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केन्द्रीय जल आयोग/ CENTRAL WATER COMMISSION



कृष्णा बेसीन / KRISHNA BASIN

वर्ष पुस्तिका (भाग - I)

WATER YEAR BOOK (Vol. I)

निस्सारण वर्ष पुस्तिका/DISCHARGE YEAR BOOK

(जून-2019 - मई-2020)

(JUNE-2019 – MAY-2020)

कृष्णा एवं समन्वय परिमंडल / KRISHNA & CO-ORDINATION CIRCLE

हैदराबाद / HYDERABAD

मार्च -2021

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प्रस्तावना

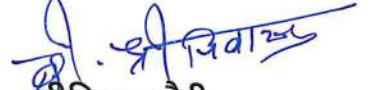
जल, सीमित संसाधन होने के कारण, विवेकपूर्णता से उपयोग करने के लिए उचित योजना अत्यधिक आवश्यक है। योजना के लिए, सांख्यिकता से मान्य आंकड़ा संग्रह प्राथमिक जरूरत है। भारत में सभी नदी क्षेत्रों में जल विज्ञान संबंधी प्रेक्षण स्टेशनों के अच्छे नेटवर्क के माध्यम से इस उद्देश्य को निभाने के लिए केंद्रीय जल आयोग प्रयत्न करता आ रहा है। यह रिपोर्ट कृष्णा नदी क्षेत्र से संबंध रखता है जो चार राज्यों यथा महाराष्ट्र, कर्नाटक, तेलंगाना और आंध्र प्रदेश को सम्मिलित करता है।

कृष्णा नदी क्षेत्र से संबंधित जल वर्ष पुस्तक **2019-20** तीन खंड में तैयार की गयी है। खंड **I, II** व **III** क्रमशः प्रवाह डेटा, तलछट डेटा और जल गुणवत्ता डेटा अंतर्विष्ट करता है। वर्ष **2019-20** के लिए अनुभाग खंड **I** में, स्थल अनुसार इतिहास, सामान्य प्रवाह डेटा, जल विज्ञान संबंधी डेटा, प्रतिदिन स्तर-निर्वहन डेटा और नक्शे/मानचित्र को सम्मिलित किया गया है। इसी प्रकार, स्थल अनुसार प्रतिदिन तलछट डेटा खंड **II** में और जल नमूनों की जल गुणवत्ता विश्लेषण खंड **III** में शामिल किया जाता है।

इस जल वर्ष पुस्तक (खंड **I**) में कृष्ण नदी क्षेत्र के **55** स्टेशनों से एकत्रित प्रतिदिन डेटा को समाविष्ट करके प्रकाशित किया गया है जिस में से **37** स्टेशन कृष्ण एवं समन्वय परिमंडल, हैदराबाद के क्षेत्राधिकार में हैं और शेष **18** स्टेशन जल विज्ञान एवं समन्वय परिमंडल, बेंगलुरु क्षेत्राधिकार में हैं। प्रति वर्ष जल वर्ष पुस्तक प्रकाशित की जाती है जिस में माह जून से मई तक का डेटा रहता है। यह डेटा डिजिटल रूप में भी उपलब्ध है और डब्ल्यू.आर.आई.एस. वेबसाइट पर अपलोड किया जायेगा और डेटा विकीर्णन पर दिशानिर्देशों के अनुसार विभिन्न उपयोगकर्ता एजेंसियों की जरूरत के अनुसार भी उपलब्ध करवाया जाएगा।

यह जल वर्ष पुस्तक **2019-20** को प्रकाशित करने में इस कार्यालय और विभिन्न मंडल कार्यालयों यथा ऊपरी कृष्ण मंडल, पुणे, निचली कृष्ण मंडल, हैदराबाद और कावेरी मंडल, बेंगलूरु के अधिकारियों और कर्मचारियों के प्रयासों को अभिस्वीकृत किया जाता है जिन के बिना यह खंड प्रकाशित करना संभव नहीं होता।

हैदराबाद
मार्च 2021


(श्रीनिवास बैरी)
अधीक्षक अभियंता

P R E F A C E

Water, being a limited resource needs to be judiciously utilized for which proper planning is very essential. In order to plan, a statistically valid data bank is a primary requirement. Central Water Commission endeavours to achieve this objective through a good network of Hydrological observation Stations in all river basins in India. This report pertains to the Krishna river basin which encompasses four states viz. Maharashtra, Karnataka, Telangana and Andhra Pradesh.

Water Year Book 2019-20 pertaining to Krishna Basin is prepared in three volumes. The Volume I, II & III contains stream flow data, Sediment data and Water Quality data respectively. Site-wise history of stream flow data and Hydrological data for the year 2019-20 comprising abstract of daily stage-discharge data and charts/maps are included in Volume I. Similarly, site-wise daily sediment data with charts are included in the Volume II and site-wise results of Water Quality analysis of Water Samples are included in Volume III.

This volume of the Water Year Book (Vol-I) contains the daily discharge data collected at 55 sites in the Krishna Basin, out of which 37 sites are under the jurisdiction of Krishna and Co-ordination Circle, Hyderabad and remaining 18 sites are under Hydrological observation & coordination circle, Bengaluru. The Water Year Book containing data from June to May is published every year. The data is also available in digital form and would be uploaded onto WRIS website and also supplied to various user agencies according to their requirement following the guidelines on data dissemination.

The efforts of the officers and staff of this office and that of field Divisions viz. Upper Krishna Division, Pune, Lower Krishna Division, Hyderabad and Cauvery Division, Bengaluru in bringing out this Water Year Book 2019-20 are hereby acknowledged, without which, it would not have been possible to bring out this volume.

Hyderabad
March 2021


(Srinivasu Bairy)
Superintending Engineer

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कृष्णा नदी क्षेत्र
दैनिक निर्वहन डेटा (खंड - I)
(जून 2019 - मई 2020)

1. परिचय

1.1 कृष्णा नदी प्रणाली

1.1.1 कृष्णा नदी प्रायद्वीपीय भारत में दूसरी सबसे बड़ी पूर्व-निकासी अंतरराज्यीय नदी है। नदी क्षेत्र पूर्वी रेखांश 73°21' से 81°09' तक और उत्तरी अक्षांश 13°07' से 19°25' के बीच स्थित है, जो महाराष्ट्र, कर्नाटक, तेलंगाना और आंध्र प्रदेश के बड़े क्षेत्रों को कवर करते हुए डेक्कन के पठार में है।

कृष्णा नदी क्षेत्र उत्तर में गोदावरी नदी क्षेत्र से अलग चोटी द्वारा, दक्षिण और पूर्व में पूर्वी घाटों द्वारा तथा पश्चिम में पश्चिमी घाटों द्वारा घिरा हुआ है। नदी क्षेत्र का आकार त्रिकोणीय है जिसका आधार पश्चिमी घाट है तथा शीर्ष विजयवाड़ा है और कृष्णा नदी स्वयं मध्यस्थ बनती हैं। सभी प्रमुख सहायक नदियां पश्चिमी घाट से निकलते हुए हैं और वो कृष्णा नदी में इसकी लंबाई के ऊपरी दो-तिहाई हिस्से में आकर मिलती हैं।

1.1.2 कृष्णा नदी 2,59,439 वर्ग किलोमीटर (भू स्थानिक डेटा सेट के आधार पर) क्षेत्र में बहती है जो कि देश के कुल भौगोलिक क्षेत्र का लगभग 8% है।

जल निकासी क्षेत्र का राज्यवार वितरण नीचे दी गई तालिका में दिखाया गया है।

राज्य का नाम	लम्बाई (कि.मी.)	जल निकासी क्षेत्र (वर्ग कि.मी.)	जल निकासी क्षेत्र %
महाराष्ट्र	306	69,044	26.8
कर्नाटक	483	1,13,622	43.7
तेलंगाना	612	51,388	19.8
आंध्र प्रदेश		25,385	9.8
कुल	1401	2,59,439	100.0

1.1.3 कृष्णा नदी अरब सागर से लगभग 64 किमी दूर महाबलेश्वर के उत्तर में 1337 मीटर की ऊंचाई पर पश्चिमी घाटों में उदित होती है और महाराष्ट्र, कर्नाटक, तेलंगाना और आंध्र प्रदेश राज्यों से होते हुये पश्चिम से पूर्व तक बहती हुये विजयवाड़ा के नीचे की ओर बहाव के साथ बंगाल की खाड़ी में मिल जाती है।

1.1.4 कृष्णा नदी जलमार्ग 1400 किमी लम्बा है जिसमें शामिल होने वाली 13 प्रमुख सहायक नदियां हैं, जिनमें से छह दाएं किनारे की सहायक नदियां हैं और सात बाएं किनारे की सहायक नदियां हैं। घटप्रभा, मलप्रभा और तुंगभद्रा प्रमुख दाएं किनारे की सहायक नदियां हैं जो कुल मिलाकर 35.45% हिस्सेदारी रखते हैं, जबकि भीमा, मुसी और मुन्नरू प्रमुख बाएं किनारे की सहायक नदियां हैं जो कुल मिलाकर 35.62 % क्षेत्र हिस्सेदारी रखते हैं। सहायक नदियों के स्रोत की ऊंचाई, लंबाई और अपवाह क्षेत्रों की जानकारी नीचे तालिका में दी गई है।

कृष्णा नदी की महत्वपूर्ण सहायक नदियां

स. क्र.	सहायक नदी का नाम	तट	औ. स. त. के ऊपर स्रोत की ऊंचाई (मी.)	लम्बाई (कि.मी.)	अपवाह-क्षेत्र (वर्ग कि.मी.)
1	कोयना	दायाँ	1441	118	4,890
2	पंचगंगा	दायाँ	1020	74	2,575
3	दुधगंगा	दायाँ	870	103	2,350
4	घटप्रभा	दायाँ	884	283	8,829
5	मलप्रभा	दायाँ	793	304	11,549
6	भीमा	बायाँ	945	861	70,614
7	तुंगभद्रा	दायाँ	610	531	71,417
8	दिंडी	बायाँ	718	178	3,490
9	पेद्दवागु	बायाँ	707	109	2,343
10	हालिया	बायाँ	708	112	3,780
11	मूसी	बायाँ	661	265	11,212
12	पालेरु	बायाँ	515	152	3,263
13	मुन्नेरु	बायाँ	238	195	10,409

1.2 कृष्णा नदी क्षेत्र में बारिश का स्वरूप

कृष्णा नदी क्षेत्र में औसत वार्षिक वर्षा 750 मि.मी. है। वर्ष 2019-20 में कृष्णा नदी बेसिन में तुंगभद्रा उप बेसिन के क्षेत्र में कम वर्षा और अन्य क्षेत्रों औसत वर्षा हुई, जिसके कारण तुंगभद्रा बेसिन के कई साइटों पर कम वार्षिक उपज देखी गई, जबकि अधिकांश अन्य साइटों पर पिछले वर्ष की तुलना में अच्छा प्रदर्शन देखा गया। दक्षिण पश्चिम मॉनसून जून के मध्य में शुरू होता है और अक्टूबर के मध्य तक वापस चला जाता है। मानसून अवधि के दौरान लगभग 90% वार्षिक वर्षा प्राप्त होती है, जिसमें से 70% जुलाई, अगस्त और सितंबर के दौरान होती है।

1.3 कृष्णा नदी क्षेत्र में जल-विज्ञान संबंधी तंत्र

कृष्णा गोदावरी आयोग ने जुलाई 1962 की अपनी रिपोर्ट में कृष्णा बेसिन में कई स्थानों पर स्थायी आधार पर दैनिक बहाव अवलोकन साइटों की एक वैज्ञानिक तरीके से स्थापित करने की सिफारिश की थी। 1973 की अपनी रिपोर्ट में कृष्णा जल विवाद न्यायाधिकरण ने भी कृष्णा बेसिन में अतिरिक्त जल-विज्ञान निरीक्षण केंद्रों की स्थापना की सिफारिश की थी। केन्द्रीय जल आयोग ने 1963 में कृष्णा बेसिन में जल-विज्ञान अवलोकन शुरू किया। कृष्णा नदी और इसकी सहायक नदियों पर जल-विज्ञान स्थलों की स्थापना की गई और डेटा संग्रहण जारी है। मानसून के मौसम के दौरान, स्टेशन गेज लाइन पर गेज घंटे प्रति घंटा दर्ज की जाता है। गैर मानसून के मौसम के दौरान 0800 घंटे, 1300 घंटे और 1800 घंटे प्रतिदिन तीन बार दर्ज की जाता है।

कृष्णा बेसिन के 55 जल-विज्ञान अवलोकन केंद्रों में से 37, कृष्णा और समन्वय परिमंडल, हैदराबाद के नियंत्रण में हैं और 18 कावेरी मंडल, जल विज्ञानीय प्रेशरण एवं समन्वय परिमंडल, (एच.वो. और सी.सी.), बेंगलुरु के अधीन हैं। कृष्णा और समन्वय परिमंडल के तहत, दो मंडल हैं, यथा ऊपरी कृष्णा मंडल, पुणे ने 16 अवलोकन केंद्रों को और निचली कृष्णा मंडल, हैदराबाद ने 21 अवलोकन केंद्रों को सम्भाले रखा है।

2019-20 के दौरान एकत्रित 55 केंद्रों का दैनिक गेज और निर्वहन डेटा इस खंड में प्रस्तुत किया गया है। गेज और निर्वहन अवलोकन के अलावा, इनमें से कुछ केंद्रों पर तलछट और जल गुणवत्ता निगरानी भी की जाती है। सभी 55 साइटों का वर्ष 2019-20 के लिए जल स्तर और निर्वहन डेटा खंड -1 में प्रस्तुत किया गया है। निलंबित तलछट डेटा (27 साइट) और जल गुणवत्ता डेटा (43 साइट) वर्ष 2019-20 के लिए अनुक्रम II और III में क्रमशः प्रस्तुत किए जाते हैं।

1.4 निरीक्षण तकनीकें

गेज और निर्वहन डेटा के संग्रह के लिए अपनाए गए मानक तरीकों को निम्नलिखित पैरा में संक्षेप में समझाया गया है।

1.4.1 गेज निरीक्षण

नदी के जल स्तर या चरण को औसत समुद्र तल के आधार के ऊपर इसकी ऊंचाई के रूप में मापा जाता है। गैर-अभिलिखित गेज को मैनुअल रूप से पढ़ कर जल स्तर माप किया जाता है। लंबवत चिह्नित छड़ी की श्रृंखला प्रत्येक साइट पर तीन लइनों में स्थापित की जाती है। मेट्रिक इकाई अंकन के साथ इनेमल पेन्ट गेज प्लेटें गेज पोस्ट पर स्थापित की जाती हैं ताकि गेज को तीन दशमलव तक पढ़ा जा सके। तीन गेजिंग लाइनों में से, मध्य लाइन को स्टेशन गेज लाइन के रूप में उपयोग किया जाता है और अन्य दो लाइनों की रीडिंग का उपयोग पानी की सतह के ढलान की गणना के लिए किया जाता है।

1.4.2 निर्वहन निरीक्षण

आमतौर पर, रविवार और छुट्टियों के दिनों को छोड़कर सभी दिनों में क्षेत्र-वेग विधि का उपयोग करके लगभग 0800 घंटे पर एक बार निर्वहन अवलोकन किया जाता है।

स्टेशन गेज लाइन पर नदी के गहराई और वेग अवलोकन हेतु IS: 1192-2013 में उल्लेखित विधि अनुसार नदी को 15-25 भागों में विभाजित किया जाता है। नदी के प्रवाह की चौड़ाई और प्रवाह की स्थिति के आधार पर प्रत्येक खंड का केंद्रीय बिंदु टैग लाइन का उपयोग करके या खंड प्रणाली द्वारा चिह्नित किया जाता है।

मध्य खंड विधि का आमतौर पर पालन किया जाता है और प्रत्येक खंड के मध्य बिंदु पर गहराई और वेग मापा जाता है। वेडिंग राड या गहराई रॉड का उपयोग करके गहराई दर्ज की जाती है, किंतु 3.0 मीटर से अधिक गहराई के लिये साउंडिंग रील या इको साउंडर का उपयोग किया जाता है। असाधारण मामलों में, जहां नदी का नदीतल स्थिर है, अवलोकन अनुभाग में नदी के हालिया ली गई क्रास सेक्शन को उपयोग करके गहराई का अनुमान लगाया जाता है।

गहराई और वेग अवलोकन कम प्रवाह के दौरान वेडिंग के द्वारा तथा ज्यादा प्रवाह के दौरान नाव के साथ केबल वे द्वारा या आईबी / ओबी इंजन द्वारा किया जाता है। कुछ साइटों पर,

पुल का उपयोग करके उस साइट पर उपलब्ध अवलोकन सुविधाओं के माध्यम से डेटा के संग्रह किया जाता है।

IS: 3910-1992 के अनुसार बनाई गई एक कप प्रकार के धारामापी का उपयोग करके IS: 3918-1966 के अनुरूप वेग को मापा जाता है। आमतौर पर धारामापी IS: 6064-1971 के अनुसार निलंबन उपकरण द्वारा प्रत्येक खंड बिंदु पर सतह से कुल गहराई की 0.6 गहराई तक नीचे किया जाता है और जब जल की गहराई 0.3 मीटर से कम होती है, तो वेग पानी की सतह के बिल्कुल नीचे मापा जाता है।

अत्यधिक प्रवाह वेग के दौरान नदी के मध्यम और उच्च स्थलों में, इंजनों वाली नाव का उपयोग किया जाता है। जहां इंजन के बिना FRP नाव का उपयोग किया जाता है उन कुछ स्टेशनों पर नावों के संचालन हेतु केबल वे स्थापित किये गये हैं। जब धारा प्रवाह की स्थिति के कारण नाव को अवलोकन के लिए स्थिर रखना मुश्किल हो जाता है, वहां कभी-कभी वेग मापन सड़क-पुलों से किए जाता हैं, जहां भी संभव होता हैं। जब उपर्युक्त प्रक्रियाओं में से कोई भी संभव नहीं होती है, तो या तो फ्लोट अवलोकन या ढलान-क्षेत्र विधि द्वारा गणना की जाती है।

विभिन्न साइटों पर विभिन्न विधियों द्वारा ली गया डेटा, निर्वहन की गणना करने के लिए निर्धारित मानक रूपों में दर्ज किया जाता है और फिर सतह जल डेटा प्रविष्टि प्रणाली (SWDES) में अंकित करने के लिए उप मंडलीय डेटा केंद्र में प्रेषित किया जाता है। डेटा की सॉफ्ट कॉपी मंडल कार्यालय में जमा की जाती है। मंडल डेटा प्रसंस्करण केंद्र में प्राथमिक सत्यापन के बाद, क्षेत्रीय डेटा प्रसंस्करण केंद्र, परिमंडल कार्यालय में HYMOS सॉफ्टवेयर का उपयोग कर डेटा को संशोधित करके अंतिम रूप दिया जाता है। वर्ष 2016 से लिया गया डेटा को e-SWIS (ऑनलाइन डेटा बेस) में दर्ज किया जा रहा है।

1.4.3 गैर-निरीक्षण दिनों के लिए निर्वहन डेटा की गणना

प्रत्येक सत्र (मानसून या गैर मानसून) के दौरान मापा नदी स्तर और निर्वहन डेटा SWDES से HYMOS में भेजा जाता हैं। HYMOS में सभी अवलोकन बिंदुओं को वेटेज देकर और ऐसे अवलोकनों को छोड़कर जो असंगत हो, एक स्तर-निर्वहन दर-निर्धारण वक्र तैयार किया जाता हैं। वर्तमान मौसम के लिए चरण-निर्वहन वक्र को इस तरह से अंतिम रूप दिया गया है कि यह पूर्वाग्रह से मुक्त हो और उपयुक्त परीक्षणों को पास करता हो। पिछले वर्ष के एस-डी वक्र के साथ अध्यारोपित करके तुलना की जाती है और वर्तमान वर्ष के वक्र में यदि कोई परिवर्तन देखा जाता है तो इसके सत्यापन के लिए चरण-क्षेत्र और चरण-वेग आरेखों का उपयोग करके अध्ययन किया जाता है। परिवर्तन की उपयुक्तता के संतोषजनक निष्कर्ष पर, वर्तमान मौसम के चरण-निर्वहन वक्र को अंतिम रूप दिया गया है और गैर-निरीक्षण दिनों के लिए 0800 घंटे बजे पानी के स्तर के लिये दर-निर्धारण वक्र से निर्वहन की गणना की जाती है। अमान्य अवलोकनों के लिए निर्वहन की गणना, चरण-निर्वहन दर-निर्धारण वक्र से की जाती है।

1.5 व्याख्यात्मक & विवेचनात्मक टिप्पणी

1.5.1 इस प्रकाशन में प्रस्तुत डेटा और आलेखी प्रस्तुतिकरणों में निहित जल-विज्ञान मानकों को समझने में सहायता के लिए निम्नलिखित स्पष्टीकरण / व्याख्या दी गयी है।

- i. जल वर्ष, कैलेंडर वर्ष के 1 जून से शुरू होता है और अगले कैलेंडर वर्ष के 31 मई तक चलता है और एक पूर्ण जल-विज्ञान चक्र को पूर्ण करता है।
- ii. दिए गए निर्वहन आंकड़े दैनिक निरीक्षित / अनुमानित प्रवाह होते हैं। गैर-अवलोकन दिनों और अमान्य अवलोकनों के लिए, 0800 घंटों के गेज के लिए निर्वहन का अनुमान लगाया जाता है और प्रति सेकंड घन मीटर (Cumecs) में दर्शाया जाता है।
- iii. गेज का शून्य प्रत्येक साइट के लिए निर्धारित डेटम स्तर का संदर्भ है और बारहमासी नदी के निम्नतम पानी के स्तर से 1 या 2 मीटर कम रखा जाता है। गैर-बारहमासी नदी में, इसे नदी के तल के स्तर से 1 मीटर कम रखा जाता है।
- iv. निर्वहन को निम्न तरीकों से पूर्णांकित किया जाता है :
 - a) 1000 क्यूमेक्स से अधिक होने पर निकटतम पूर्ण पूर्णांक।
 - b) 100-999 क्यूमेक्स के बीच होने पर निकटतम पहला दशमलव मान।
 - c) 10-99 क्यूमेक्स के बीच होने पर निकटतम दूसरा दशमलव मान।
 - d) 10 से कम होने पर निकटतम तीसरा दशमलव मान।
- v. महीने के अधिकतम और न्यूनतम निर्वहन (अवलोकित / गणना) दैनिक निर्वहन से लिया जाता है।
- vi. अपवाह (रन-ऑफ) मिलीमीटर में जल निकासी क्षेत्र पर निर्वहन माप स्टेशन तक पानी की वास्तविक गहराई होती है, जो कि वार्षिक गणित रन-ऑफ के जो समतुल्य होती है, जिसे निम्नलिखित संबंधों का उपयोग करके गणना किया जाता है।

वार्षिक अपवाह (मिलियन क्यूबिक मीटर) $\times 1000$

अपवाह (मि.मी.) = $\frac{\text{वार्षिक अपवाह (मिलियन क्यूबिक मीटर)} \times 1000}{\text{अपवाह क्षेत्र (वर्ग किमी)}}$

अपवाह क्षेत्र (वर्ग किमी)

- vii. रिकॉर्ड पर अधिकतम और सबसे निचला निर्वहन मापने के समय के अनुरूप होता है (निर्वहन मापने का समय आमतौर पर 08.00 घंटे से निर्वहन माप के अंत तक होता है) और पूर्ण अधिकतम और सबसे कम पानी के स्तर के अनुरूप नहीं होता है। हालांकि, अधिकतम उत्पन्न जल स्तर घटना के दिनांक और समय के साथ इसकी अनुमानित निर्वहन का उल्लेख प्रत्येक साइट की इतिहास पुस्तिका में किया गया है। गेजिंग साइट का कोड नंबर एक सात-कॉलम वाला अद्वितीय अक्षरांकीय संदर्भ संख्या होती है, जो डेटा बैंकों में प्रवाह डेटा के भंडारण और पुनर्प्राप्ति की सुविधा प्रदान करता है। पहला वर्ण या तो एक अभिन्न नदी बेसिन या एक क्षेत्र है जिसमें कई संगत नदी अपवहन क्षेत्र प्रदर्शित करता है। इसके बाद एक वर्ण होता है, जो एक स्वतंत्र नदी प्रणाली की पहचान करता है, जिसमें समुद्र में एक या एक से अधिक आउटलेट होते हैं। या जो किसी अन्य देश में प्रवेश करने

के लिए अंतरराष्ट्रीय सीमा पार करते हैं। तीसरे, चौथे और पांचवें वर्ण समुद्र / अंतरराष्ट्रीय सीमा से धारा की ओर बढ़ते क्रमशः पहले, दूसरे और तीसरे अनुक्रम की सहायक नदियों को दर्शाते हैं। छठे और सातवें वर्ण नदी पर निर्धारित गेजिंग साइट का स्थान इंगित करते हैं। रिक्त स्थान, यदि कोई हो तो, शून्य से भरे होते हैं।

1.5.2 चित्रात्मक निरूपण की व्याख्या

आयतचित्र-हाइड्रोग्राफ, पट्टी मानचित्र और एक पाई आरेख आदि; स्वचालित रूप से दर्ज किए गए डेटा के आधार पर सॉफ्टवेयर द्वारा उत्पन्न होते हैं, जिनकी संक्षेप में व्याख्या नीचे दी गयी है।

A. आयतचित्र-हाइड्रोग्राफ : इस आलेखीय निरूपण से पता चलता है (ए) अधिकतम ऐतिहासिक निर्वहन जिसका मतलब है उपलब्ध डेटा की पूरी अवधि में जल वर्ष के प्रत्येक महीने में दिन में उच्चतम निर्वहन कितना है। (बि) इसी प्रकार न्यूनतम ऐतिहासिक निर्वहन का मतलब है उपलब्ध डेटा की पूरी अवधि में जल वर्ष के प्रत्येक महीने में दिन में सबसे कम निर्वहन कितना है। (सि) वर्तमान वर्ष सहित उपलब्ध डेटा की पूरी अवधि के लिए जल वर्ष में प्रत्येक महीने में औसत ऐतिहासिक निर्वहन (डि) वर्तमान वर्ष का औसत निर्वहन का मतलब है कि वर्तमान वर्ष के प्रत्येक माह में दैनिक निर्वहन का औसत मान। इस प्रकार यह ग्राफ एक दिन के अधिकतम न्यूनतम निर्वहन और प्रत्येक वर्ष के लिए प्रत्येक माह के औसत निर्वहन का जिसके लिए डेटा उपलब्ध है निरूपण करता है। तथा इन मानों की तुलना मौजूदा वर्ष के मासिक औसत मानों से करता है।

B. रनऑफ का बार चार्ट: यह निम्नलिखित सूत्रों का उपयोग करते हुए दस लाख घन मीटर (एम.सी.एम.) में मौजूदा वर्ष सहित सभी वर्षों के उपलब्ध आंकड़ों के लिए प्रत्येक जल वर्ष के वार्षिक प्रवाह का सचित्र प्रदर्शन है।

$$\text{दैनिक डिस्चार्ज (घन मीटर प्रति सेकेंड में)} \times (60 \times 60 \times 24 / 1000000) = \text{एम.सी.एम. में दिन का रनऑफ}$$

दैनिक रनऑफ का योग एक वर्ष में वार्षिक रनऑफ देता है। यह चार्ट उपलब्ध डेटा के सभी वर्षों के लिए साइट पर प्रत्येक वर्ष के वार्षिक रन ऑफ की तुलना करता है।

C. पाई आरेख: मासिक औसत रनऑफ का पाई आरेख वर्ष के प्रत्येक महीने के लिए सालाना रन ऑफ का औसत प्रतिशत दर्शाता है जिसके लिए चालू वर्ष का डेटा भी उपलब्ध हो। इसी तरह वर्तमान वर्ष का पाई आरेख वर्तमान जल वर्ष में प्रत्येक महीने के वार्षिक प्रवाह के प्रतिशत का निरूपित करता है। यह निरूपण किसी विशेष साइट पर वार्षिक उपज में पानी का मासिक योगदान दिखाता है। क्षेत्र में धारा के मार्ग में बारिश गिरने के आधार पर मासिक रन ऑफ एक साइट से दूसरे साइट पर भिन्न हो सकता है।

D. अध्यारोपित अनुप्रस्थ काट: नदी के तल का अनुप्रस्थ काट मानक निर्वहन क्षेत्र के साथ प्रत्येक साइट पर मानसून के पहले और मानसून के बाद दर्ज की जाती है और अनुप्रस्थ काट में परिवर्तन पता करने हेतु इसे अध्यारोपित भी करते हैं।

E. जल स्तर बनाम समय चार्ट: प्रत्येक साइट पर 3 शीर्ष चोटी के बाढ़ का निरूपण इन चार्टों द्वारा किया जाता है जिसमें प्रत्येक बाढ़ के लिए 72 घंटे (3 दिन) के समय के साथ पानी का स्तर तिथि और समय दिया होता है।

1.6 प्रस्तुति का तरीका

इस खंड में साइट-वार जल-विज्ञान डेटा वृत्तपत्रक प्रवाह तालिका और चित्रमय सारांश प्रस्तुत किए जाते हैं। हाइड्रोलॉजिकल स्टेशनों का अनुक्रमण समुद्र से ऊपर की ओर बढ़ने वाली नदी के साथ या मुख्य नदी / अंतरराष्ट्रीय सीमा के साथ संगम से नदी के स्रोत तक व्यवस्थित किया जाता है जिसमें मध्यवर्ती सहायक नदियों स्थित साइटों को भी समान रूप से प्राथमिकता दी जाती है।

प्रवाह सारणी निम्नलिखित तथ्य इंगित करती है:

अ) दैनिक निर्वहन	(क्यूमेक्स में)
आ) दस दैनिक औसत निर्वहन	(क्यूमेक्स में)
इ) मासिक औसत निर्वहन	(क्यूमेक्स में)
ई) मासिक अधिकतम और न्यूनतम निर्वहन	(क्यूमेक्स में)
उ) वार्षिक रनऑफ	(मि. क्यूमेक्स और मिमी में)
ऊ) वार्षिक अपवाह	(एमसीएम से टीएमसी में)

KRISHNA BASIN

DAILY DISCHARGE DATA (VOL - I)

(JUNE 2019 – MAY 2020)

1.0 INTRODUCTION

1.1 THE KRISHNA RIVER SYSTEM

1.1.1 The River Krishna is the second largest eastward draining interstate river in Peninsular India. The basin of Krishna is situated between East longitudes 73° 21' to 81° 09' and North latitudes 13° 07' to 19° 25' in the Deccan Plateau covering large areas in the States of Maharashtra, Karnataka, Telangana and Andhra Pradesh.

The Krishna Basin is bounded on the North by the ridge, separating it from the Godavari basin and on the South and East by the Eastern Ghats and on the West by the Western Ghats. The basin is more or less triangular in shape with its base along the Western Ghats, the apex at Vijayawada and the river Krishna itself forming the median. All the major tributaries are originating in the Western Ghats and joining river Krishna at the base of the triangle in the upper two-thirds of its length.

1.1.2 The Krishna drains an area of 2,59,439 sq.km (based on geo spatial data sets) which is nearly 8% of the total geographical area of the country.

The State wise distribution of drainage area is shown in the Table given below.

Name of State	Length (km)	Drainage area (sq.km)	Drainage area %
Maharashtra	306	69,044	26.8
Karnataka	483	1,13,622	43.7
Telangana	612	51,388	19.8
Andhra Pradesh		25,385	9.8
Total	1401	2,59,439	100.0

1.1.3 The river Krishna rises in the Western Ghats at an altitude of 1337m just North of Mahabaleswar, about 64 km from the Arabian Sea and flows from West to East through the States of Maharashtra, Karnataka, Telangana and Andhra Pradesh before it joins the Bay of Bengal at downstream of Vijayawada.

1.1.4 There are about 13 major tributaries which join the river Krishna along its 1400 km course, out of which, six tributaries are on right bank and remaining seven are on left bank. Among the major tributaries, the Ghataprabha, Malaprabha and Tunga- Bhadra are the principal right bank tributaries which together contribute 35.45% of the total catchment area, whereas the Bhima, Musi and Munneru are the principal left bank tributaries which together contribute 35.62% of the total catchment area.

The elevation of source, length and catchment areas of the tributaries are indicated in given table below.

The important tributaries of river Krishna

Sl.No.	Name of tributary	Bank	Elevation of source in m above MSL	Length (km)	Catchment area (sq.km)
1	Koyna	Right	1441	118	4,890
2	Panchganga	Right	1020	74	2,575
3	Dudhganga	Right	870	103	2,350
4	Ghataprabha	Right	884	283	8,829
5	Malaprabha	Right	793	304	11,549
6	Bhima	Left	945	861	70,614
7	Tunga Bhadra	Right	610	531	71,417
8	Dindi	Left	718	178	3,490
9	Peddavagu	Left	707	109	2,343
10	Halia	Left	708	112	3,780
11	Musi	Left	661	265	11,212
12	Paleru	Left	515	152	3,263
13	Munneru	Left	238	195	10,409

1.2 RAINFALL PATTERN IN THE KRISHNA BASIN

The average annual rainfall in the Krishna basin is 750 mm. In 2019-20 Tungabhadra sub basin in Krishna River Basin experienced less rainfall and above average rainfall in other areas, due to which less annual yield observed at many of the sites in Tungabhadra basin while most of other sites experienced good runoff compared to the previous year. The South West Monsoon sets in the middle of June and withdraws by the middle of October. About 90% of annual rainfall is received during the Monsoon period, of which more than 70% occurs during July, August and September.

1.3 Hydrological Network in Krishna Basin

Krishna Godavari Commission in their report of July 1962 recommended for establishment of daily discharge observation sites on permanent basis and in a scientific way at various locations in Krishna basin. Krishna Water Dispute Tribunal in their report of 1973 also recommended setting up of additional Hydrological Observation stations in Krishna basin. Central Water Commission commenced Hydrological Observations in Krishna Basin in 1963. Hydrological Observation sites on main Krishna River and its tributaries were established and data collection is being continued. During monsoon season, gauges are recorded hourly at the station gauge line. During non-monsoon season gauges are recorded thrice daily at 0800 hours, 1300 hours and 1800 hours.

Out of 55 Hydrological observation stations in the Krishna Basin, 37 are under the control of Krishna & Co-Ordination Circle, Hyderabad and 18 are under Hydrological observation, & coordination circle Bangalore. Under the Krishna & Co-Ordination Circle, there are two divisions namely, Upper Krishna Division, (UKD) Pune maintaining 16 observation stations and Lower Krishna Division, (LKD) Hyderabad maintaining 21 observation stations.

The daily gauge and discharge data of 55 stations collected during 2019-20 have been presented in this volume. In addition to gauge and discharge observations, Sediment and Water Quality monitoring are also conducted at some of these stations. The water level and discharge data for the year 2019-20 of all the 55 sites are presented in Volume-I. Suspended Sediment data (27 sites) and Water Quality data (43 Sites) are presented for the year 2019-20 in volumes II and III respectively.

1.4 OBSERVATION TECHNIQUES

The standard methods adopted for collection of Gauge and Discharge data are explained briefly in the following Para's.

1.4.1 Gauge Observation

Water level or stage of the river is measured as its elevation above MSL datum. Water level measurement is carried out by manually reading non-recording gauges. Series of vertical staff gauges are fixed at three sections at every site. Enameled gauge plates with metric unit markings are fixed on the gauge posts so that gauges can be read up to three decimals. Out of the three gauging lines, the central one is used as station gauge line and readings of the other two lines are used for calculation of water surface slope.

1.4.2 Discharge Observation

In general, discharge observations are conducted once in a day commencing at about 0800 hours using area-velocity method on all days except Sundays and holidays.

Across the river at station gauge line, the river is divided into 15 – 25 segments as outlined in IS 1192 – 2013 for conducting depth and velocity observations. The central point of each segment is located / marked using the tag line or by Segmentation system depending on the width of the river and flow conditions.

Mid-section method is generally followed and depth and velocity are observed at midpoint of each segment. Depth is recorded using wading rod and sounding rod up to 3.0 m above which Sounding reel or Echo Sounder is used. In exceptional cases, where the river bed is stable, depths are estimated using recent cross section of the stream at the observation section.

Depth and velocity observations are carried out by wading during lean flow and at higher flow conditions by Boat with cable way or Boat with IB /OB Engine or Catamaran or Motor Launch. At certain sites, Bridge sections are used for collection of data depending on the means of observation facilities available at that site.

The velocity is measured as per IS 3918 - 1966 by using a cup type current meter conforming to IS 3910 - 1992. In general the current meter is lowered to the requisite depth i.e. 0.6 of total depth from the surface at every segment point by suspension equipment as per IS: 6064 - 1971 and when the depth is less than 0.3 meter, the velocity is observed just below the water surface.

At medium and high stages with significant flow velocities, boats fitted with power engines are being used. At some stations cableway has been established for navigating the boat, where FRP boats without engines are used. Measurements of velocity are sometimes carried out from road bridges, wherever feasible, when it becomes difficult to keep the boat stable for velocity observations due to the river flow conditions. When none of the above procedures is possible, either float observation is resorted to or computed by slope area method.

The data observed by different methods at various sites is entered in prescribed standard forms to compute the discharge and then transmitted to sub divisional data centre to be entered into Surface Water Data Entry System (SWDES). The soft copy of the data is submitted to division. After Primary validation at Divisional Data Processing Centre, the data is processed and finalized in Regional Data Processing Centre using the HYMOS software at the Circle. From June 2016 onwards the observed is being entered in e-SWIS (online database).

1.4.3 Computation of discharge for non-observed days

The stages and corresponding discharges measured during each season (monsoon or non-monsoon) are exported to HYMOS from SWDES. Stage-Discharge rating curve will be generated in HYMOS giving weightage to all the observation points and discarding such observations which appear inconsistent. The Stage-Discharge curve for the current season is then finalised such that it is free from bias and passes all the goodness of fit tests. It is also compared by superimposition with the previous year's S-D curve and shift, if any, of the current year's curve is studied with reference to changes in the river cross-section and using the stage-area and stage-velocity diagrams for verification. On satisfactory conclusion of the appropriateness of the shift, the Stage-Discharge curve of the current season is finalised and used for computation of discharge from the rating curve against 0800 hours water level for non-observed days. The discharge for the discarded observations, are computed from the Stage-Discharge rating curve.

1.5 EXPLANATORY & INTERPRETATION NOTE

1.5.1 The following explanatory/ interpretation note is given for assistance in understanding hydrological parameters contained in the data and graphical representations presented in this publication.

- i. Water year commences from 1st June of a calendar year and extends up to 31st of May of next calendar year and covers one complete hydrologic cycle.
- ii. The discharge figures given are daily observed/estimated flows. For non-observation days and discarded observations, the discharge is estimated against 0800 hours gauge reading and represented in cubic meter per second (cumec).
- iii. The zero RL of gauge is a reference of datum level, fixed for each site and is kept 1 or 2m lower than the lowest water level of a perennial stream. In a non-perennial stream, it is kept 1m lower than the bed level of the stream.
- iv. Discharge is rounded off to
 - a) Nearest full integer when it exceeds 1000 cumec.
 - b) Nearest first decimal value when it is between 100-999 cumec.
 - c) Nearest second decimal value when it is between 10-99 cumec.
 - d) Nearest third decimal value when it is less than 10 cumec.
- v. Maximum and minimum discharges (observed / computed) of the month are taken from daily discharges.
- vi. Run-off in millimeters (mm) is the notional depth of water over the drainage area up to the discharge measurement station converted as equivalent to the calculated Annual run-off, which is computed using the following relation.

$$\text{Run-off (mm)} = \frac{\text{Annual run-off (Million cubic metre)* 1000}}{\text{Catchment area (sq.km)}}$$

- vii. The peak and the lowest discharge on record correspond to the measuring time (Discharge measuring time is generally from 08.00 hours to the end of discharge measurement) and are not corresponding to absolute peak and lowest observed water level.

However Maximum Water level occurred with date and time of occurrence and corresponding estimated discharge has been mentioned in History sheet of each site.

The gauging site's code number is a unique seven-column alphanumeric reference number, which facilitates storage and retrieval of flow data in data banks. The first character is identifier of either an integral river basin or for convenience a region having several contiguous river catchments. This is followed by a character,

which identifies an independent river system, which either has one or more outlets to the sea or crosses international border to enter another country. The third, fourth and fifth characters denote first, second and third order of tributaries respectively from the sea/international boundary moving upstream. The sixth and seventh characters indicate the location of gauging site earmarked on the river. Blank spaces, if any, are filled by zeros.

1.5.2 Interpretation of Graphical representations

Histogram-Hydrograph, Bar Chart and a pie diagram etc; are automatically generated by the software based on the data entered, which are briefly interpreted below.

A) Histogram-Hydrograph: This graphical representation reveals (a) Maximum discharge historical, which means, highest discharge observed, on a day, in each month of water year, in the entire period of available data. (b) Similarly minimum historical discharge means, lowest discharge observed, on a day, in each month of water year, in the entire period of available data. (c) Mean discharge-Historical means, average value of discharge, for each month, in a water year, for the entire period of available data including current year. (d) Mean discharge current year means, average value of daily discharge in each month, in current water year. Therefore this graph represents maximum, minimum discharge observed on a day and mean of each month discharge for all years for which data is available and comparing these values with current year monthly mean values.

B) Bar chart of Runoff: This is the graphical representation of annual runoff of each water year, for all years of available data, including current year, in million cubic meter (MCM) using the following formula.

Daily discharge, in Cubic meter per second $\times (60 \times 60 \times 24 / 1000000) =$ Runoff of the day in MCM.

Sum of daily Run off in a year gives annual runoff. This chart compares annual run off of each year at a site for all years of available data.

C) Pie Diagrams: Pie diagram of monthly average runoff represents average percentage of annual run off, for each month of water year, of all years, for which data is available including current year. Similarly current year pie diagram represents percentage of annual runoff of each month in current water year. This representation shows monthly contribution of water yield, in annual runoff, at a particular site. The monthly run off may vary from one site to another site depending up on rain fall at upstream in that region.

D) Superimposed cross section: The profile of river bed along standard discharge section is recorded, at on set and off set of monsoon at each site and superimpose the same, to find out cross sectional variations of river bed.

E) Water level Vs Time Charts: At each site 3 highest peak floods have been represented by these charts, showing water level ,date and time of occurrence with a time span of 72 hours (3 days) for each flood.

1.6 METHOD OF PRESENTATION

Site-wise hydrological data history sheets, flow tables and pictorial summary are presented in this volume. The serial order of hydrological stations is arranged along the river moving upstream from the sea or confluence with main river /international boundary towards its source, giving due priority to sites on intermediate tributary in similar way.

The flow tables indicate the following.

a) Daily discharge	(in cumec)
b) Ten-daily mean discharge	(in cumec)
c) Monthly mean discharge	(in cumec)
d) Monthly maximum and minimum discharge	(in cumec)
e) Annual run-off	(in M.cum. & mm)

HISTORY SHEET

		Water Year : 2019-2020	
Site	: Vijayawada (Teriminal site of River Krishna)	Code	: AK000B9
State	: Andhra Pradesh	District	: Krishna
Basin	: Krishna	Independent River	: Krishna
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Krishna
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Krishna SD2, Vijayawada
Drainage Area	: 251360 Sq. Km.	Bank	: Left
Latitude	: 16°30'04"	Longitude	: 80°37'30"
Zero of Gauge (m)	: 8.69 (m.s.l)	01/01/1964	- 31/08/1964
	: 8.152 (m.s.l)	01/09/1964	
	: 8.152 (m.s.l)	01/01/2000	- 31/12/2220
	Opening Date	Closing Date	
Gauge	: 21/03/1964	HFL During 2019-20	: 18.912 m
		Corres. Discharge	: 21600 (Estimated)
Discharge	: 24/03/1964	Date & Time of	: 17/08/2019
		occurance	: 06.00 hrs.
Sediment	: 01/02/1965		
Water Quality	: 01/01/1972		

HFL Recorded so far in m : 19.332 dt 05-10-2009

Corresponding Discharge (cumecs) : 28140 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	14925	17.392	06/08/1965	2.100	9.182	20/12/1965
1966-1967	10950	16.822	06/08/1966	0.000	8.997	28/05/1967
1967-1968	15215	18.192	07/08/1967	0.000	9.047	16/07/1967
1968-1969	8806	16.932	21/05/1969	2.509	8.997	13/04/1969
1969-1970	14346	17.552	08/08/1969	1.868	9.092	05/05/1970
1970-1971	14193	17.592	23/09/1970	2.930	9.032	16/04/1971
1971-1972	6915	15.132	08/09/1971	3.969	8.842	21/05/1972
1972-1973	3451	13.777	18/07/1972	1.700	8.812	27/04/1973
1973-1974	7795	15.302	30/10/1973	2.400	9.022	07/05/1974
1974-1975	13307	17.092	30/09/1974	5.045	9.122	21/02/1975
1975-1976	18513	18.182	13/10/1975	5.100	9.312	23/04/1976
1976-1977	14218	17.102	11/08/1976	2.470	9.052	29/03/1977
1977-1978	6793	15.122	02/08/1977	8.046	9.182	23/04/1978
1978-1979	17024	17.742	16/08/1978	2.954	9.012	21/05/1979
1979-1980	18620	17.572	30/09/1979	15.37	9.192	06/04/1980
1980-1981	13473	16.777	15/07/1980	3.489	8.982	18/02/1981

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1981-1982	11661	16.442	27/09/1981	10.94	8.932	21/06/1981
1982-1983	6388	14.847	24/08/1982	22.70	9.032	30/06/1982
1983-1984	20712	18.217	07/10/1983	9.200	8.842	20/07/1983
1984-1985	3082	13.392	21/08/1984	15.50	9.222	10/07/1984
1985-1986	2799	12.992	14/08/1985	7.900	8.872	15/02/1986
1986-1987	10144	16.237	13/08/1986	3.306	8.692	17/05/1987
1987-1988	2345	12.802	15/11/1987	6.161	8.802	15/10/1987
1988-1989	12071	16.782	01/10/1988	6.370	8.932	12/07/1988
1989-1990	17619	17.302	24/07/1989	13.95	9.052	07/07/1989
1990-1991	12239	16.502	23/08/1990	21.62	9.022	30/06/1990
1991-1992	11306	16.551	06/08/1991	27.70	8.954	07/07/1991
1992-1993	4072	13.679	12/09/1992	18.68	8.852	29/07/1992
1993-1994	8724	15.386	22/10/1993	26.56	8.832	28/07/1993
1994-1995	12366	16.572	24/07/1994	21.91	8.782	29/06/1994
1995-1996	3764	13.057	21/10/1995	9.194	8.592	02/04/1996
1996-1997	12323	16.992	04/10/1996	28.49	8.802	05/08/1996
1997-1998	13120	16.652	31/08/1997	13.45	8.542	22/07/1997
1998-1999	25082	18.947	16/10/1998	13.89	9.412	15/12/1998
1999-2000	5864	14.602	15/08/1999	11.31	8.932	29/01/2000
2000-2001	8135	15.537	24/08/2000	5.482	8.852	20/01/2001
2001-2002	4486	13.677	01/10/2001	4.424	8.772	24/07/2001
2002-2003	165.2	9.622	09/06/2002	2.989	8.772	25/03/2003
2003-2004	577.9	10.902	09/08/2003	0.176	8.852	29/05/2004
2004-2005	1481	12.122	07/10/2004	0.000	8.832	01/08/2004
2005-2006	20545	17.937	21/09/2005	0.000	9.432	08/04/2006
2006-2007	14636	16.772	17/08/2006	0.000	9.702	17/02/2007
2007-2008	14590	16.852	21/09/2007	0.431	9.392	24/05/2008
2008-2009	10580	16.302	11/08/2008	29.00	9.252	24/05/2009
2009-2010	27660	19.272	06/10/2009	23.72	9.132	16/08/2009
2010-2011	6954	14.662	06/09/2010	0.000	9.332	13/01/2011
2011-2012	11812	16.047	10/09/2011	0.000	9.332	28/12/2011
2012-2013	3182	13.172	05/09/2012	0.000	8.922	27/11/2012
2013-2014	10899	16.202	27/10/2013	0.000	9.152	03/01/2014
2014-2015	2456	12.702	19/09/2014	0.000	8.882	24/12/2014
2015-2016	1596	12.032	22/06/2015	0.000	8.762	21/01/2016
2016-2017	3596	13.102	23/09/2016	0.000	8.862	04/12/2016
2017-2018	134.0	9.712	20/07/2017	0.000	8.732	09/12/2017
2018-2019	4174	13.930	21/08/2018	0.000	8.842	26/01/2019

Annual Runoff of Krishna at Vijayawada

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1964-1965		241	241		9	9
2	1965-1966	34371	996	35367	1215	35	1250
3	1966-1967	23657	4263	27921	836	151	987
4	1967-1968	29502	1751	31253	1042	62	1104
5	1968-1969	20893	2394	23287	738	85	823
6	1969-1970	40870	1112	41982	1444	39	1483
7	1970-1971	43671	291	43961	1543	10	1553
8	1971-1972	27022	215	27237	955	8	962
9	1972-1973	5275	126	5402	186	4	191
10	1973-1974	32848	185	33032	1161	7	1167
11	1974-1975	27890	372	28261	986	13	999
12	1975-1976	67697	2465	70162	2392	87	2479
13	1976-1977	29842	168	30011	1054	6	1060
14	1977-1978	18708	671	19379	661	24	685
15	1978-1979	48367	3700	52067	1709	131	1840
16	1979-1980	23533	2456	25988	832	87	918
17	1980-1981	30328	611	30939	1072	22	1093
18	1981-1982	33214	2622	35835	1174	93	1266
19	1982-1983	11347	2977	14324	401	105	506
20	1983-1984	37358	1916	39274	1320	68	1388
21	1984-1985	6682	3567	10250	236	126	362
22	1985-1986	4015	1451	5466	142	51	193
23	1986-1987	4084	901	4985	144	32	176
24	1987-1988	2252	2059	4311	80	73	152
25	1988-1989	30904	2606	33509	1092	92	1184
26	1989-1990	17451	3846	21297	617	136	753
27	1990-1991	22946	6098	29044	811	215	1026
28	1991-1992	27530	5139	32669	973	182	1154
29	1992-1993	5008	4607	9614	177	163	340
30	1993-1994	12336	7159	19495	436	253	689
31	1994-1995	34061	5071	39131	1204	179	1383
32	1995-1996	4794	1537	6332	169	54	224

33	1996-1997	15169	3923	19092	536	139	675
34	1997-1998	14697	1986	16683	519	70	590
35	1998-1999	30908	2785	33692	1092	98	1191
36	1999-2000	8430	1929	10360	298	68	366
37	2000-2001	5932	1259	7191	210	44	254
38	2001-2002	2116	1087	3203	75	38	113
39	2002-2003	311	63	374	11	2	13
40	2003-2004	245	88	333	9	3	12
41	2004-2005	628	31	658	22	1	23
42	2005-2006	35590	443	36034	1258	16	1273
43	2006-2007	26740	1	26741	945	0	945
44	2007-2008	25721	541	26262	909	19	928
45	2008-2009	9064	693	9757	320	25	345
46	2009-2010	13169	1341	14510	465	47	513
47	2010-2011	12525	1299	13825	443	46	488
48	2011-2012	7306	0	7306	258	0	258
49	2012-2013	1715	0	1715	61	0	61
50	2013-2014	11207	55	11262	396	2	398
51	2014-2015	2373	0	2373	84	0	84
52	2015-2016	237	0	237	8	0	8
53	2016-2017	1439	0	1439	51	0	51
54	2017-2018	12	0	12	0	0	0
55	2018-2019	1000	16	1016	35	1	36
56	2019-2020	20336	0	20336	719	0	719
Average		18279	1627	19579	646	57	692
75% Dependable flow (MCM)				5418			
90 % Dependable flow (MCM)				573			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Vijayawada (AK000B9)

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	8.802	0.000	8.792	0.000	8.802	0.000	9.412	17.52 *	12.552	2118	11.412	730.1
2	8.802	0.000	8.792	0.000	8.802	0.000	9.402	15.58 *	12.102	1254 *	12.402	1949
3	8.802	0.000	8.792	0.000	8.802	0.000	10.402	218.4	11.502	1044	12.142	1294 *
4	8.802	0.000	8.792	0.000	8.802	0.000	11.142	666.2	11.752	1193	11.602	930.7
5	8.802	0.000	8.792	0.000	8.802	0.000	10.177	153.2	10.482	153.8	12.102	1406
6	8.802	0.000	8.792	0.000	8.812	0.000	9.667	70.68	9.732	219.9 *	11.177	539.8
7	8.802	0.000	8.792	0.000	8.812	0.000	9.562	52.50	9.662	50.51	11.217	580.6
8	8.802	0.000	8.792	0.000	8.812	0.000	9.512	39.63 *	10.152	205.2 *	10.602	287.6
9	8.802	0.000	8.792	0.000	8.812	0.000	10.902	543.6	11.317	836.0	9.762	27.02
10	8.802	0.000	8.792	0.000	8.812	0.000	11.502	943.0	11.977	1424	11.052	461.0 *
11	8.802	0.000	8.792	0.000	8.812	0.000	15.412	6428	12.102	1556	11.427	736.4
12	8.802	0.000	8.792	0.000	8.812	0.000	15.027	5518	11.972	1416	10.652	299.0 *
13	8.802	0.000	8.792	0.000	12.112	1490	12.367	1789	11.452	700.2 *	9.927	70.20
14	8.802	0.000	8.792	0.000	16.842	10626	15.427	6424	13.152	2545	9.677	6.803
15	8.802	0.000	8.792	0.000	16.477	9923	13.602	3310 *	12.402	1923	9.942	72.70
16	8.802	0.000	8.792	0.000	18.297	17454	12.952	2335	10.822	549.5	9.742	33.11
17	8.802	0.000	8.792	0.000	18.832	20641	11.602	1199	11.602	1138	9.732	23.68 *
18	8.802	0.000	8.792	0.000	17.852	15773	11.772	1297	11.427	986.5	9.717	17.10
19	8.802	0.000	8.792	0.000	16.827	10502	13.077	2445	11.227	775.9	9.697	8.363
20	8.802	0.000	8.792	0.000	12.872	2144	13.652	3189	11.152	513.5 *	9.652	7.351
21	8.802	0.000	8.792	0.000	10.042	204.1	13.602	3141	11.017	663.4	9.642	0.000
22	8.792	0.000	8.792	0.000	9.872	158.1	13.352	2892 *	11.077	622.1	9.622	0.000
23	8.792	0.000	8.802	0.000	9.852	154.2	11.152	688.2	12.677	2206	9.602	0.000
24	8.792	0.000	8.802	0.000	9.852	156.9	11.802	1202	16.292	8893	9.592	0.000
25	8.792	0.000	8.802	0.000	9.847	143.6	12.362	1947	17.652	14461	9.592	0.000
26	8.792	0.000	8.802	0.000	9.562	53.08	12.117	1730	16.802	10532	9.592	0.000
27	8.792	0.000	8.802	0.000	9.462	27.07	14.127	3893	13.552	3224 *	9.592	0.000
28	8.792	0.000	8.802	0.000	9.432	18.73	14.762	5043	13.452	3009	9.592	0.000
29	8.792	0.000	8.802	0.000	9.422	21.24	14.752	5622 *	13.002	2352	9.592	0.000
30	8.792	0.000	8.802	0.000	9.422	20.44	11.802	1381	12.952	2358	9.592	0.000
31			8.802	0.000	9.417	19.01			13.627	3246		
Ten-Daily Mean												
I Ten-Daily	8.802	0.000	8.792	0.000	8.807	0.000	10.168	272.0	11.123	849.9	11.347	820.7
II Ten-Daily	8.802	0.000	8.792	0.000	14.774	8855	13.489	3393	11.731	1210	10.017	127.5
III Ten-Daily	8.793	0.000	8.800	0.000	9.653	88.77	12.983	2754	13.827	4688	9.601	0.000
Monthly												
Min.	8.792	0.000	8.792	0.000	8.802	0.000	9.402	15.58	9.662	50.51	9.592	0.000
Max.	8.802	0.000	8.802	0.000	18.832	20641	15.427	6428	17.652	14461	12.402	1949
Mean	8.799	0	8.795	0	11.032	2888	12.213	2140	12.279	2328	10.322	316.1

Annual Runoff in MCM = 20336 Annual Runoff in mm = 81

Peak Observed Discharge = 20641 cumecs on 17/08/2019

Corres. Water Level :18.832 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Corres. Water Level :8.802 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : Vijayawada (AK000B9)

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	9.592	0.000	9.552	0.000	9.502	0.000	9.472	0.000	9.462	0.000	9.442	0.000
2	9.592	0.000	9.552	0.000	9.502	0.000	9.472	0.000	9.462	0.000	9.442	0.000
3	9.582	0.000	9.552	0.000	9.502	0.000	9.472	0.000	9.452	0.000	9.442	0.000
4	9.582	0.000	9.552	0.000	9.492	0.000	9.472	0.000	9.452	0.000	9.442	0.000
5	9.582	0.000	9.552	0.000	9.492	0.000	9.472	0.000	9.452	0.000	9.442	0.000
6	9.582	0.000	9.552	0.000	9.492	0.000	9.462	0.000	9.452	0.000	9.442	0.000
7	9.582	0.000	9.552	0.000	9.492	0.000	9.462	0.000	9.452	0.000	9.442	0.000
8	9.582	0.000	9.542	0.000	9.492	0.000	9.462	0.000	9.452	0.000	9.442	0.000
9	9.582	0.000	9.542	0.000	9.492	0.000	9.462	0.000	9.452	0.000	9.442	0.000
10	9.582	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
11	9.582	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
12	9.582	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
13	9.582	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
14	9.572	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
15	9.572	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
16	9.572	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
17	9.562	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
18	9.562	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
19	9.562	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
20	9.562	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
21	9.562	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
22	9.562	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
23	9.562	0.000	9.532	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
24	9.562	0.000	9.522	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
25	9.562	0.000	9.522	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
26	9.552	0.000	9.522	0.000	9.482	0.000	Not observed due to Lock-Down		9.452	0.000	9.442	0.000
27	9.552	0.000	9.512	0.000	9.472	0.000			9.452	0.000	9.442	0.000
28	9.552	0.000	9.512	0.000	9.472	0.000			9.442	0.000	9.432	0.000
29	9.552	0.000	9.512	0.000	9.472	0.000			9.442	0.000	9.432	0.000
30	9.552	0.000	9.502	0.000					9.442	0.000	9.432	0.000
31	9.552	0.000	9.502	0.000							9.432	0.000
Ten-Daily Mean												
I Ten-Daily	9.584	0.000	9.549	0.000	9.494	0.000	9.467	0.000	9.454	0.000	9.442	0.000
II Ten-Daily	9.571	0.000	9.542	0.000	9.482	0.000	9.462	0.000	9.452	0.000	9.442	0.000
III Ten-Daily	9.557	0.000	9.520	0.000	9.479	0.000	9.462	0.000	9.449	0.000	9.438	0.000
Monthly												
Min.	9.552	0.000	9.502	0.000	9.472	0.000	9.462	0.000	9.442	0.000	9.432	0.000
Max.	9.592	0.000	9.552	0.000	9.502	0.000	9.472	0.000	9.462	0.000	9.442	0.000
Mean	9.570	0	9.537	0	9.485	0	9.464	0	9.452	0	9.441	0

Peak Computed Discharge = 5622 cumecs on 29/09/2019

Corres. Water Level :14.752 m

Lowest Computed Discharge = 15.58 cumecs on 02/09/2019

Corres. Water Level :9.402 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

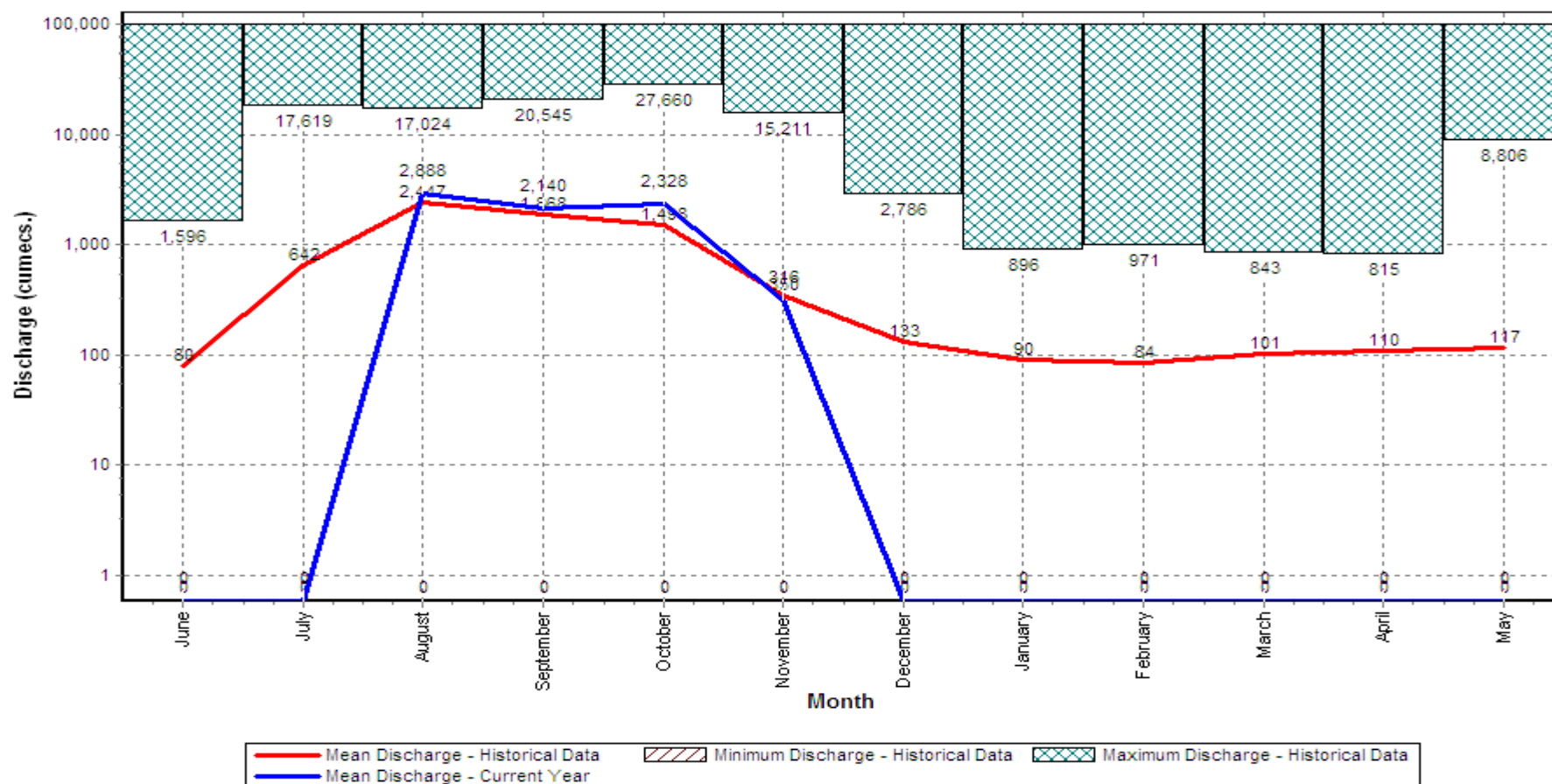
Station Name : Vijayawada (AK000B9)

Data considered : 1965-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Lower Krishna SD2, Vijayawada



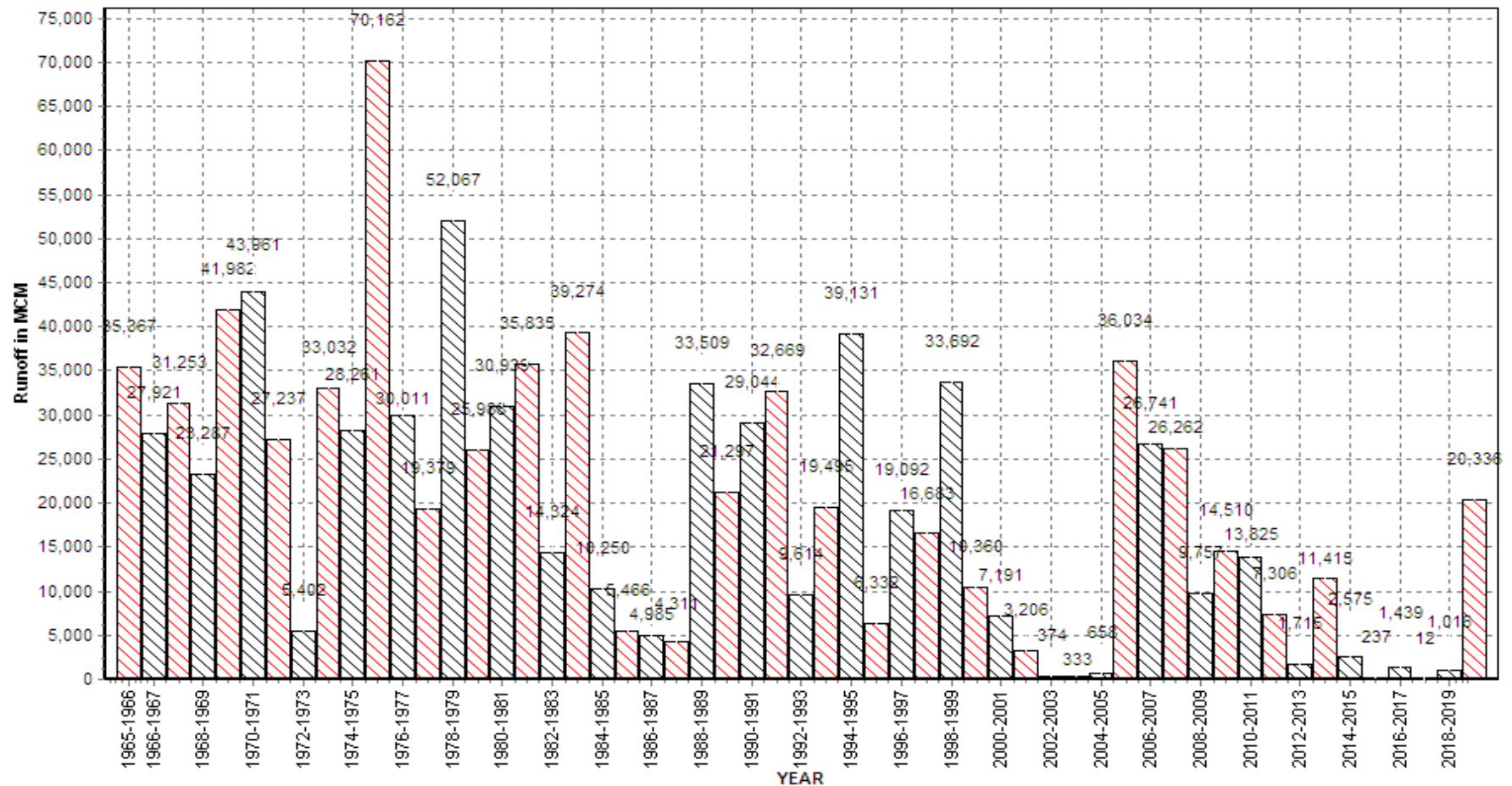
Annual Runoff Values for the period: 1965 - 2020

Station Name : Vijayawada (AK000B9)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Note: Missing values have not been considered while arriving at Annual Runoff

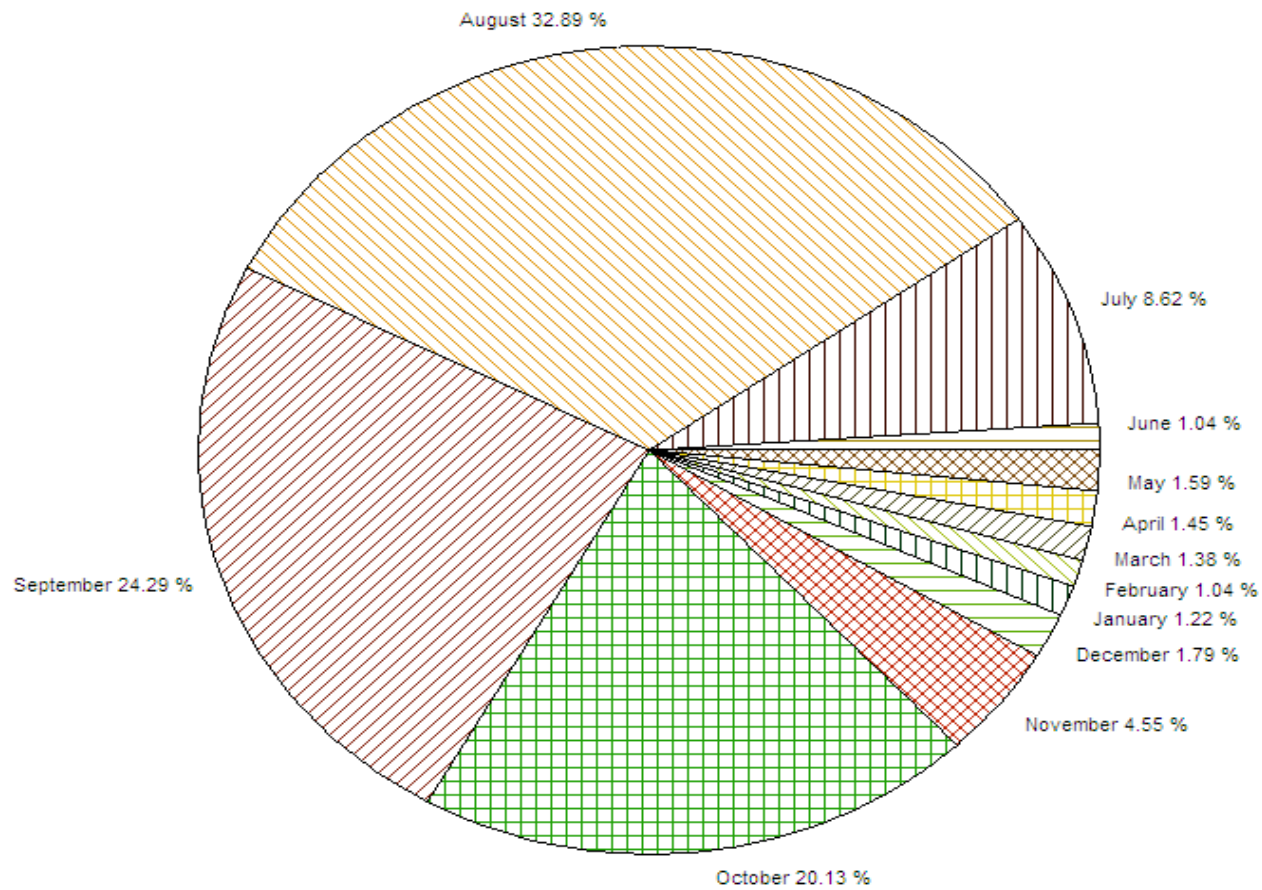
Monthly Average Runoff based on period : 1965-2019

Station Name : Vijayawada (AK000B9)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



June	1.04 %
July	8.62 %
August	32.89 %
September	24.29 %
October	20.13 %
November	4.55 %
December	1.79 %
January	1.22 %
February	1.04 %
March	1.38 %
April	1.45 %
May	1.59 %

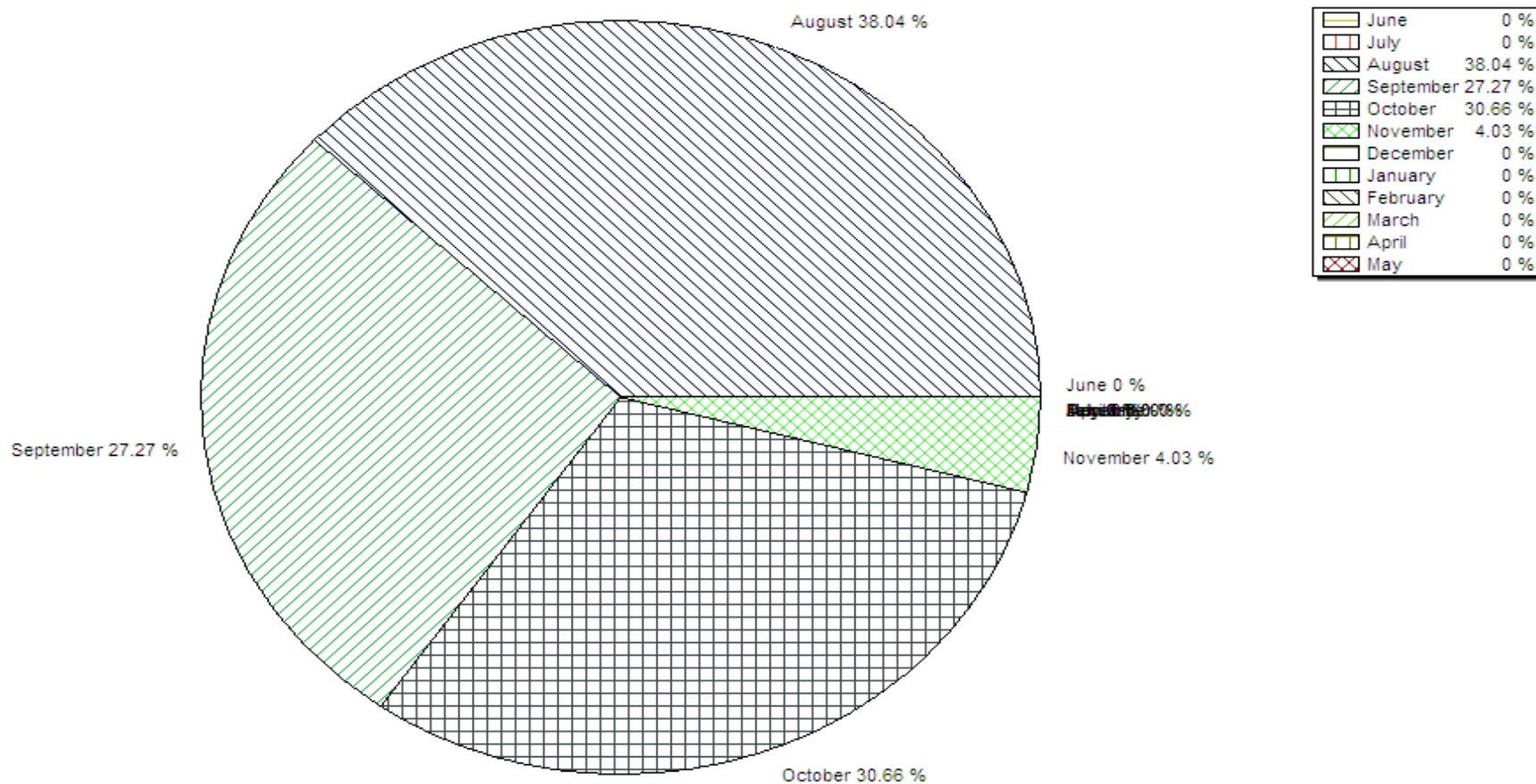
Monthly Runoff for the Year : 2019-2020

Station Name : Vijayawada (AK000B9)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



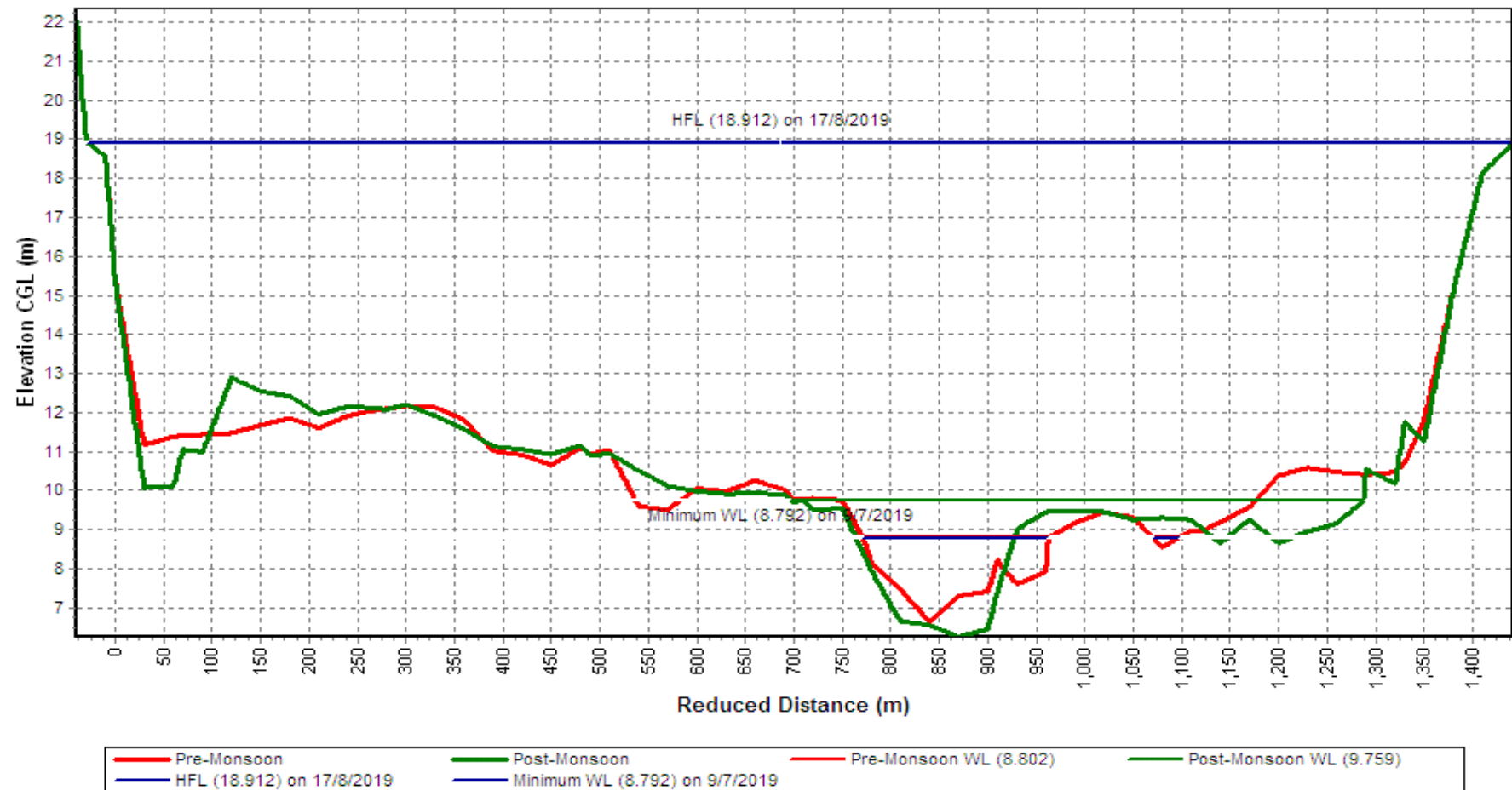
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Vijayawada (AK000B9)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



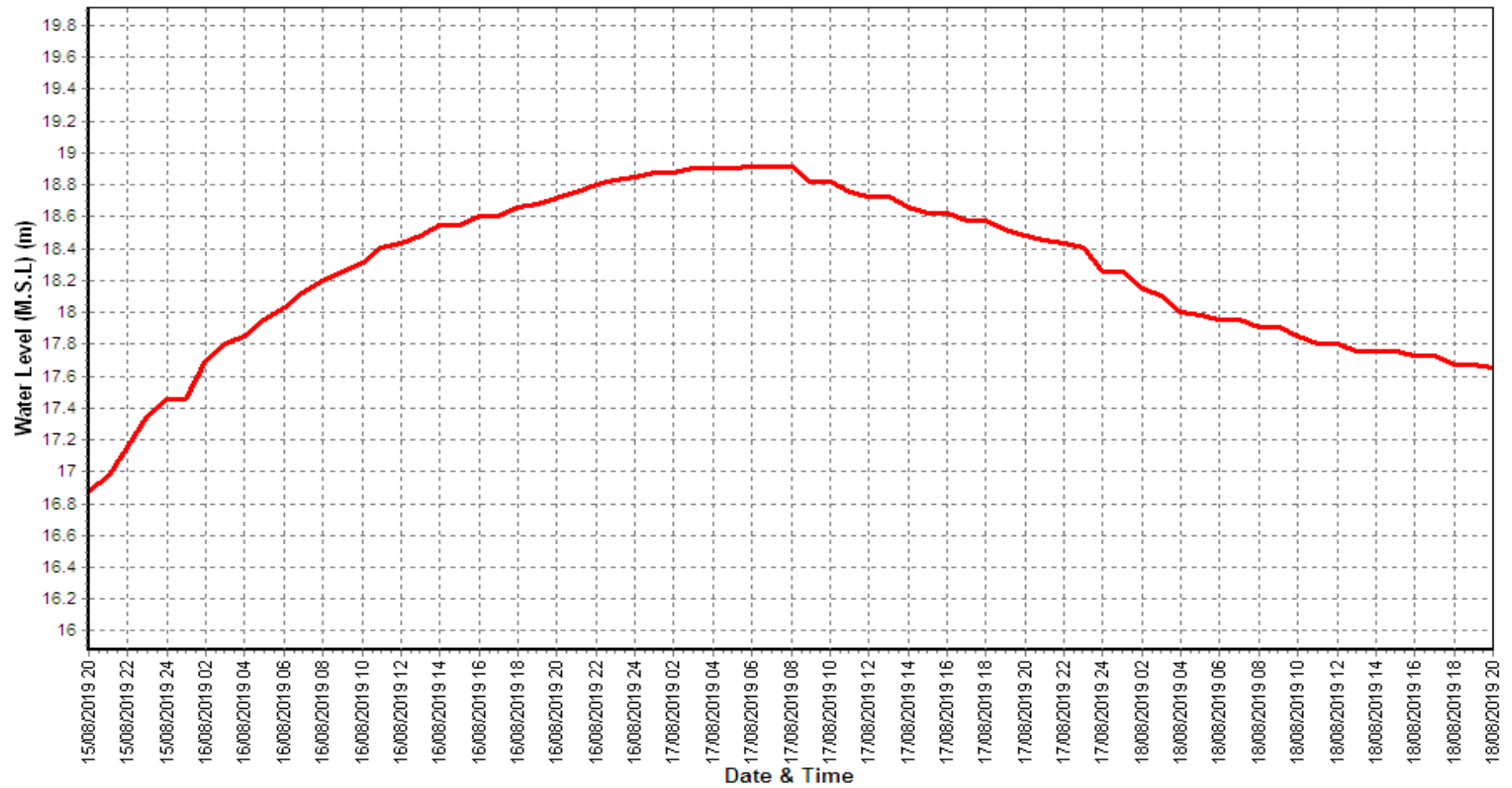
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Vijayawada (AK000B9)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



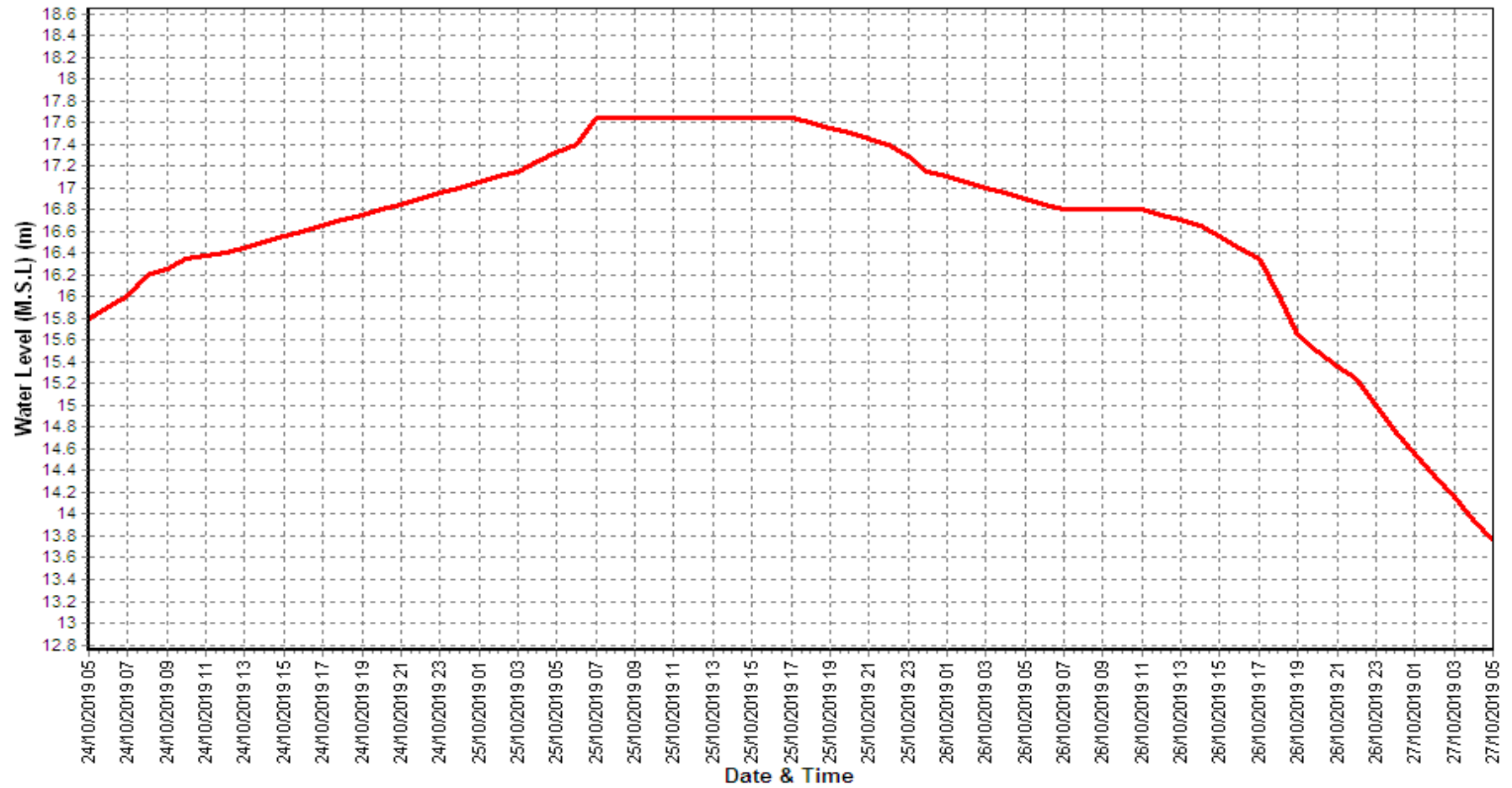
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Vijayawada (AK000B9)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



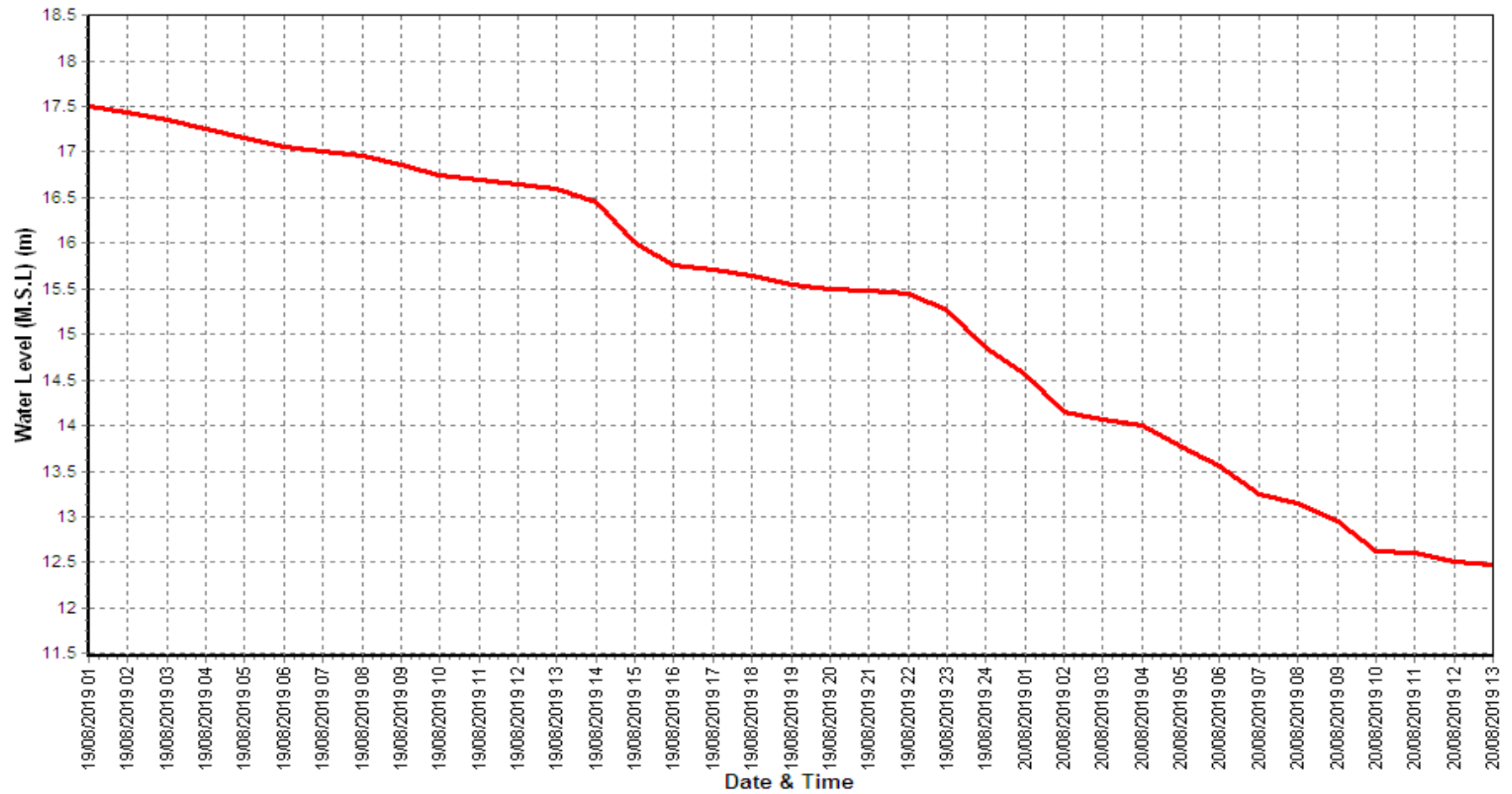
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Vijayawada (AK000B9)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



HISTORY SHEET

Water Year : 2019-2020

Site : Keesara

Code : AKA00B4

State : Andhra Pradesh

District : Krishna

Basin : Krishna

Independent River : Krishna

Tributary : Munneru

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada

Drainage Area : 9854 Sq. Km.

Bank : Left

Latitude : 16°42'53"

Longitude : 80°19'13"

Zero of Gauge (m) : 28.585 (m.s.l)
 28.186 (m.s.l)
 27.186 (m.s.l)
 27.035 (m.s.l)
 27.5 (m.s.l)
 27.5 (m.s.l)

01/04/1964 - 04/08/1970
 05/08/1970 - 31/01/1972
 01/02/1972 - 31/05/1972
 01/06/1972 - 31/05/1984
 01/06/1984
 01/01/2000 - 31/12/2220

Opening Date

Closing Date

Gauge : 23/09/1963

HFL During 2019-20 : 30.810 m

Corres. Discharge : 483 (Estimated)

Discharge : 26/06/1964

Date & Time of

occurrence : 03/09/2019

Sediment : 02/07/1965

Water Quality : 01/01/1972

HFL Recorded so far in m : 35.810 dt 24-07-1989

Corresponding Discharge (cumecs) :14128*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	1130	31.435	16/07/1965	0.000		18/05/1966
1966-1967	1485	31.785	06/09/1966	0.000	29.050	21/05/1967
1967-1968	1092	31.357	24/07/1967	0.000	28.770	15/04/1968
1968-1969	7000	36.810	20/05/1969	0.000	28.700	28/03/1969
1969-1970	2396	32.585	31/07/1969	0.700	28.605	26/04/1970
1970-1971	2473	32.286	23/08/1970	0.000	28.056	06/04/1971
1971-1972	324.5	30.016	12/10/1971	0.000	28.001	21/03/1972
1972-1973	117.5	29.000	04/07/1972	0.000	27.785	24/03/1973
1973-1974	936.9	30.500	10/08/1973	0.000	27.840	20/03/1974
1974-1975	871.5	30.565	16/10/1974	0.000	27.815	13/04/1975
1975-1976	1605	31.465	11/09/1975	0.000	27.955	22/04/1976
1976-1977	4553	32.753	22/07/1976	0.000	28.025	28/03/1977
1977-1978	1023	30.840	20/11/1977	0.200	28.010	14/04/1978
1978-1979	5180	33.000	15/08/1978	0.000	27.855	23/04/1979

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1979-1980	477.2	30.020	24/09/1979	0.000	28.005	12/07/1979
1980-1981	912.1	30.755	23/08/1980	0.000	27.925	27/02/1981
1981-1982	3003	32.550	04/08/1981	0.000	27.825	20/04/1982
1982-1983	1559	31.430	13/08/1982	0.000	27.865	12/06/1982
1983-1984	6140	33.755	06/10/1983	0.000	28.055	12/06/1983
1984-1985	664.4	31.260	12/10/1984	0.200	28.940	07/06/1984
1985-1986	1133	32.025	14/08/1985	0.000		25/05/1986
1986-1987	5950	35.110	13/08/1986	0.000	29.135	15/06/1986
1987-1988	1508	32.290	11/07/1987	0.129	29.000	27/06/1987
1988-1989	3390	33.740	30/07/1988	0.244	29.060	16/06/1988
1989-1990	6750	35.295	24/07/1989	0.576	28.605	01/06/1989
1990-1991	4090	33.680	02/10/1990	3.000	29.230	29/05/1991
1991-1992	2757	33.024	22/09/1991	0.100	29.310	18/05/1992
1992-1993	380.5	30.705	10/10/1992	0.000	29.300	05/06/1992
1993-1994	297.1	30.550	08/09/1993	0.550	29.195	21/05/1994
1994-1995	957.6	31.500	07/10/1994	0.201	29.120	02/07/1994
1995-1996	1801	32.440	17/10/1995	0.200	29.180	19/05/1996
1996-1997	2354	32.680	28/08/1996	0.340	29.180	02/06/1996
1997-1998	727.6	31.250	29/10/1997	0.504	29.050	07/06/1997
1998-1999	1478	32.070	16/10/1998	0.372	29.080	05/06/1998
1999-2000	654.0	31.115	12/09/1999	0.016	28.940	25/05/2000
2000-2001	3267	33.055	27/08/2000	0.034	28.870	30/05/2001
2001-2002	264.4	30.480	05/08/2001	0.010	28.920	30/05/2002
2002-2003	200.6	30.370	25/08/2002	0.000		25/01/2003
2003-2004	763.4	31.260	08/08/2003	0.000		11/04/2004
2004-2005	1064	31.580	05/08/2004	0.000		16/04/2005
2005-2006	6157	35.660	21/09/2005	0.000		03/07/2005
2006-2007	3799	33.700	05/08/2006	0.109	28.730	31/05/2007
2007-2008	864.2	31.100	21/09/2007	0.211	28.725	01/06/2007
2008-2009	4691	34.150	10/08/2008	0.000	28.650	01/06/2008
2009-2010	1104	31.635	22/05/2010	0.000	28.400	12/07/2009
2010-2011	1578	31.675	08/09/2010	3.047	28.790	26/05/2011
2011-2012	662.5	30.755	26/08/2011	0.000	28.260	01/05/2012
2012-2013	3036	33.150	04/09/2012	0.000	28.310	18/05/2013
2013-2014	1371	31.810	27/10/2013	0.000	28.600	02/04/2014
2014-2015	514.8	30.585	28/10/2014	0.000	28.530	07/07/2014
2015-2016	1194	31.650	22/06/2015	0.000		23/03/2016
2016-2017	1769	32.020	24/09/2016	0.000	28.520	16/03/2017
2017-2018	348.9	30.280	19/07/2017	0.000	28.280	07/02/2018
2018-2019	2933	33.040	20/08/2018	0.000	28.480	22/03/2019

Annual Runoff of Munneru at Keesara

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966	899	18	917	32	1	32
2	1966-1967	1620	55	1676	57	2	59
3	1967-1968	1110	19	1129	39	1	40
4	1968-1969	530	1005	1535	19	36	54
5	1969-1970	2158	178	2335	76	6	83
6	1970-1971	2712	44	2755	96	2	97
7	1971-1972	392	6	397	14	0	14
8	1972-1973	164	16	180	6	1	6
9	1973-1974	818	13	831	29	0	29
10	1974-1975	723	12	735	26	0	26
11	1975-1976	2689	33	2722	95	1	96
12	1976-1977	2797	35	2832	99	1	100
13	1977-1978	399	29	428	14	1	15
14	1978-1979	4321	36	4357	153	1	154
15	1979-1980	312	54	366	11	2	13
16	1980-1981	1365	25	1390	48	1	49
17	1981-1982	1957	30	1987	69	1	70
18	1982-1983	1329	100	1429	47	4	50
19	1983-1984	4633	163	4796	164	6	169
20	1984-1985	614	191	805	22	7	28
21	1985-1986	1142	148	1290	40	5	46
22	1986-1987	1616	132	1748	57	5	62
23	1987-1988	1101	112	1213	39	4	43
24	1988-1989	4296	145	4440	152	5	157
25	1989-1990	3950	822	4772	140	29	169
26	1990-1991	3336	247	3583	118	9	127
27	1991-1992	1857	189	2046	66	7	72
28	1992-1993	755	181	937	27	6	33
29	1993-1994	813	162	975	29	6	34
30	1994-1995	2158	311	2470	76	11	87
31	1995-1996	1852	129	1981	65	5	70
32	1996-1997	2749	284	3033	97	10	107
33	1997-1998	749	239	988	26	8	35
34	1998-1999	2727	284	3011	96	10	106
35	1999-2000	1447	150	1597	51	5	56

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
36	2000-2001	2776	169	2945	98	6	104
37	2001-2002	455	81	536	16	3	19
38	2002-2003	225	0	225	8	0	8
39	2003-2004	763	39	801	27	1	28
40	2004-2005	677	32	709	24	1	25
41	2005-2006	2898	317	3214	102	11	114
42	2006-2007	2134	138	2272	75	5	80
43	2007-2008	1419	314	1733	50	11	61
44	2008-2009	4036	175	4212	143	6	149
45	2009-2010	132	310	442	5	11	16
46	2010-2011	3835	383	4218	136	14	149
47	2011-2012	944	120	1065	33	4	38
48	2012-2013	2395	34	2429	85	1	86
49	2013-2014	2175	118	2293	77	4	81
50	2014-2015	507	95	602	18	3	21
51	2015-2016	908	1	909	32	0	32
52	2016-2017	996	12	1009	35	0	36
53	2017-2018	765	17	783	27	1	28
54	2018-2019	1512	101	1614	53	4	57
55	2019-2020	1117	128	1245	39	5	44
Average		1687	149	1835	60	5	65
75% Dependable flow (MCM)				812			
90 % Dependable flow (MCM)				419			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Keesara (AKA00B4)

Division : Lower Krishna Divn., Hyderabad

Local River : Munneru

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000	29.150	35.81 *	29.510	100.5	29.570	95.68
2		0.000		0.000	28.860	13.37	30.100	234.0 *	29.740	140.0 *	29.490	83.63
3		0.000		0.000	28.880	15.08	30.785	524.4	29.710	140.0	29.550	94.57 *
4		0.000		0.000	29.885	168.1	30.210	250.4	29.600	117.2	29.610	102.4
5		0.000		0.000	29.490	91.06	29.910	186.3	29.470	89.35	29.570	95.58
6		0.000		0.000	29.285	51.30	29.710	140.9	29.390	70.51 *	29.510	86.67
7		0.000		0.000	29.210	41.82	29.610	117.2	29.340	58.12	29.420	74.33
8		0.000		0.000	30.375	275.5	29.600	109.6 *	29.380	68.85 *	29.335	62.65
9		0.000		0.000	30.140	230.1	29.480	82.49	29.460	88.14	29.290	57.67
10		0.000		0.000	29.780	148.0	29.370	67.21 *	29.450	86.20	29.250	48.95 *
11		0.000		0.000	29.550	96.77	29.370	69.57	30.050	225.3	29.180	42.29
12		0.000		0.000	29.320	51.92	29.290	53.04	29.845	170.1	29.130	33.41 *
13		0.000		0.000	29.210	42.11	29.260	52.88	29.900	179.1 *	29.060	23.00
14		0.000		0.000	29.140	33.43	29.230	45.08	29.890	180.6	29.060	22.42
15		0.000		0.000	29.080	27.76 *	29.300	56.23 *	29.770	155.5	29.090	27.30
16		0.000		0.000	28.980	17.52	29.490	87.65	29.660	125.9	29.120	30.41
17		0.000		0.000	29.060	26.52	29.795	168.8	29.580	111.6	29.170	38.29 *
18		0.000		0.000	29.040	23.59 *	30.120	230.0	29.640	122.2	29.210	41.92
19		0.000		0.000	28.980	16.38	30.450	300.3	29.730	145.2	29.220	44.37
20		0.000		0.000	29.320	52.85	30.180	240.9	29.700	131.0 *	29.230	49.45
21		0.000		0.000	29.250	43.37	29.970	196.9	30.130	228.4	29.240	51.49
22		0.000		0.000	29.550	93.78	29.910	181.6 *	29.910	191.4	29.220	49.36
23		0.000		0.000	29.690	127.8	29.890	179.0	29.920	191.5	29.170	40.02
24		0.000		0.000	29.610	102.0	29.750	161.1	29.860	175.2	29.120	32.24 *
25		0.000		0.000	29.840	163.9 *	29.840	180.0	30.035	220.6	29.100	27.30
26		0.000		0.000	29.735	141.4	29.825	171.5	29.970	206.8	29.070	22.42
27		0.000		0.000	29.520	90.60	29.880	187.8	29.800	154.2 *	29.040	21.77
28		0.000		0.000	29.010	19.23	29.990	207.8	29.760	154.1	29.040	21.67
29		0.000		0.000	29.115	28.62	29.860	168.9 *	29.610	119.8	29.060	22.64
30		0.000		0.000	29.060	22.55	29.670	129.4	29.520	102.6	29.080	23.21
31				0.000	29.100	30.91			29.540	107.7		
Ten-Daily Mean												
I Ten-Daily		0.000		0.000	29.545	103.4	29.792	174.8	29.505	95.89	29.459	80.21
II Ten-Daily		0.000		0.000	29.168	38.89	29.649	130.5	29.777	154.6	29.147	35.29
III Ten-Daily		0.000		0.000	29.407	78.57	29.859	176.4	29.823	168.4	29.114	31.21
Monthly												
Min.		0.000		0.000	28.860	0.000	29.150	35.81	29.340	58.12	29.040	21.67
Max.		0.000		0.000	30.375	275.5	30.785	524.4	30.130	228.4	29.610	102.4
Mean		0		0	29.369	73.79	29.767	160.6	29.705	140.6	29.240	48.9

Annual Runoff in MCM = 1245 Annual Runoff in mm = 126

Peak Observed Discharge = 524.4 cumecs on 03/09/2019 Corres. Water Level :30.785 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Stage-Discharge Data for the period 2019 - 2020

Station Name : Keesara (AKA00B4)

Division : Lower Krishna Divn., Hyderabad

Local River : Munneru

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	29.090	28.79 *	28.930	13.79	28.680	0.000	28.800	5.225 *	Not observed Due to Lock-Down		28.780	0.000
2	29.120	28.39	28.945	15.09	28.700	0.000	28.860	8.300			28.780	0.000
3	29.230	50.07	28.985	18.49	28.740	0.000	28.810	5.118			28.770	0.000
4	29.250	53.30	29.020	20.94	28.770	0.000	28.860	8.427			28.760	0.000
5	29.220	47.51	29.070	26.46 *	28.870	10.13	28.830	6.503			28.750	0.000
6	29.140	30.67	29.040	21.93	28.870	9.901	28.850	7.177			28.730	0.000
7	29.120	29.00	28.980	18.44	28.780	0.000	28.890	10.45			28.730	0.000
8	29.080	27.62 *	28.920	11.86	28.710	0.000	28.940	13.94 *			28.740	0.000
9	29.045	21.75	28.865	7.792	28.820	0.000	29.020	20.75			28.740	0.000
10	29.030	20.73	28.810	5.113	28.910	11.98	29.030	22.13 *			28.740	0.000
11	29.020	20.40	28.810	5.221	28.910	11.92	29.030	21.40			28.730	0.000
12	29.010	19.72	28.790	4.778 *	28.930	13.30	28.940	13.00			28.730	0.000
13	29.010	19.21	28.760	0.000	28.920	12.02	28.910	11.26			28.660	0.000
14	29.020	20.18	28.760	0.000	28.870	9.145	28.910	11.22			28.680	0.000
15	29.020	21.12 *	28.780	0.000	28.880	9.594	28.880	9.627 *			28.640	0.000
16	29.050	23.15	28.780	0.000	28.860	8.385 *	28.830	7.104			28.600	0.000
17	29.070	24.91	28.920	11.99	28.840	7.088	28.810	5.213			28.560	0.000
18	29.050	23.74	28.960	17.02	28.890	10.92	28.780	0.000			28.540	0.000
19	29.050	23.33	28.980	17.32 *	28.940	13.56	28.790	0.000			28.570	0.000
20	29.030	21.85	28.980	17.62	28.930	12.97	28.790	0.000	28.760	0.000	28.620	0.000
21	28.990	19.52	28.960	15.69	28.920	12.11	28.790	0.000	28.770	0.000	28.660	0.000
22	28.980	17.32 *	28.950	15.11	28.910	11.36	28.790	0.000	28.770	0.000	28.660	0.000
23	28.970	18.32	28.940	13.67	28.920	12.40 *	28.790	0.000	28.780	0.000	28.660	0.000
24	28.940	16.65	28.880	9.991	28.920	12.19	28.900	10.93	28.780	0.000	28.660	0.000
25	28.930	13.16 *	28.810	5.183	28.890	10.51	28.780	4.354 *	28.780	0.000	28.650	0.000
26	28.930	15.77	28.780	4.354 *	28.880	10.09	Not observed Due to Lock-Down		28.780	0.000	28.650	0.000
27	28.930	15.34	28.750	0.000	28.850	7.395			28.780	0.000	28.640	0.000
28	28.990	19.23	28.720	0.000	28.850	7.145			28.770	0.000	28.630	0.000
29	28.930	13.16 *	28.700	0.000	28.780	0.000			28.750	0.000	28.680	0.000
30	28.940	16.94	28.690	0.000					28.760	0.000	28.720	0.000
31	28.940	16.91	28.670	0.000							28.750	0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	29.133	33.78	28.957	15.99	28.785	3.201	28.889	10.80	28.709		28.752	0.000
II Ten-Daily	29.033	21.76	28.852	7.395	28.897	10.89	28.867	7.882	28.688	0.000	28.633	0.000
III Ten-Daily	28.952	16.57	28.805	5.818	28.880	9.246	28.779	3.217	28.772	0.000	28.669	0.000
<u>Monthly</u>												
Min.	28.930	13.16	28.670	0.000	28.680	0.000	28.740	0.000	28.640	0.000	28.540	0.000
Max.	29.250	53.30	29.070	26.46	28.940	13.56	29.030	22.13	28.780	0.000	28.780	0.000
Mean	29.036	23.8	28.869	9.608	28.853	7.728	28.843	7.169	28.723	0	28.684	0

Peak Computed Discharge = 234.0 cumecs on 02/09/2019

Corres. Water Level :30.1 m

Lowest Computed Discharge = 2.874 cumecs on 29/03/2020

Corres. Water Level :28.74 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

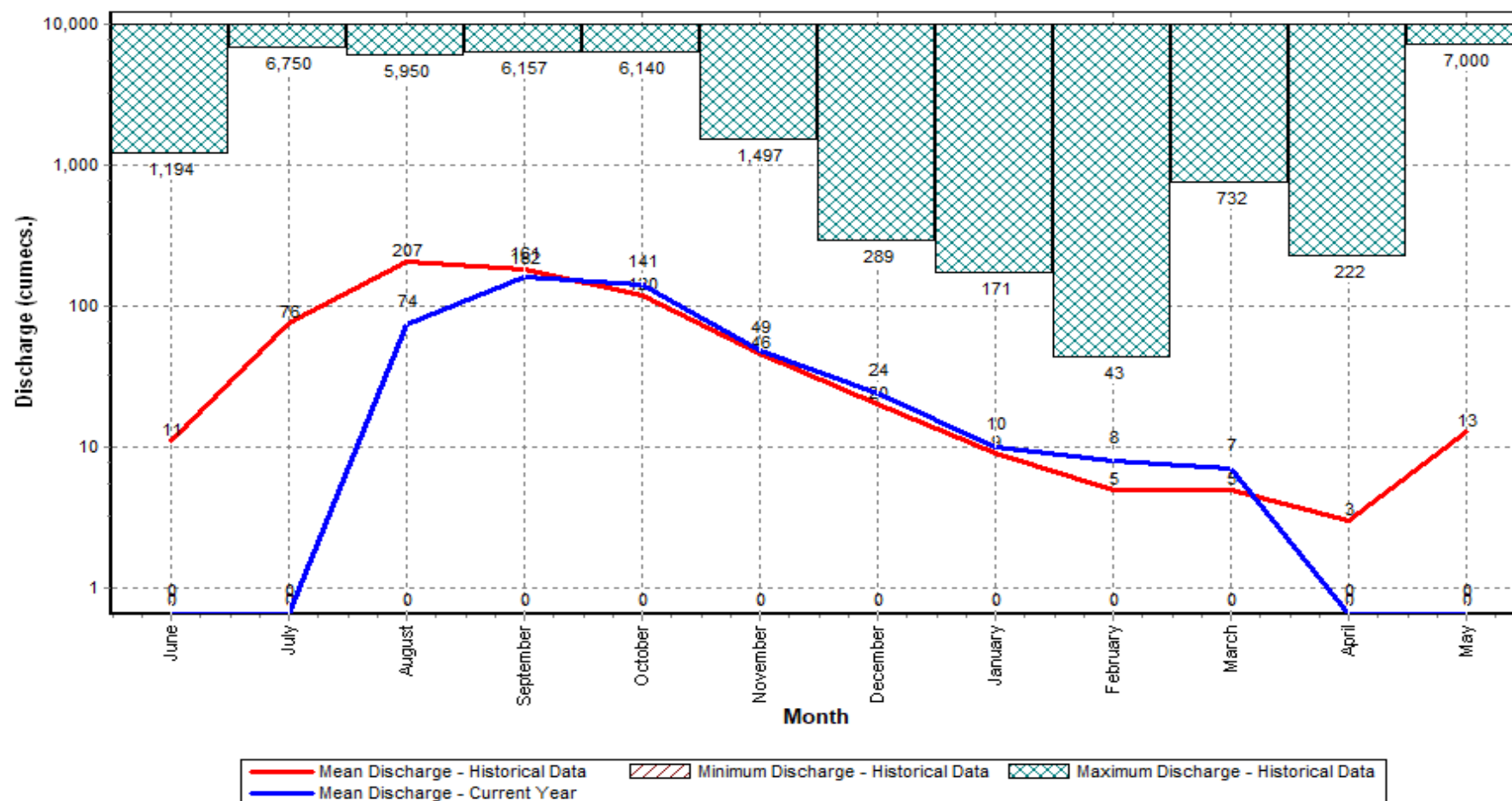
Station Name : Keesara (AKA00B4)

Data considered : 1965-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Munneru

Sub-Division : Lower Krishna SD2, Vijayawada



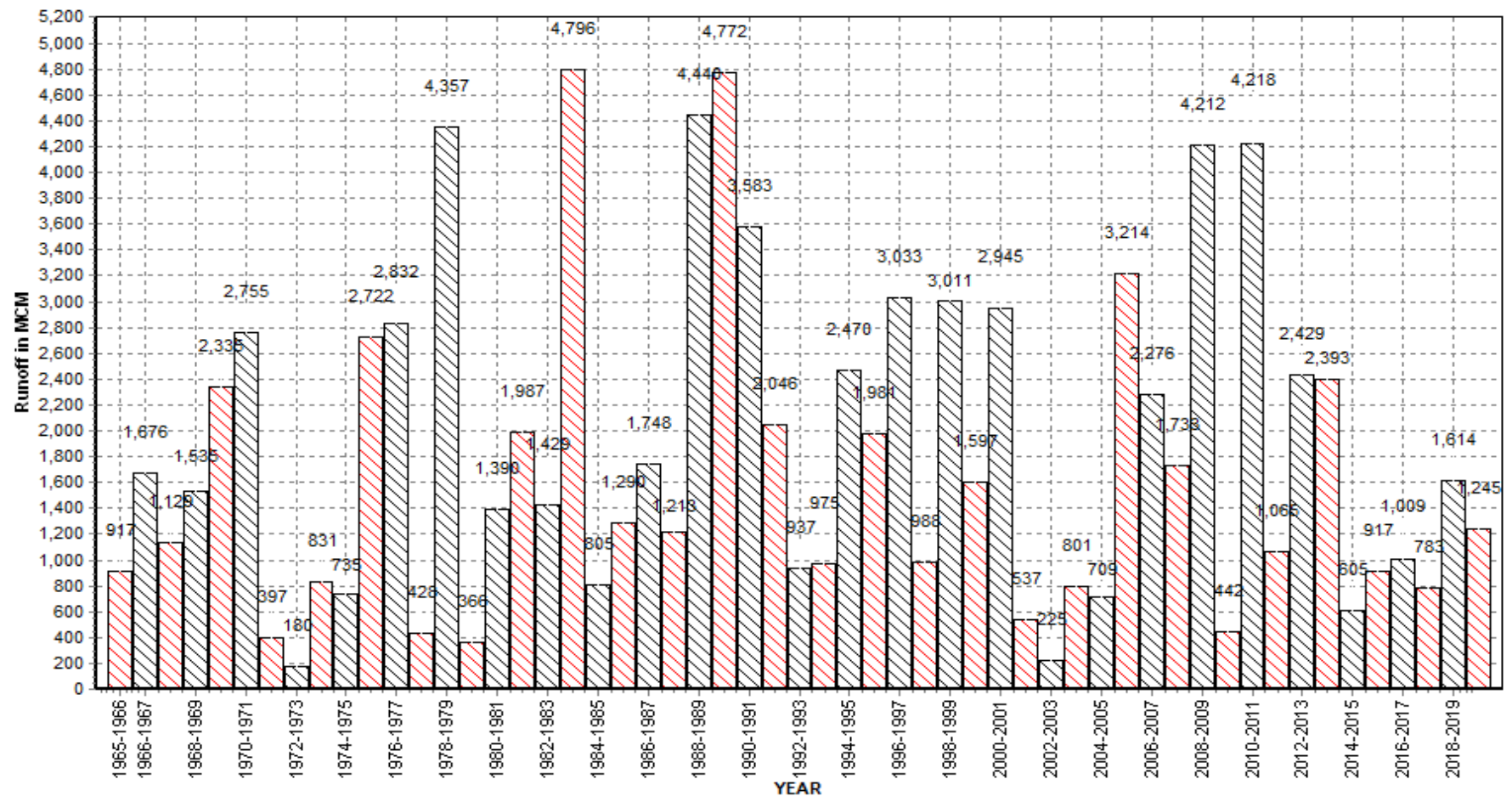
Annual Runoff Values for the period: 1965 - 2020

Station Name : Keesara (AKA00B4)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Note: Missing values have not been considered while arriving at Annual Runoff

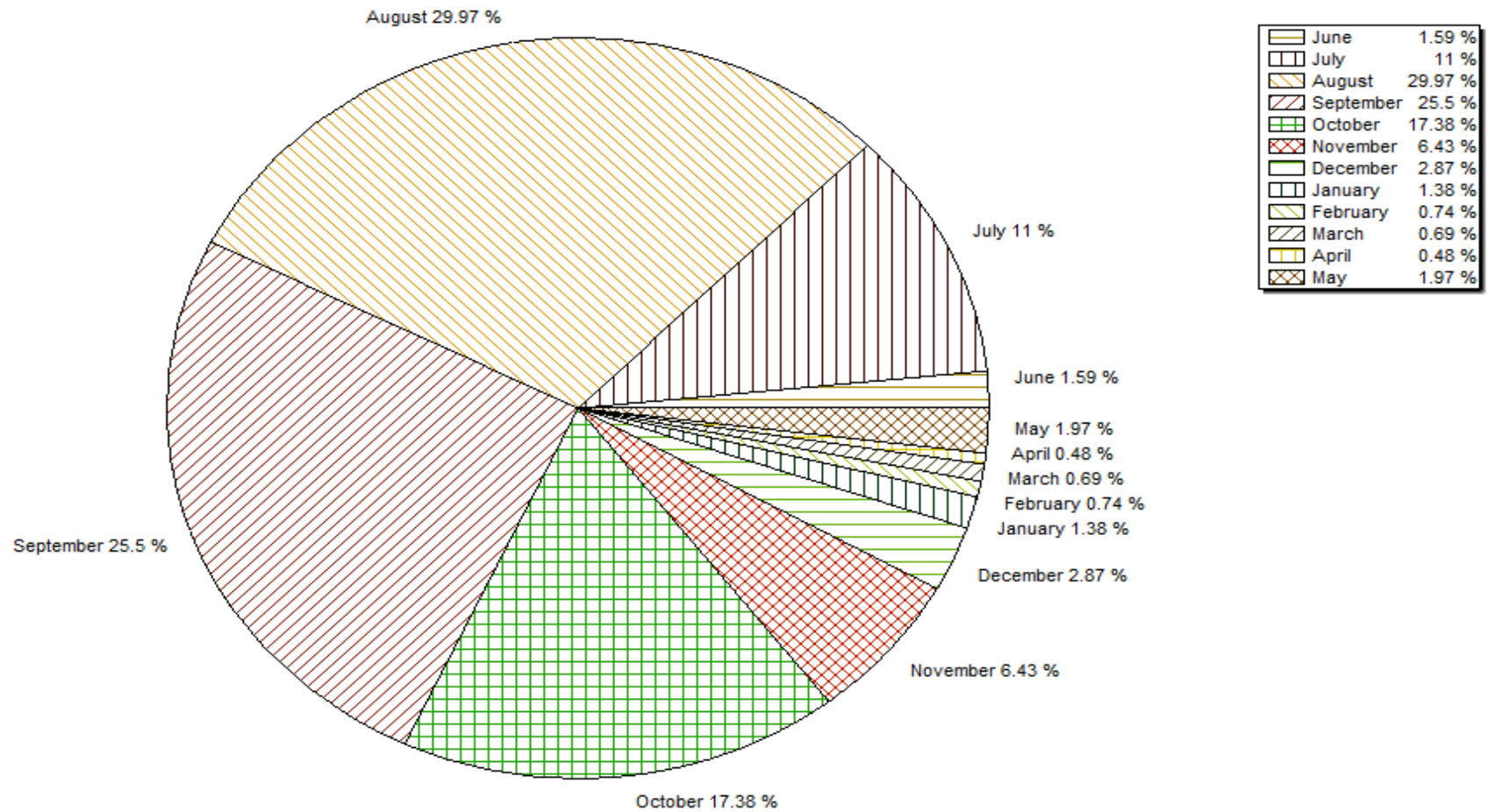
Monthly Average Runoff based on period : 1965-2019

Station Name : Keesara (AKA00B4)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



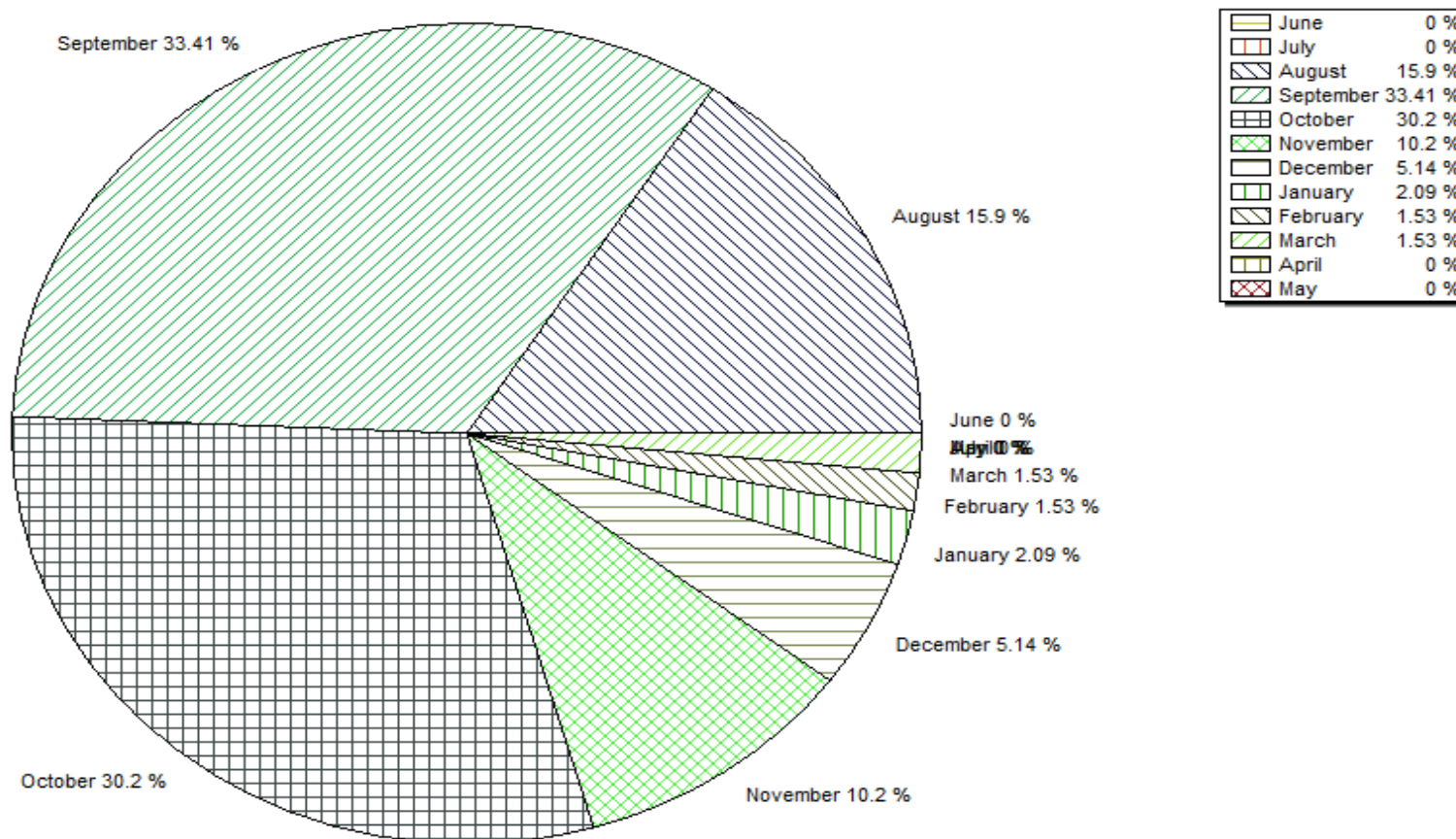
Monthly Runoff for the Year : 2019-2020

Station Name : Keesara (AKA00B4)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada

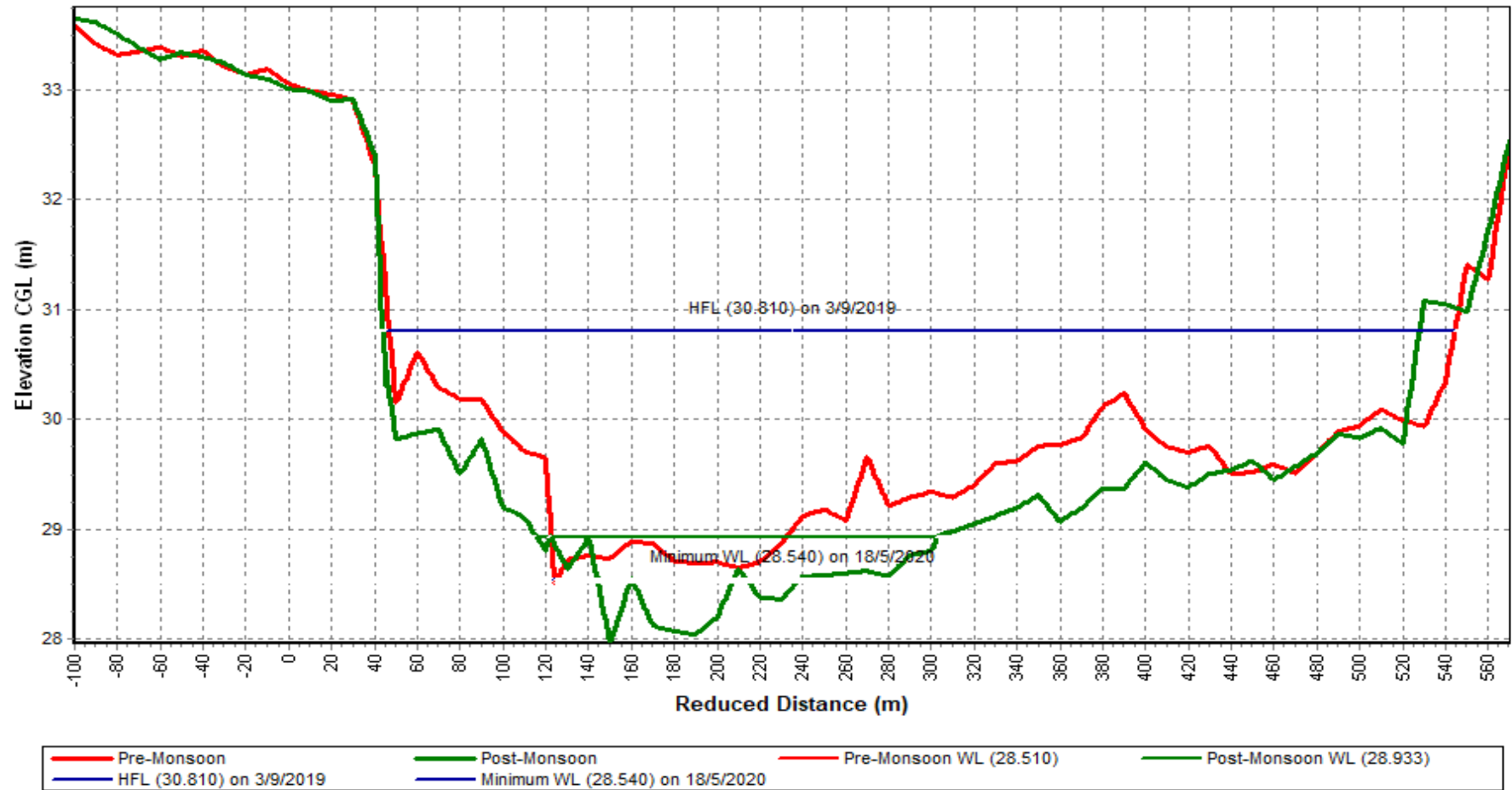


Station Name : Keesara (AKA00B4)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Post Monsoon Cross Section Difference Due to High Flood

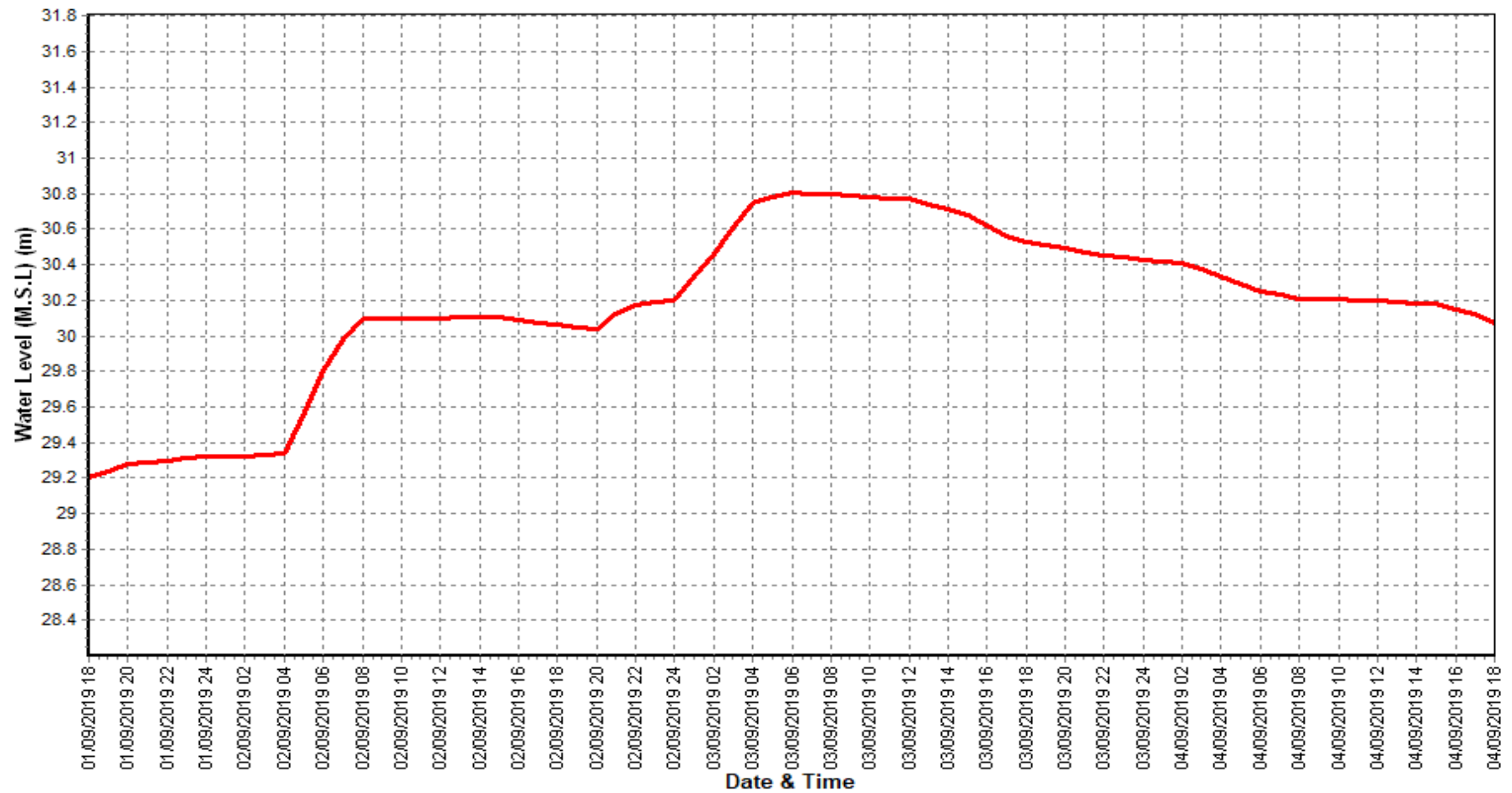
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Keesara (AKA00B4)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



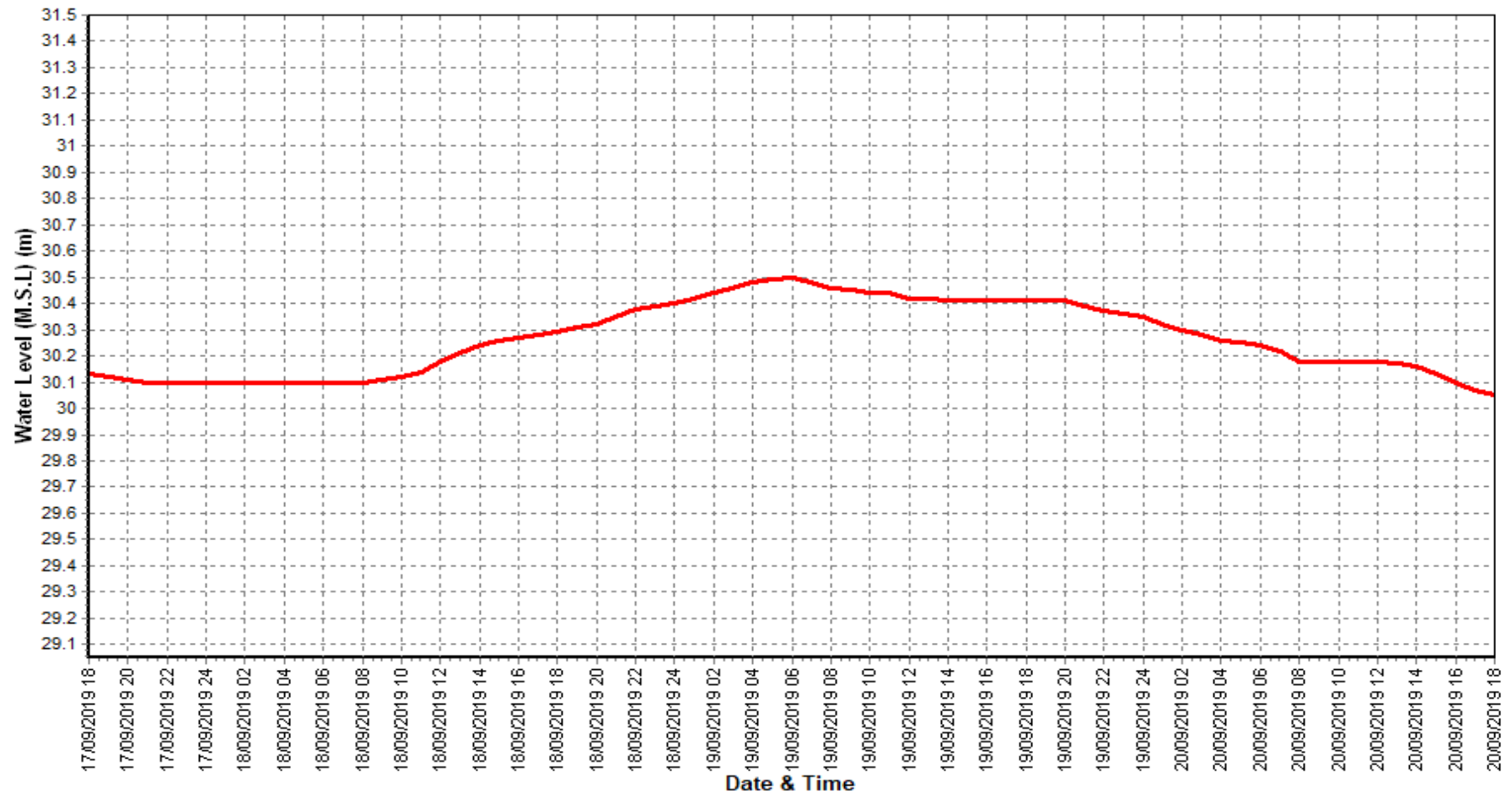
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Keesara (AKA00B4)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



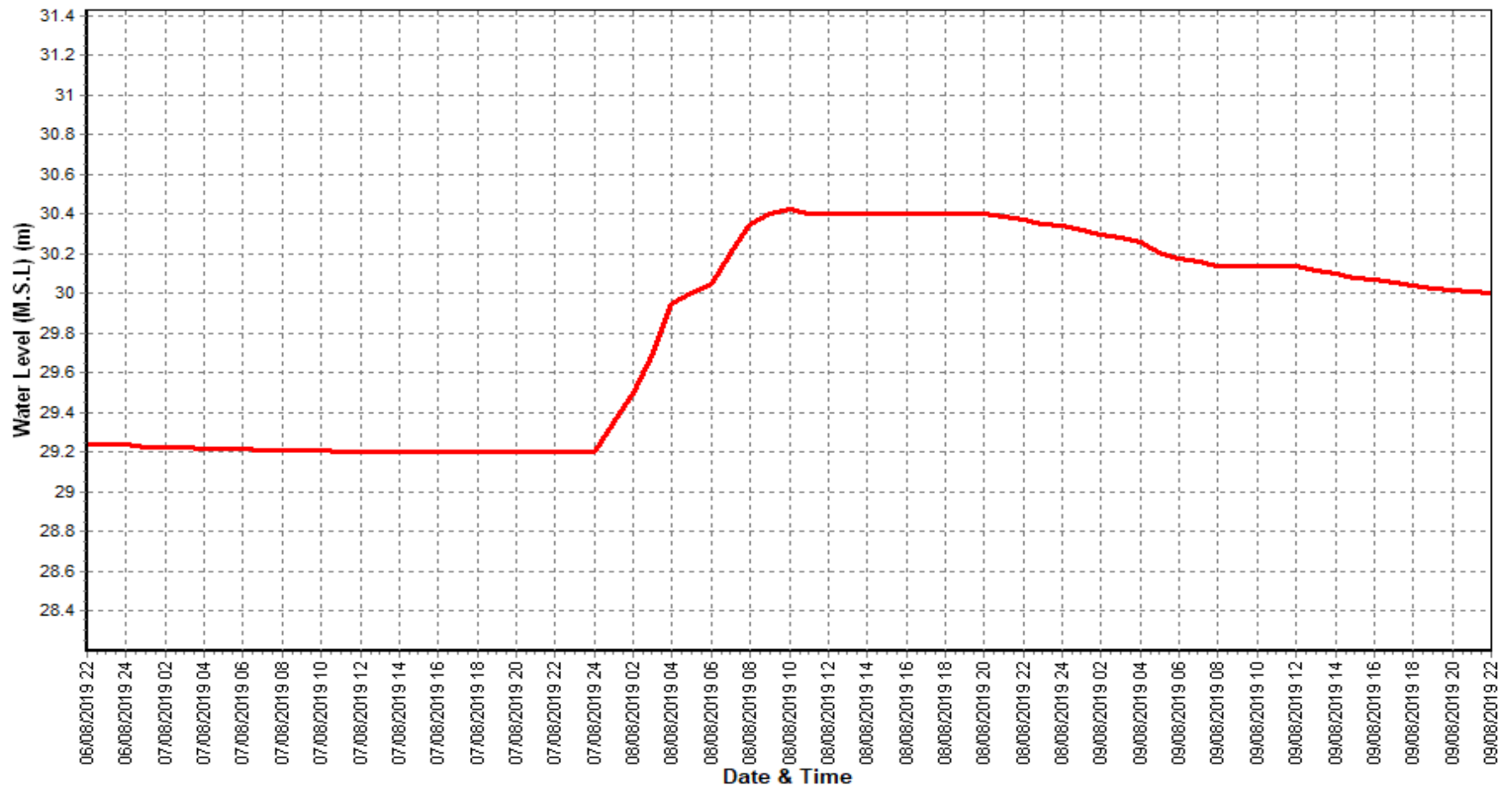
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Keesara (AKA00B4)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



HISTORY SHEET

Water Year : 2019-2020

Site	: Madhira	Code	: AKA10D2
State	: Telangana	District	Khammam
Basin	: Krishna	Independent River	: Krishna
Tributary	: Munneru	Sub Tributary	: Wyra
Sub-Sub Tributary	: -	Local River	: Wyra
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Krishna SD2, Vijayawada
Drainage Area	: 1850 Sq. Km.	Bank	: Left
Latitude	: 16°55'05"	Longitude	: 80°21'32"
Zero of Gauge (m)	: 44.5 (m.s.l) 44.5 (m.s.l)	01/06/1984 01/01/2000	- 31/12/2220
	Opening Date	Closing Date	
Gauge	: 23/02/1984	HFL During 2019-20	: 46.380 m
		Corres. Discharge	: 267 (Estimated)
Discharge	: 07/06/1984	Date & Time of	: 18/09/2019
		occurrence	: 22.00 hrs.
Sediment	: 01/03/2014		
Water Quality	: 01/06/1992		

HFL Recorded so far in m : 52.010 dt 20-09-2005

Corresponding Discharge (cumecs) : 3048 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1984-1985	346.3	47.175	12/10/1984	0.000		01/06/1984
1985-1986	865.1	48.230	11/10/1985	0.000	44.850	28/05/1986
1986-1987	1269	49.205	13/08/1986	0.000	44.870	06/07/1986
1987-1988	110.8	46.365	13/11/1987	0.076	44.830	29/06/1987
1988-1989	859.7	48.260	19/09/1988	0.168	44.860	15/06/1988
1989-1990	1238	49.250	31/08/1989	0.224	44.860	26/06/1989
1990-1991	946.7	49.200	02/10/1990	1.000	44.850	22/05/1991
1991-1992	1306	49.280	22/09/1991	0.100	44.740	16/05/1992
1992-1993	147.9	46.300	10/10/1992	0.142	44.670	13/05/1993
1993-1994	80.44	46.021	28/08/1993	0.262	44.690	10/06/1993
1994-1995	419.1	47.400	07/10/1994	0.146	44.650	01/07/1994
1995-1996	554.6	48.015	16/10/1995	0.392	44.700	16/05/1996
1996-1997	356.1	46.995	28/08/1996	0.504	44.730	01/06/1996
1997-1998	91.39	46.070	12/09/1997	0.407	44.680	03/06/1997
1998-1999	411.0	47.160	16/10/1998	0.177	44.710	03/06/1998
1999-2000	303.9	46.950	26/08/1999	0.052	44.540	23/05/2000
2000-2001	867.1	48.505	27/08/2000	0.040	44.530	31/05/2001

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2001-2002	98.37	45.925	15/08/2001	0.000	44.540	04/07/2001
2002-2003	73.22	45.915	14/10/2002	0.000		27/01/2003
2003-2004	142.4	46.140	08/08/2003	0.000		17/04/2004
2004-2005	303.8	46.900	05/08/2004	0.000		16/04/2005
2005-2006	2309	50.820	21/09/2005	0.000		18/06/2005
2006-2007	802.2	47.975	20/09/2006	0.374	44.510	30/05/2007
2007-2008	431.3	47.030	06/10/2007	0.000		31/05/2008
2008-2009	1854	49.600	10/08/2008	0.000	44.390	12/04/2009
2009-2010	412.5	47.145	22/05/2010	0.000		11/08/2009
2010-2011	316.7	46.545	08/09/2010	0.000	44.430	31/05/2011
2011-2012	211.6	46.175	26/08/2011	0.000	44.250	28/04/2012
2012-2013	441.3	47.220	03/11/2012	0.000	44.473	27/05/2013
2013-2014	301.7	46.570	26/10/2013	0.000	44.520	28/07/2013
2014-2015	173.1	46.040	28/10/2014	0.000		08/07/2014
2015-2016	347.3	46.550	21/06/2015	0.000		02/02/2016
2016-2017	76.88	45.535	10/10/2016	0.000		03/02/2017
2017-2018	145.1	45.790	18/07/2017	0.000		24/11/2017
2018-2019	1401	50.040	20/08/2018	0.000		12/02/2019

Annual Runoff of Wyra at Madhira

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1984-1985	196	95	292	7	3	10
2	1985-1986	463	53	516	16	2	18
3	1986-1987	526	71	597	19	3	21
4	1987-1988	189	59	249	7	2	9
5	1988-1989	894	63	958	32	2	34
6	1989-1990	1343	280	1623	47	10	57
7	1990-1991	1100	105	1204	39	4	43
8	1991-1992	586	80	666	21	3	24
9	1992-1993	216	61	277	8	2	10
10	1993-1994	268	76	344	9	3	12
11	1994-1995	563	119	682	20	4	24
12	1995-1996	380	65	446	13	2	16
13	1996-1997	630	119	749	22	4	26
14	1997-1998	196	83	278	7	3	10
15	1998-1999	544	122	666	19	4	24
16	1999-2000	418	69	487	15	2	17
17	2000-2001	649	76	725	23	3	26
18	2001-2002	94	55	149	3	2	5
19	2002-2003	<u>61</u>	0	61	2	0	2
20	2003-2004	86	13	99	3	0	4
21	2004-2005	176	13	190	6	0	7
22	2005-2006	781	164	945	28	6	33
23	2006-2007	446	71	517	16	3	18
24	2007-2008	413	116	529	15	4	19
25	2008-2009	709	52	761	25	2	27
26	2009-2010	50	142	192	2	5	7
27	2010-2011	805	167	973	28	6	34
28	2011-2012	318	51	369	11	2	13
29	2012-2013	480	10	491	17	0	17
30	2013-2014	367	47	414	13	2	15
31	2014-2015	174	72	246	6	3	9
32	2015-2016	191	0	191	7	0	7

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	2016-2017	70	6	75	2	0	3
34	2017-2018	124	36	161	4	1	6
35	2018-2019	456	21	478	16	1	17
36	2019-2020	223	44	268	8	2	9
Average		422	74	496	15	3	18
75% Dependable flow (MCM)				246			
90 % Dependable flow (MCM)				134			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Madhira (AKA10D2)

Division : Lower Krishna Divn., Hyderabad

Local River : Wyra

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000	44.850	16.20 *	44.940	20.44	44.670	6.626
2		0.000		0.000		0.000	45.190	41.58 *	45.000	25.65 *	44.640	8.107
3		0.000		0.000	44.990	24.77	45.655	105.9	44.880	18.29	44.670	6.626 *
4		0.000		0.000	44.920	20.28 *	45.390	63.60 #	44.710	9.856	44.900	18.87
5		0.000		0.000	44.610	5.918	45.200	43.10	44.640	7.580	44.710	8.499
6		0.000		0.000	44.580	4.583	45.010	29.04	44.650	7.408 *	44.700	5.815
7		0.000		0.000	44.620	6.302	44.930	21.77	44.640	7.620	44.610	5.443
8		0.000		0.000	45.130	35.33	44.880	17.88 *	44.620	6.431 *	44.580	5.571
9		0.000		0.000	44.910	19.90	44.745	9.969	44.640	7.565	44.590	4.721
10		0.000		0.000	44.630	6.748 #	44.670	8.107 *	45.180	38.90	44.560	4.859 *
11		0.000		0.000	44.560	4.721 *	44.640	7.572	45.670	109.1	44.530	3.532
12		0.000		0.000	44.550	4.466 *	44.630	7.285	45.310	54.89	44.510	1.774 *
13		0.000		0.000	44.530	3.982 #	44.670	7.733	45.280	50.79 *	44.500	1.947
14		0.000		0.000	44.530	3.982 #	44.750	9.626	45.050	29.40	44.500	1.947
15		0.000		0.000	44.510	1.532 *	44.980	24.24 *	44.990	22.71	44.550	5.358
16		0.000		0.000		0.000	44.960	26.11	44.960	20.90	44.570	6.748
17		0.000		0.000		0.000	45.840	133.7	44.880	18.27	44.630	7.311 *
18		0.000		0.000		0.000	46.065	182.8	44.970	21.93	44.650	6.210
19		0.000		0.000		0.000	46.190	213.8	44.970	21.89	44.630	6.287
20		0.000		0.000		0.000	45.550	97.07	44.900	19.06 *	44.630	7.277
21		0.000		0.000	44.910	20.38	45.380	67.08	44.900	18.87	44.650	5.470
22		0.000		0.000	44.920	20.28 #	45.200	42.55 *	44.840	15.44	44.580	4.848
23		0.000		0.000	45.080	32.41	45.110	33.49	45.050	27.33	44.540	4.220
24		0.000		0.000	45.020	29.82	44.990	23.36	45.020	27.11 #	44.540	4.861 *
25		0.000		0.000	44.930	20.91 *	45.050	29.85	44.890	18.45	44.530	4.880
26		0.000		0.000	44.830	15.70	44.970	22.72	44.725	9.331	44.530	4.820
27		0.000		0.000	44.620	6.725	45.040	29.48	44.810	14.11 *	44.540	4.671
28		0.000		0.000	44.560	3.389	45.220	43.68	44.980	22.40	44.530	5.151
29		0.000		0.000	44.540	2.461	45.050	29.40 *	44.805	14.73	44.560	5.151
30		0.000		0.000	44.520	1.656	44.900	20.12	44.750	10.58	44.560	5.151
31				0.000	44.520	1.586			44.730	9.413		
<u>Ten-Daily Mean</u>												
I Ten-Daily		0.000		0.000	44.799	12.38	45.052	35.72	44.790	14.97	44.663	7.514
II Ten-Daily		0.000		0.000	44.536	1.868	45.228	70.98	45.098	36.90	44.570	4.839
III Ten-Daily		0.000		0.000	44.768	14.12	45.091	34.17	44.864	17.07	44.556	4.922
<u>Monthly</u>												
Min.		0.000		0.000	44.510	0.000	44.630	7.285	44.620	6.431	44.500	1.774
Max.		0.000		0.000	45.130	35.33	46.190	213.8	45.670	109.1	44.900	18.87
Mean		0		0	44.730	9.608	45.123	46.96	44.915	22.79	44.596	5.758

Annual Runoff in MCM = 267 Annual Runoff in mm = 144

Peak Observed Discharge = 213.8 cumecs on 19/09/2019 Corres. Water Level :46.19 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Madhira (AKA10D2)

Division : Lower Krishna Divn., Hyderabad

Local River : Wyra

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	44.550	5.525 *	44.510	4.405	44.520	4.807	44.520	4.796 *	Not observed due to Lock-Down			0.000
2	44.570	5.908	44.520	4.896	44.520	4.796 *	44.530	5.404				0.000
3	44.620	7.381	44.530	5.143	44.520	4.816	44.530	5.403				0.000
4	44.650	8.419	44.600	6.633	44.510	4.554	44.540	5.325				0.000
5	44.620	7.311	44.580	6.298 *	44.530	5.374	44.530	5.402				0.000
6	44.560	5.766	44.560	5.768	44.480	3.930	44.540	5.319				0.000
7	44.550	5.577	44.520	4.906	44.470	3.742	44.550	5.550				0.000
8	44.550	5.525 *	44.440	2.875	44.440	2.868	44.530	5.034 *				0.000
9	44.530	5.010	44.430	2.724	44.420	2.687 *	44.540	5.315				0.000
10	44.540	5.368	44.420	2.574	44.480	3.945	44.530	5.034 *				0.000
11	44.530	5.065	44.370	1.845	44.490	4.232	44.520	5.056				0.000
12	44.540	5.397	44.350	1.526 *	44.430	2.662	44.530	5.407				0.000
13	44.550	5.507	44.340	1.592	44.410	2.350	44.510	4.567				0.000
14	44.560	5.763	44.430	2.735	44.450	3.155	44.440	2.973				0.000
15	44.560	5.778 *	44.480	3.891 *	44.480	3.910	44.430	2.874 *				0.000
16	44.570	5.847	44.520	4.998	44.490	4.110 *	44.390	2.131				0.000
17	44.570	5.844	44.580	6.221	44.510	4.526	44.370	1.856				0.000
18	44.580	6.119	44.590	6.349	44.520	4.975	44.390	2.106				0.000
19	44.560	5.765	44.600	6.836 *	44.510	4.528	44.350	1.628				0.000
20	44.540	5.346	44.600	6.636	44.530	5.228	44.360	1.816		0.000		0.000
21	44.520	4.829	44.560	5.670	44.520	4.893	44.370	1.807		0.000		0.000
22	44.530	5.034 *	44.520	4.974	44.510	4.538	44.410	2.504 *		0.000		0.000
23	44.520	4.808	44.510	4.450	44.480	3.891 *	44.440	2.977		0.000		0.000
24	44.540	5.233	44.420	2.552	44.510	4.526	44.440	2.971		0.000		0.000
25	44.520	4.796 *	44.420	2.458	44.490	4.154	44.430	2.874 *		0.000		0.000
26	44.530	5.038	44.400	2.327 *	44.440	2.879	Not observed Due to Lock-Down			0.000		0.000
27	44.510	4.579	44.370	1.857	44.420	2.538				0.000		0.000
28	44.530	5.079	44.360	1.752	44.370	1.916				0.000		0.000
29	44.510	4.562 *	44.430	2.673	44.400	2.303				0.000		0.000
30	44.520	4.897	44.440	2.832						0.000		0.000
31	44.530	5.006	44.510	4.478								0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	44.574	6.179	44.511	4.622	44.489	4.152	44.534	5.258		0.000		0.000
II Ten-Daily	44.556	5.643	44.486	4.263	44.482	3.968	44.429	3.042		0.000		0.000
III Ten-Daily	44.524	4.897	44.449	3.275	44.460	3.515	44.418	2.627		0.000		0.000
<u>Monthly</u>												
Min.	44.510	4.562	44.340	1.526	44.370	1.916	44.350	1.628		0.000		0.000
Max.	44.650	8.419	44.600	6.836	44.530	5.374	44.550	5.550		0.000		0.000
Mean	44.550	5.551	44.481	4.028	44.478	3.891	44.469	3.845		0		0

Peak Computed Discharge = 50.79 cumecs on 13/10/2019

Corres. Water Level :45.28 m

Lowest Computed Discharge = 1.526 cumecs on 12/01/2020

Corres. Water Level :44.35 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

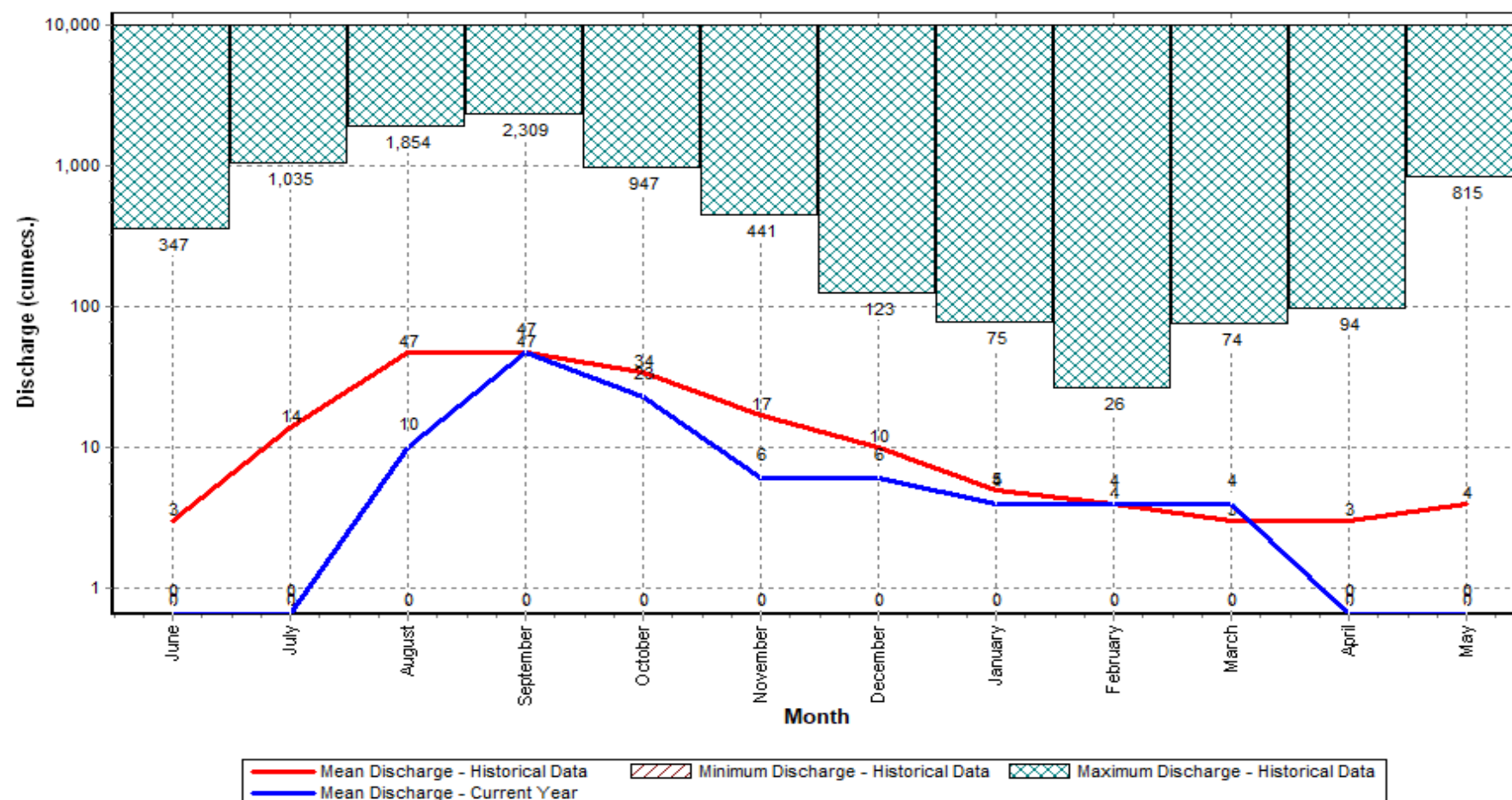
Station Name : Madhira (AKA10D2)

Data considered : 1984-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Wyra

Sub-Division : Lower Krishna SD2, Vijayawada



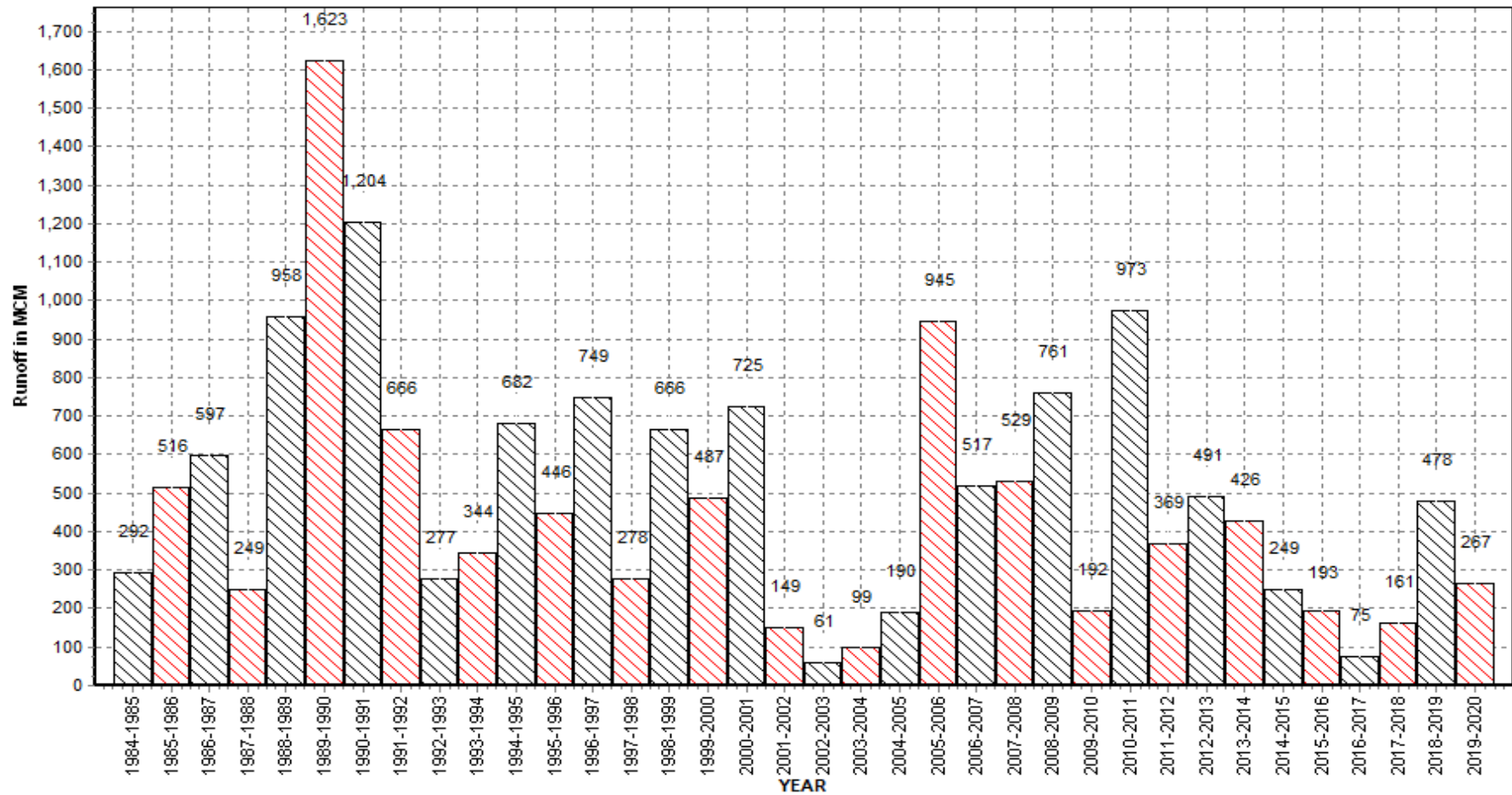
Annual Runoff Values for the period: 1984 - 2020

Station Name : Madhira (AKA10D2)

Local River : Wyra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Note: Missing values have not been considered while arriving at Annual Runoff

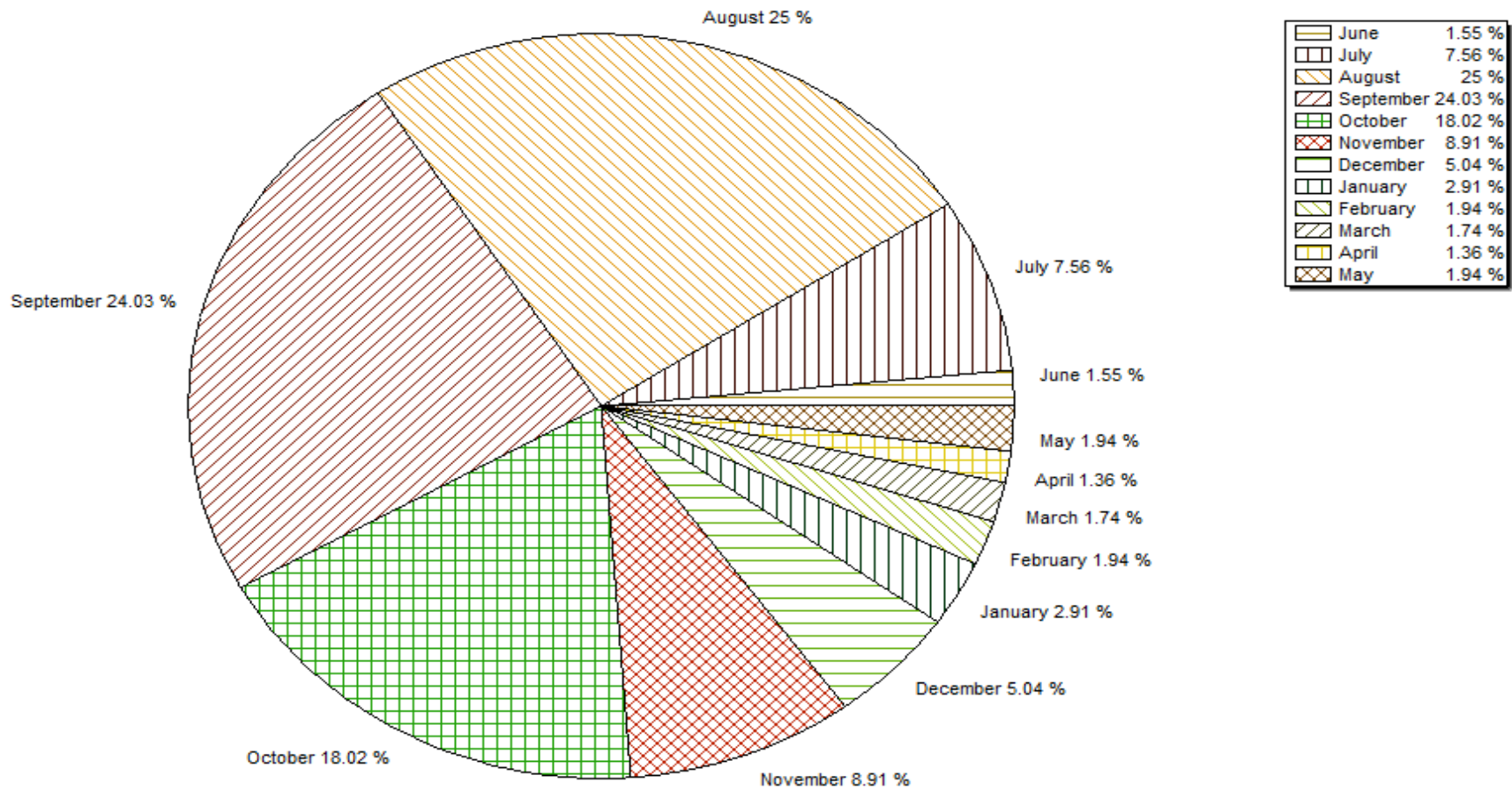
Monthly Average Runoff based on period : 1984-2019

Station Name : Madhira (AKA10D2)

Local River : Wyra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



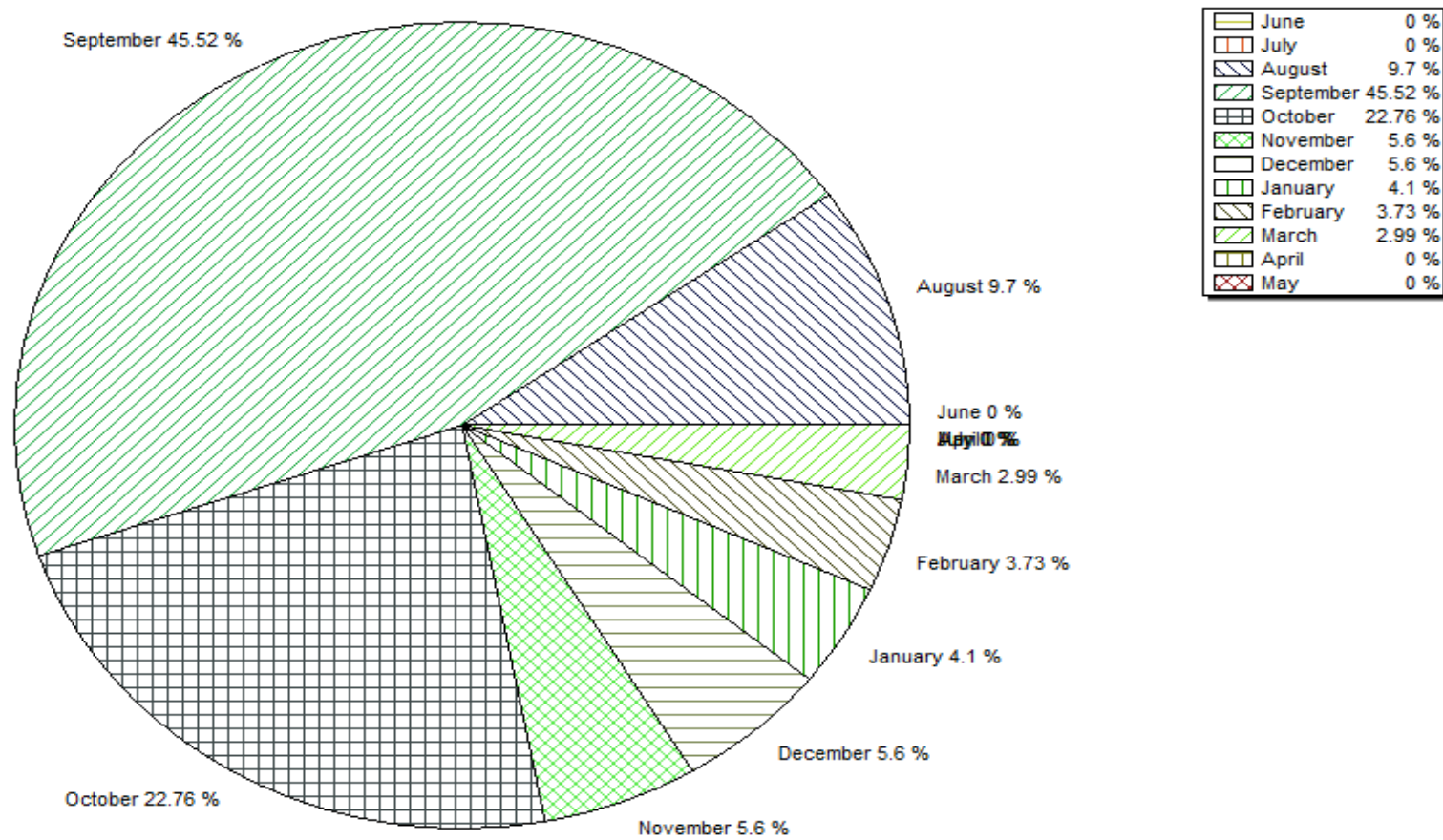
Monthly Runoff for the Year : 2019-2020

Station Name : Madhira (AKA10D2)

Local River : Wyra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada

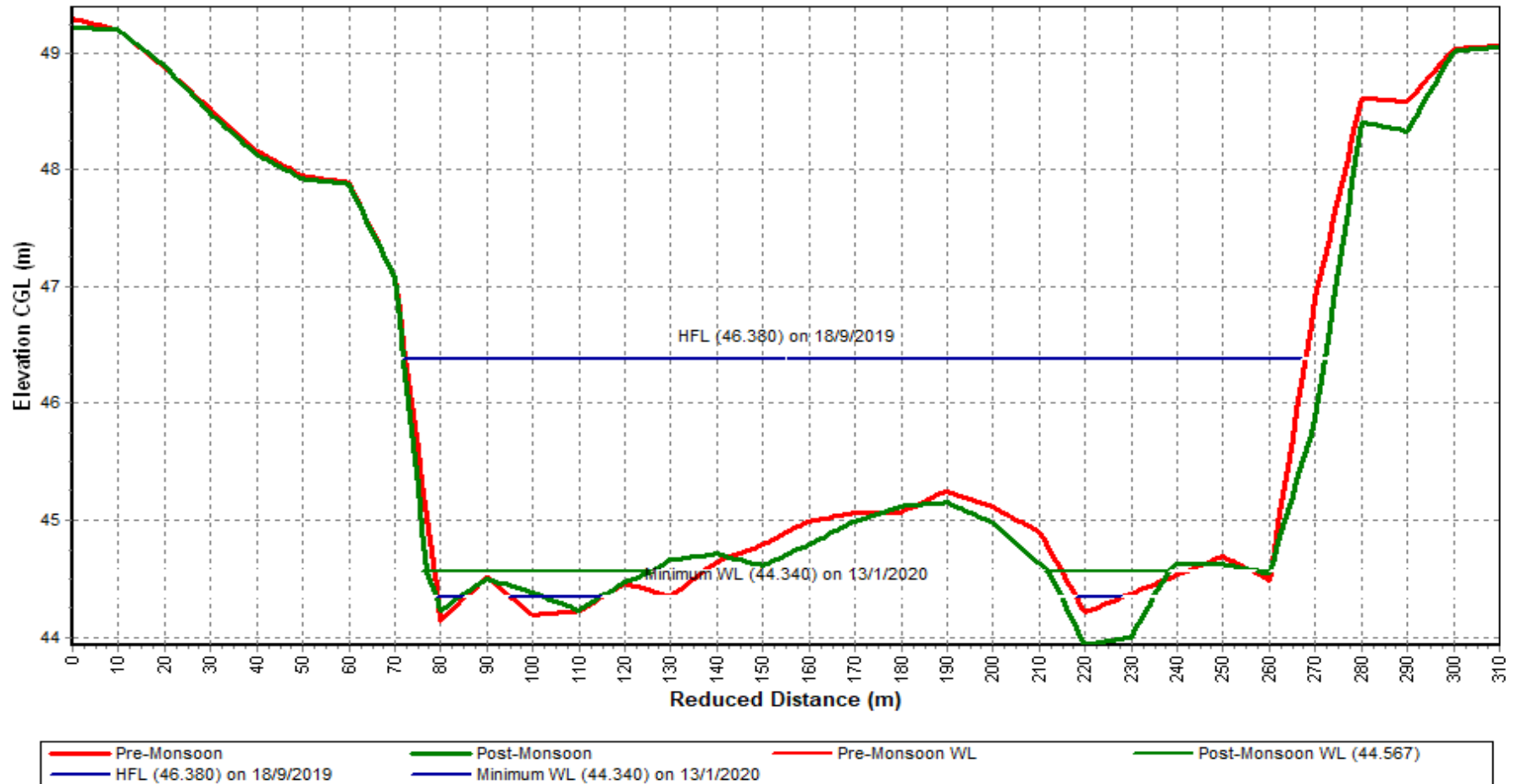


Station Name : Madhira (AKA10D2)

Local River : Wyra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Post Monsoon Cross Section Difference Due to High Flood

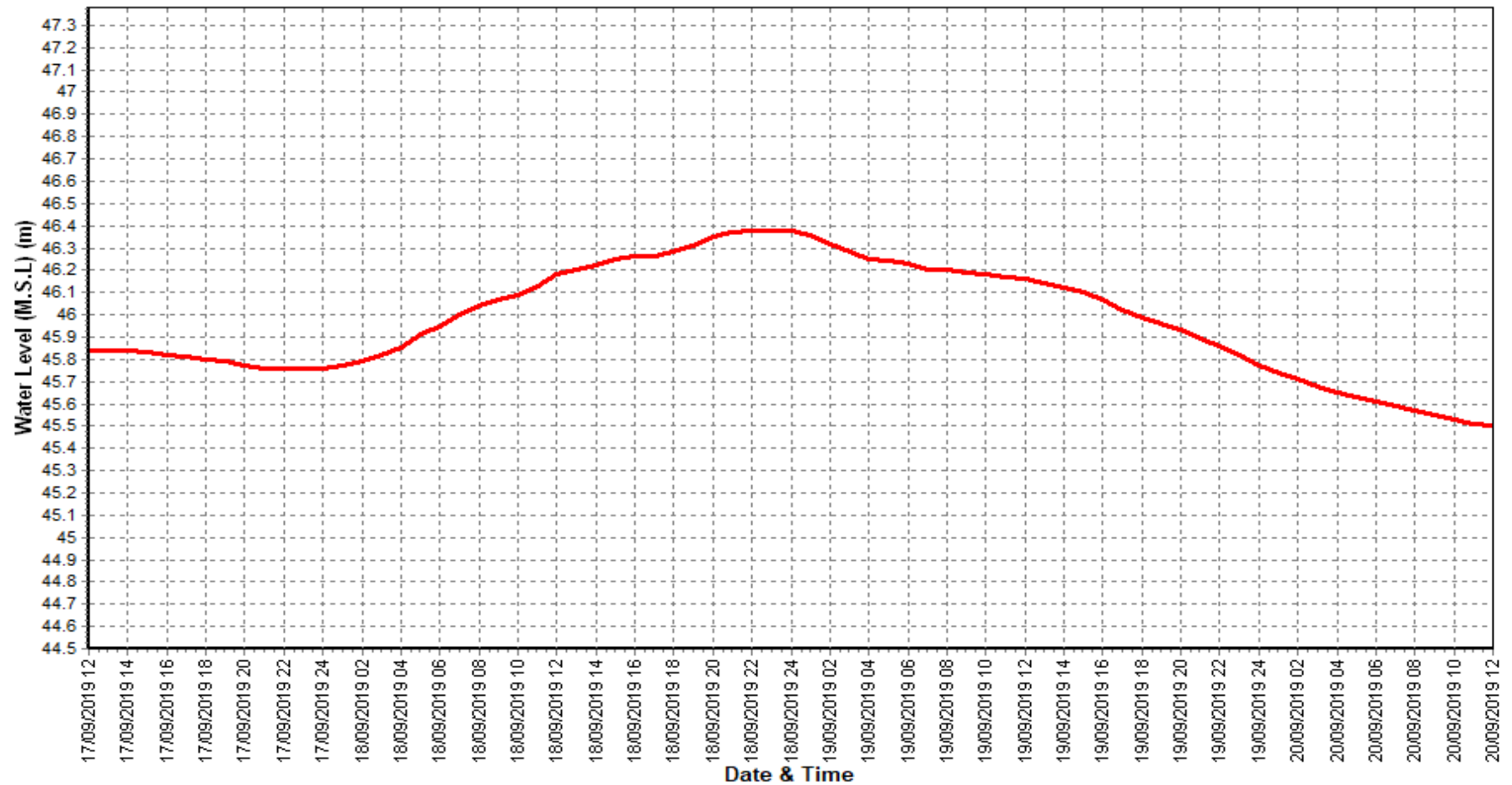
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Madhira (AKA10D2)

Local River : Wyra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



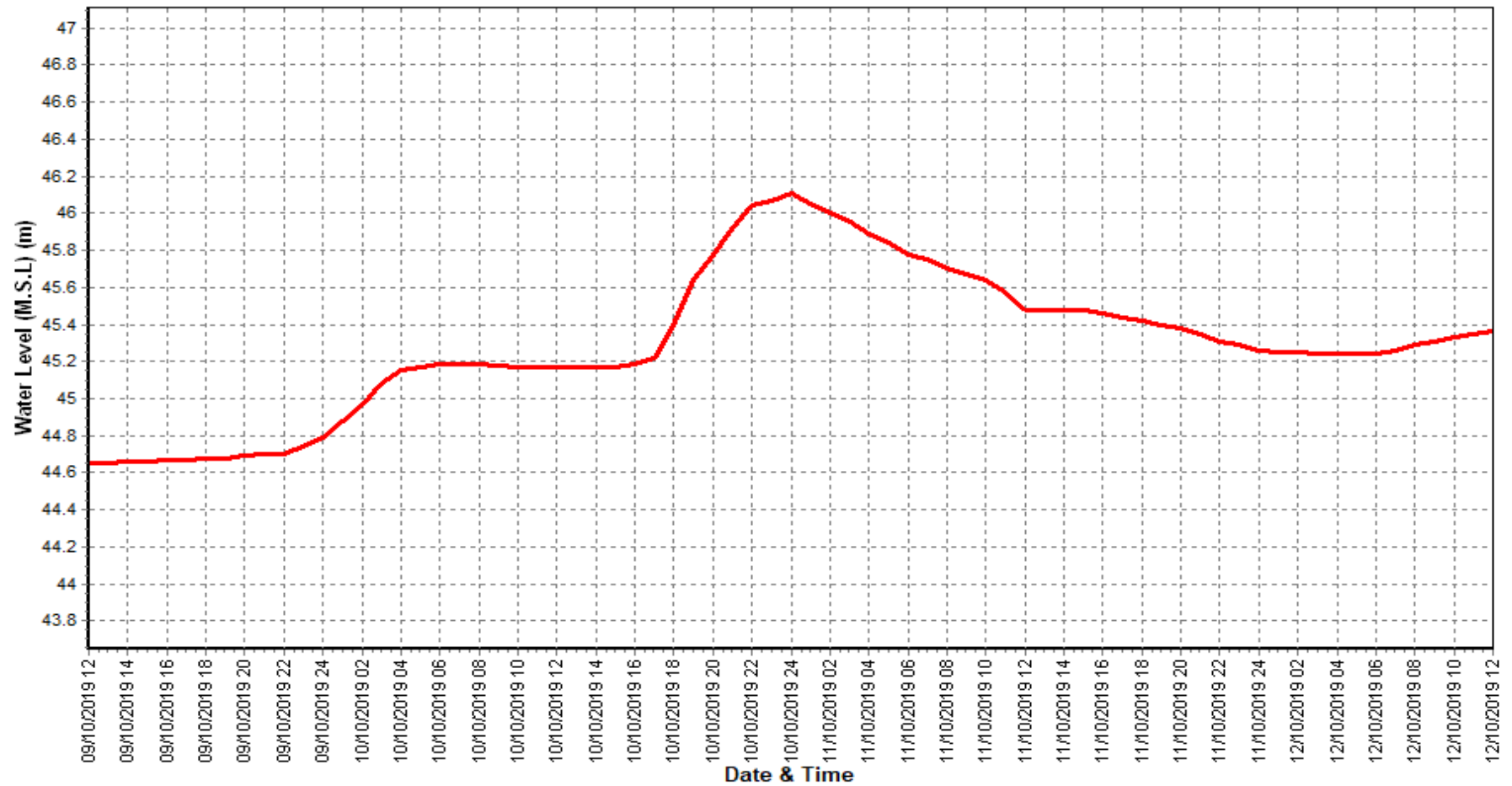
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Madhira (AKA10D2)

Local River : Wyra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



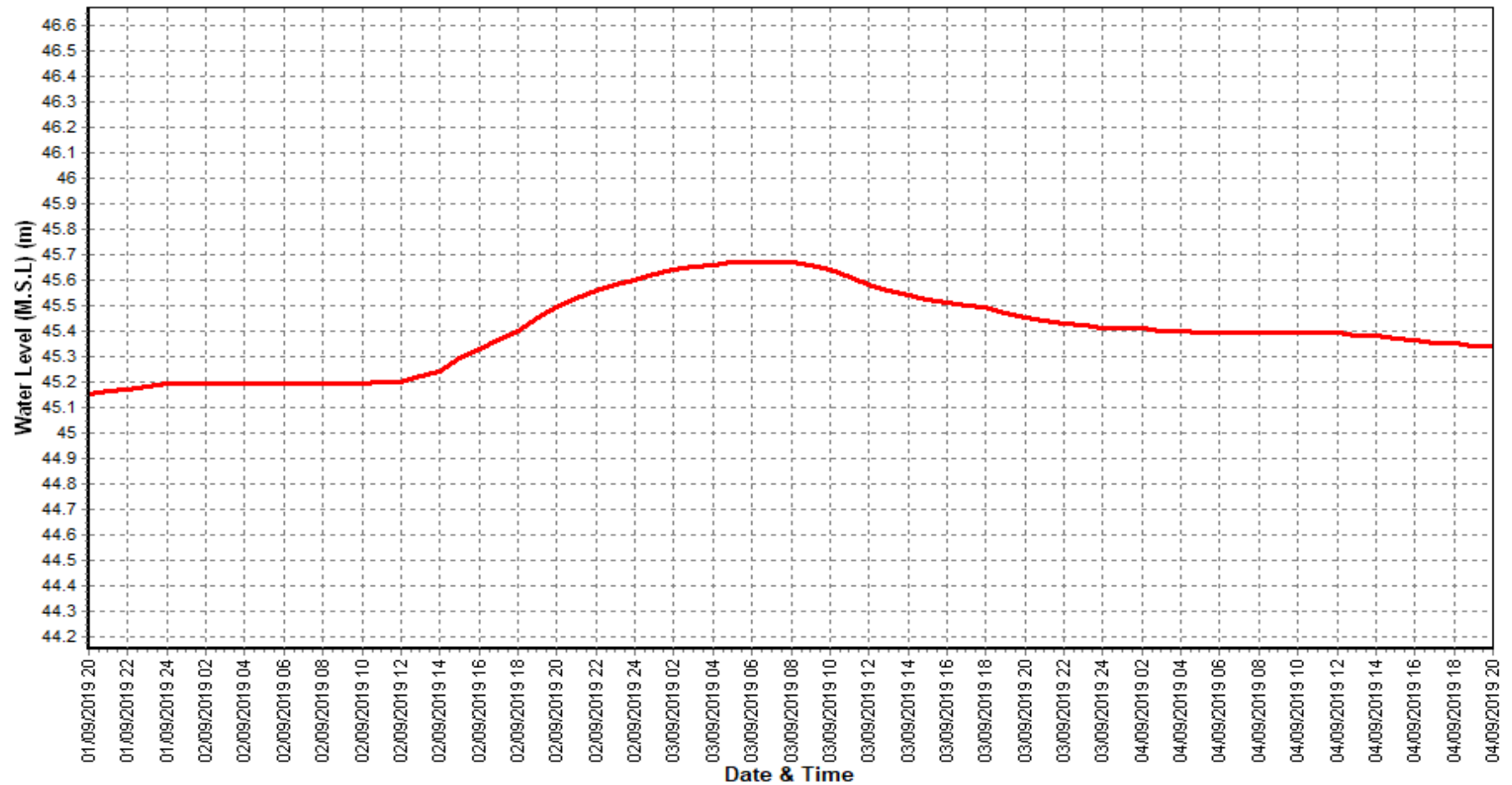
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Madhira (AKA10D2)

Local River : Wyra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



HISTORY SHEET

		Water Year	: 2019-2020
Site	: DAREDU	Code	: 035-LKDHYD
State	: Andhra Pradesh	District	Khammam
Basin	: Krishna	Independent River	: Krishna
Tributary	: Munneru	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Munneru
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Krishna SD2, Vijayawada
Drainage Area	: 3100 Sq. Km.	Bank	: Left
Latitude	: 17°22'46"	Longitude	: 80°07'49"
Zero of Gauge (m)	: 93.5 (m.s.l) 108.5 (m.s.l)	16/11/2016 05/03/2019	- 04/03/2019
	Opening Date	Closing Date	
Gauge	: 16/11/2016	HFL During 2019-20	: 114.280 m
		Corres. Discharge	: 465 (Estimated)
Discharge	: 16/11/2016	Date & Time of occurrence	: 08/08/2019 : 06:00 Hrs
Sediment	:		
Water Quality	:		

HFL Recorded so far in m : 101.480 dt 21-08-2018 (Due to change Zero of Gauge value 93.5 to 108.5)
Corresponding Discharge (cumecs) : 1582 (Estimated)

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2017-2018	11.70	95.620	24/10/2017	0.000		26/05/2018
2018-2019	1520	101.360	21/08/2018	0.000	95.350	16/02/2019

Annual Runoff of Munneru at Daredu

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2017-2018	16	1	17	1	0	1
2	2018-2019	743	12	755	26	0	27
3	2019-2020	2376	554	2930	84	20	104
Average		380	6	386	13	0	14
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : DAREDU (035-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Munneru

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000	110.460	0.000	112.690	228.5	112.790	231.3	112.550	202.2
2		0.000		0.000	110.500	0.000	113.820	401.8	113.040	258.7	112.560	204.9
3		0.000		0.000	110.690	0.000	114.230	464.8	112.960	252.4	112.550	202.2
4		0.000		0.000	112.580	206.9	113.400	321.8	112.880	240.6	112.580	207.1
5		0.000		0.000	112.760	228.1	112.990	267.1	112.770	228.3	112.570	204.8
6		0.000		0.000	112.760	223.7	112.930	258.7	112.730	223.1	112.560	204.9
7		0.000		0.000	113.580	340.5	113.010	268.0	112.790	231.3	112.540	199.1
8		0.000		0.000	114.200	454.6	112.960	261.7	112.880	240.6	112.560	206.1
9		0.000		0.000	113.620	353.8	112.880	251.3	112.970	253.9	112.530	194.1
10		0.000		0.000	113.110	272.6	112.900	253.8	112.900	241.9	112.500	190.2
11		0.000		0.000	112.890	244.8	112.870	249.7	112.830	237.3	112.400	161.5
12		0.000		0.000	112.750	226.0	112.800	238.6	112.770	228.3	112.360	157.1
13		0.000		0.000	112.680	219.8	112.740	233.8	113.080	261.2	112.330	155.0
14		0.000		0.000	112.650	215.9	112.790	241.6	113.030	258.1	112.320	153.9
15		0.000		0.000	112.660	217.2	112.780	238.8	112.910	241.0	112.330	155.0
16		0.000		0.000	112.640	213.6	112.930	258.7	112.930	245.5	112.350	156.1
17		0.000		0.000	112.670	217.8	113.030	267.4	112.870	239.1	112.330	155.0
18		0.000		0.000	112.670	217.8	113.130	282.9	112.970	253.9	112.320	153.9
19		0.000		0.000	112.800	233.0	113.070	271.0	112.950	250.8	112.310	151.8
20		0.000		0.000	112.730	225.8	112.980	265.5	112.990	256.6	112.300	149.7
21		0.000	109.600	0.000	112.820	236.2	113.010	266.0	113.260	285.3	112.310	152.8
22		0.000	109.750	0.000	112.910	243.3	112.900	259.9	112.590	206.3	112.320	153.9
23		0.000	109.670	0.000	112.870	244.4	113.010	266.0	112.750	225.8	112.330	155.0
24		0.000	109.610	0.000	112.980	256.8	112.970	263.2	112.690	218.9	112.320	153.9
25		0.000	109.610	0.000	113.090	270.5	112.920	254.9	112.840	238.4	112.310	152.8
26		0.000	109.620	0.000	112.880	245.8	113.030	267.1	112.880	240.0	112.330	155.0
27		0.000	109.980	0.000	112.760	229.6	113.040	270.9	112.690	218.9	112.320	153.9
28		0.000	110.190	0.000	112.690	218.9	113.050	272.6	112.650	213.9	112.310	152.8
29		0.000	110.320	0.000	112.670	223.5	113.010	266.0	112.560	201.0	112.300	151.8
30		0.000	110.410	0.000	112.650	222.4	112.680	229.8	112.570	203.3	112.310	152.8
31			110.440	0.000	112.670	223.5			112.600	207.1		
Ten-Daily Mean												
I Ten-Daily		0.000		0.000	112.426	208.0	113.181	297.7	112.871	240.2	112.550	201.6
II Ten-Daily		0.000		0.000	112.714	223.2	112.912	254.8	112.933	247.2	112.335	154.9
III Ten-Daily		0.000	109.927	0.000	112.817	237.7	112.962	261.7	112.735	223.5	112.316	153.5
Monthly												
Min.		0.000	109.600	0.000	110.460	0.000	112.680	228.5	112.560	201.0	112.300	149.7
Max.		0.000	110.440	0.000	114.200	454.6	114.230	464.8	113.260	285.3	112.580	207.1
Mean		0	109.927	0	112.658	223.4	113.018	271.4	112.843	236.5	112.400	170

Annual Runoff in MCM = 2930 Annual Runoff in mm = 945

Peak Observed Discharge = 464.8 cumecs on 03/09/2019 Corres. Water Level :114.23 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Stage-Discharge Data for the period 2019 - 2020

Station Name : DAREDU (035-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Munneru

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	112.310	151.8	112.280	149.5	111.910	0.000	111.290	0.000	Not observed Due to Lock-Down		110.550	0.000
2	112.300	151.4	112.270	148.4	111.900	0.000	111.280	0.000			110.550	0.000
3	112.290	149.7	112.270	148.4	111.880	0.000	111.260	0.000			110.540	0.000
4	112.300	151.4	112.270	148.4	111.870	0.000	111.250	0.000			110.540	0.000
5	112.310	151.8	112.280	149.5	111.850	0.000	111.240	0.000			110.540	0.000
6	112.300	150.4	112.270	148.4	111.840	0.000	111.230	0.000			110.530	0.000
7	112.310	151.8	112.270	148.4	111.830	0.000	111.220	0.000			110.530	0.000
8	112.300	150.4	112.250	145.5	111.800	0.000	111.230	0.000			110.520	0.000
9	112.310	151.8	112.240	143.5	111.770	0.000	111.270	0.000			110.510	0.000
10	112.320	152.8	112.240	143.5	111.770	0.000	111.270	0.000			110.510	0.000
11	112.310	151.8	112.220	140.5	111.780	0.000	111.260	0.000			110.500	0.000
12	112.300	150.4	112.150	133.1	111.780	0.000	111.260	0.000			110.490	0.000
13	112.290	149.7	112.100	0.000	111.760	0.000	111.240	0.000			110.480	0.000
14	112.300	150.4	112.090	0.000	111.740	0.000	111.230	0.000			110.470	0.000
15	112.310	151.8	112.080	0.000	111.730	0.000	111.210	0.000			110.470	0.000
16	112.290	149.7	112.080	0.000	111.710	0.000	111.180	0.000			110.460	0.000
17	112.290	149.7	112.080	0.000	111.700	0.000	111.150	0.000			110.460	0.000
18	112.290	149.7	112.070	0.000	111.680	0.000	111.120	0.000			110.450	0.000
19	112.280	149.5	112.070	0.000	111.670	0.000	111.060	0.000			110.450	0.000
20	112.280	149.5	112.070	0.000	111.650	0.000	111.030	0.000	110.600	0.000	110.460	0.000
21	112.280	149.5	112.060	0.000	111.620	0.000	111.020	0.000	110.580	0.000	110.460	0.000
22	112.280	149.5	112.060	0.000	111.590	0.000	111.010	0.000	110.560	0.000	110.450	0.000
23	112.280	149.5	112.060	0.000	111.550	0.000	110.990	0.000	110.550	0.000	110.450	0.000
24	112.290	149.7	112.060	0.000	111.520	0.000	110.960	0.000	110.540	0.000	110.440	0.000
25	112.290	149.7	112.050	0.000	111.480	0.000	110.930	0.000	110.540	0.000	110.430	0.000
26	112.280	149.5	112.030	0.000	111.450	0.000	Not observed Due to Lock-Down		110.550	0.000	110.430	0.000
27	112.290	149.7	112.010	0.000	111.410	0.000			110.550	0.000	110.420	0.000
28	112.280	149.5	111.990	0.000	111.360	0.000			110.550	0.000	110.420	0.000
29	112.290	149.7	111.970	0.000	111.320	0.000			110.560	0.000	110.410	0.000
30	112.280	149.5	111.950	0.000					110.560	0.000	110.400	0.000
31	112.280	149.5	111.940	0.000							110.390	0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	112.305	151.3	112.264	147.4	111.842	0.000	111.254	0.000		0.000	110.532	0.000
II Ten-Daily	112.294	150.2	112.101	27.36	111.720	0.000	111.174	0.000	110.600	0.000	110.469	0.000
III Ten-Daily	112.284	149.5	112.016	0.000	111.478	0.000	110.982	0.000	110.554	0.000	110.427	0.000
<u>Monthly</u>												
Min.	112.280	149.5	111.940	0.000	111.320	0.000	110.930	0.000	110.540	0.000	110.390	0.000
Max.	112.320	152.8	112.280	149.5	111.910	0.000	111.290	0.000	110.600	0.000	110.550	0.000
Mean	112.294	150.3	112.124	56.36	111.687	0	111.168	0	110.558	0	110.475	0

Peak Computed Discharge = 0.000 cumecs on 26/03/2020

Lowest Computed Discharge = 0.000 cumecs on 26/03/2020

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

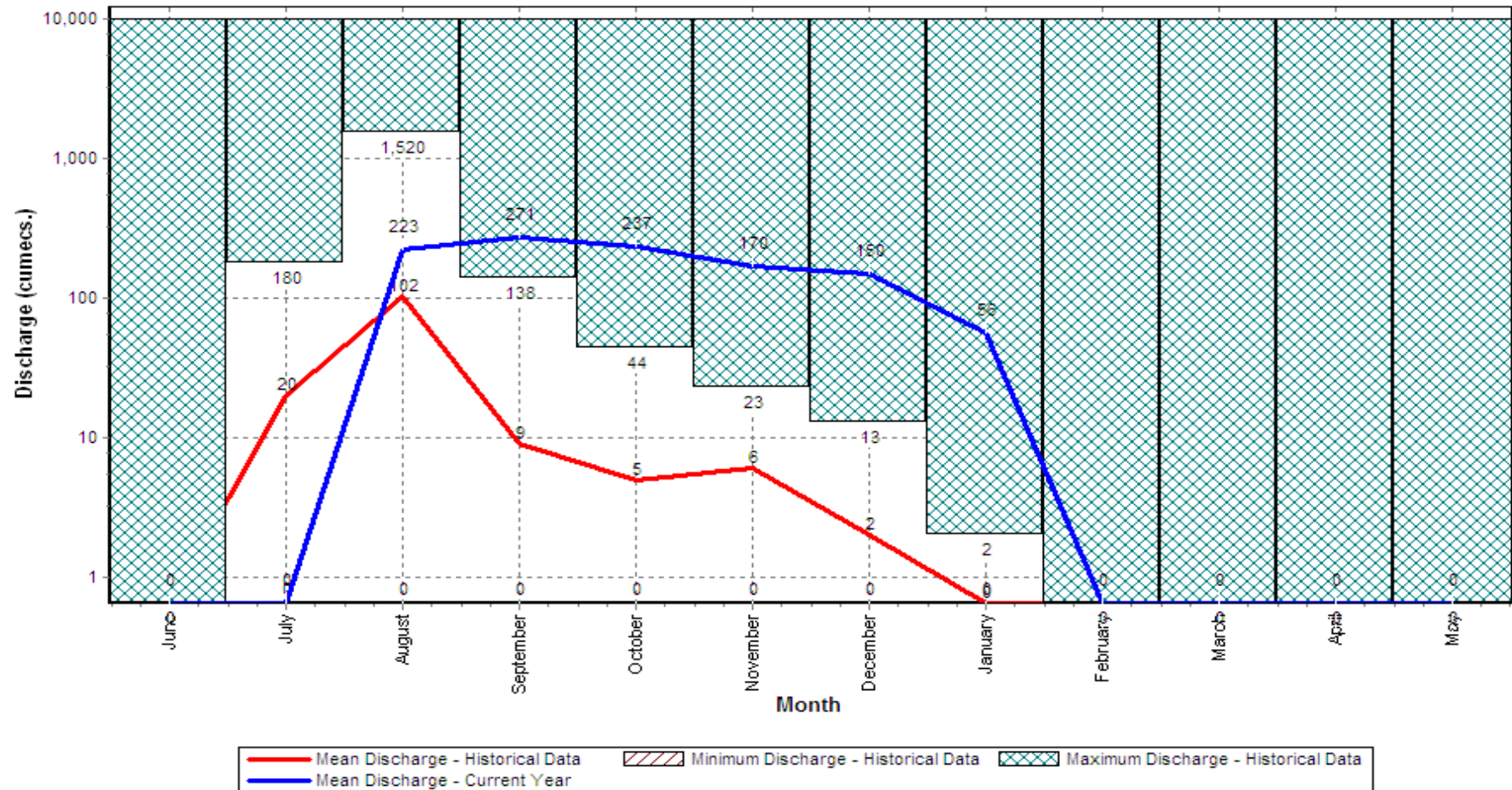
Station Name : DAREDU (035-LKDHYD)

Data considered : 2017-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Munneru

Sub-Division : Lower Krishna SD2, Vijayawada



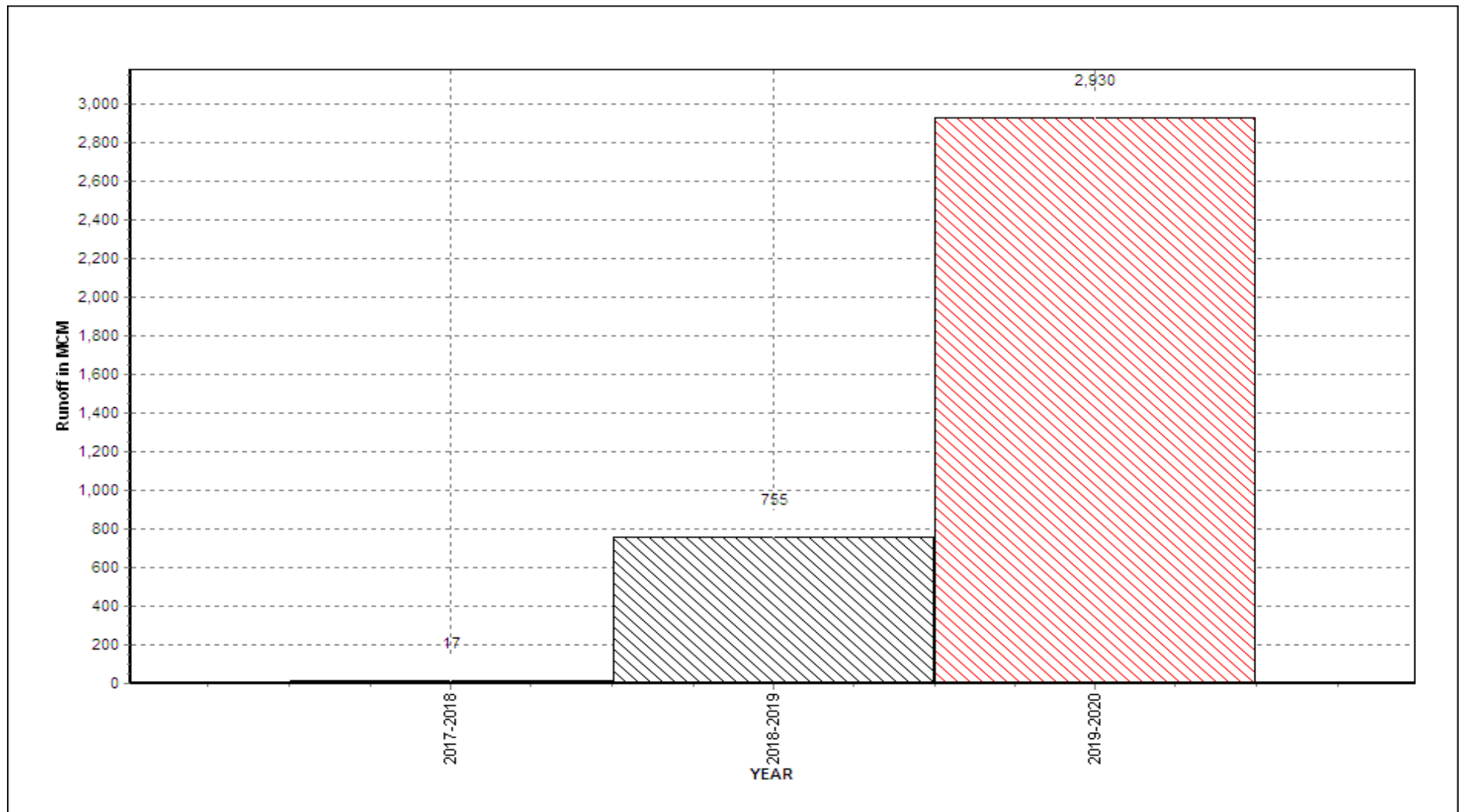
Annual Runoff Values for the period: 2017 - 2020

Station Name : DAREDU (035-LKDHYD)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Note: Missing values have not been considered while arriving at Annual Runoff

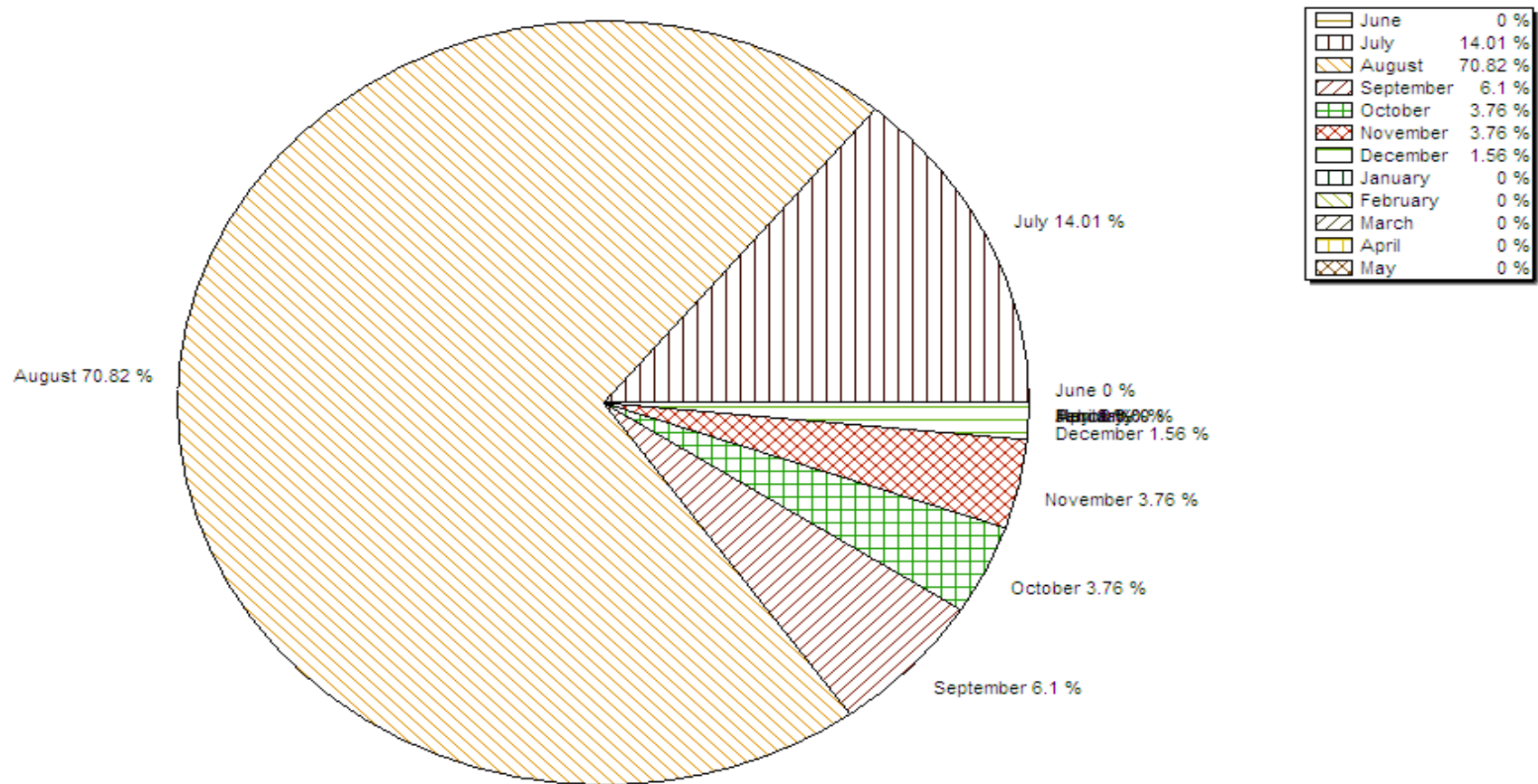
Monthly Average Runoff based on period : 2017-2019

Station Name : DAREDU (035-LKDHYD)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



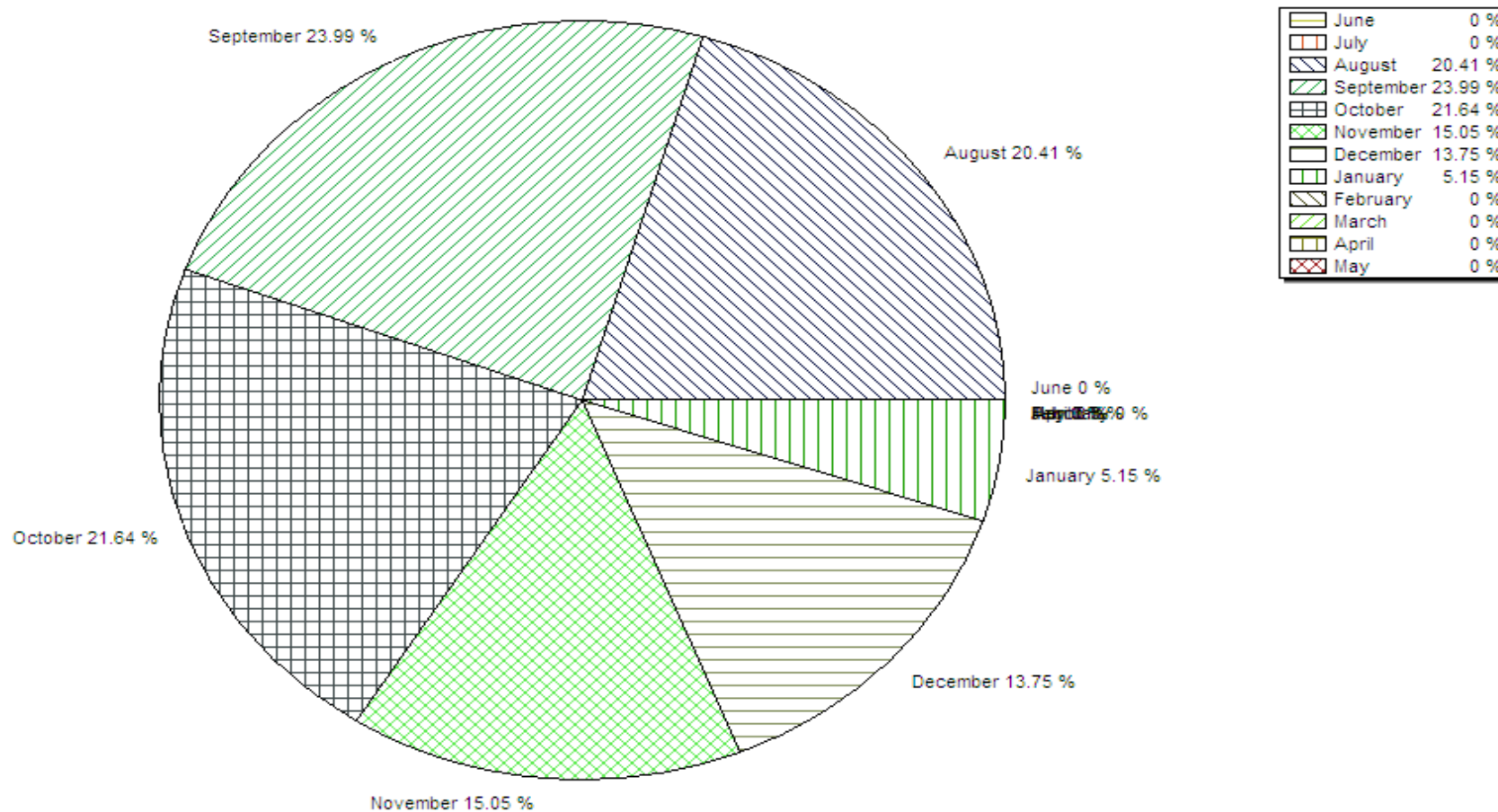
Monthly Runoff for the Year : 2019-2020

Station Name : DAREDU (035-LKDHYD)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



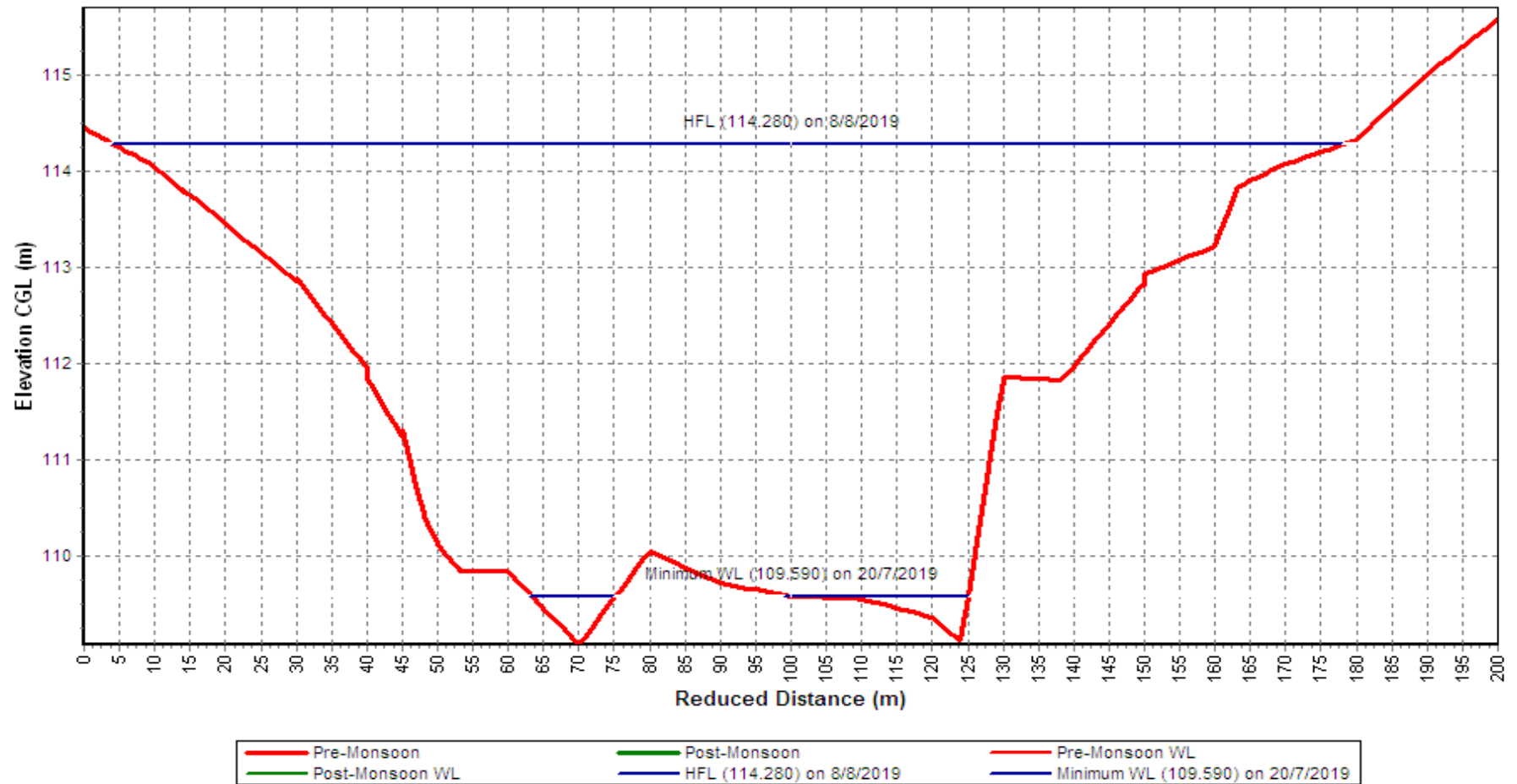
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : DAREDU (035-LKDHYD)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Note : Post Monsoon X-Section Not Observed Due to Non Possibility of Site Condition

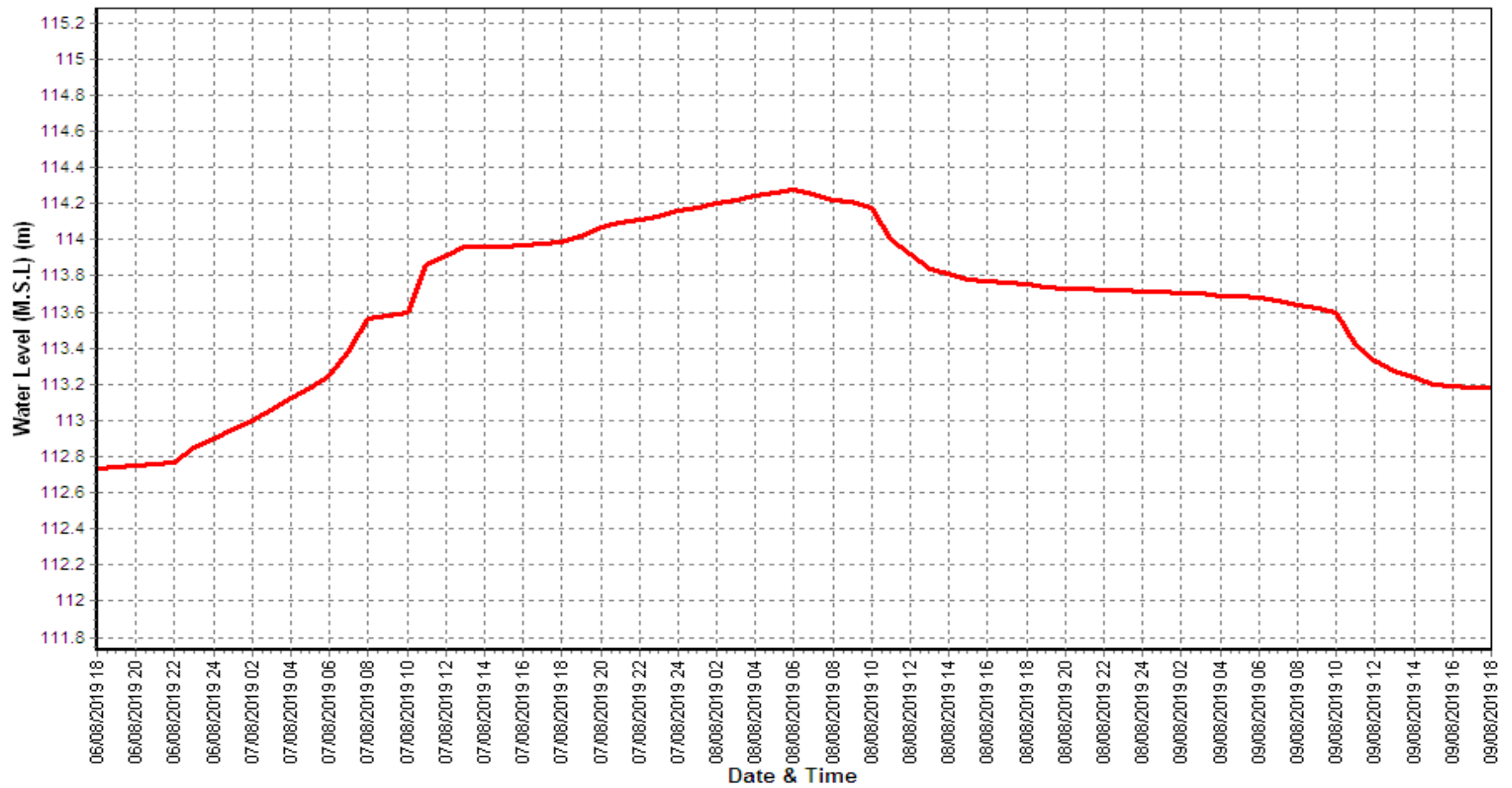
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : DAREDU (035-LKDHYD)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



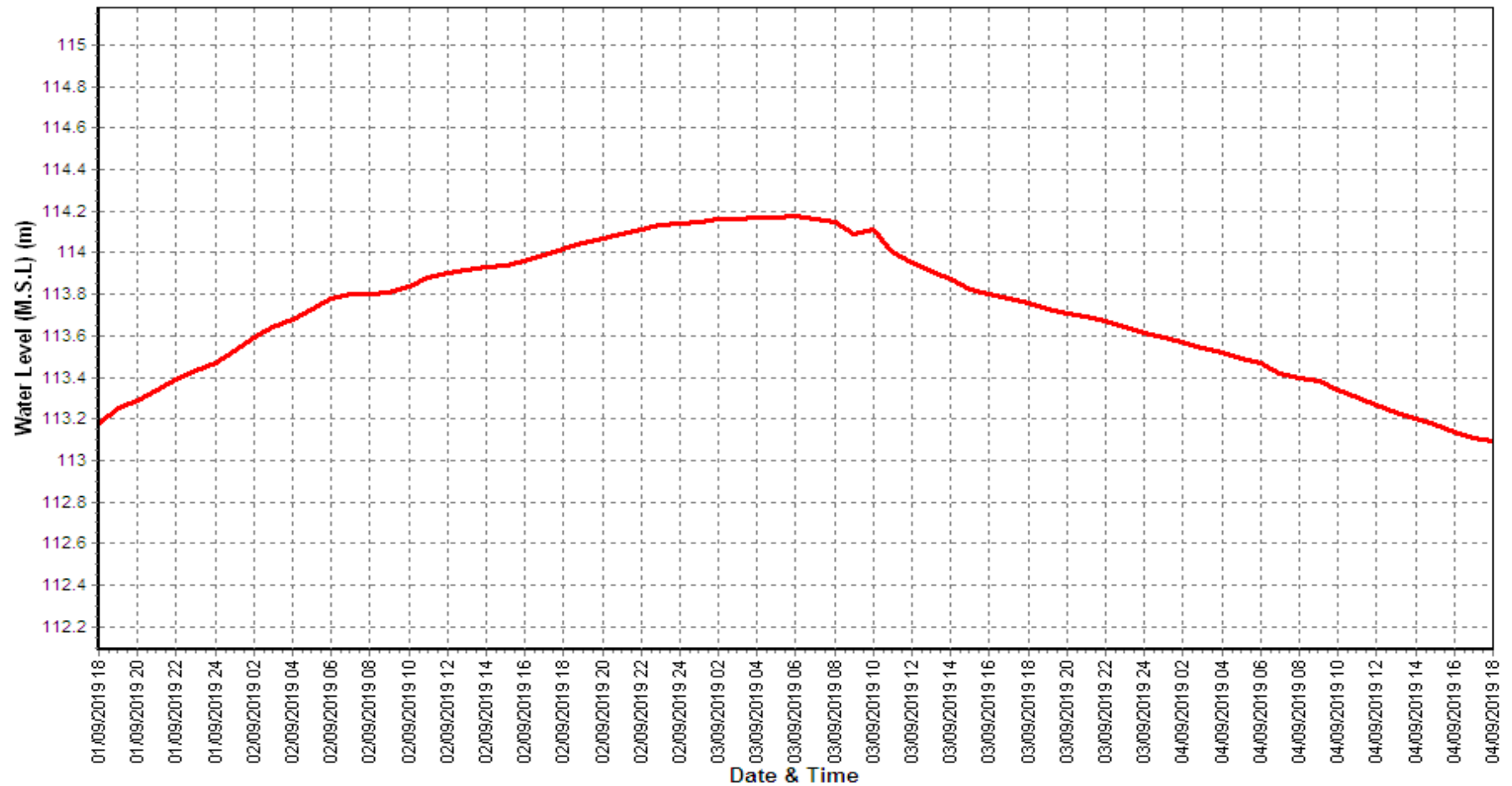
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : DAREDU (035-LKDHYD)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



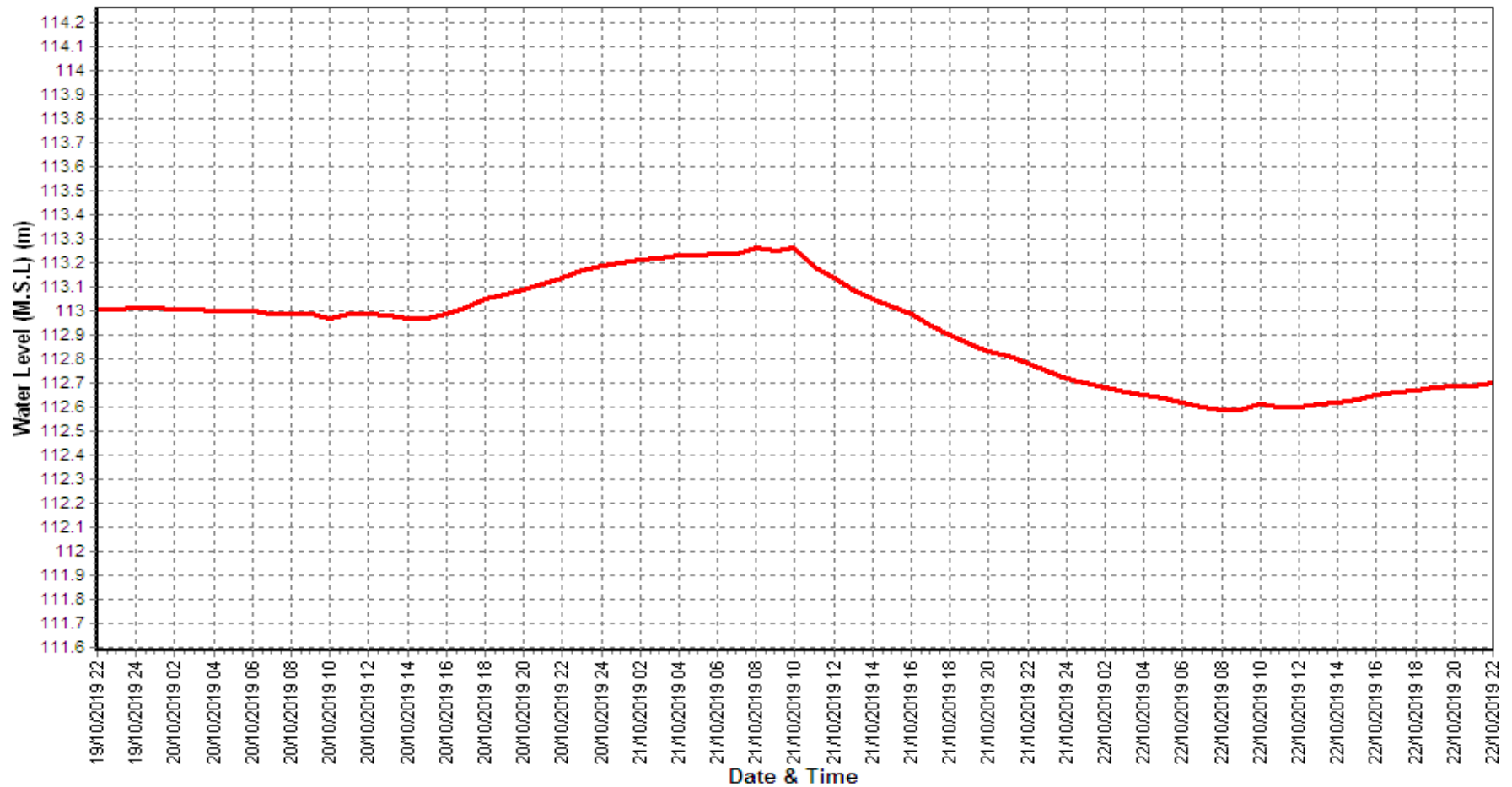
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : DAREDU (035-LKDHYD)

Local River : Munneru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



HISTORY SHEET

		Water Year	: 2019-2020
Site	: MUNUGODU	Code	: 033-LKDHYD
State	: Andhra Pradesh	District	: Guntur
Basin	: Krishna	Independent River	: Krishna
Tributary	: Lower Krishna	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: YEDDUVAGU
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Krishna SD2, Vijayawada
Drainage Area	: 647.8 Sq. Km.	Bank	: Left
Latitude	: 16°33'17"	Longitude	: 80°12'23"
Zero of Gauge (m)	: 24.5 (m.s.l)	01/03/2017	
	Opening Date	Closing Date	
Gauge	: 24/10/2016	HFL During 2019-20	: 29.160 m
		Corres. Discharge	: 570 (Estimated)
Discharge	: 24/10/2016	Date & Time of	: 18/09/2019
		occurrence	: 22.00 hrs.
Sediment	:		
Water Quality	:		

HFL Recorded so far in m : 29.160 dt 18-09-2019

Corresponding Discharge (cumecs) : 570 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2018-2019	68.93	27.630	20/08/2018	0.000		06/03/2019

Annual Runoff of Eddu Vagu at Munugodu

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2017-2018	27	30	57	1	1	2
2	2018-2019	71	20	91	2	1	3
3	2019-2020	228	67	294	8	2	10
Average		49	25	74	2	1	3
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : MUNUGODU (033-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : YEDDUVAGU

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000	25.890	0.413	25.830	0.116	26.300	0.994 *	26.520	8.791	26.950	35.04
2		0.000	25.890	0.413	25.870	0.277	26.350	2.046 *	26.530	8.738 *	26.750	19.04
3		0.000	25.880	0.395	25.880	0.301	26.400	5.517	26.530	9.086	26.670	16.98 *
4		0.000	25.840	0.000	25.920	0.038 *	26.390	5.329	26.560	10.46	26.610	11.66
5		0.000	25.810	0.000	25.860	0.231	26.320	4.334	26.610	12.09	26.540	9.003
6		0.000	25.800	0.000	25.900	0.341	26.285	4.066	26.650	15.64 *	26.530	8.441
7	26.140	1.850	25.800	0.000	25.860	0.230	26.250	3.826	26.595	11.36	26.530	8.535
8	25.980	0.750	25.790	0.000	25.840	0.209	26.250	0.309 *	26.560	10.28 *	26.530	8.838
9	25.880	0.446 *	25.770	0.000	25.810	0.000	26.230	3.369	26.620	13.02	26.530	8.778
10	25.860	0.379	25.760	0.000	25.800	0.000	26.240	0.218 *	26.640	13.64	26.500	7.314 *
11	25.820	0.000	25.760	0.000	25.780	0.000	26.230	3.261	26.460	7.281	26.465	7.361
12	25.810	0.000	25.750	0.000	25.740	0.000	26.240	3.570	26.650	15.40	26.450	5.212 *
13	25.800	0.000	25.740	0.000	25.730	0.000	26.250	3.834	26.590	11.95 *	26.420	4.116 #
14	25.810	0.000	25.870	0.000	25.935	0.529	26.295	4.370	27.080	58.06	26.450	5.212 #
15	25.800	0.000	25.820	0.000	25.810	0.000	26.370	2.567 *	26.950	43.22	26.450	5.212 #
16	25.800	0.000	25.990	0.771	27.530	123.4	27.200	73.90	26.760	25.31	26.450	5.212 #
17	25.800	0.000	25.880	0.308	27.410	105.2	26.900	38.14	26.680	19.67	26.470	6.012 *
18	25.780	0.000	25.830	0.000	26.740	27.71 *	29.160	570.7	26.660	18.23	26.460	5.605 #
19	25.780	0.000	25.800	0.000	25.890	0.370	27.200	73.90	27.100	60.59	26.600	11.25
20	25.780	0.000	26.170	2.080	26.460	6.968	26.820	30.56	27.550	126.2 *	26.700	14.96
21	25.770	0.000	25.860	0.265 *	26.240	3.012	26.595	11.43	26.930	41.16	26.660	12.49
22	25.790	0.000	25.975	0.713	26.380	5.011	26.650	15.64 *	26.820	30.55	26.600	9.554
23	25.790	0.000	25.870	0.279	26.320	3.965	26.760	25.31	27.130	64.48	26.630	12.42
24	25.830	0.000	25.830	0.000	26.540	8.655	26.710	21.92	26.860	34.26	26.600	12.53 *
25	25.830	0.000	25.915	0.352	26.390	7.015 *	27.160	68.46	26.840	32.39	26.630	12.42
26	26.055	1.682	25.850	0.236	26.300	4.051	27.020	50.72	26.560	10.29	26.590	13.56
27	25.975	0.932	25.840	0.000	26.285	3.818	27.250	80.94	26.520	8.250 *	26.590	13.13
28	25.910	0.548	25.830	0.000	26.230	3.023	26.980	47.26	26.530	8.851	26.580	11.81
29	25.900	0.483	25.850	0.233	26.280	3.818	26.580	11.38 *	26.570	11.06	26.590	13.24
30	25.900	0.499 *	25.830	0.120	26.265	3.800	26.530	8.983	26.640	12.02	26.590	13.51
31			25.835	0.151	26.290	4.030			27.010	52.42		
<u>Ten-Daily Mean</u>												
I Ten-Daily	25.965	0.343	25.823	0.122	25.857	0.174	26.302	3.001	26.582	11.31	26.614	13.36
II Ten-Daily	25.798	0.000	25.861	0.316	26.302	26.42	26.866	80.48	26.848	38.59	26.492	7.016
III Ten-Daily	25.875	0.414	25.862	0.214	26.320	4.564	26.824	34.20	26.765	27.79	26.606	12.47
<u>Monthly</u>												
Min.	25.770	0.000	25.740	0.000	25.730	0.000	26.230	0.218	26.460	7.281	26.420	4.116
Max.	26.140	1.850	26.170	2.080	27.530	123.4	29.160	570.7	27.550	126.2	26.950	35.04
Mean	25.858	0.252	25.849	0.217	26.165	10.2	26.664	39.23	26.732	25.96	26.571	10.95

Annual Runoff in MCM = 295 Annual Runoff in mm = 455

Peak Observed Discharge = 570.7 cumecs on 18/09/2019 Corres. Water Level :29.16 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : MUNUGODU (033-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : YEDDUVAGU

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	26.580	13.51 *	26.410	8.885	26.200	4.711	26.180	3.896 *	Not observed Due to lock-Down			0.000
2	26.600	13.60	26.430	9.180	26.120	2.945 *	26.050	1.972				0.000
3	26.750	19.04	26.420	9.077	26.000	1.257	26.000	1.393				0.000
4	26.770	20.50	26.480	10.96	25.970	1.232	25.960	0.933				0.000
5	26.700	16.26	26.550	12.59 *	25.950	0.889	25.940	0.889				0.000
6	26.590	13.37	26.480	11.08	25.950	0.899	25.880	0.480				0.000
7	26.570	13.19	26.440	9.509	25.940	0.819	25.870	0.425				0.000
8	26.540	12.29 *	26.450	9.678	26.000	1.257	26.130	3.095 *				0.000
9	26.460	10.23	26.420	9.088	26.050	2.001 *	26.190	4.238				0.000
10	26.500	11.11	26.430	9.225	26.220	4.914	26.030	1.763 *				0.000
11	26.500	11.06	26.440	9.480	26.510	11.51	25.960	0.944				0.000
12	26.520	11.98	26.400	8.483 *	26.470	10.56	25.890	0.575				0.000
13	26.510	11.66	26.370	7.482	26.380	7.931	25.940	0.874				0.000
14	26.520	12.25	26.350	6.966	26.300	6.310	25.970	1.041				0.000
15	26.480	10.58 *	26.350	7.290 *	26.250	5.358	25.990	1.333 *				0.000
16	26.460	10.47	26.350	7.082	26.070	2.252 *	26.000	1.378				0.000
17	26.460	10.42	26.290	6.158	25.990	1.245	26.010	1.526				0.000
18	26.510	12.00	26.210	4.795	25.950	0.914	25.980	1.208				0.000
19	26.510	11.92	26.240	4.976 *	25.900	0.583	25.930	0.852			26.060	1.950
20	26.510	11.89	26.250	5.495	25.880	0.541	25.860	0.470		0.000	26.110	2.265
21	26.520	12.25	26.230	5.089	25.960	0.941	25.860	0.478		0.000	26.080	2.082
22	26.500	11.13 *	26.260	5.889	26.000	1.332	25.780	0.053 *		0.000	26.030	1.507
23	26.480	11.09	26.300	6.323	26.100	2.657 *	25.780	0.000		0.000	25.910	0.649
24	26.500	11.25	26.380	8.019	26.130	3.190	25.780	0.000		0.000	25.840	0.248 *
25	26.490	10.85 *	26.340	6.760	26.220	4.648	Not observed Due to Lock-Down			0.000	25.800	0.103 *
26	26.500	11.23	26.340	7.062 *	26.250	5.303				0.000	25.800	0.000
27	26.520	12.26	26.380	8.020	26.320	6.500				0.000	25.780	0.000
28	26.480	10.56	26.380	7.824	26.320	6.512				0.000	25.770	0.000
29	26.480	10.58 *	26.390	8.253	26.340	6.721				0.000		0.000
30	26.490	11.14	26.410	8.872						0.000		0.000
31	26.470	10.83	26.360	7.423								0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	26.606	14.31	26.451	9.928	26.040	2.092	26.023	1.908		0.000		0.000
II Ten-Daily	26.498	11.42	26.325	6.821	26.170	4.721	25.953	1.020		0.000	26.085	0.421
III Ten-Daily	26.494	11.20	26.343	7.230	26.182	4.201	25.800	0.048		0.000	25.876	0.417
<u>Monthly</u>												
Min.	26.460	10.23	26.210	4.795	25.880	0.541	25.780	0.000		0.000	25.770	0.000
Max.	26.770	20.50	26.550	12.59	26.510	11.51	26.190	4.238		0.000	26.110	2.265
Mean	26.531	12.27	26.372	7.968	26.129	3.653	25.957	0.962		0	25.918	0.284

Peak Computed Discharge = 126.2 cumecs on 20/10/2019

Corres. Water Level :27.55 m

Lowest Computed Discharge = 0.038 cumecs on 04/08/2019

Corres. Water Level :25.92 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

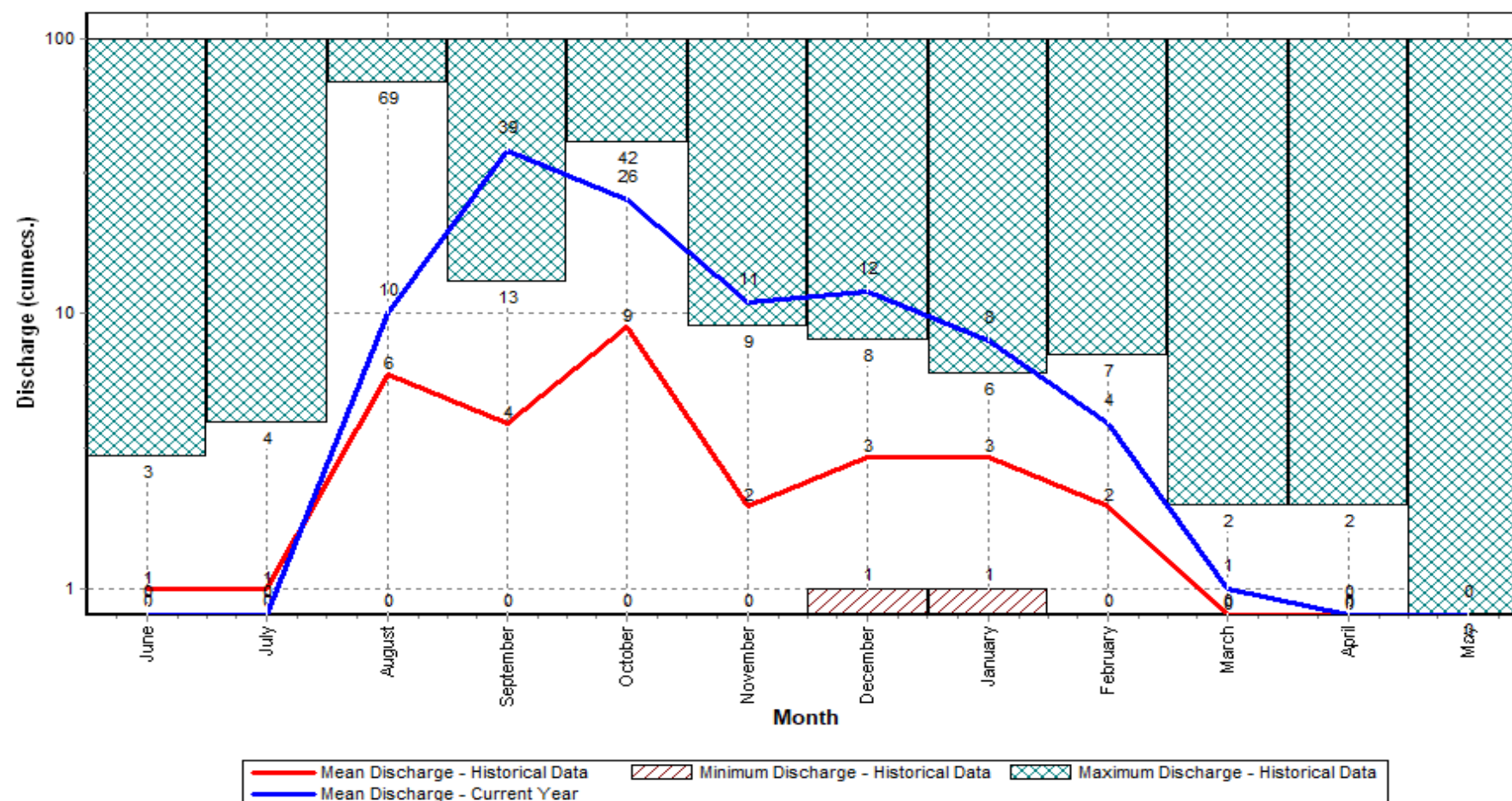
Station Name : MUNUGODU (033-LKDHYD)

Data considered : 2018-2020

Division : Lower Krishna Divn., Hyderabad

Local River : YEDDUVAGU

Sub-Division : Lower Krishna SD2, Vijayawada



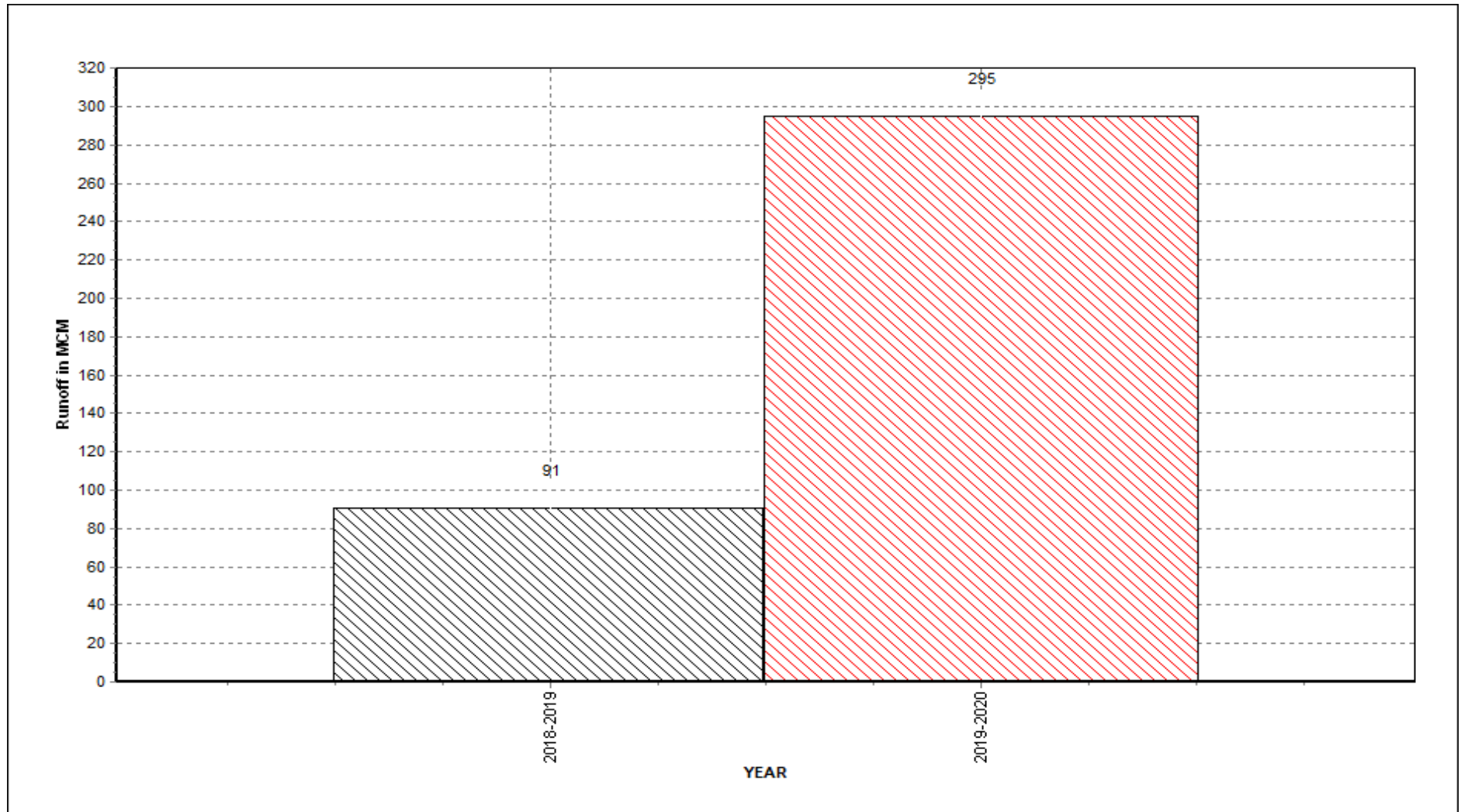
Annual Runoff Values for the period: 2018 - 2020

Station Name : MUNUGODU (033-LKDHYD)

Local River : YEDDUVAGU

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Note: Missing values have not been considered while arriving at Annual Runoff

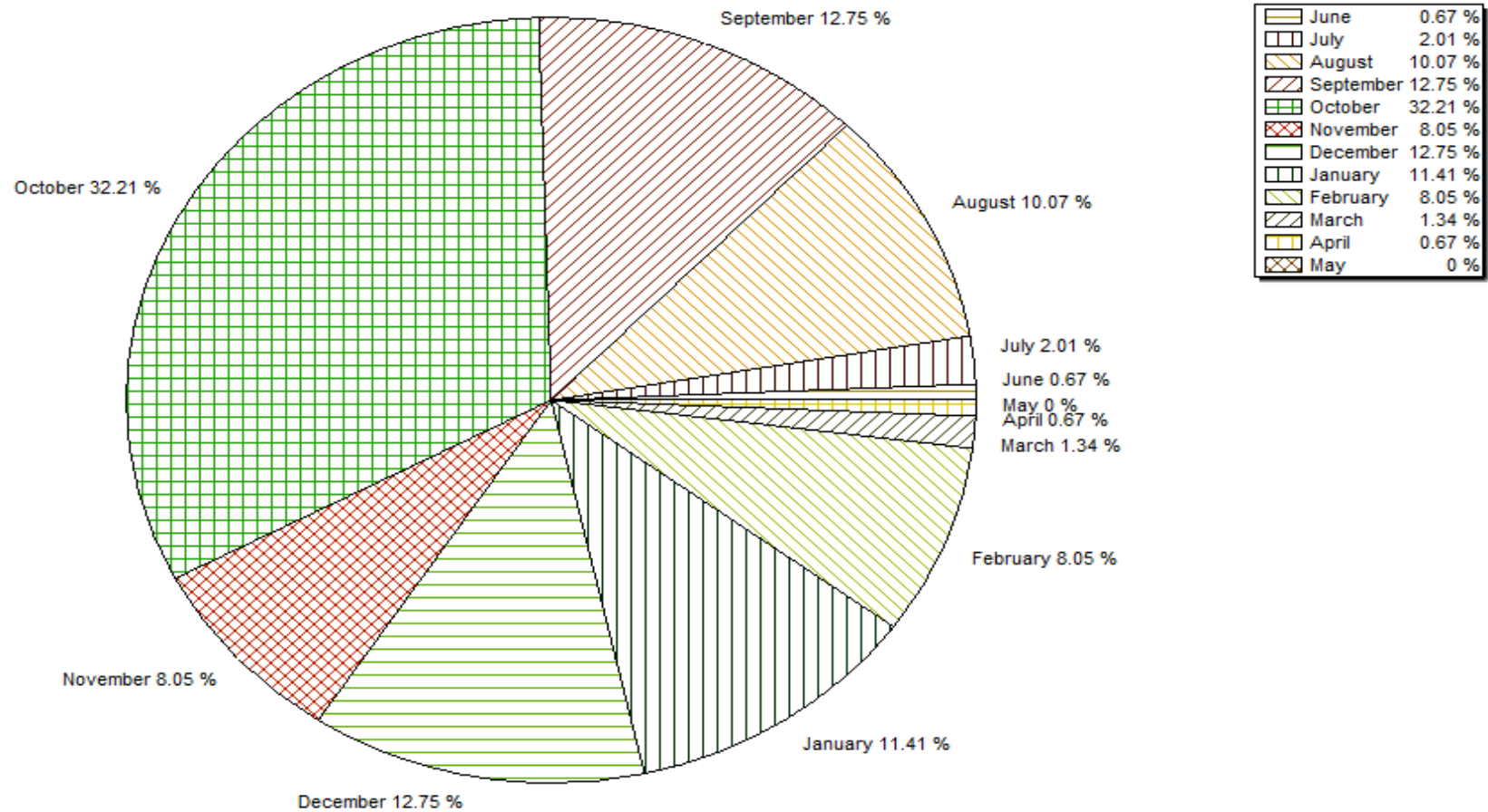
Monthly Average Runoff based on period : 2018-2019

Station Name : MUNUGODU (033-LKDHYD)

Local River : YEDDUVAGU

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



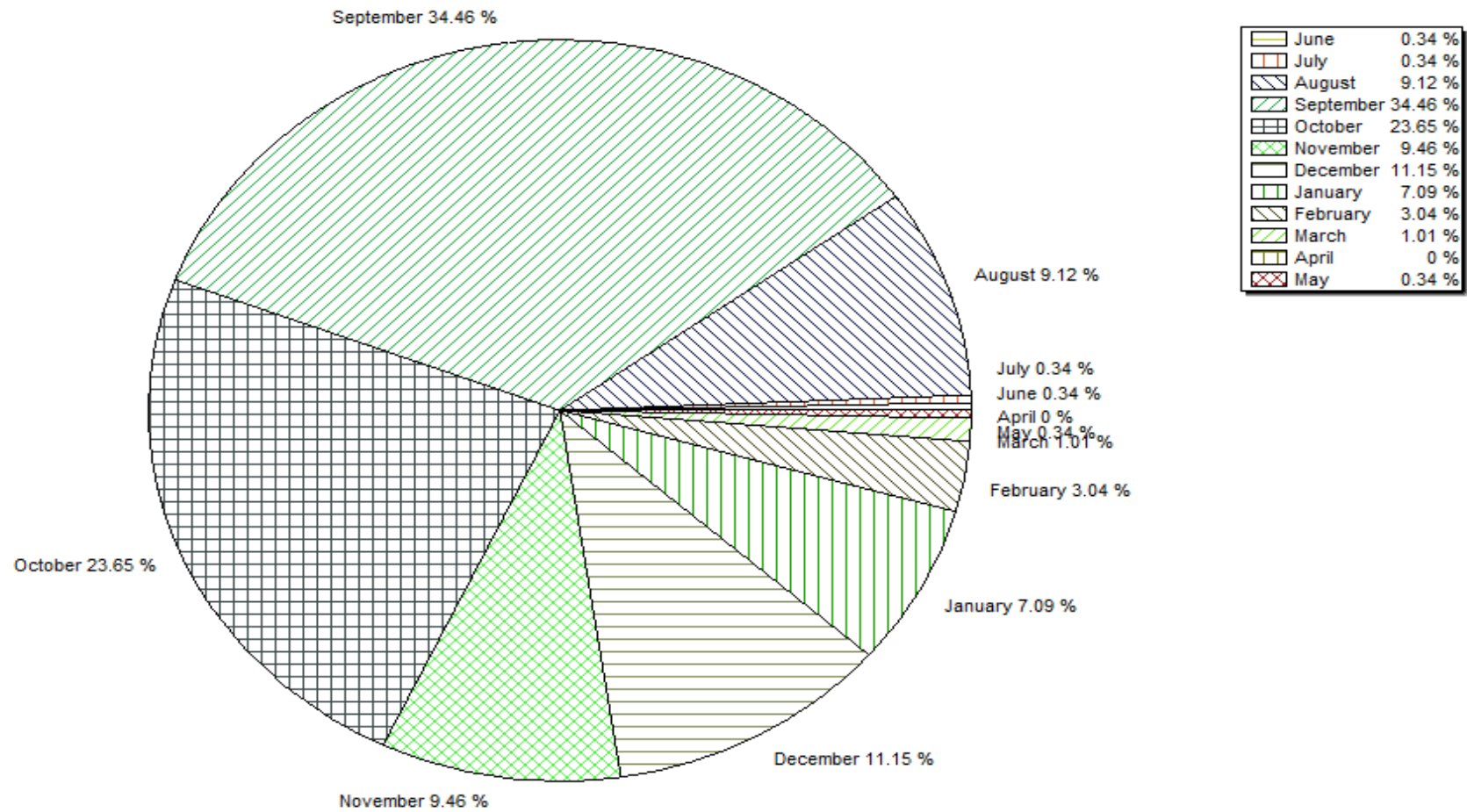
Monthly Runoff for the Year : 2019-2020

Station Name : MUNUGODU (033-LKDHYD)

Local River : YEDDUVAGU

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



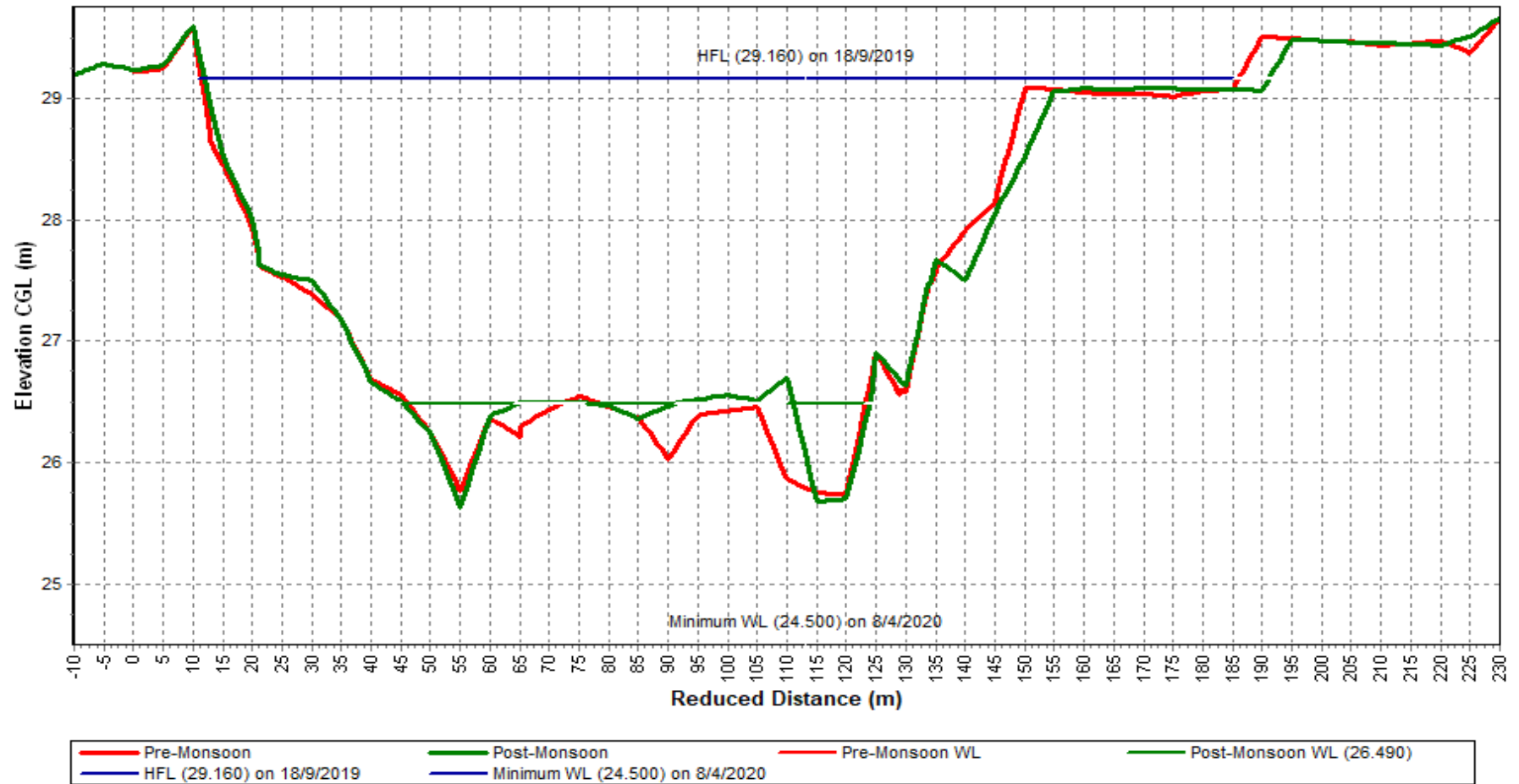
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : MUNUGODU (033-LKDHYD)

Local River : YEDDUVAGU

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Post Monsoon Cross-Section Difference Due to High Flood

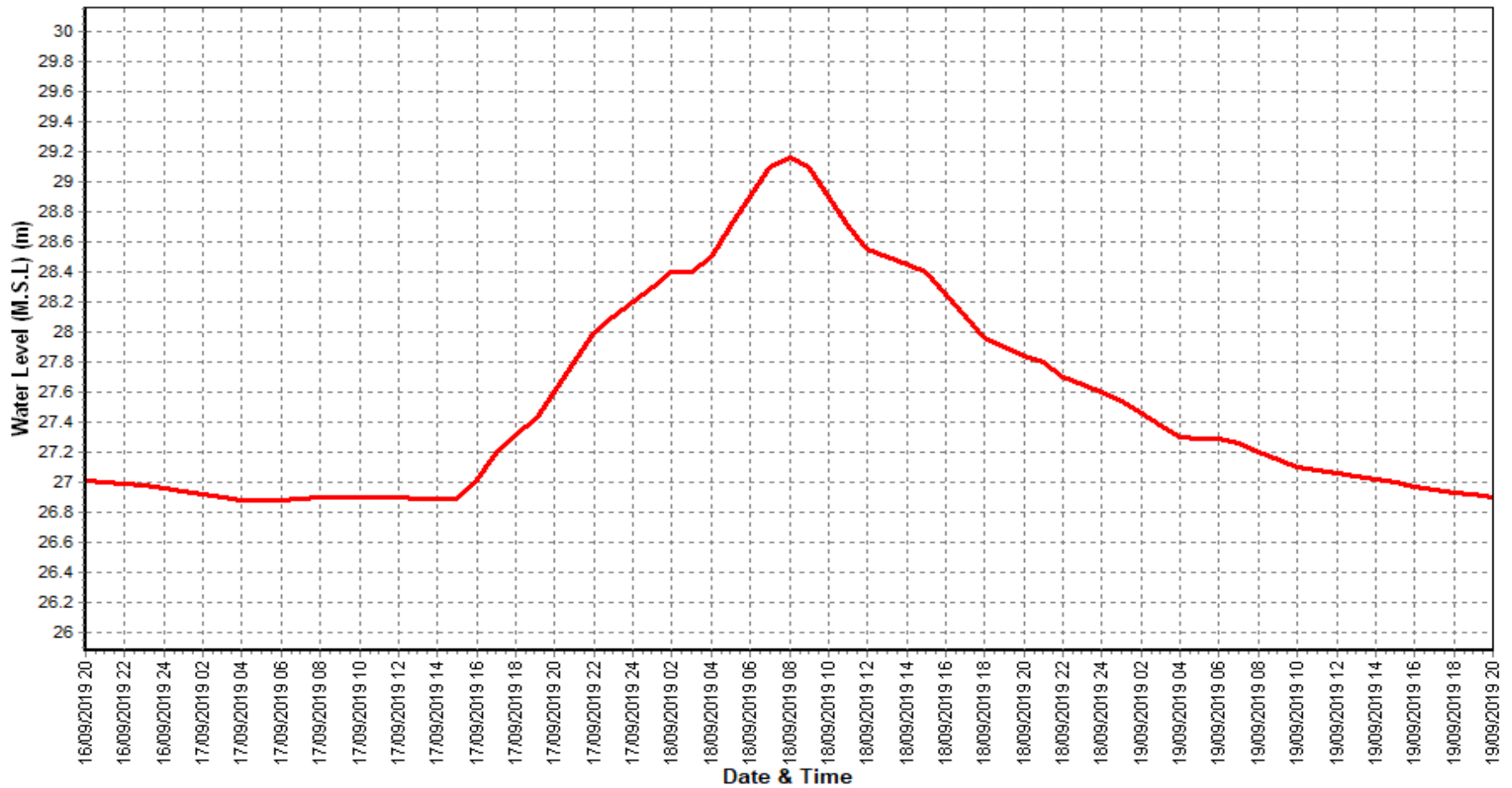
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : MUNUGODU (033-LKDHYD)

Local River : YEDDUVAGU

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



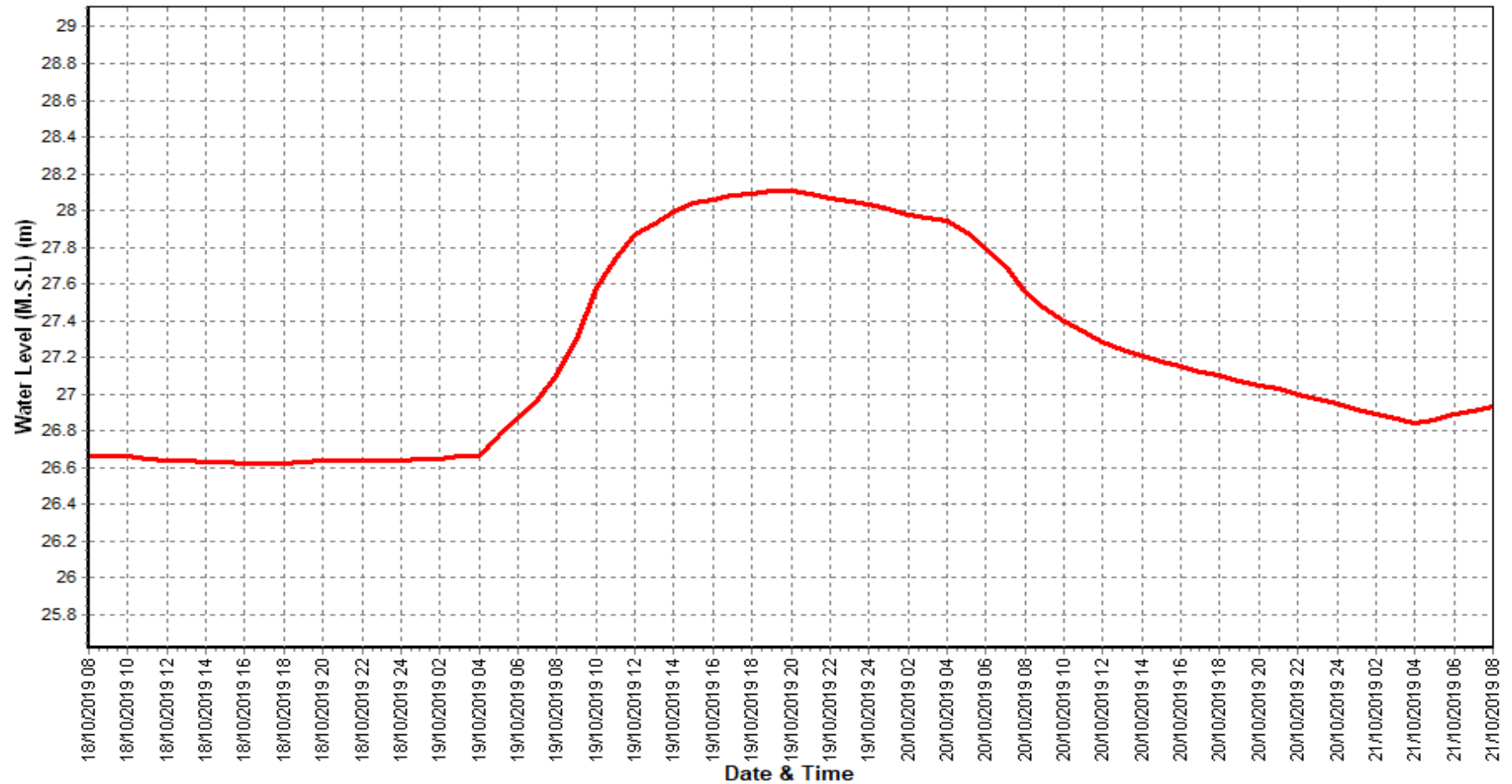
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : MUNUGODU (033-LKDHYD)

Local River : YEDDUVAGU

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



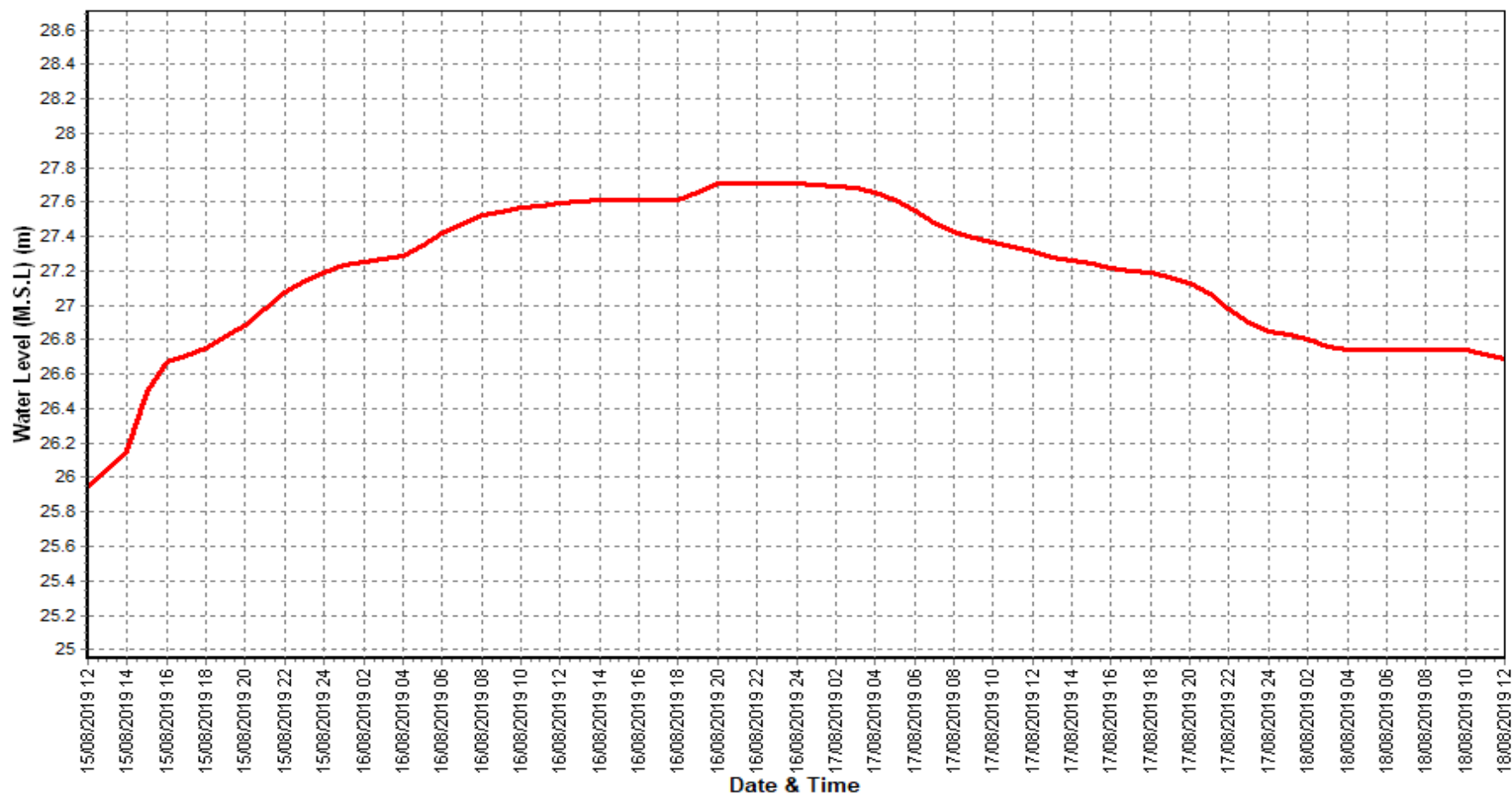
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : MUNUGODU (033-LKDHYD)

Local River : YEDDUVAGU

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



HISTORY SHEET

Water Year : 2019-2020

Site : Paleru Bridge

Code : AKC00D3

State : Andhra Pradesh

District : Krishna

Basin : Krishna

Independent River : Krishna

Tributary : Paleru

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Paleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada

Drainage Area : 2928 Sq. Km.

Bank : Right

Latitude : 16°56'56"

Longitude : 80°02'57"

Zero of Gauge (m) : 73.232 (m.s.l)
 71.367 (m.s.l)
 71.857 (m.s.l)
 70.357 (m.s.l)
 70.357 (m.s.l)

01/06/1964 - 20/09/1964
 21/09/1964 - 31/05/1970
 01/06/1970 - 31/10/1984
 01/11/1984
 01/01/2000 - 31/12/2220

Opening Date

Closing Date

Gauge : 18/05/1964

HFL During 2019-20 : 73.217 m

Corres. Discharge : 58 (Estimated)

Discharge : 01/07/1964

Date & Time of

occurrence : 19/09/2019

Sediment : 01/03/2014

Water Quality : 01/06/1992

HFL Recorded so far in m : 78.877 dt 23-07-1989

Corresponding Discharge (cumecs) : 1086*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	461.0	74.464	14/07/1965	0.120	71.742	10/07/1965
1966-1967	18.80	72.372	25/07/1966	0.000	71.627	31/05/1967
1967-1968	129.4	73.202	25/07/1967	0.000	71.777	13/06/1967
1968-1969	427.0	73.937	20/05/1969	0.030	71.757	15/06/1968
1969-1970	284.8	73.777	14/12/1969	0.161	71.597	07/07/1969
1970-1971	825.3	75.507	23/08/1970	0.400	72.282	19/06/1970
1971-1972	51.00	73.147	03/10/1971	0.100	72.207	21/05/1972
1972-1973	28.00	73.207	05/11/1972	0.040	72.437	11/03/1973
1973-1974	45.00	73.462	03/10/1973	0.100	72.362	01/06/1973
1974-1975	442.8	74.947	16/10/1974	0.100	72.382	23/07/1974
1975-1976	492.6	74.965	09/09/1975	0.700	72.110	25/06/1975
1976-1977	460.3	74.872	26/08/1976	0.300	72.207	10/04/1977
1977-1978	139.5	73.757	04/10/1977	0.200	72.187	17/07/1977
1978-1979	1165	76.132	16/08/1978	0.800	72.057	23/05/1979
1979-1980	208.7	74.077	28/09/1979	0.200	71.992	16/07/1979

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1980-1981	109.4	73.522	02/08/1980	0.400	72.097	31/05/1981
1981-1982	223.8	74.137	04/08/1981	0.300	72.077	17/04/1982
1982-1983	183.7	73.997	12/08/1982	0.100	72.167	31/05/1983
1983-1984	2250	78.002	06/10/1983	0.200	72.067	13/07/1983
1984-1985	202.9	73.697	12/10/1984	0.200	71.607	08/07/1984
1985-1986	587.6	75.332	14/08/1985	0.600	71.767	09/07/1985
1986-1987	406.4	74.465	13/08/1986	0.500	71.972	08/07/1986
1987-1988	104.0	73.322	13/11/1987	0.649	72.027	30/05/1988
1988-1989	1086	76.282	20/09/1988	1.000	72.052	15/06/1988
1989-1990	1564	78.447	24/07/1989	1.000	72.017	06/08/1989
1990-1991	537.6	74.807	03/10/1990	3.745	72.007	05/07/1990
1991-1992	378.3	74.286	22/09/1991	0.867	71.902	04/05/1992
1992-1993	69.63	73.102	02/09/1992	0.275	71.792	31/07/1992
1993-1994	154.3	73.615	10/10/1993	1.749	71.958	24/06/1993
1994-1995	348.7	74.357	06/10/1994	0.684	71.912	18/07/1994
1995-1996	448.9	74.807	19/10/1995	0.387	71.722	07/08/1995
1996-1997	220.7	74.057	28/08/1996	0.274	71.772	08/08/1996
1997-1998	130.2	73.552	24/09/1997	0.097	71.717	12/08/1997
1998-1999	344.6	74.652	16/10/1998	0.376	71.727	22/07/1998
1999-2000	174.2	74.027	29/09/1999	0.269	71.727	17/01/2000
2000-2001	592.3	75.407	24/08/2000	0.287	71.797	31/03/2001
2001-2002	148.7	73.572	30/09/2001	0.038	71.757	04/09/2001
2002-2003	160.0	73.657	13/10/2002	0.000	71.147	08/03/2003
2003-2004	11.13	72.487	08/08/2003	0.000		20/04/2004
2004-2005	24.03	72.657	22/09/2004	0.004	71.517	03/09/2004
2005-2006	665.7	75.607	22/09/2005	0.010	71.667	22/06/2005
2006-2007	276.0	74.277	20/09/2006	0.008	71.707	21/07/2006
2013-2014	7.192	72.357	10/05/2014	0.493	71.657	28/03/2014
2014-2015	158.2	73.682	27/10/2014	0.000	71.457	26/07/2014
2015-2016	33.60	73.357	19/06/2015	0.000	71.257	16/01/2016
2016-2017	22.99	72.452	24/09/2016	0.000		31/05/2017
2017-2018	12.65	72.117	28/04/2018	0.000	71.517	03/11/2017
2018-2019	216.1	74.672	20/08/2018	0.000	71.367	07/08/2018

Annual Runoff of Paleru at Paleru Bridge

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966	176	6	182	6	0	6
2	1966-1967	20	3	23	1	0	1
3	1967-1968	118	3	121	4	0	4
4	1968-1969	9	72	81	0	3	3
5	1969-1970	212	113	324	7	4	11
6	1970-1971	407	25	432	14	1	15
7	1971-1972	54	15	69	2	1	2
8	1972-1973	47	13	60	2	0	2
9	1973-1974	109	21	130	4	1	5
10	1974-1975	302	108	410	11	4	14
11	1975-1976	786	146	932	28	5	33
12	1976-1977	681	24	705	24	1	25
13	1977-1978	286	128	414	10	5	15
14	1978-1979	808	41	849	29	1	30
15	1979-1980	219	274	494	8	10	17
16	1980-1981	389	37	426	14	1	15
17	1981-1982	373	30	404	13	1	14
18	1982-1983	279	72	352	10	3	12
19	1983-1984	832	75	907	29	3	32
20	1984-1985	250	144	395	9	5	14
21	1985-1986	405	58	463	14	2	16
22	1986-1987	340	106	446	12	4	16
23	1987-1988	213	63	276	8	2	10
24	1988-1989	1054	130	1184	37	5	42
25	1989-1990	898	191	1089	32	7	38
26	1990-1991	486	201	687	17	7	24
27	1991-1992	403	89	492	14	3	17
28	1992-1993	214	153	367	8	5	13
29	1993-1994	281	153	434	10	5	15
30	1994-1995	419	176	596	15	6	21
31	1995-1996	320	98	418	11	3	15
32	1996-1997	348	192	540	12	7	19

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	268	94	362	9	3	13
34	1998-1999	558	178	735	20	6	26
35	1999-2000	304	58	362	11	2	13
36	2000-2001	504	46	550	18	2	19
37	2001-2002	111	99	210	4	4	7
38	2002-2003	39	1	39	1	0	1
39	2003-2004	12	2	14	0	0	0
40	2004-2005	34	49	83	1	2	3
41	2005-2006	486	187	673	17	7	24
42	2006-2007	268	146	414	9	5	15
43	2007-2008	Site was down graded wef 01-06-2007 and again upgraded wef 01-03-2014.					
44	2008-2009						
45	2009-2010						
46	2010-2011						
47	2011-2012						
48	2012-2013						
49	2013-2014		22	22		1	1
50	2014-2015	143	56	199	5	2	7
51	2015-2016	34	1	35	1	0	1
52	2016-2017	19	2	21	1	0	1
53	2017-2018	43	34	78	2	1	3
54	2018-2019	145	30	174	5	1	6
55	2019-2020	155	55	210	5	2	7
Average		313	83	389	11	3	14
75% Dependable flow (MCM)				126			
90 % Dependable flow (MCM)				35			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Paleru Bridge (AKC00D3)

Division : Lower Krishna Divn., Hyderabad

Local River : Paleru

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	71.757	2.160	71.717	1.140	71.667	0.804	71.977	7.657 *	72.347	22.13	72.197	15.66
2	71.717	1.760 *	71.707	1.111	71.657	0.747	72.257	17.68 *	72.217	16.18 *	72.207	15.93
3	71.707	1.710	71.707	1.101	71.677	0.825	72.657	34.08	72.057	10.29	72.237	16.93 *
4	71.687	1.536	71.697	0.985	71.657	0.995 *	72.657	33.95	72.117	11.13	72.187	15.02
5	71.677	1.456 *	71.687	0.921	71.667	0.811	72.437	25.62	72.322	18.79	72.197	15.62
6	71.667	1.473	71.667	0.803	71.712	1.132	72.257	18.22	72.317	19.97 *	72.217	16.23
7	71.657	1.455	71.657	0.670 *	71.677	0.800	72.197	15.87	72.227	16.02	72.207	15.92
8	71.657	1.448	71.637	0.580	71.767	2.431	72.107	12.16 *	72.157	13.96 *	72.077	10.70
9	71.647	1.278 *	71.637	0.567	71.867	5.222	72.057	9.966	72.047	9.830	72.037	9.703
10	71.687	1.536	71.627	0.544	71.857	5.107	72.007	8.667 *	72.197	15.66	71.997	8.329 *
11	71.677	1.417	71.617	0.478	71.737	2.228 *	71.987	8.181	72.057	10.41	72.007	9.385
12	71.687	1.530	71.607	0.468	71.637	0.984 *	71.977	7.595	72.067	10.61	71.997	8.329 *
13	71.697	1.706	71.597	0.423	71.687	0.943	72.007	8.875	72.327	20.35 *	71.957	7.538
14	71.697	1.418	71.597	0.456 *	71.607	0.468	71.997	8.446	72.317	18.56	71.967	7.571
15	71.677	1.360	71.597	0.456	71.567	0.000	72.027	9.351 *	72.307	17.54	72.007	9.436
16	71.667	1.392 *	71.587	0.411	71.547	0.000	72.227	16.36	72.217	16.03	72.077	10.17
17	71.657	1.396	71.587	0.411	71.537	0.000	72.317	21.67	72.257	18.20	71.977	7.658 *
18	71.667	1.421	71.587	0.404	71.527	0.000	72.467	26.46	72.307	17.62	72.007	9.446
19	71.667	1.395	71.557	0.000	71.517	0.000	73.072	46.72	72.427	26.87	71.997	9.226
20	71.657	1.345	71.537	0.000	71.537	0.000	72.777	38.90	72.737	36.97 *	72.087	10.38
21	71.647	1.306	71.537	0.000	71.717	1.138	72.577	31.29	72.827	43.48	72.087	10.33
22	71.647	1.324	71.537	0.000	72.387	24.59	72.417	23.87 *	72.852	43.97	72.027	9.368
23	71.637	1.228 *	71.527	0.000	72.607	32.57	72.357	21.64	72.867	43.88	72.017	9.350
24	71.617	1.153	71.527	0.000	72.297	20.29	72.312	18.36	72.657	35.06	71.987	7.992 *
25	71.677	1.385	71.527	0.000	72.197	14.40 *	72.257	18.07	72.577	30.19	71.967	7.638
26	71.697	1.678	71.527	0.000	72.457	26.94	72.237	16.27	72.357	19.10	71.957	6.824
27	71.697	1.663	71.577	0.000	72.257	18.73	72.542	28.43	72.307	19.58 *	71.947	6.415
28	71.677	1.367	71.587	0.412 *	72.037	9.515	72.697	36.65	72.167	14.01	71.957	6.776
29	71.657	1.359	71.597	0.451	71.907	5.756	72.527	28.28 *	72.067	10.67	71.947	6.456
30	71.657	1.333 *	71.697	0.992	71.817	4.882	72.372	24.33	72.037	8.825	71.967	7.812
31			71.687	0.906	71.877	5.274			72.157	13.90		
Ten-Daily Mean												
I Ten-Daily	71.686	1.581	71.674	0.842	71.721	1.887	72.261	18.39	72.201	15.40	72.156	14.00
II Ten-Daily	71.675	1.438	71.587	0.351	71.590	0.462	72.285	19.26	72.302	19.32	72.008	8.914
III Ten-Daily	71.661	1.379	71.575	0.251	72.142	14.92	72.430	24.72	72.443	25.70	71.986	7.896
Monthly												
Min.	71.617	1.153	71.527	0.000	71.517	0.000	71.977	7.595	72.037	8.825	71.947	6.415
Max.	71.757	2.160	71.717	1.140	72.607	32.57	73.072	46.72	72.867	43.97	72.237	16.93
Mean	71.674	1.466	71.611	0.474	71.828	6.051	72.325	20.79	72.319	20.32	72.050	10.27

Annual Runoff in MCM = 211 Annual Runoff in mm = 72

Peak Observed Discharge = 46.72 cumecs on 19/09/2019 Corres. Water Level :73.072 m

Lowest Observed Discharge = 0.000 cumecs on 19/07/2019 Corres. Water Level :71.557 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Paleru Bridge (AKC00D3)

Division : Lower Krishna Divn., Hyderabad

Local River : Paleru

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	71.947	6.971 *	71.627	0.564	71.757	3.144	71.857	4.845 *	Not observed Due to Lock-Down			
2	71.957	7.453	71.627	0.557	71.777	3.153 *	71.867	5.059				
3	72.017	9.213	71.617	0.456	71.797	3.433	71.857	4.902				
4	71.997	9.164	71.637	0.625	71.777	3.449	71.827	4.255				
5	72.007	9.223	71.657	0.964 *	71.807	3.733 #	71.807	3.782				
6	72.017	9.211	71.657	0.786	71.797	3.237	71.837	4.366				
7	71.987	8.684	71.647	0.752	71.777	3.128	71.877	5.358				
8	71.957	7.222 *	71.637	0.619	71.777	3.460	71.937	6.723 *				
9	71.897	6.349	71.637	0.611	71.807	3.765 *	72.007	7.994				
10	71.907	6.439	71.627	0.611	71.987	7.980	72.037	9.333 *				
11	71.927	6.768	71.627	0.556	72.207	15.77	72.047	8.676				
12	71.917	6.432	71.707	1.825 *	72.107	10.83	72.027	8.609				
13	71.897	6.418	71.737	2.304	72.087	10.11	72.007	7.906				
14	71.917	6.315	71.727	2.180	72.057	9.100	72.027	8.572				
15	71.897	5.761 *	71.747	2.566 *	71.987	7.705	72.007	8.520 *				
16	71.877	5.179	71.767	3.249	71.857	4.845 *	71.907	6.001				
17	71.817	4.130	71.757	2.901	71.977	7.834	71.927	6.347				
18	71.787	3.404	71.987	8.407	71.757	3.202	71.887	5.875				
19	71.767	3.295	71.997	8.254 *	71.787	3.115	71.877	5.372				
20	71.757	3.136	72.007	8.604	71.857	5.152	71.907	6.081				
21	71.747	3.014	72.027	9.267	71.887	5.298	71.897	5.985				
22	71.747	2.566 *	72.007	8.703	71.877	5.116 #	71.907	5.997 *				
23	71.727	2.251	71.987	8.015	71.857	5.154 *	71.947	6.912				
24	71.727	2.249	71.997	8.545	71.827	4.103 #	72.027	8.103				
25	71.707	1.825 *	71.957	7.137	71.807	3.691	72.047	9.610 *				
26	71.677	1.009	71.917	6.236 *	71.787	3.523	Not observed due to Lock-Down					
27	71.657	0.788	71.857	5.523	71.807	3.680						
28	71.667	0.882	71.807	4.130	71.857	5.089 #						
29	71.657	0.964 *	71.797	4.039	71.877	5.129 *						
30	71.637	0.662	71.777	3.567								
31	71.637	0.630	71.757	2.960			71.957	7.222 *				
Ten-Daily Mean												
I Ten-Daily	71.969	7.993	71.637	0.654	71.806	3.848	71.891	5.662				
II Ten-Daily	71.856	5.084	71.806	4.085	71.968	7.766	71.962	7.196				
III Ten-Daily	71.690	1.531	71.899	6.193	71.843	4.532	71.977	7.692				
Monthly												
Min.	71.637	0.630	71.617	0.456	71.757	3.115	71.807	3.782				
Max.	72.017	9.223	72.027	9.267	72.207	15.77	72.047	9.610				
Mean	71.833	4.762	71.784	3.726	71.873	5.411	71.944	6.877				

Peak Computed Discharge = 36.97 cumecs on 20/10/2019

Corres. Water Level :72.737 m

Lowest Computed Discharge = 0.412 cumecs on 28/07/2019

Corres. Water Level :71.58701 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

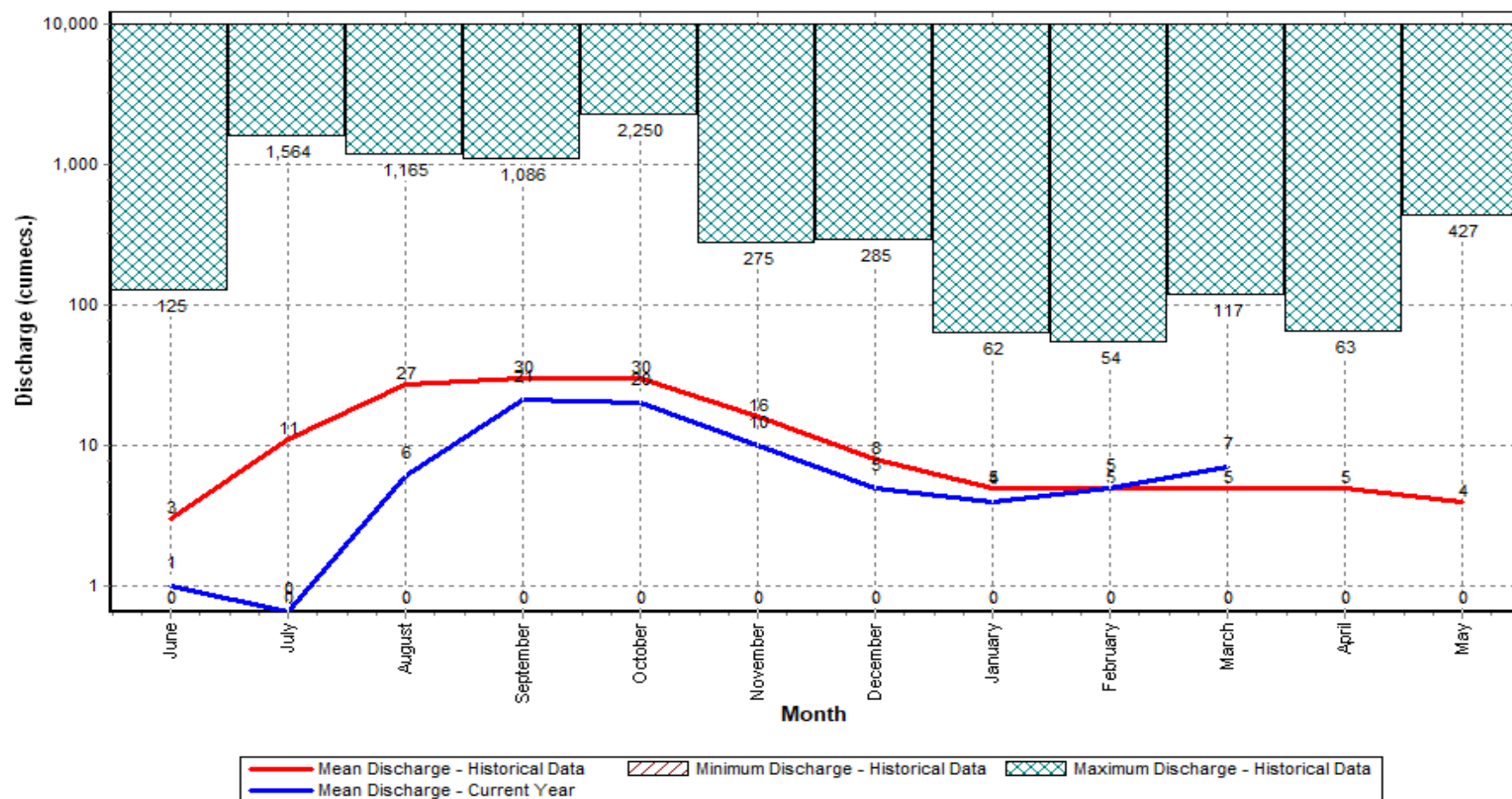
Station Name : Paleru Bridge (AKC00D3)

Data considered : 1965-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Paleru

Sub-Division : Lower Krishna SD2, Vijayawada



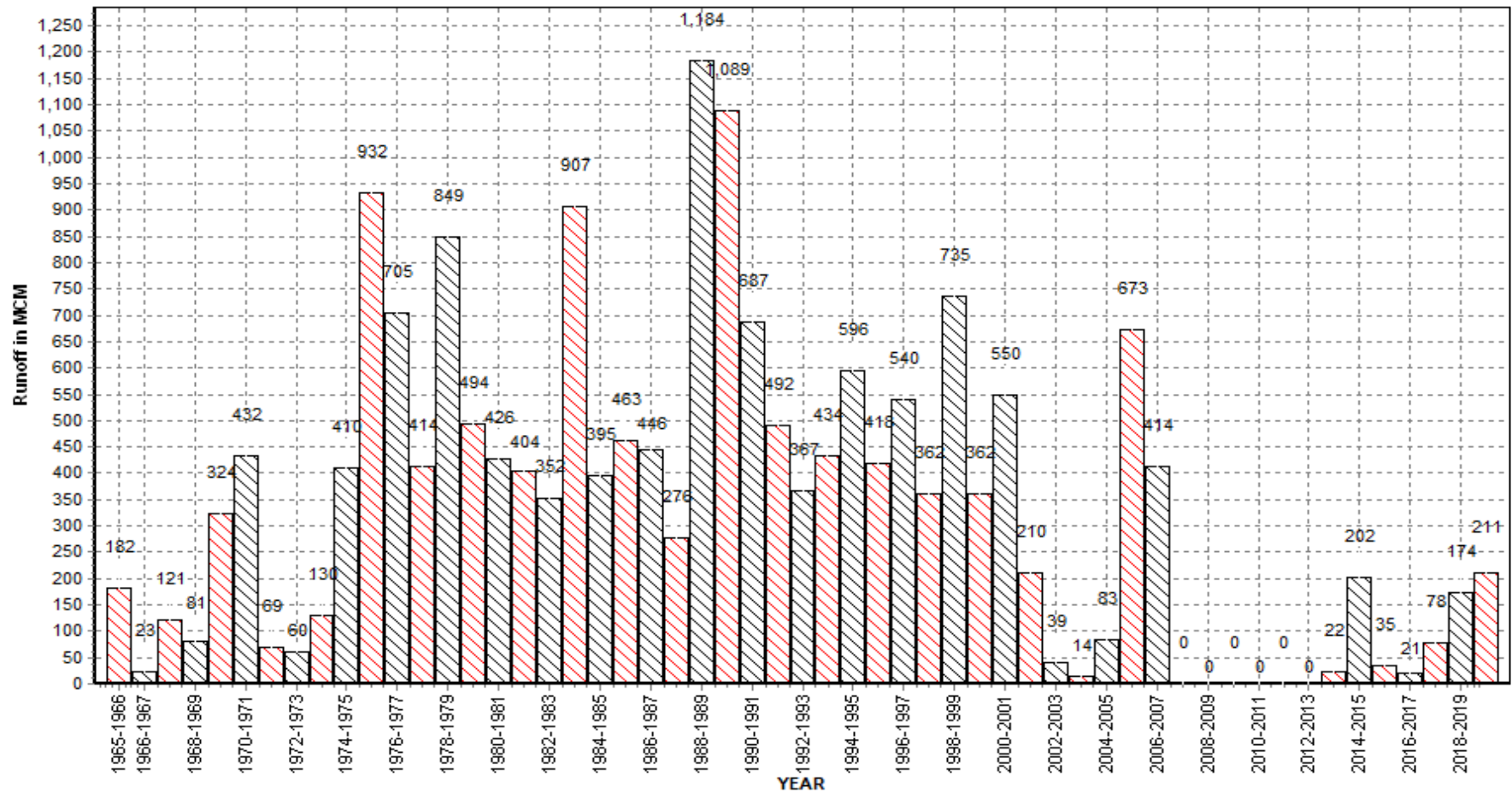
Annual Runoff Values for the period: 1965 - 2020

Station Name : Paleru Bridge (AKC00D3)

Local River : Paleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Note: Missing values have not been considered while arriving at Annual Runoff

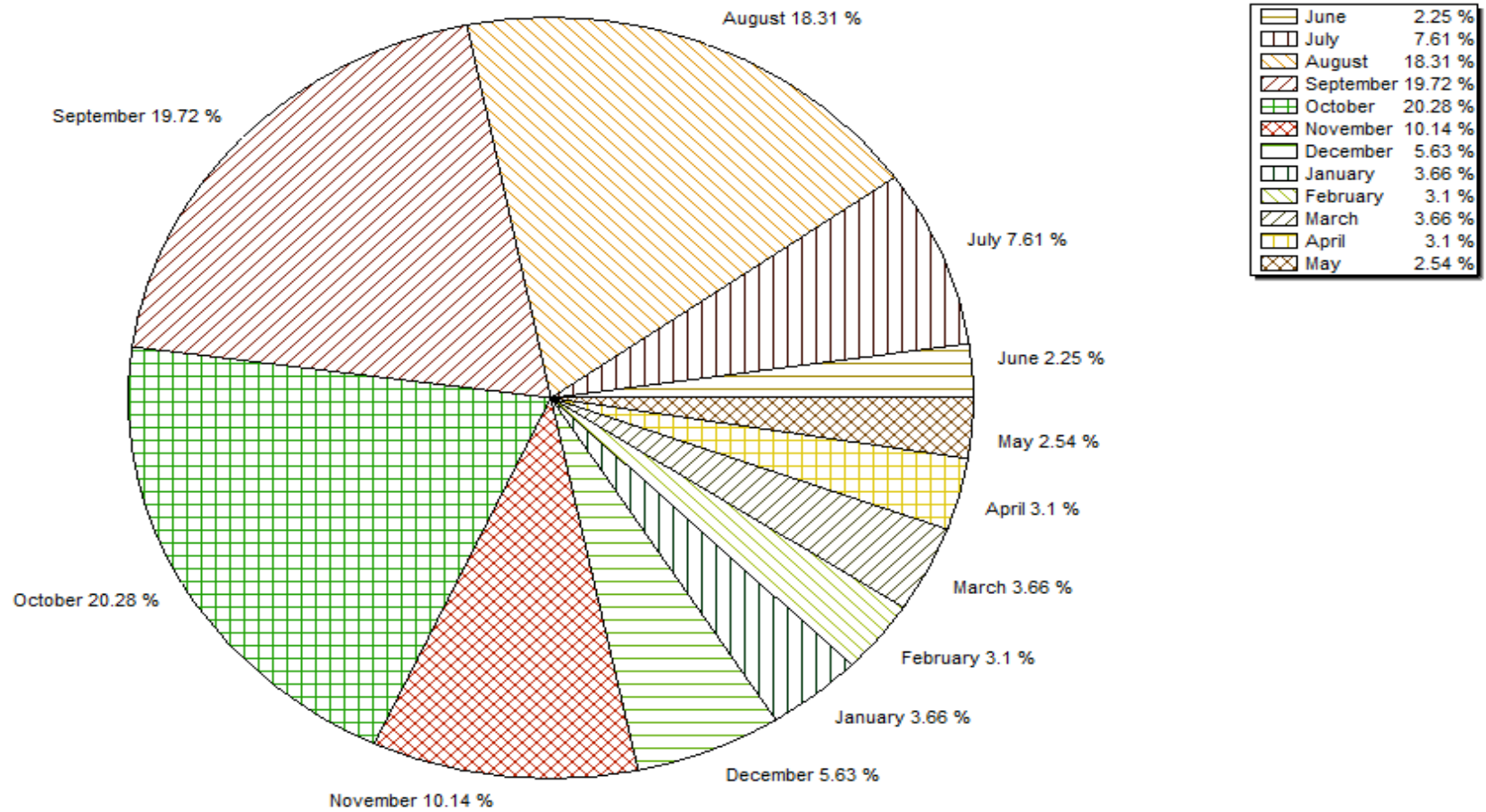
Monthly Average Runoff based on period : 1965-2019

Station Name : Paleru Bridge (AKC00D3)

Local River : Paleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



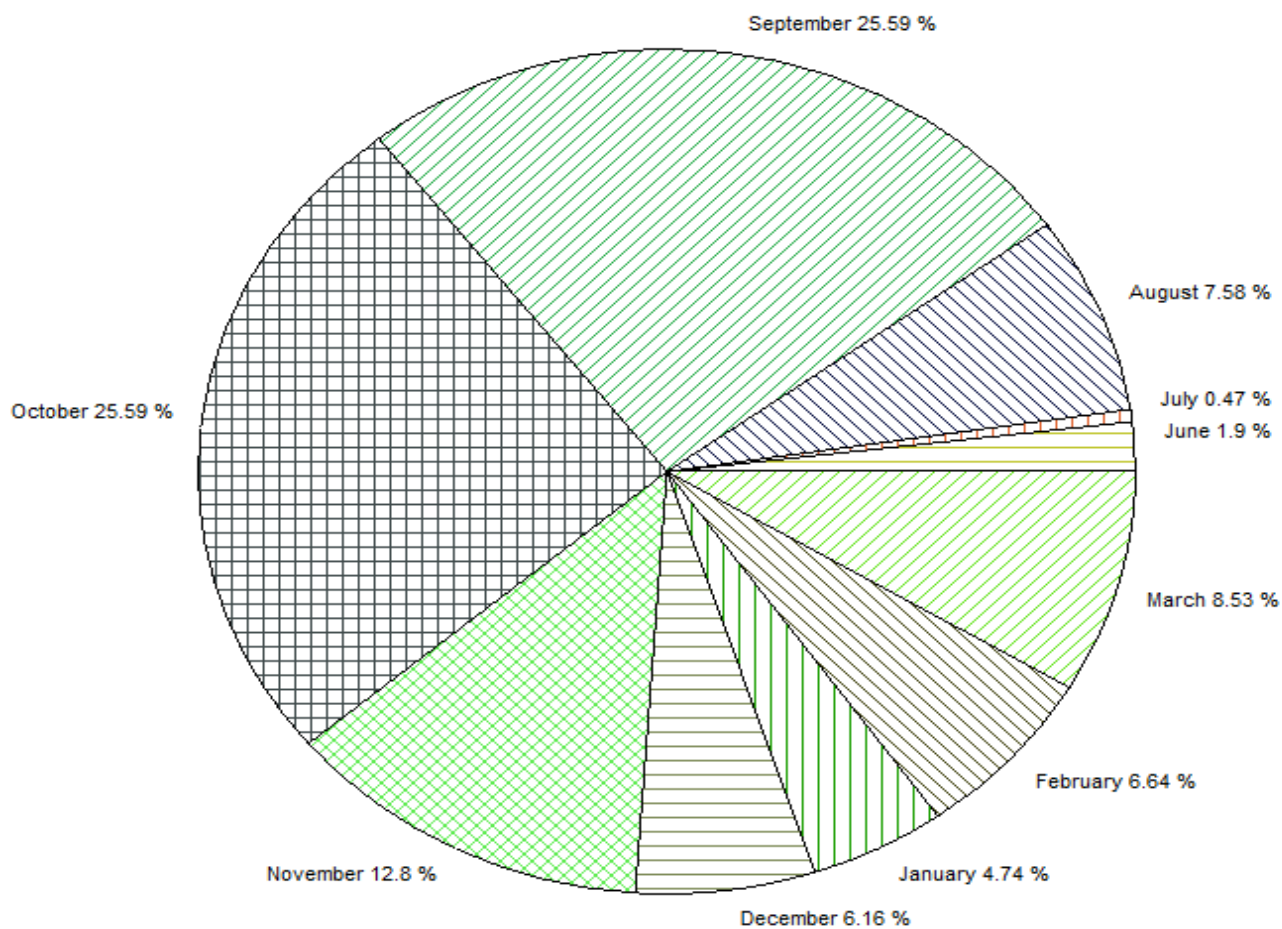
Monthly Runoff for the Year : 2019-2020

Station Name : Paleru Bridge (AKC00D3)

Local River : Paleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



June	1.9 %
July	0.47 %
August	7.58 %
September	25.59 %
October	25.59 %
November	12.8 %
December	6.16 %
January	4.74 %
February	6.64 %
March	8.53 %

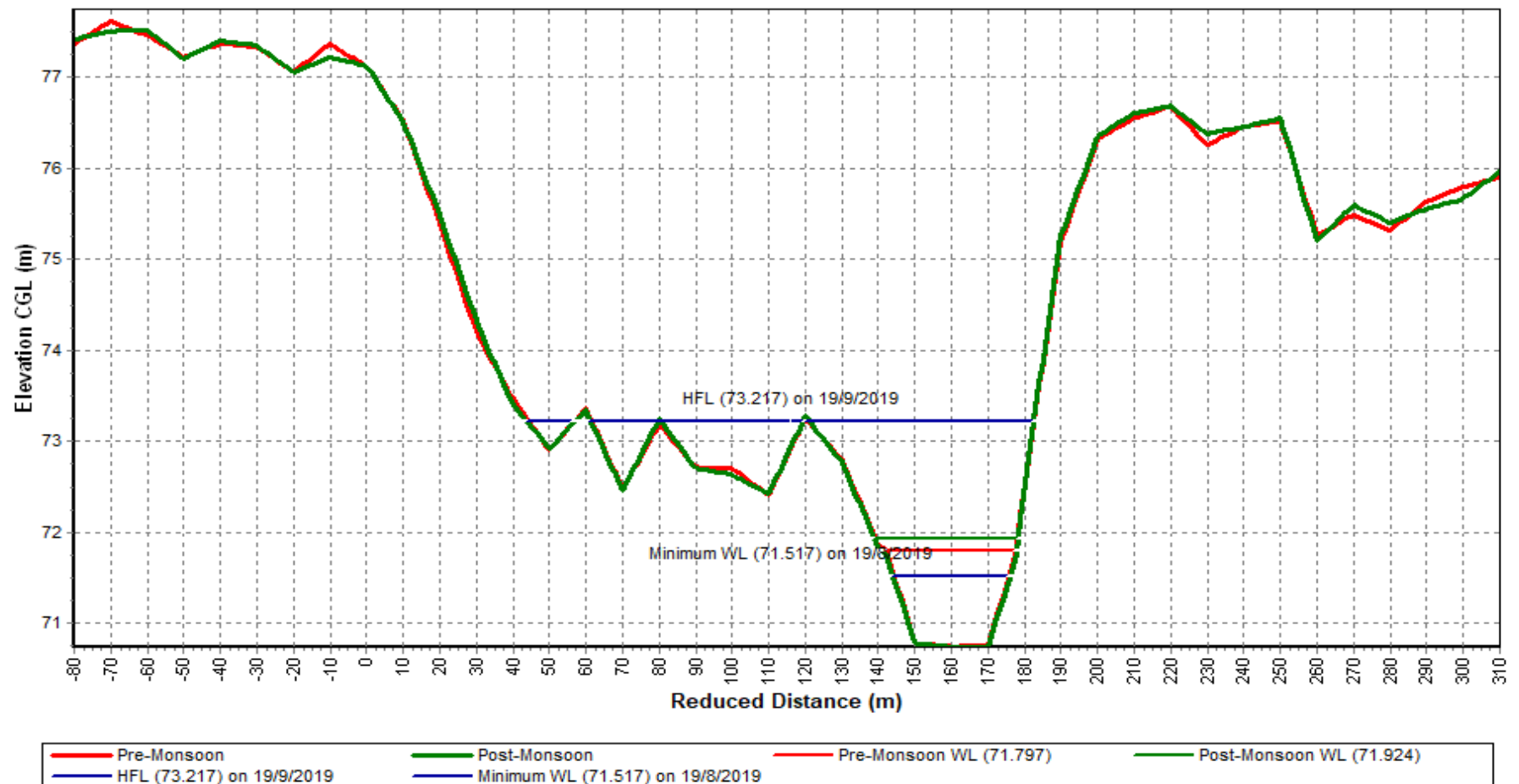
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Paleru Bridge (AKC00D3)

Local River : Paleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



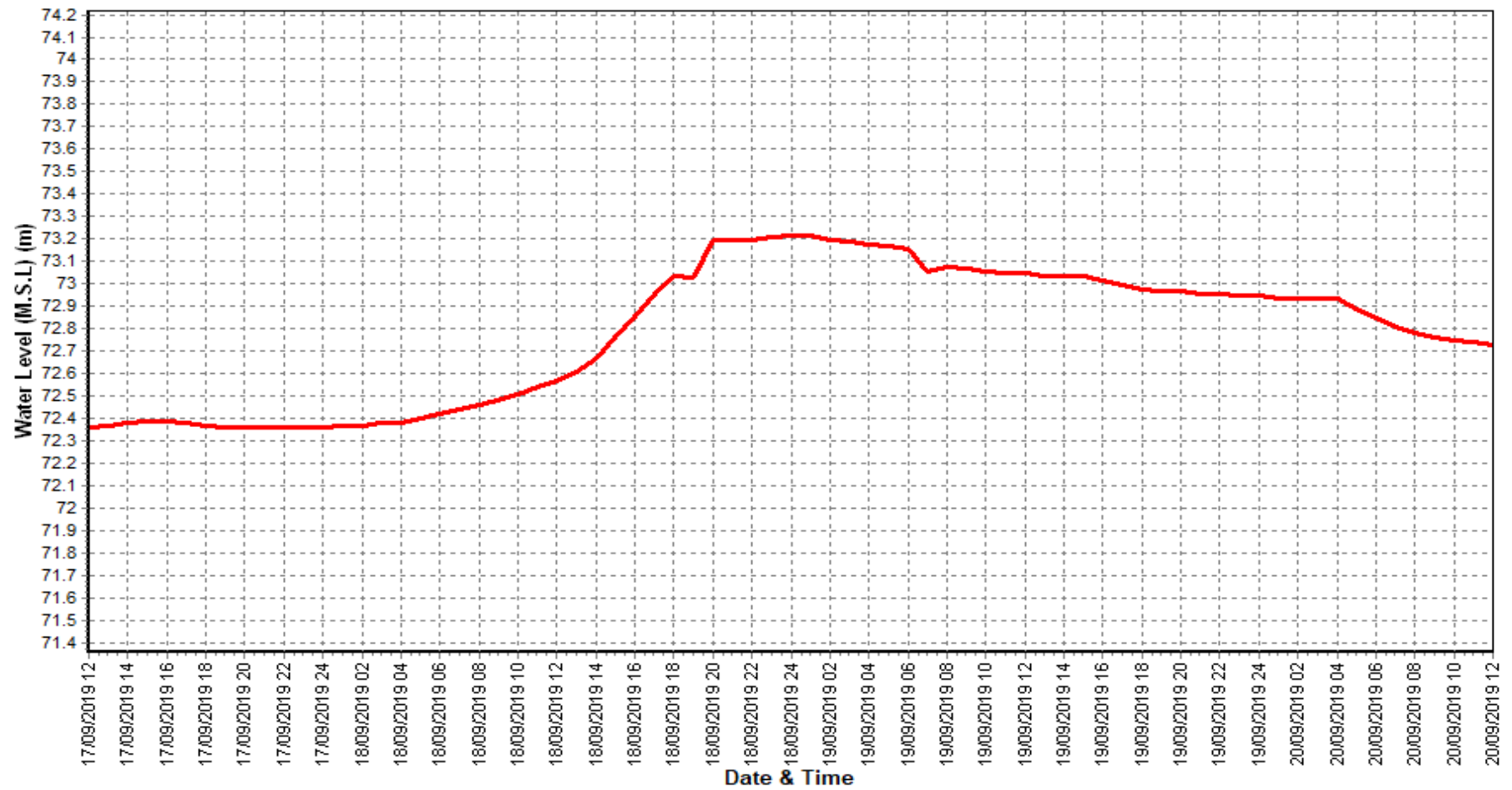
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Paleru Bridge (AKC00D3)

Local River : Paleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



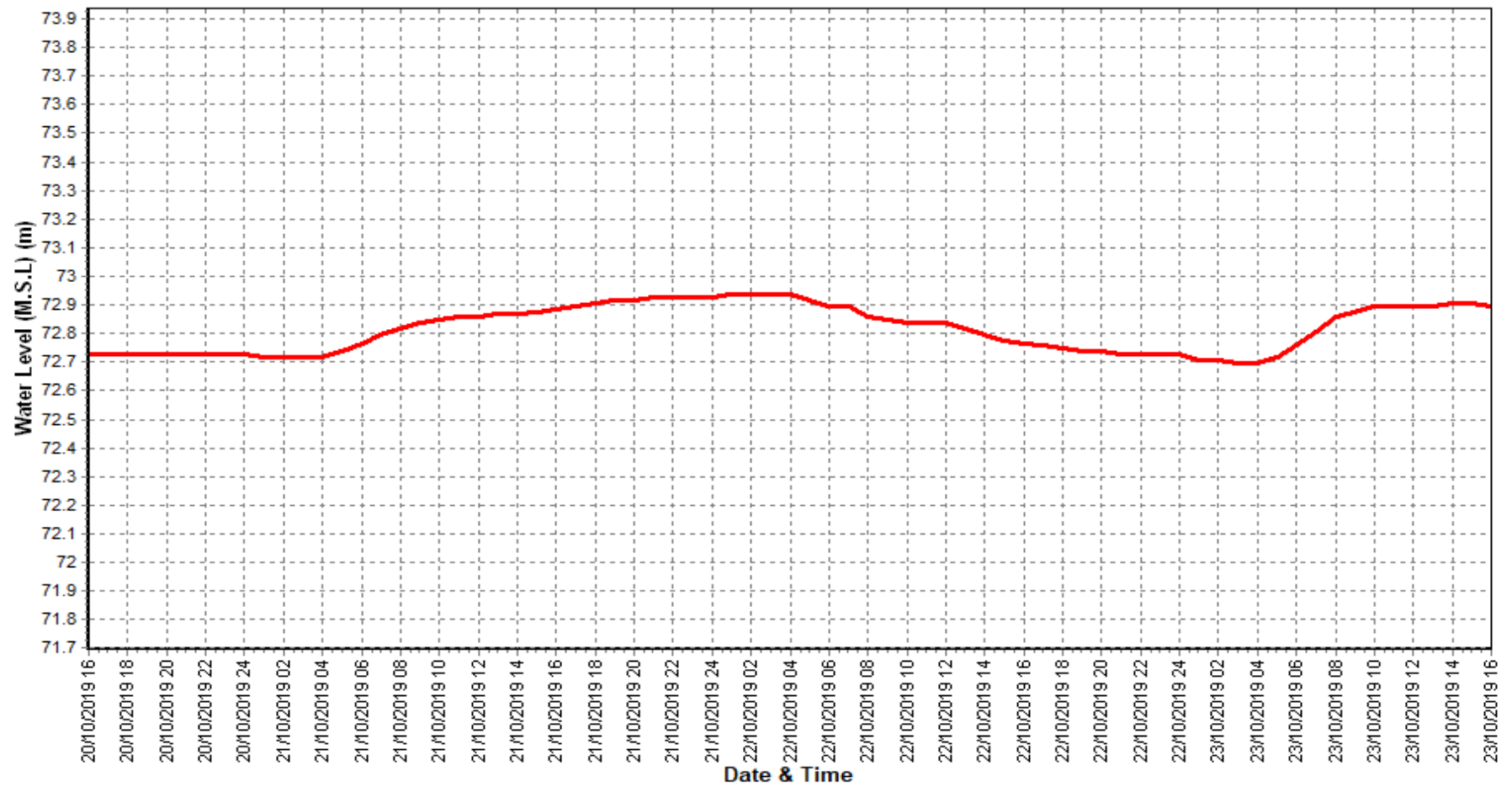
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Paleru Bridge (AKC00D3)

Local River : Paleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



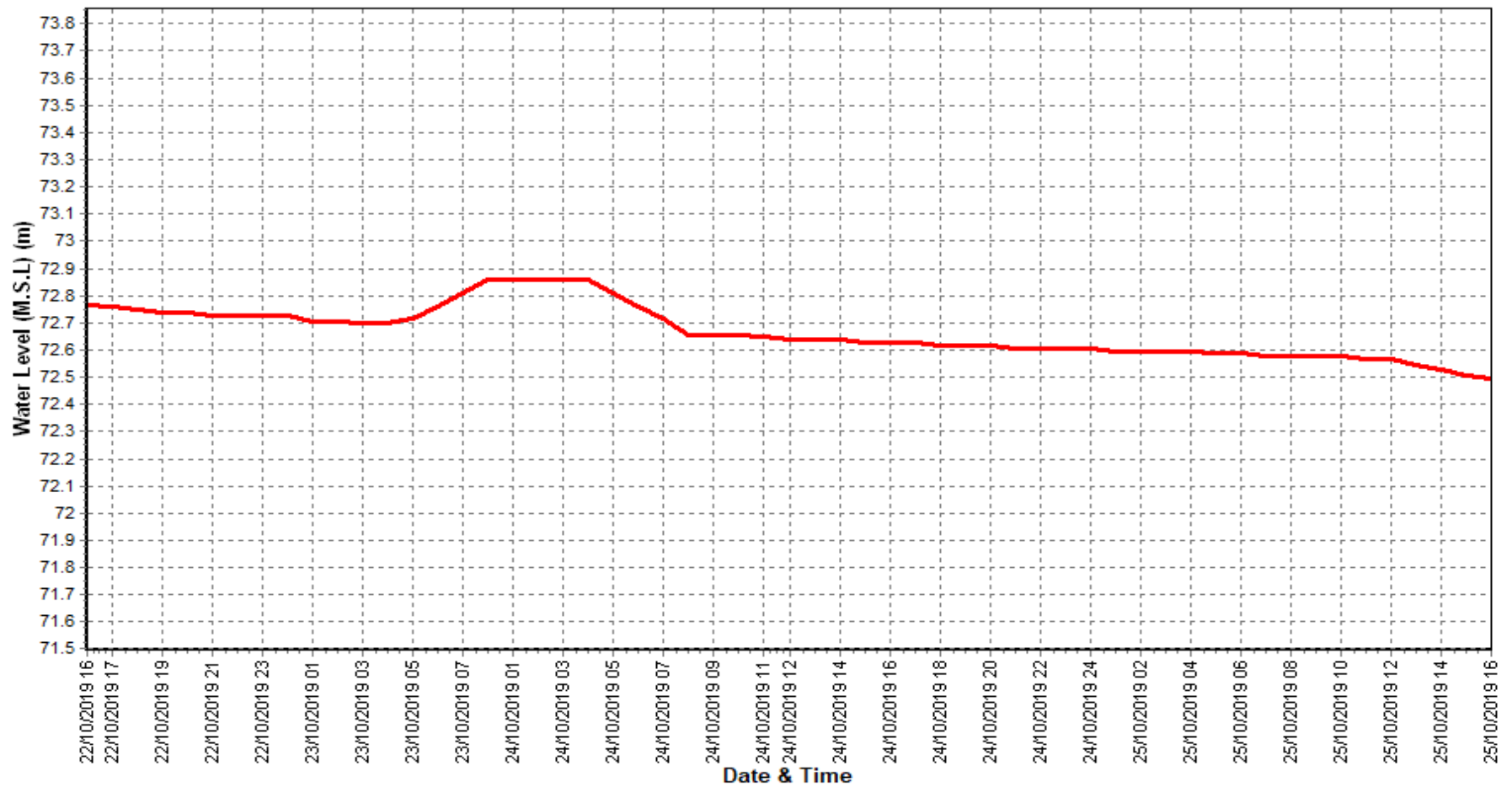
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Paleru Bridge (AKC00D3)

Local River : Paleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



HISTORY SHEET

Water Year : 2019-2020

Site : Wadenapally

Code : AK000D5

State : Telangana

District : Nalgonda

Basin : Krishna

Independent River : Krishna

Tributary : -

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada

Drainage Area : 235544 Sq. Km.

Bank : Left

Latitude : 16°47'39"

Longitude : 80°04'23"

Zero of Gauge (m) : 22.054 (m.s.l)
22.054 (m.s.l)01/01/1964
01/01/2000 - 31/12/2220

Opening Date

Closing Date

Gauge : 27/05/1964

HFL During 2019-20 : 40.624 m
Corres. Discharge : 22995 (Estimated)
Date & Time of : 16/08/2019
occurrence : 15.00 hrs.

Discharge : 10/12/1965

Sediment : 01/12/1966

Water Quality : 01/01/1972

HFL Recorded so far in m : 42.494 dt 05-10-2009

Corresponding Discharge (cumecs) : 31836 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1966-1967	11140	35.334	05/08/1966	1.094	24.529	16/05/1967
1967-1968	20016	38.554	06/08/1967	2.120	24.669	14/07/1967
1968-1969	7152	33.149	14/08/1968	20.44	24.789	17/05/1969
1969-1970	16486	37.139	08/08/1969	7.920	24.824	21/05/1970
1970-1971	14596	36.634	23/09/1970	0.000	24.799	29/05/1971
1971-1972	7122	32.969	07/09/1971	0.000	24.854	15/05/1972
1972-1973	4313	30.794	18/07/1972	0.000	24.704	02/06/1972
1973-1974	8333	33.139	18/07/1973	2.500	24.609	06/06/1973
1974-1975	16473	36.909	29/09/1974	6.797	24.594	02/06/1974
1975-1976	18962	38.129	13/10/1975	8.184	24.694	30/05/1976
1976-1977	14408	36.459	11/08/1976	2.717	24.529	06/06/1976
1977-1978	6737	33.064	02/08/1977	79.00	25.184	06/06/1977
1978-1979	18256	37.454	02/10/1978	14.20	24.749	22/05/1979
1979-1980	21560	37.514	30/09/1979	128.1	25.324	12/06/1979
1980-1981	15450	36.584	14/07/1980	20.00	24.724	11/05/1981
1981-1982	12919	35.334	24/09/1981	125.7	25.244	13/06/1981
1982-1983	6540	32.474	31/08/1982	148.2	25.312	17/05/1983

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1983-1984	14393	36.294	22/08/1983	82.40	24.954	14/06/1983
1984-1985	3832	30.924	21/08/1984	59.46	24.954	26/05/1985
1985-1986	2101	28.989	14/08/1985	50.81	24.854	01/04/1986
1986-1987	2675	29.574	13/08/1986	5.942	24.054	13/05/1987
1987-1988	2196	29.054	05/11/1987	4.835	24.004	07/06/1987
1988-1989	12959	36.374	29/09/1988	36.16	24.894	22/05/1989
1989-1990	11930	36.074	02/10/1989	61.22	24.994	20/06/1989
1990-1991	15540	36.034	24/08/1990	46.14	24.894	04/06/1990
1991-1992	12693	36.344	03/08/1991	31.32	24.804	08/06/1991
1992-1993	4913	31.363	12/09/1992	35.70	24.824	28/06/1992
1993-1994	10144	34.276	12/10/1993	53.30	24.774	06/06/1993
1994-1995	15575	36.974	23/07/1994	63.31	24.914	31/05/1995
1995-1996	1581	28.214	19/10/1995	49.16	24.774	31/05/1996
1996-1997	13740	36.809	04/10/1996	58.38	24.989	10/06/1996
1997-1998	15214	36.714	01/09/1997	41.58	24.754	08/06/1997
1998-1999	23689	41.144	16/10/1998	47.17	24.854	04/05/1999
1999-2000	6212	32.904	14/08/1999	15.00	24.854	03/06/1999
2000-2001	2957	30.224	24/08/2000	50.72	25.174	16/04/2001
2001-2002	2414	30.194	01/10/2001	34.17	24.734	29/05/2002
2002-2003	726.6	27.214	17/08/2002	5.563	24.199	15/03/2003
2003-2004	388.2	26.614	25/11/2003	5.948	24.264	24/06/2003
2004-2005	1178	28.204	05/10/2004	2.174	24.384	20/08/2004
2005-2006	16793	37.639	11/08/2005	4.244	24.504	26/06/2005
2006-2007	18000	37.484	16/08/2006	16.45	24.504	22/05/2007
2007-2008	15956	36.834	20/09/2007	16.27	24.474	31/05/2008
2008-2009	8408	32.514	17/09/2008	9.436	24.294	31/05/2009
2009-2010	31803	42.484	05/10/2009	7.808	24.234	10/06/2009
2010-2011	6021	31.324	08/10/2010	13.80	24.734	08/06/2010
2011-2012	12951	35.494	09/09/2011	7.703	24.204	15/05/2012
2012-2013	366.0	26.174	29/11/2012	11.72	24.284	06/04/2013
2013-2014	13434	35.704	26/10/2013	10.74	24.354	02/06/2013
2014-2015	4272	30.304	16/09/2014	0.000	23.794	24/06/2014
2015-2016	229.4	25.364	22/10/2015	0.000	23.164	27/01/2016
2016-2017	4919	30.454	23/09/2016	0.000	23.674	11/07/2016
2017-2018	259.3	25.464	24/10/2017	0.658	23.404	10/07/2017
2018-2019	588.1	25.929	20/08/2018	0.000	24.784	12/08/2018

Annual Runoff of Krishna at Wadenapalli

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966		2571	2571		91	91
2	1966-1967	28344	6661	35005	1002	235	1237
3	1967-1968	37915	4917	42832	1340	174	1513
4	1968-1969	24509	3030	27539	866	107	973
5	1969-1970	41191	2481	43672	1456	88	1543
6	1970-1971	44714	1905	46619	1580	67	1647
7	1971-1972	29421	1901	31322	1040	67	1107
8	1972-1973	10139	1307	11446	358	46	404
9	1973-1974	38291	1516	39807	1353	54	1407
10	1974-1975	32155	3845	36001	1136	136	1272
11	1975-1976	69282	4332	73614	2448	153	2601
12	1976-1977	30160	2032	32192	1066	72	1138
13	1977-1978	22236	3139	25375	786	111	897
14	1978-1979	45708	5188	50896	1615	183	1798
15	1979-1980	30298	4100	34398	1071	145	1215
16	1980-1981	35526	2564	38091	1255	91	1346
17	1981-1982	36102	4815	40917	1276	170	1446
18	1982-1983	14542	5129	19671	514	181	695
19	1983-1984	37428	3770	41198	1323	133	1456
20	1984-1985	11908	5166	17074	421	183	603
21	1985-1986	8228	2555	10783	291	90	381
22	1986-1987	8159	2633	10791	288	93	381
23	1987-1988	5738	3592	9330	203	127	330
24	1988-1989	30909	4456	35365	1092	157	1250
25	1989-1990	16511	5771	22282	583	204	787
26	1990-1991	30198	7860	38058	1067	278	1345
27	1991-1992	29502	6087	35589	1042	215	1258
28	1992-1993	9945	6591	16537	351	233	584
29	1993-1994	17913	8818	26731	633	312	945
30	1994-1995	38060	7464	45524	1345	264	1609
31	1995-1996	5533	3244	8776	196	115	310
32	1996-1997	14728	6058	20786	520	214	734
33	1997-1998	17848	3771	21619	631	133	764
34	1998-1999	30461	4974	35435	1076	176	1252
35	1999-2000	10453	4199	14652	369	148	518

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
36	2000-2001	6327	3186	9513	224	113	336
37	2001-2002	4393	2745	7137	155	97	252
38	2002-2003	3514	663	4177	124	23	148
39	2003-2004	1484	945	2429	52	33	86
40	2004-2005	3058	1206	4265	108	43	151
41	2005-2006	35327	2529	37856	1248	89	1338
42	2006-2007	32828	3052	35880	1160	108	1268
43	2007-2008	35114	3115	38229	1241	110	1351
44	2008-2009	12526	3232	15758	443	114	557
45	2009-2010	21622	3224	24846	764	114	878
46	2010-2011	14395	2723	17118	509	96	605
47	2011-2012	12454	1132	13586	440	40	480
48	2012-2013	1574	1216	2790	56	43	99
49	2013-2014	13279	2558	15837	469	90	560
50	2014-2015	6359	1359	7718	225	48	273
51	2015-2016	654	366	1019	23	13	36
52	2016-2017	2759	875	3634	98	31	128
53	2017-2018	641	969	1610	23	34	57
54	2018-2019	1274	594	1978	45	21	70
55	2019-2020	24829	976	25805	877	34	912
Average		20898	3366	23885	738	119	844
75% Dependable flow (MCM)				9513			
90 % Dependable flow (MCM)				2702			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Wadenapally (AK000D5)

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	23.554	1.553	23.444	1.353	23.594	1.726	25.554	236.3 *	29.169	2507	28.704	2050
2	23.554	1.622 *	23.444	1.317	23.594	1.707	24.854	73.56 *	27.464	1116 *	27.864	1329
3	23.554	1.553	23.554	1.494	23.594	1.733	24.774	60.67 #	27.894	1584	28.274	1675 *
4	23.554	1.553	23.634	1.911	23.594	1.719 *	24.774	100.4	26.004	246.7	28.154	1626
5	23.554	1.622 *	23.634	1.879	23.594	1.719	25.264	165.3	25.649	241.1	28.279	1600
6	23.554	1.553	23.694	1.961	23.594	1.713	25.264	160.3	25.534	230.4 *	27.254	987.8
7	23.554	1.707	23.694	1.971 *	23.594	1.726	25.604	265.0	26.394	721.4	27.254	977.5
8	23.504	1.512	23.634	1.879	23.594	1.762	26.784	809.1	26.904	793.7 *	25.704	254.8
9	23.444	1.353 *	23.634	1.899	23.594	1.692	27.434	927.4	28.264	1888	27.279	1025
10	23.444	1.440	23.594	1.819	23.594	1.615	30.904	4227 #	29.674	2977	27.154	931.1 *
11	23.444	1.431	23.594	1.784	23.594	1.719 *	32.804	6948	26.879	712.9	27.134	980.8
12	23.444	1.427	23.594	1.723	25.604	266.6	32.804	6948	28.274	1896	27.134	919.7 *
13	23.444	1.393	23.594	1.732	34.154	7901	27.279	1004 #	29.704	2924 *	25.744	342.2
14	23.444	1.363	23.594	1.732 *	37.004	14326 #	33.304	7558	29.544	2416	25.894	346.9 #
15	23.444	1.394	23.594	1.719	36.854	13303	31.454	4974	26.674	669.7	25.674	245.1
16	23.444	1.353 *	23.594	1.732	39.854	21419	27.254	985.2	28.239	1890	25.674	242.0
17	23.444	1.385	23.594	1.721	38.904	18115	28.224	1637 #	28.354	1914	25.674	273.0 *
18	23.444	1.387	23.594	1.732	37.904	15516	28.104	1549 #	28.154	1856	25.414	177.2
19	23.444	1.360	23.594	1.766	34.324	9182 #	30.324	3574	27.254	922.4	25.214	151.5
20	23.444	1.363	23.594	1.755	25.539	226.9	30.954	4408	25.854	332.8 *	25.209	142.6
21	23.444	1.394	23.594	1.774 *	25.819	318.3	30.554	3995	25.904	350.4 #	25.314	174.7
22	23.444	1.355	23.594	1.719	25.934	354.3	27.474	1122 *	28.444	1806 #	25.214	149.5
23	23.444	1.353 *	23.614	1.869	25.934	345.2	27.874	1385 #	31.854	4952	25.214	146.0
24	23.444	1.341	23.614	1.869	25.854	325.9	28.639	1965	36.454	13264	25.214	146.2 *
25	23.444	1.363	23.614	1.859	24.904	82.22 *	27.274	979.5	37.504	17125	25.074	123.3
26	23.444	1.265	23.594	1.819	24.604	37.27 #	28.799	2095 #	34.354	9234 #	25.054	101.2
27	23.444	1.291	23.594	1.787	24.604	37.27 #	31.404	4890	31.374	4799 *	25.054	99.47
28	23.444	1.279	23.594	1.723 *	25.164	135.6	32.954	6936	31.304	4712 #	25.004	98.33
29	23.444	1.292	23.594	1.719	25.224	143.8	28.034	1498 *	28.194	1615 #	25.004	96.27
30	23.444	1.353 *	23.594	1.819	25.624	261.1	29.179	2427 #	31.654	5556	25.004	95.88
31			23.594	1.730	25.899	334.0			28.634	1958		
Ten-Daily Mean												
I Ten-Daily	23.527	1.547	23.596	1.748	23.594	1.711	26.121	702.4	27.295	1231	27.592	1246
II Ten-Daily	23.444	1.386	23.594	1.740	33.374	10026	30.250	3959	27.893	1554	25.877	382.1
III Ten-Daily	23.444	1.329	23.599	1.790	25.415	215.9	29.219	2729	31.425	5943	25.115	123.1
Monthly												
Min.	23.444	1.265	23.444	1.317	23.594	1.615	24.774	60.67	25.534	230.4	25.004	95.88
Max.	23.554	1.707	23.694	1.971	39.854	21419	33.304	7558	37.504	17125	28.704	2050
Mean	23.472	1.42	23.597	1.76	27.395	3311	28.530	2463	28.953	3007	26.194	583.6

Annual Runoff in MCM = 25805 Annual Runoff in mm = 110

Peak Observed Discharge = 21419 cumecs on 16/08/2019 Corres. Water Level :39.854 m

Lowest Observed Discharge = 1.265 cumecs on 26/06/2019 Corres. Water Level :23.444 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Wadenapally (AK000D5)

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Lower Krishna SD2, Vijayawada

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	25.004	94.83 *	24.854	77.46	24.954	85.60	24.904	82.41 *	Not observed due to Lock-Down		24.504	48.68
2	24.604	55.64	24.854	77.28	25.054	96.66 *	24.904	80.66			24.504	48.02
3	24.604	55.45	24.854	77.40	25.004	88.16	24.904	80.61			24.504	48.84 *
4	24.604	55.55	24.954	87.16	25.054	95.24	24.904	80.48			23.949	11.05
5	24.554	52.56	24.854	77.82 *	25.054	95.53	24.904	80.97			23.944	11.01
6	24.554	52.26	24.824	75.25	25.004	88.10	24.904	80.84			23.944	11.05
7	24.554	53.92	24.804	70.94	25.004	88.45	24.904	80.41			23.944	11.20 *
8	24.554	52.04 *	24.504	48.38	24.854	76.10	24.904	82.41 *			23.944	11.21
9	24.854	77.00	24.504	48.96	24.854	77.82 *	24.804	70.35			23.944	11.29
10	24.854	76.18	24.504	48.04	24.824	74.89	24.804	73.31 *			23.944	11.42 *
11	24.854	76.35	24.824	75.61	24.854	76.92	24.504	48.39			23.944	11.21
12	24.854	76.83	24.824	75.10 *	24.854	76.12	24.504	48.05			23.944	11.26
13	24.604	55.95	24.754	68.52	24.514	49.79	24.504	48.48			23.944	11.34
14	24.554	52.21	24.754	68.24	24.554	52.83	24.504	48.14			23.944	10.97
15	24.554	52.04 *	24.754	68.88 *	24.504	47.31	24.504	48.06 *			23.944	11.00
16	24.554	52.29	24.754	68.96	24.554	52.04 *	24.679	62.58			23.944	11.29
17	24.554	52.19	24.754	68.11	24.704	66.74	24.804	70.01			23.944	11.08 *
18	24.514	49.18	24.754	68.01	24.704	66.35	24.804	70.52			23.944	11.21 *
19	24.514	49.01	24.754	68.88 *	24.704	66.89	24.804	70.33			23.944	11.21
20	24.514	49.27	24.754	68.05	24.704	66.85	24.804	70.52	24.774	69.33	23.944	11.21
21	24.854	76.06	24.754	68.85	24.704	66.92	24.804	70.98	24.704	66.27	23.944	11.11
22	24.854	77.82 *	24.754	68.45	24.704	66.37	24.804	73.31 *	24.704	66.09	23.944	11.19
23	25.004	96.03	24.854	77.27	24.904	82.41 *	24.504	50.42	24.704	66.63	23.944	11.07
24	25.004	96.26	24.854	77.87	24.904	80.32	24.504	48.01	24.704	66.94	23.944	11.04 *
25	24.984	89.92 *	24.854	77.61	24.904	80.48	Not observed due to Lock-down		24.504	50.34	23.944	11.21 *
26	24.984	93.03	24.854	77.82 *	24.904	80.22			24.504	48.06 *	23.944	11.21
27	24.944	87.61	24.954	87.36	25.054	95.67			24.504	48.87	23.944	11.48
28	24.944	89.40	24.954	87.32	24.904	80.59			24.504	48.62	23.944	11.21
29	24.854	77.82 *	24.954	87.57	24.904	80.68			24.504	48.90	23.944	11.24
30	25.074	107.7	24.954	87.20					24.504	48.68	23.944	11.31
31	25.084	108.0	24.954	87.09							23.944	11.11 *
<u>Ten-Daily Mean</u>												
I Ten-Daily	24.674	62.54	24.751	68.87	24.966	86.65	24.884	79.25	24.682	62.87	24.112	22.38
II Ten-Daily	24.607	56.53	24.768	69.84	24.665	62.18	24.642	58.51	25.001	91.85	23.944	11.18
III Ten-Daily	24.962	90.88	24.881	80.40	24.876	79.29	24.680	62.74	24.584	55.94	23.944	11.20
<u>Monthly</u>												
Min.	24.514	49.01	24.504	48.04	24.504	47.31	24.504	48.01	24.454	44.18	23.944	10.97
Max.	25.084	108.0	24.954	87.57	25.054	96.66	24.904	82.41	25.154	106.5	24.504	48.84
Mean	24.755	70.66	24.803	73.27	24.834	75.93	24.734	66.7	24.756	70.22	23.998	14.8

Peak Computed Discharge = 4799 cumecs on 27/10/2019

Corres. Water Level :31.374 m

Lowest Computed Discharge = 1.353 cumecs on 09/06/2019

Corres. Water Level :23.444 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

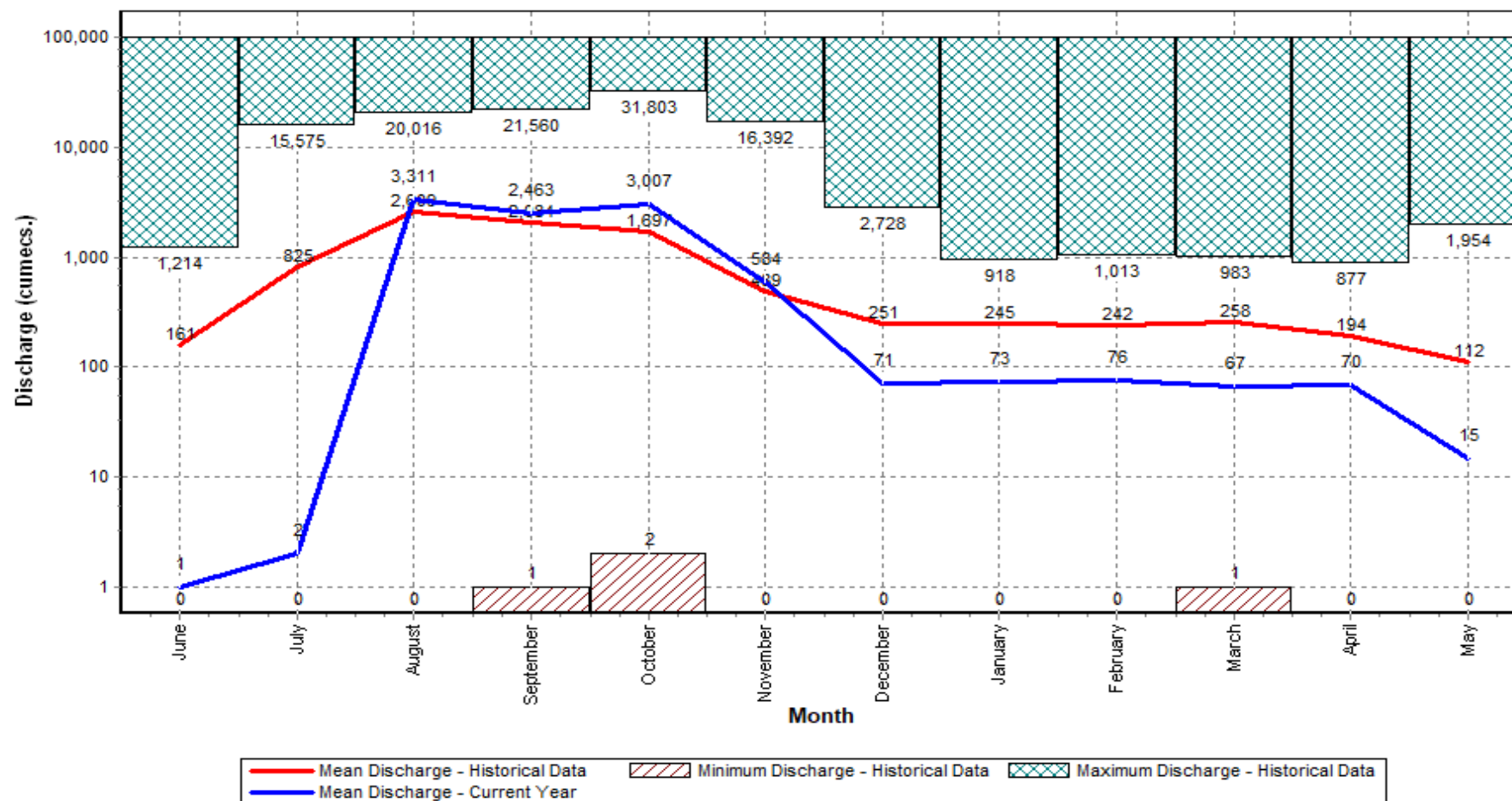
Station Name : Wadenapally (AK000D5)

Data considered : 1966-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Lower Krishna SD2, Vijayawada



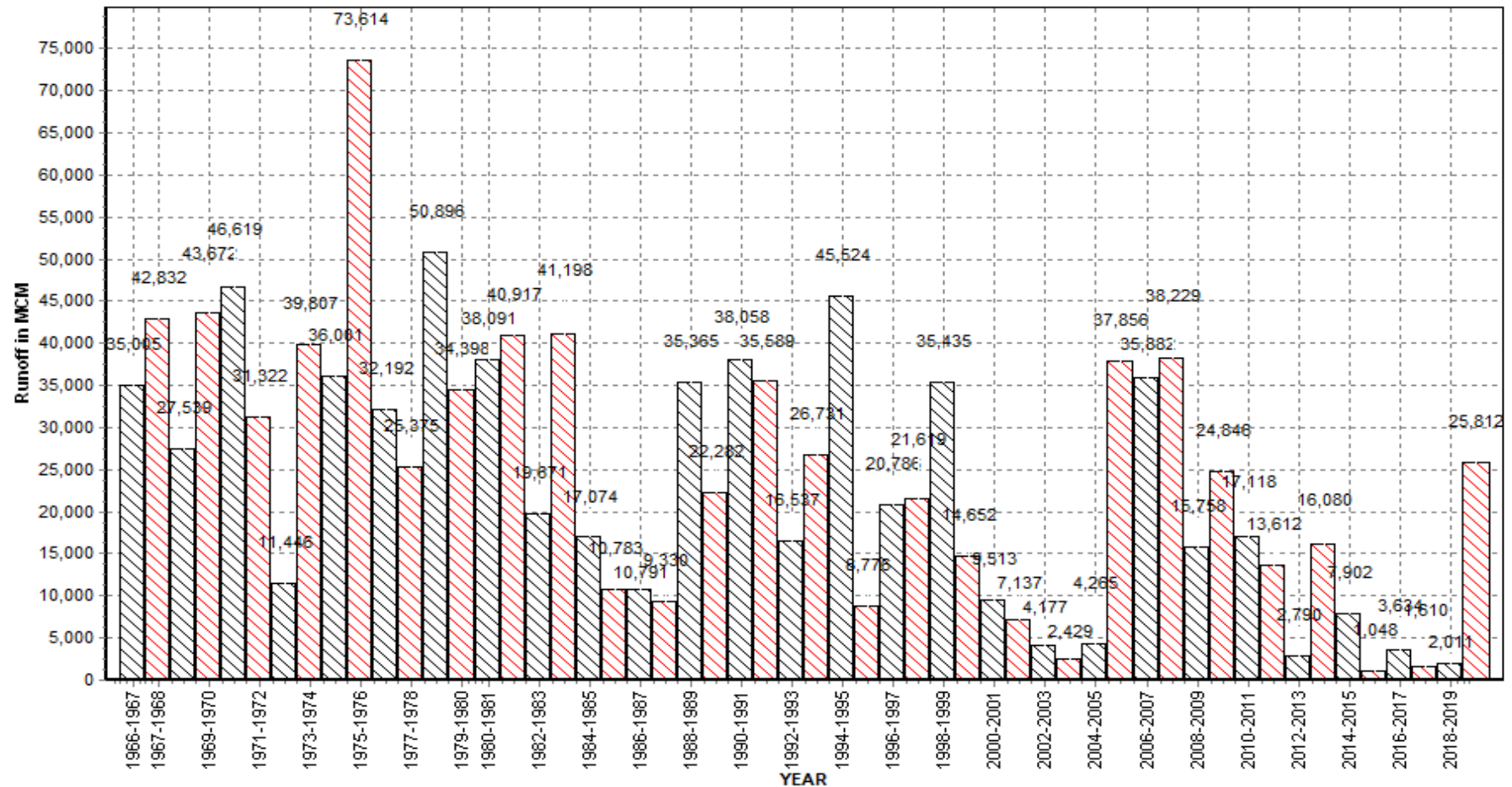
Annual Runoff Values for the period: 1966 - 2020

Station Name : Wadenapally (AK000D5)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



Note: Missing values have not been considered while arriving at Annual Runoff

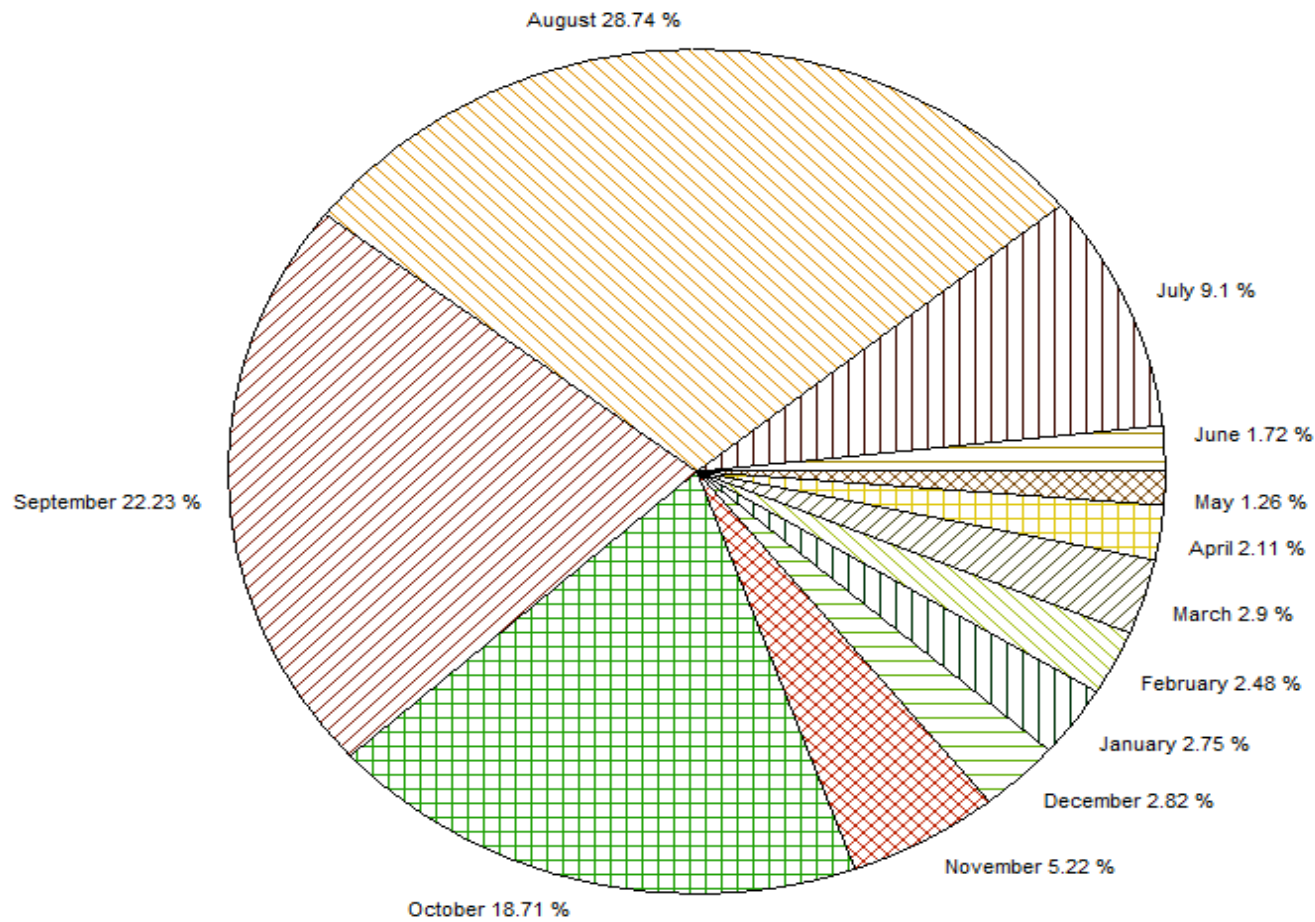
Monthly Average Runoff based on period : 1966-2019

Station Name : Wadenapally (AK000D5)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



June	1.72 %
July	9.1 %
August	28.74 %
September	22.23 %
October	18.71 %
November	5.22 %
December	2.82 %
January	2.75 %
February	2.48 %
March	2.9 %
April	2.11 %
May	1.26 %

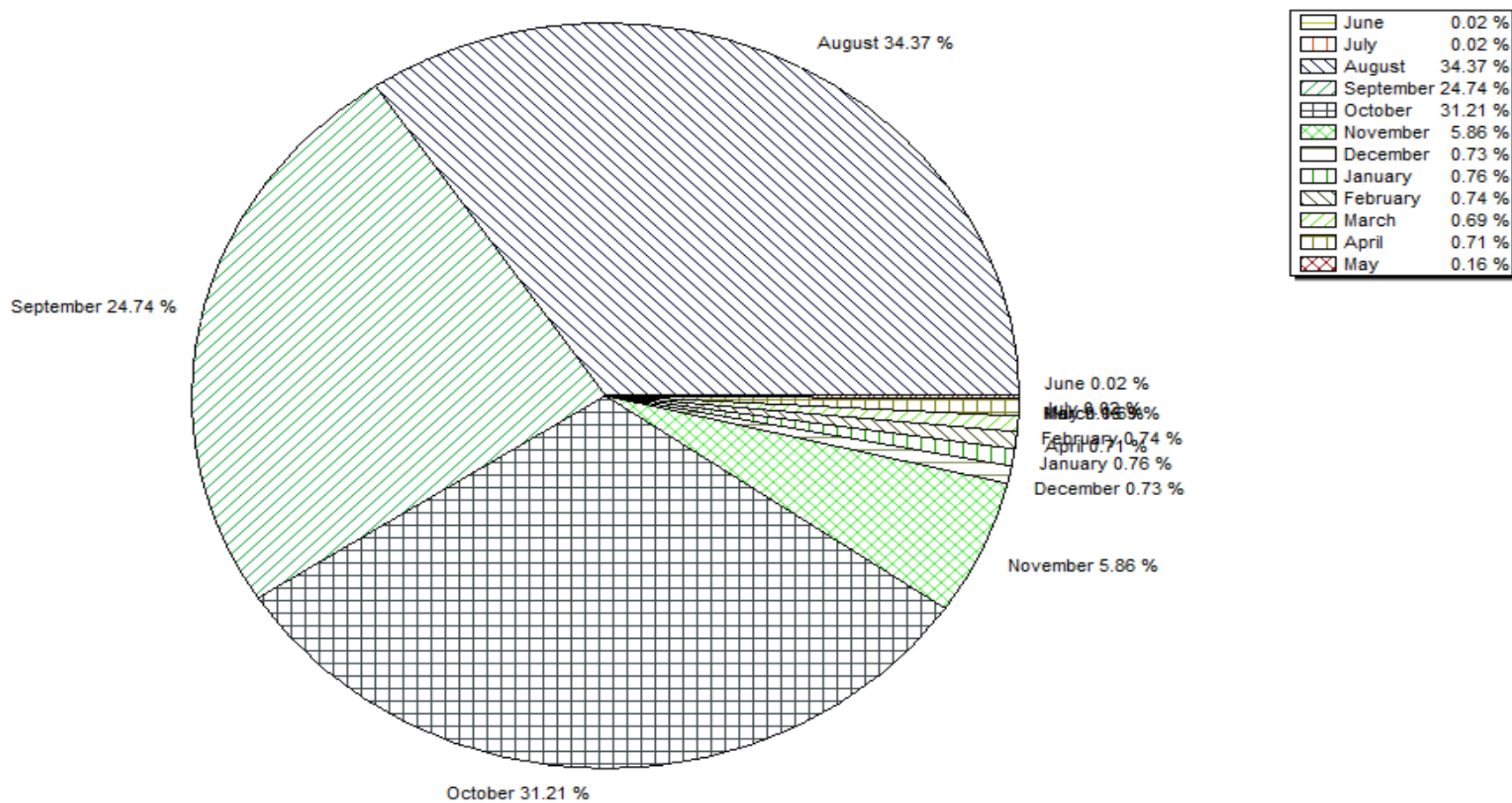
Monthly Runoff for the Year : 2019-2020

Station Name : Wadenapally (AK000D5)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



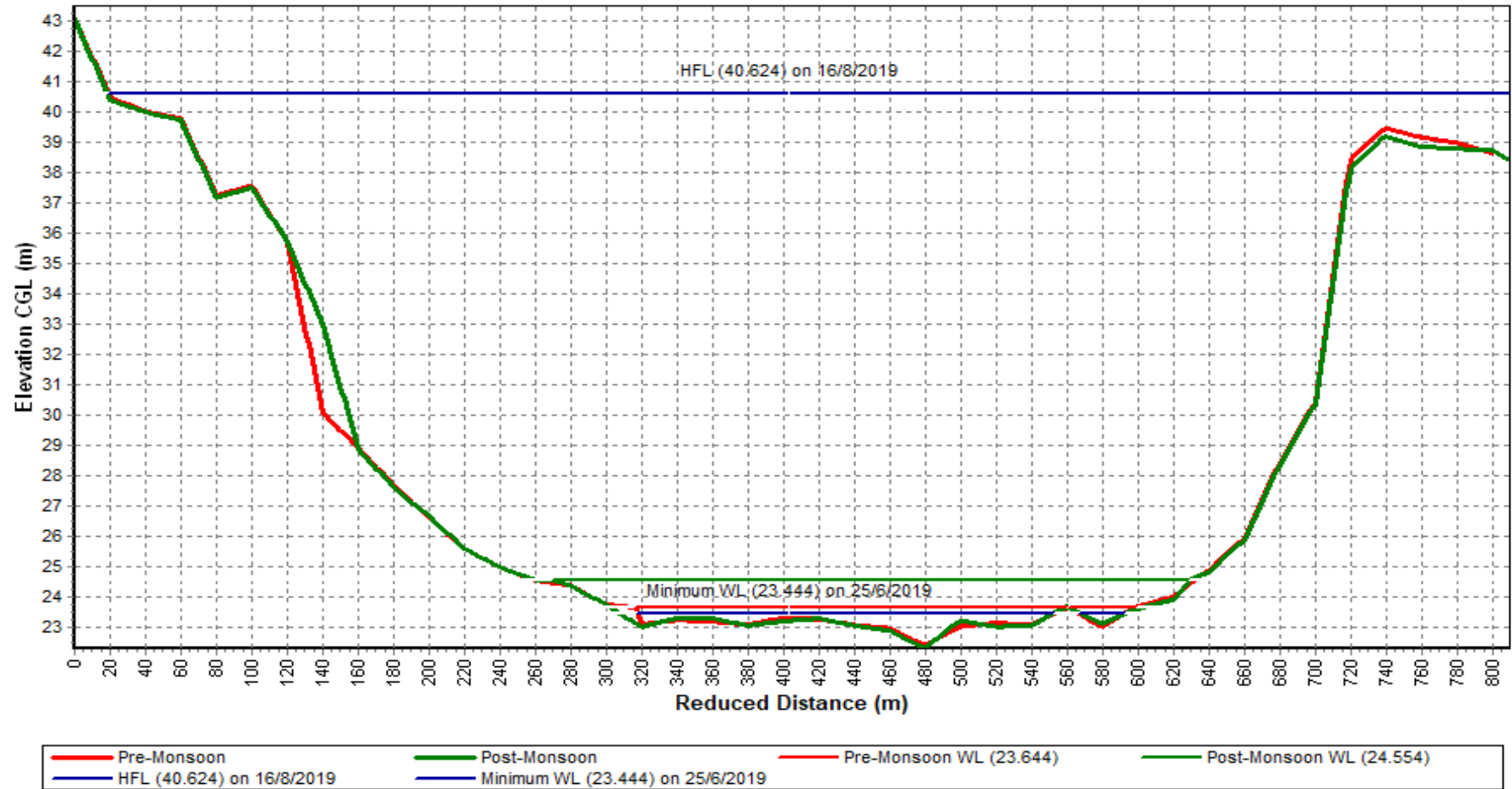
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Wadenapally (AK000D5)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



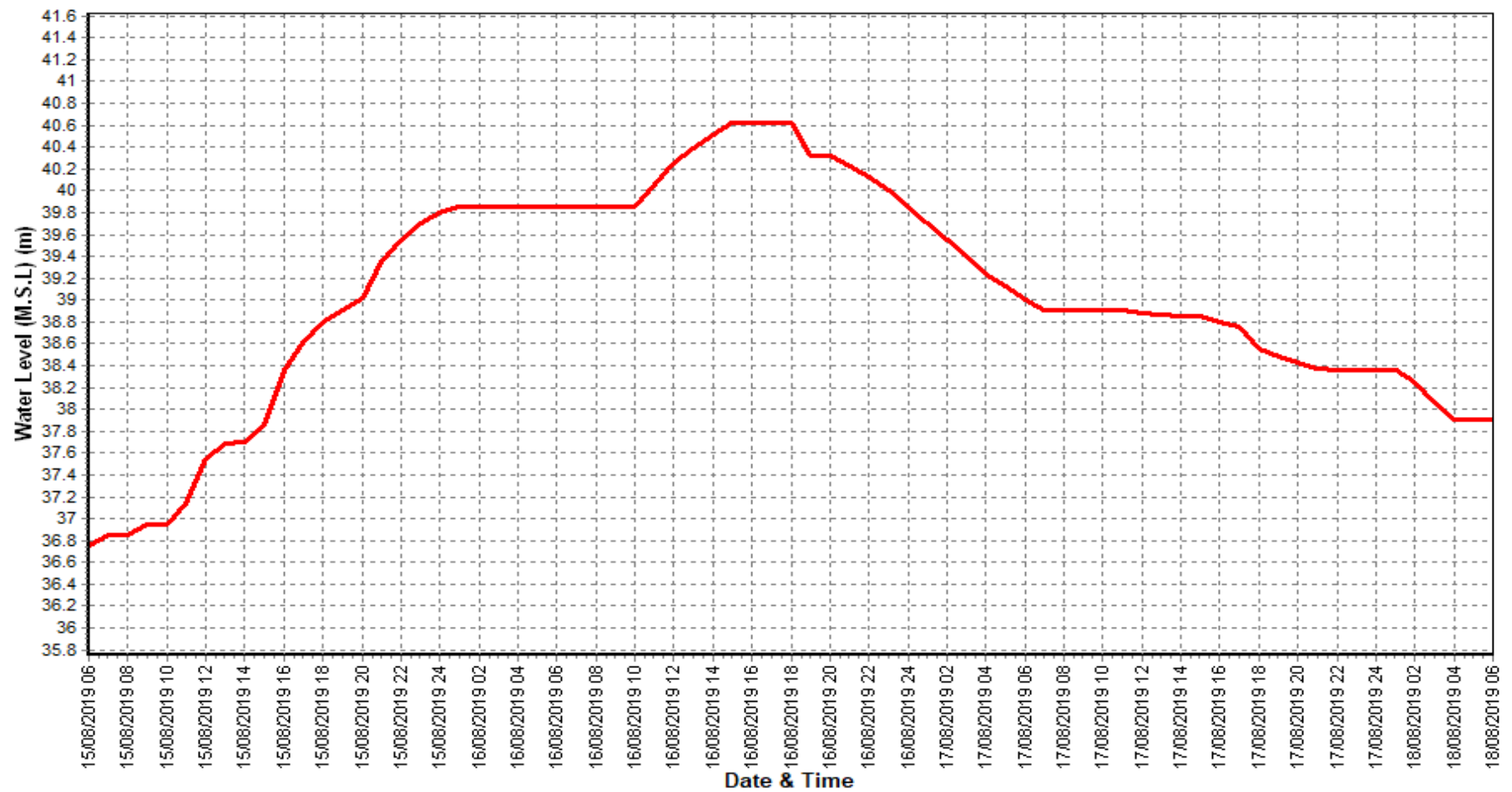
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Wadenapally (AK000D5)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



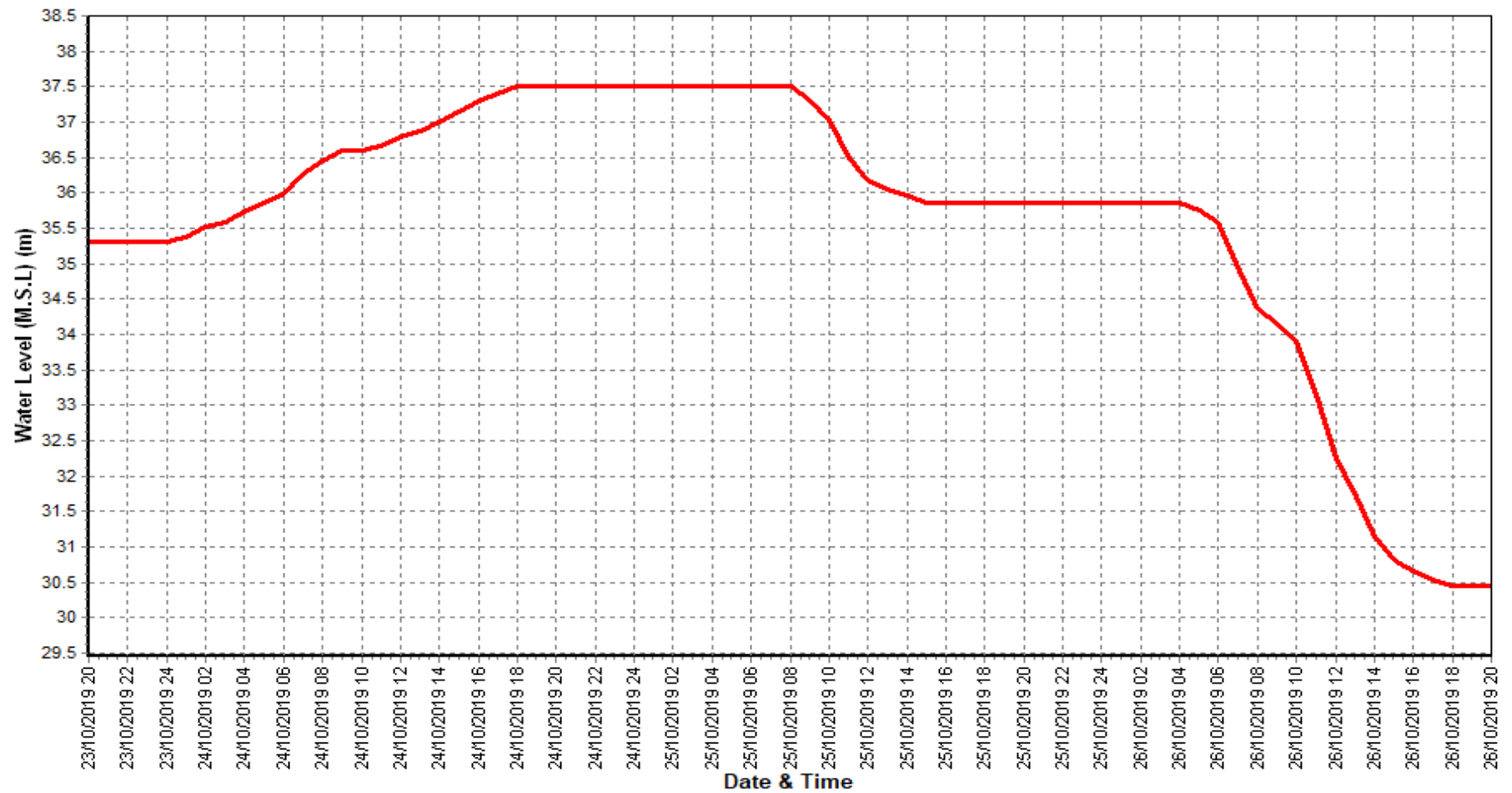
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Wadenapally (AK000D5)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



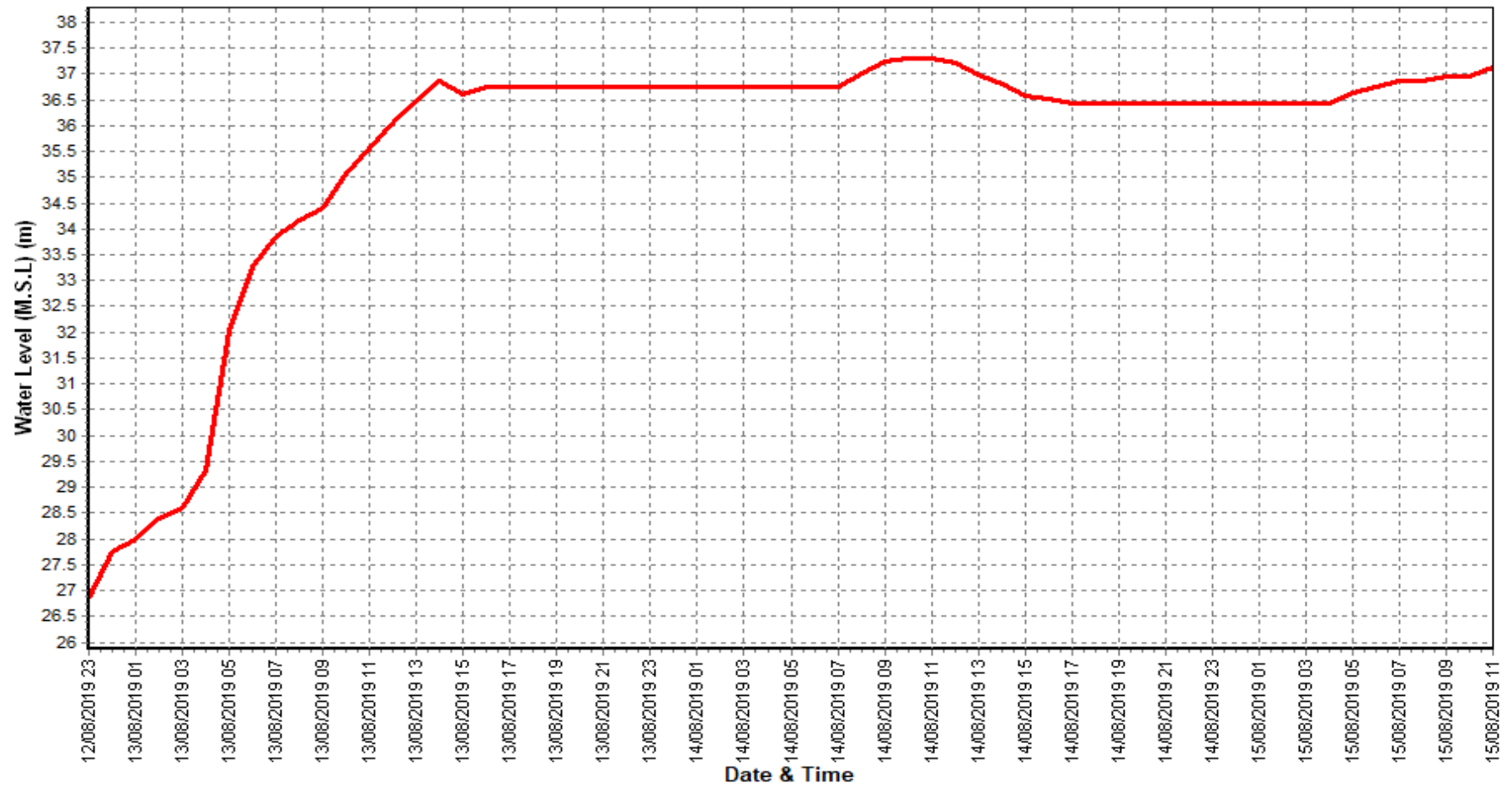
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Wadenapally (AK000D5)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD2, Vijayawada



HISTORY SHEET

		Water Year	: 2019-2020
Site	: VALIGONDA	Code	: 040-LKDHYD
State	: Telangna	District	Nalgonda
Basin	: Krishna	Independent River	: Krishna
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Musi
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Krishna SD 1, N.S.Dam
Drainage Area	: 5830 Sq. Km.	Bank	:
Latitude	: 17°21'56"	Longitude	: 79°01'56"
Zero of Gauge (m)	: 94 (m.s.l)	01/06/2019	
	Opening Date	Closing Date	
Gauge	: 01/06/2019	HFL During 2019-20	: 98.520 m
		Corres. Discharge	: 238 (Estimated)
Discharge	: 01/06/2019	Date & Time of	: 27/09/2019
		occurrence	: 20:00 Hrs
Sediment	:		
Water Quality	: 01/06/2019		

HFL Recorded so far in m : 98.520 dt 27-09-2019

Corresponding Discharge (cumecs) : 238 (Estimated)

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Annual Runoff of Munneru at Valigonda

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2019-2020	438	11	449	15	0	16
Average							
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : VALIGONDA (040-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Musi

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	94.000	0.000	96.360	0.269 *	96.575	2.073 #	96.440	0.705 *	97.870	103.7	97.470	43.08
2	94.000	0.000	96.320	0.138 *	97.350	36.85	96.500	1.206 *	97.800	90.52 *	97.415	39.36
3	94.000	0.000	96.330	0.165 *	98.025	118.8	97.580	59.56	97.580	53.70	97.410	40.41 *
4	94.000	0.000	96.320	0.138 *	97.755	87.07	97.440	44.67	97.590	54.66	97.380	37.72
5	94.000	0.000	96.300	0.091 *	97.610	67.49	96.900	8.851	97.900	106.8	97.385	38.19
6	94.000	0.000	96.330	0.165 *	97.580	64.68	96.625	2.596	97.940	113.5 *	97.340	32.23
7	96.445	0.000	96.330	0.165 *	97.460	45.81	96.520	1.261	97.960	115.3	97.325	31.78
8	96.400	0.000	96.310	0.091	97.480	48.15	96.470	0.935 *	97.570	58.50 *	97.320	31.62
9	97.000	0.000	96.280	0.074	97.180	21.20	96.490	0.984	97.650	68.63	97.320	31.55
10	96.470	0.000	96.240	0.000	96.880	8.526	96.450	0.777 *	97.980	120.9	97.305	30.39 *
11	96.350	0.000	96.240	0.000	96.420	0.572 *	96.440	0.701	97.620	61.91	97.290	30.38
12	96.350	0.000	96.230	0.000	96.350	0.231 *	96.460	0.804	97.750	88.71	97.310	30.84 *
13	96.340	0.000	96.220	0.000	96.420	0.572 #	96.470	0.913	97.970	118.8 *	97.270	28.77
14	96.340	0.000	96.190	0.000	96.490	1.568	96.460	0.750	97.740	86.42	97.250	27.31
15	96.290	0.000	96.240	0.000	96.460	0.854 *	96.480	1.021 *	97.665	70.21	97.200	22.84
16	96.250	0.000	96.260	0.000	96.420	0.572 #	96.430	0.636 #	97.605	54.32	97.200	22.49
17	96.240	0.000	96.260	0.000	96.390	0.403 #	96.465	0.849	97.655	68.73	97.200	23.09 *
18	96.330	0.000	96.200	0.000	96.400	0.456 *	97.770	93.03	97.840	101.4	97.200	22.13
19	96.260	0.000	96.360	0.269 #	96.660	2.653	97.580	55.53	97.950	111.3	97.200	22.40
20	96.180	0.000	96.560	1.877 #	96.670	2.733	97.750	89.67	97.660	70.18 *	97.200	22.90
21	96.230	0.000	97.285	25.74	96.490	1.138	97.815	98.31	97.800	90.16	97.210	23.50
22	96.260	0.000	96.490	0.991	96.420	0.572 #	97.670	71.54 *	97.575	53.22	97.220	24.11
23	96.240	0.000	96.560	1.913	96.390	0.446	97.220	26.39	97.625	65.64	97.180	21.53
24	96.420	0.000	96.360	0.269 #	96.470	0.834	97.400	36.67	97.815	92.12	97.170	21.41 *
25	96.370	0.000	96.250	0.000	96.500	1.206 *	97.635	69.41	97.690	79.59	97.140	18.99
26	96.340	0.000	96.560	1.877 #	96.470	0.824	98.020	129.9	97.585	53.29	97.050	16.06
27	96.420	0.000	97.580	62.84	96.440	0.785	97.975	123.0	97.540	54.85 *	96.790	7.805
28	96.300	0.000	96.650	3.234 *	96.400	0.485	98.100	144.2	97.430	41.04	96.400	0.456 #
29	96.300	0.000	96.750	5.766	96.390	0.404	97.880	103.3 *	97.350	36.90	96.280	0.000
30	96.340	0.000	96.780	7.924	96.420	0.572 #	98.105	137.1	97.545	55.65	96.260	0.000
31			96.600	2.426 #	96.415	0.547			97.485	44.63		
Ten-Daily Mean												
I Ten-Daily	95.032	0.000	96.312	0.130	97.390	50.06	96.742	12.16	97.784	88.62	97.367	35.63
II Ten-Daily	96.293	0.000	96.276	0.215	96.468	1.062	96.830	24.39	97.745	83.19	97.232	25.31
III Ten-Daily	96.322	0.000	96.715	10.27	96.437	0.710	97.782	93.98	97.585	60.64	96.870	13.39
Monthly												
Min.	94.000	0.000	96.190	0.000	96.350	0.231	96.430	0.636	97.350	36.90	96.260	0.000
Max.	97.000	0.000	97.580	62.84	98.025	118.8	98.105	144.2	97.980	120.9	97.470	43.08
Mean	95.882	0	96.443	3.755	96.754	16.74	97.118	43.51	97.701	76.94	97.156	24.78

Annual Runoff in MCM = 449 Annual Runoff in mm = 77

Peak Observed Discharge = 144.2 cumecs on 28/09/2019 Corres. Water Level :98.1 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :94 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : VALIGONDA (040-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Musi

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	96.260	0.000	96.400	0.449	96.410	0.469	96.370	0.330 *	Not observed due to Lock-Down		96.500	0.999
2	96.280	0.000	96.430	0.495	96.430	0.592 *	96.380	0.399			96.490	0.916
3	96.280	0.000	96.410	0.468	96.440	0.602	96.350	0.000			96.500	0.977 *
4	96.830	4.050	96.440	0.549	96.420	0.512	96.350	0.000			96.510	1.042
5	96.280	0.000	96.440	0.539 *	96.410	0.486	96.340	0.000			96.530	1.412
6	96.260	0.000	96.430	0.491	96.400	0.462	96.340	0.000			96.520	1.382
7	96.270	0.000	96.380	0.405	96.420	0.501	96.350	0.000			96.520	1.377
8	96.260	0.000	96.410	0.475	96.400	0.462	96.350	0.000			96.540	1.450
9	96.270	0.000	96.370	0.381	96.420	0.544 *	96.340	0.000			96.500	1.034
10	96.270	0.000	96.350	0.301	96.500	0.967	96.350	0.000			96.500	0.977 *
11	96.280	0.000	96.360	0.337	96.500	0.977 *	96.340	0.000			96.510	1.161
12	96.290	0.000	96.350	0.301 *	96.490	0.917 *	96.340	0.000			96.510	1.142
13	96.290	0.000	96.370	0.377	96.480	0.859 *	96.340	0.000			96.520	1.284
14	96.270	0.000	96.410	0.477	96.500	0.977 *	96.350	0.000			96.520	1.306
15	96.270	0.000	96.360	0.337 *	96.470	0.758	96.340	0.000			96.490	0.926
16	96.290	0.000	96.380	0.398	96.420	0.544 *	96.340	0.000			96.480	0.896
17	96.280	0.000	96.440	0.533	96.400	0.437	96.350	0.000			96.480	0.859 *
18	96.280	0.067 *	96.400	0.448	96.400	0.423	96.350	0.000			96.480	0.868
19	96.290	0.087 *	96.400	0.453 *	96.400	0.437	96.340	0.000			96.470	0.844
20	96.290	0.087 *	96.430	0.510	96.410	0.473	96.500	0.977 *	96.940	5.101	96.470	0.833
21	96.290	0.000	96.430	0.529	96.400	0.446	96.470	0.802 *	96.930	4.988	96.440	0.548
22	96.280	0.000	96.430	0.530	96.410	0.487	96.450	0.694 *	96.930	4.959	96.445	0.582
23	96.370	0.344	96.430	0.527	96.400	0.453 *	96.430	0.592 *	96.920	4.819	96.450	0.595
24	96.360	0.331	96.440	0.539	96.390	0.391	96.400	0.458	96.910	4.687	96.455	0.642 *
25	96.350	0.257 *	96.450	0.569	96.400	0.435	96.400	0.453 *	96.940	5.046	96.455	0.642 *
26	96.350	0.328	96.450	0.569 *	96.400	0.438	Not observed due to Lock-Down		96.900	4.579 *	96.440	0.536
27	96.360	0.333	96.460	0.597	96.410	0.490			96.550	1.102 #	96.470	0.844
28	96.350	0.318	96.440	0.532	96.420	0.504			96.540	1.331	96.470	0.848
29	96.350	0.257 *	96.440	0.536	96.370	0.365			96.530	1.269	96.480	0.867
30	96.380	0.410	96.440	0.530					96.520	0.977 #	96.490	0.928
31	96.390	0.428	96.410	0.465							96.480	0.859 *
<u>Ten-Daily Mean</u>												
I Ten-Daily	96.326	0.405	96.406	0.455	96.425	0.560	96.352	0.073	96.397	0.467	96.511	1.157
II Ten-Daily	96.283	0.024	96.390	0.417	96.447	0.680	96.359	0.098	96.595	1.763	96.493	1.012
III Ten-Daily	96.348	0.273	96.438	0.539	96.400	0.445	96.409	0.501	96.767	3.376	96.461	0.717
<u>Monthly</u>												
Min.	96.260	0.000	96.350	0.301	96.370	0.365	96.340	0.000	96.330	0.192	96.440	0.536
Max.	96.830	4.050	96.460	0.597	96.500	0.977	96.500	0.977	96.940	5.101	96.540	1.450
Mean	96.320	0.235	96.412	0.472	96.425	0.566	96.375	0.233	96.586	1.869	96.488	0.954

Peak Computed Discharge = 118.8 cumecs on 13/10/2019

Corres. Water Level :97.97 m

Lowest Computed Discharge = 0.067 cumecs on 18/12/2019

Corres. Water Level :96.28 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

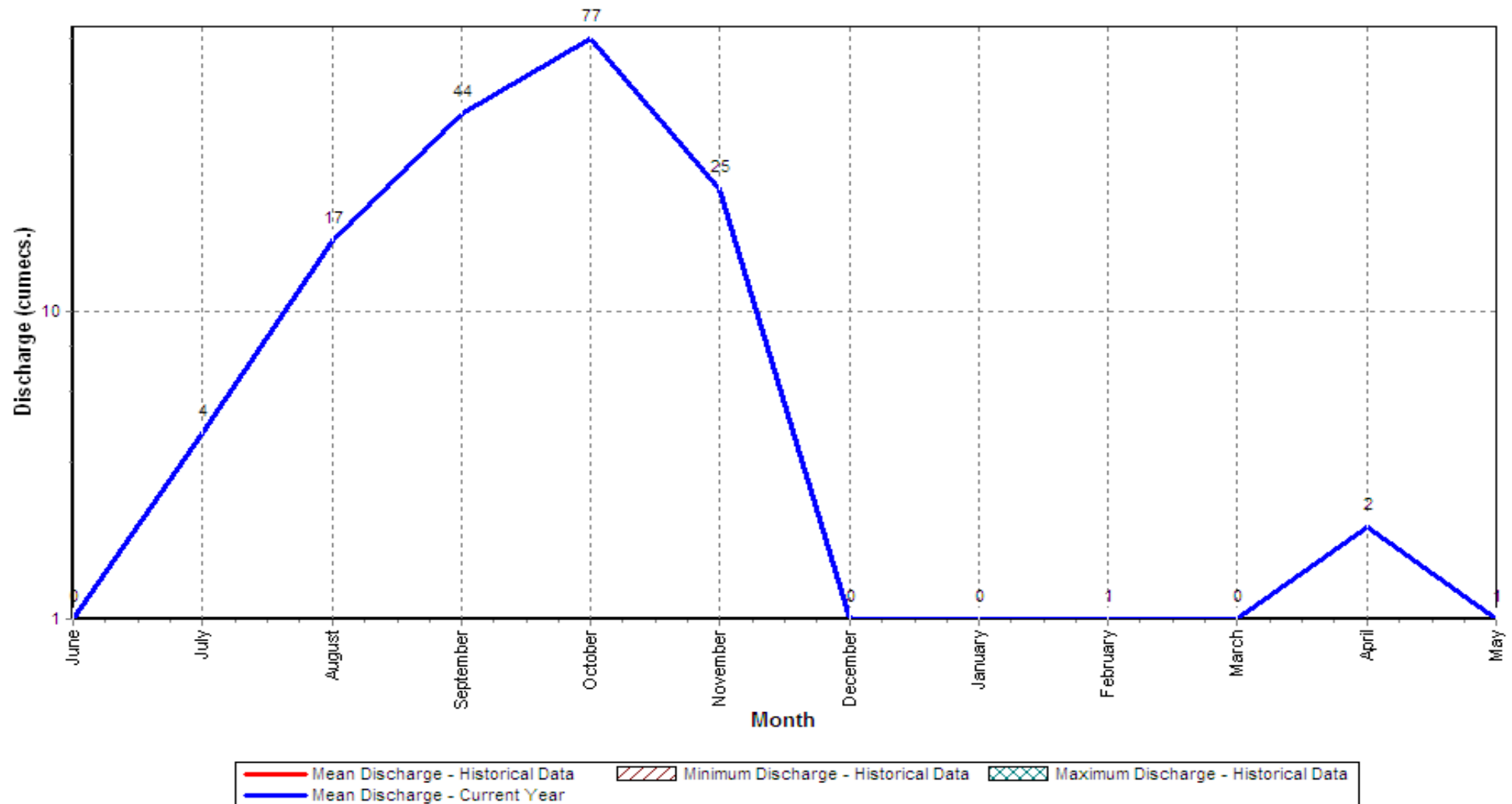
Station Name : VALIGONDA (040-LKDHYD)

Data considered : 2019-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Musi

Sub-Division : Lower Krishna SD 1, N.S.Dam



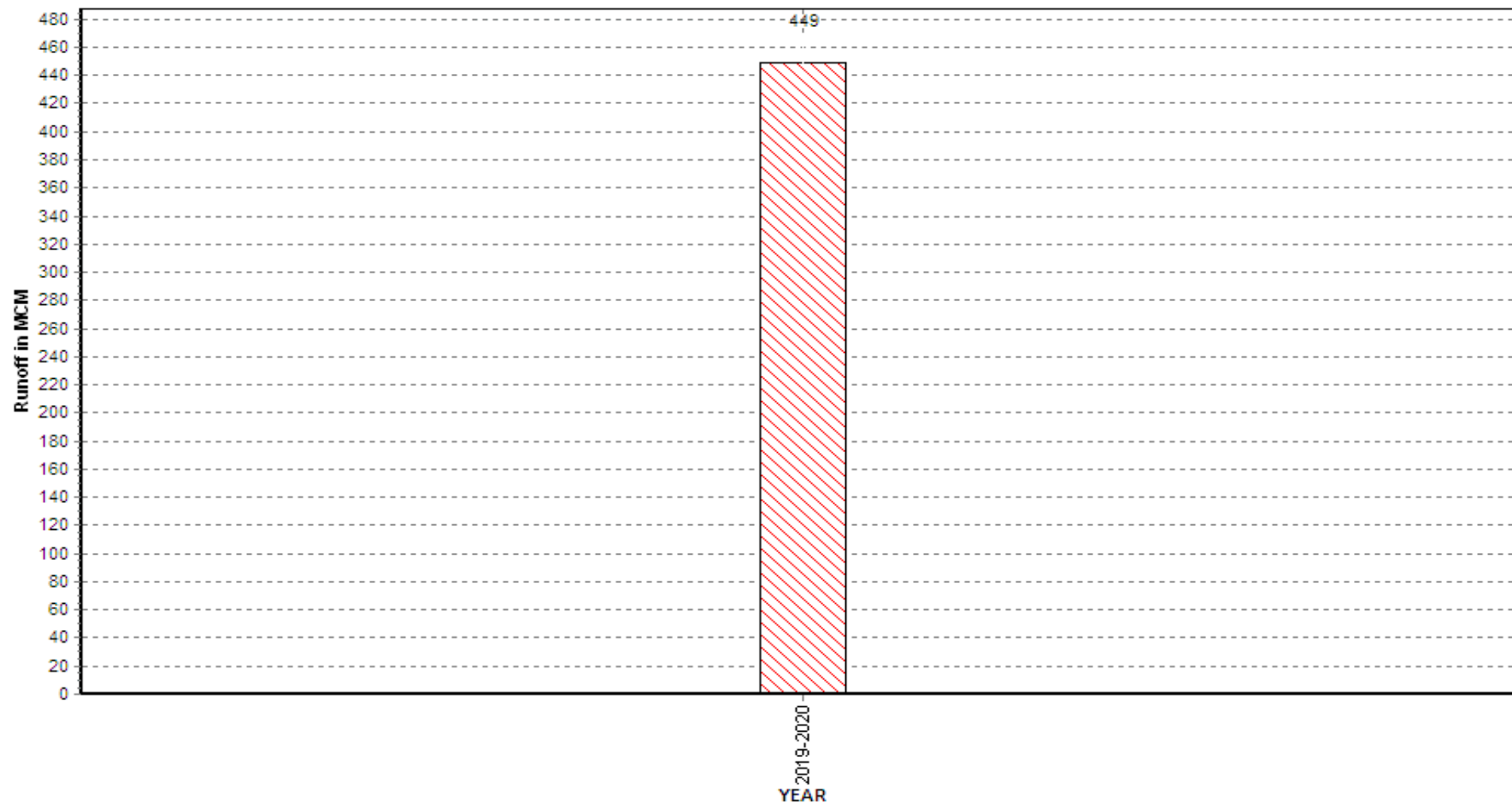
Annual Runoff Values for the period: 2019 - 2020

Station Name : VALIGONDA (040-LKDHYD)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



Note: Missing values have not been considered while arriving at Annual Runoff

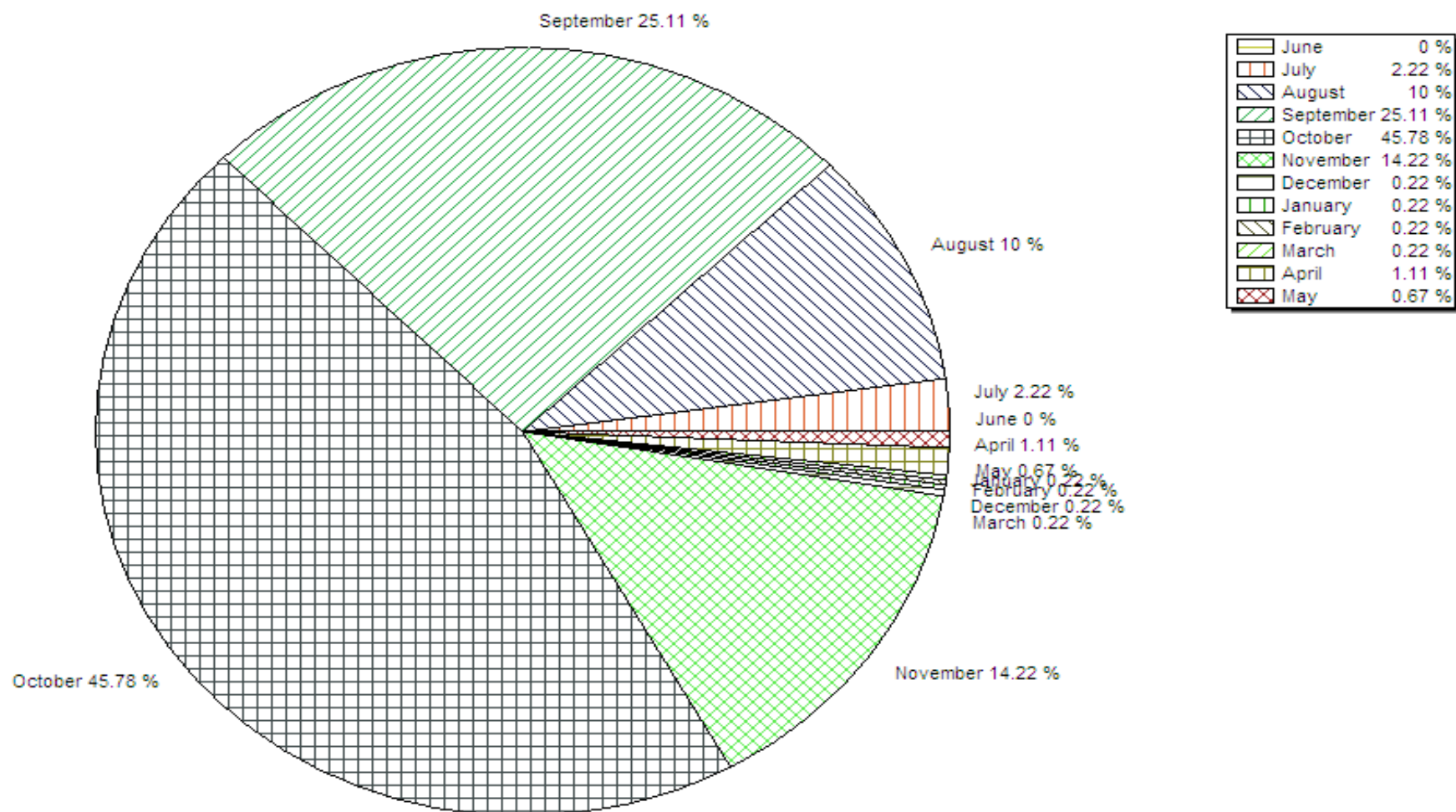
Monthly Runoff for the Year : 2019-2020

Station Name : VALIGONDA (040-LKDHYD)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



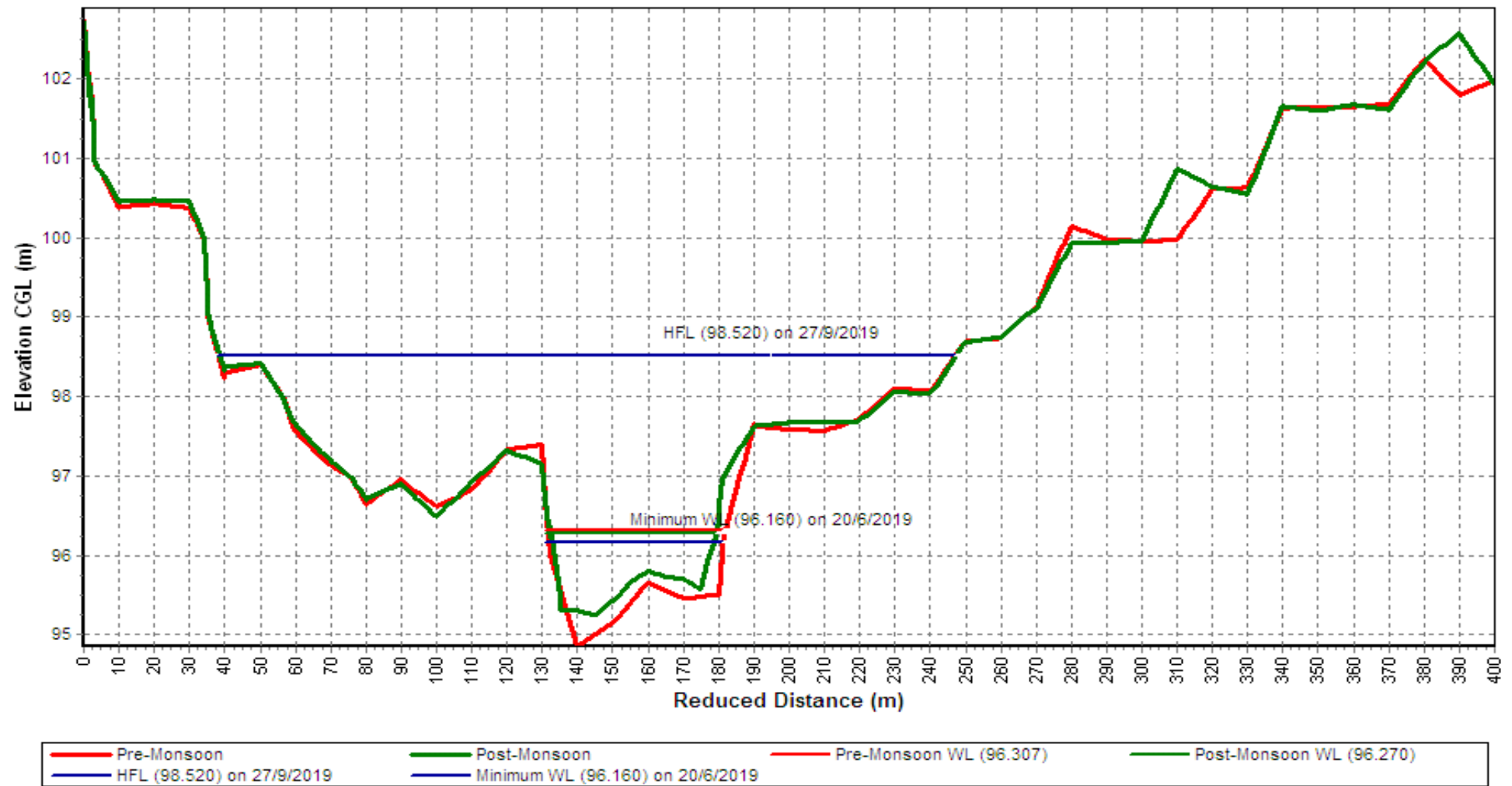
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : VALIGONDA (040-LKDHYD)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1. N.S.Dam



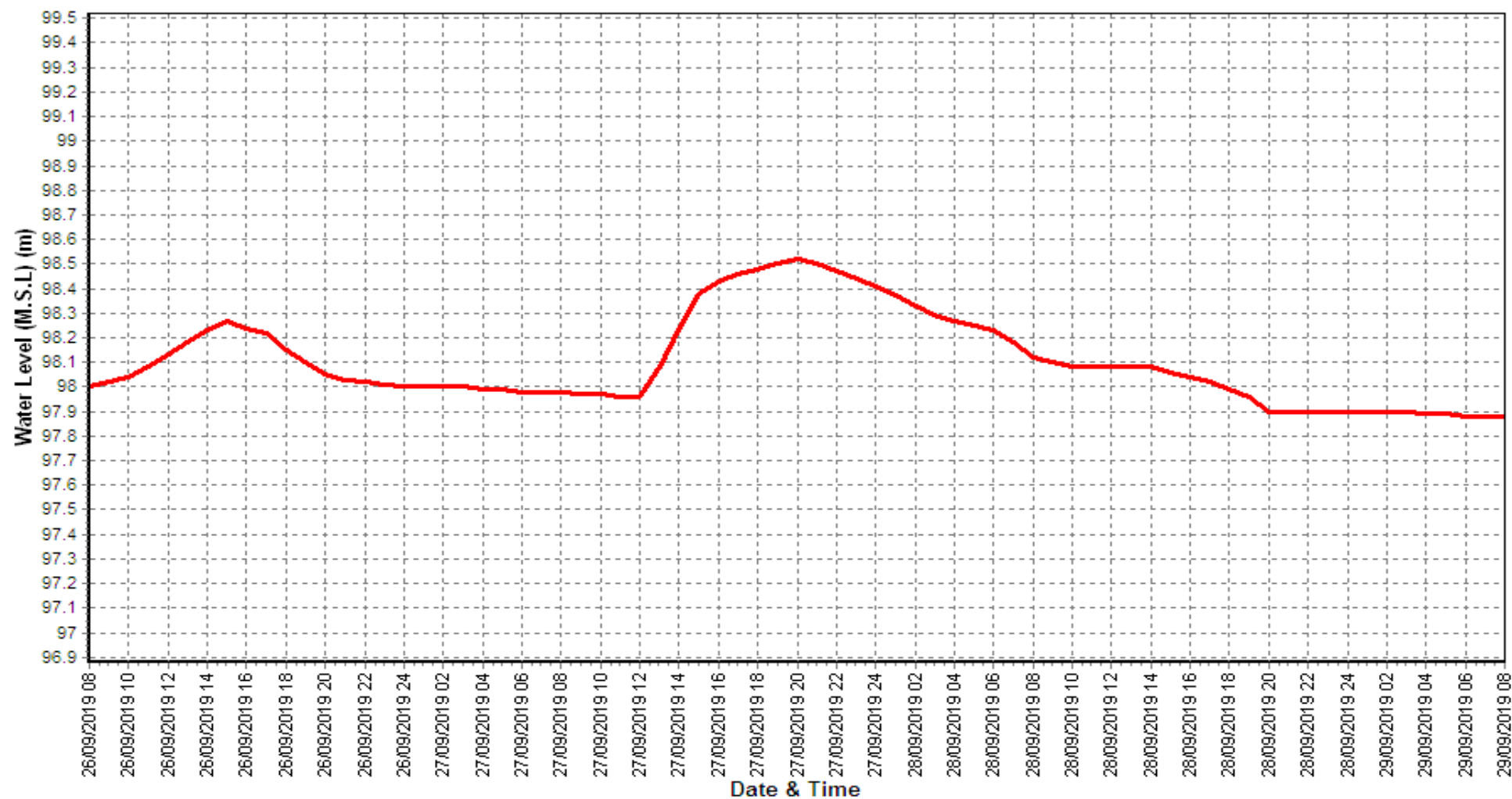
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : VALIGONDA (040-LKDHYD)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



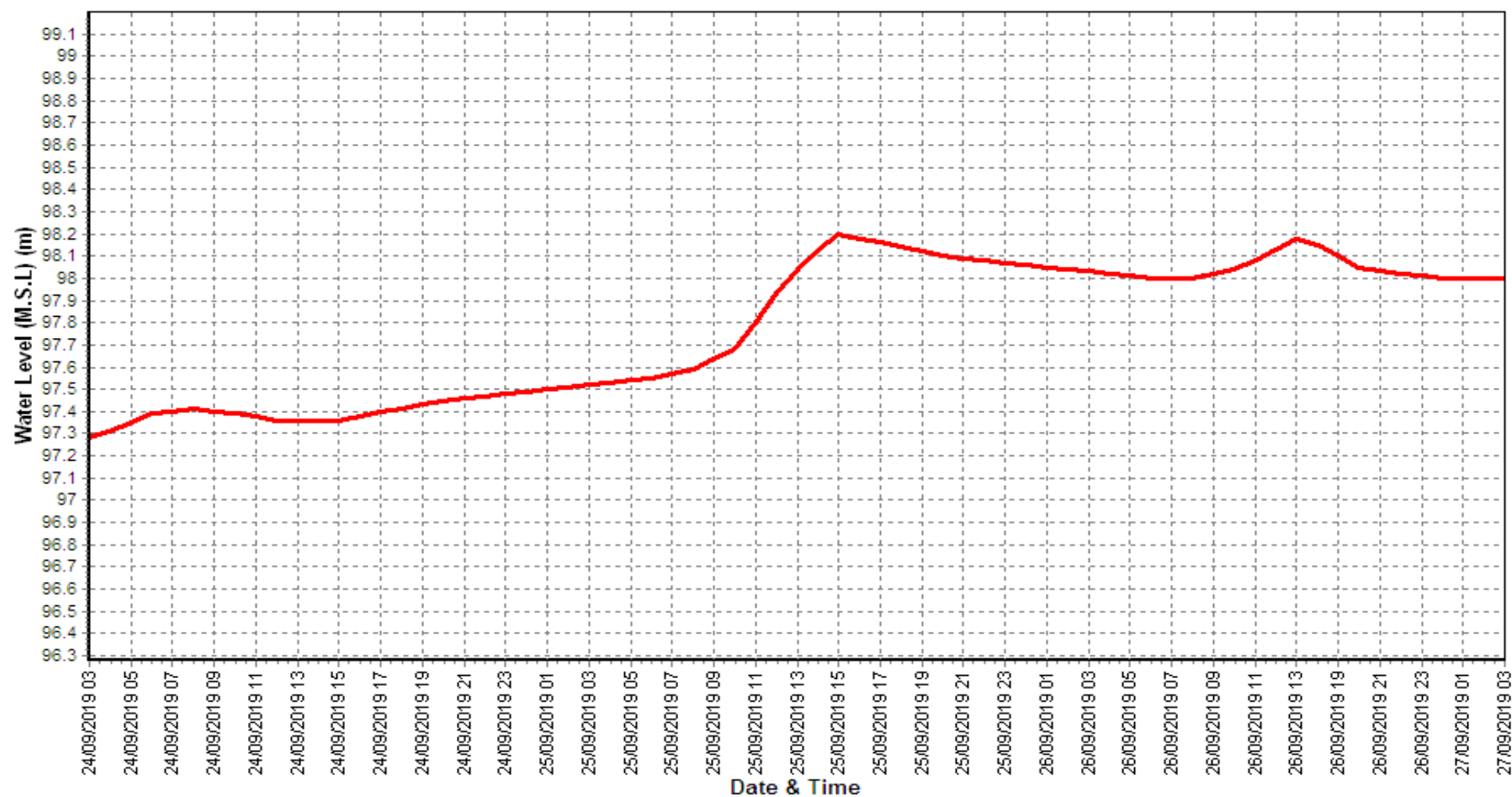
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : VALIGONDA (040-LKDHYD)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



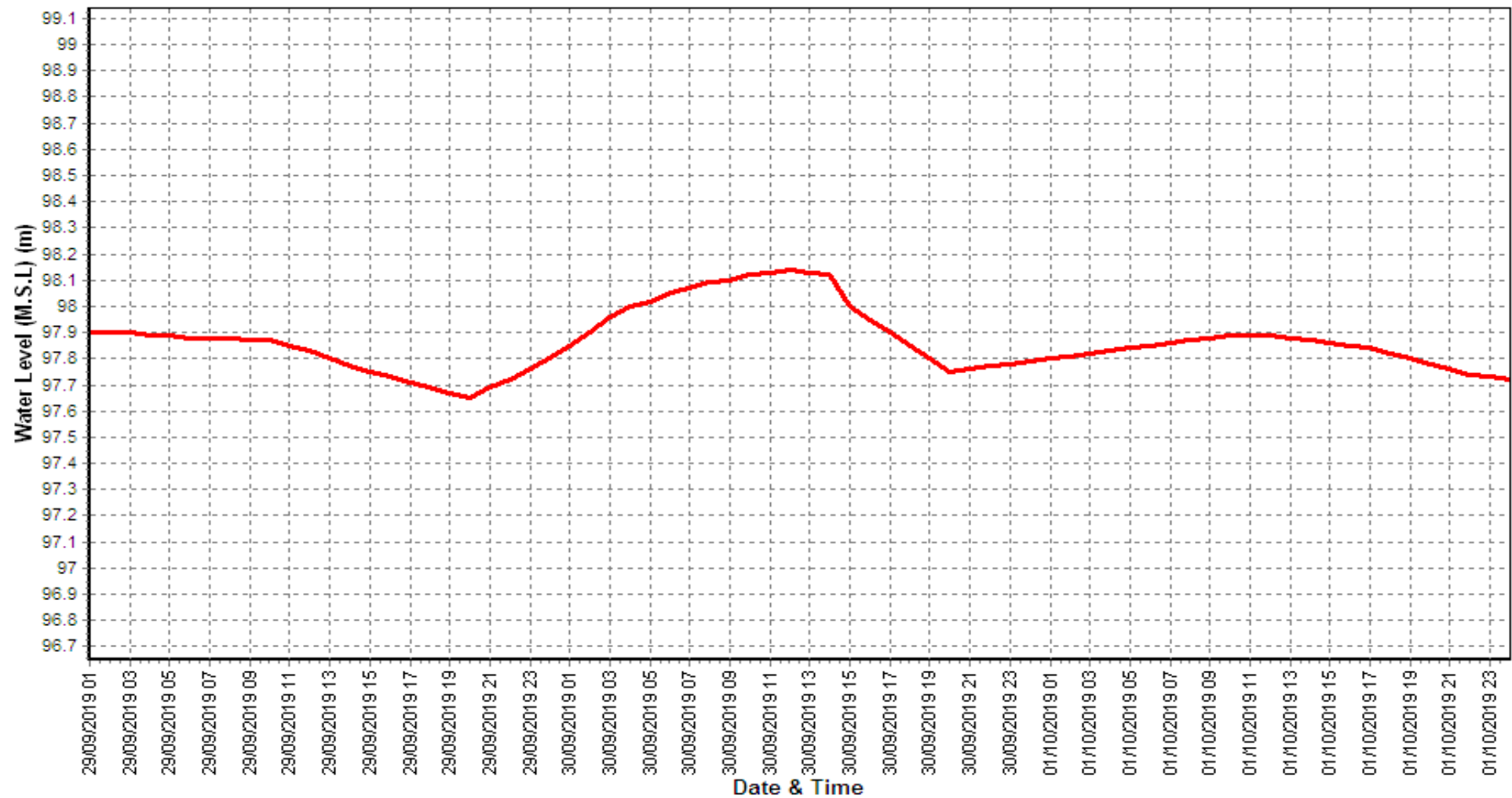
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : VALIGONDA (040-LKDHYD)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Dameracherla	Code	: AKF00A7
State	: Andhra Pradesh	District	Nalgonda
Basin	: Krishna	Independent River	: Krishna
Tributary	: Musi	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Musi
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Krishna SD 1, N.S.Dam
Drainage Area	: 11501 Sq. Km.	Bank	: Right
Latitude	: 16°44'21"	Longitude	: 79°40'11"
Zero of Gauge (m)	: 56 (m.s.l)	01/06/1968	- 31/05/1972
	: 55 (m.s.l)	01/06/1972	- 31/05/2010
	: 53 (m.s.l)	01/06/2010	
	: 53 (m.s.l)	21/07/1968	
	Opening Date	Closing Date	
Gauge	: 01/12/1967	HFL During 2019-20	: 60.090 m
		Corres. Discharge	: 3983 (Estimated)
Discharge	: 27/07/1968	Date & Time of	: 16/08/2019
		occurrence	: 08:00 Hrs
Sediment	: 02/09/2013		
Water Quality	: 01/01/1980		

HFL Recorded so far in m : 62.500 dt 05-10-2009

Corresponding Discharge (cumecs) : 4300 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1969-1970	215.0	57.575	06/09/1969	1.000	56.080	31/05/1970
1970-1971	644.0	59.180	23/09/1970	0.689	56.050	20/06/1970
1971-1972	473.0	57.590	03/10/1971	0.280	55.910	31/05/1972
1972-1973	275.5	57.195	06/10/1972	0.200	55.900	12/06/1972
1973-1974	367.5	57.300	13/08/1973	0.200	55.740	18/06/1973
1974-1975	164.0	56.715	24/10/1974	0.500	55.690	16/05/1975
1975-1976	1389	58.570	08/10/1975	1.100	55.685	11/06/1975
1976-1977	921.7	57.785	05/09/1976	0.800	55.410	09/06/1976
1977-1978	155.9	56.320	23/08/1977	0.900	55.335	13/06/1977
1978-1979	1420	58.790	16/08/1978	0.700	55.300	05/06/1978
1979-1980	662.5	57.300	28/09/1979	0.500	55.250	22/06/1979
1980-1981	143.0	56.400	18/09/1980	0.200	55.130	20/04/1981
1981-1982	380.8	56.900	10/10/1981	0.100	55.230	13/04/1982
1982-1983	684.2	57.513	20/10/1982	0.100	55.225	11/06/1982
1983-1984	5762	61.065	06/10/1983	0.000	55.100	20/06/1983

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1984-1985	132.1	56.250	02/08/1984	0.600	55.245	13/07/1984
1985-1986	283.2	57.100	13/08/1985	0.400	55.130	25/05/1986
1986-1987	194.5	56.730	13/08/1986	0.300	55.130	02/06/1986
1987-1988	247.3	56.750	04/11/1987	0.097	55.090	09/06/1987
1988-1989	1356	58.450	20/09/1988	0.153	55.030	06/06/1988
1989-1990	2656	61.335	24/07/1989	0.545	55.110	04/07/1989
1990-1991	395.0	57.140	31/08/1990	0.538	55.100	29/06/1990
1991-1992	1077	58.751	22/09/1991	2.142	55.129	05/06/1991
1992-1993	121.6	56.291	11/09/1992	0.310	55.060	11/07/1992
1993-1994	171.9	56.500	10/10/1993	0.407	55.089	27/06/1993
1994-1995	744.4	57.500	06/10/1994	0.543	55.090	29/07/1994
1995-1996	915.9	57.710	20/10/1995	0.718	55.040	30/05/1996
1996-1997	538.5	57.170	08/09/1996	0.447	55.010	14/06/1996
1997-1998	196.5	56.450	23/09/1997	0.000	55.080	25/07/1997
1998-1999	1659	60.520	16/10/1998	0.000		17/07/1998
1999-2000	225.9	56.570	07/09/1999	0.700	55.000	21/05/2000
2000-2001	1270	58.450	23/08/2000	0.708	55.000	24/07/2000
2001-2002	922.1	57.775	30/09/2001	0.008	54.750	23/07/2001
2002-2003	4.286	55.140	16/12/2002	0.000		19/04/2003
2003-2004	42.52	55.590	24/08/2003	0.000	54.700	02/12/2003
2004-2005	272.3	56.400	06/10/2004	0.000	54.960	09/08/2004
2005-2006	699.0	58.800	30/10/2005	0.000	55.140	12/07/2005
2006-2007	446.1	56.345	28/10/2006	0.000	54.800	08/07/2006
2007-2008	353.8	56.620	25/03/2008	0.000	54.900	09/07/2007
2008-2009	1327	58.600	10/08/2008	0.827	55.000	22/06/2008
2009-2010	4300	62.500	05/10/2009	0.000	54.500	15/08/2009
2010-2011	461.5	57.150	28/08/2010	0.989	54.920	20/06/2010
2011-2012	282.0	56.910	20/08/2011	0.000	54.780	27/05/2012
2012-2013	107.6	55.920	03/10/2012	0.000	54.750	06/02/2013
2013-2014	3656	60.500	26/10/2013	0.000	54.980	05/06/2013
2014-2015	381.0	56.690	27/10/2014	0.000		19/08/2014
2015-2016	100.9	55.665	21/08/2015	0.000		31/03/2016
2016-2017	1963	58.375	24/09/2016	0.000	54.460	10/08/2016
2017-2018	583.5	57.200	04/10/2017	0.000	54.640	15/06/2017
2018-2019	343.9	56.350	21/08/2018	0.000	54.710	23/06/2018

Annual Runoff of Musi at Dameracherla

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1968-1969	729	756	1485	26	27	52
2	1969-1970	937	670	1606	33	24	57
3	1970-1971	1262	331	1593	45	12	56
4	1971-1972	568	206	774	20	7	27
5	1972-1973	311	170	481	11	6	17
6	1973-1974	527	270	798	19	10	28
7	1974-1975	548	344	892	19	12	32
8	1975-1976	3009	390	3398	106	14	120
9	1976-1977	983	149	1132	35	5	40
10	1977-1978	375	190	565	13	7	20
11	1978-1979	1430	255	1685	51	9	60
12	1979-1980	481	278	758	17	10	27
13	1980-1981	521	40	561	18	1	20
14	1981-1982	706	37	744	25	1	26
15	1982-1983	481	90	571	17	3	20
16	1983-1984	1814	265	2079	64	9	73
17	1984-1985	379	281	660	13	10	23
18	1985-1986	559	91	651	20	3	23
19	1986-1987	485	119	604	17	4	21
20	1987-1988	422	126	548	15	4	19
21	1988-1989	1504	206	1710	53	7	60
22	1989-1990	1375	327	1702	49	12	60
23	1990-1991	736	278	1015	26	10	36
24	1991-1992	739	225	964	26	8	34
25	1992-1993	410	345	756	14	12	27
26	1993-1994	423	272	695	15	10	25
27	1994-1995	584	325	908	21	11	32
28	1995-1996	684	128	812	24	5	29
29	1996-1997	707	352	1059	25	12	37
30	1997-1998	383	117	500	14	4	18
31	1998-1999	1146	339	1484	40	12	52
32	1999-2000	473	171	644	17	6	23

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	2000-2001	765	266	1031	27	9	36
34	2001-2002	387	151	538	14	5	19
35	2002-2003	8	7	15	0	0	1
36	2003-2004	40	0	40	1	0	1
37	2004-2005	247	244	491	9	9	17
38	2005-2006	1146	399	1545	41	14	55
39	2006-2007	978	510	1488	35	18	53
40	2007-2008	1218	636	1854	43	22	66
41	2008-2009	1512	586	2098	53	21	74
42	2009-2010	1212	494	1706	43	17	60
43	2010-2011	1047	597	1644	37	21	58
44	2011-2012	624	119	743	22	4	26
45	2012-2013	89	48	137	3	2	5
46	2013-2014	1924	244	2168	68	9	77
47	2014-2015	447	257	704	16	9	25
48	2015-2016	145	4	149	5	0	5
49	2016-2017	1028	64	1093	36	2	39
50	2017-2018	665	207	872	24	7	31
51	2018-2019	281	66	347	10	2	12
52	2019-2020	707	253	960	25	9	34
Average		772	256	1028	27	9	36
75% Dependable flow (MCM)				579			
90 % Dependable flow (MCM)				387			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Dameracherla (AKF00A7)

Division : Lower Krishna Divn., Hyderabad

Local River : Musi

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	54.690	0.000	54.710	0.000	54.900	2.603	55.800	80.32	55.500	47.92	55.580	63.83
2	54.680	0.000	54.720	0.000	54.890	2.459	55.520	50.91 *	55.460	43.00 *	55.560	60.98
3	54.680	0.000	54.720	0.000	54.890	2.621	55.800	85.25	55.900	111.4	55.530	52.30 *
4	54.670	0.000	54.700	0.000	54.840	1.473 *	56.000	140.2	55.920	129.9	55.500	53.39
5	54.670	0.000	54.690	0.000	54.810	0.867	55.650	56.42	55.920	140.8	55.420	42.59
6	54.660	0.000	54.780	0.628 #	54.880	2.216	55.440	38.64	55.860	111.2 *	55.400	40.88
7	54.820	1.263	54.790	0.741 *	54.900	3.055	55.420	37.44	57.200	602.4	55.340	28.57
8	54.840	1.464	54.810	0.999 #	54.890	2.725	55.380	33.64 *	57.000	538.5 *	55.330	29.89
9	54.830	1.303 *	54.740	0.353 #	54.910	3.210	55.330	23.03	56.530	416.0	55.330	29.79
10	54.810	1.098	54.670	0.000	54.910	3.190	55.300	25.59 *	56.380	309.6	55.320	27.48 *
11	54.810	1.047	54.660	0.000	54.870	2.058 *	55.280	0.000	56.000	148.2	55.310	27.14
12	54.810	1.043	54.640	0.000	54.800	0.864 *	55.360	0.000	56.020	155.9	55.290	24.67 *
13	54.800	0.855	54.640	0.000	54.680	0.000	55.390	25.89	56.000	144.2 *	55.320	30.44
14	54.800	0.745	54.620	0.000	56.950	0.000	55.500	0.000	55.700	63.96	55.400	39.64
15	54.800	0.767	54.610	0.000	56.350	0.000	55.460	43.00 *	55.500	51.83	55.440	45.79
16	54.790	0.741 *	54.700	0.000	60.090	0.000	56.000	142.5	55.500	53.43	55.430	45.17
17	54.760	0.434 #	54.690	0.000	58.950	0.000	55.660	61.50	55.480	45.70	55.430	39.33 *
18	54.740	0.281 #	54.680	0.000	57.800	0.000	56.700	419.1	55.610	65.16	55.500	53.98
19	54.700	0.000	54.670	0.000	54.820	0.000	56.050	160.1	56.000	144.3	55.480	46.31
20	54.700	0.000	54.760	0.434 #	54.740	0.000	55.660	64.75	55.900	120.1 *	55.480	47.34
21	54.690	0.000	54.790	0.741 *	54.700	0.000	55.500	52.48	55.800	87.97	55.420	41.30
22	54.680	0.000	54.800	1.061	55.150	9.179	55.400	35.86 *	56.040	170.4	55.350	32.13
23	54.690	0.000	54.810	1.117	55.170	9.717	55.340	24.85	56.300	288.7	55.320	30.10
24	54.710	0.000	54.810	1.132	55.200	16.93	55.310	23.68	56.050	176.0	55.310	26.53 *
25	54.710	0.000	54.790	0.741 #	55.150	13.81 *	55.520	56.40	56.030	152.1 #	55.310	27.65
26	54.700	0.000	54.830	1.379	55.020	6.119	55.620	61.54	56.000	149.7	55.400	37.22
27	54.700	0.000	54.840	1.491	55.000	5.578	55.670	68.31	55.740	86.80 *	55.350	33.40
28	54.720	0.000	54.850	1.656 *	54.950	4.798	55.900	107.0	55.600	67.37	55.340	33.19
29	54.720	0.000	54.850	1.617	54.940	3.331	55.700	79.44 *	55.520	54.54	55.340	31.42
30	54.710	0.000	54.850	1.571	54.940	3.851	55.530	52.52	55.640	70.72	55.310	29.15
31			54.870	1.758	55.440	36.98			55.600	66.14		
<u>Ten-Daily Mean</u>												
I Ten-Daily	54.735	0.513	54.733	0.272	54.882	2.442	55.564	57.15	56.167	245.1	55.431	42.97
II Ten-Daily	54.771	0.591	54.667	0.043	56.405	0.292	55.706	91.69	55.771	99.27	55.408	39.98
III Ten-Daily	54.703	0.000	54.826	1.297	55.060	10.03	55.549	56.20	55.847	124.6	55.345	32.21
<u>Monthly</u>												
Min.	54.660	0.000	54.610	0.000	54.680	0.000	55.280	0.000	55.460	43.00	55.290	24.67
Max.	54.840	1.464	54.870	1.758	60.090	36.98	56.700	419.1	57.200	602.4	55.580	63.83
Mean	54.736	0.368	54.745	0.562	55.436	4.44	55.606	68.35	55.926	155.3	55.395	38.39

Annual Runoff in MCM = 972 Annual Runoff in mm = 84

Peak Observed Discharge = 602.4 cumecs on 07/10/2019 Corres. Water Level :57.2 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :54.69 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Dameracherla (AKF00A7)

Division : Lower Krishna Divn., Hyderabad

Local River : Musi

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	55.320	30.10 *	55.160	9.641	55.180	10.28	55.240	19.35 *	Not observed due to Lock-Down		54.890	2.323
2	55.300	27.25	55.210	18.67	55.200	15.21 *	55.260	23.00			54.920	2.652
3	55.340	33.12	55.260	23.36	55.230	20.95	55.290	24.84			54.910	2.532 *
4	55.340	33.70	55.280	25.72	55.320	28.67	55.320	28.89			54.900	2.393
5	55.250	23.01	55.320	28.07 *	55.370	33.19	55.410	37.29			54.880	2.086
6	55.280	26.19	55.350	32.21	55.390	35.49	55.480	45.01			54.860	1.903
7	55.230	20.65	55.320	27.34	55.390	34.54	55.620	64.29			54.850	1.817
8	55.200	17.72 *	55.300	26.46	55.350	32.41	55.560	56.80 *			54.850	1.580
9	55.210	18.72	55.320	27.72	55.500	49.32 *	55.500	46.55			54.840	1.447
10	55.080	7.295	55.330	28.25	55.670	72.49	55.440	42.02 *			54.840	1.437 *
11	55.080	7.049	55.300	26.64	55.600	63.69	55.400	35.47			54.830	1.422
12	55.060	5.981	55.300	25.84 *	55.400	34.95	55.350	31.17			54.810	1.170
13	54.970	2.865	55.320	28.72	55.350	31.89	55.310	27.56			54.810	1.103
14	54.950	2.468	55.340	30.18	55.320	30.06	55.260	23.14			54.820	1.283
15	54.950	2.468 *	55.320	28.07 *	55.280	26.21	55.210	16.23 *			54.800	1.030
16	55.000	4.329	55.290	26.52	55.280	23.64 *	55.170	9.807			54.800	1.046
17	54.980	3.660	55.310	27.96	55.300	26.92	55.180	10.51			54.790	0.974 *
18	54.970	3.209	55.280	25.67	55.360	32.73	55.180	10.46			54.780	0.841
19	54.940	2.903	55.320	28.07 *	55.380	34.80	55.180	10.42			54.790	0.974
20	54.950	3.424	55.350	31.55	55.420	38.42	55.300	27.08	54.850	1.297	54.760	0.588
21	54.980	3.796	55.360	32.07	55.440	39.98	55.360	33.35	54.850	1.464	54.760	0.599
22	54.970	3.696 *	55.370	33.86	55.400	37.42	55.350	31.47 *	54.840	1.459	54.810	1.162
23	54.920	2.385	55.340	30.06	55.410	38.45 *	55.340	30.50	54.810	1.306	54.810	1.168
24	54.900	2.040	55.310	27.82	55.420	38.89	55.320	28.85	54.840	1.310	54.820	1.211 *
25	54.950	3.424 *	55.280	25.54	55.370	33.78	Not observed due to Lock-Down		54.800	1.229	54.830	1.422 *
26	55.000	4.388	55.210	16.23 *	55.330	29.75			54.910	2.125 *	54.840	1.491
27	55.000	4.034	55.140	7.850	55.290	25.87			54.780	1.217	54.820	1.221
28	55.010	4.409	55.120	7.148	55.260	23.21			54.780	1.224	54.810	1.072
29	55.030	5.081 *	55.070	6.799	55.230	20.67			54.770	1.264	54.840	1.502
30	55.080	6.529	55.080	6.914					54.770	1.273	54.850	1.705
31	55.100	7.398	55.160	9.187							54.860	1.902 *
<u>Ten-Daily Mean</u>												
I Ten-Daily	55.255	23.78	55.285	24.75	55.360	33.26	55.412	38.81	55.106	6.563	54.874	2.017
II Ten-Daily	54.985	3.836	55.313	27.92	55.369	34.33	55.254	20.18	55.090	6.627	54.799	1.043
III Ten-Daily	54.995	4.289	55.222	18.50	55.350	32.00	55.283	24.23	54.815	1.387	54.823	1.314
<u>Monthly</u>												
Min.	54.900	2.040	55.070	6.799	55.180	10.28	55.170	9.807	54.770	1.217	54.760	0.588
Max.	55.340	33.70	55.370	33.86	55.670	72.49	55.620	64.29	55.170	9.807	54.920	2.652
Mean	55.075	10.43	55.272	23.55	55.360	33.24	55.315	27.63	55.004	4.859	54.832	1.453

Peak Computed Discharge = 538.5 cumecs on 08/10/2019

Corres. Water Level :57 m

Lowest Computed Discharge = 0.741 cumecs on 16/06/2019

Corres. Water Level :54.79 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

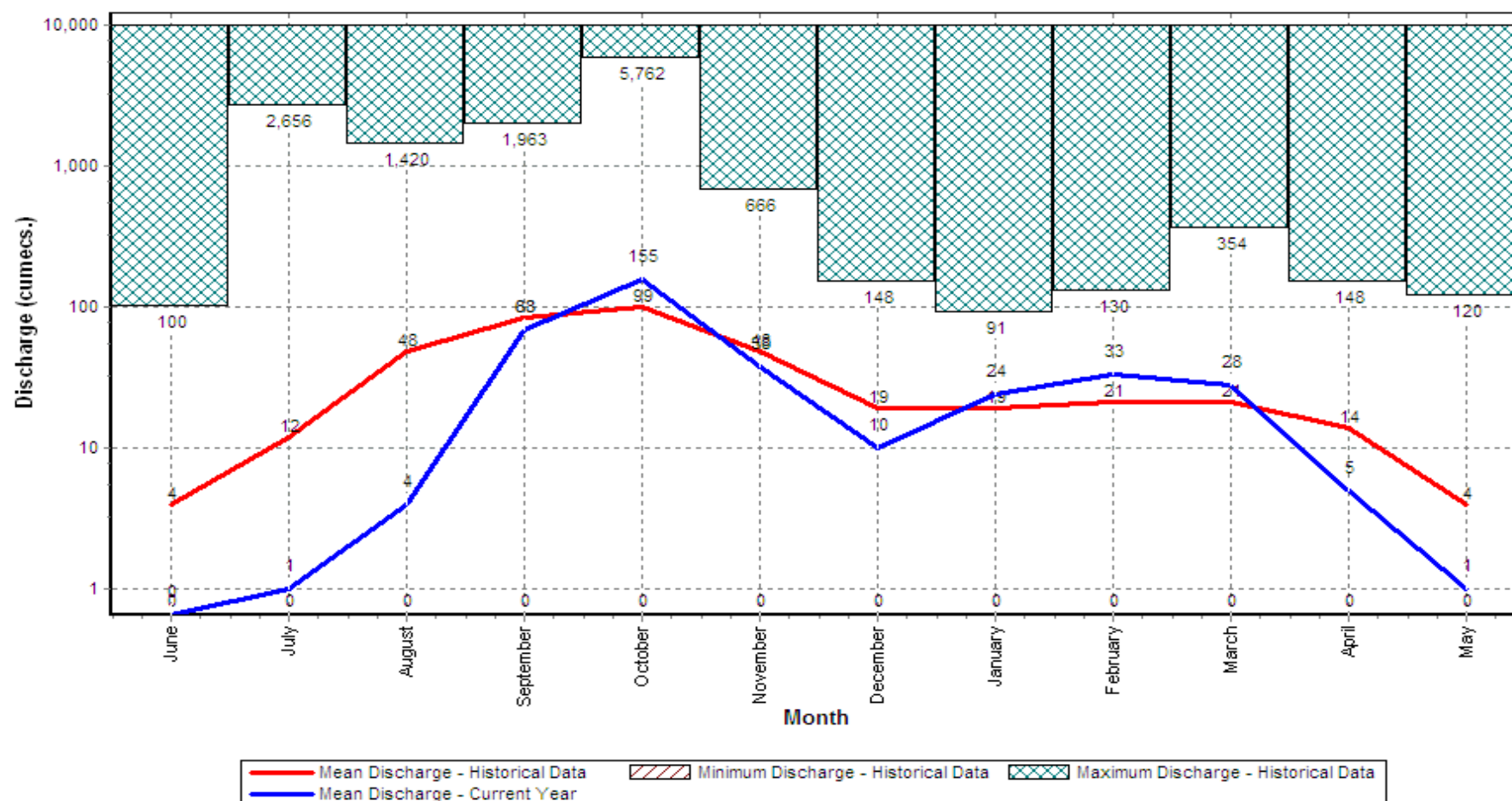
Station Name : Dameracherla (AKF00A7)

Data considered : 1969-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Musi

Sub-Division : Lower Krishna SD 1, N.S.Dam



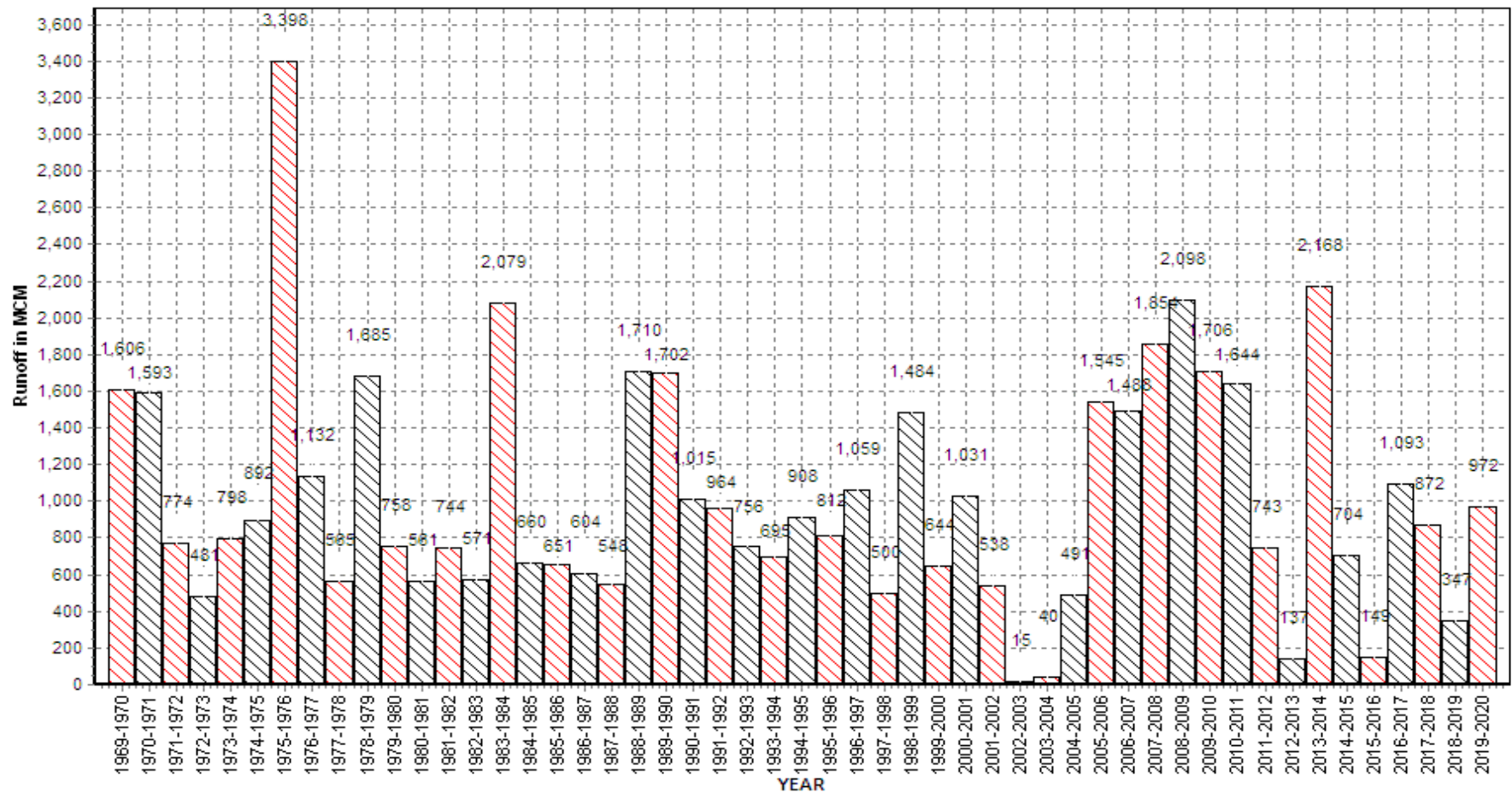
Annual Runoff Values for the period: 1969 - 2020

Station Name : Dameracherla (AKF00A7)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



Note: Missing values have not been considered while arriving at Annual Runoff

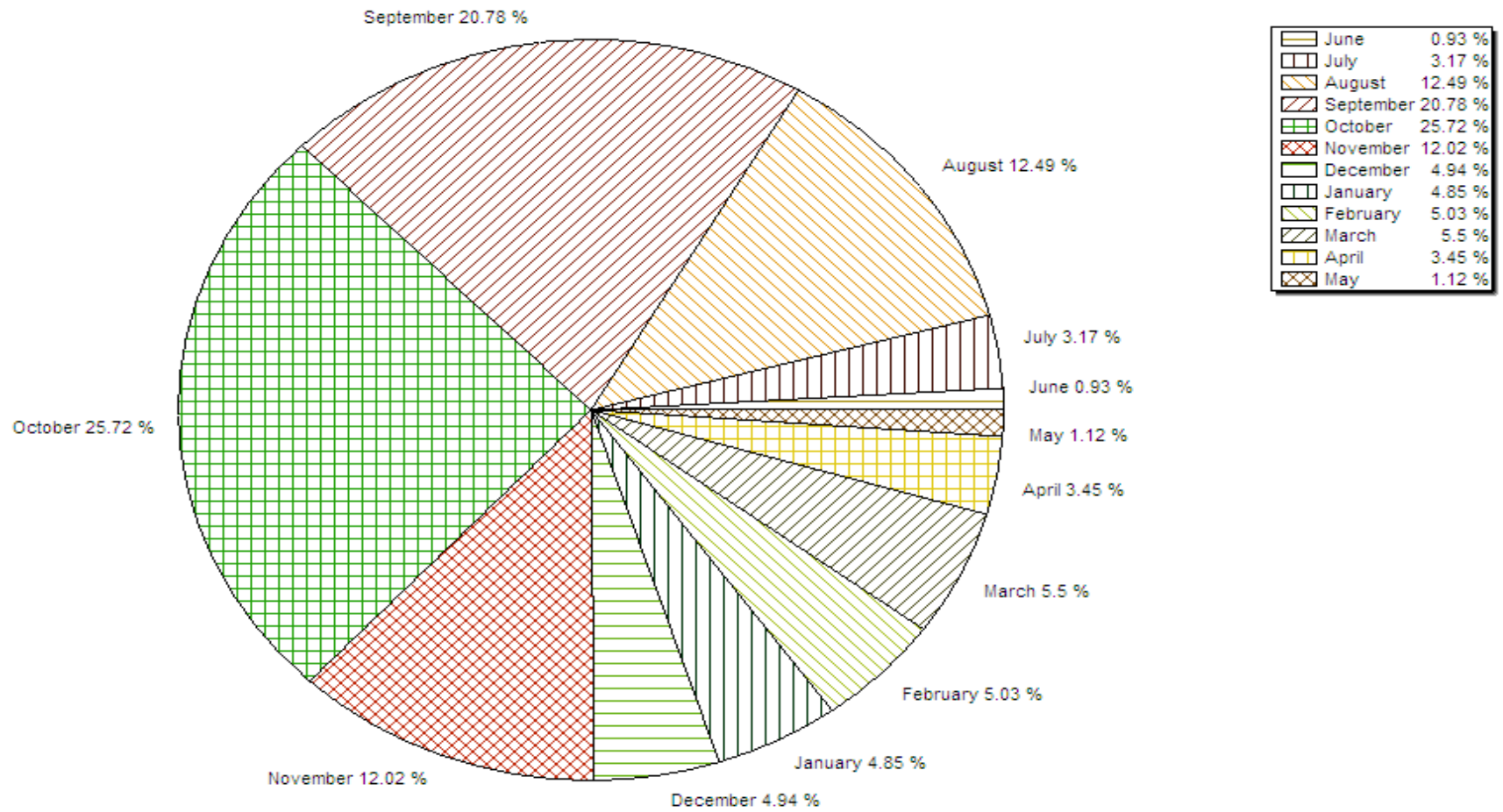
Monthly Average Runoff based on period : 1969-2019

Station Name : Dameracherla (AKF00A7)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



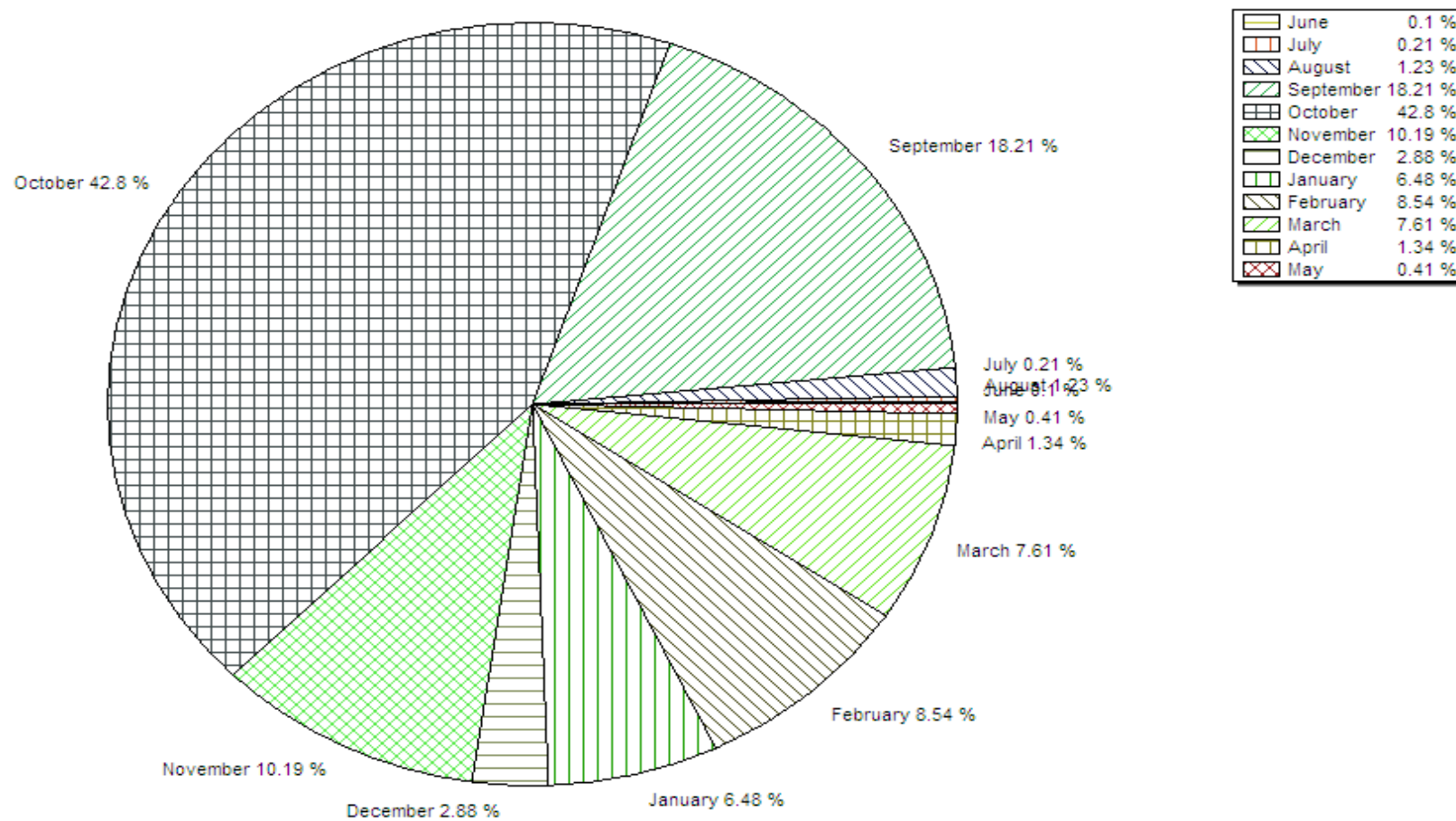
Monthly Runoff for the Year : 2019-2020

Station Name : Dameracherla (AKF00A7)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



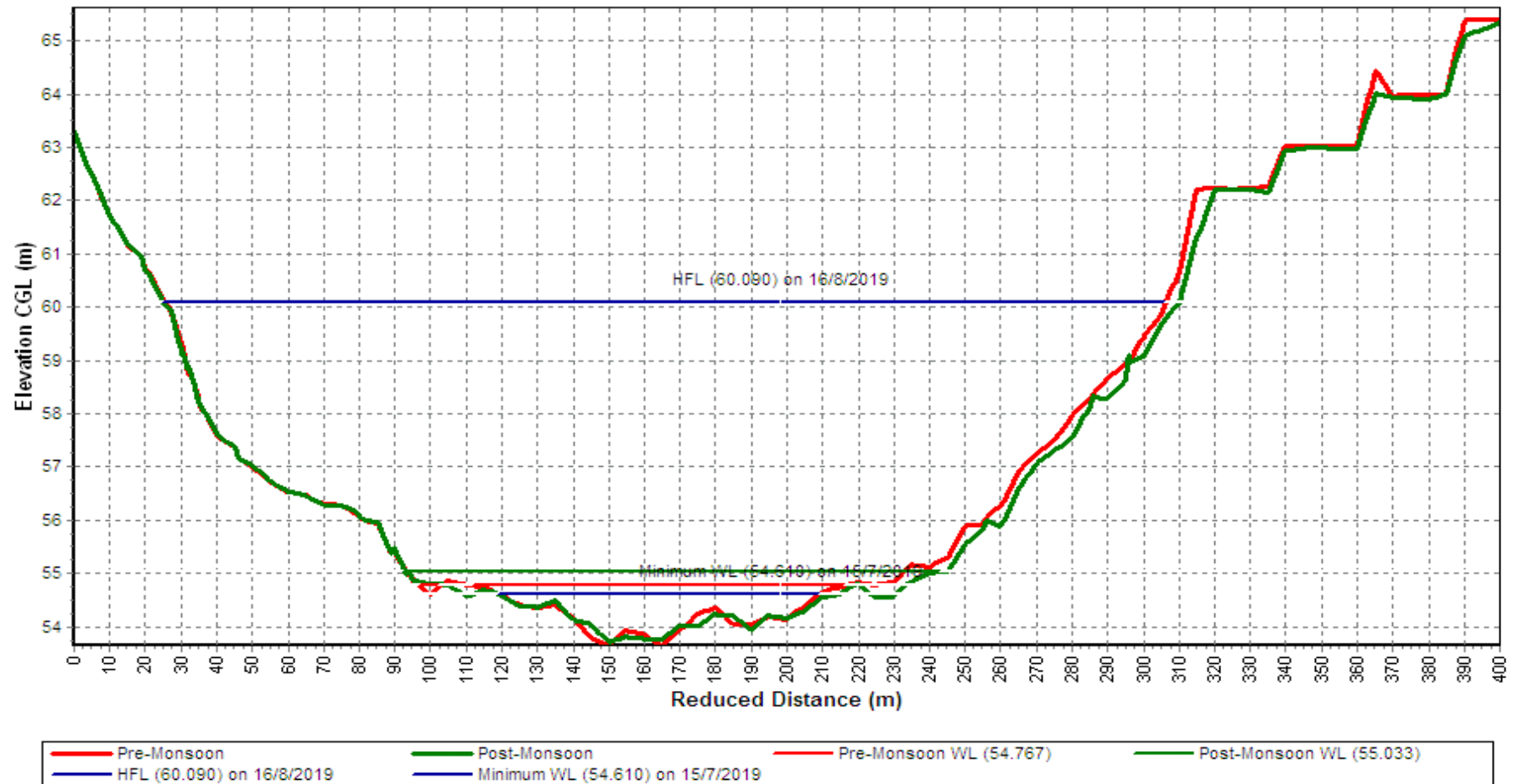
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Dameracherla (AKF00A7)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



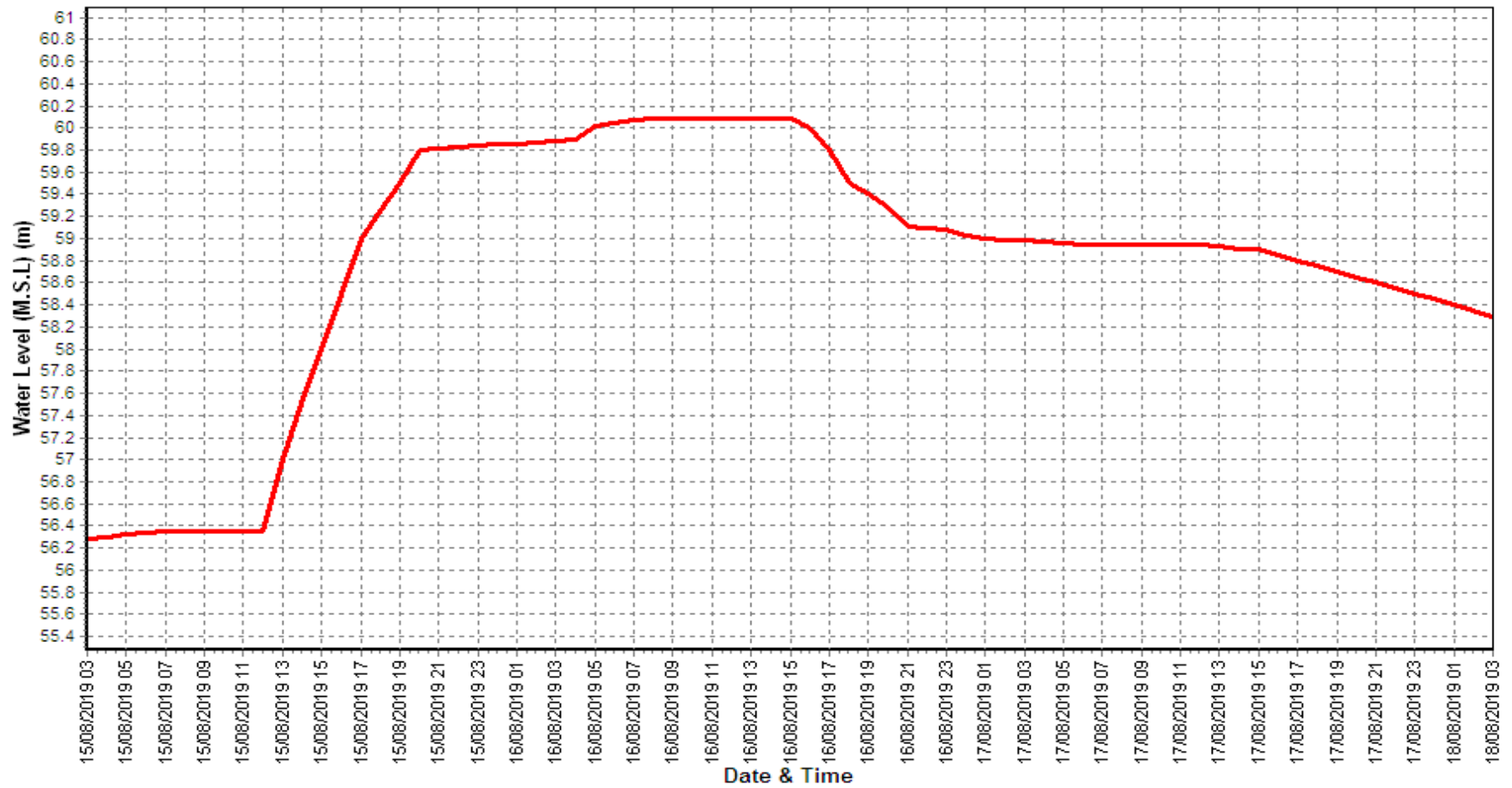
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Dameracherla (AKF00A7)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



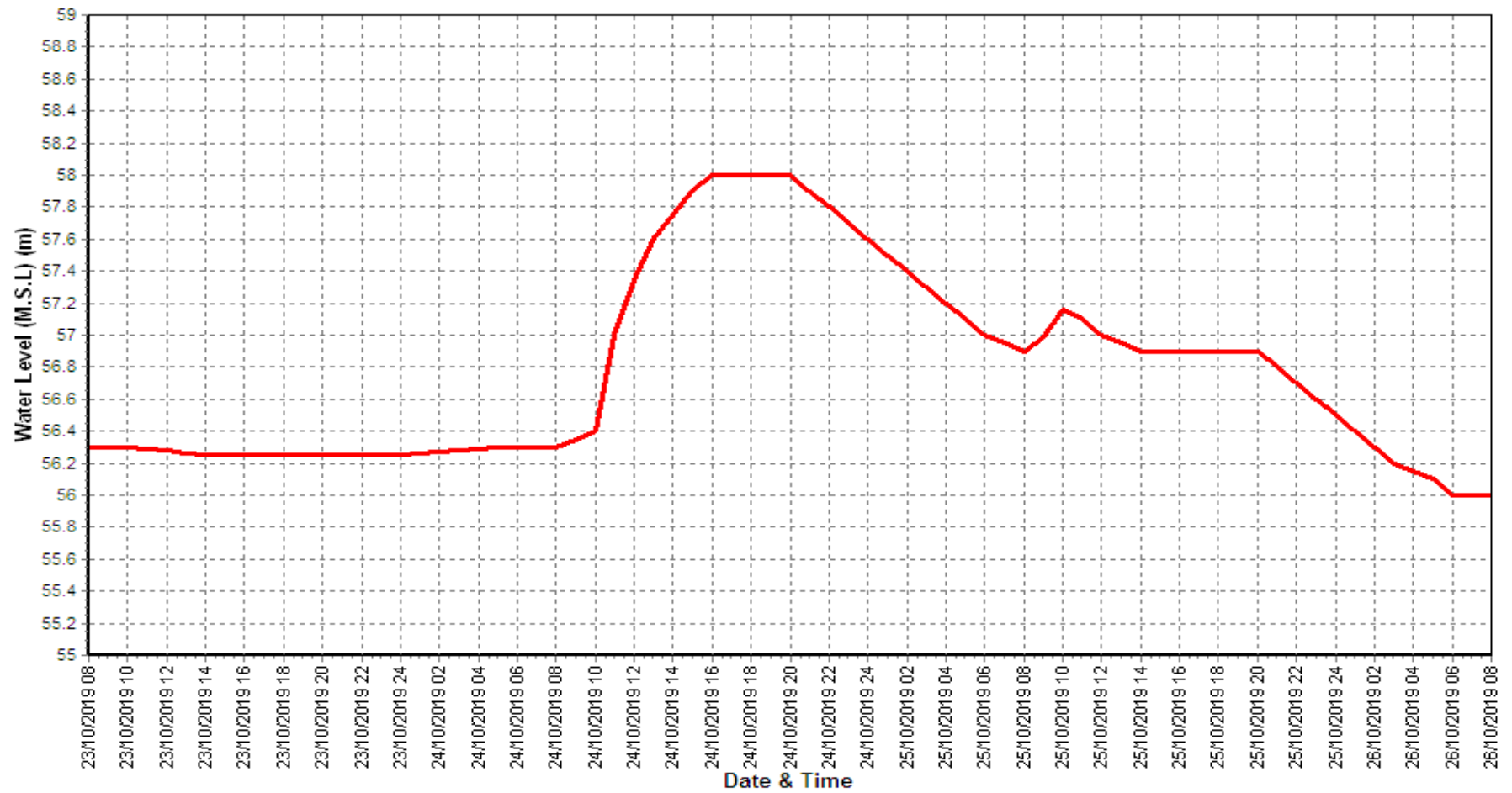
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Dameracherla (AKF00A7)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



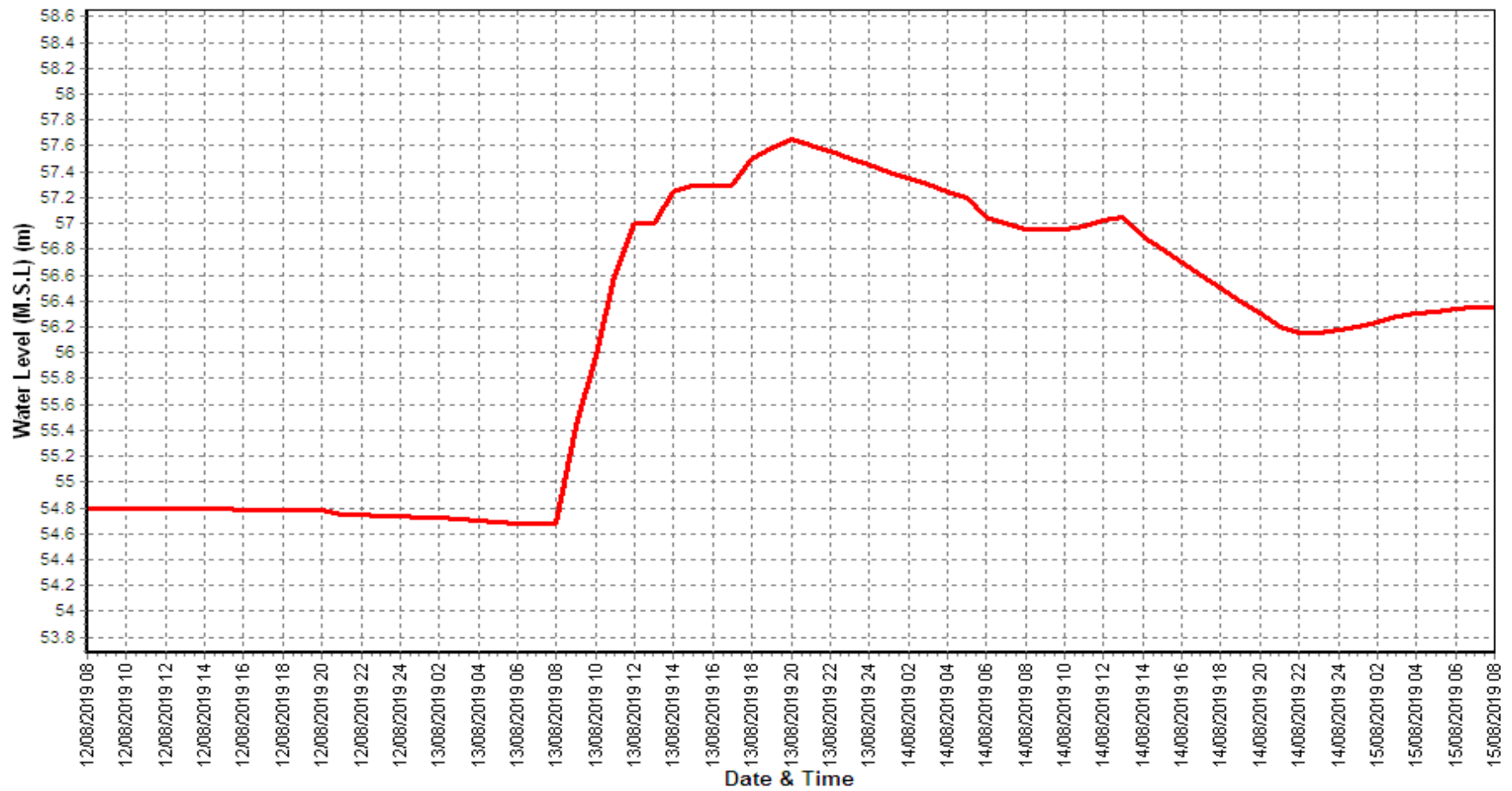
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Dameracherla (AKF00A7)

Local River : Musi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



HISTORY SHEET

Water Year : 2019-2020

Site : Anantharam

Code : 034-LKDHYD

State : Andhra Pradesh

District : Nalgonda

Basin : Krishna

Independent River : Krishna

Tributary : -

Sub Tributary :

Sub-Sub Tributary :

Local River : Aleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam

Drainage Area : 2448.4 Sq. Km.

Bank : Right

Latitude : 17°26'05"

Longitude : 79°24'43"

Zero of Gauge (m) : 96 (m.s.l)
96 (m.s.l)
226.5 (m.s.l)01/03/2017
01/06/2017 - 11/04/2019
12/04/2019

Opening Date

Closing Date

Gauge : 26/10/2016

Discharge : 26/10/2016

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2018-2019	0.000		09/02/2019	0.000		27/06/2018

Stage-Discharge Data for the period 2019 - 2020

Station Name : Anantharam (034-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Aleru

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000		0.000		0.000		0.000
2		0.000		0.000		0.000		0.000		0.000		0.000
3		0.000		0.000		0.000		0.000		0.000		0.000
4		0.000		0.000		0.000		0.000		0.000		0.000
5		0.000		0.000		0.000		0.000		0.000		0.000
6		0.000		0.000		0.000		0.000		0.000		0.000
7		0.000		0.000		0.000		0.000		0.000		0.000
8		0.000		0.000		0.000		0.000		0.000		0.000
9		0.000		0.000		0.000		0.000		0.000		0.000
10		0.000		0.000		0.000		0.000		0.000		0.000
11		0.000		0.000		0.000		0.000		0.000		0.000
12		0.000		0.000		0.000		0.000		0.000		0.000
13		0.000		0.000		0.000		0.000		0.000		0.000
14		0.000		0.000		0.000		0.000		0.000		0.000
15		0.000		0.000		0.000		0.000		0.000		0.000
16		0.000		0.000		0.000		0.000		0.000		0.000
17		0.000		0.000		0.000		0.000		0.000		0.000
18		0.000		0.000		0.000		0.000		0.000		0.000
19		0.000		0.000		0.000		0.000		0.000		0.000
20		0.000		0.000		0.000		0.000		0.000		0.000
21		0.000		0.000		0.000		0.000		0.000		0.000
22		0.000		0.000		0.000		0.000		0.000		0.000
23		0.000		0.000		0.000		0.000		0.000		0.000
24		0.000		0.000		0.000		0.000		0.000		0.000
25		0.000		0.000		0.000		0.000		0.000		0.000
26		0.000		0.000		0.000		0.000		0.000		0.000
27		0.000		0.000		0.000		0.000		0.000		0.000
28		0.000		0.000		0.000		0.000		0.000		0.000
29		0.000		0.000		0.000		0.000		0.000		0.000
30		0.000		0.000		0.000		0.000		0.000		0.000
31				0.000		0.000				0.000		
<u>Ten-Daily Mean</u>												
I Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
II Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
III Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
<u>Monthly</u>												
Min.		0.000		0.000		0.000		0.000		0.000		0.000
Max.		0.000		0.000		0.000		0.000		0.000		0.000
Mean		0		0		0		0		0		0

Annual Runoff in MCM = 0 Annual Runoff in mm = 0

Peak Observed Discharge = 0.000 cumecs on 01/06/2019

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Stage-Discharge Data for the period 2019 - 2020

Station Name : Anantharam (034-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Aleru

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1		0.000		0.000		0.000		0.000		0.000		0.000
2		0.000		0.000		0.000		0.000		0.000		0.000
3		0.000		0.000		0.000		0.000		0.000		0.000
4		0.000		0.000		0.000		0.000		0.000		0.000
5		0.000		0.000		0.000		0.000		0.000		0.000
6		0.000		0.000		0.000		0.000		0.000		0.000
7		0.000		0.000		0.000		0.000		0.000		0.000
8		0.000		0.000		0.000		0.000		0.000		0.000
9		0.000		0.000		0.000		0.000		0.000		0.000
10		0.000		0.000		0.000		0.000		0.000		0.000
11		0.000		0.000		0.000		0.000		0.000		0.000
12		0.000		0.000		0.000		0.000		0.000		0.000
13		0.000		0.000		0.000		0.000		0.000		0.000
14		0.000		0.000		0.000		0.000		0.000		0.000
15		0.000		0.000		0.000		0.000		0.000		0.000
16		0.000		0.000		0.000		0.000		0.000		0.000
17		0.000		0.000		0.000		0.000		0.000		0.000
18		0.000		0.000		0.000		0.000		0.000		0.000
19		0.000		0.000		0.000		0.000		0.000		0.000
20		0.000		0.000		0.000		0.000		0.000		0.000
21		0.000		0.000		0.000		0.000		0.000		0.000
22		0.000		0.000		0.000		0.000		0.000		0.000
23		0.000		0.000		0.000		0.000		0.000		0.000
24		0.000		0.000		0.000		0.000		0.000		0.000
25		0.000		0.000		0.000		0.000		0.000		0.000
26		0.000		0.000		0.000		0.000		0.000		0.000
27		0.000		0.000		0.000		0.000		0.000		0.000
28		0.000		0.000		0.000		0.000		0.000		0.000
29		0.000		0.000				0.000		0.000		0.000
30		0.000		0.000				0.000		0.000		0.000
31		0.000		0.000				0.000				0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
II Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
III Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
<u>Monthly</u>												
Min.		0.000		0.000		0.000		0.000		0.000		0.000
Max.		0.000		0.000		0.000		0.000		0.000		0.000
Mean		0		0		0		0		0		0

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

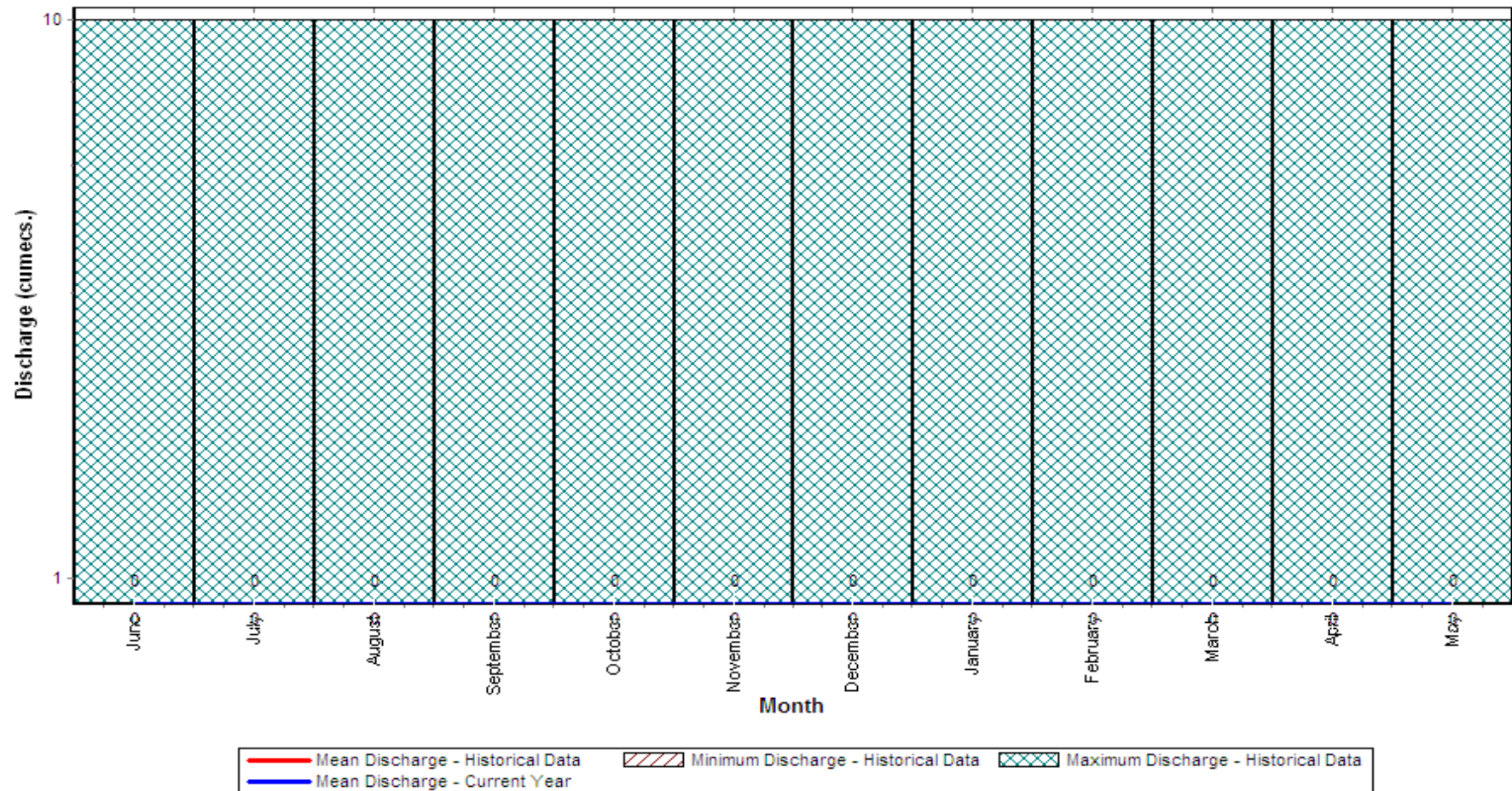
Station Name : Anantharam (034-LKDHYD)

Data considered : 2018-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Aleru

Sub-Division : Lower Krishna SD 1, N.S.Dam



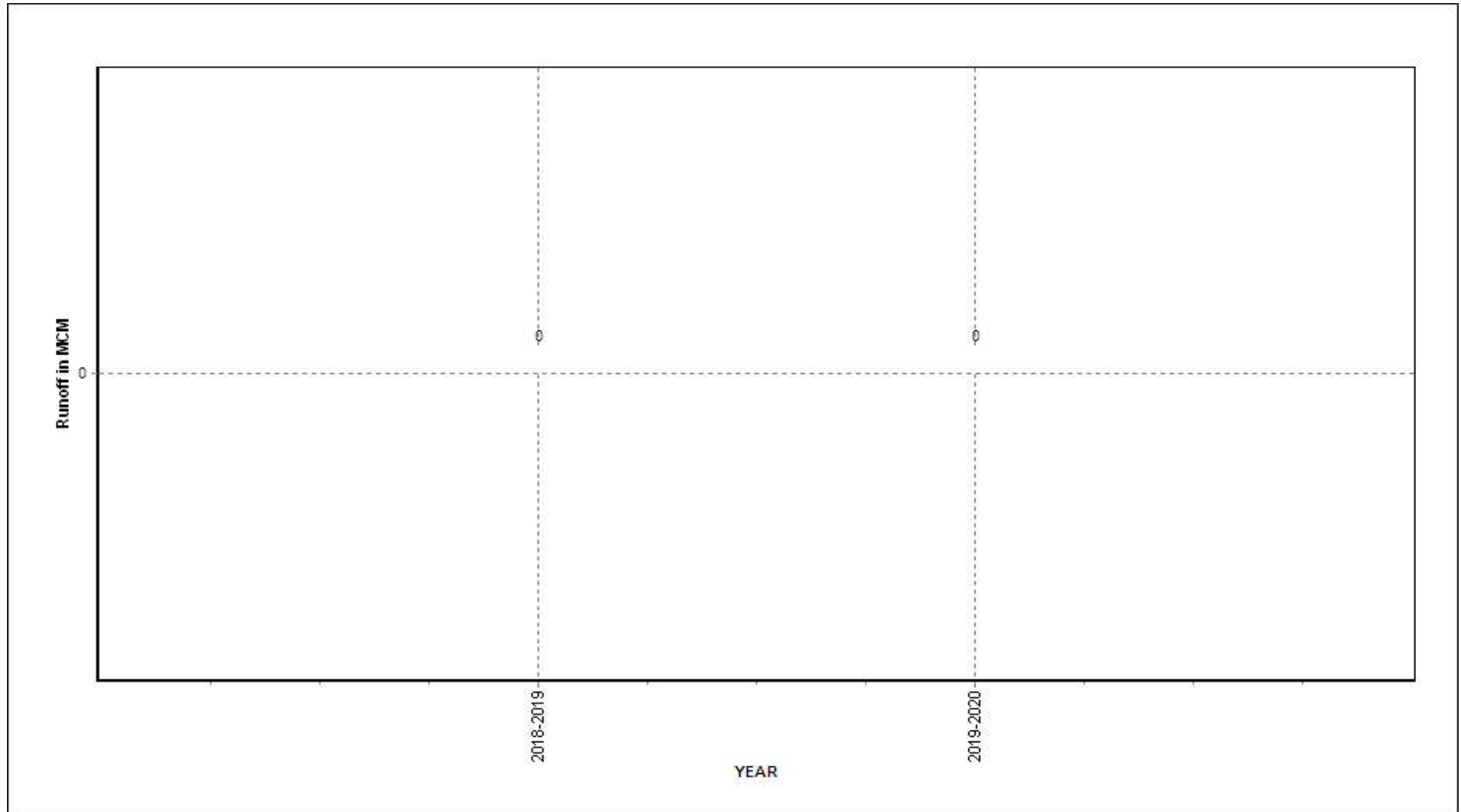
Annual Runoff Values for the period: 2018 - 2020

Station Name : Anantharam (034-LKDHYD)

Local River : Aleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



Note: Missing values have not been considered while arriving at Annual Runoff

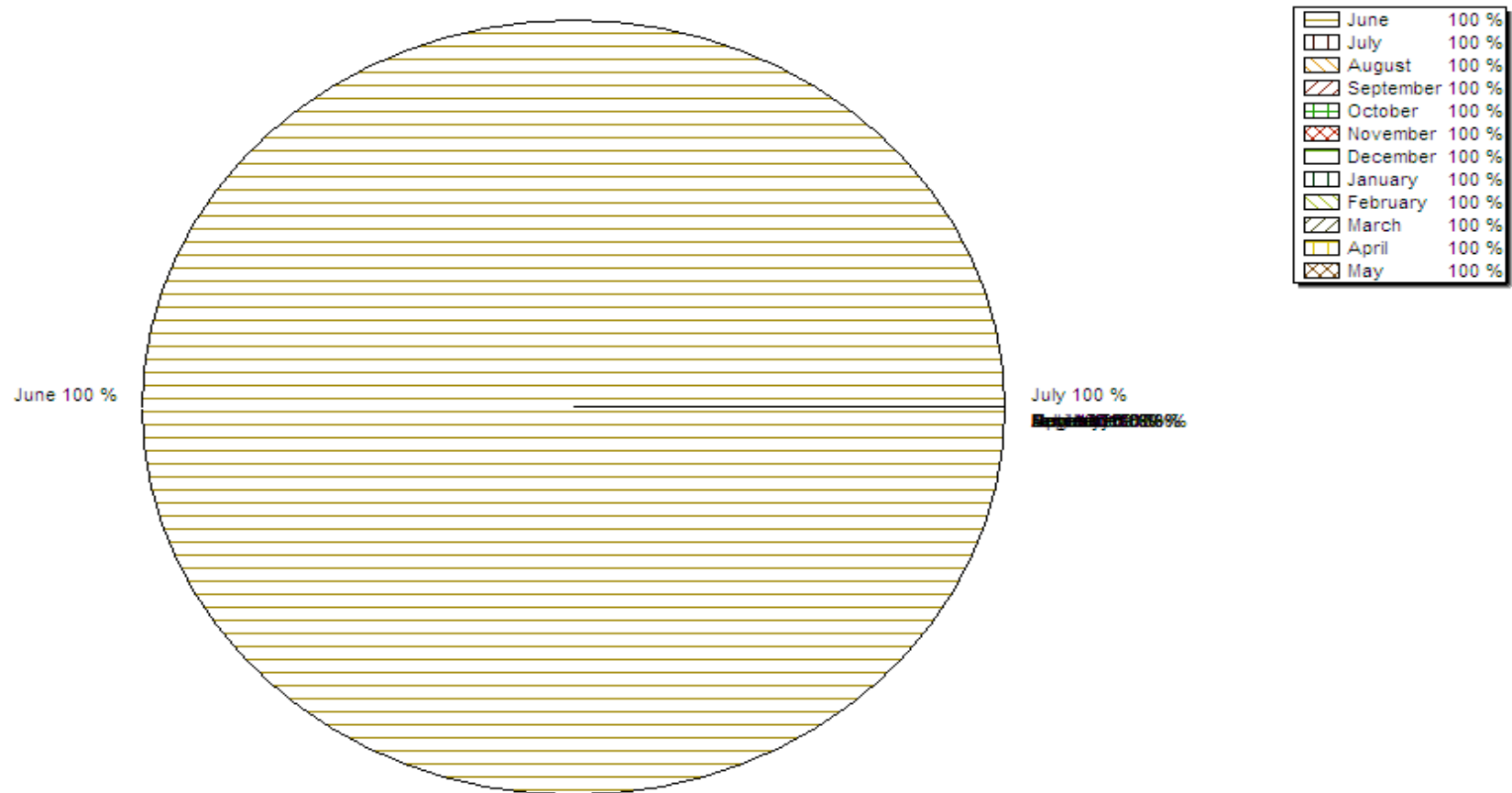
Monthly Average Runoff based on period : 2018-2019

Station Name : Anantharam (034-LKDHYD)

Local River : Aleru

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



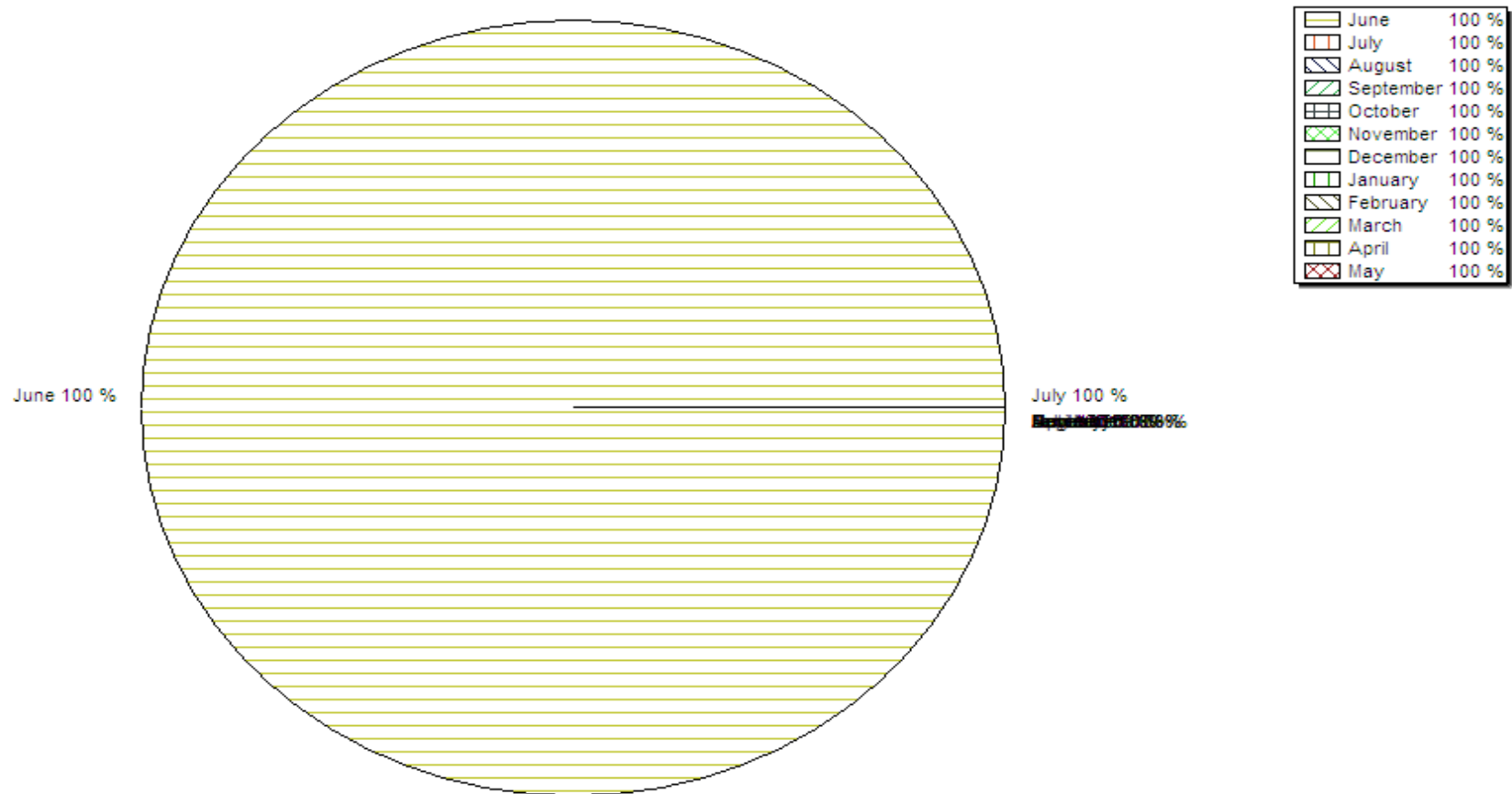
Monthly Runoff for the Year : 2019-2020

Station Name : Anantharam (034-LKDHYD)

Local River : Aleru

Division : Lower Krishna Divn., Hyderabad

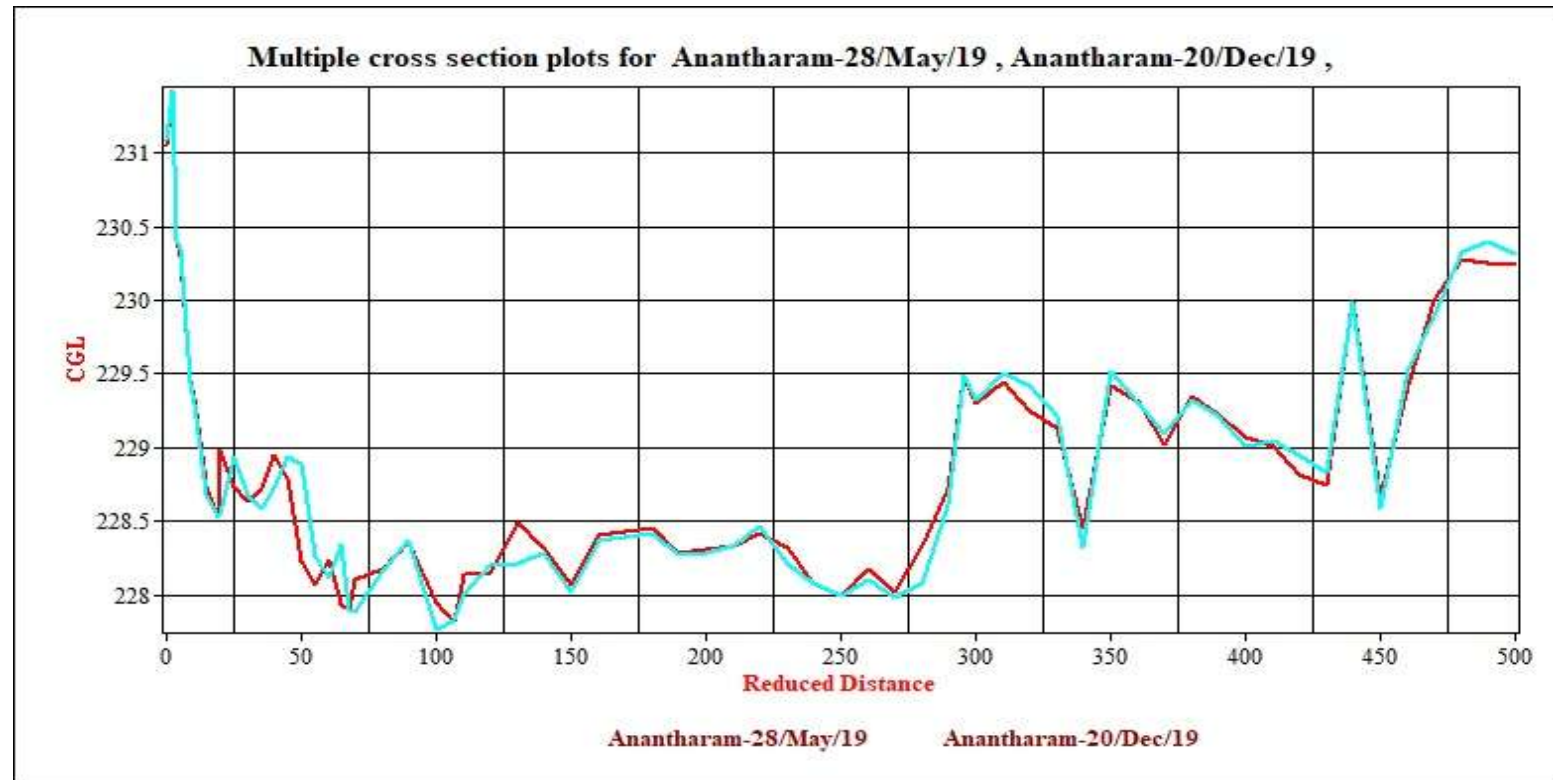
Sub-Division : Lower Krishna SD 1, N.S.Dam



Station Name : Anantharam (034-LKDHYD)
Local River : Aleru

Pre-Monsoon Post-Monsoon X-Section for Water Year : 2019-2020

Division : Lower Krishna Divn, Hyderabad
Sub-Division : Lower Krishna SD, N S Dam



HISTORY SHEET

Water Year : 2019-2020

Site : Veerlapalem Code : 032-LKDHYD

State : Andhra Pradesh District : Nalgonda

Basin : Krishna Independent River : Krishna

Tributary : - Sub Tributary : -

Sub-Sub Tributary : - Local River : Tungapadu

Division : Lower Krishna Divn., Hyderabad Sub-Division : Lower Krishna SD 1, N.S.Dam

Drainage Area : 624.5 Sq. Km. Bank : Left

Latitude : 16°41'15" Longitude : 79°32'46"

Zero of Gauge (m) : 44.5 (m.s.l)
63 (m.s.l)
63 (m.s.l)

Opening Date Closing Date

Gauge : 21/10/2016 HFL During 2019-20 : 66.570 m
Corres. Discharge : 140 (Estimated)

Discharge : 21/10/2016 Date & Time of occurrence : 18/09/2019
20:00 Hrs

Sediment :

Water Quality :

HFL Recorded so far in m :66.570 dt 18-09-2019

Corresponding Discharge (cumecs) : 140 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2018-2019	38.99	47.830	20/08/2018	0.000		09/06/2018

Annual Runoff of Tungapadu at Veeralapalem

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2017-2018	14	41	55	1	1	2
2	2018-2019	49	24	73	2	1	3
3	2019-2020	124	68	192	4	2	7
Average		32	32	64	1	1	2
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Veerlapalem (032-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Tungapadu

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	64.610	0.792	64.650	0.743	64.590	0.575	64.970	7.889 *	64.970	8.571	65.040	10.02
2	64.600	1.052 *	64.700	1.019	64.600	0.600	64.900	6.047 *	64.900	6.064 *	65.150	13.76
3	64.600	0.705	64.690	0.934	64.570	0.329	65.280	18.98	65.020	10.18	65.100	11.94 *
4	64.590	0.641	64.680	0.888	64.530	0.537 *	65.610	36.10 #	65.190	13.61	65.060	10.31
5	64.590	0.963 *	64.680	0.867	64.510	0.000	65.270	18.55	65.090	11.50	64.940	6.905
6	64.590	0.657	64.660	0.857	64.470	0.000	64.990	9.433	64.950	7.342 *	64.880	5.147
7	64.620	0.858	64.690	0.893 *	64.560	1.457	65.040	10.28	65.030	10.30	64.860	5.142
8	64.620	0.863	64.680	0.860	64.440	0.029	65.040	9.961 *	65.190	15.23 *	64.820	3.945
9	64.620	1.245 *	64.620	0.614	64.400	0.000	64.990	9.335	65.020	9.827	64.780	3.145
10	64.640	0.952	64.570	0.302	64.400	0.000	64.900	6.648 *	64.900	6.971	64.810	4.083 *
11	64.640	0.944	64.550	0.241	64.380	0.000	64.980	8.699	64.710	3.355	64.780	3.151
12	64.930	6.891	64.530	0.145	64.350	0.000	64.940	6.158	64.920	7.301	64.860	5.183 *
13	64.900	6.146	64.520	0.000	64.340	0.000	64.980	9.258	65.670	39.78 *	64.870	5.311
14	64.970	7.956	64.510	0.000	64.330	0.000	64.940	7.220	65.070	10.68	65.070	10.64
15	64.900	6.146	64.510	0.000	64.320	0.000	64.900	6.065 *	65.030	9.972	65.030	10.28
16	64.910	6.310 *	64.520	0.000	64.310	0.000	65.460	27.63 #	65.040	10.34	65.060	10.59
17	64.800	3.994	64.500	0.000	64.300	0.000	65.310	20.31 #	65.110	12.19	65.040	9.960 *
18	64.650	0.934	64.550	0.263	64.440	0.000	66.490	108.1	65.380	23.58 #	65.020	9.970
19	64.620	0.791	64.600	0.523	64.420	0.000	66.010	64.30 #	65.810	46.30	65.000	9.571
20	64.640	0.989	64.610	0.530	64.360	0.000	65.390	24.07 #	65.660	39.13 *	64.980	8.011
21	64.600	0.636	64.620	0.614 *	64.350	0.000	65.100	11.96	65.610	33.01	64.950	7.463
22	64.600	0.612	64.670	0.883	64.570	1.584	64.970	7.889 *	65.340	21.68	64.820	4.341
23	64.620	1.245 *	64.700	1.093	64.840	5.732	64.950	7.986	65.520	28.29 #	64.780	3.160
24	64.630	0.671	64.680	0.894	64.970	9.923	65.470	28.16	65.330	19.78	64.830	4.488 *
25	64.660	0.992	64.670	0.828	64.900	6.060 *	65.120	12.38	65.145	13.58	64.860	5.233
26	64.720	1.397	64.660	0.782	64.450	0.229	65.350	22.15 #	64.980	7.311	64.830	4.437
27	64.710	1.336	64.650	0.741	64.420	0.000	65.490	29.23	64.940	7.077 *	64.870	5.462
28	64.700	1.267	64.650	0.744 *	64.390	0.000	65.540	32.00	64.860	7.025	64.900	6.421
29	64.660	0.985	64.630	0.663	64.350	0.000	65.350	22.12 *	64.760	3.276	64.840	4.624
30	64.630	1.348 *	64.610	0.616	64.340	0.000	65.140	13.07	64.950	7.064	64.880	5.767
31			64.600	0.603	65.950	52.59			65.160	13.32		
Ten-Daily Mean												
I Ten-Daily	64.608	0.873	64.662	0.798	64.507	0.353	65.099	13.32	65.026	9.959	64.944	7.439
II Ten-Daily	64.796	4.110	64.540	0.170	64.355	0.000	65.340	28.18	65.240	20.26	64.971	8.267
III Ten-Daily	64.653	1.049	64.649	0.769	64.685	6.919	65.248	18.69	65.145	14.67	64.856	5.140
Monthly												
Min.	64.590	0.612	64.500	0.000	64.300	0.000	64.900	6.047	64.710	3.276	64.780	3.145
Max.	64.970	7.956	64.700	1.093	65.950	52.59	66.490	108.1	65.810	46.30	65.150	13.76
Mean	64.686	2.011	64.618	0.585	64.521	2.569	65.229	20.07	65.137	14.96	64.924	6.949

Annual Runoff in MCM = 192 Annual Runoff in mm = 307

Peak Observed Discharge = 108.1 cumecs on 18/09/2019 Corres. Water Level :66.49 m

Lowest Observed Discharge = 0.000 cumecs on 13/07/2019 Corres. Water Level :64.52 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Veerlapalem (032-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Tungapadu

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	64.870	5.358 *	64.760	3.125	64.800	3.980	64.850	4.913 *	Not observed due to Lock-Down		64.660	2.383
2	64.850	4.993	64.800	3.873	64.760	3.159 *	64.890	5.965			64.660	2.274
3	64.950	6.817	64.850	4.477	64.780	3.506	64.950	7.210			64.650	1.571 *
4	64.930	6.224	64.940	6.448	64.850	4.738	65.010	7.860			64.630	1.853
5	64.860	5.088	64.980	8.170 *	64.900	5.573	65.060	9.089			64.600	1.539
6	64.820	4.014	65.030	7.857	64.930	6.311	65.030	8.314			64.570	1.169
7	64.760	2.926	64.990	7.255	64.960	6.970	65.080	9.525			64.550	0.964
8	64.780	3.514 *	64.930	6.498	64.940	6.435	65.060	10.60 *			64.540	0.934
9	64.710	2.484	64.900	5.922	64.940	7.077 *	65.040	8.642			64.540	0.921
10	64.720	2.637	64.840	5.472	65.020	7.837	65.010	9.043 *			64.530	0.537 *
11	64.670	2.385	64.820	4.945	65.000	7.436	65.020	7.792			64.500	0.825
12	64.650	2.166	64.800	3.888 *	64.990	7.334	64.940	7.060			64.500	0.814
13	64.660	2.287	64.810	4.747	64.880	5.248	64.920	6.542			64.490	0.777
14	64.640	2.064	64.800	4.463	64.850	4.920	64.900	6.023			64.470	0.717
15	64.670	1.815 *	64.820	4.283 *	64.820	4.211	64.850	4.913 *			64.450	0.665
16	64.630	1.948	64.820	5.099	64.850	4.913 *	64.760	3.584			64.430	0.594
17	64.600	1.767	64.880	6.023	64.980	6.967	64.780	3.642			64.450	0.252 *
18	64.580	1.750	64.850	5.567	65.030	8.182	64.780	3.817			64.470	0.741
19	64.560	1.670	64.880	5.589 *	65.050	8.745	64.820	4.322			64.500	0.833
20	64.610	1.839	64.920	7.079	65.010	7.526	64.850	5.068	64.700	2.918	64.530	0.927
21	64.580	1.699	64.900	6.558	65.050	8.748	64.880	5.866	64.680	2.629	64.550	0.996
22	64.560	0.727 *	64.870	5.760	65.040	8.214	64.900	6.064 *	64.660	2.404	64.570	1.124
23	64.570	1.608	64.930	7.222	65.000	8.747 *	64.940	6.948	64.650	2.129	64.570	1.103
24	64.590	1.714	64.900	6.528	64.960	7.274	64.980	7.764	64.630	1.842	64.550	0.659 *
25	64.560	0.727 *	64.860	5.453	64.940	6.794	64.950	7.342 *	64.670	2.526	64.540	0.599 *
26	64.530	1.348	64.800	3.888 *	64.900	6.217	Not observed due to Lock-Down		64.700	2.217 *	64.530	0.921
27	64.620	1.872	64.700	2.587	64.870	5.710			64.750	3.303	64.510	0.839
28	64.640	1.980	64.680	2.402	64.850	5.336			64.780	3.722	64.500	0.809
29	64.670	1.815 *	64.660	2.298	64.840	5.120			64.740	3.116	64.520	0.904
30	64.680	2.539	64.730	2.835					64.690	2.796	64.520	0.912
31	64.700	2.682	64.760	3.215							64.530	0.537 *
Ten-Daily Mean												
I Ten-Daily	64.825	4.405	64.902	5.910	64.888	5.559	64.998	8.116	64.835	4.709	64.593	1.415
II Ten-Daily	64.627	1.969	64.840	5.168	64.946	6.548	64.862	5.276	64.821	4.458	64.479	0.715
III Ten-Daily	64.609	1.701	64.799	4.432	64.939	6.907	64.938	7.047	64.695	2.668	64.535	0.855
Monthly												
Min.	64.530	0.727	64.660	2.298	64.760	3.159	64.760	3.584	64.630	1.842	64.430	0.252
Max.	64.950	6.817	65.030	8.170	65.050	8.748	65.080	10.60	64.940	7.077	64.660	2.383
Mean	64.685	2.66	64.845	5.146	64.924	6.318	64.933	6.82	64.784	3.945	64.536	0.99

Peak Computed Discharge = 39.78 cumecs on 13/10/2019

Corres. Water Level :65.67 m

Lowest Computed Discharge = 0.252 cumecs on 17/05/2020

Corres. Water Level :64.45 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

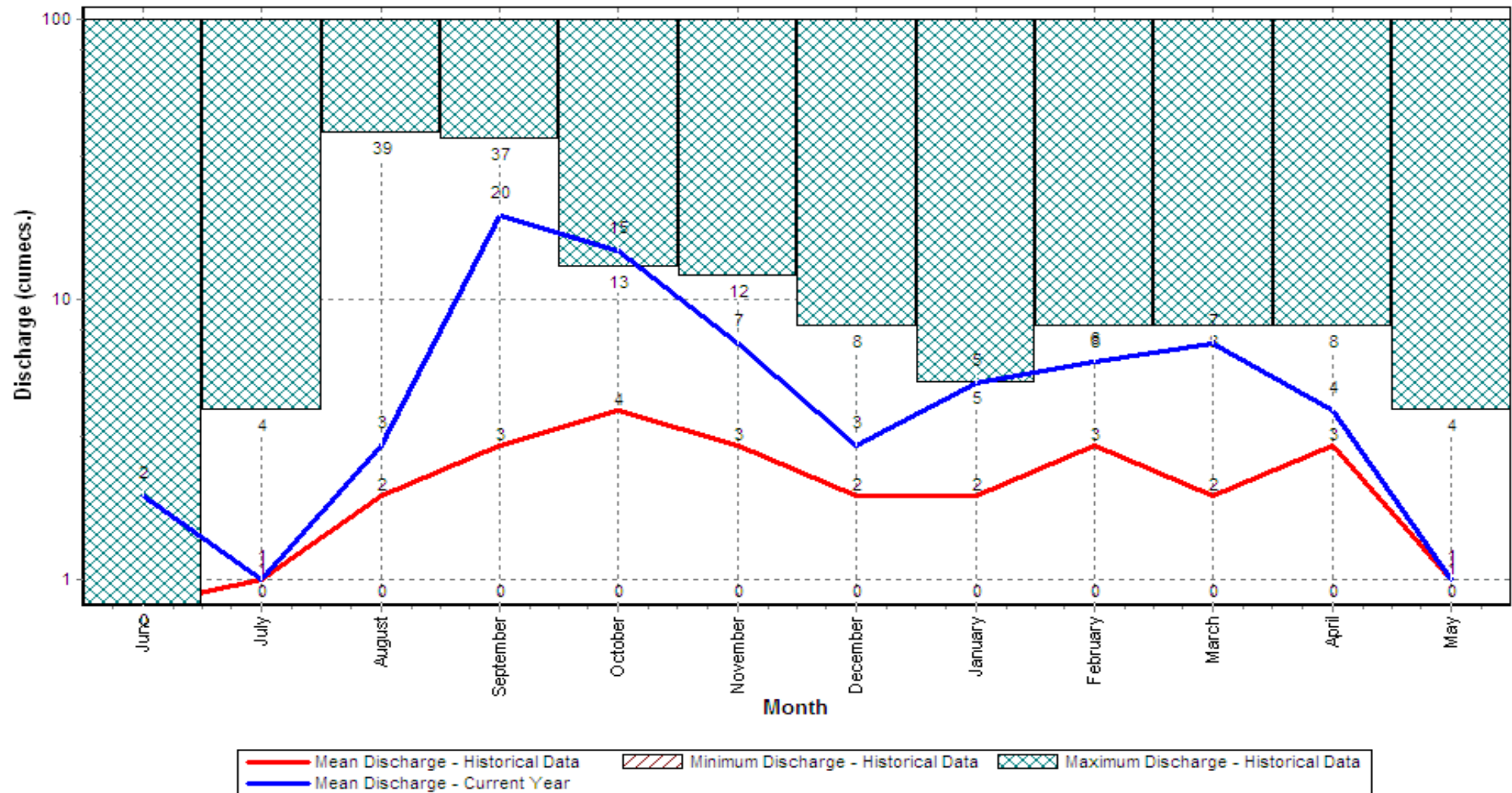
Station Name : Veerlapalem (032-LKDHYD)

Data considered : 2018-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Tungapadu

Sub-Division : Lower Krishna SD 1, N.S.Dam



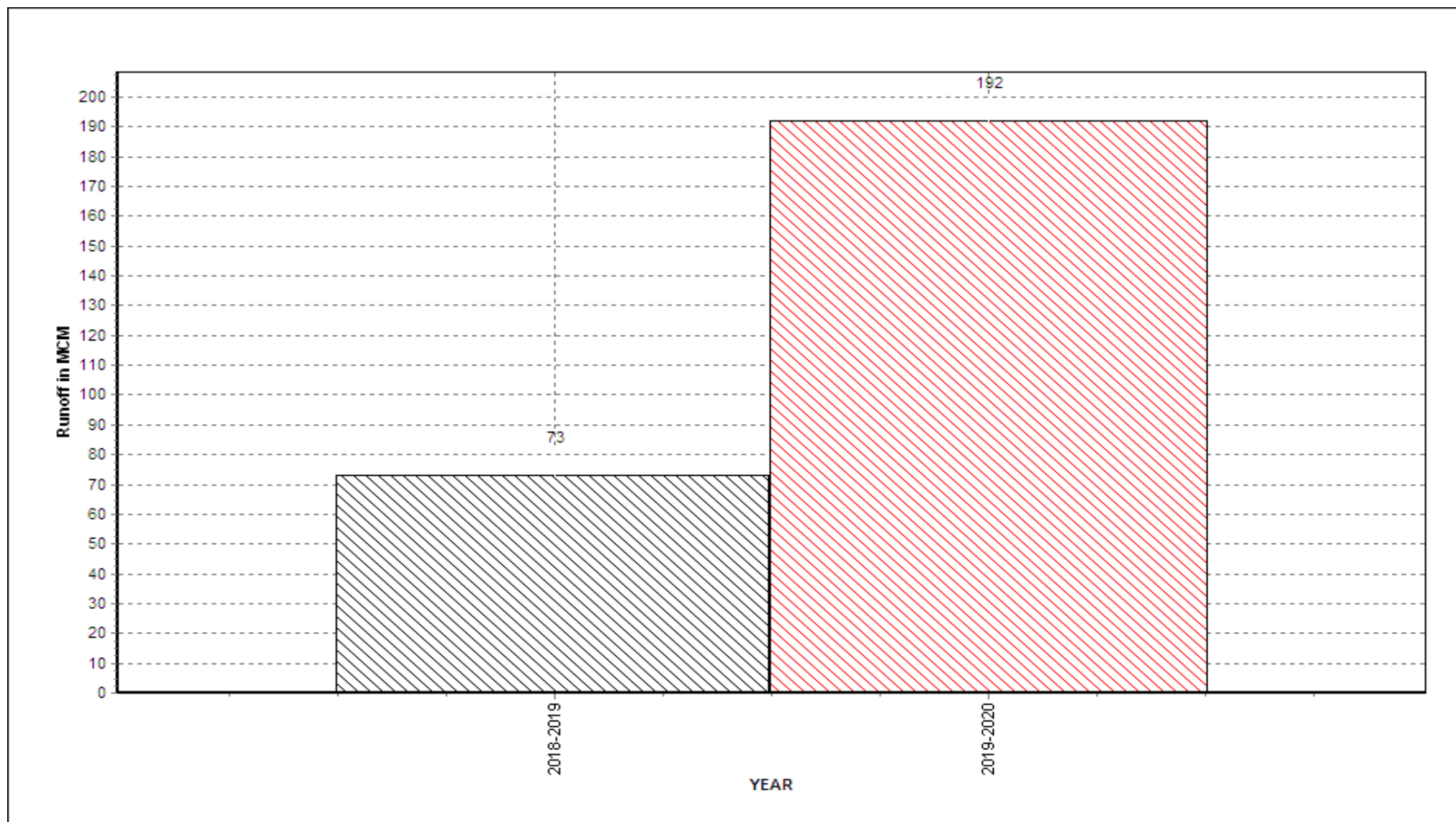
Annual Runoff Values for the period: 2018 - 2020

Station Name : Veerlapalem (032-LKDHYD)

Local River : Tungapadu

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



Note: Missing values have not been considered while arriving at Annual Runoff

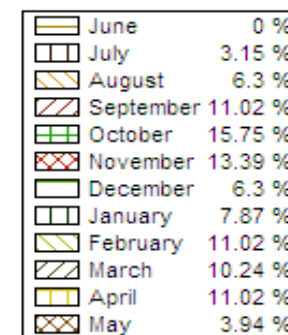
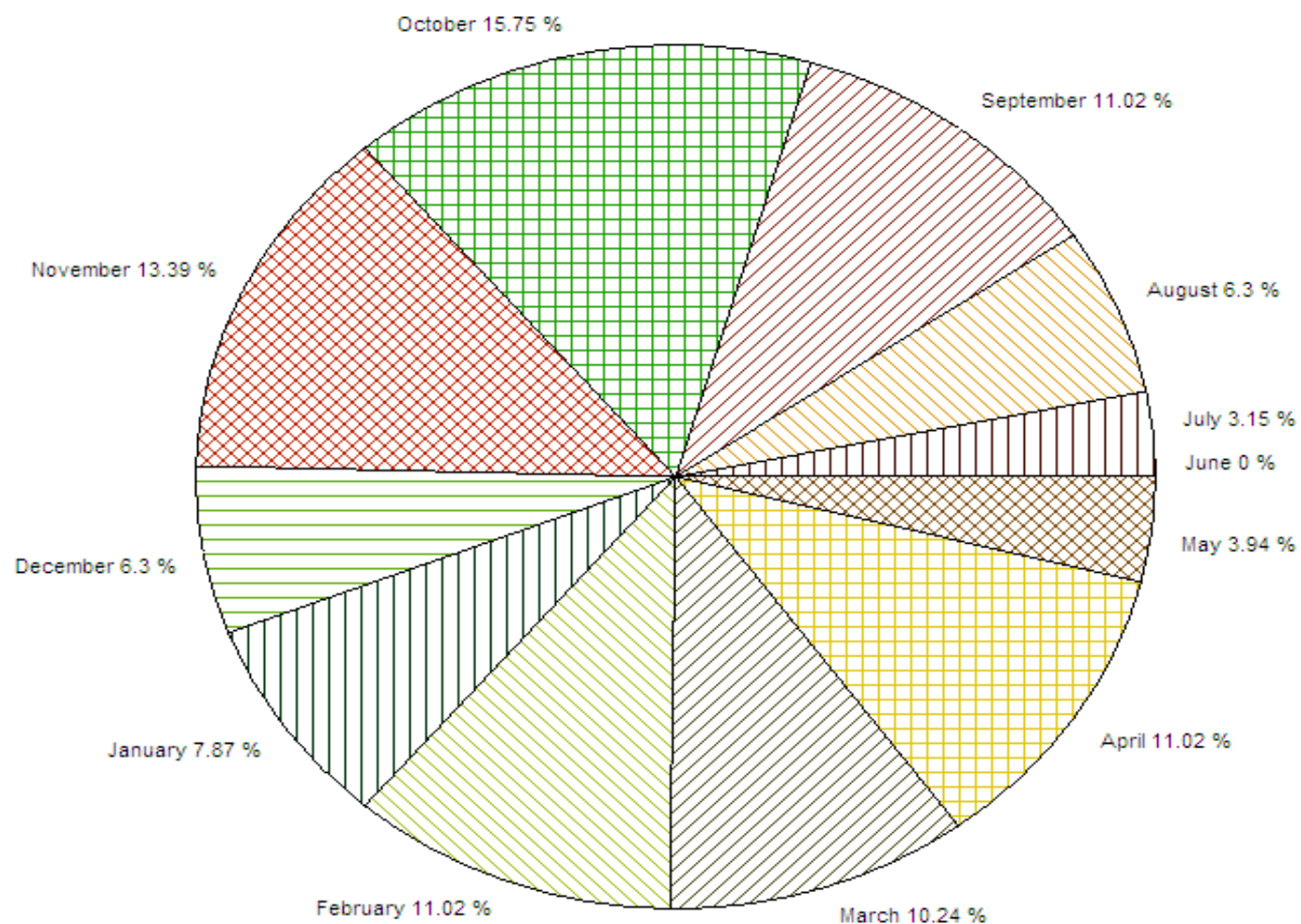
Monthly Average Runoff based on period : 2018-2019

Station Name : Veerlapalem (032-LKDHYD)

Local River : Tungapadu

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



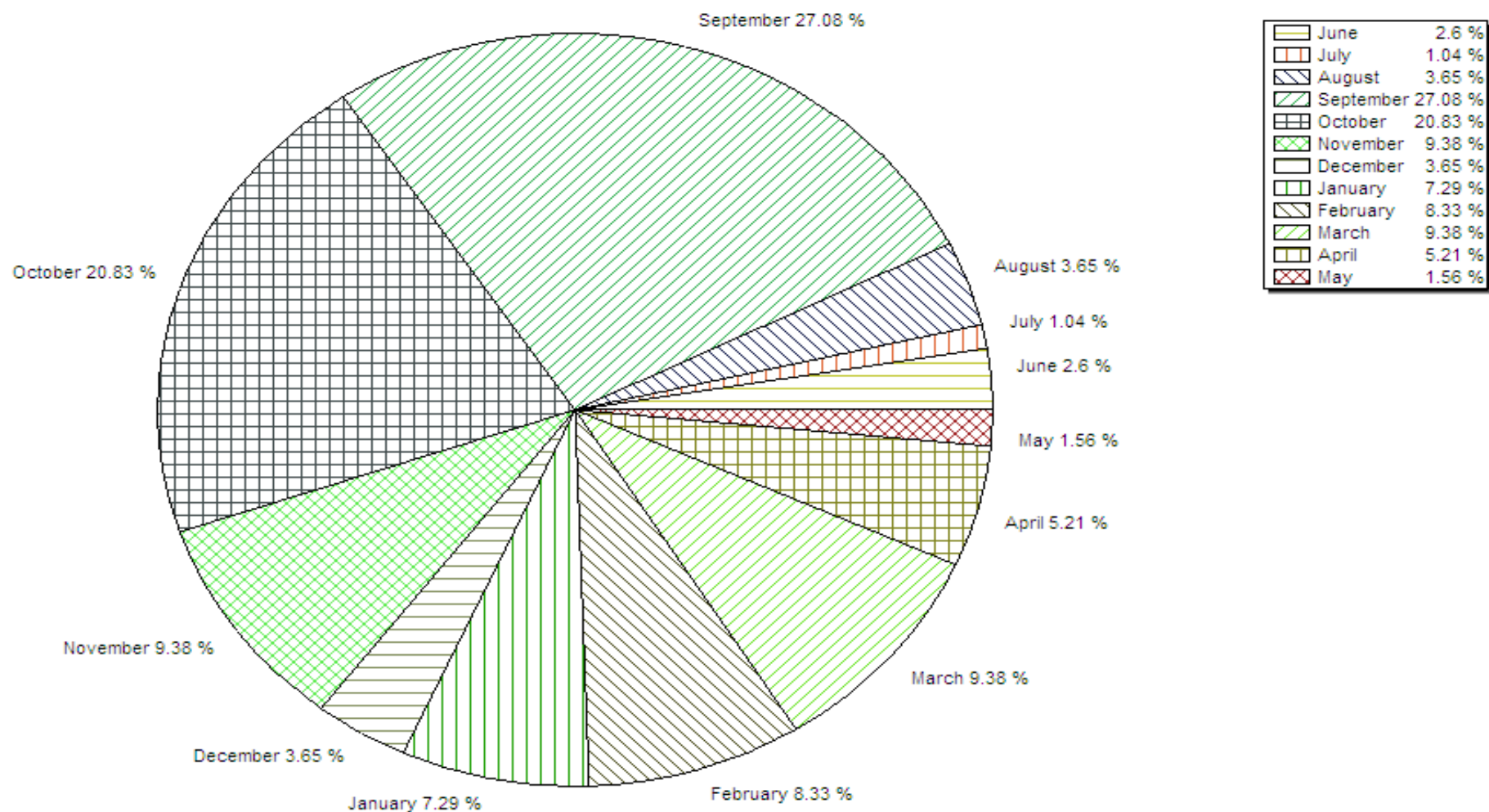
Monthly Runoff for the Year : 2019-2020

Station Name : Veerlapalem (032-LKDHYD)

Local River : Tungapadu

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



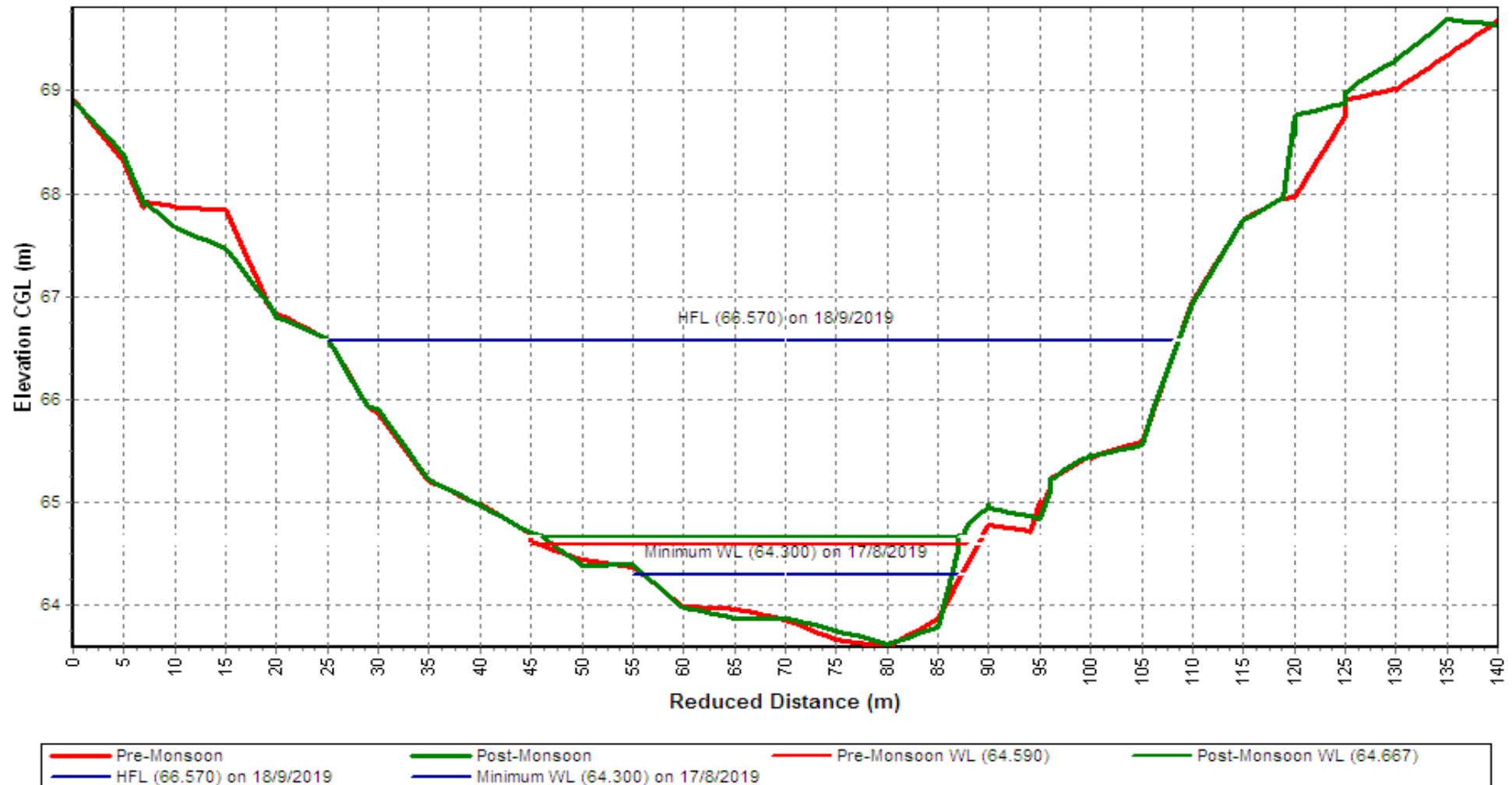
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Veerlapalem (032-LKDHYD)

Local River : Tungapadu

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



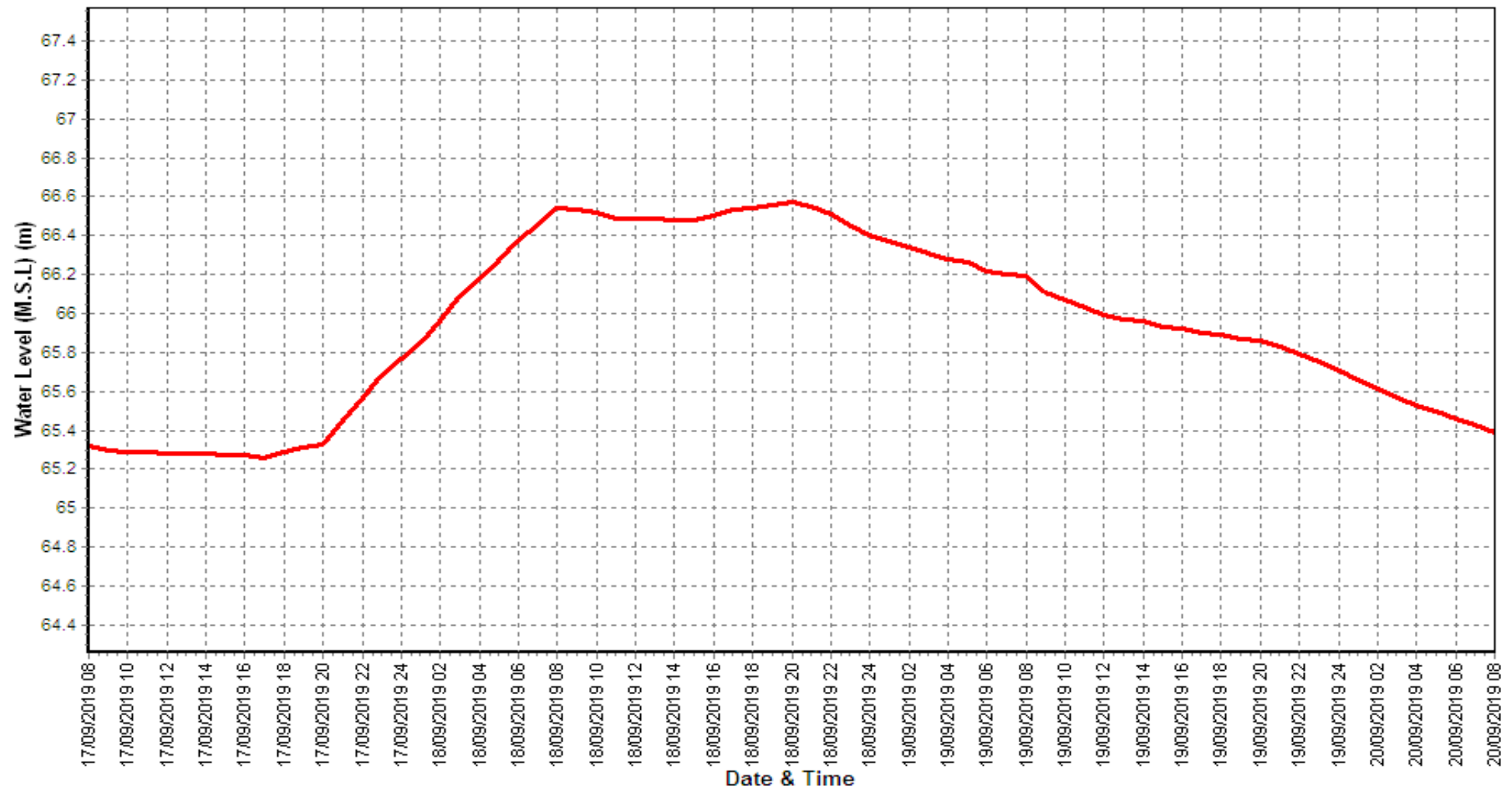
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Veerlapalem (032-LKDHYD)

Local River : Tungapadu

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



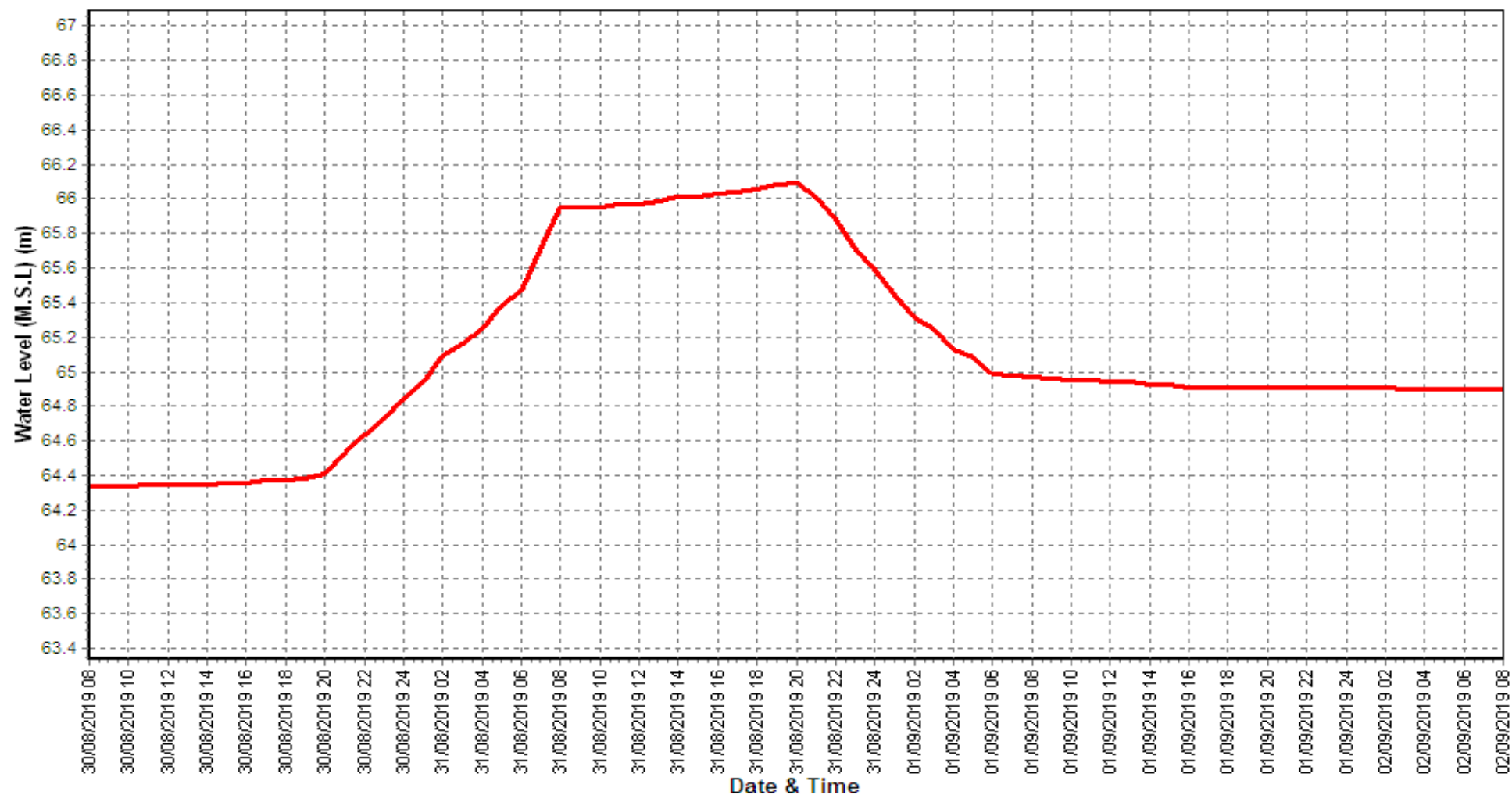
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Veerlapalem (032-LKDHYD)

Local River : Tungapadu

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



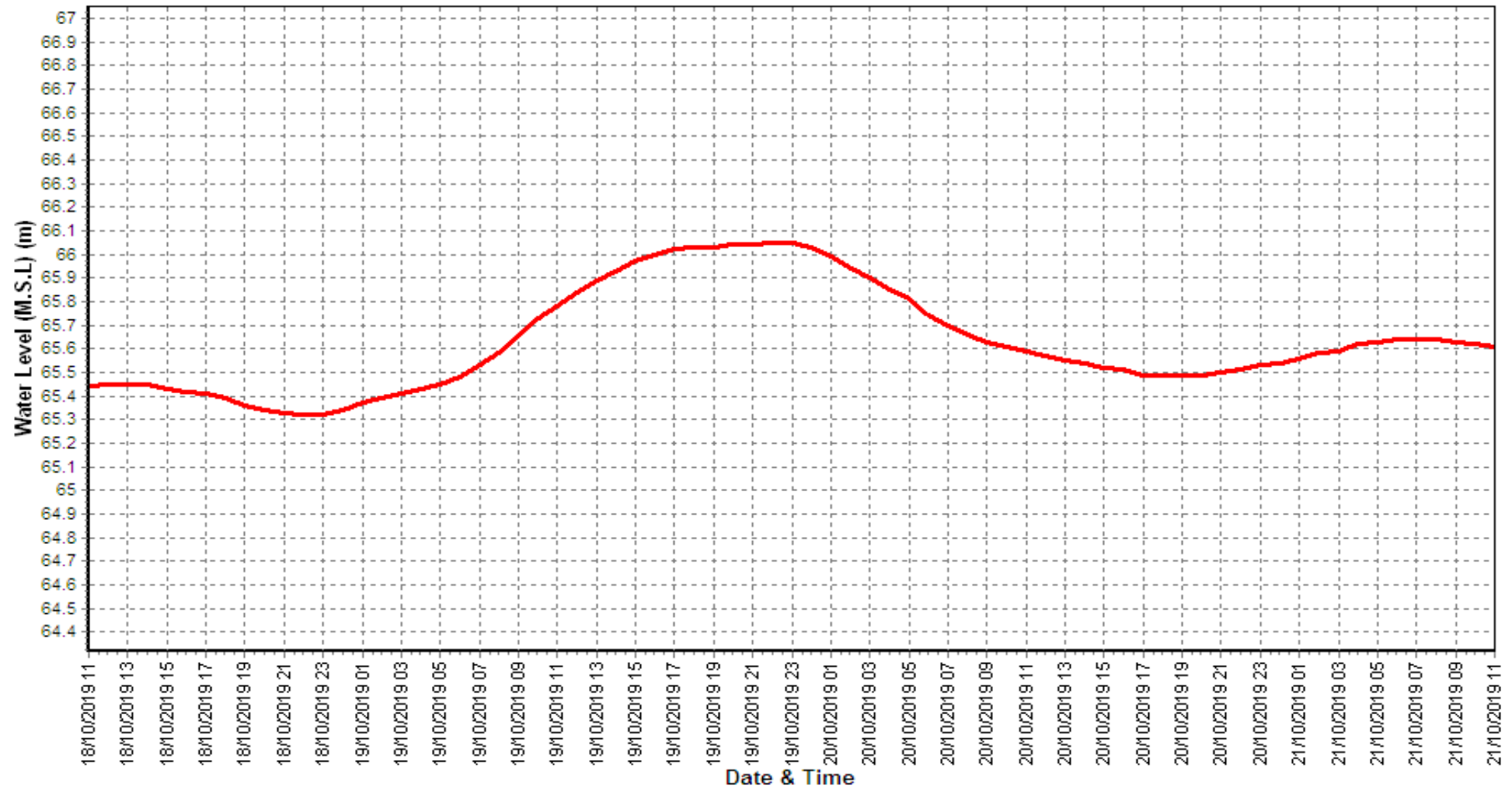
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Veerlapalem (032-LKDHYD)

Local River : Tungapadu

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



HISTORY SHEET

Water Year : 2019-2020

Site : Halia

Code : AKH00G2

State : Telangana

District : Nalgonda

Basin : Krishna

Independent River : Krishna

Tributary : Halia

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Halia

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam

Drainage Area : 3100 Sq. Km.

Bank : Left

Latitude : 16°47'25"

Longitude : 79°20'19"

Zero of Gauge (m) : 129 (m.s.l)
127.9 (m.s.l)
127.9 (m.s.l)15/02/1984 - 31/05/2002
01/06/2002
15/05/1984

Opening Date

Closing Date

Gauge : 15/02/1984

HFL During 2019-20 : 130.44 m
Corres. Discharge : 343 (Estimated)

Discharge : 11/07/1984

Date & Time of occurrence : 18/09/2019
: 14:00 Hrs

Sediment :

Water Quality : 01/06/1992

HFL Recorded so far in m : 134.405 dt 23-09-1991

Corresponding Discharge (cumecs) : 2647 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1985-1986	65.00	130.445	19/06/1985	0.000	129.200	15/04/1986
1986-1987	26.00	130.260	07/11/1986	0.000	129.175	13/05/1987
1987-1988	552.4	131.530	04/11/1987	0.000	129.120	10/06/1987
1988-1989	161.4	130.770	20/09/1988	0.010	129.210	02/06/1988
1989-1990	297.7	131.120	17/07/1989	0.040	129.265	27/04/1990
1990-1991	169.0	130.690	26/10/1990	0.000	129.080	07/05/1991
1991-1992	2647	133.507	22/09/1991	0.000	129.340	29/05/1992
1992-1993	19.16	130.000	27/05/1993	0.000	129.230	10/05/1993
1993-1994	107.7	130.550	09/10/1993	0.040	129.260	26/06/1993
1994-1995	825.3	131.915	06/10/1994	0.023	129.253	29/06/1994
1995-1996	130.5	130.750	19/10/1995	0.012	129.305	18/05/1996
1996-1997	43.16	130.410	06/09/1996	0.003	129.290	03/06/1996
1997-1998	45.78	130.360	24/09/1997	0.000	129.200	15/05/1998
1998-1999	419.2	131.415	15/10/1998	0.000	129.220	09/07/1998
1999-2000	31.20	130.405	07/09/1999	0.002	129.160	31/05/2000
2000-2001	551.3	131.580	23/08/2000	0.002	129.070	29/05/2001

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2001-2002	600.0	131.650	01/10/2001	0.000	129.100	13/07/2001
2002-2003	2.049	128.340	12/08/2002	0.000		23/04/2003
2003-2004	144.3	129.600	24/10/2003	0.000	127.970	20/01/2004
2004-2005	280.3	129.650	09/10/2004	0.000		19/07/2004
2005-2006	3383	133.000	29/10/2005	0.000		02/07/2005
2006-2007	49.94	129.300	01/11/2006	0.000	128.000	13/07/2006
2007-2008	524.3	130.400	17/09/2007	0.280	128.320	03/06/2007
2008-2009	535.1	130.830	30/11/2008	0.000		09/07/2008
2009-2010	203.9	129.990	01/10/2009	0.000		18/07/2009
2010-2011	118.8	129.980	15/09/2010	0.099	128.100	20/06/2010
2011-2012	30.93	129.380	25/08/2011	0.000	128.630	30/07/2011
2012-2013	27.81	129.210	03/10/2012	0.000	128.200	24/03/2013
2013-2014	1126	132.325	25/10/2013	0.000	128.340	08/07/2013
2014-2015	71.70	129.490	27/10/2014	0.000		04/07/2014
2015-2016	31.36	129.160	15/09/2015	0.000		07/03/2016
2016-2017	291.2	130.870	23/09/2016	0.000	128.260	17/04/2017
2017-2018	22.72	129.080	05/10/2017	0.000	128.300	22/01/2018
2018-2019	29.65	129.150	19/09/2018	0.000	128.320	14/06/2018

Annual Runoff of Halia at Halia

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1984-1985	29	7	35	1	0	1
2	1985-1986	51	3	55	2	0	2
3	1986-1987	21	5	26	1	0	1
4	1987-1988	128	8	136	5	0	5
5	1988-1989	158	10	167	6	0	6
6	1989-1990	133	20	153	5	1	5
7	1990-1991	53	9	62	2	0	2
8	1991-1992	484	8	492	17	0	17
9	1992-1993	12	11	23	0	0	1
10	1993-1994	60	9	70	2	0	2
11	1994-1995	124	10	134	4	0	5
12	1995-1996	125	4	129	4	0	5
13	1996-1997	55	13	67	2	0	2
14	1997-1998	21	4	24	1	0	1
15	1998-1999	118	9	126	4	0	4
16	1999-2000	15	4	19	1	0	1
17	2000-2001	106	8	114	4	0	4
18	2001-2002	214	6	220	8	0	8
19	2002-2003	2	0	2	0	0	0
20	2003-2004	17	0	18	1	0	1
21	2004-2005	107	8	115	4	0	4
22	2005-2006	853	51	904	30	2	32
23	2006-2007	124	47	171	4	2	6
24	2007-2008	480	59	539	17	2	19
25	2008-2009	351	115	465	12	4	16
26	2009-2010	137	99	237	5	4	8
27	2010-2011	282	141	423	10	5	15
28	2011-2012	130	39	170	5	1	6
29	2012-2013	18	9	27	1	0	1
30	2013-2014	439	62	501	16	2	18
31	2014-2015	120	43	163	4	2	6
32	2015-2016	62	5	67	2	0	2
33	2016-2017	169	11	180	6	0	6
34	2017-2018	36	19	55	1	1	2
35	2018-2019	41	27	68	1	1	2
36	2019-2020	239	75	314	8	3	11
Average		153	27	180	5	1	6
75% Dependable flow (MCM)				55			
90 % Dependable flow (MCM)				22			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Halia (AKH00G2)

Division : Lower Krishna Divn., Hyderabad

Local River : Halia

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000	128.410	0.755	128.270	0.197	129.150	27.25 *	129.150	28.75	129.090	21.26
2		0.000	128.390	0.586	128.210	0.000	129.160	28.12 *	129.050	19.45 *	129.080	19.80
3		0.000	128.390	0.590	128.210	0.000	128.960	13.99	129.040	18.21	129.060	20.15 *
4		0.000	128.380	0.529	128.220	0.000 *	129.150	28.96	129.050	21.24	129.040	16.14
5		0.000	128.340	0.463	128.180	0.000	128.960	13.86	129.070	22.52	129.010	15.21
6		0.000	128.310	0.349	128.210	0.000	128.950	13.07	129.070	20.87 *	128.970	14.98
7	128.190	0.000	128.300	0.004 *	128.230	0.000	128.830	8.690	129.080	23.34	128.910	11.35
8	128.200	0.000	128.270	0.226	128.350	0.408	128.750	5.032 *	129.050	19.45 *	128.890	10.40
9	128.200	0.000	128.310	0.347	128.270	0.206	128.750	5.599	129.250	40.23	128.880	9.758
10	128.395	0.585	128.390	0.569	128.160	0.000 *	128.730	4.473 *	129.600	87.59	128.890	10.25 *
11	128.380	0.513	128.410	0.752	128.150	0.000 *	128.620	3.773	129.580	81.28	128.890	9.845
12	128.350	0.480	128.380	0.555	128.150	0.000 *	128.610	3.302	129.370	45.63	128.880	9.795 *
13	128.320	0.391	128.270	0.220	128.650	2.399	128.640	4.384	129.240	35.78 *	128.850	8.293
14	128.270	0.180	128.220	0.000	128.750	4.743	128.640	4.174	129.120	23.06	128.870	9.740
15	128.270	0.181	128.190	0.000	128.750	5.032 *	128.660	2.834 *	129.180	28.78	128.950	13.97
16	128.240	0.000	128.170	0.000	128.650	2.435	128.920	12.19	129.120	20.71	128.930	13.52
17	128.200	0.000	128.180	0.000	128.560	1.844	129.000	15.33	129.050	18.12	128.930	12.20 *
18	128.180	0.000	128.220	0.000	128.560	1.255 *	130.200	252.9	129.120	20.88	128.930	13.35
19	128.190	0.000	128.310	0.343	128.900	10.42	129.795	114.0	129.150	26.67	128.910	11.39
20	128.150	0.000	128.400	0.698	128.830	8.013	129.600	87.49	129.330	45.89 *	128.900	10.65
21	128.170	0.000	128.530	0.932 *	128.800	6.935	129.600	86.73	129.315	45.69	128.900	10.74
22	128.180	0.000	128.480	0.886	128.950	13.53	129.480	66.52 *	129.240	37.87	128.880	8.993
23	128.200	0.000	128.460	0.687	129.160	29.65	129.295	47.78	129.260	42.49	128.890	9.647
24	128.340	0.516	128.440	0.617	129.420	61.73	129.240	39.23	129.280	43.44	128.890	10.25 *
25	128.410	0.790	128.380	0.521	129.200	31.80 *	129.160	29.84	129.270	40.80	128.890	9.571
26	128.430	0.900	128.380	0.527	128.920	11.49	129.150	29.03	129.170	26.12	128.880	9.795 *
27	128.520	1.708	128.370	0.487	128.800	6.837	129.410	59.96	129.120	24.73 *	128.860	8.927 *
28	128.450	0.902	128.380	0.094 *	128.750	5.230	129.480	70.16	129.080	20.57	128.860	8.927 *
29	128.410	0.799	128.380	0.490	128.750	5.236	129.410	56.27 *	129.020	15.44	128.850	8.512 *
30	128.410	0.177 *	128.340	0.380	128.740	5.069	129.210	39.03	129.050	18.89	128.830	7.721 *
31			128.320	0.347	128.900	11.19			129.080	21.73		
Ten-Daily Mean												
I Ten-Daily	128.246	0.058	128.349	0.442	128.231	0.081	128.939	14.90	129.141	30.16	128.982	14.93
II Ten-Daily	128.255	0.175	128.275	0.257	128.595	3.614	129.069	50.04	129.226	34.68	128.904	11.28
III Ten-Daily	128.352	0.579	128.405	0.542	128.945	17.15	129.344	52.46	129.171	30.71	128.873	9.308
Monthly												
Min.	128.150	0.000	128.170	0.000	128.150	0.000	128.610	2.834	129.020	15.44	128.830	7.721
Max.	128.520	1.708	128.530	0.932	129.420	61.73	130.200	252.9	129.600	87.59	129.090	21.26
Mean	128.294	0.271	128.345	0.418	128.602	7.279	129.117	39.13	129.179	31.81	128.920	11.84

Annual Runoff in MCM = 315 Annual Runoff in mm = 102

Peak Observed Discharge = 252.9 cumecs on 18/09/2019 Corres. Water Level :130.2 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Halia (AKH00G2)

Division : Lower Krishna Divn., Hyderabad

Local River : Halia

Sub-Division : Lower Krishna SD 1, N.S.Dam

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	128.830	8.864 *	128.700	4.658	128.850	9.821	128.670	3.386 *	Not observed Due to Lock-Down		128.690	4.569
2	128.840	8.467	128.700	4.617	128.850	9.786 *	128.670	3.949			128.690	4.564
3	128.840	9.319 *	128.740	5.285	128.850	9.619	128.670	3.934 #			128.620	3.503 *
4	128.830	8.864 *	128.820	8.791	128.830	9.074	128.660	3.500			128.580	2.329
5	128.820	8.423 *	128.820	8.423 *	128.820	8.508	128.700	4.103 #			128.570	1.966
6	128.800	7.580 *	128.800	8.162	128.780	7.395	128.670	3.390			128.570	1.959
7	128.800	7.580 *	128.770	6.427	128.760	6.879	128.650	3.034			128.570	1.957 *
8	128.780	6.790 *	128.770	6.334	128.750	6.177	128.650	2.938 *			128.580	2.225
9	128.770	6.392	128.770	6.377	128.750	5.704 *	128.680	3.413			128.570	1.909
10	128.760	6.053 *	128.810	8.695	128.920	13.84	128.670	3.386 *			128.570	1.902 *
11	128.770	6.422	128.800	8.132	128.950	15.89	128.660	3.502			128.570	1.796
12	128.770	6.404	128.800	7.580 *	128.960	16.23	128.660	3.515			128.500	0.932 #
13	128.740	5.196	128.810	8.500	128.920	13.99	128.660	3.502			128.500	0.932 #
14	128.760	6.306	128.810	8.547	128.920	14.14	128.710	4.285 #			128.490	0.908
15	128.750	5.704 *	128.800	7.580 *	128.880	11.84	128.710	4.439 *			128.490	0.922
16	128.740	5.306	128.800	8.327	128.820	8.423 *	128.660	3.521			128.480	0.834
17	128.750	5.458	128.800	8.191	128.770	7.177	128.680	3.412 #			128.500	0.932 *
18	128.750	5.738	128.800	8.247	128.750	6.544	128.710	4.439 #			128.570	1.940
19	128.720	4.517	128.800	7.580 *	128.750	6.395	128.710	4.457 #			128.590	2.831
20	128.700	4.412	128.810	8.807	128.740	5.738	128.830	9.265	128.690	4.595	128.620	3.504
21	128.700	4.468	128.800	8.282	128.750	6.596	128.810	7.976	128.650	3.973	128.590	2.892
22	128.700	4.156 *	128.740	5.593	128.760	7.110	128.840	9.319 *	128.620	3.339	128.590	2.833
23	128.690	4.283	128.710	5.154	128.710	4.439 *	128.860	10.28	128.620	3.282	128.570	1.803
24	128.670	3.733	128.710	5.118	128.640	3.237	128.880	11.67	128.600	2.728	128.570	1.802 *
25	128.670	3.386 *	128.740	5.592	128.630	2.715	Not observed due to Lock-Down		128.580	2.444	128.560	1.560 *
26	128.670	3.829	128.740	5.368 *	128.620	2.367			128.580	2.434 *	128.560	1.578
27	128.670	3.835	128.750	6.030	128.610	2.031			128.590	2.513 #	128.530	1.175
28	128.670	3.613	128.780	7.342	128.670	3.972			128.590	2.536 #	128.550	1.345
29	128.670	3.386 *	128.810	8.639	128.670	3.865			128.600	2.738 #	128.550	1.357
30	128.670	3.888	128.840	9.575					128.690	4.549	128.590	2.815
31	128.680	4.104	128.860	10.43							128.600	2.450 *
Ten-Daily Mean												
I Ten-Daily	128.807	7.833	128.770	6.777	128.816	8.680	128.669	3.503			128.601	2.688
II Ten-Daily	128.745	5.546	128.803	8.149	128.846	10.64	128.699	4.434	128.690	4.595	128.531	1.553
III Ten-Daily	128.678	3.880	128.771	7.011	128.673	4.037	128.772	6.830	128.612	3.053	128.569	1.965
Monthly												
Min.	128.670	3.386	128.700	4.617	128.610	2.031	128.650	2.938	128.580	2.434	128.480	0.834
Max.	128.840	9.319	128.860	10.43	128.960	16.23	128.880	11.67	128.690	4.595	128.690	4.569
Mean	128.741	5.693	128.781	7.303	128.782	7.913	128.715	4.984	128.619	3.194	128.567	2.065

Peak Computed Discharge = 66.52 cumecs on 22/09/2019

Corres. Water Level :129.48 m

Lowest Computed Discharge = 0.000 cumecs on 04/08/2019

Corres. Water Level :128.22 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

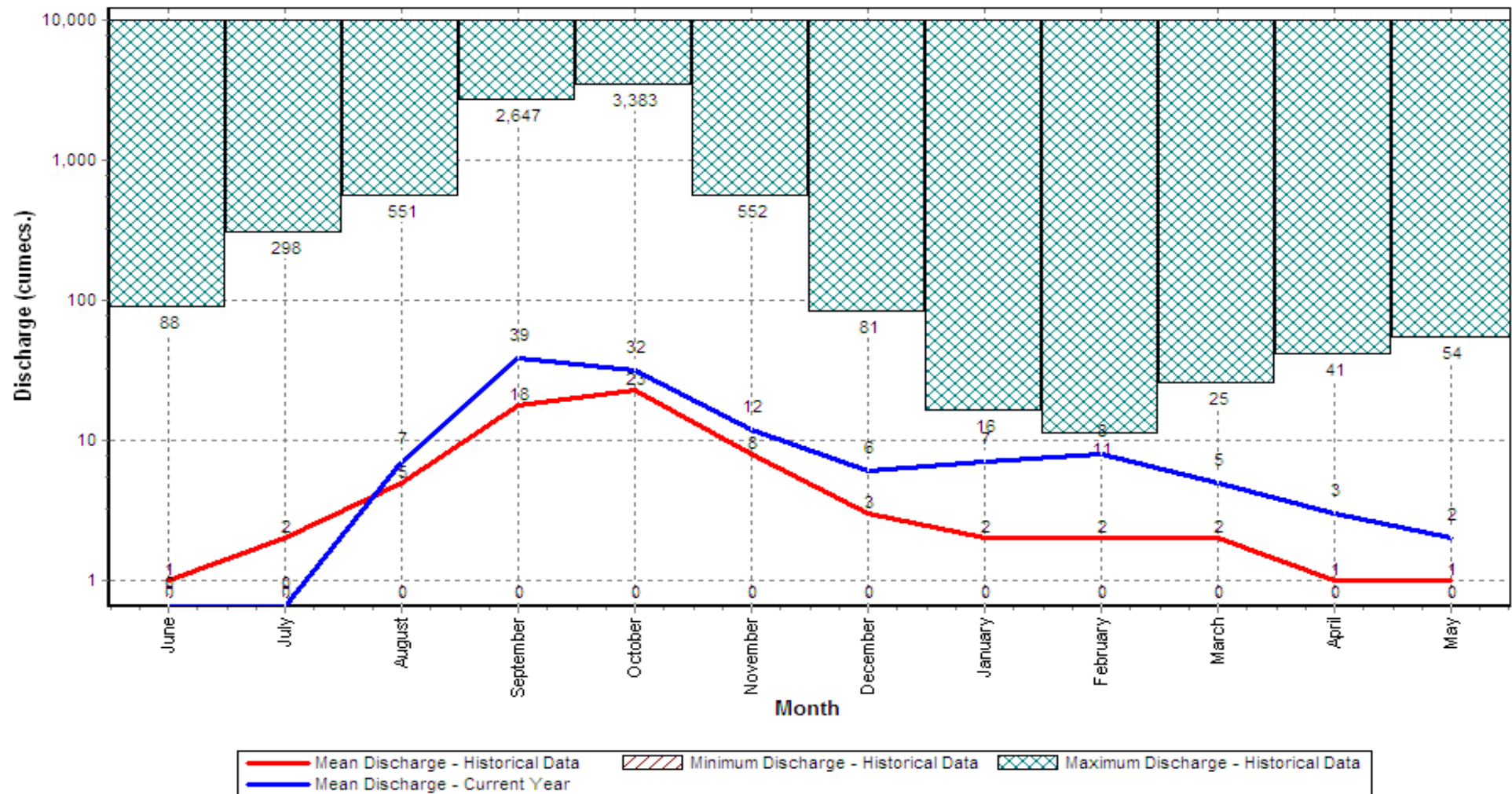
Station Name : Halia (AKH00G2)

Data considered : 1985-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Halia

Sub-Division : Lower Krishna SD 1, N.S.Dam



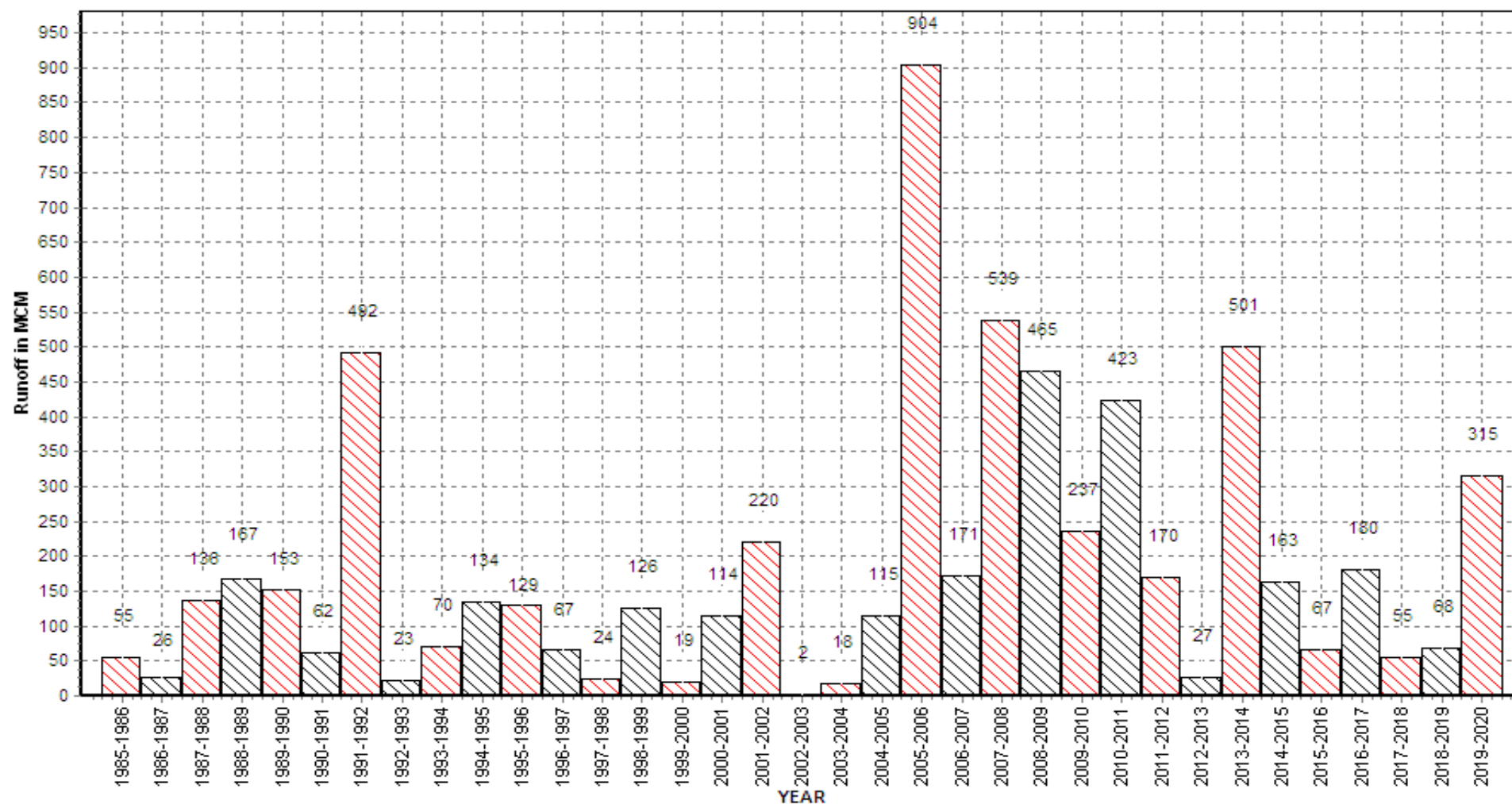
Annual Runoff Values for the period: 1985 - 2020

Station Name : Halia (AKH00G2)

Local River : Halia

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



Note: Missing values have not been considered while arriving at Annual Runoff

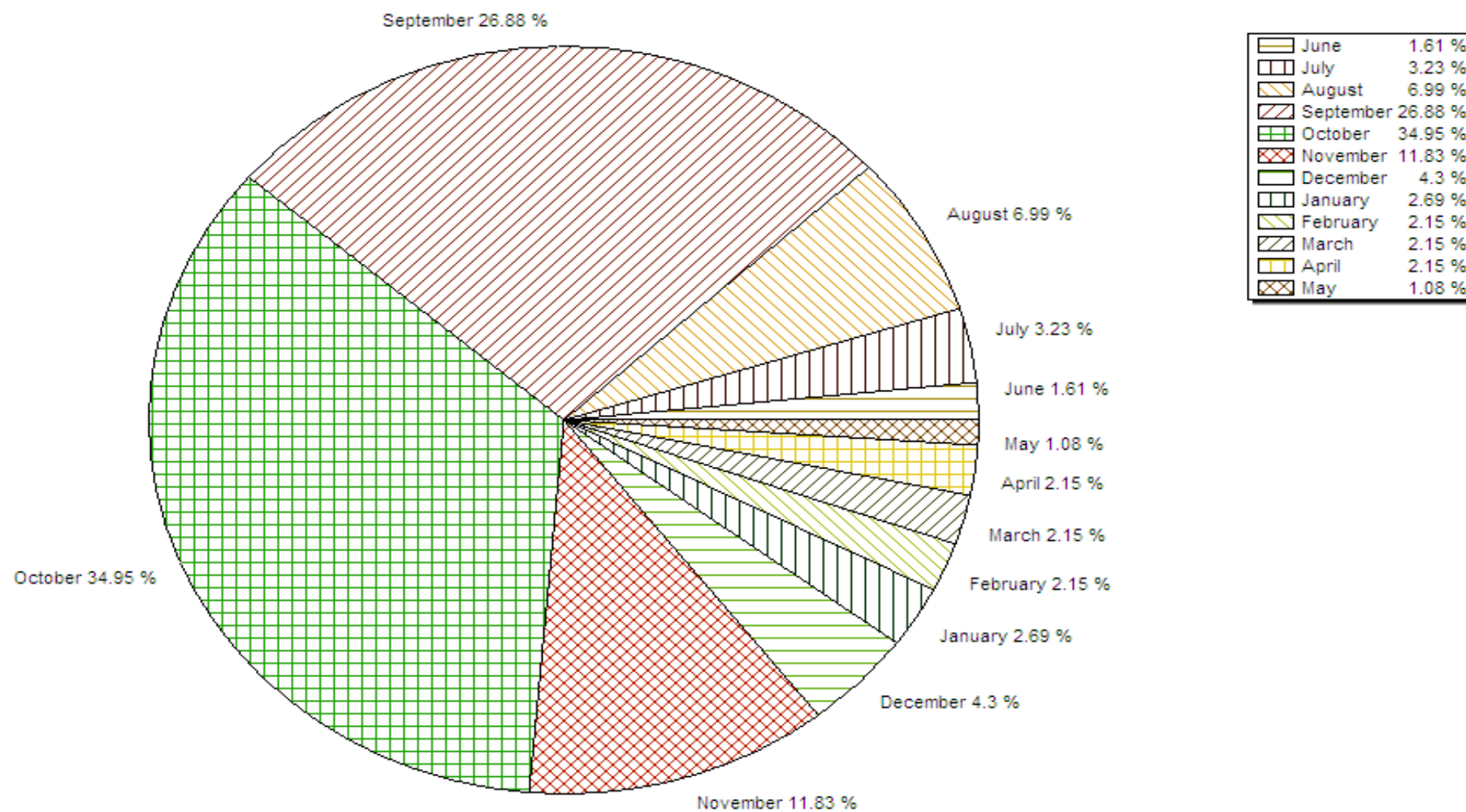
Monthly Average Runoff based on period : 1985-2019

Station Name : Halia (AKH00G2)

Local River : Halia

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



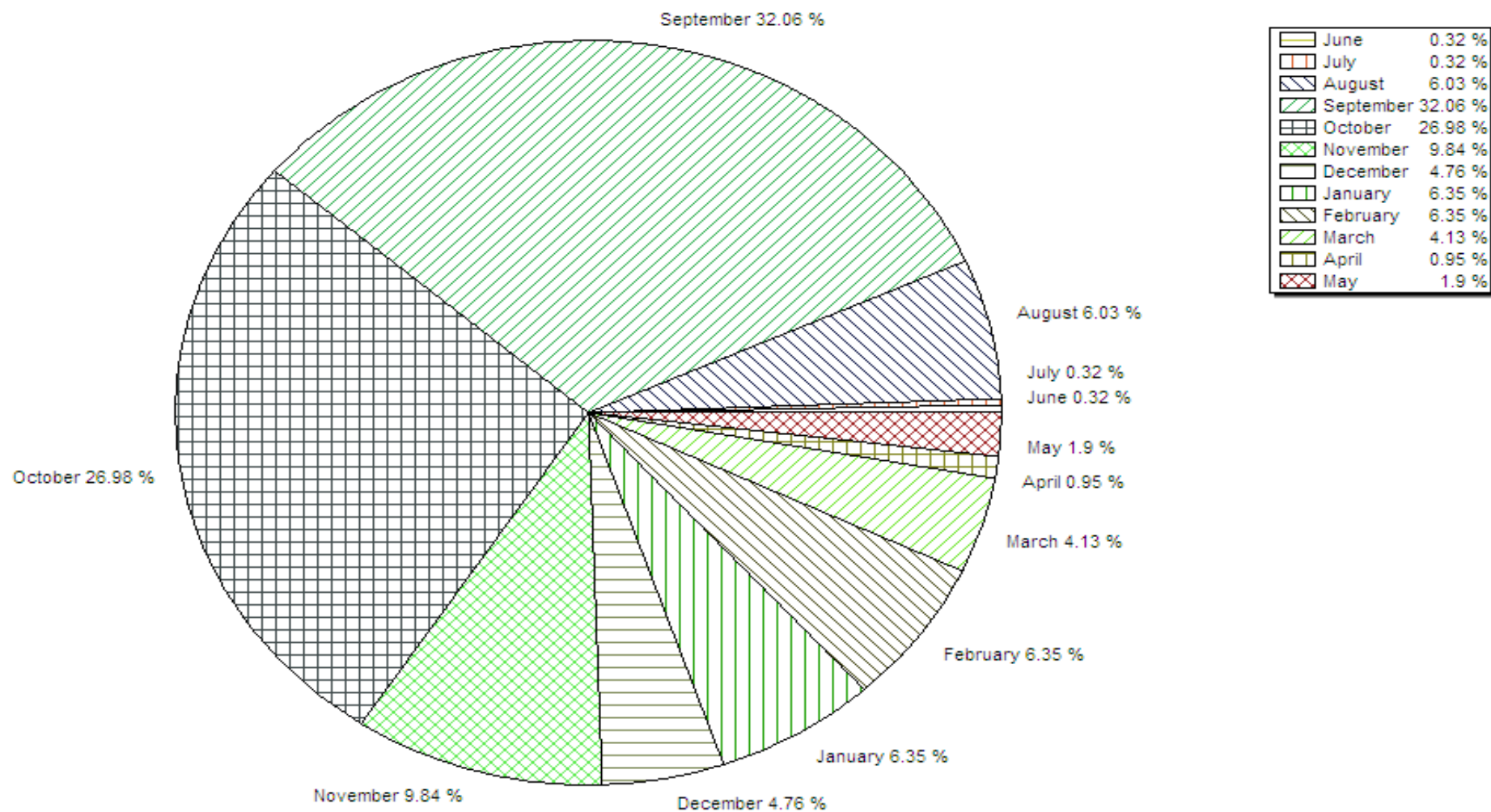
Monthly Runoff for the Year : 2019-2020

Station Name : Halia (AKH00G2)

Local River : Halia

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



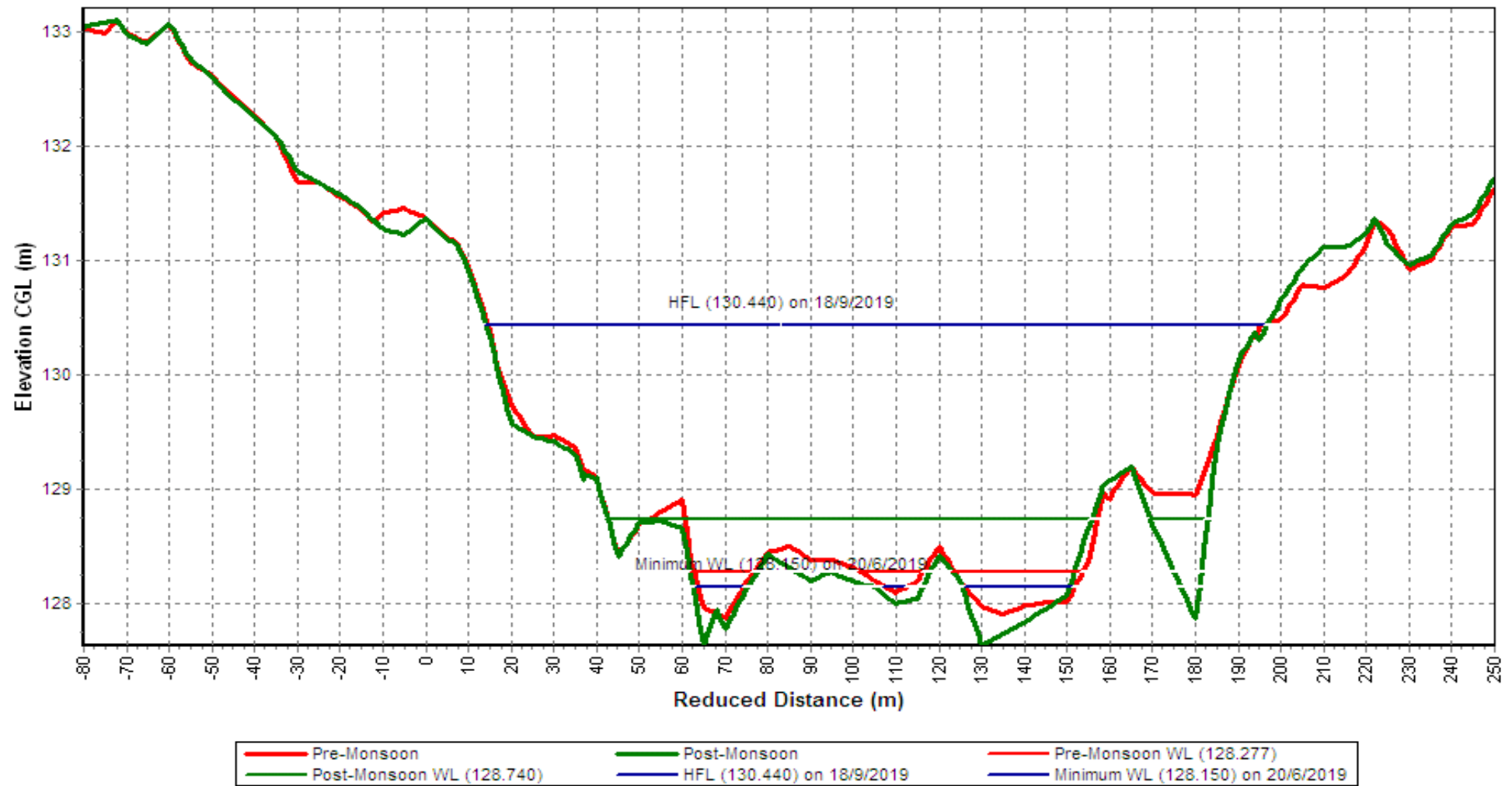
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Halia (AKH00G2)

Local River : Halia

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



Cross Section Difference Due to High Flood

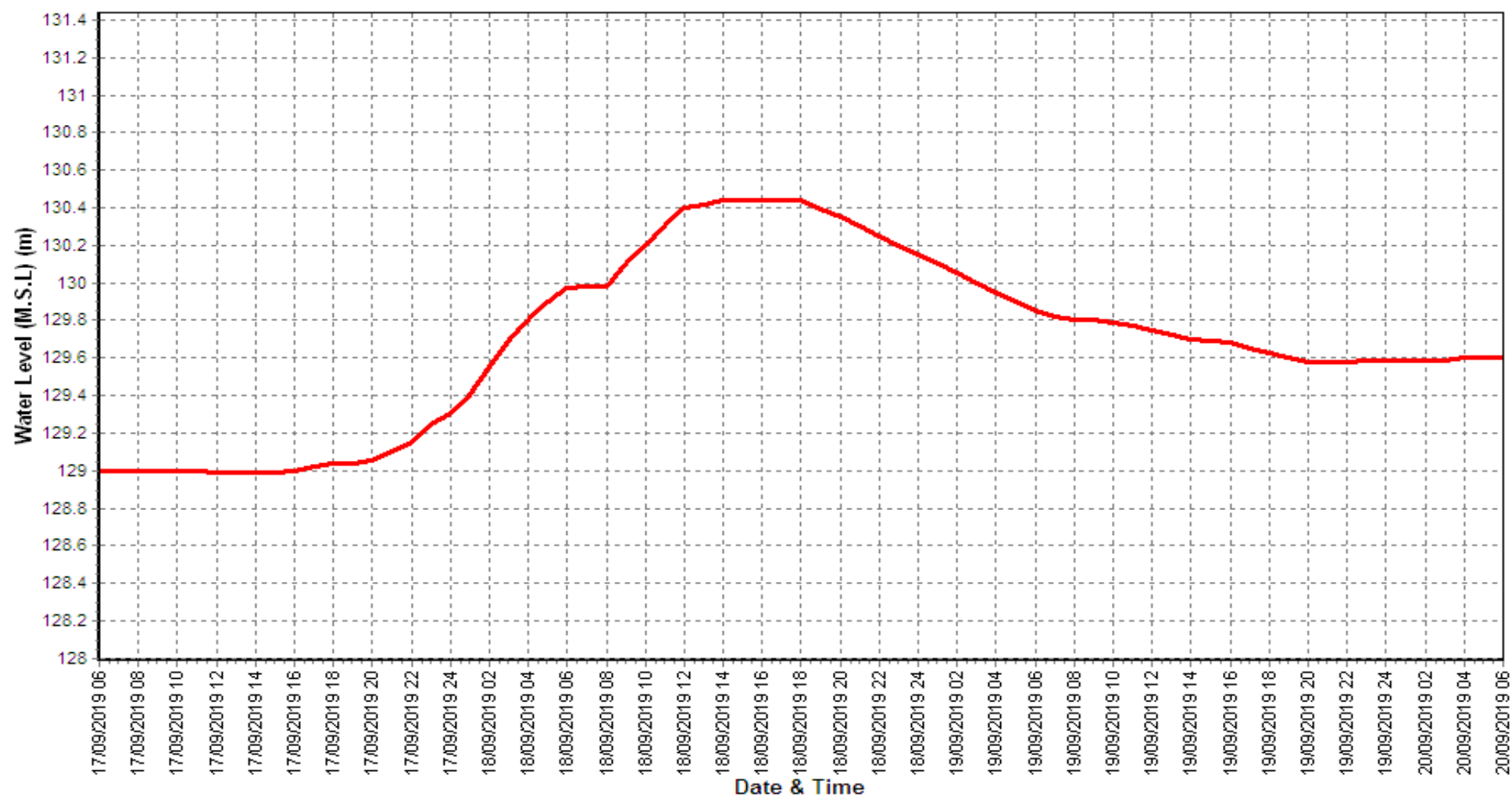
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Halia (AKH00G2)

Local River : Halia

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



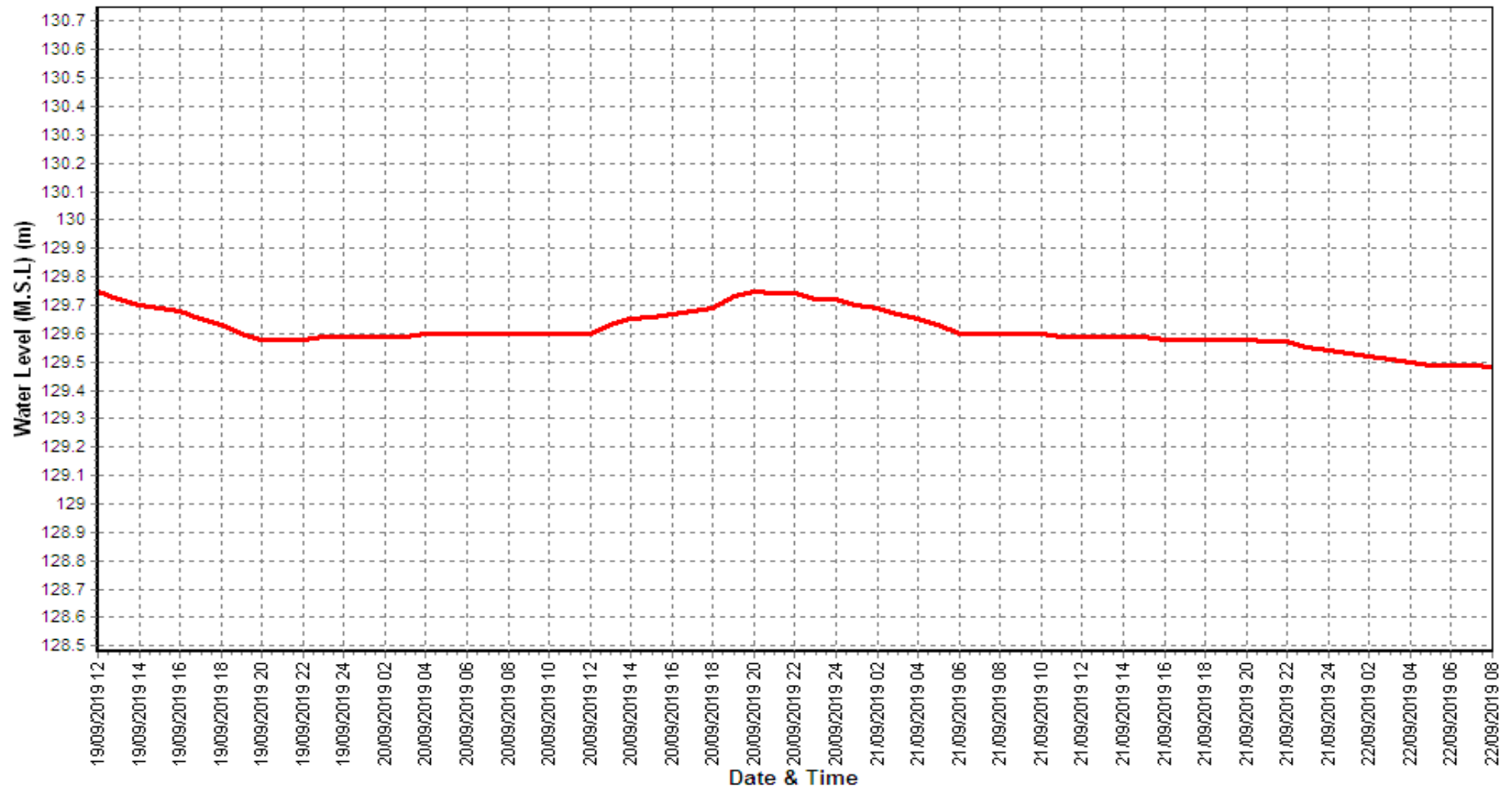
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Halia (AKH00G2)

Local River : Halia

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



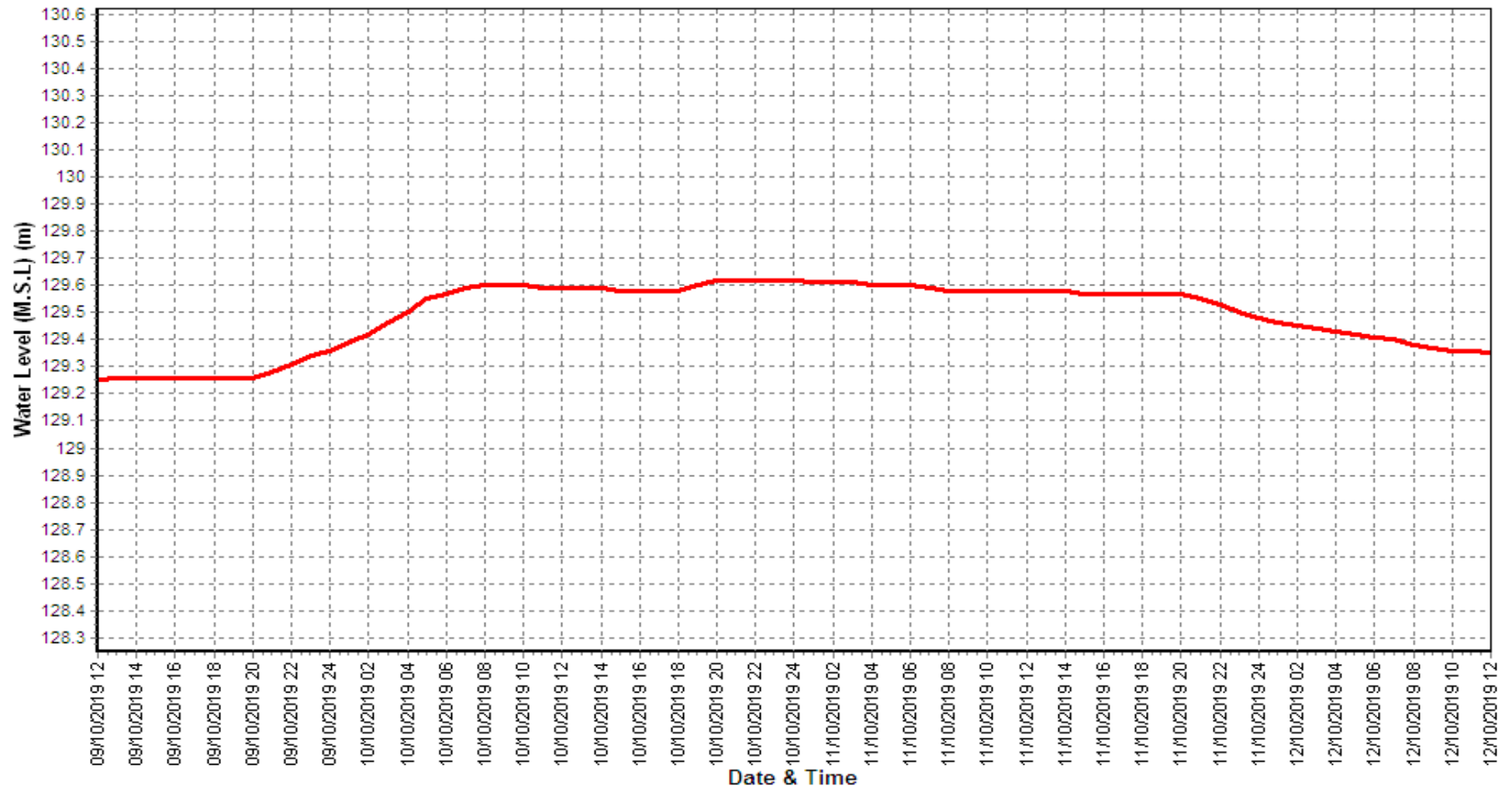
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Halia (AKH00G2)

Local River : Halia

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Krishna SD 1, N.S.Dam



HISTORY SHEET

Water Year : 2019-2020

Site : DODDIPADU.

Code : AKL00B1

State : Andhra Pradesh

District : Kurnool

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary : HUNDRI

Sub-Sub Tributary : HUNDRI

Local River : HUNDRI

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool

Drainage Area : 3240 Sq. Km.

Bank : Left

Latitude : 15°44'24"

Longitude : 77°59'35"

Zero of Gauge (m) : 286.383 (m.s.l)
285.803 (m.s.l)18/11/2014
01/05/2019

Opening Date

Closing Date

Gauge : 18/11/2014

HFL During 2019-20 : 288.013 m

Corres. Discharge : 107 (Estimated)

Discharge : 18/11/2014

Date & Time of

occurrence : 24:00 Hrs

Sediment :

Water Quality :

HFL Recorded so far in m :290.063 dt 13-10-2017

Corresponding Discharge (cumecs) : 1836*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2015-2016	74.81	288.693	11/09/2015	0.000		24/08/2015
2016-2017	54.34	287.723	16/09/2016	0.000		18/04/2017
2017-2018	1012	289.443	13/10/2017	0.000		27/03/2018
2018-2019	38.64	287.623	18/10/2018	0.000	286.593	30/03/2019

Annual Runoff of Hundri at Doddipadu

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2014-2015	2	6	7	0	0	0
2	2015-2016	108	0	108	4	0	4
3	2016-2017	37	10	47	1	0	2
4	2017-2018	208	36	244	7	1	9
5	2018-2019	55	3	58	2	0	2
6	2019-2020	72	27	99	3	1	3
Average		82	11	93	3	0	3
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Station Name : DODDIPADU.

Stage-Discharge Data for the period 2019 - 2020

Local River : HUNDRI

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000	287.263	3.627 *	287.393	6.893	287.373	7.215
2		0.000		0.000		0.000	287.273	3.756 *	287.453	11.88 *	287.408	8.699
3		0.000		0.000		0.000	287.253	2.825	287.353	5.819	287.383	7.414 *
4		0.000		0.000		0.000	287.308	5.572	287.313	5.329	287.418	9.059
5		0.000		0.000		0.000	287.263	3.167	287.703	42.47	287.263	3.213
6		0.000		0.000		0.000	287.243	1.782	287.713	43.03 *	287.313	4.802
7		0.000		0.000		0.000	287.233	1.898	287.413	10.61	287.293	4.779
8		0.000		0.000		0.000	287.203	1.467 *	287.503	16.09 *	287.303	4.935
9		0.000		0.000		0.000	287.263	3.506	287.458	12.69	287.313	5.194
10		0.000		0.000		0.000	287.273	3.756 *	287.378	6.003	287.303	4.347 *
11		0.000		0.000		0.000	287.258	3.221	287.433	10.02	287.448	11.78
12		0.000		0.000	287.003	0.000	287.248	3.627	287.573	19.42	287.273	3.756 *
13		0.000		0.000	287.003	0.000	287.303	5.192	287.513	17.03 *	287.203	1.674
14		0.000		0.000	287.003	0.000	287.303	5.149	287.403	9.122	287.233	2.689
15		0.000		0.000		0.000	287.283	3.919 *	287.373	6.266	287.243	2.856
16		0.000		0.000		0.000	287.243	2.756	287.373	6.303	287.303	4.725
17		0.000		0.000		0.000	287.243	2.836	287.378	7.791	287.263	3.627 *
18		0.000		0.000		0.000	287.333	5.830	287.353	5.755	287.233	2.929
19		0.000		0.000		0.000	287.793	57.30	287.258	3.697	287.303	4.697
20		0.000		0.000		0.000	287.338	5.843	287.313	4.611 *	287.283	5.146
21		0.000		0.000	287.143	0.136	287.298	5.210	287.418	9.108	287.203	1.834
22		0.000		0.000	287.143	0.148	287.313	4.611 *	287.448	10.54	287.193	1.483
23		0.000		0.000	287.403	7.229	287.373	6.551	287.473	13.47	287.223	2.950
24		0.000		0.000	287.293	5.496	287.813	60.37	287.433	9.674	287.203	1.567 *
25		0.000		0.000	287.273	3.756 *	287.413	9.593	287.428	9.083	287.253	4.132
26		0.000		0.000	287.243	1.850	287.463	12.18	287.423	9.128	287.233	3.038
27		0.000		0.000	287.253	2.235	287.598	20.68	287.423	9.763 *	287.223	2.976
28		0.000		0.000	287.263	3.201	287.773	54.84	287.383	6.273	287.223	2.934
29		0.000		0.000	287.248	2.763	287.373	6.912 *	287.438	10.74	287.293	5.490
30		0.000		0.000	287.253	2.897	287.373	6.836	287.393	7.939	287.253	4.434
31				0.000	287.253	2.966			287.353	6.567		
Ten-Daily Mean												
I Ten-Daily		0.000		0.000		0.000	287.258	3.136	287.468	16.08	287.337	5.966
II Ten-Daily		0.000		0.000	287.003	0.000	287.334	9.567	287.397	9.002	287.279	4.388
III Ten-Daily		0.000		0.000	287.252	2.971	287.479	18.78	287.419	9.298	287.230	3.084
Monthly												
Min.		0.000		0.000	287.003	0.000	287.203	1.467	287.258	3.697	287.193	1.483
Max.		0.000		0.000	287.403	7.229	287.813	60.37	287.713	43.03	287.448	11.78
Mean		0		0	287.198	1.054	287.357	10.49	287.428	11.39	287.282	4.479

Annual Runoff in MCM = 99 Annual Runoff in mm = 31

Peak Observed Discharge = 60.37 cumecs on 24/09/2019 Corres. Water Level :287.813 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Station Name : DODDIPADU.

Stage-Discharge Data for the period 2019 - 2020

Local River : HUNDRI

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	287.233	2.518 *	287.153	1.348	287.213	4.343	287.123	1.025 *	286.863	0.000	287.043	0.000
2	287.193	1.204	287.243	5.723	287.203	3.567 *	287.103	0.945	286.853	0.000	287.073	0.000
3	287.283	4.962	287.163	2.935	287.183	3.254	287.093	0.813	286.853	0.000	287.043	0.000 *
4	287.243	4.203	287.183	3.585	287.173	2.821	287.053	0.000	286.853	0.000	287.073	0.000
5	287.263	4.438	287.193	3.676 *	287.143	1.566	287.063	0.000	286.843	0.000	287.073	0.000
6	287.253	4.001	287.173	3.324	287.133	1.433	287.053	0.000	286.843	0.000	287.053	0.000
7	287.293	5.849	287.163	1.357	287.123	1.172	287.043	0.000	286.833	0.000	287.053	0.000
8	287.253	4.001 *	287.203	3.905	287.103	1.153	287.033	0.000	286.833	0.000	287.033	0.000
9	287.253	4.001	287.183	3.394	287.173	2.821 *	287.033	0.000	287.063	0.000	287.003	0.000
10	287.273	4.891	287.173	2.789	287.263	6.247	287.063	0.000	287.063	0.000	287.013	0.000
11	287.263	4.438	287.183	3.294	287.223	4.367	287.093	0.783	287.053	0.000	286.903	0.000
12	287.223	2.790	287.203	3.567 *	287.283	6.671	287.103	0.818	287.063	0.000	286.903	0.000
13	287.203	1.767	287.233	5.015	287.253	5.575	287.103	0.821	287.043	0.000	286.893	0.000
14	287.103	0.655	287.193	3.270	287.233	4.452	287.093	0.709	287.053	0.000	286.893	0.000
15	287.103	0.615 *	287.203	3.567 *	287.243	5.290	287.073	0.000	287.043	0.000	286.883	0.000
16	287.103	0.602	287.173	2.114	287.273	6.391 *	287.043	0.000	287.043	0.000	286.883	0.000
17	287.113	0.816	287.163	1.997	287.243	5.229	287.033	0.000	287.063	0.000	286.883	0.000
18	287.223	2.532	287.173	2.148	287.233	4.472	286.903	0.000	287.053	0.000	286.873	0.000
19	287.233	2.628	287.203	3.567 *	287.233	4.593	286.903	0.000	287.043	0.000	286.873	0.000
20	287.223	2.536	287.193	3.924	287.243	5.342	286.903	0.000	287.063	0.000	286.863	0.000
21	287.203	1.867	287.183	3.474	287.213	4.096	286.903	0.000	287.053	0.000	286.853	0.000
22	287.213	1.924 *	287.193	3.728	287.213	4.174	286.903	0.000	287.063	0.000	286.843	0.000
23	287.133	0.777	287.223	4.851	287.203	3.567 *	286.893	0.000	287.053	0.000	286.833	0.000
24	287.103	0.575	287.203	3.792	287.273	6.550	286.893	0.000	287.063	0.000	286.823	0.000
25	287.123	0.844 *	287.213	4.711	287.243	5.471	286.883	0.000	287.063	0.000	286.823	0.000
26	287.183	1.112	287.203	3.567 *	287.233	4.794	286.883	0.000	287.043	0.000	286.813	0.000
27	287.143	1.091	287.213	4.293	287.243	5.542	286.883	0.000	287.023	0.000	286.793	0.000
28	287.183	1.149	287.203	3.755	287.213	4.233	286.873	0.000	287.033	0.000	286.773	0.000
29	287.203	1.967 *	287.193	3.419	287.143	1.908	286.863	0.000	287.053	0.000	286.563	0.000
30	287.183	1.112	287.263	6.350			286.863	0.000	287.063	0.000	286.553	0.000
31	287.173	1.093	287.223	4.764			287.443	0.000			287.133	0.000 *
Ten-Daily Mean												
I Ten-Daily	287.254	4.007	287.183	3.204	287.171	2.838	287.066	0.278	286.890	0.000	287.046	0.000
II Ten-Daily	287.179	1.938	287.192	3.246	287.246	5.238	287.025	0.313	287.052	0.000	286.885	0.000
III Ten-Daily	287.168	1.228	287.210	4.246	287.220	4.482	286.935	0.000	287.051	0.000	286.800	0.000
Monthly												
Min.	287.103	0.575	287.153	1.348	287.103	1.153	286.863	0.000	286.833	0.000	286.553	0.000
Max.	287.293	5.849	287.263	6.350	287.283	6.671	287.443	1.025	287.063	0.000	287.133	0.000
Mean	287.199	2.353	287.196	3.587	287.212	4.176	287.006	0.191	286.998	0	286.907	0

Peak Computed Discharge = 43.03 cumecs on 06/10/2019

Corres. Water Level :287.713 m

Lowest Computed Discharge = 0.000 cumecs on 03/05/2020

Corres. Water Level :287.043 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Station Name : DODDIPADU.

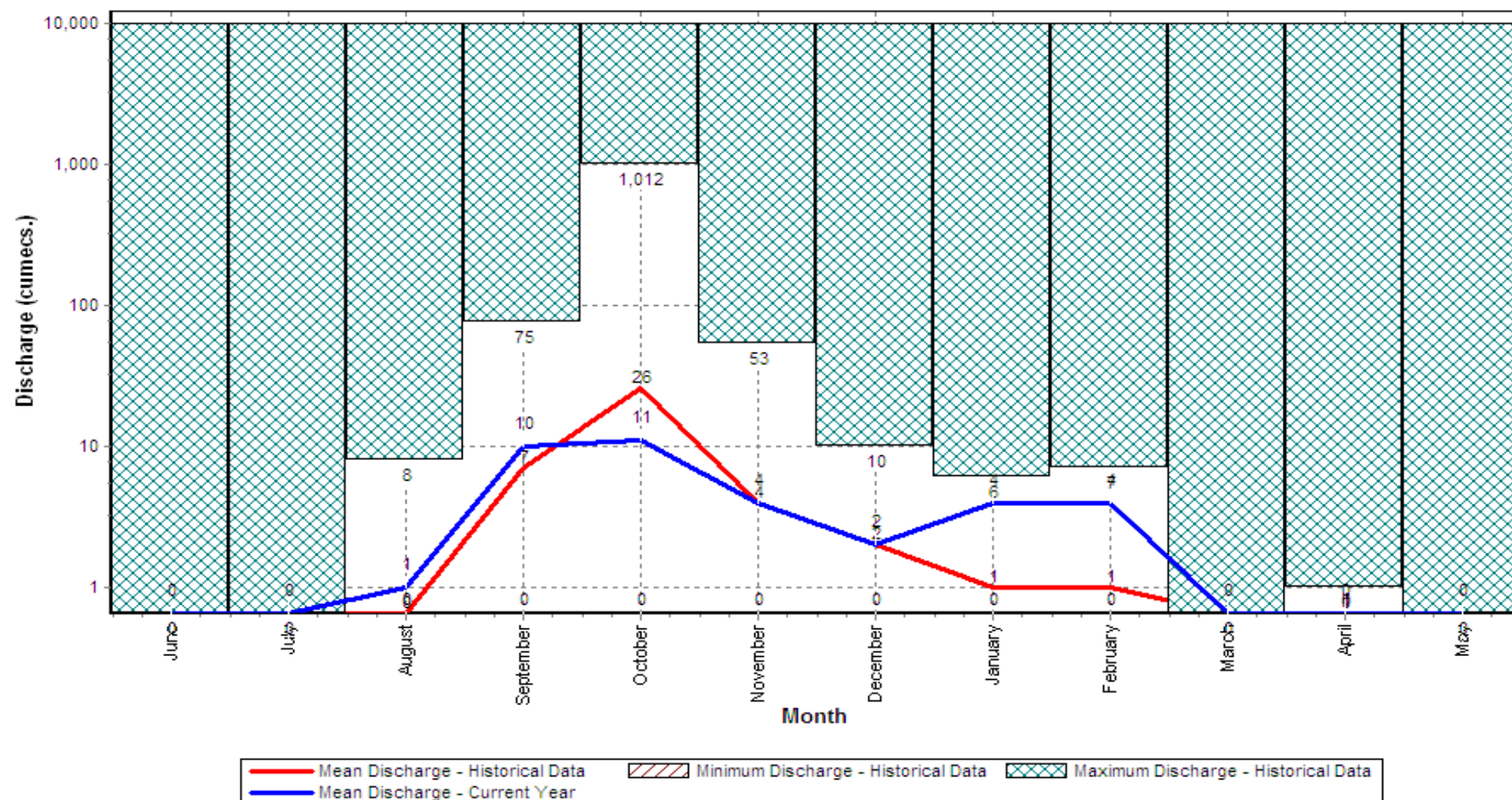
Local River : HUNDRI

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

Data considered : 2015-2020

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool

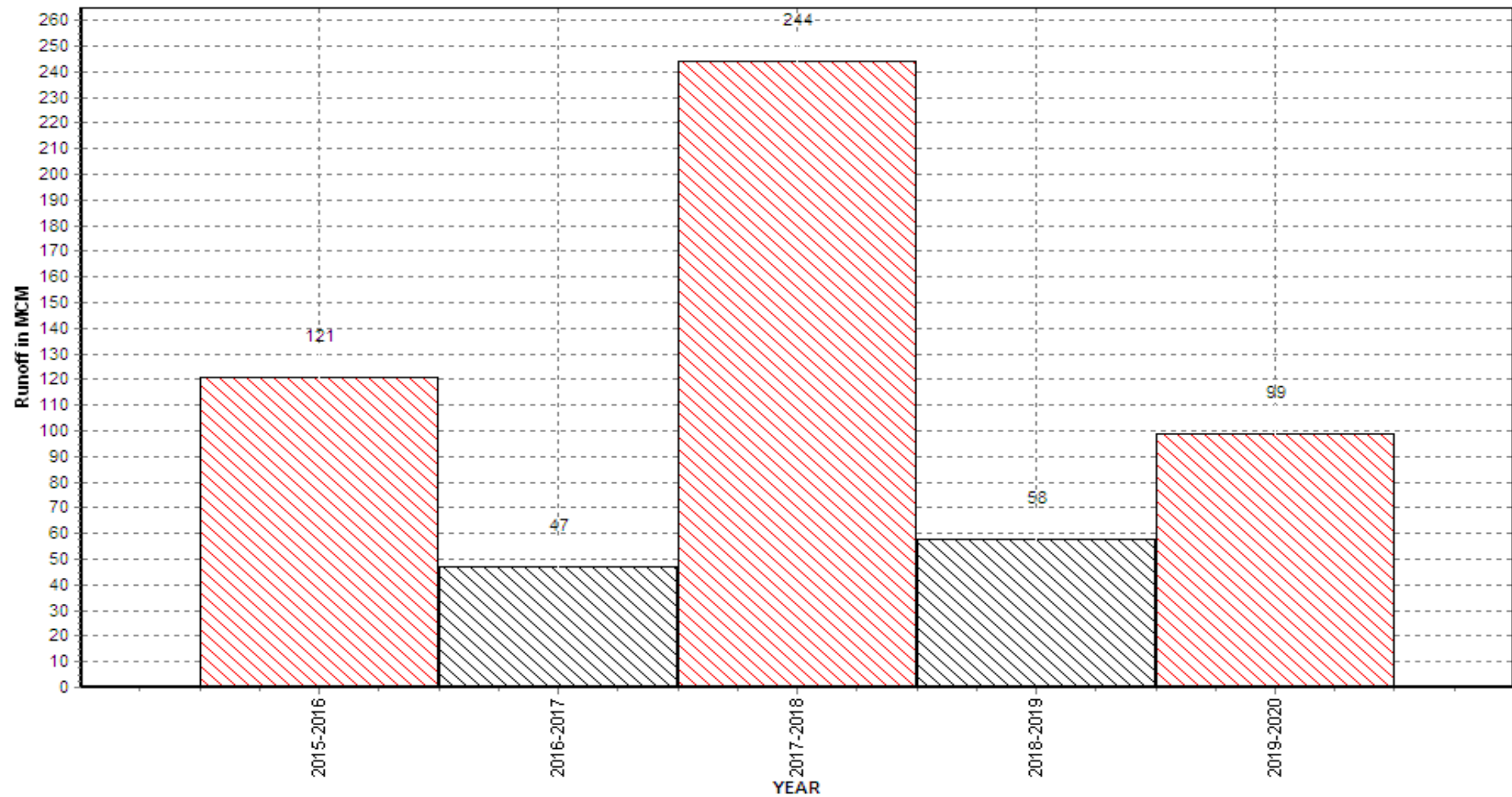


Station Name : DODDIPADU.

Annual Runoff Values for the period: 2015 - 2020

Local River : HUNDRI

Division : Lower Krishna Divn., Hyderabad
Sub-Division : Lower Tungabhadra SD, Kurnool

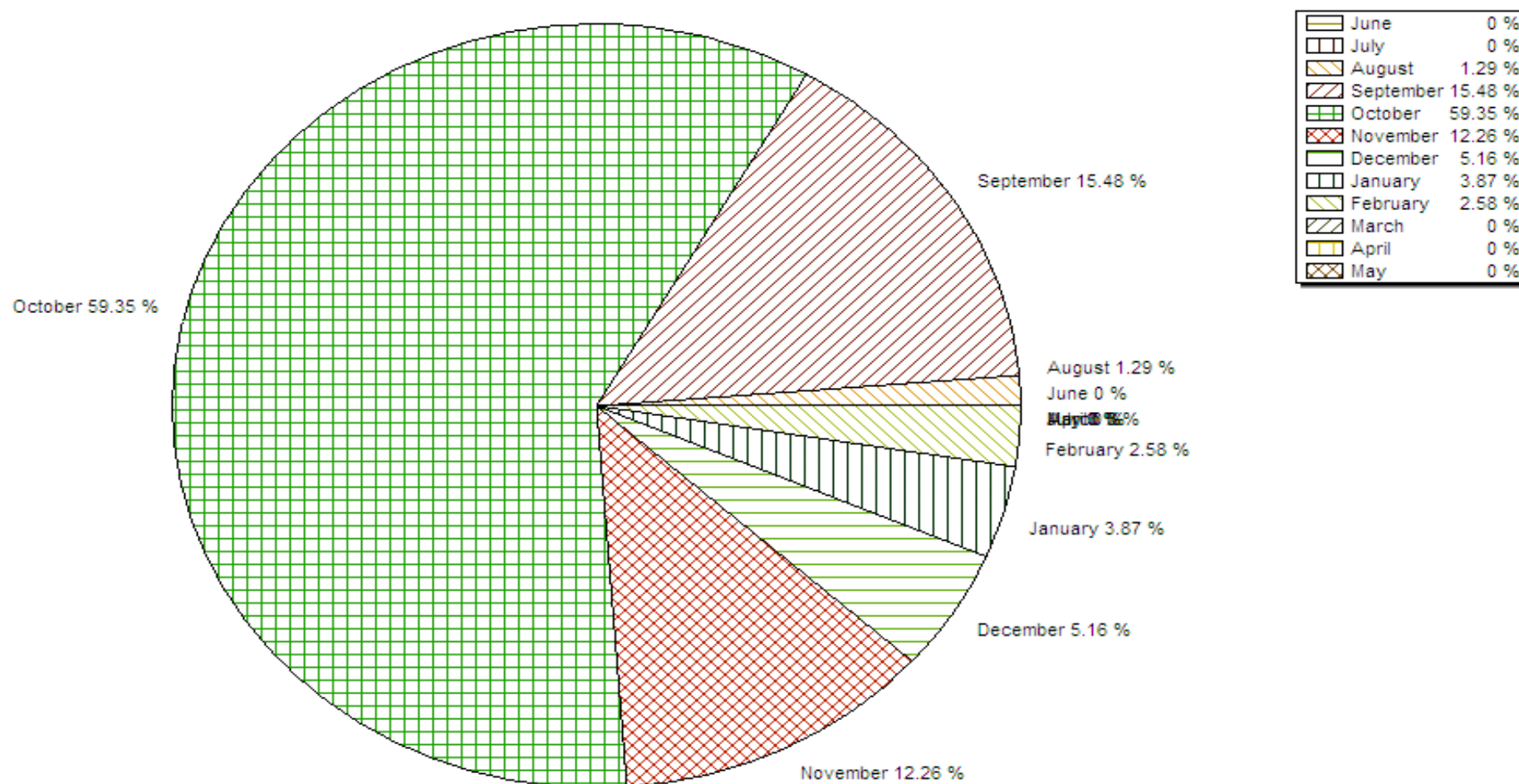


Note: Missing values have not been considered while arriving at Annual Runoff

Station Name : DODDIPADU.
Local River : HUNDRI

Monthly Average Runoff based on period : 2015-2019

Division : Lower Krishna Divn., Hyderabad
Sub-Division : Lower Tungabhadra SD, Kurnool



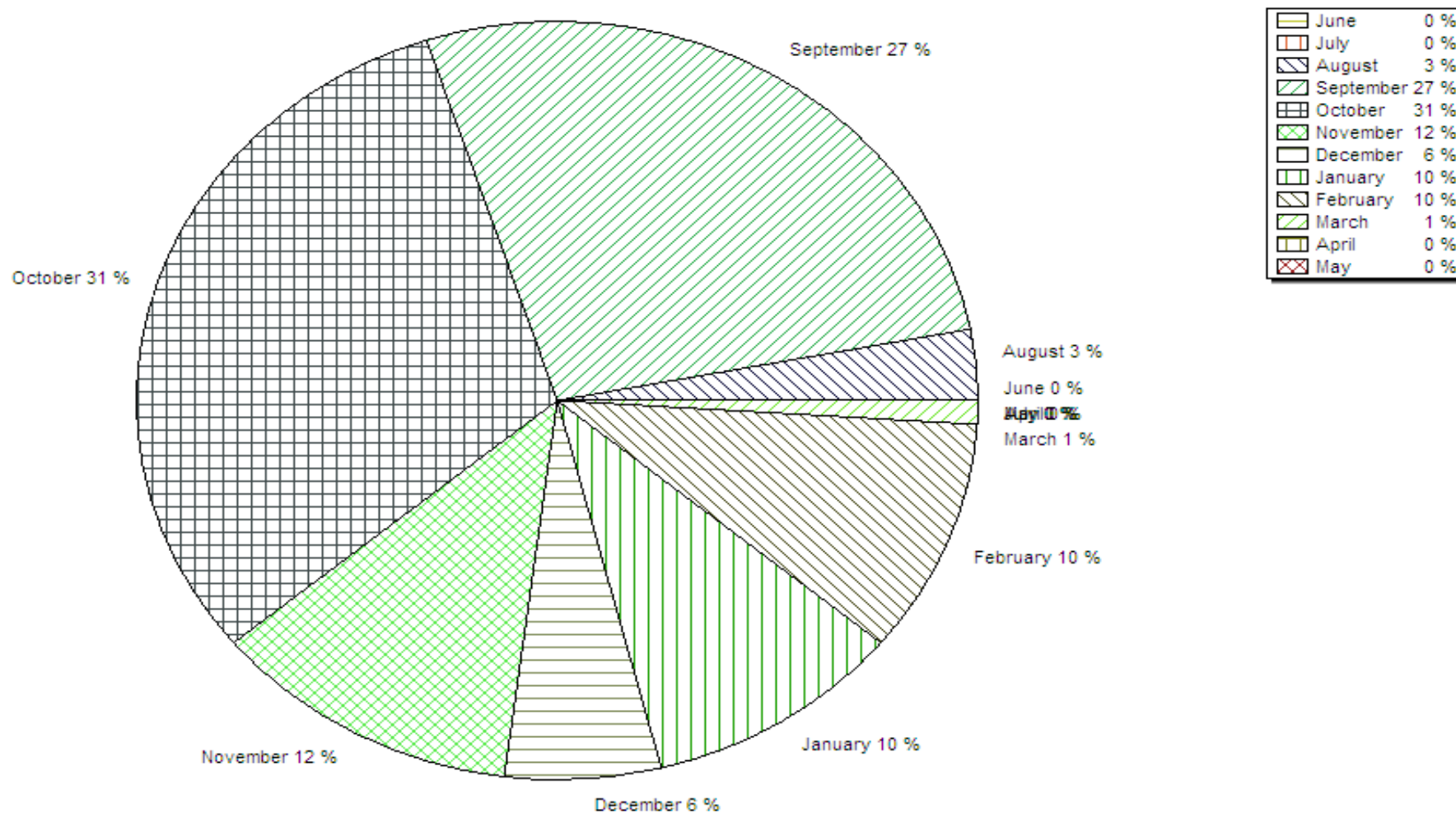
Station Name : DODDIPADU.

Local River : HUNDRI

Monthly Runoff for the Year : 2019-2020

Division : Lower Krishna Divn., Hyderabad

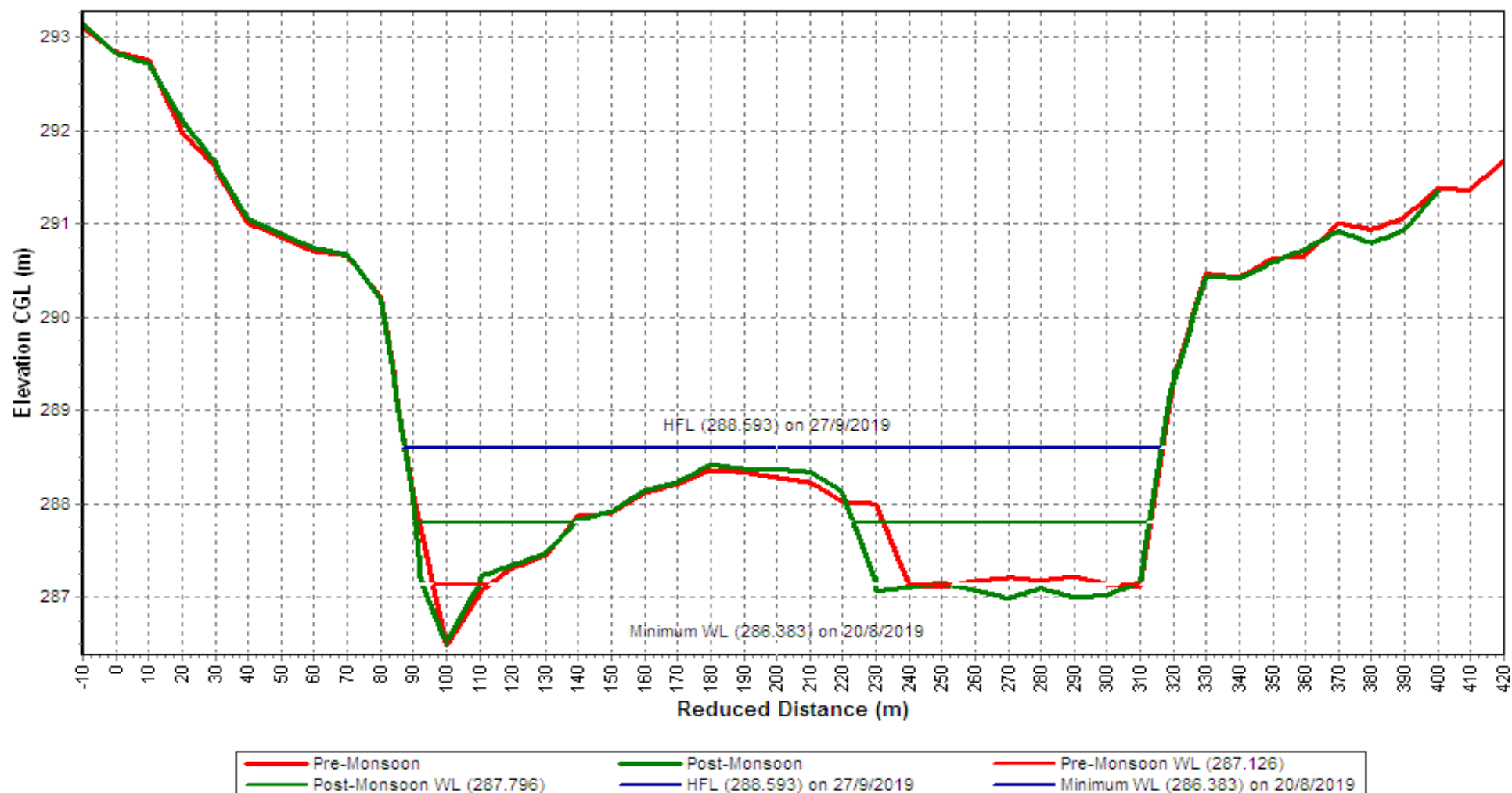
Sub-Division : Lower Tungabhadra SD, Kurnool



Station Name : DODDIPADU.
Local River : HUNDRI

Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

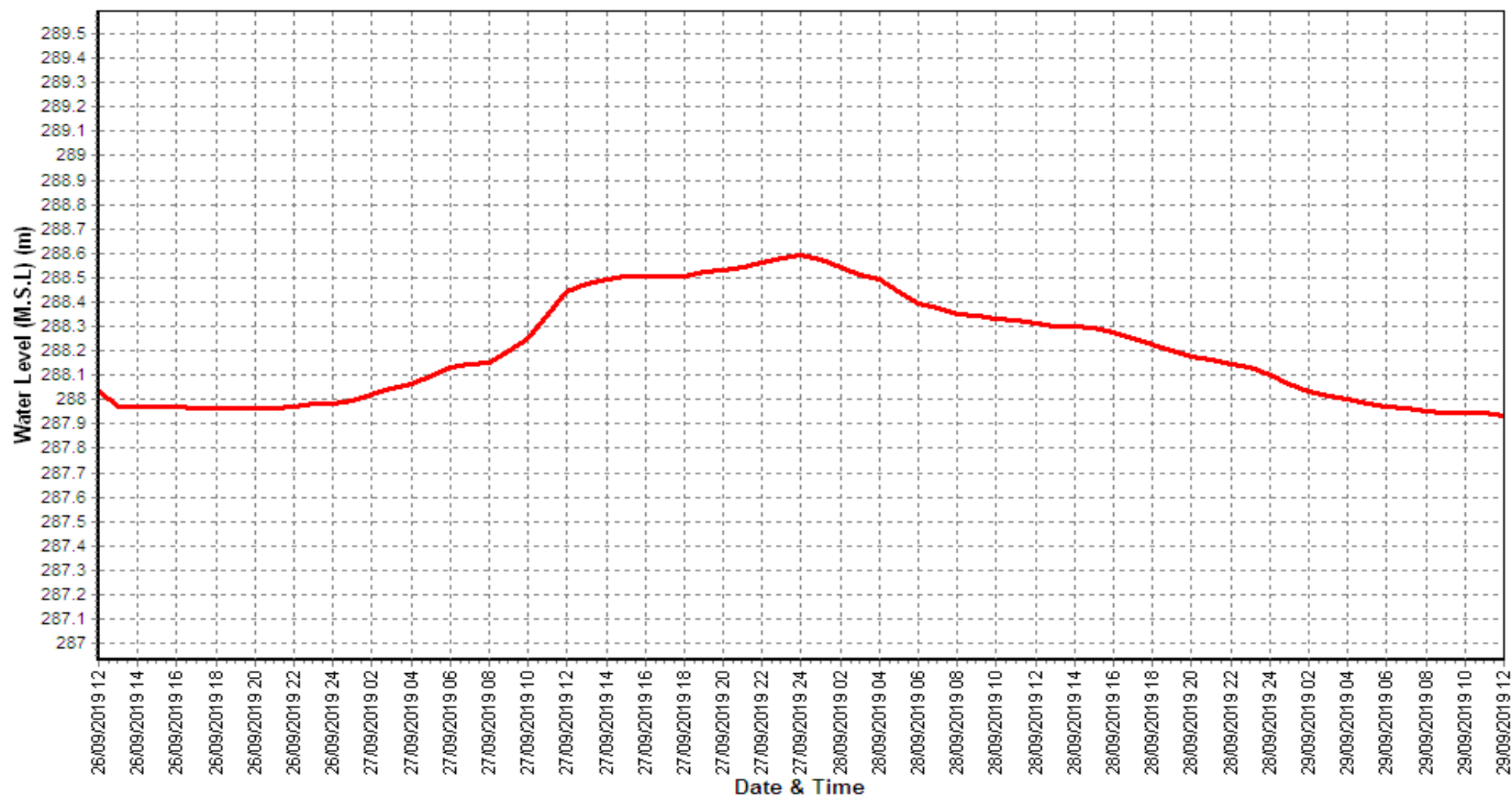
Division : Lower Krishna Divn., Hyderabad
Sub-Division : Lower Tungabhadra SD. Kurnool



Station Name : DODDIPADU.
Local River : HUNDRI

Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Division : Lower Krishna Divn., Hyderabad
Sub-Division : Lower Tungabhadra SD, Kurnool



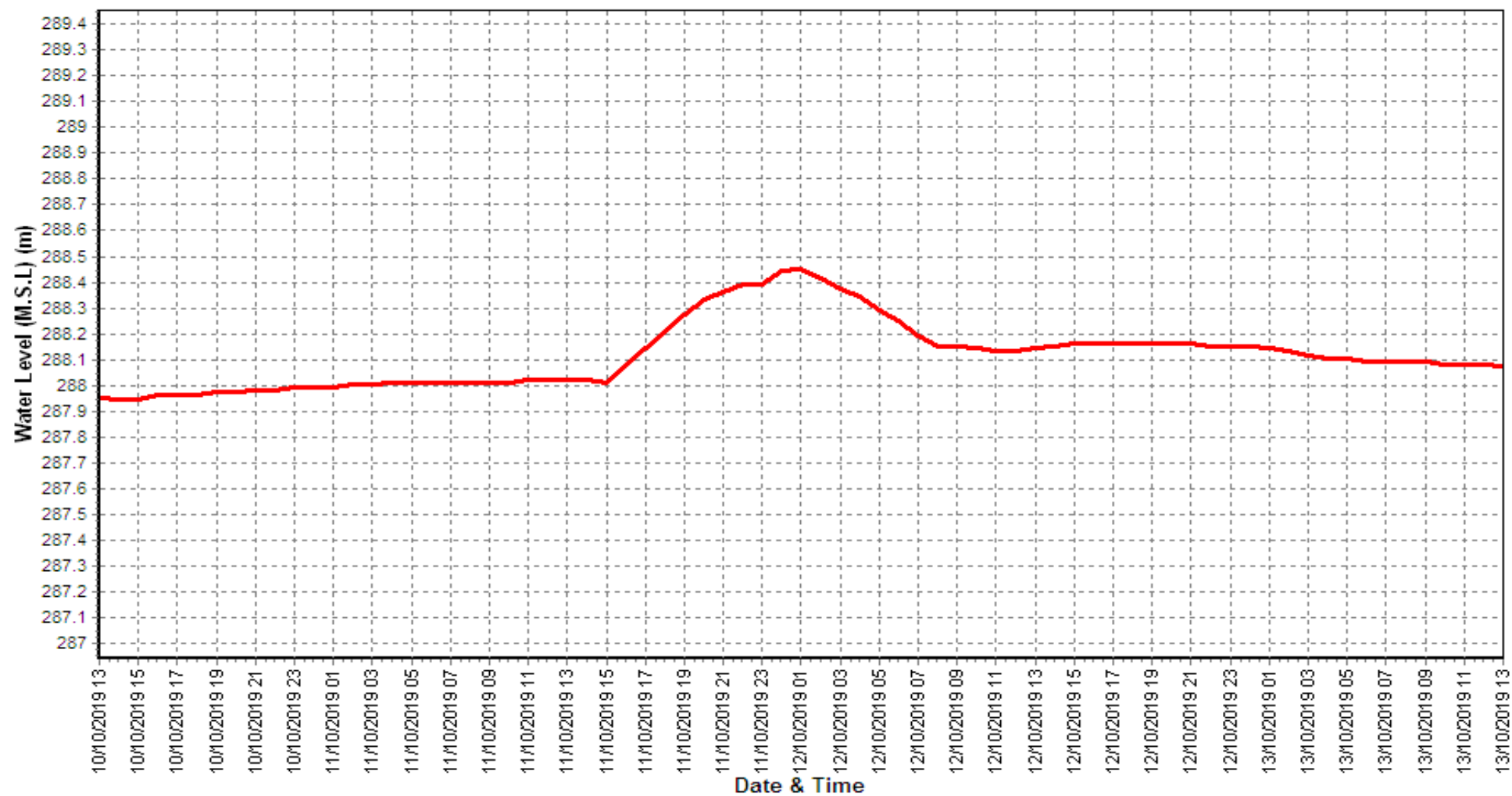
Station Name : DODDIPADU.

Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Local River : HUNDRI

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



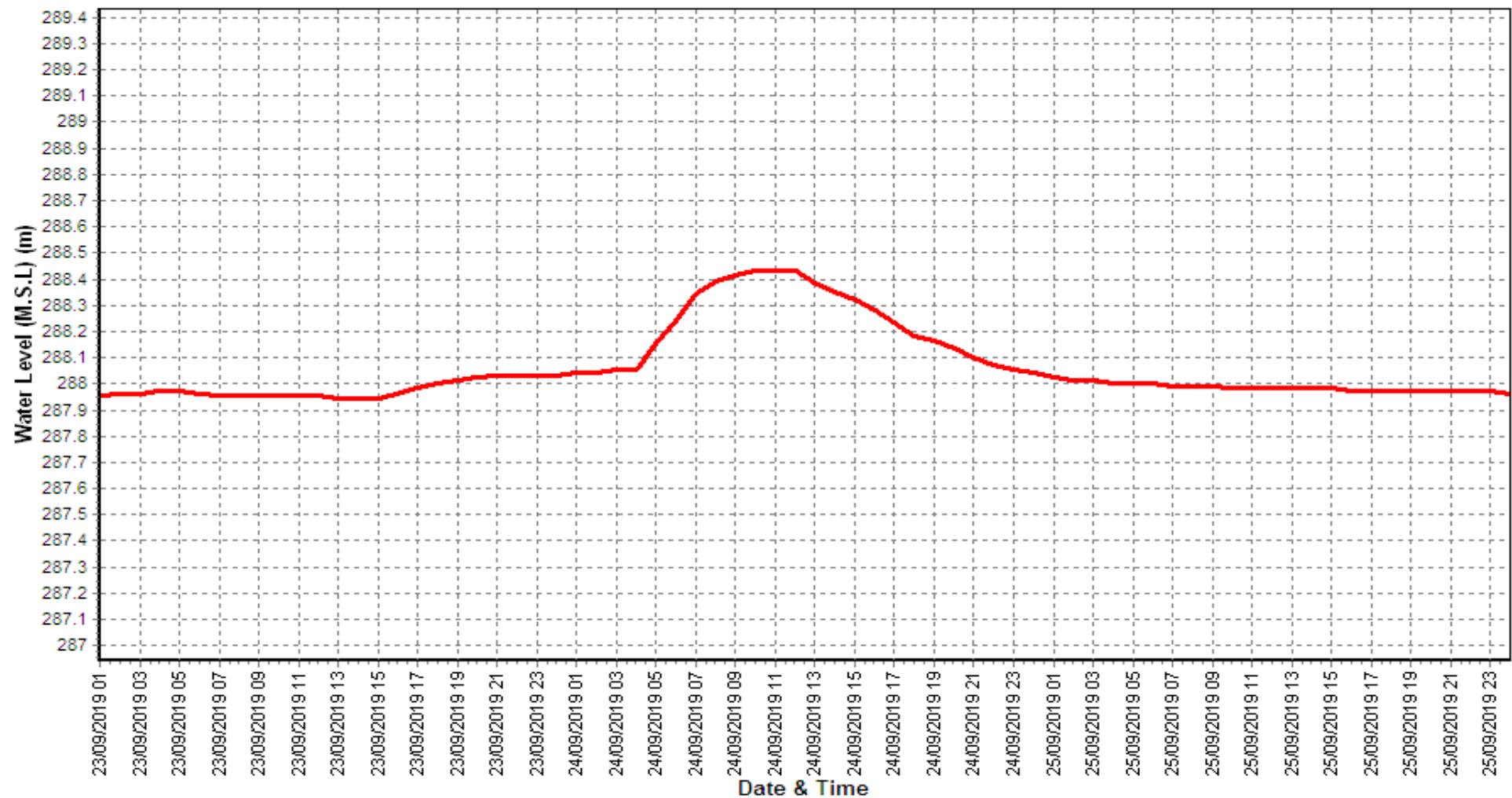
Station Name : DODDIPADU.

Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Local River : HUNDRI

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



HISTORY SHEET

		Water Year : 2019-2020	
Site	: Bawapuram	Code	: AKL00B8
State	: Andhra Pradesh	District	: Kurnool
Basin	: Krishna	Independent River	: Krishna
Tributary	: Tungabhadra	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Tungabhadra
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Tungabhadra SD, Kurnool
Drainage Area	: 67180 Sq. Km.	Bank	: Right
Latitude	: 15°52'57"	Longitude	: 77°57'26"
Zero of Gauge (m)	: 271.825 (m.s.l)	14/03/1964	- 31/05/1969
	: 270.485 (m.s.l)	01/06/1969	- 31/12/1972
	: 270.245 (m.s.l)	01/01/1973	
	: 270.245 (m.s.l)	01/05/2019	
	Opening Date	Closing Date	
Gauge	: 14/03/1964	HFL During 2019-20	: 276.825 m
		Corres. Discharge	: 5929 (Estimated)
Discharge	: 01/04/1964	Date & Time of	: 13/08/2019
		occurrence	: 06:00 Hrs
Sediment	: 01/06/1965		
Water Quality	: 01/01/1972		

HFL Recorded so far in m : 285.225 dt 02-10-2009

Corresponding Discharge (cumecs) : 30527*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	3250	277.755	25/07/1965	1.000	272.560	23/03/1966
1966-1967	2700	277.295	25/09/1966	1.258	272.600	07/07/1966
1967-1968	3735	278.080	06/08/1967	1.049	272.550	11/07/1967
1968-1969	4987	278.337	09/10/1968	2.288	272.585	15/07/1968
1969-1970	3523	276.420	06/08/1969	2.500	271.410	15/05/1970
1970-1971	5714	277.883	21/09/1970	4.856	271.445	05/04/1971
1971-1972	3448	276.420	15/10/1971	4.140	271.455	09/05/1972
1972-1973	1152	274.660	19/09/1972	1.500	271.050	20/05/1973
1973-1974	1867	275.205	19/08/1973	1.700	271.305	11/05/1974
1974-1975	5520	277.285	28/09/1974	3.000	271.190	04/05/1975
1975-1976	6214	277.835	19/10/1975	3.300	271.145	03/07/1975
1976-1977	465.8	273.198	26/08/1976	3.000	271.105	13/10/1976
1977-1978	1864	274.945	13/10/1977	1.800	271.045	11/07/1977
1978-1979	6723	278.160	30/09/1978	2.100	271.055	01/07/1978
1979-1980	2149	275.445	25/09/1979	1.500	270.915	19/07/1979

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1980-1981	4779	277.075	16/08/1980	0.800	270.990	03/05/1981
1981-1982	4345	276.885	20/09/1981	2.400	271.055	25/07/1981
1982-1983	3998	276.590	07/08/1982	1.600	271.015	04/05/1983
1983-1984	2772	275.905	18/08/1983	0.700	270.915	13/07/1983
1984-1985	2944	275.815	06/08/1984	0.400	270.905	28/04/1985
1985-1986	1156	274.165	19/08/1985	0.100	270.885	19/04/1986
1986-1987	2858	275.585	16/08/1986	0.000	270.865	31/03/1987
1987-1988	1423	274.390	29/06/1987	0.170	270.835	09/06/1987
1988-1989	3455	275.975	31/08/1988	0.000		15/05/1989
1989-1990	2787	275.640	25/09/1989	0.000		02/06/1989
1990-1991	2989	275.945	18/08/1990	0.090	270.925	05/08/1990
1991-1992	3748	276.325	01/08/1991	0.023	270.915	21/04/1992
1992-1993	15004	280.445	19/11/1992	0.386	270.840	06/05/1993
1993-1994	4879	276.864	11/10/1993	1.418	270.815	09/07/1993
1994-1995	6971	278.015	19/07/1994	0.230	270.700	01/05/1995
1995-1996	1209	273.895	31/08/1995	0.000	270.655	28/06/1995
1996-1997	6509	277.525	03/10/1996	0.000	270.695	02/06/1996
1997-1998	5069	276.645	10/08/1997	0.945	270.775	24/07/1997
1998-1999	6036	276.975	15/10/1998	0.000	270.775	22/06/1998
1999-2000	2667	275.370	01/08/1999	0.542	270.665	01/02/2000
2000-2001	2629	275.515	11/10/2000	1.525	270.755	12/03/2001
2001-2002	3213	275.935	08/10/2001	0.000		22/05/2002
2002-2003	1268	274.295	13/10/2002	0.000	270.545	02/03/2003
2003-2004	534.0	273.185	24/10/2003	0.000	270.495	17/02/2004
2004-2005	1481	274.340	07/09/2004	0.000		03/05/2005
2005-2006	4651	276.345	06/08/2005	0.000		07/07/2005
2006-2007	5667	276.945	15/08/2006	0.000	270.395	02/04/2007
2007-2008	8101	278.395	20/09/2007	0.666	270.395	02/03/2008
2008-2009	6397	277.305	16/08/2008	0.000	270.275	15/05/2009
2009-2010	19986	281.585	02/10/2009	0.632	270.515	21/03/2010
2010-2011	5494	276.675	25/08/2010	0.585	270.505	10/08/2010
2011-2012	3774	275.590	05/09/2011	0.017	270.295	16/04/2012
2012-2013	1898	274.120	03/11/2012	0.000	270.125	23/04/2013
2013-2014	4755	275.755	06/08/2013	0.000	270.335	01/03/2014
2014-2015	5830	276.105	05/08/2014	0.000	270.285	08/04/2015
2015-2016	2081	273.955	08/09/2015	0.000	269.655	18/05/2016
2016-2017	1234	273.105	17/09/2016	0.000	269.995	25/01/2017
2017-2018	2757	274.495	16/09/2017	0.000	270.025	19/03/2018
2018-2019	5750	276.415	18/08/2018	0.000	270.115	10/02/2019

Annual Runoff of Tungabhadra at Bawapuram

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966	4936	736	5672	174	26	200
2	1966-1967	2750	844	3594	97	30	127
3	1967-1968	4695	307	5002	166	11	177
4	1968-1969	5721	791	6511	202	28	230
5	1969-1970	6261	693	6954	221	25	246
6	1970-1971	9624	536	10160	340	19	359
7	1971-1972	4034	689	4723	143	24	167
8	1972-1973	2091	155	2246	74	5	79
9	1973-1974	5584	374	5958	197	13	211
10	1974-1975	5725	295	6020	202	10	213
11	1975-1976	14441	462	14903	510	16	527
12	1976-1977	686	292	978	24	10	35
13	1977-1978	3403	205	3608	120	7	127
14	1978-1979	11649	218	11867	412	8	419
15	1979-1980	3590	254	3843	127	9	136
16	1980-1981	8910	151	9061	315	5	320
17	1981-1982	6789	110	6900	240	4	244
18	1982-1983	4951	87	5038	175	3	178
19	1983-1984	4737	93	4830	167	3	171
20	1984-1985	3896	68	3964	138	2	140
21	1985-1986	1200	83	1283	42	3	45
22	1986-1987	2118	44	2161	75	2	76
23	1987-1988	2336	138	2475	83	5	87
24	1988-1989	4358	89	4447	154	3	157
25	1989-1990	2557	255	2812	90	9	99
26	1990-1991	4448	44	4492	157	2	159
27	1991-1992	6201	82	6284	219	3	222
28	1992-1993	9654	177	9831	341	6	347
29	1993-1994	5235	692	5927	185	24	209
30	1994-1995	10128	76	10204	358	3	361
31	1995-1996	1766	68	1834	62	2	65
32	1996-1997	5346	169	5515	189	6	195

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	4477	264	4741	158	9	168
34	1998-1999	8100	175	8275	286	6	292
35	1999-2000	5119	142	5261	181	5	186
36	2000-2001	5422	156	5578	192	6	197
37	2001-2002	3277	128	3405	116	5	120
38	2002-2003	786	53	839	28	2	30
39	2003-2004	495	177	672	17	6	24
40	2004-2005	1528	167	1695	54	6	60
41	2005-2006	5931	198	6129	210	7	217
42	2006-2007	4472	86	4558	158	3	161
43	2007-2008	10818	708	11526	382	25	407
44	2008-2009	5341	160	5501	189	6	194
45	2009-2010	9946	467	10414	351	17	368
46	2010-2011	5479	234	5713	194	8	202
47	2011-2012	3566	56	3622	126	2	128
48	2012-2013	1334	16	1351	47	1	48
49	2013-2014	7873	12	7885	278	0	279
50	2014-2015	7180	33	7213	254	1	255
51	2015-2016	1150	9	1159	41	0	41
52	2016-2017	356	0	356	13	0	13
53	2017-2018	1667	16	1683	59	1	59
54	2018-2019	5079	2	5081	179	0	180
55	2019-2020	7686	164	7850	272	6	278
Average		5035	231	5266	178	8	186
75% Dependable flow (MCM)				2812			
90 % Dependable flow (MCM)				1234			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Bawapuram (AKL00B8)

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	268.565	0.000	270.045	0.000	270.055	0.000	270.495	3.124 *	272.125	641.1	271.805	422.1
2	268.565	0.000	270.045	0.000	270.055	0.000	270.495	3.124 *	271.665	355.2 *	272.025	540.5
3	268.565	0.000	270.035	0.000	270.055	0.000	270.555	7.726	271.530	285.6	271.445	247.8 *
4	268.565	0.000	270.025	0.000	270.055	0.000	270.565	8.021	271.455	252.6	271.720	361.0
5	268.565	0.000	270.025	0.000	270.055	0.000	270.525	7.171	271.290	208.9	271.705	351.1
6	268.565	0.000	270.015	0.000	270.045	0.000	271.875	442.0	271.215	164.7 *	271.290	198.2
7	268.585	0.000	270.005	0.000	270.035	0.000	273.275	1518	272.005	534.3	271.110	125.9
8	269.245	0.000	269.975	0.000	270.015	0.000	273.785	1960 *	271.705	375.0 *	270.530	9.059
9	269.845	0.000	269.965	0.000	269.965	0.000	274.325	2551	272.610	896.1	270.505	7.236
10	269.855	0.000	269.945	0.000	269.955	0.000	273.605	1783 *	272.795	1285	270.505	9.720 *
11	269.855	0.000	269.925	0.000	269.925	0.000 *	273.545	1732	272.165	676.6	270.485	6.371
12	269.855	0.000	269.915	0.000	275.775	4325	273.605	1808	273.595	1808	270.465	5.900 *
13	269.855	0.000	269.905	0.000	276.825	6013	273.555	1743	272.535	882.2 *	270.535	10.54
14	269.855	0.000	269.885	0.000	274.735	2928	272.155	651.1	272.055	577.6	271.115	125.6
15	269.855	0.000	269.875	0.000	274.445	2661	271.915	486.3 *	271.655	365.6	270.655	24.58
16	269.855	0.000	269.865	0.000	273.290	1491	271.770	386.1	271.545	331.7	270.520	8.513
17	269.855	0.000	269.845	0.000	273.735	1780	271.860	424.6	272.035	546.3	270.475	6.806 *
18	269.855	0.000	270.095	0.000	273.235	1542	271.320	221.9	271.665	347.1	270.445	6.144
19	269.855	0.000	270.095	0.000	273.515	1672	271.935	467.7	271.615	331.2	270.435	5.465
20	269.845	0.000	270.085	0.000	272.590	814.1	273.110	1442	271.325	205.6 *	270.425	4.969
21	269.845	0.000	270.085	0.000	272.110	628.5	272.625	840.8	272.965	1290	270.475	6.154
22	269.845	0.000	270.075	0.000	272.720	1071	272.045	561.1 *	272.155	591.2	270.485	6.819
23	269.845	0.000	270.055	0.000	272.155	641.7	271.360	240.7	275.075	3243	270.465	5.669
24	269.835	0.000	270.105	0.000	272.015	584.3	272.860	1160	275.915	4486	270.465	5.900 *
25	270.065	0.000	270.095	0.000	271.625	335.9 *	272.860	1196	273.705	2003	270.465	5.791
26	270.065	0.000	270.085	0.000	270.575	7.877	274.645	2843	272.805	918.6	270.455	5.381
27	270.045	0.000	270.095	0.000	270.455	0.947 #	274.355	2578	273.185	1398 *	270.455	5.345
28	270.035	0.000	270.095	0.000	270.415	0.254 #	273.160	1427	272.685	1050	270.455	5.241
29	270.015	0.000	270.085	0.000	270.445	0.577 #	272.395	784.3 *	273.380	1617	270.465	5.802
30	270.005	0.000	270.065	0.000	270.435	0.287 #	272.290	706.4	273.345	1594	270.455	5.262
31			270.055	0.000	270.385	0.215 #			272.240	681.0		
Ten-Daily Mean												
I Ten-Daily	268.892	0.000	270.008	0.000	270.029	0.000	271.950	828.3	271.840	499.9	271.264	227.3
II Ten-Daily	269.854	0.000	269.949	0.000	273.807	2323	272.477	936.2	272.019	607.2	270.556	20.49
III Ten-Daily	269.960	0.000	270.081	0.000	271.212	297.4	272.859	1234	273.405	1716	270.464	5.736
Monthly												
Min.	268.565	0.000	269.845	0.000	269.925	0.000	270.495	3.124	271.215	164.7	270.425	4.969
Max.	270.065	0.000	270.105	0.000	276.825	6013	274.645	2843	275.915	4486	272.025	540.5
Mean	269.569	0	270.015	0	271.668	854.8	272.429	999.4	272.453	965.9	270.761	84.5

Annual Runoff in MCM = 7850 Annual Runoff in mm = 117

Peak Observed Discharge = 6013 cumecs on 13/08/2019 Corres. Water Level :276.825 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :268.565 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Bawapuram (AKL00B8)

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	270.465	6.050 *	270.455	5.502	270.395	4.880	270.325	1.802 *	269.995	0.000	269.325	0.000
2	270.475	6.082	270.455	5.504	270.395	4.328 *	270.355	2.693	269.985	0.000	269.315	0.000
3	270.475	6.640	270.455	5.488	270.395	4.876	270.355	2.684	269.965	0.000	269.305	0.000
4	271.185	166.3	270.425	4.107	270.395	4.821	270.355	2.763	269.935	0.000	269.295	0.000
5	271.485	273.0	270.385	3.889 *	270.395	4.857	270.355	2.812	269.895	0.000	269.285	0.000
6	271.445	238.9	270.355	2.606	270.395	5.066	270.355	2.880	269.865	0.000	269.275	0.000
7	271.310	211.4	270.355	2.599	270.395	4.947	270.355	2.817	269.845	0.000	269.265	0.000
8	271.205	170.0 *	270.355	2.620	270.395	4.900	270.355	2.729 *	269.835	0.000	269.255	0.000
9	271.475	268.5	270.365	2.690	270.395	4.328 *	270.355	2.909	269.825	0.000	269.235	0.000
10	270.505	7.450	270.375	2.902	270.385	3.348	270.375	3.477 *	269.815	0.000	269.215	0.000
11	270.445	5.704	270.375	2.917	270.385	3.426	270.385	3.478	269.795	0.000	269.195	0.000
12	270.465	6.225	270.375	2.272 *	270.385	3.463	270.385	3.585	269.765	0.000	269.195	0.000
13	270.535	10.42	270.375	2.965	270.395	4.878	270.355	2.901	269.725	0.000	269.185	0.000
14	271.205	173.3	270.375	2.951	270.395	4.845	270.355	2.881	269.695	0.000	269.165	0.000
15	270.495	8.717 *	270.375	2.272 *	270.355	2.632	270.355	2.729 *	269.665	0.000	269.155	0.000
16	270.455	5.542	270.375	2.926	270.325	1.802 *	270.285	0.885	269.635	0.000	269.145	0.000
17	270.455	5.602	270.375	2.908	270.315	1.708	270.285	0.896	269.615	0.000	269.135	0.000
18	270.455	5.514	270.355	2.589	270.295	0.955	270.285	0.897	269.585	0.000	269.105	0.000
19	270.455	5.571	270.345	1.885 *	270.285	0.784	270.265	0.642	269.555	0.000	269.085	0.000
20	270.465	6.357	270.345	1.895	270.285	0.820	270.265	0.623	269.525	0.000	269.065	0.000
21	270.465	5.983	270.655	25.01	270.245	0.798	270.265	0.575	269.505	0.000	269.055	0.000
22	270.455	5.025 *	270.495	9.168	270.285	0.790	270.255	0.544 *	269.485	0.000	269.045	0.000
23	270.445	4.745	270.425	4.737	270.285	0.928 *	270.235	0.000	269.465	0.000	269.015	0.000
24	270.445	4.783	270.395	4.268	270.285	0.792	270.235	0.000	269.445	0.000	268.995	0.000
25	270.455	5.025 *	270.385	3.192	270.285	0.796	270.215	0.000	269.425	0.000	268.985	0.000
26	270.455	5.496	270.385	3.889 *	270.285	0.826	270.195	0.000	269.395	0.000	268.975	0.000
27	270.455	5.396	270.385	3.264	270.285	0.818	270.165	0.000	269.385	0.000	268.925	0.000
28	270.455	5.459	270.365	2.847	270.285	0.829	270.135	0.000	269.355	0.000	268.915	0.000
29	270.455	5.025 *	270.365	2.879	270.315	1.727	270.115	0.000	269.345	0.000	268.915	0.000
30	270.445	4.740	270.355	2.535			270.055	0.000 *	269.345	0.000	268.895	0.000
31	270.445	4.836	270.395	4.268			270.035	0.000			268.895	0.000 *
<u>Ten-Daily Mean</u>												
I Ten-Daily	271.003	135.4	270.398	3.791	270.394	4.635	270.354	2.757	269.896	0.000	269.277	0.000
II Ten-Daily	270.543	23.29	270.367	2.558	270.342	2.531	270.322	1.952	269.656	0.000	269.143	0.000
III Ten-Daily	270.452	5.137	270.419	6.005	270.284	0.923	270.173	0.102	269.415	0.000	268.965	0.000
<u>Monthly</u>												
Min.	270.445	4.740	270.345	1.885	270.245	0.784	270.035	0.000	269.345	0.000	268.895	0.000
Max.	271.485	273.0	270.655	25.01	270.395	5.066	270.385	3.585	269.995	0.000	269.325	0.000
Mean	270.659	53.02	270.395	4.179	270.342	2.757	270.280	1.555	269.656	0	269.123	0

Peak Computed Discharge = 1960 cumecs on 08/09/2019

Corres. Water Level :273.785 m

Lowest Computed Discharge = 0.000 cumecs on 11/08/2019

Corres. Water Level :269.925 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

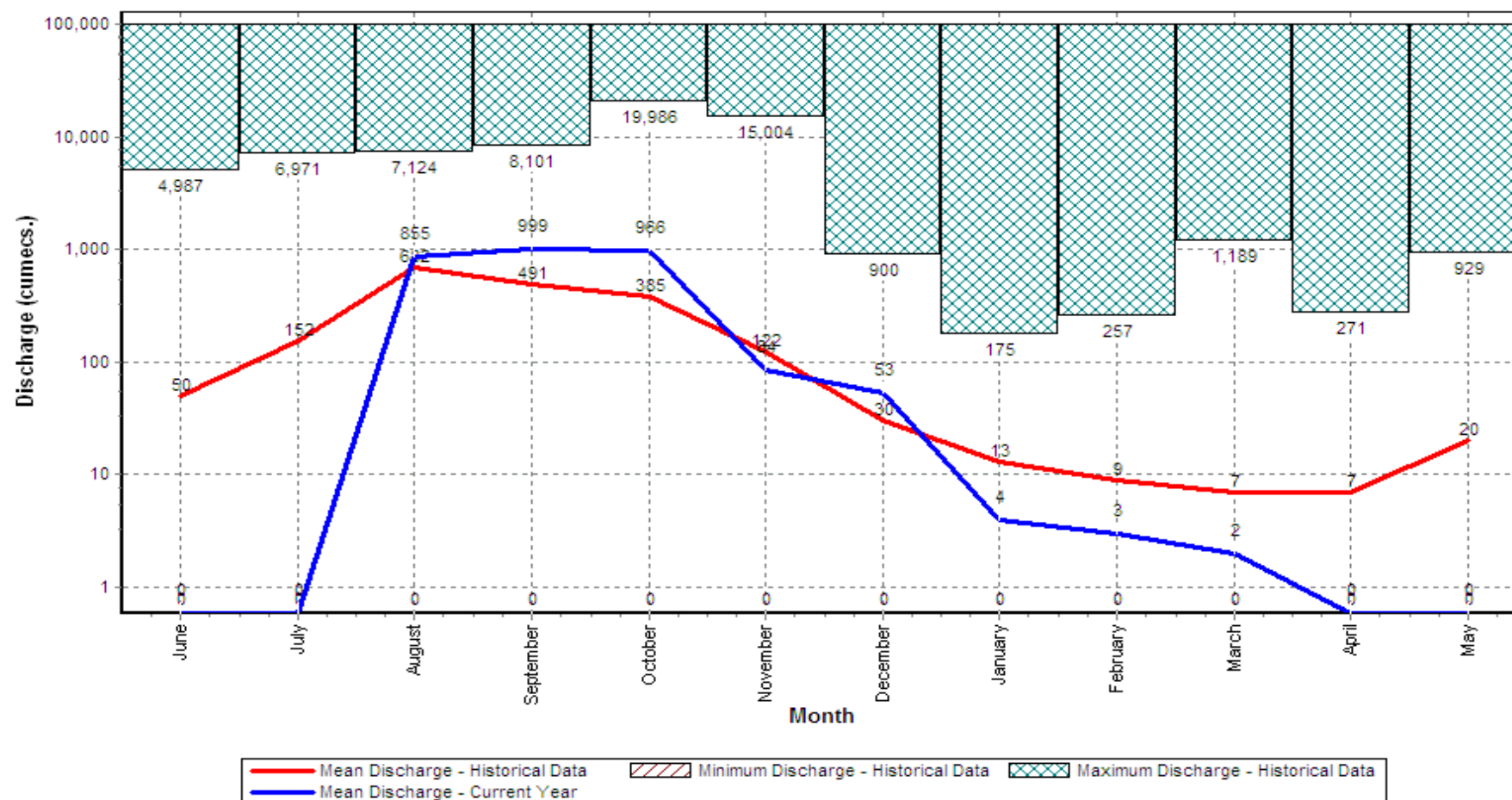
Station Name : Bawapuram (AKL00B8)

Data considered : 1965-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool



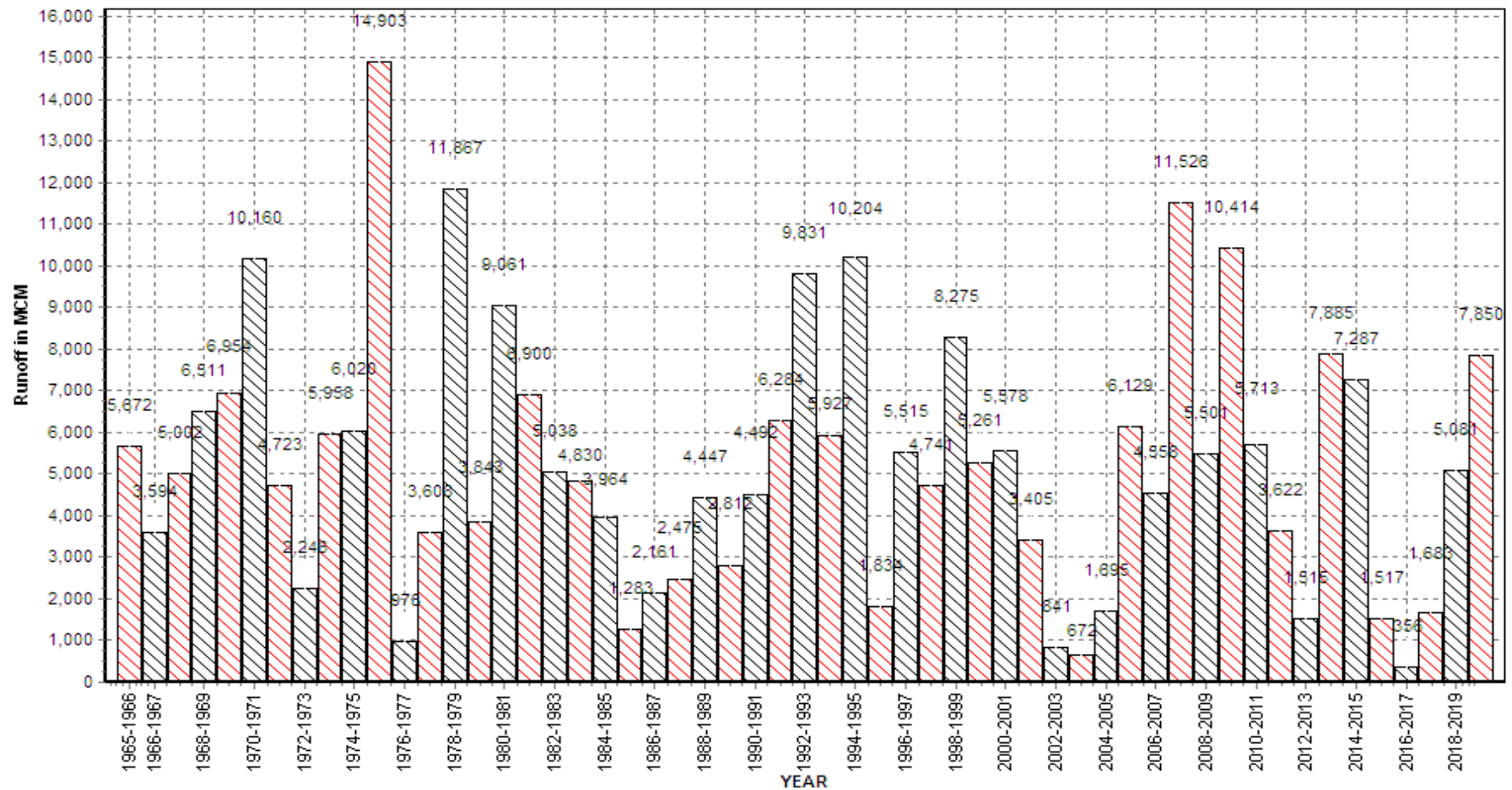
Annual Runoff Values for the period: 1965 - 2020

Station Name : Bawapuram (AKL00B8)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



Note: Missing values have not been considered while arriving at Annual Runoff

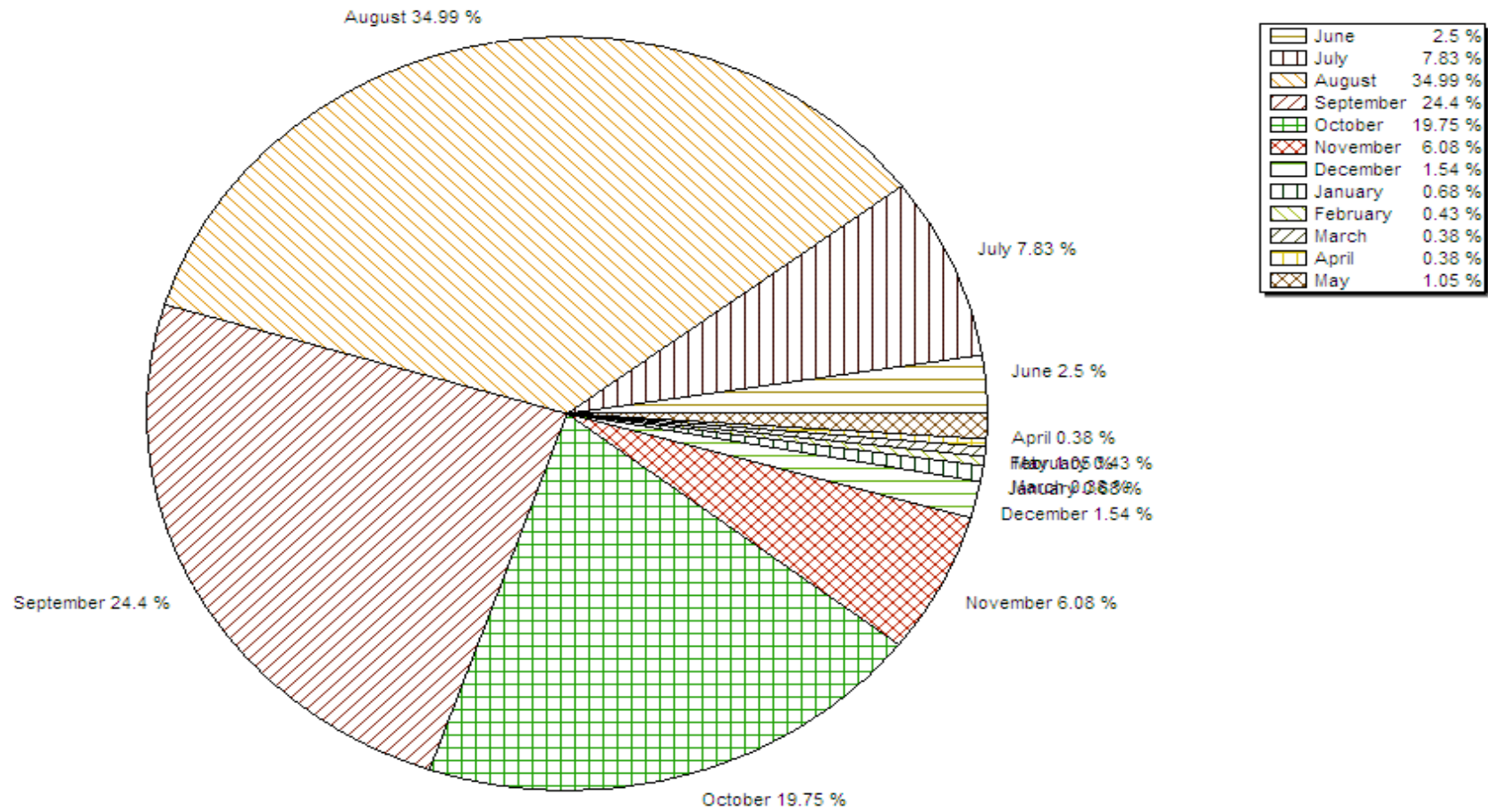
Monthly Average Runoff based on period : 1965-2019

Station Name : Bawapuram (AKL00B8)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



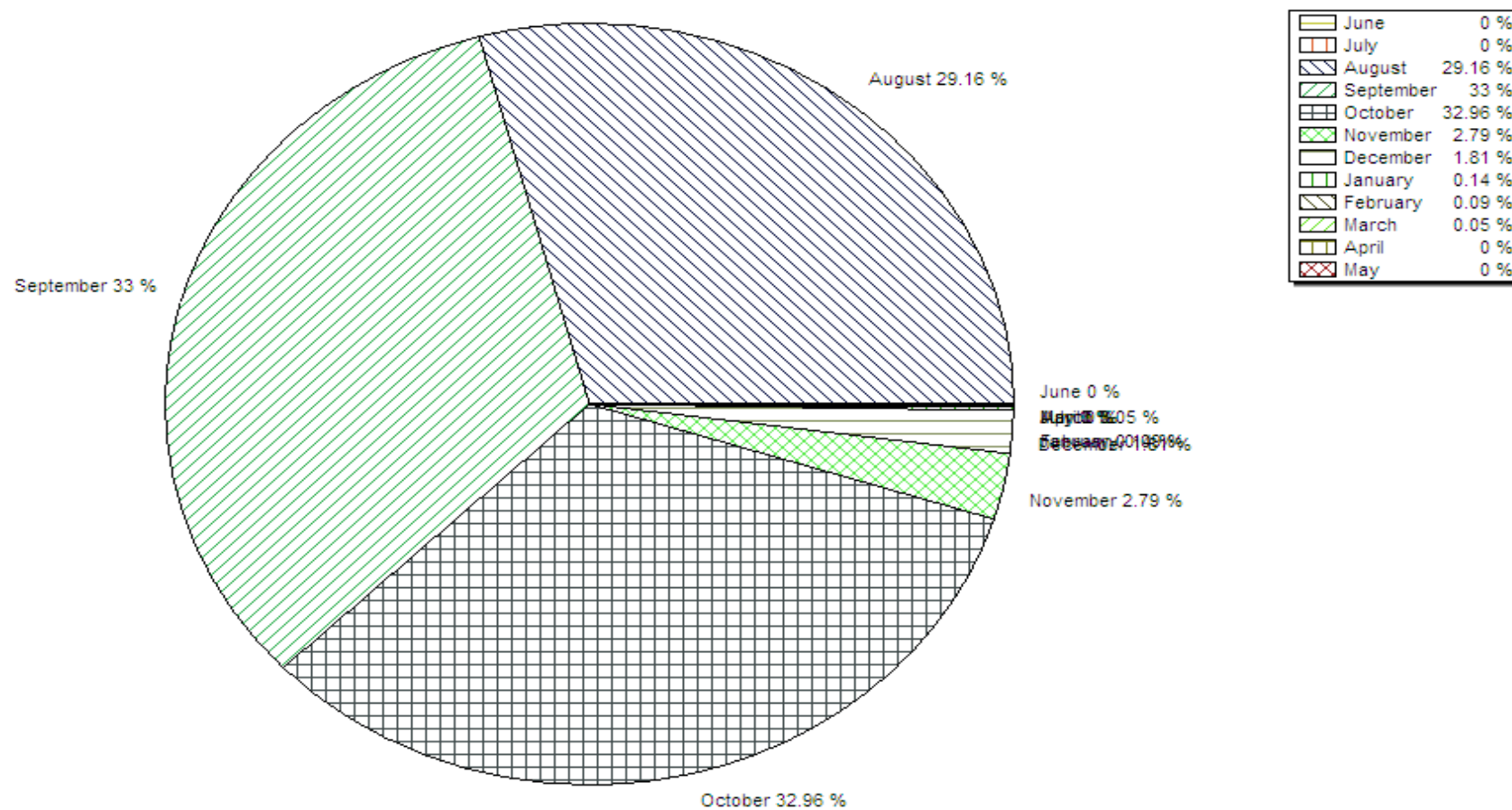
Monthly Runoff for the Year : 2019-2020

Station Name : Bawapuram (AKL00B8)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



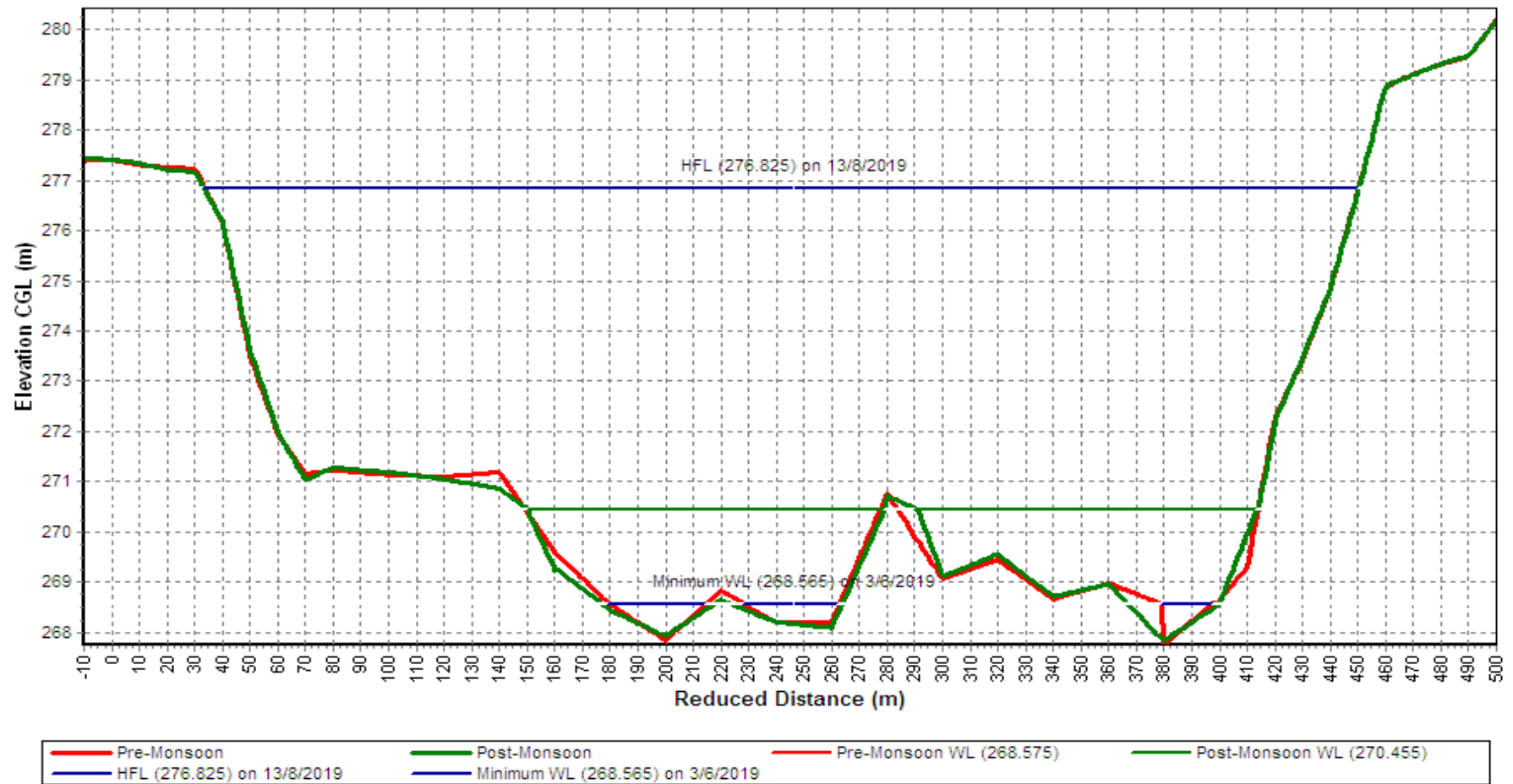
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Bawapuram (AKL00B8)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Bawapuram (AKL00B8)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



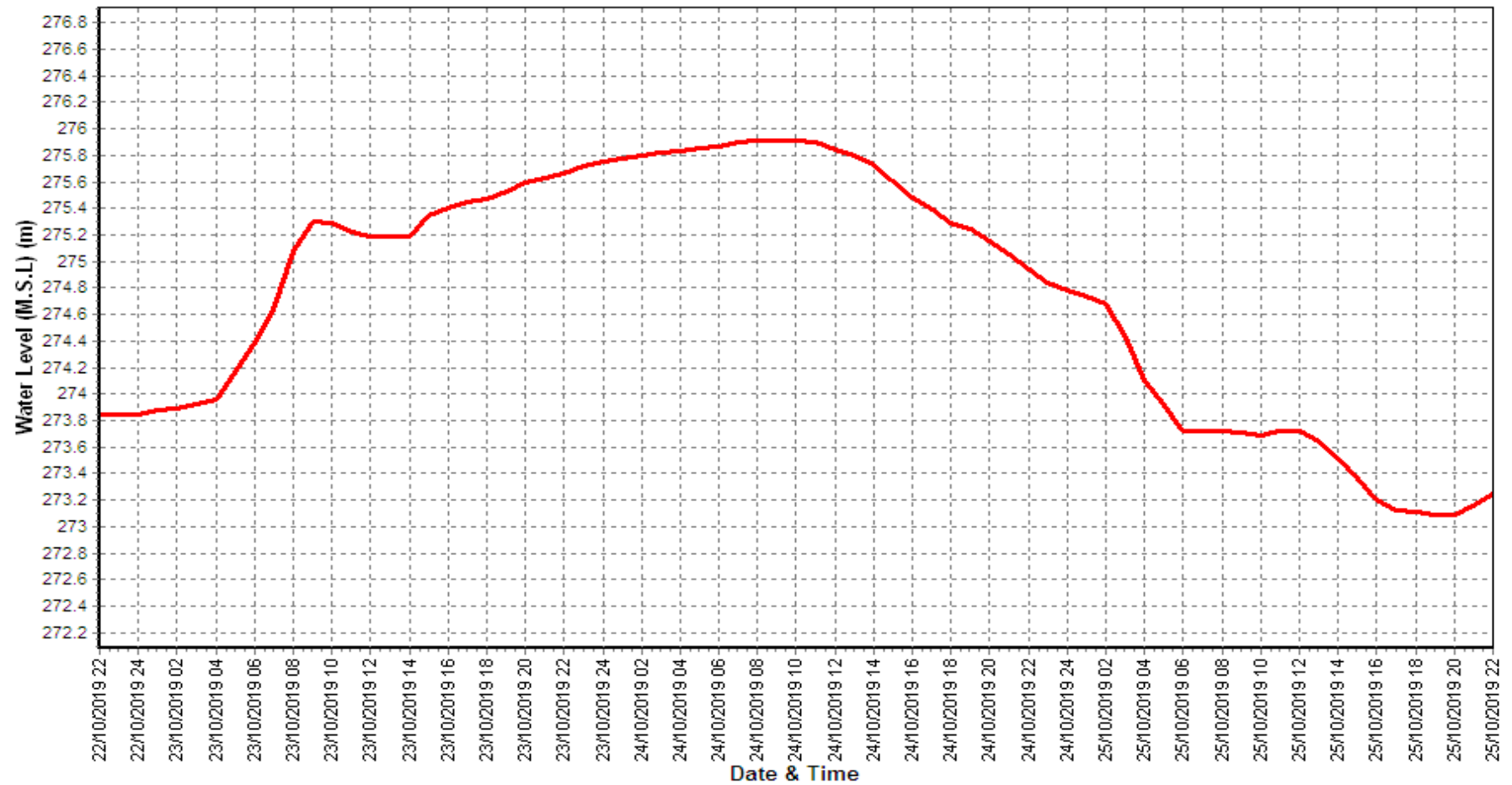
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Bawapuram (AKL00B8)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



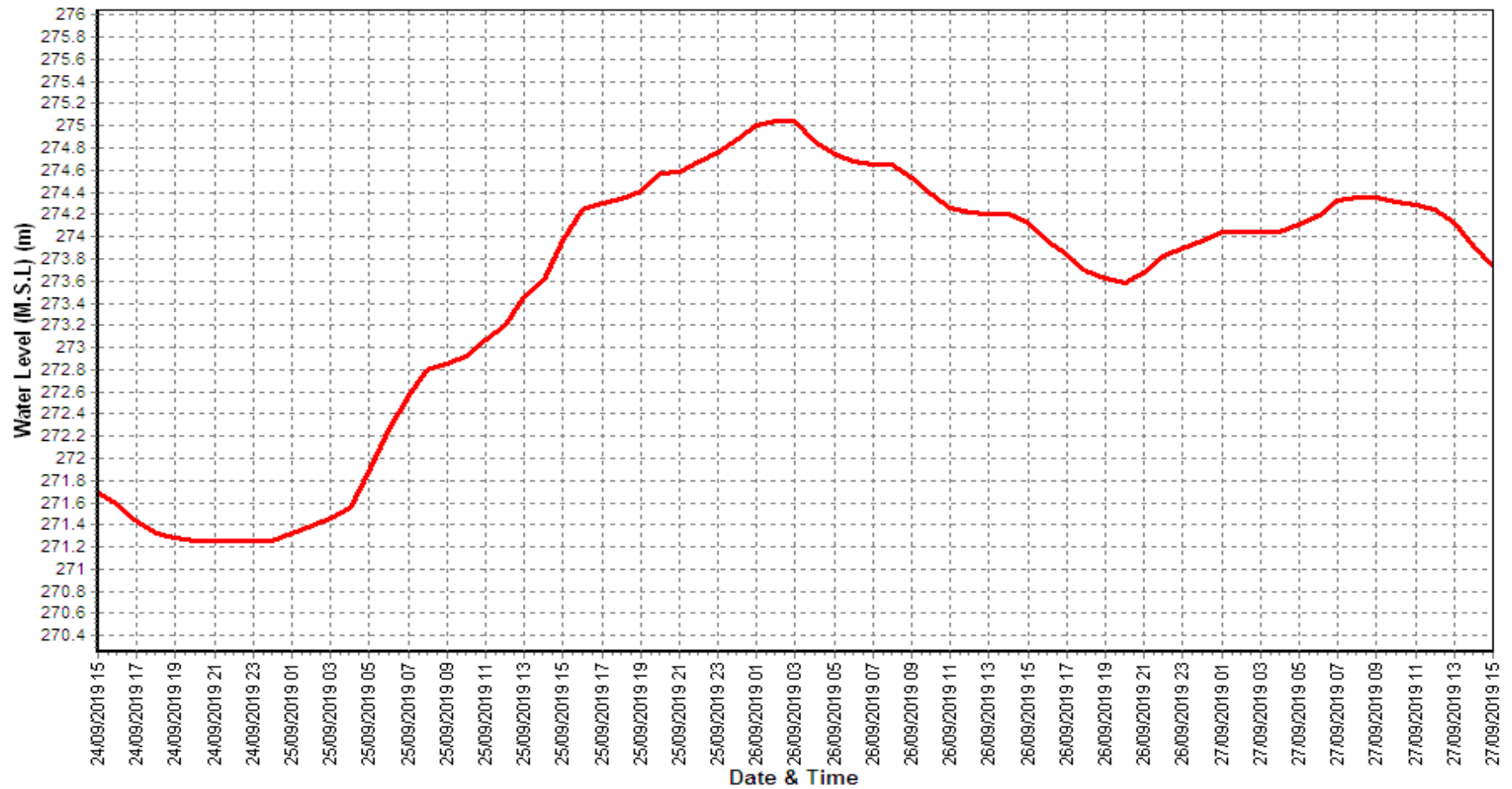
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Bawapuram (AKL00B8)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



HISTORY SHEET

		Water Year : 2019-2020	
Site	: Mantralayam	Code	: AKL00F2
State	: Andhra Pradesh	District	: Kurnool
Basin	: Krishna	Independent River	: Krishna
Tributary	: Tungabhadra	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Tungabhadra
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Tungabhadra SD, Kurnool
Drainage Area	: 60630 Sq. Km.	Bank	: Right
Latitude	: 15°56'43"	Longitude	: 77°25'38"
Zero of Gauge (m)	: 308.34 (m.s.l)	10/03/1972	- 30/11/1973
	: 307.645 (m.s.l)	01/12/1973	- 31/05/1975
	: 307.5 (m.s.l)	01/06/1975	- 31/05/1982
	: 306 (m.s.l)	01/06/1982	
	: 306 (m.s.l)	10/02/1996	
	Opening Date	Closing Date	
Gauge	: 10/03/1972	HFL During 2019-20	: 312.900 m
		Corres. Discharge	: 2246 (Estimated)
Discharge	: 01/06/1972	Date & Time of	: 12/08/2019
		occurrence	: 17:00 Hrs
Sediment	: 26/07/1977		
Water Quality	: 01/08/1977		

HFL Recorded so far in m : 318.770 dt 02-10-2009

Corresponding Discharge (cumecs) : 18882 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1972-1973	908.6	310.650	19/09/1972	15.20	308.710	27/05/1973
1973-1974	2259	312.197	25/10/1973	11.00	308.085	11/05/1974
1974-1975	5465	313.015	28/09/1974	7.700	307.975	31/05/1975
1975-1976	4489	313.260	19/10/1975	7.300	308.375	03/06/1975
1976-1977	568.2	309.920	22/08/1976	13.99	308.400	01/06/1976
1977-1978	2508	311.950	12/10/1977	19.70	308.465	06/07/1977
1978-1979	8504	314.775	30/09/1978	8.200	308.280	31/05/1979
1979-1980	3477	312.430	13/08/1979	4.800	308.215	31/05/1980
1980-1981	5258	313.630	08/07/1980	4.507	308.230	31/05/1981
1981-1982	5346	313.500	19/09/1981	4.600	308.220	02/06/1981
1982-1983	3161	311.045	06/08/1982	3.798	306.765	31/05/1983
1983-1984	2437	310.560	18/08/1983	2.400	306.755	07/06/1983
1984-1985	2943	310.778	10/10/1984	3.229	306.790	09/06/1984
1985-1986	1254	309.375	19/08/1985	2.752	306.720	31/05/1986

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1986-1987	2904	310.695	15/08/1986	1.000	306.685	11/05/1987
1987-1988	1817	309.860	28/06/1987	0.736	306.645	17/06/1987
1988-1989	2644	310.365	16/09/1988	0.001	306.470	31/05/1989
1989-1990	2310	310.285	25/09/1989	0.000	306.435	02/06/1989
1990-1991	3451	310.965	18/08/1990	2.552	306.890	25/05/1991
1991-1992	3919	311.453	31/07/1991	10.50	307.030	27/05/1992
1992-1993	16540	315.710	19/11/1992	7.040	307.024	09/07/1992
1993-1994	4208	311.382	19/10/1993	1.610	306.530	06/07/1993
1994-1995	7793	312.910	19/07/1994	0.981	306.300	11/05/1995
1995-1996	1198	309.200	31/08/1995	0.000	306.270	23/05/1996
1996-1997	5592	312.235	03/10/1996	0.000	306.280	01/06/1996
1997-1998	5186	311.810	10/08/1997	0.000	306.260	28/07/1997
1998-1999	5421	311.535	15/10/1998	0.000	306.230	18/06/1998
1999-2000	3522	310.980	30/07/1999	1.501	306.340	04/07/1999
2000-2001	2826	310.585	10/10/2000	0.270	306.290	26/07/2000
2001-2002	3796	311.330	08/10/2001	0.000		29/05/2002
2002-2003	1090	309.105	13/10/2002	0.000	305.810	16/05/2003
2003-2004	663.8	308.535	24/10/2003	0.000	305.850	26/04/2004
2004-2005	2008	309.900	17/08/2004	0.000	305.970	18/05/2005
2005-2006	5188	311.725	15/10/2005	0.000	305.980	13/06/2005
2006-2007	5307	312.040	15/08/2006	0.000	306.000	25/03/2007
2007-2008	7446	313.820	19/09/2007	0.929	306.130	25/05/2008
2008-2009	5831	312.410	16/08/2008	0.052	306.010	15/04/2009
2009-2010	18843	318.770	02/10/2009	0.063	305.920	22/07/2009
2010-2011	5646	312.690	25/08/2010	0.000	306.190	11/04/2011
2011-2012	3186	311.030	05/09/2011	0.000	306.060	18/03/2012
2012-2013	1766	309.705	05/09/2012	0.000	305.820	12/03/2013
2013-2014	4092	311.390	06/08/2013	0.000	306.010	11/07/2013
2014-2015	4810	312.015	05/08/2014	0.000	305.910	04/07/2014
2015-2016	1867	310.090	08/09/2015	0.000		05/05/2016
2016-2017	614.1	308.440	17/09/2016	0.000	305.930	25/02/2017
2017-2018	1940	310.095	16/09/2017	0.000	305.500	06/04/2018
2018-2019	5401	312.390	18/08/2018	0.000	305.720	21/02/2019

Annual Runoff of Tungabhadra at Mantralayam

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1972-1973	2713	835	3548	96	30	125
2	1973-1974	6113	1226	7339	216	43	259
3	1974-1975	5864	1127	6992	207	40	247
4	1975-1976	16080	1582	17662	568	56	624
5	1976-1977	1640	786	2425	58	28	86
6	1977-1978	4095	1019	5113	145	36	181
7	1978-1979	13064	1088	14152	462	38	500
8	1979-1980	4799	1000	5799	170	35	205
9	1980-1981	10803	926	11730	382	33	414
10	1981-1982	8540	900	9441	302	32	334
11	1982-1983	6082	861	6943	215	30	245
12	1983-1984	5316	825	6141	188	29	217
13	1984-1985	4806	639	5445	170	23	192
14	1985-1986	1865	601	2465	66	21	87
15	1986-1987	3142	476	3618	111	17	128
16	1987-1988	2742	502	3244	97	18	115
17	1988-1989	4887	501	5388	173	18	190
18	1989-1990	3032	690	3722	107	24	132
19	1990-1991	5682	748	6429	201	26	227
20	1991-1992	7576	900	8476	268	32	300
21	1992-1993	10667	949	11617	377	34	410
22	1993-1994	6109	795	6904	216	28	244
23	1994-1995	11024	586	11611	390	21	410
24	1995-1996	2025	498	2523	72	18	89
25	1996-1997	5407	606	6013	191	21	212
26	1997-1998	5095	618	5713	180	22	202
27	1998-1999	8066	553	8620	285	20	305
28	1999-2000	6291	405	6696	222	14	237
29	2000-2001	5883	391	6275	208	14	222
30	2001-2002	3617	412	4029	128	15	142
31	2002-2003	915	285	1200	32	10	42
32	2003-2004	846	364	1210	30	13	43
33	2004-2005	2195	318	2513	78	11	89
34	2005-2006	7157	468	7625	253	17	269
35	2006-2007	5122	319	5441	181	11	192
36	2007-2008	11641	1171	12812	411	41	453
37	2008-2009	5816	368	6185	206	13	219
38	2009-2010	11503	781	12284	406	28	434
39	2010-2011	7130	544	7674	252	19	271

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
40	2011-2012	4255	294	4548	150	10	161
41	2012-2013	1786	167	1953	63	6	69
42	2013-2014	7804	272	8077	276	10	285
43	2014-2015	6999	481	7481	247	17	264
44	2015-2016	1530	194	1723	54	7	61
45	2016-2017	518	1	519	18	0	18
46	2017-2018	1642	133	1776	58	5	63
47	2018-2019	5480	150	5630	194	5	199
48	2019-2020	7602	326	7928	269	12	281
Average		5687	618	6305	201	22	223
75% Dependable flow (MCM)				3566			
90 % Dependable flow (MCM)				1770			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Mantralayam (AKL00F2)

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	305.170	0.000	306.210	5.088	305.650	0.000	306.620	42.17 *	308.070	419.3	308.005	413.2
2	305.170	0.000	306.140	0.000	305.630	0.000	306.630	43.36 *	307.750	315.6 *	307.990	397.5
3	305.170	0.000	306.100	0.000	305.610	0.000	306.680	48.28	307.600	292.4	307.900	375.5 *
4	305.170	0.000	306.070	0.000	305.600	0.000	306.615	44.39	307.510	244.3	308.050	402.1
5	305.170	0.000	306.060	0.000	305.590	0.000	306.525	38.95	307.320	196.7	307.790	330.7
6	305.170	0.000	306.010	0.000	305.580	0.000	308.725	789.9	308.000	418.8 *	307.280	182.5
7	305.170	0.000	306.010	0.000	305.570	0.000	309.895	1779	307.930	364.7	307.000	123.5
8	305.170	0.000	305.980	0.000	305.570	0.000	310.280	2239 *	308.750	834.9 *	306.895	91.16
9	305.170	0.000	305.940	0.000	305.540	0.000	310.490	2534	308.630	669.5	306.800	66.62 *
10	305.180	0.000	305.920	0.000	305.510	0.000	309.780	1692 *	308.725	727.5	306.800	66.62 *
11	305.180	0.000	305.890	0.000	305.490	0.000 *	309.815	1704	308.170	470.0	306.815	72.87
12	305.180	0.000	305.860	0.000	312.120	5105	309.840	1745	310.280	2239 *	307.500	228.9 *
13	305.180	0.000	305.820	0.000	312.630	5934	309.250	1160	308.600	738.4 *	307.220	161.5
14	305.180	0.000	305.790	0.000	310.815	2965	308.205	518.4	308.595	639.6	307.005	120.6
15	306.230	8.051	305.780	0.000	309.590	1550	308.390	614.6 *	307.980	402.1	306.830	73.08
16	306.300	13.70 *	305.760	0.000	310.105	1976	308.070	441.9	308.175	493.3	306.770	65.89
17	306.260	8.477	305.760	0.000	309.745	1619	307.685	312.3	307.880	346.2	306.700	52.24 *
18	306.185	7.656 #	305.770	0.000	309.840	1753 *	307.670	313.1	307.820	329.8	306.680	56.09
19	306.130	0.000	305.780	0.000	309.580	1419	308.995	952.0	307.530	252.1	306.670	55.94
20	306.120	0.000	305.770	0.000	309.005	921.5	310.070	1935	307.500	228.9 *	306.615	51.92
21	306.070	0.000	305.750	0.000	308.595	648.2	308.850	828.8	308.360	557.6	306.610	51.04
22	306.060	0.000	305.750	0.000	308.730	726.2	307.900	375.5 *	309.540	1469	306.590	49.32
23	306.070	0.000	305.750	0.000	308.270	462.3	307.340	198.4	311.590	4242	306.630	53.08
24	306.070	0.000	305.740	0.000	307.900	350.9	307.775	339.3	311.600	4473	306.640	44.57 *
25	306.050	0.000	305.740	0.000	307.500	228.9 *	310.335	2241	309.585	1383	306.650	54.83
26	306.040	0.000	305.720	0.000	306.880	82.43	310.085	1859	309.105	973.7	306.690	60.07
27	306.385	16.39	305.720	0.000	306.565	42.15	309.900	1730	309.200	1167 *	306.690	57.45
28	306.450	20.27	305.710	0.000	306.440	17.88	309.050	992.4	309.345	1199	306.740	65.05
29	306.410	17.07	305.700	0.000	306.370	14.89	308.270	549.7 *	309.630	1434	306.740	63.66
30	306.290	13.500	305.690	0.000	306.340	13.68	308.280	522.2	309.680	1479	306.815	78.61
31			305.670	0.000	306.585	43.48			308.130	466.7		
Ten-Daily Mean												
I Ten-Daily	305.171	0.000	306.044	0.509	305.585	0.000	308.224	925.0	308.029	448.4	307.451	244.9
II Ten-Daily	305.795	3.789	305.798	0.000	309.892	2324	308.799	969.5	308.253	613.9	306.880	93.90
III Ten-Daily	306.190	5.971	305.722	0.000	307.289	239.2	308.779	963.7	309.615	1713	306.680	57.77
Monthly												
Min.	305.170	0.000	305.670	0.000	305.490	0.000	306.525	38.95	307.320	196.7	306.590	44.57
Max.	306.450	20.27	306.210	5.088	312.630	5934	310.490	2534	311.600	4473	308.050	413.2
Mean	305.718	3.159	305.850	0.164	307.579	834.6	308.600	952.8	308.664	950.6	307.004	132.2

Annual Runoff in MCM = 7928 Annual Runoff in mm = 131

Peak Observed Discharge = 5934 cumecs on 13/08/2019 Corres. Water Level :312.63 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :305.17 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Mantralayam (AKL00F2)

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	306.850	74.57 *	306.360	18.51	306.450	27.32	306.310	15.82 *	Not observed due to Lock-Down		306.050	0.000
2	306.850	80.72	306.360	17.93	306.440	23.94 *	306.300	14.33			306.050	0.000
3	306.915	87.09	306.330	16.08	306.390	18.93	306.270	13.85			306.050	0.000 *
4	307.220	164.4	306.310	15.23	306.380	17.97	306.250	12.51			306.050	0.000
5	307.240	167.8	306.300	13.70 *	306.360	16.14	306.200	10.67			306.040	0.000
6	307.170	138.9	306.290	13.93	306.330	14.76	306.170	7.088 #			306.030	0.000
7	307.130	125.2	306.270	12.80	306.310	13.50	306.130	4.461			306.030	0.000 *
8	307.040	109.7 *	306.250	11.88	306.290	13.10 *	306.090	0.000			306.030	0.000
9	306.895	81.63	306.220	10.47	306.280	12.50 *	306.070	0.000			306.020	0.000
10	306.880	77.08	306.200	8.966	306.270	10.94	306.080	0.000			306.010	0.000
11	306.870	75.05	306.200	8.331 *	306.250	10.02	306.040	0.000			306.000	0.000
12	306.800	64.22	306.200	8.331 *	306.220	8.915	305.960	0.000			306.000	0.000
13	306.760	60.22	306.200	7.899	306.220	8.546	305.940	0.000			306.000	0.000
14	306.730	56.34 *	306.200	6.964	306.200	7.424	306.000	0.000			306.000	0.000
15	306.690	50.91 *	306.200	8.331 *	306.200	6.912	306.150	0.000 *			306.000	0.000
16	306.640	51.24	306.855	72.64	306.190	7.877 *	306.250	0.000			305.980	0.000
17	306.630	49.77	306.860	70.11	306.180	5.999	306.230	11.01			305.980	0.000
18	306.560	42.39	306.980	104.5	306.170	4.480	306.200	9.445			306.030	0.000
19	306.510	36.73	306.980	97.74 *	306.420	25.99	306.170	6.841			306.050	0.000
20	306.505	30.16	306.900	88.48	306.530	38.71	306.140	4.156	306.140	0.000	306.030	0.000
21	306.530	36.68	306.860	68.95	306.540	38.35	306.140	0.000	306.130	0.000	306.060	0.000
22	306.570	36.51 *	306.760	58.92	306.530	35.44	306.140	0.000	306.110	0.000	306.100	0.000
23	306.630	46.50	306.740	56.01	306.600	39.85 *	306.140	0.000	306.080	0.000	306.100	0.000
24	306.610	44.01	306.660	49.56	306.725	65.52	Not observed due to Lock-Down		306.070	0.000	306.110	0.000
25	306.600	39.85 *	306.620	45.22	306.680	56.88			306.060	0.000	306.120	0.000
26	306.440	26.23	306.610	41.00 *	306.580	44.22			306.050	0.000	306.120	0.000
27	306.430	24.91	306.510	33.25	306.450	27.75			306.040	0.000	306.120	0.000
28	306.420	22.10	306.430	25.55	306.400	23.63			306.040	0.000	306.120	0.000
29	306.400	20.68 *	306.410	23.69	306.360	15.82			306.060	0.000	306.110	0.000
30	306.380	19.91	306.390	21.99					306.050	0.000	306.120	0.000
31	306.360	18.89	306.380	18.84							306.120	0.000 *
<u>Ten-Daily Mean</u>												
I Ten-Daily	307.019	110.7	306.289	13.95	306.350	16.91	306.187	7.872	306.087	0.000	306.036	0.000
II Ten-Daily	306.670	51.70	306.557	47.33	306.258	12.49	306.108	3.145	306.163	0.000	306.007	0.000
III Ten-Daily	306.488	30.57	306.579	40.27	306.541	38.61	306.229	0.000	306.069	0.000	306.109	0.000
<u>Monthly</u>												
Min.	306.360	18.89	306.200	6.964	306.170	4.480	305.940	0.000	305.950	0.000	305.980	0.000
Max.	307.240	167.8	306.980	104.5	306.725	65.52	306.390	15.82	306.300	0.000	306.120	0.000
Mean	306.718	63.24	306.479	34.06	306.377	22.12	306.176	3.554	306.106	0	306.053	0

Peak Computed Discharge = 2239 cumecs on 08/09/2019

Corres. Water Level :310.28 m

Lowest Computed Discharge = 0.000 cumecs on 11/08/2019

Corres. Water Level :305.49 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

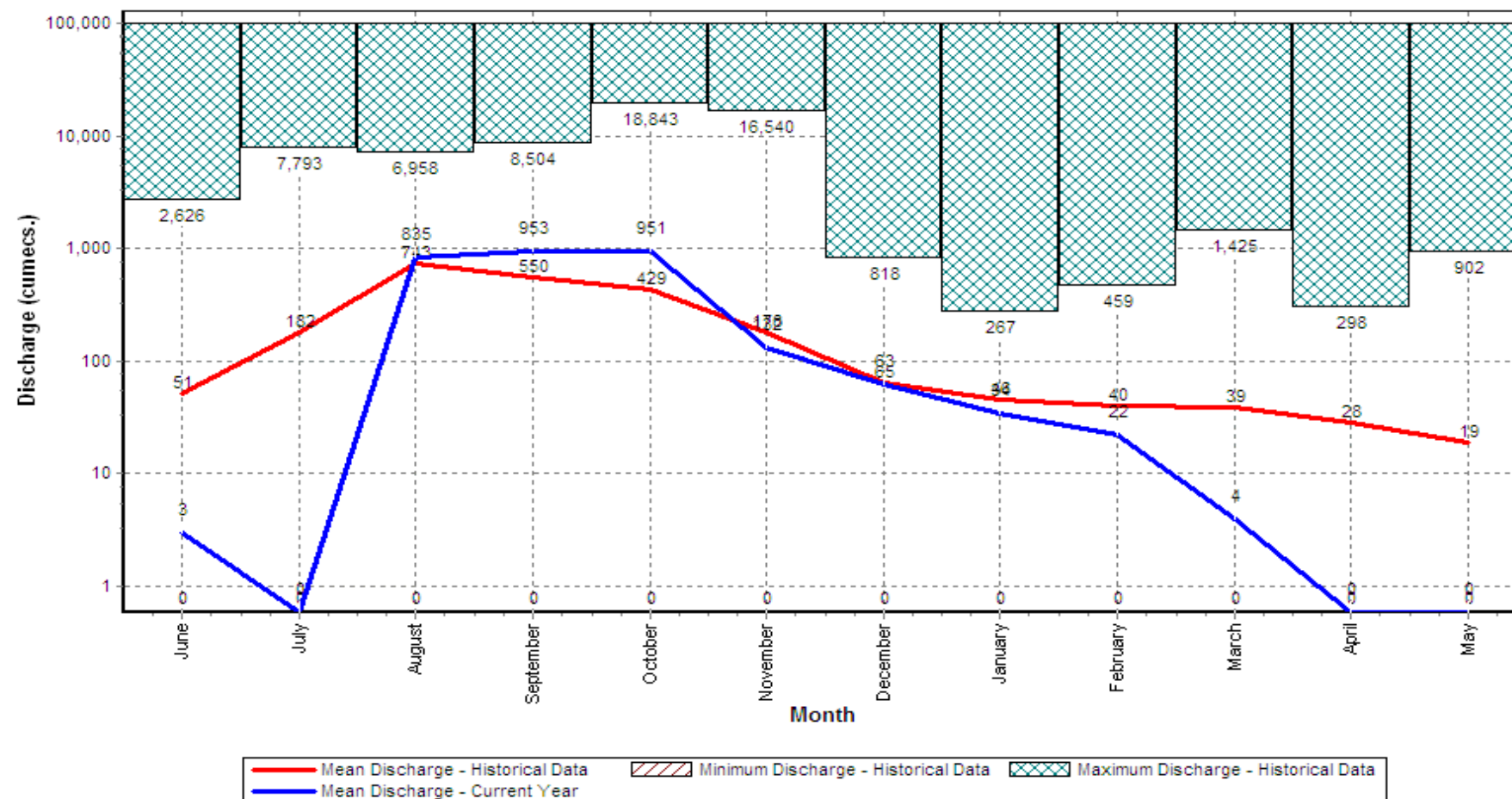
Station Name : Mantralayam (AKL00F2)

Data considered : 1972-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool



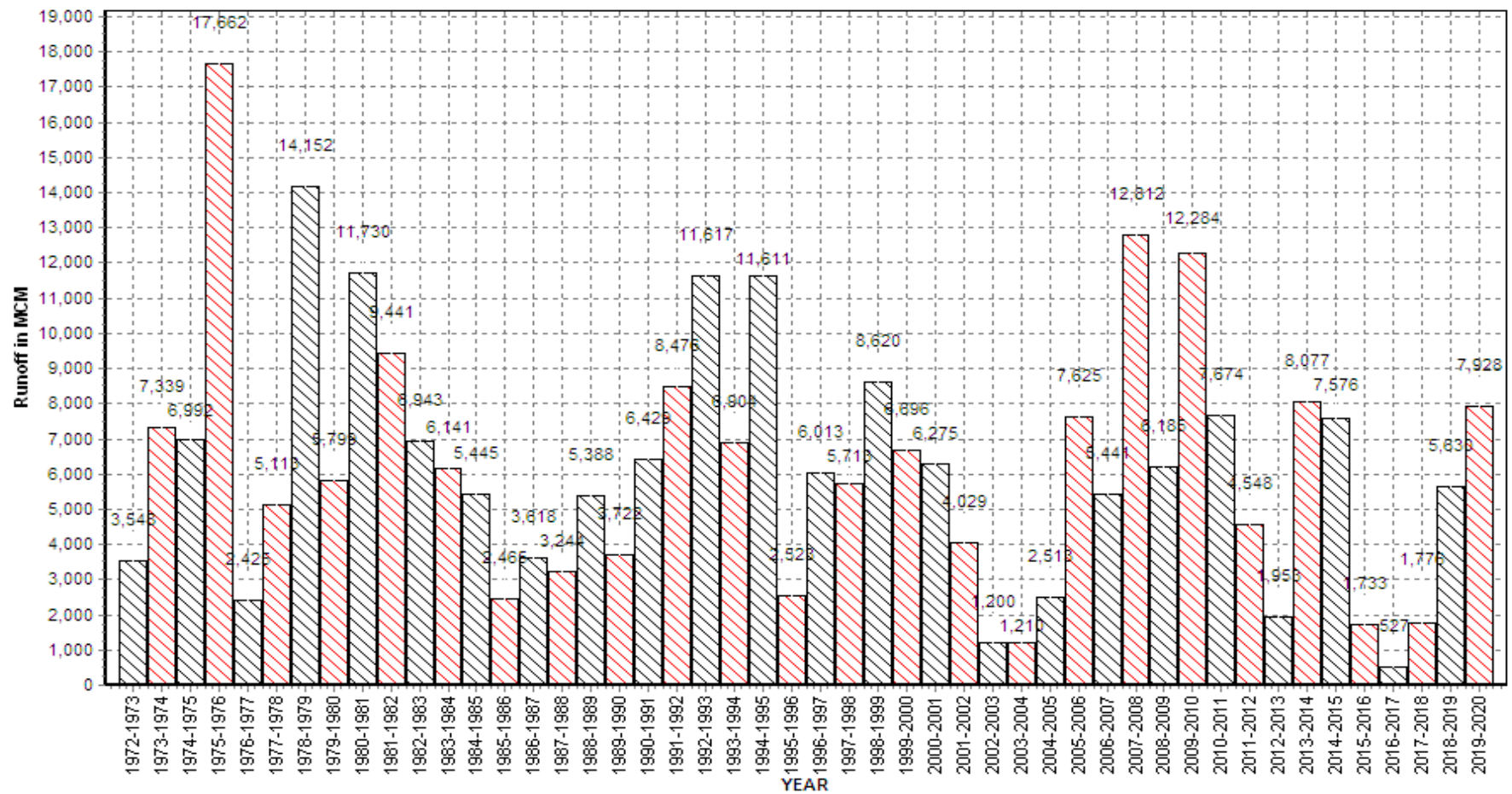
Annual Runoff Values for the period: 1972 - 2020

Station Name : Mantralayam (AKL00F2)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



Note: Missing values have not been considered while arriving at Annual Runoff

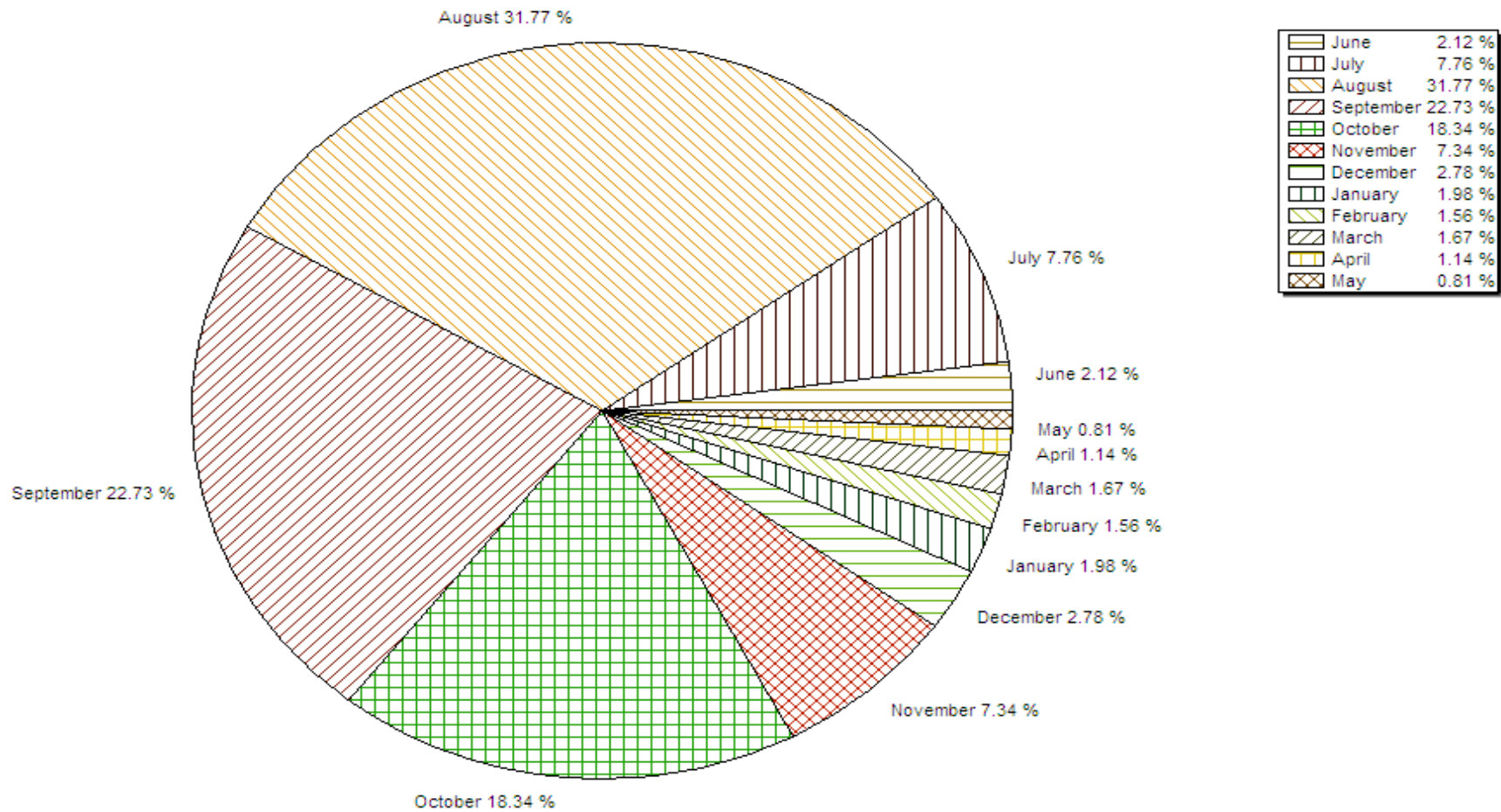
Monthly Average Runoff based on period : 1972-2019

Station Name : Mantralayam (AKL00F2)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



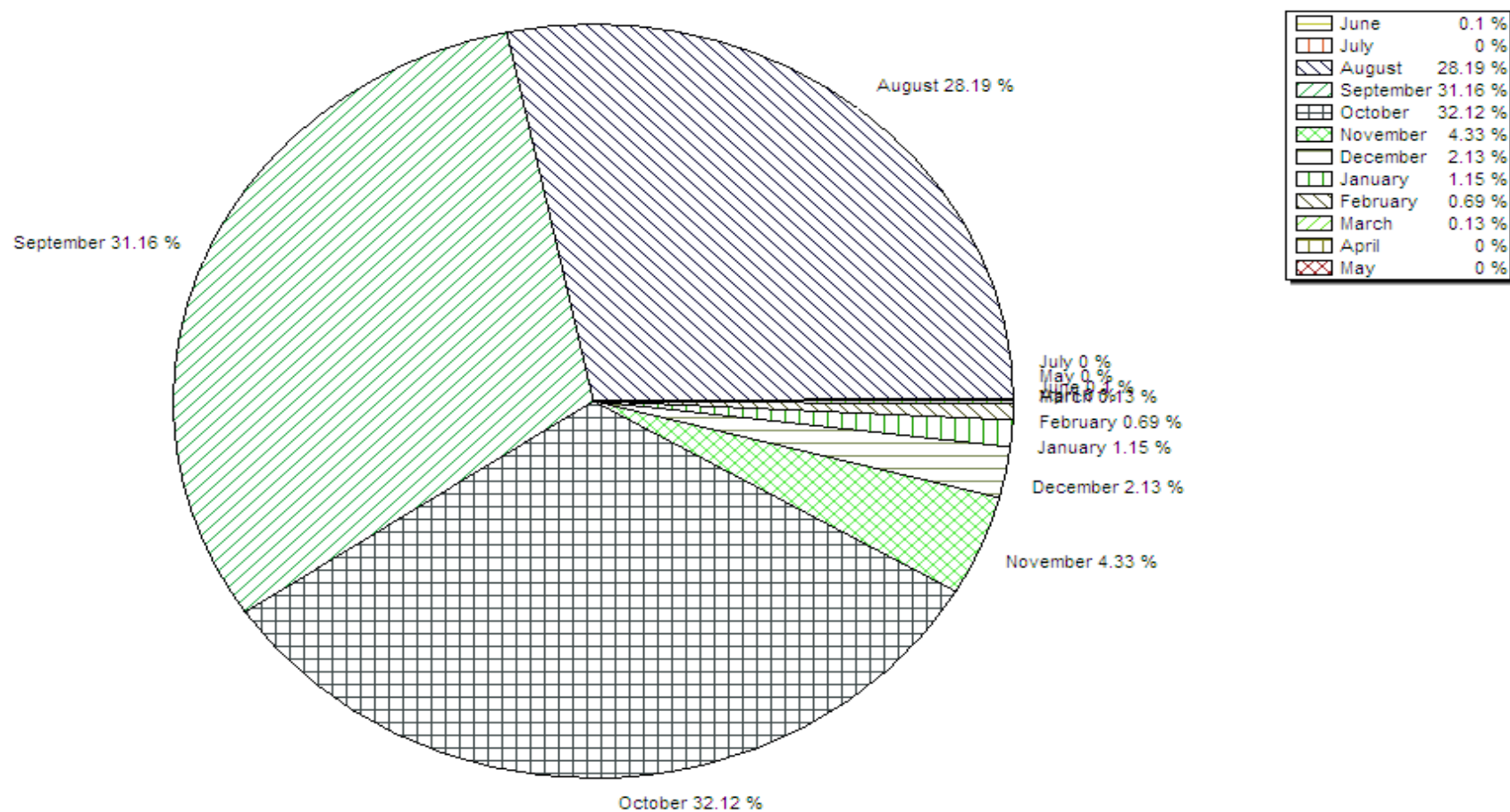
Monthly Runoff for the Year : 2019-2020

Station Name : Mantralayam (AKL00F2)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool

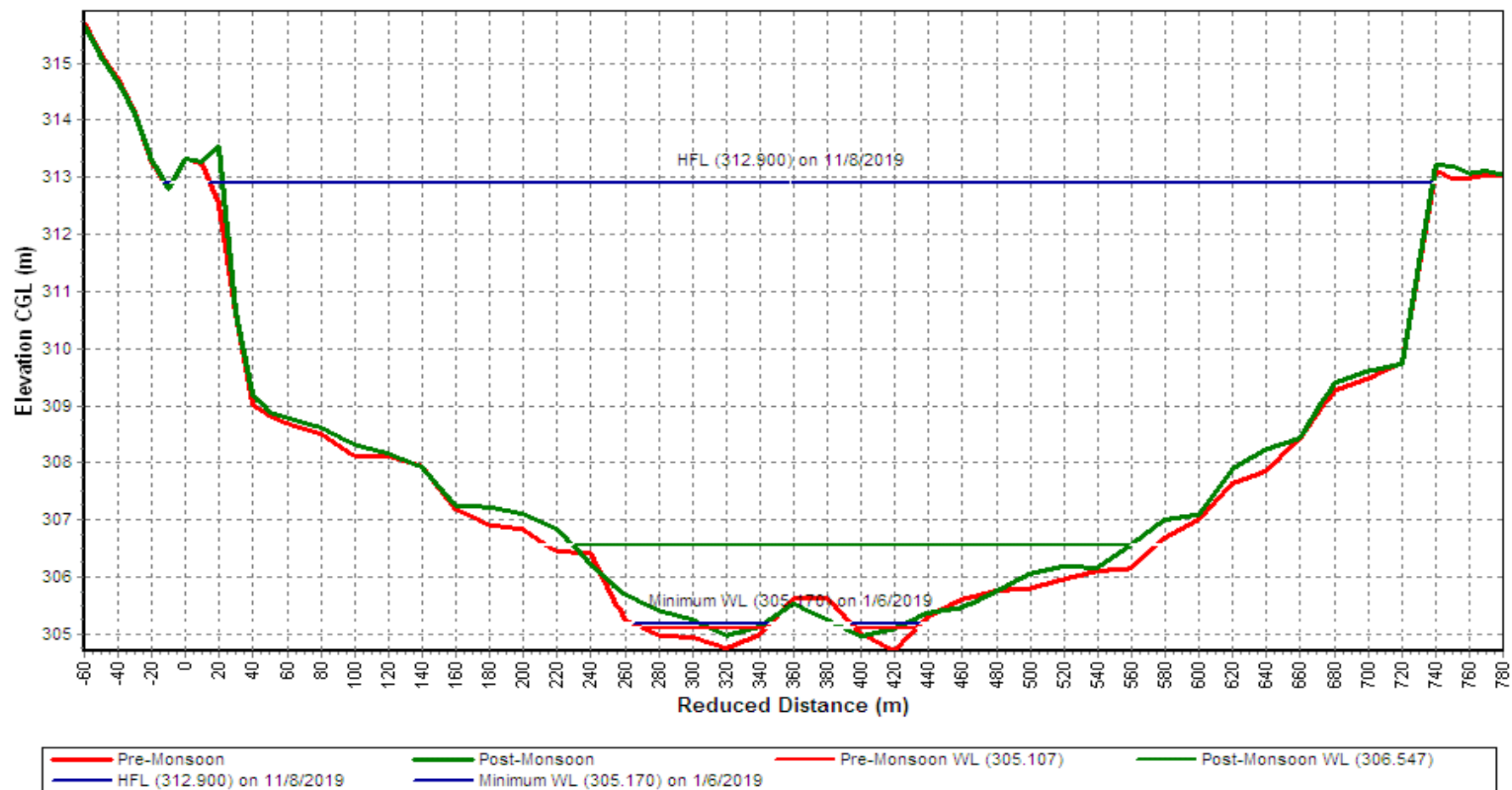


Station Name : Mantralayam (AKL00F2)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



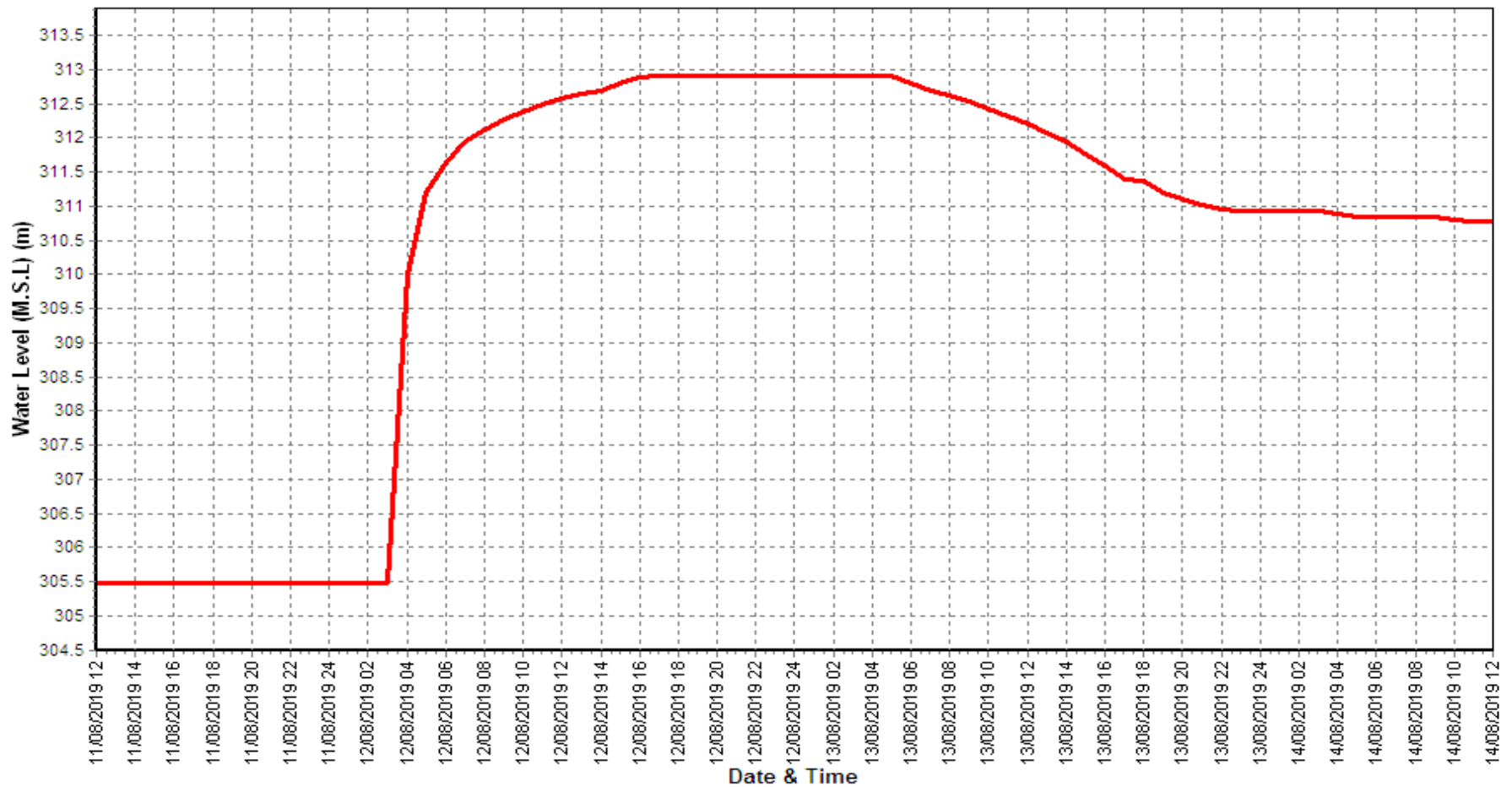
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Mantralayam (AKL00F2)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



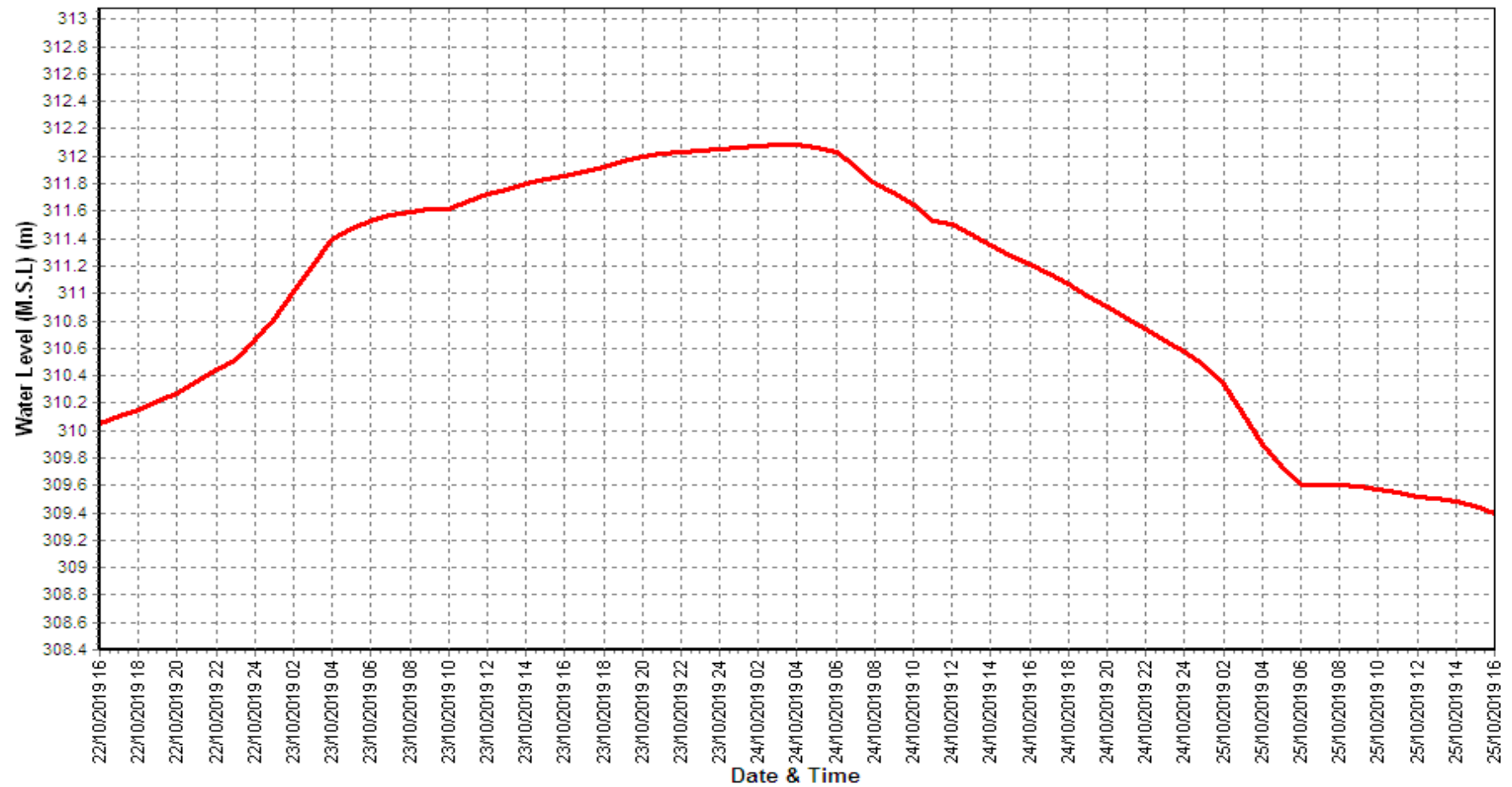
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Mantralayam (AKL00F2)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



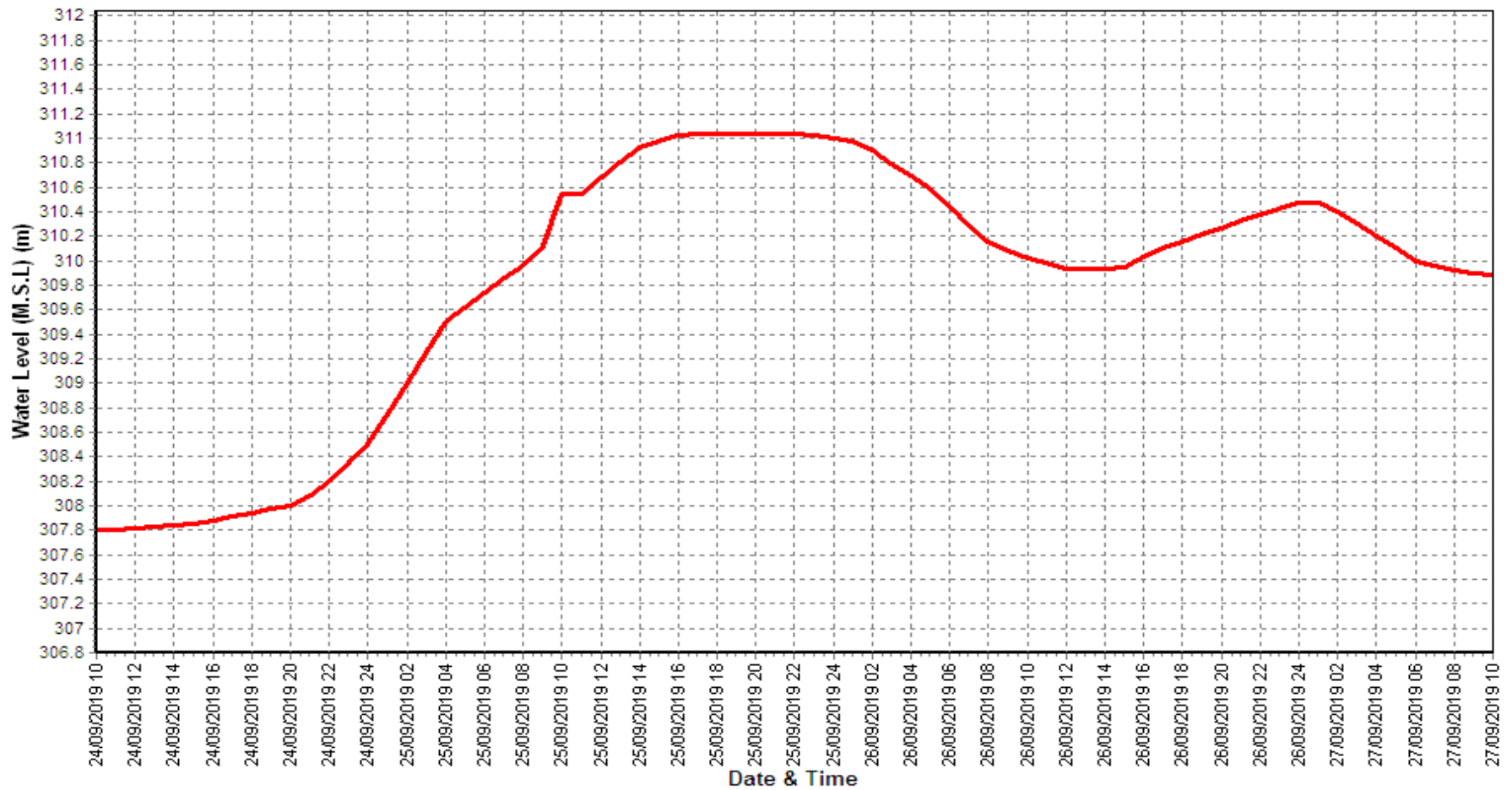
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Mantralayam (AKL00F2)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



HISTORY SHEET

		Water Year	: 2019-2020
Site	: MELAGANUR	Code	: 030-LKDHYD
State	: Andhra Pradesh	District	Kurnool
Basin	: Krishna	Independent River	: Krishna
Tributary	: Tungabhadra	Sub Tributary	: -
Sub-Sub Tributary	:	Local River	: Tungabhadra
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Tungabhadra SD, Kurnool
Drainage Area	: 593.75 Sq. Km.	Bank	: Right
Latitude	: 15°50'44"	Longitude	: 77°01'31"
Zero of Gauge (m)	: 94 (m.s.l) 332.5 (m.s.l) 332.5 (m.s.l)	01/06/2017 28/05/2018 02/07/2018	- 27/05/2018
	Opening Date	Closing Date	
Gauge	: 24/10/2016	HFL During 2019-20	: 342.840 m
		Corres. Discharge	: 6585 (Estimated)
Discharge	: 24/10/2016	Date & Time of occurrence	: 12/08/2019 : 12:00 Hrs
Sediment	:		
Water Quality	:		

HFL Recorded so far in m : 342.840 dt 12-08-2019

Corresponding Discharge (cumecs) : 6585 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2018-2019	5543	342.220	17/08/2018	0.000		27/03/2019

Annual Runoff of Tungabhadra at Melaganur

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2017-2018	1377	21	1589	49	1	56
2	2018-2019	5711	205	5917	202	7	209
3	2019-2020	6987	429	7416	247	15	262
Average		3544	113	3753	125	4	133
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : MELAGANUR (030-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000	335.880	1.590		0.000	336.440	41.47	337.810	379.5	338.210	450.2
2		0.000	335.830	0.000		0.000	336.440	43.04 *	337.400	267.2	337.770	343.0
3		0.000	335.780	0.000		0.000	336.340	32.95	337.380	261.2	337.690	311.3 *
4		0.000	335.750	0.000		0.000	336.320	31.12	337.200	209.9	337.750	336.3
5		0.000	335.740	0.000		0.000	337.780	390.5	337.140	195.3	337.300	204.1
6		0.000	335.700	0.000		0.000	339.110	1015	338.230	516.2	336.930	127.4
7		0.000	335.700	0.000		0.000	339.850	1967	337.850	394.8	336.810	102.7
8		0.000	335.700	0.000		0.000	340.240	2476	339.120	1145 *	336.710	83.74
9		0.000	335.690	0.000		0.000	340.110	2302	338.400	574.5	336.680	78.36
10	336.980	132.5	335.660	0.000		0.000	339.650	1722	338.370	558.4	336.730	112.3 *
11	336.510	39.68	335.630	0.000		0.000	339.630	1698	337.810	379.5	336.700	81.93
12	336.100	14.82	335.600	0.000	342.750	5657	339.610	1675	339.400	1428	337.070	157.9
13	336.080	9.095		0.000	341.820	5040	338.640	694.6	338.200	556.3 *	336.810	102.7
14	336.080	9.251		0.000	340.570	2960	338.330	539.4	338.220	511.3	336.510	57.20
15	336.080	9.018		0.000	339.070	1084	338.250	511.6	337.740	376.7	336.480	69.19
16	336.030	7.529 *		0.000	340.070	2249	337.860	398.7	338.330	539.4	336.410	62.86
17	336.000	4.621		0.000	338.950	970.2	337.440	278.4	337.730	372.9	336.400	63.87 *
18	335.950	2.478		0.000	339.660	1732	337.660	348.6	337.590	326.4	336.470	80.21
19	335.910	1.818		0.000	339.050	1065	338.850	875.8	337.220	215.4	336.470	78.42
20	335.880	1.564	336.015	15.73	338.730	769.7	338.670	720.1	338.250	582.0 *	336.450	75.48
21	335.880	1.633	335.850	0.000 *	338.430	682.7	338.350	548.0	337.620	290.7	336.430	71.97
22	335.840	1.212	335.840	0.000	338.350	634.4	337.470	287.7	339.920	1985	336.460	79.97
23	335.820	1.125 *	335.760	0.000	338.270	511.5	336.860	114.6	341.700	4722	336.450	76.50
24	336.700	99.88	335.630	0.000	337.640	341.8	337.280	232.4	341.010	3548	336.440	69.19 *
25	336.210	20.73		0.000	336.880	118.8	339.790	1893	339.030	991.2	336.440	74.46
26	336.210	20.63		0.000	336.470	44.58	339.470	1507	339.010	972.4	336.440	72.45
27	336.170	15.16	336.125	12.14	336.280	30.77	339.460	1495	338.700	844.9 *	336.440	73.09
28	336.050	8.401	335.870	0.000 *	336.340	35.41	338.400	574.5	339.240	1198	336.430	71.19
29	335.990	5.005	335.810	0.000	336.410	39.85	338.350	548.0	339.330	1291	336.480	82.87
30	335.950	3.256 *	335.770	0.000	336.380	36.81	338.300	523.6	339.180	1137	336.530	87.33
31			335.680	0.000	336.330	33.75			337.930	395.3		
Ten-Daily Mean												
I Ten-Daily	336.980	13.25	335.743	0.159		0.000	338.228	1002	337.890	450.2	337.258	214.9
II Ten-Daily	336.062	9.987	335.748	1.573	340.074	2153	338.494	774.0	338.049	528.8	336.577	82.97
III Ten-Daily	336.082	17.70	335.815	1.103	337.071	228.2	338.373	772.4	339.334	1580	336.454	75.90
Monthly												
Min.	335.820	0.000	335.600	0.000	336.280	0.000	336.320	31.12	337.140	195.3	336.400	57.20
Max.	336.980	132.5	336.125	15.73	342.750	5657	340.240	2476	341.700	4722	338.210	450.2
Mean	336.115	13.65	335.773	0.95	338.423	775.4	338.365	849.4	338.454	876.3	336.763	124.6

Annual Runoff in MCM = 7411 Annual Runoff in mm = 12481

Peak Observed Discharge = 5657 cumecs on 12/08/2019 Corres. Water Level :342.75 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : MELAGANUR (030-LKDHYD)

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	336.520	80.28 *	336.070	20.41	336.220	37.55	335.900	10.07 *	Not observed Due to Lock-Down		335.690	0.000
2	336.530	88.93	336.020	15.70	336.150	34.03 *	335.740	2.390			335.680	0.000
3	336.710	116.8	336.010	14.91	336.050	17.36	335.720	2.081 #			335.690	0.000
4	336.930	148.2	336.010	14.81	336.050	16.90	335.720	2.057			335.650	0.000
5	336.840	135.2	335.970	14.19 *	336.020	14.90	335.710	1.984 #			335.660	0.000
6	336.720	117.3	335.910	11.48	335.990	11.76	335.700	1.856 #			335.730	0.000
7	336.550	94.46	335.910	11.17	335.970	10.85	335.860	5.629			335.680	0.000
8	336.520	80.28 *	335.940	12.32	335.970	10.29	335.760	2.456 *			335.710	0.000
9	336.520	89.32	335.980	14.19	335.940	13.51 *	335.670	0.759			335.730	0.000
10	336.480	87.42	335.980	13.86	335.910	5.450	335.650	0.724 *			335.710	0.000
11	336.440	73.23	336.000	14.39	335.910	5.693	336.310	50.70			335.760	0.000
12	336.420	66.15	335.910	10.91 *	335.920	6.783	336.250	40.95			335.760	0.000
13	336.380	57.40	336.370	57.81	335.920	6.699	336.170	33.24			335.700	0.000
14	336.370	55.33	336.530	85.45	335.900	5.371	336.000	17.41			335.690	0.000
15	336.360	58.70 *	336.530	84.71 *	336.250	42.48	335.960	15.28 *			335.740	0.000
16	336.310	48.75	336.530	84.35	336.280	48.81 *	335.950	13.33			335.740	0.000
17	336.320	50.44	336.620	98.95	336.280	44.47	336.010	18.36			335.770	0.000
18	336.320	51.40	336.680	106.1	336.280	44.53	335.930	14.46			335.770	0.000
19	336.320	51.45	336.700	107.4 *	336.260	43.33	335.950	15.96			335.810	0.000
20	336.330	52.60	336.550	88.04	336.220	41.54	335.950	15.94	335.620	0.000	335.810	0.000
21	336.340	53.70	336.550	87.89	336.280	45.29	335.930	14.00	335.750	0.000	335.800	0.000
22	336.320	53.68 *	336.500	80.48	336.230	42.55	335.920	11.77 *	335.780	0.000	335.780	0.000
23	336.320	51.94	336.450	78.71	336.450	70.54 *	336.165	33.94	335.730	0.000	335.770	0.000
24	336.230	44.78	336.430	70.86	336.410	67.35	336.300	51.15	335.730	0.000	335.790	0.000
25	336.200	39.53 *	336.400	65.01	336.400	65.05	Not observed due to Lock-Down		335.690	0.000	335.750	0.000
26	336.190	40.40	336.320	53.68 *	336.200	37.62			335.690	0.000	335.760	0.000
27	336.150	27.66	336.260	43.09	336.120	22.93			335.680	0.000	335.770	0.000
28	336.120	22.20	336.260	43.28	336.030	17.19			335.640	0.000	335.760	0.000
29	336.100	28.77 *	336.240	39.96	336.030	16.97			335.700	0.000	335.740	0.000
30	336.110	21.49	336.240	40.83					335.750	0.000	335.810	0.000
31	336.090	21.14	336.200	36.69							335.810	0.000 *
Ten-Daily Mean												
I Ten-Daily	336.632	103.8	335.980	14.30	336.027	17.26	335.743	3.000	335.706	0.000	335.693	0.000
II Ten-Daily	336.357	56.54	336.442	73.82	336.122	28.97	336.048	23.57	335.645	0.000	335.755	0.000
III Ten-Daily	336.197	36.84	336.350	58.23	336.239	42.83	336.013	24.20	335.714	0.000	335.776	0.000
Monthly												
Min.	336.090	21.14	335.910	10.91	335.900	5.371	335.650	0.000	335.610	0.000	335.650	0.000
Max.	336.930	148.2	336.700	107.4	336.450	70.54	336.350	57.43	335.890	0.000	335.810	0.000
Mean	336.389	64.81	336.260	49.09	336.126	29.23	335.937	17.16	335.704	0	335.743	0

Peak Computed Discharge = 1145 cumecs on 08/10/2019

Corres. Water Level :339.12 m

Lowest Computed Discharge = 0.000 cumecs on 21/07/2019

Corres. Water Level :335.85 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l.) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

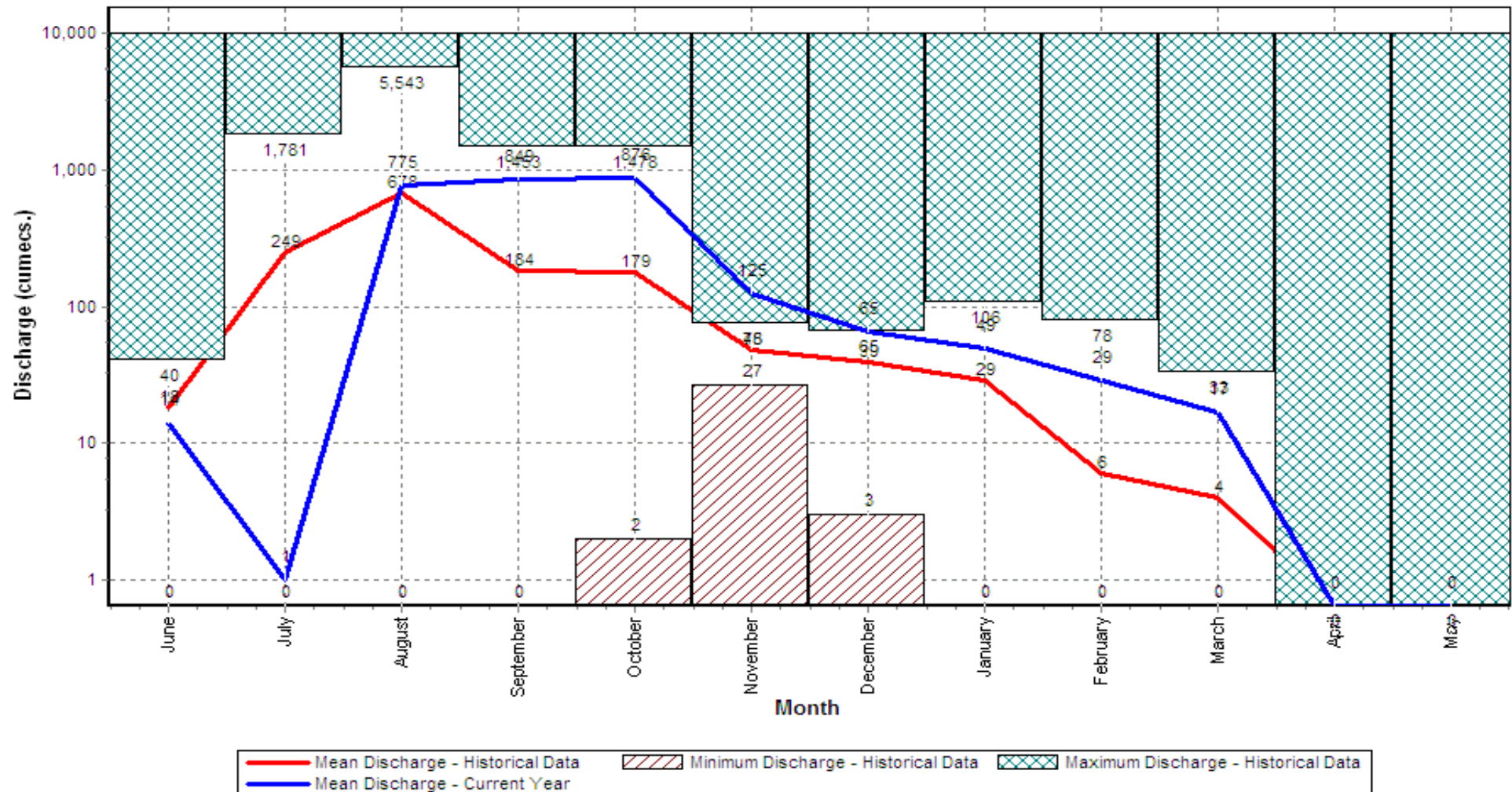
Station Name : MELAGANUR (030-LKDHYD)

Data considered : 2018-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Tungabhadra

Sub-Division : Lower Tungabhadra SD, Kurnool



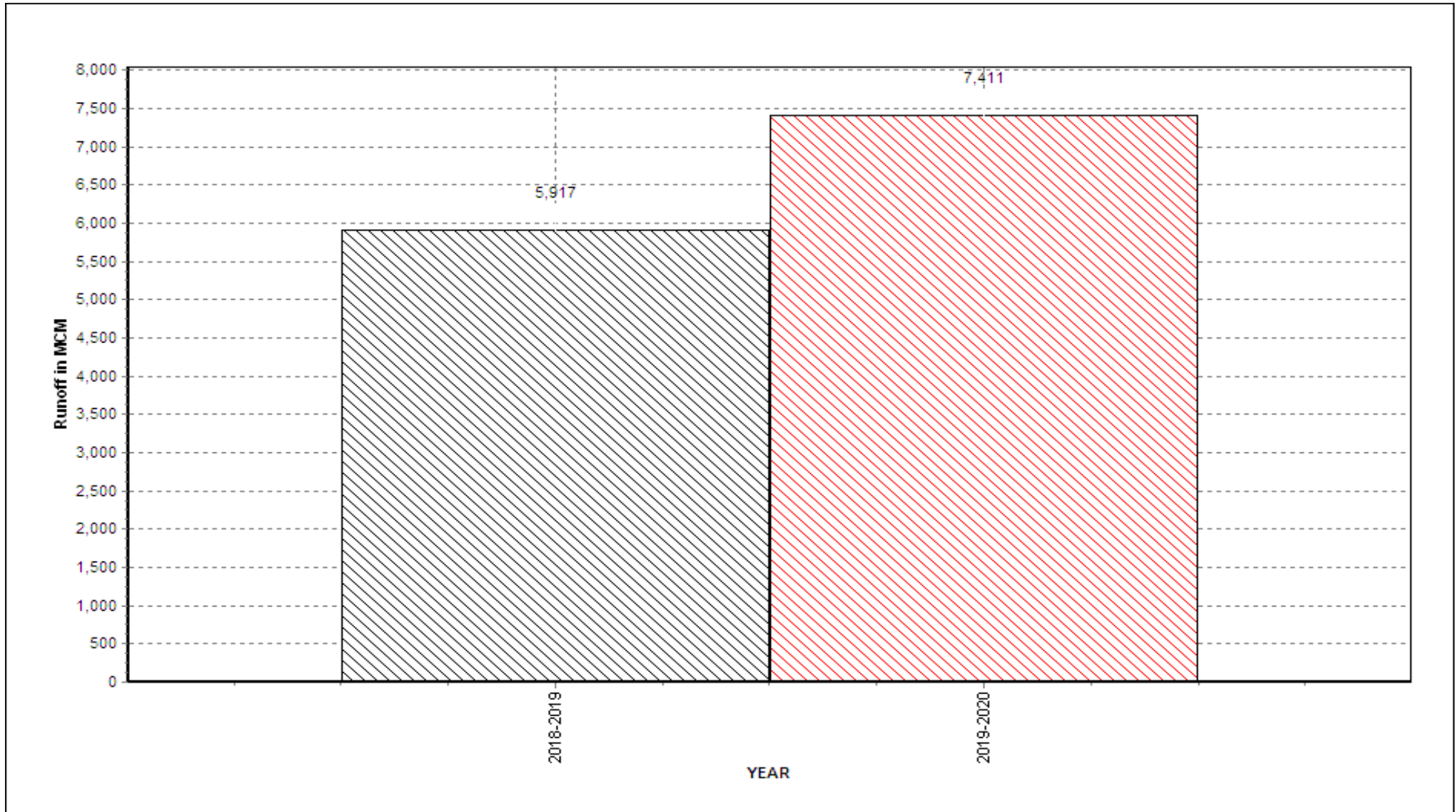
Annual Runoff Values for the period: 2018 - 2020

Station Name : MELAGANUR (030-LKDHYD)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



Note: Missing values have not been considered while arriving at Annual Runoff

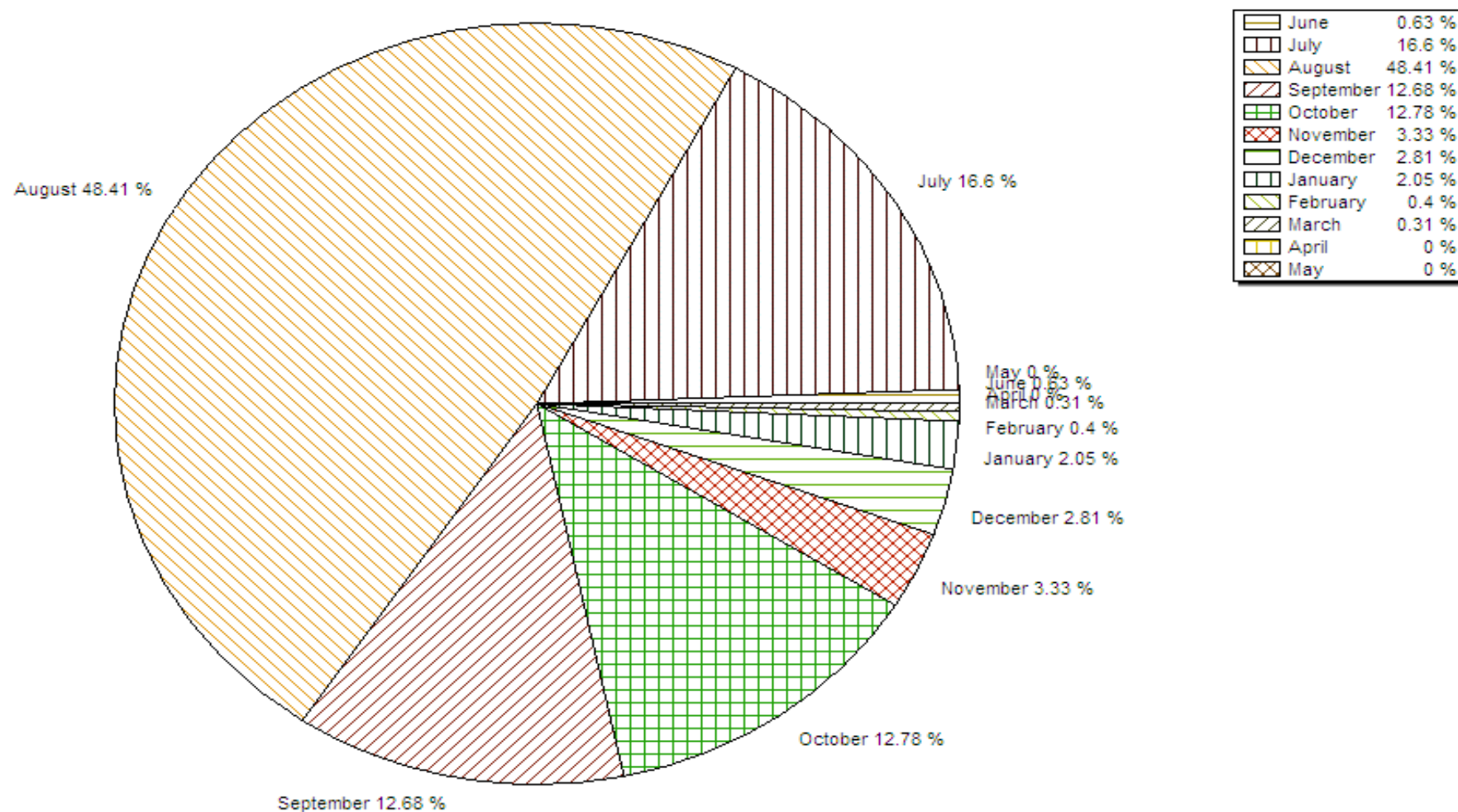
Monthly Average Runoff based on period : 2018-2019

Station Name : MELAGANUR (030-LKDHYD)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



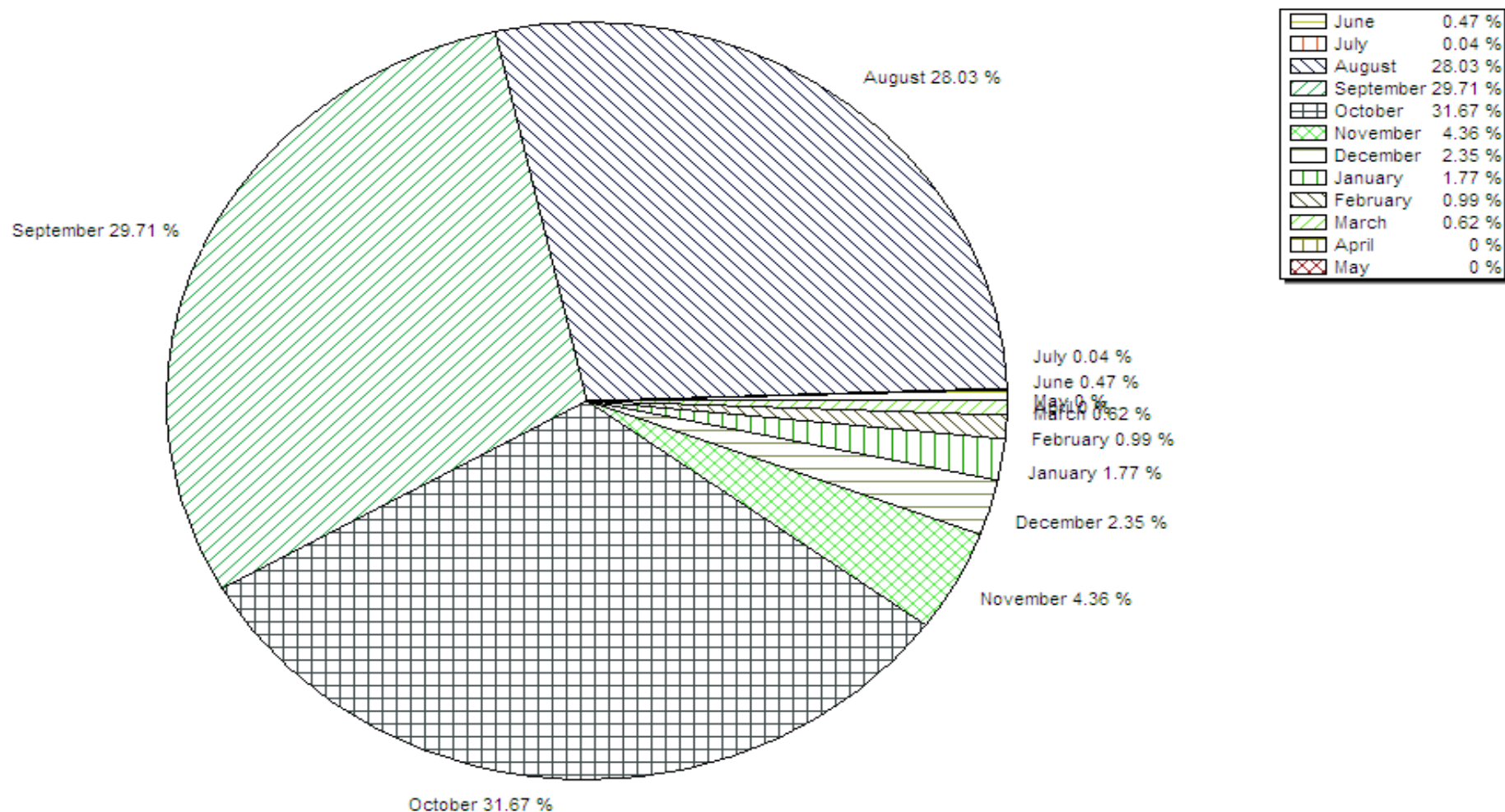
Monthly Runoff for the Year : 2019-2020

Station Name : MELAGANUR (030-LKDHYD)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



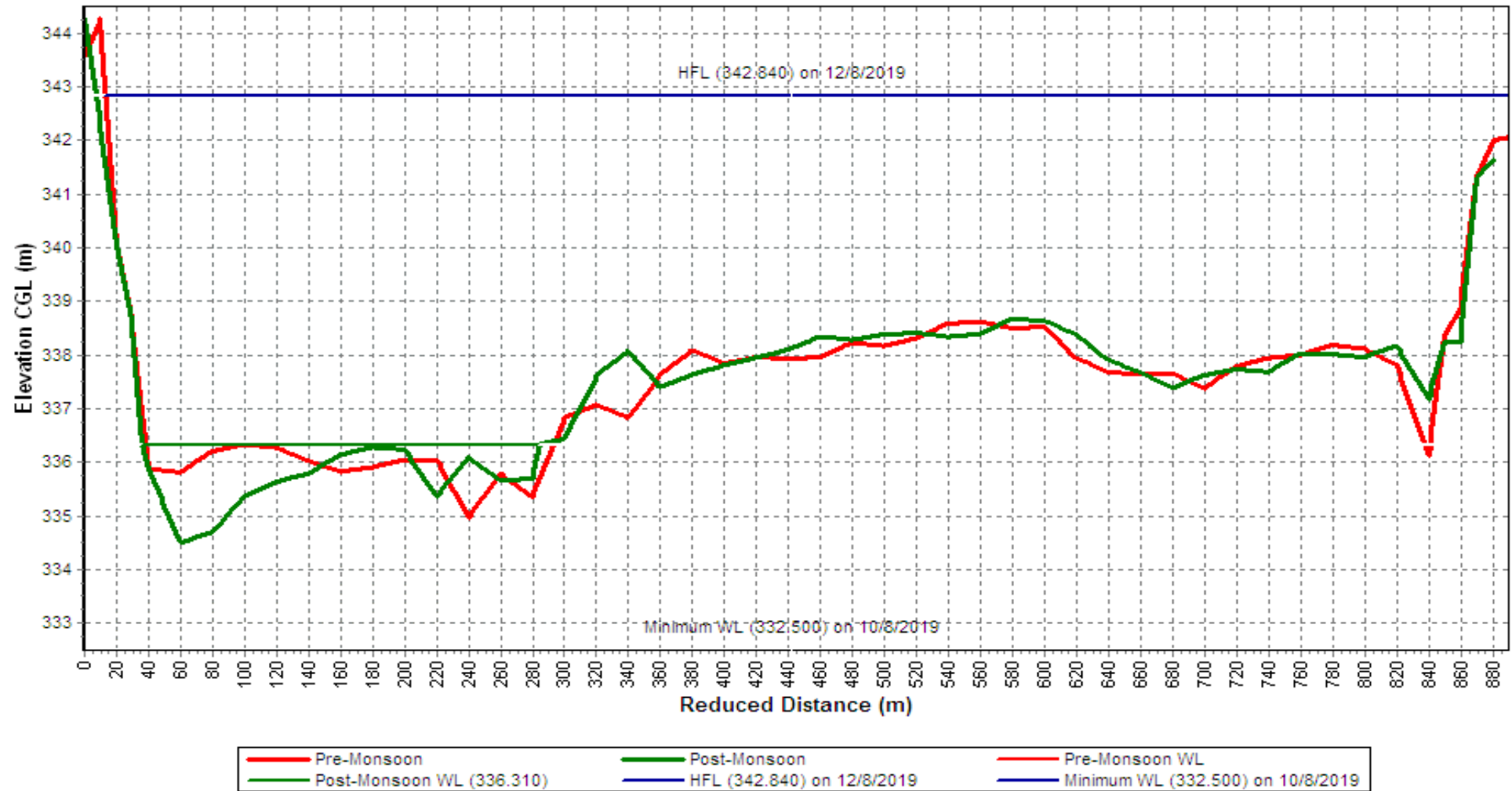
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : MELAGANUR (030-LKDHYD)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



Cross Section Difference Due to High Flood

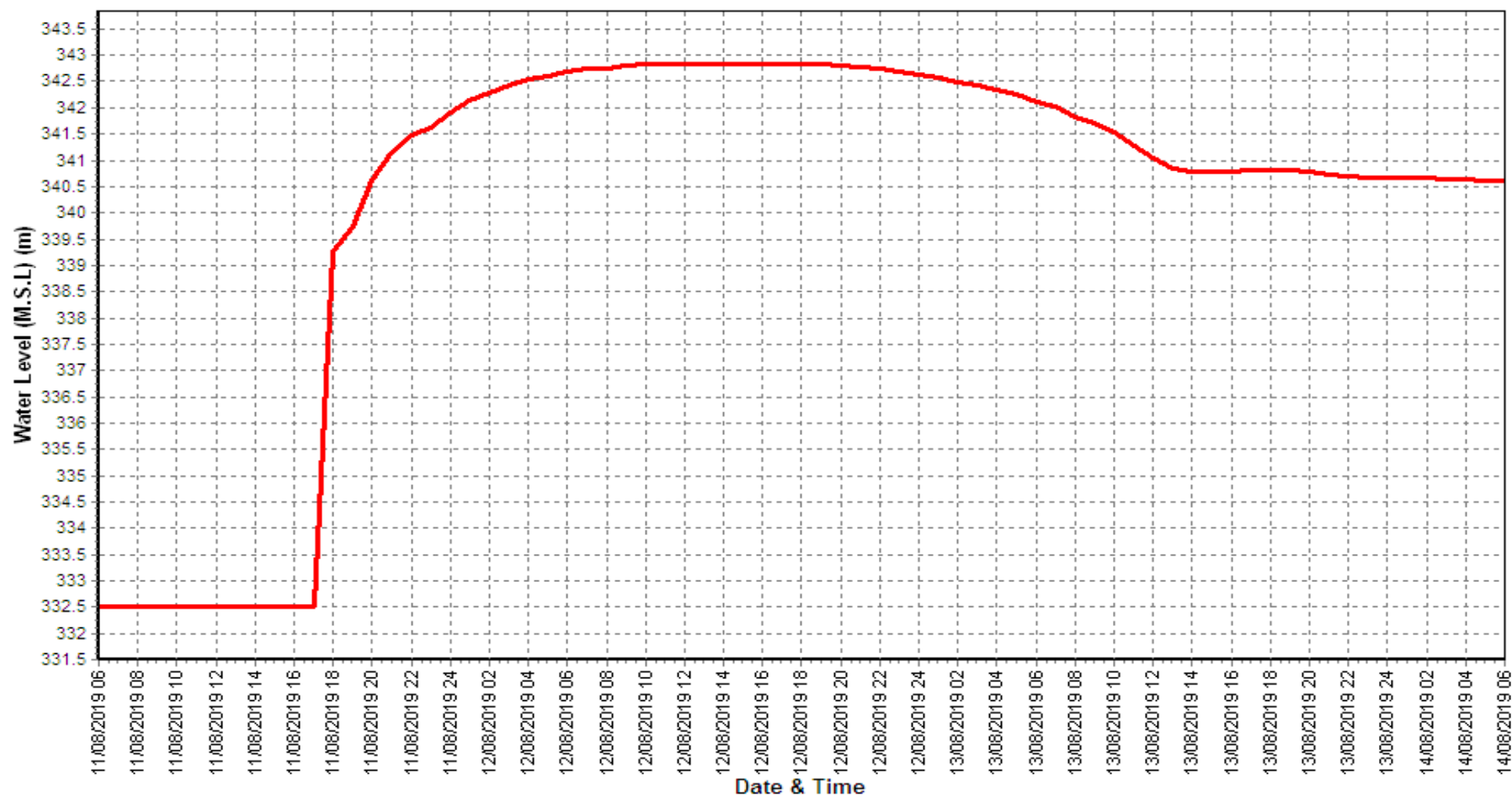
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : MELAGANUR (030-LKDHYD)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



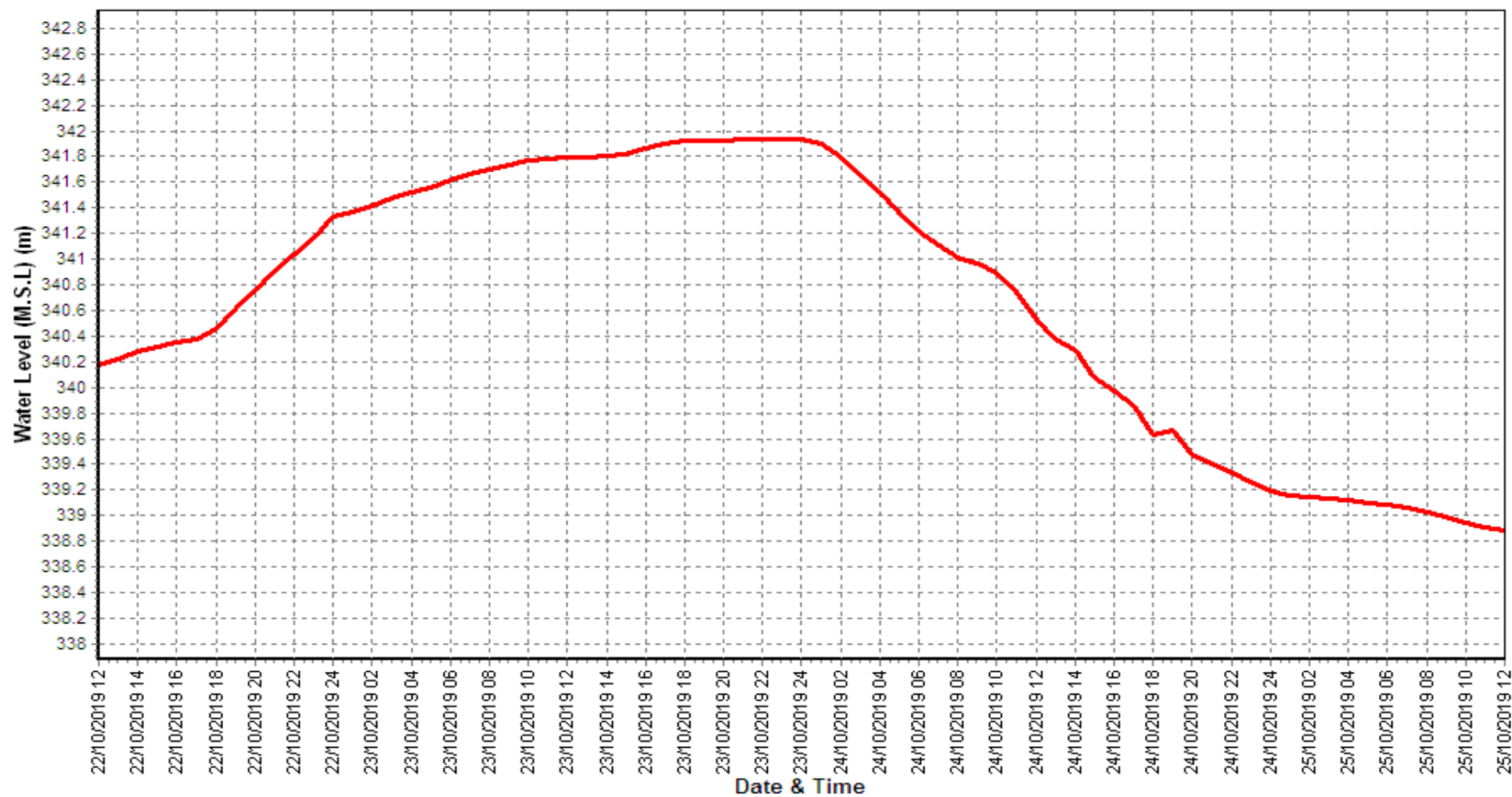
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : MELAGANUR (030-LKDHYD)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



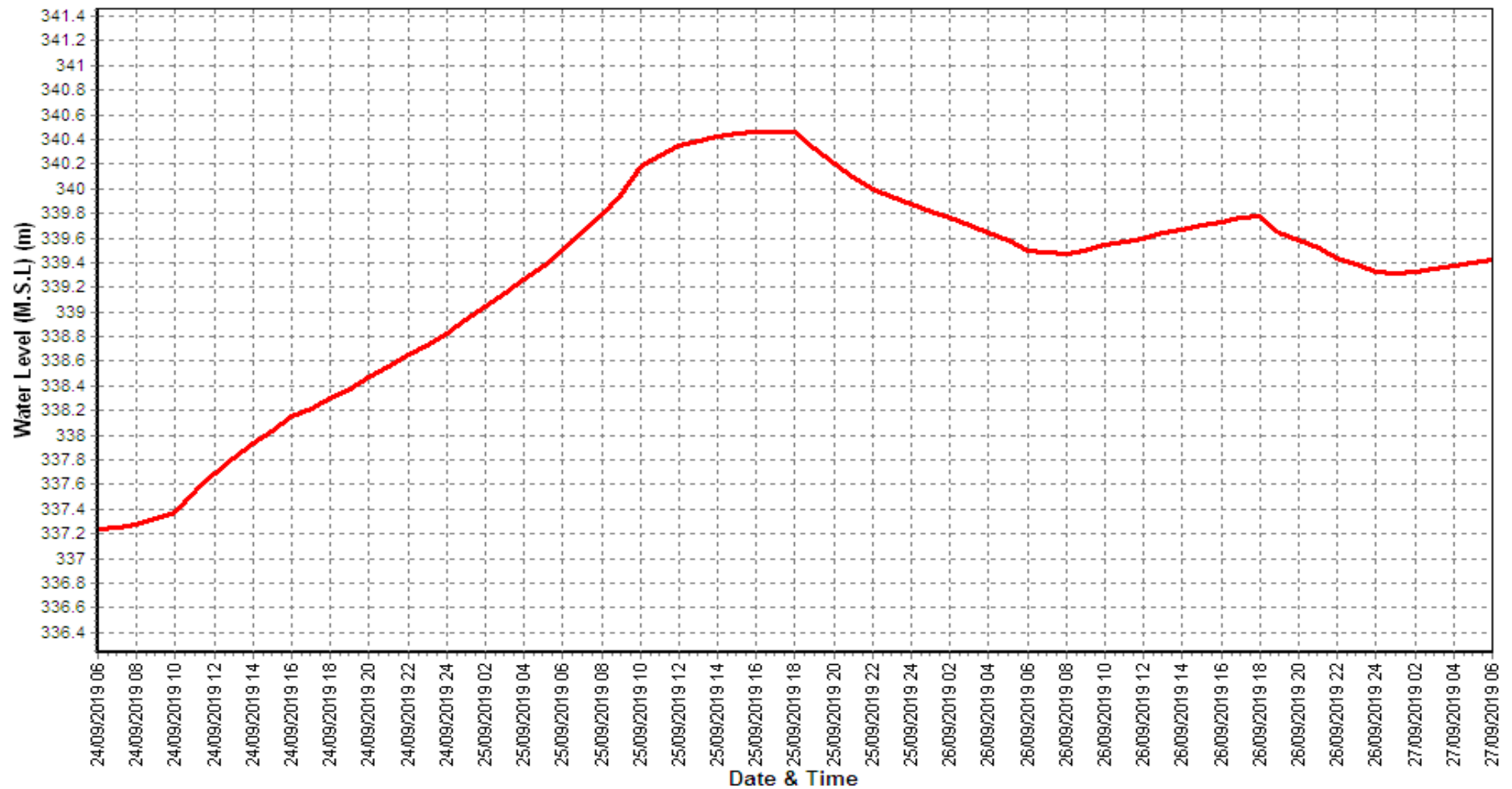
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : MELAGANUR (030-LKDHYD)

Local River : Tungabhadra

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



HISTORY SHEET

		Water Year : 2019-2020	
Site	: T Ramapuram	Code	: AKL50A6
State	: Karnataka	District	: Bellary
Basin	: Krishna	Independent River	: Krishna
Tributary	: Tungabhadra	Sub Tributary	: Hagari
Sub-Sub Tributary	: -	Local River	: Hagari
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Lower Tungabhadra SD, Kurnool
Drainage Area	: 23500 Sq. Km.	Bank	: Right
Latitude	: 15°39'40"	Longitude	: 76°57'56"
Zero of Gauge (m)	: 349.368 (m.s.l) 349.368 (m.s.l)	13/07/1963 01/05/2019	
	Opening Date	Closing Date	
Gauge	: 13/07/1963	HFL During 2019-20	: 353.168 m
		Corres. Discharge	: 2125 (Estimated)
Discharge	: 23/08/1964	Date & Time of	: 25/09/2019
		occurrence	: 11:00 Hrs
Sediment	:		
Water Quality	: 01/01/1980		

HFL Recorded so far in m : 356.478 dt 02-10-2009

Corresponding Discharge (cumecs) : 3720*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1966-1967	635.0	352.283	24/09/1966	0.200	350.253	02/06/1966
1967-1968	1022	352.966	04/10/1967	0.500	350.388	12/05/1968
1968-1969	939.6	353.098	09/10/1968	0.831	350.338	02/05/1969
1969-1970	506.6	352.018	21/10/1969	1.155	350.413	03/04/1970
1970-1971	1052	353.088	20/09/1970	0.617	350.268	15/05/1971
1971-1972	1923	353.858	14/10/1971	0.510	350.268	26/04/1972
1972-1973	740.0	352.508	18/09/1972	0.090	350.283	12/05/1973
1973-1974	1400	353.518	19/09/1973	0.000	350.228	02/06/1973
1974-1975	604.2	352.298	05/10/1974	0.100	350.193	27/05/1975
1975-1976	1084	353.118	05/11/1975	0.600	350.093	29/05/1976
1976-1977	156.0	351.388	22/08/1976	0.300	350.028	10/06/1976
1977-1978	407.8	351.928	11/10/1977	1.000	350.153	28/04/1978
1978-1979	1451	353.483	30/09/1978	0.200	350.153	29/05/1979
1979-1980	413.8	351.933	24/09/1979	0.200	350.113	27/05/1980
1980-1981	357.2	351.778	30/09/1980	0.100	350.118	16/04/1981
1981-1982	1046	353.158	12/09/1981	1.100	350.058	24/05/1982
1982-1983	1070	353.148	07/11/1982	0.200	350.028	08/05/1983

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1983-1984	930.0	352.868	04/10/1983	0.100	350.018	02/06/1983
1984-1985	308.0	351.648	15/07/1984	0.100	349.918	27/06/1984
1985-1986	144.9	351.228	29/09/1985	0.000	350.018	19/04/1986
1986-1987	1116	352.823	19/09/1986	0.000	349.828	28/04/1987
1987-1988	840.5	352.898	23/10/1987	0.000		06/05/1988
1988-1989	918.1	353.043	30/08/1988	0.000		04/04/1989
1989-1990	1112	353.018	24/09/1989	0.000		24/04/1990
1990-1991	142.0	351.358	14/10/1990	0.235	349.903	15/04/1991
1991-1992	660.5	352.451	06/06/1991	0.000		09/04/1992
1992-1993	955.4	352.958	19/11/1992	0.536	349.818	15/05/1993
1993-1994	299.1	351.828	10/10/1993	0.000		21/07/1993
1994-1995	573.5	352.398	04/10/1994	0.000		22/05/1995
1995-1996	591.2	352.438	30/08/1995	0.000		25/04/1996
1996-1997	1573	353.748	21/10/1996	0.000		25/05/1997
1997-1998	209.7	351.548	13/11/1997	0.000		09/06/1997
1998-1999	794.5	352.758	12/10/1998	0.000		04/05/1999
1999-2000	593.1	352.413	27/09/1999	0.000		30/04/2000
2000-2001	1032	353.118	10/10/2000	0.000		01/05/2001
2001-2002	904.7	352.963	29/09/2001	0.000		04/03/2002
2002-2003	290.3	351.768	15/10/2002	0.000		16/04/2003
2003-2004	230.2	351.563	07/10/2003	0.000		20/02/2004
2004-2005	262.6	351.483	06/09/2004	0.000		14/04/2005
2005-2006	878.6	352.818	06/09/2005	0.000		12/07/2005
2006-2007	901.5	352.898	04/11/2006	0.000		27/07/2006
2007-2008	1809	354.318	19/09/2007	0.000		24/07/2007
2008-2009	1433	353.458	29/08/2008	0.000	349.648	27/06/2008
2009-2010	3192	355.948	02/10/2009	0.000		19/07/2009
2010-2011	981.8	352.788	24/08/2010	0.000		31/07/2010
2011-2012	193.4	350.768	02/06/2011	0.000		12/08/2011
2012-2013	326.4	351.143	04/09/2012	0.000		16/07/2012
2013-2014	488.5	351.848	04/09/2013	0.000		26/07/2013
2014-2015	647.5	352.158	26/10/2014	0.000	349.508	19/07/2014
2015-2016	1117	353.458	07/09/2015	0.000		07/07/2015
2016-2017	243.3	350.858	03/06/2016	0.000		27/08/2016
2017-2018	1312	352.783	13/10/2017	0.000		27/04/2018
2018-2019	211.8	350.988	20/10/2018	0.000		02/04/2019

Annual Runoff of Hagari at T Ramapuram

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966		76	76		3	3
2	1966-1967	723	259	983	26	9	35
3	1967-1968	375	90	464	13	3	16
4	1968-1969	940	172	1112	33	6	39
5	1969-1970	543	234	777	19	8	27
6	1970-1971	923	152	1075	33	5	38
7	1971-1972	792	273	1065	28	10	38
8	1972-1973	535	80	614	19	3	22
9	1973-1974	928	150	1078	33	5	38
10	1974-1975	942	160	1102	33	6	39
11	1975-1976	2226	259	2485	79	9	88
12	1976-1977	298	137	435	11	5	15
13	1977-1978	790	148	938	28	5	33
14	1978-1979	939	177	1116	33	6	39
15	1979-1980	645	144	789	23	5	28
16	1980-1981	399	153	552	14	5	20
17	1981-1982	1381	163	1544	49	6	55
18	1982-1983	712	163	876	25	6	31
19	1983-1984	662	116	778	23	4	27
20	1984-1985	355	91	446	13	3	16
21	1985-1986	249	75	324	9	3	11
22	1986-1987	666	88	754	24	3	27
23	1987-1988	653	79	732	23	3	26
24	1988-1989	748	11	759	26	0	27
25	1989-1990	839	86	925	30	3	33
26	1990-1991	338	84	422	12	3	15
27	1991-1992	450	66	516	16	2	18
28	1992-1993	644	149	793	23	5	28
29	1993-1994	444	230	674	16	8	24
30	1994-1995	360	148	508	13	5	18
31	1995-1996	545	58	603	19	2	21
32	1996-1997	1270	121	1390	45	4	49

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	283	109	392	10	4	14
34	1998-1999	1016	94	1110	36	3	39
35	1999-2000	734	84	818	26	3	29
36	2000-2001	901	85	987	32	3	35
37	2001-2002	1263	77	1340	45	3	47
38	2002-2003	235	29	263	8	1	9
39	2003-2004	181	57	238	6	2	8
40	2004-2005	310	45	354	11	2	13
41	2005-2006	957	124	1081	34	4	38
42	2006-2007	461	Site downgraded as Seasonal Site from 2006-07 and again upgraded in 2014 - 15	461	16	Site downgraded as Seasonal Site from 2006-07 and again upgraded in 2014 - 15	16
43	2007-2008	914		914	32		32
44	2008-2009	1017		1017	36		36
45	2009-2010	1766		1766	62		62
46	2010-2011	772		772	27		27
47	2011-2012	289		289	10		10
48	2012-2013	384		384	14		14
49	2013-2014	456		456	16		16
50	2014-2015	425	96	521	15	3	18
51	2015-2016	713	68	781	25	2	28
52	2016-2017	102	0	102	4	0	4
53	2017-2018	716	82	798	25	3	28
54	2018-2019	194	21	216	7	1	8
55	2019-2020	995	136	1131	35	5	40
Average		692	117	780	24	4	28
75% Dependable flow (MCM)				456			
90 % Dependable flow (MCM)				279			

Stage-Discharge Data for the period 2019 - 2020

Station Name : T Ramapuram (AKL50A6)

Division : Lower Krishna Divn., Hyderabad

Local River : Hagari

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000		0.000	350.468	107.4	350.368	88.36
2		0.000		0.000		0.000		0.000	350.498	124.9 *	350.408	97.52
3		0.000		0.000		0.000		0.000	350.318	74.98	350.408	97.69 *
4		0.000		0.000		0.000		0.000	350.548	134.6	350.193	69.52
5		0.000		0.000		0.000		0.000	351.228	340.5	350.203	71.67
6	349.228	1.267		0.000		0.000		0.000	350.948	276.4 *	350.138	58.83
7	349.228	1.282		0.000		0.000		0.000	351.118	307.7	350.108	55.33
8	349.138	0.663		0.000		0.000		0.000	350.428	106.8 *	350.058	53.40
9	349.238	1.382 *		0.000		0.000		0.000	350.488	117.4	350.078	55.61
10	350.338	97.46		0.000		0.000		0.000	350.658	173.0	350.038	52.38 *
11	349.568	9.968		0.000		0.000		0.000	350.888	252.7	349.973	48.41
12	349.348	5.307		0.000		0.000		0.000	350.933	264.9	349.918	42.19 *
13	349.498	6.100		0.000		0.000		0.000	350.788	215.5 *	349.868	35.00
14	349.443	6.953		0.000		0.000		0.000	350.618	165.1	349.803	29.11
15	349.308	4.212		0.000		0.000		0.000	350.473	100.1	349.833	32.29
16	349.268	1.482 *		0.000		0.000		0.000	350.408	94.06	349.918	37.91
17	349.168	1.519		0.000		0.000		0.000	350.258	61.36	349.948	45.52 *
18	349.153	1.377		0.000		0.000	349.708	18.97	350.538	118.8	349.888	34.98
19	349.143	1.216		0.000		0.000	350.768	205.1	350.438	88.27	349.868	33.12
20	349.113	0.568		0.000		0.000	351.548	433.2	350.198	58.13 *	349.858	32.17
21	349.088	0.293		0.000		0.000	350.768	203.7	350.418	108.1	349.918	36.44
22	349.078	0.121		0.000		0.000	350.368	92.57 *	350.378	87.00	349.898	34.14
23		0.000		0.000		0.000	350.518	124.6	350.553	159.6	349.878	33.41
24	349.678	23.35		0.000		0.000	351.078	286.7	350.478	142.7	349.908	41.11 *
25	349.968	44.53		0.000		0.000	353.008	1898	350.528	146.1	349.868	32.55
26	349.643	17.28		0.000		0.000	351.788	549.6	350.438	98.64	349.878	33.51
27	349.368	4.665		0.000		0.000	351.048	255.9	350.478	119.6 *	349.868	32.56
28	349.248	2.041		0.000		0.000	350.793	218.8	350.353	77.04	349.928	39.28
29	349.193	1.007		0.000		0.000	351.518	418.8 *	351.248	348.4	349.968	44.29
30	349.168	1.519 *		0.000		0.000	350.998	266.5	351.018	281.0	349.938	40.79
31				0.000		0.000			350.478	114.5		
Ten-Daily Mean												
I Ten-Daily	349.434	10.21		0.000		0.000		0.000	350.670	176.4	350.200	70.03
II Ten-Daily	349.301	3.870		0.000		0.000	350.675	65.73	350.554	141.9	349.887	37.07
III Ten-Daily	349.381	9.481		0.000		0.000	351.189	431.5	350.579	153.0	349.905	36.81
Monthly												
Min.	349.078	0.000		0.000		0.000	349.708	0.000	350.198	58.13	349.803	29.11
Max.	350.338	97.46		0.000		0.000	353.008	1898	351.248	348.4	350.408	97.69
Mean	349.359	7.852		0		0	351.070	165.7	350.600	156.9	349.997	47.97

Annual Runoff in MCM = 1131 Annual Runoff in mm = 48

Peak Observed Discharge = 1898 cumecs on 25/09/2019 Corres. Water Level :353.008 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Stage-Discharge Data for the period 2019 - 2020

Station Name : T Ramapuram (AKL50A6)

Division : Lower Krishna Divn., Hyderabad

Local River : Hagari

Sub-Division : Lower Tungabhadra SD, Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	349.958	46.67 *	349.508	7.872	349.518	8.403	349.188	1.190 *	0.000	0.000		
2	350.018	46.97	349.538	8.427	349.518	8.403 *	349.338	3.780	0.000	0.000		
3	350.218	82.63	349.528	8.475	349.528	8.686	349.218	1.574	0.000	0.000		
4	350.268	91.36	349.508	7.773	349.518	8.531	349.308	2.939	0.000	0.000		
5	350.183	78.88	349.518	7.989 *	349.488	8.172	349.398	5.547	0.000	0.000		
6	350.048	49.32	349.498	7.710	349.468	7.087	349.278	2.562	0.000	0.000		
7	349.998	44.28	349.548	8.579	349.438	6.714	349.268	2.421	0.000	0.000		
8	349.968	47.83 *	349.568	10.89	349.398	5.146	349.228	1.581 *	0.000	0.000		
9	349.988	43.38	349.618	14.07	349.398	5.246 *	349.198	1.191	0.000	0.000		
10	349.968	43.84	349.638	16.12	349.413	6.190	349.168	0.528 *	0.000	0.000		
11	349.938	42.48	349.648	17.03	349.468	7.763	349.148	0.488	0.000	0.000		
12	349.878	38.66	349.658	19.18 *	349.488	8.319	0.000	0.000	0.000	0.000		
13	349.828	36.05	349.628	15.87	349.508	8.600	0.000	0.000	0.000	0.000		
14	349.808	34.49	349.568	11.04	349.433	6.493	0.000	0.000	0.000	0.000		
15	349.768	27.62 *	349.568	11.00 *	349.408	5.917	0.000	0.000	0.000	0.000		
16	349.748	29.63	349.578	11.63	349.398	5.246 *	0.000	0.000	0.000	0.000		
17	349.728	24.81	349.563	10.96	349.388	5.351	0.000	0.000	0.000	0.000		
18	349.718	23.86	349.558	10.43	349.373	4.669	0.000	0.000	0.000	0.000		
19	349.748	26.37	349.538	8.327 *	349.328	2.776	0.000	0.000	0.000	0.000		
20	349.768	27.47	349.528	8.251	349.308	2.746	0.000	0.000	0.000	0.000		
21	349.788	28.93	349.568	10.96	349.268	2.177	0.000	0.000	0.000	0.000		
22	349.798	30.25 *	349.553	9.876	349.318	2.709	0.000	0.000	0.000	0.000		
23	349.783	28.54	349.548	9.614	349.248	1.819 *	0.000	0.000	0.000	0.000		
24	349.688	19.13	349.548	9.671	349.148	0.549	0.000	0.000	0.000	0.000		
25	349.668	19.87 *	349.533	8.271	349.218	1.459	0.000	0.000	0.000	0.000		
26	349.648	17.19	349.528	8.135 *	349.238	1.619	0.000	0.000	0.000	0.000		
27	349.608	14.11	349.528	8.135	349.213	1.179	0.000	0.000	0.000	0.000		
28	349.588	12.87	349.573	11.68	349.228	1.581	0.000	0.000	0.000	0.000		
29	349.578	12.23 *	349.518	8.189	349.228	1.613	0.000	0.000	0.000	0.000		
30	349.538	8.367	349.518	8.188			0.000	0.000	0.000	0.000		
31	349.508	6.878	349.528	8.151			0.000			0.000		
Ten-Daily Mean												
I Ten-Daily	350.061	57.52	349.547	9.790	349.469	7.258	349.259	2.331	0.000	0.000		
II Ten-Daily	349.793	31.14	349.584	12.37	349.410	5.788	349.148	0.049	0.000	0.000		
III Ten-Daily	349.654	18.03	349.540	9.170	349.234	1.634	0.000	0.000	0.000	0.000		
Monthly												
Min.	349.508	6.878	349.498	7.710	349.148	0.549	349.148	0.000	0.000	0.000		
Max.	350.268	91.36	349.658	19.18	349.528	8.686	349.398	5.547	0.000	0.000		
Mean	349.830	35	349.556	10.4	349.376	5.006	349.249	0.768	0	0		

Peak Computed Discharge = 418.8 cumecs on 29/09/2019

Corres. Water Level :351.518 m

Lowest Computed Discharge = 0.528 cumecs on 10/03/2020

Corres. Water Level :349.168 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

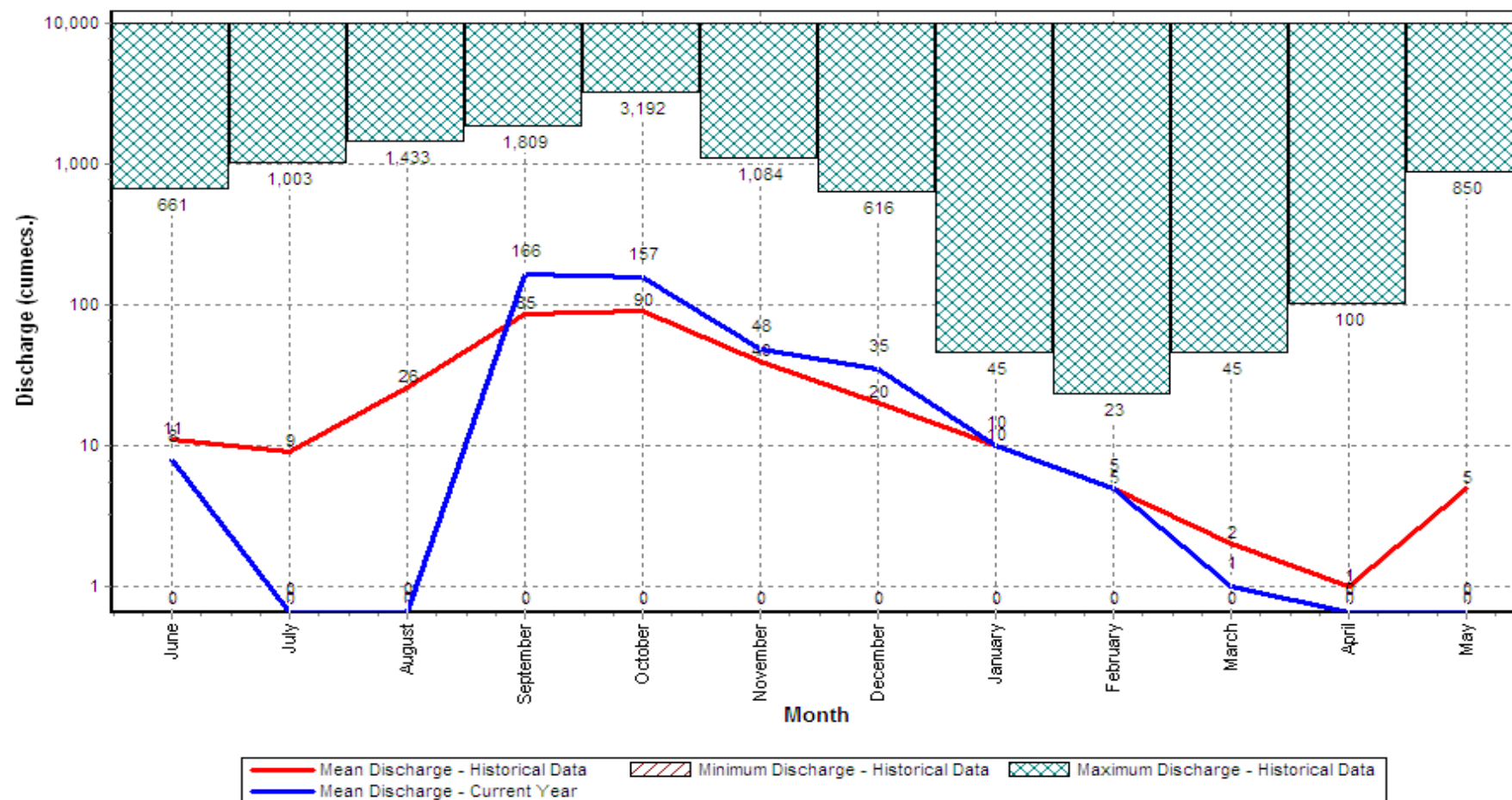
Station Name : T Ramapuram (AKL50A6)

Data considered : 1966-2020

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool

Local River : Hagari



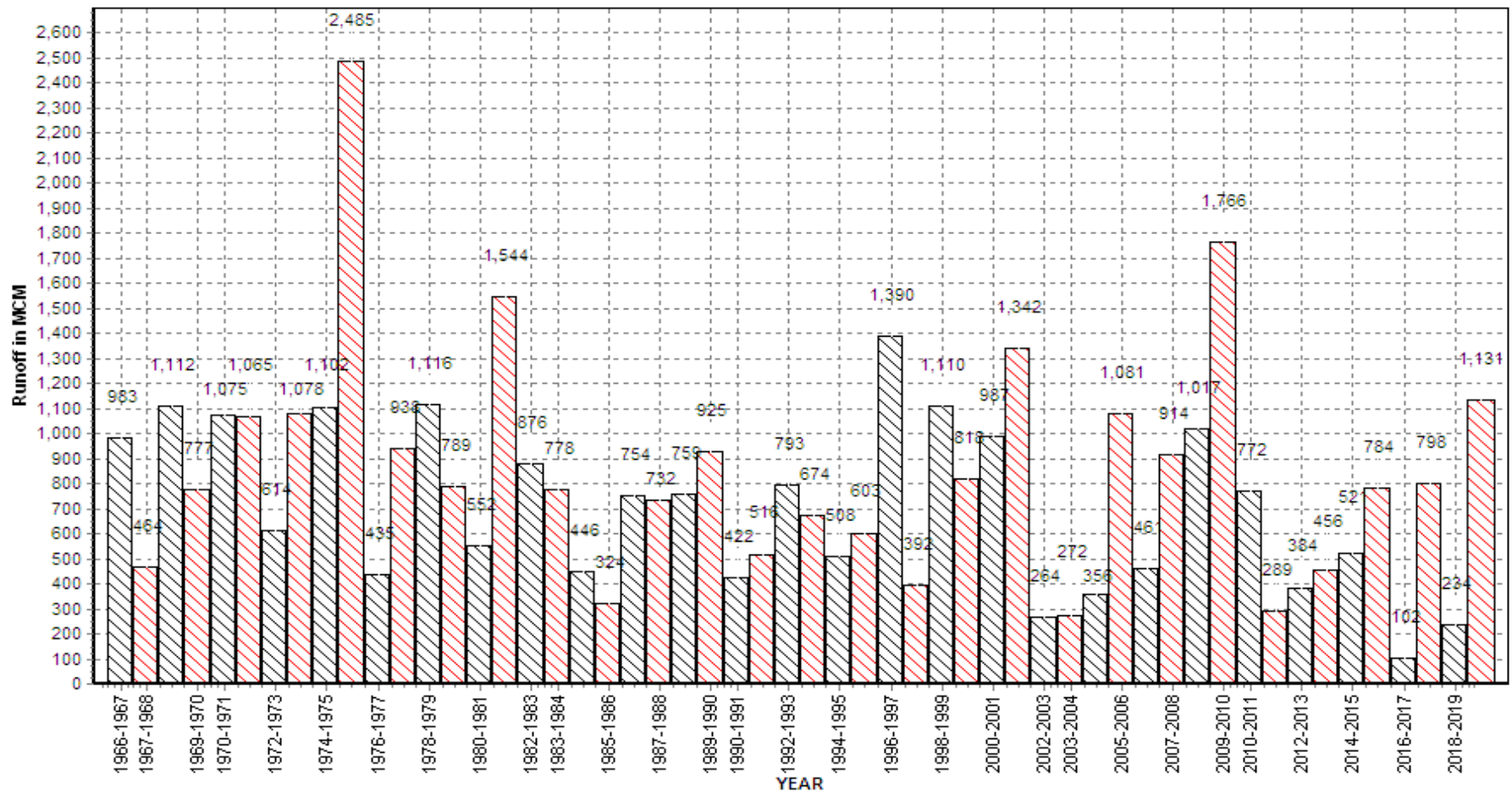
Annual Runoff Values for the period: 1966 - 2020

Station Name : T Ramapuram (AKL50A6)

Local River : Hagari

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



Note: Missing values have not been considered while arriving at Annual Runoff

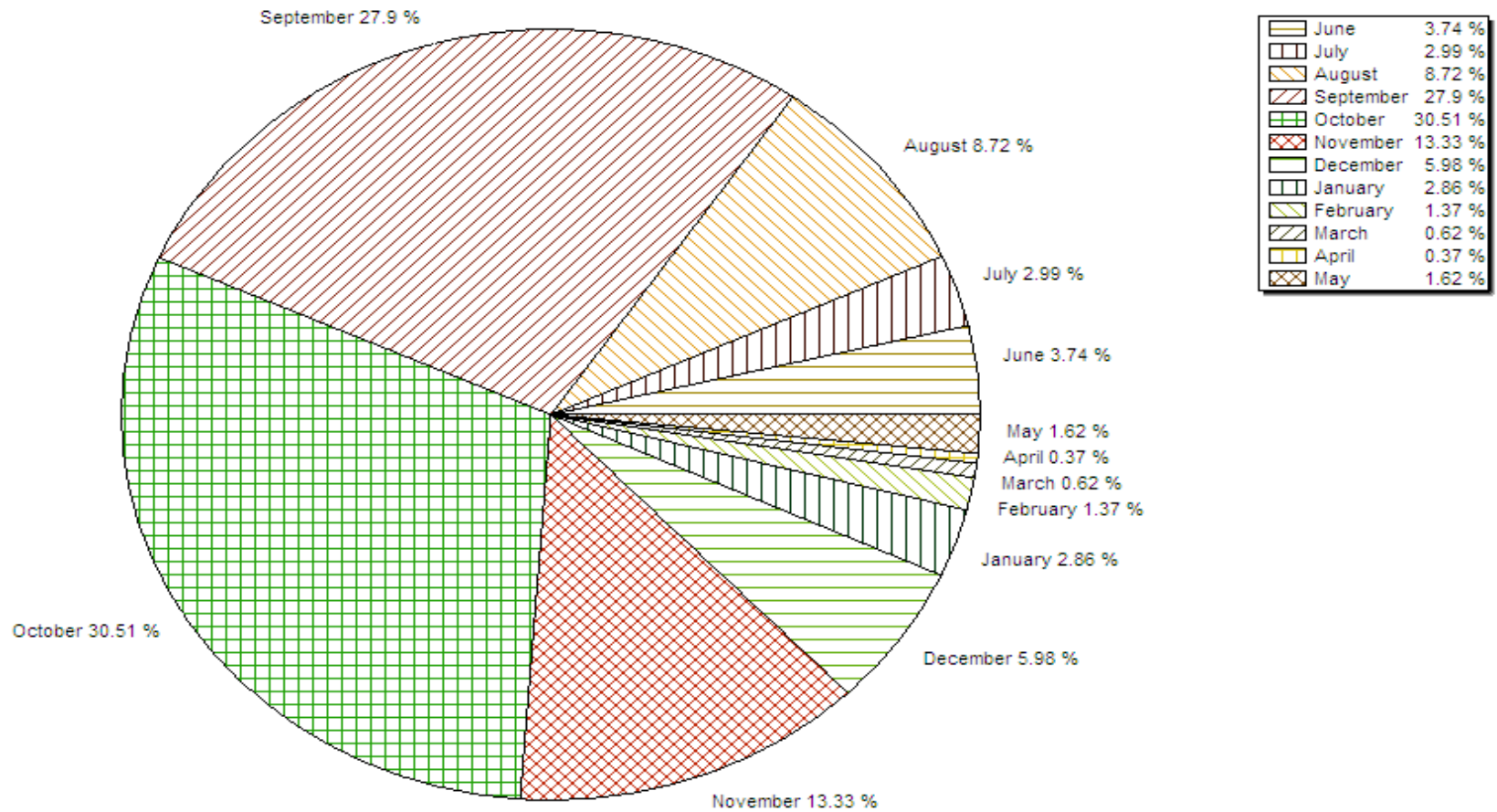
Monthly Average Runoff based on period : 1966-2019

Station Name : T Ramapuram (AKL50A6)

Local River : Hagari

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



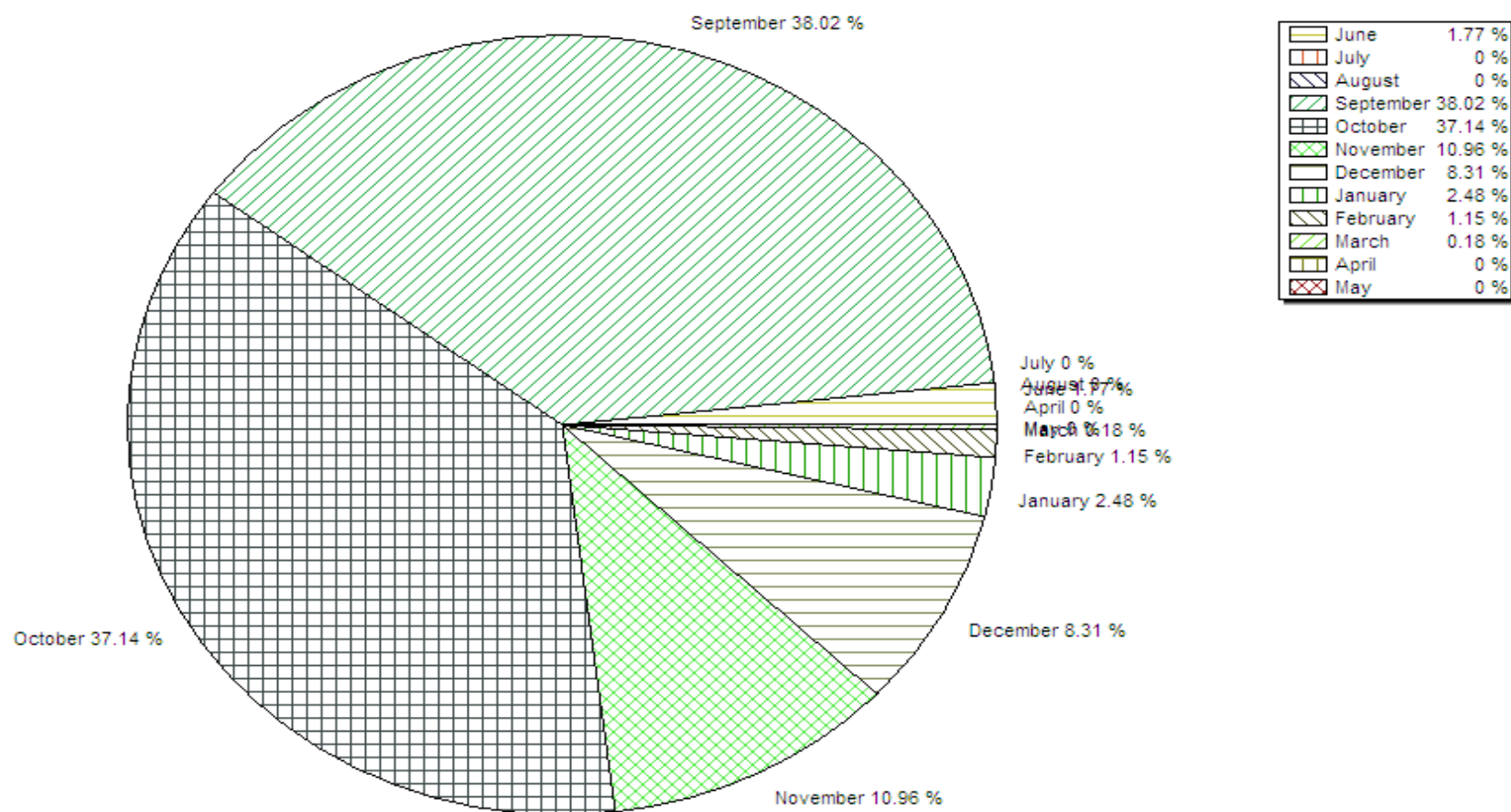
Monthly Runoff for the Year : 2019-2020

Station Name : T Ramapuram (AKL50A6)

Local River : Hagari

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



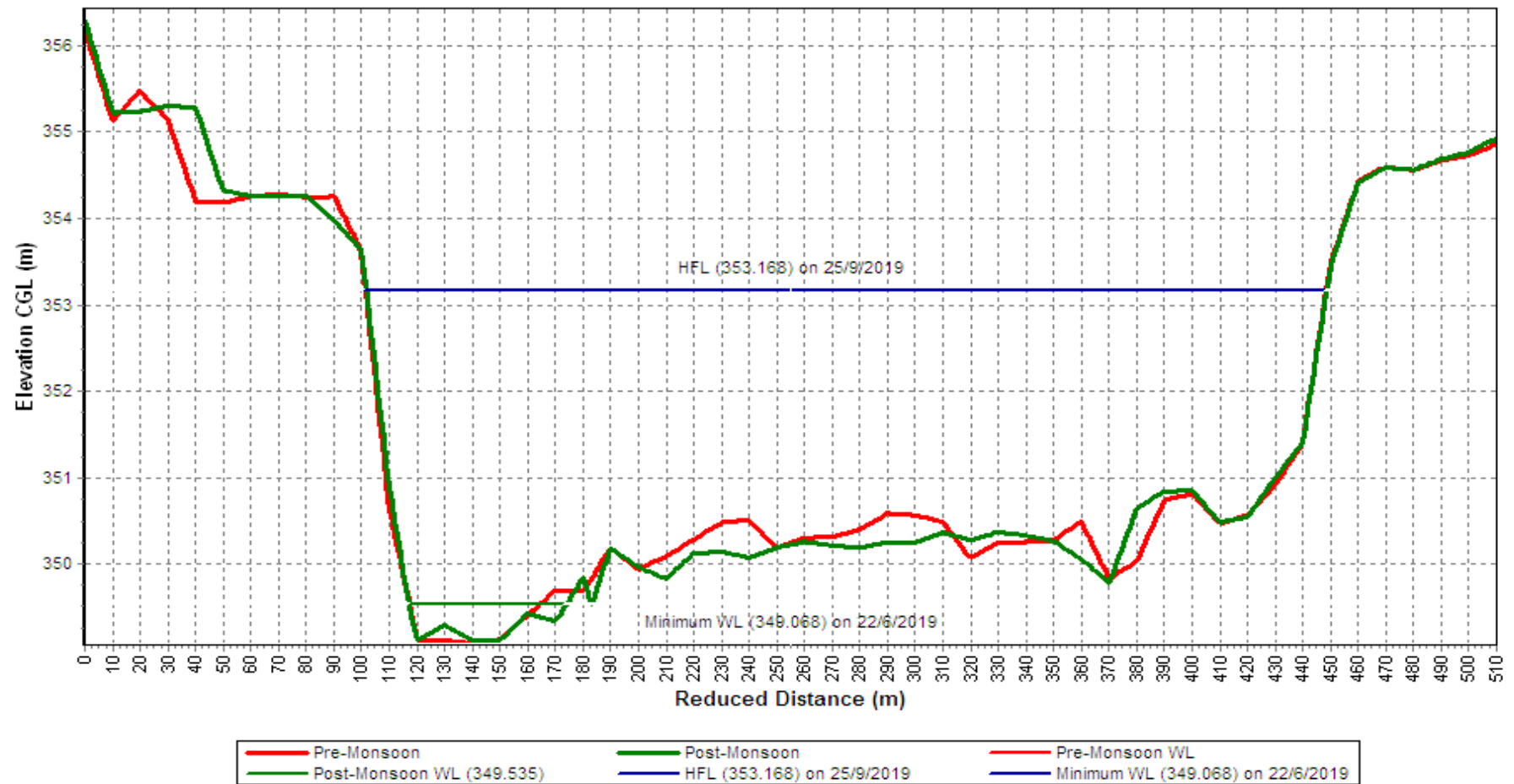
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : T Ramapuram (AKL50A6)

Local River : Hagari

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



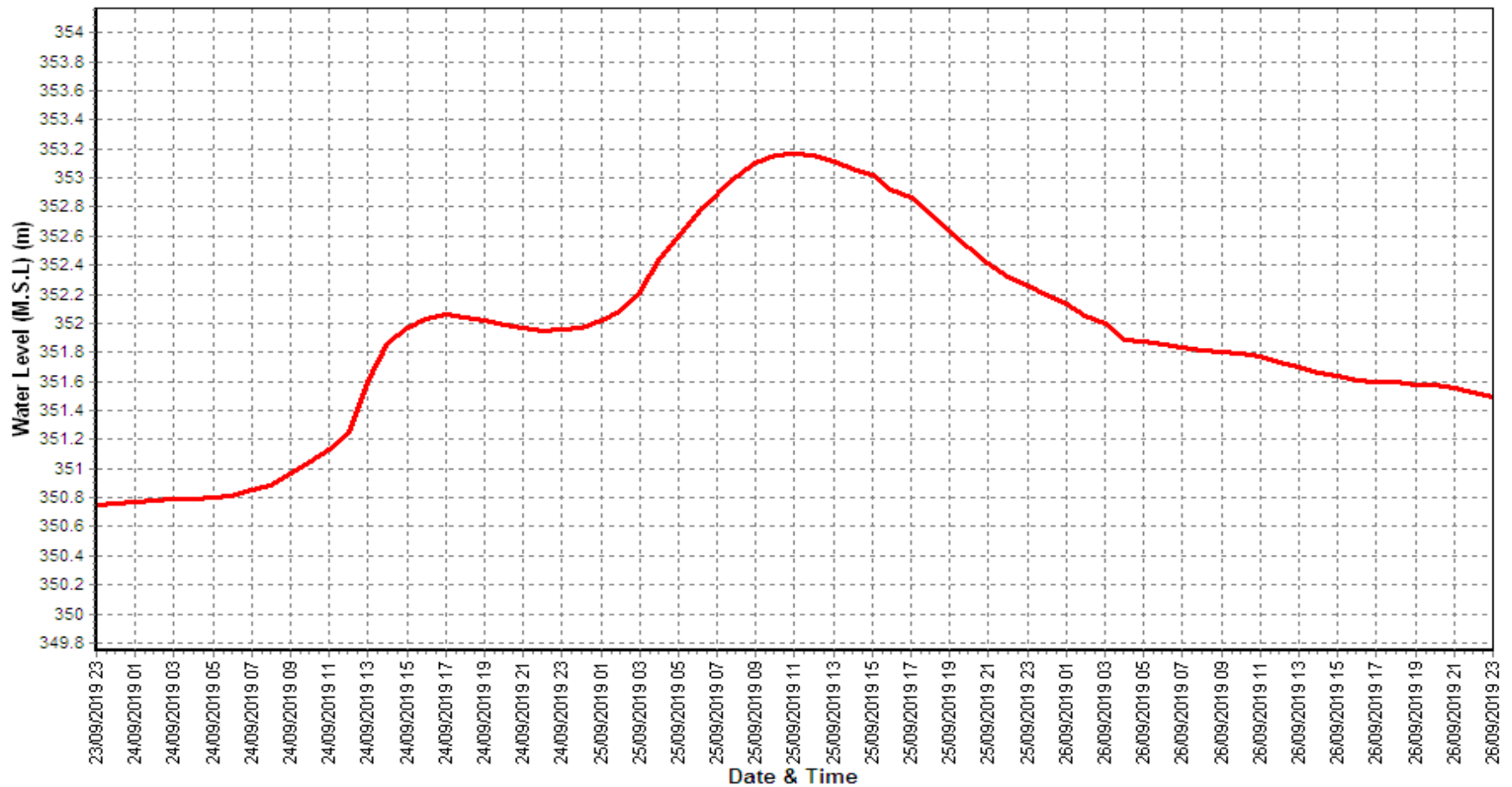
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : T Ramapuram (AKL50A6)

Local River : Hagari

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



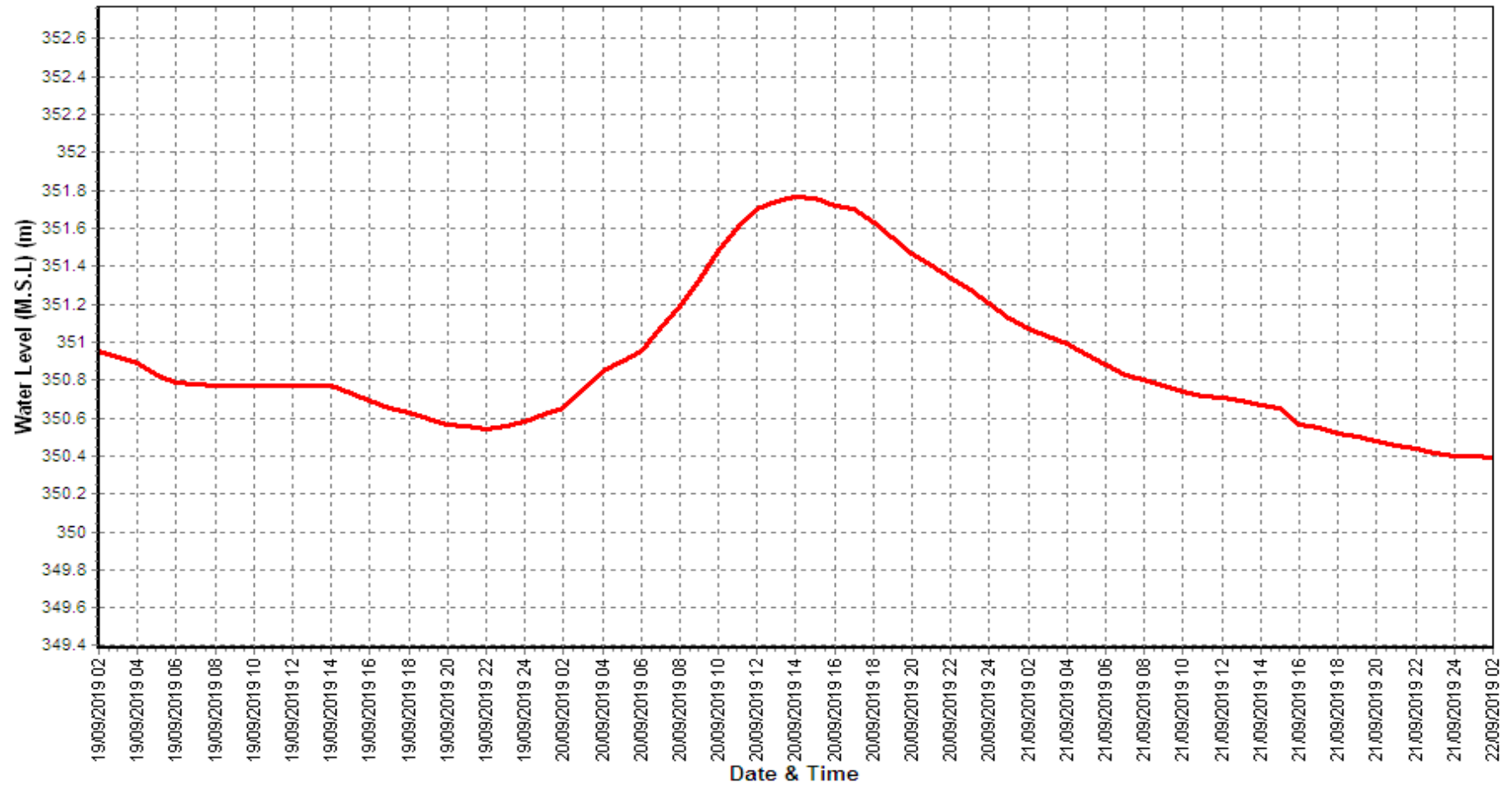
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : T Ramapuram (AKL50A6)

Local River : Hagari

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



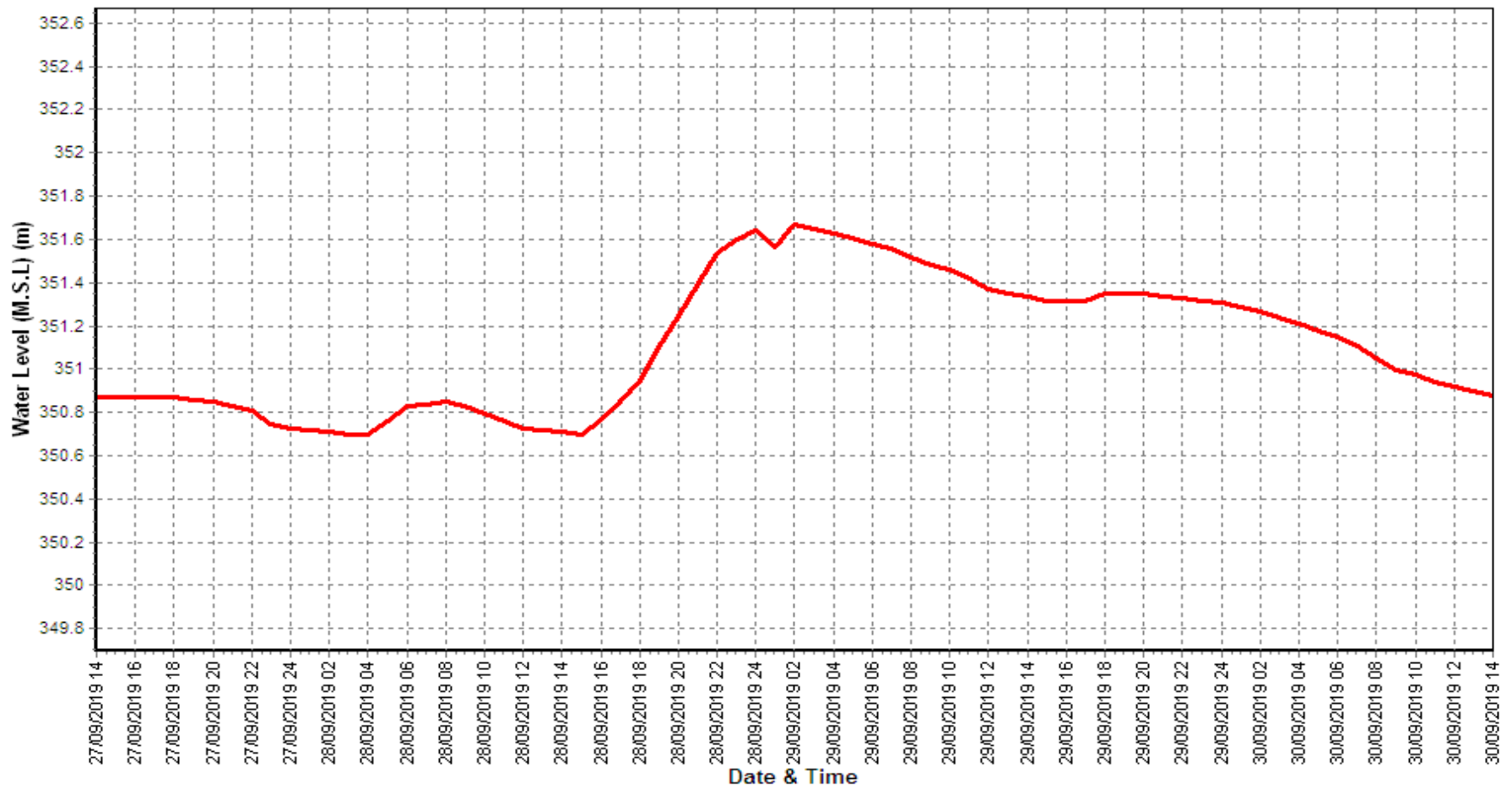
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : T Ramapuram (AKL50A6)

Local River : Hagari

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Lower Tungabhadra SD, Kurnool



HISTORY SHEET

Water Year : 2019-2020

Site : KELLODU

Code : AKL50T9

State : Karnataka

District : Chitradurga

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Vedavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere

Drainage Area : 4320 Sq. Km.

Bank : Left

Latitude : 13°45'15"

Longitude : 76°19'11"

Zero of Gauge (m) : 644.75 (m.s.l)

01/03/1990

Opening Date

Closing Date

Gauge : 01/06/1990

Discharge : 11/07/1990

Sediment :

Water Quality : 01/07/1994

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1991-1992	29.82	99.965	17/09/1991	0.000		01/04/1992
1992-1993	576.6	102.880	17/11/1992	0.245	98.920	15/04/1993
1993-1994	253.0	101.867	22/10/1993	0.000	98.930	28/03/1994
1994-1995	201.5	101.340	27/10/1994	0.000	99.010	22/06/1994
1995-1996	78.37	99.920	23/10/1995	0.000		27/02/1996
1996-1997	76.67	100.340	29/09/1996	0.000		31/03/1997
1997-1998	161.8	101.250	28/11/1997	0.000		12/04/1998
1998-1999	42.50	99.940	24/08/1998	0.000		23/03/1999
1999-2000	241.0	101.820	26/10/1999	0.000		12/07/1999
2000-2001	399.2	102.600	23/10/2000	0.000	98.615	27/01/2001
2001-2002	52.49	99.250	19/09/2001	0.000		14/04/2002
2002-2003	34.74	99.580	30/10/2002	0.000		25/01/2003
2003-2004	30.69	99.380	04/10/2003	0.000		03/07/2003
2004-2005	0.000		10/09/2004	0.000		25/01/2005
2005-2006	53.52	99.540	17/07/2005	0.000	97.545	07/03/2006
2006-2007	2.307	649.220	03/11/2006	0.000		25/12/2006
2007-2008	1.570	647.610	24/03/2008	0.000		20/01/2008
2008-2009	28.18	647.910	03/09/2008	0.000		24/01/2009
2009-2010	117.2	648.910	23/09/2009	0.000		15/03/2010
2010-2011	300.8	650.250	13/11/2010	0.000		25/06/2010
2011-2012	48.55	647.825	15/10/2011	0.000	646.300	03/12/2011
2012-2013	11.56	647.060	01/10/2012	0.000		23/01/2013

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2013-2014	4.716	647.290	17/09/2013	0.000		27/08/2013
2014-2015	128.9	649.540	27/10/2014	0.000		23/03/2015
2015-2016	77.90	648.390	03/11/2015	0.000		08/05/2016
2016-2017	0.000		05/04/2017	0.000		27/08/2016
2017-2018	299.0	650.570	01/07/2017	0.000	0.000	25/01/2018
2018-2019	6.062	647.100	20/08/2018	0.000		25/01/2019

Annual Runoff of Vedavathi at Kellodu

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1991-1992	12	4	15	0	0	1
2	1992-1993	47	2	49	2	0	2
3	1993-1994	259	28	288	9	1	10
4	1994-1995	222	9	231	8	0	8
5	1995-1996	175	17	192	6	1	7
6	1996-1997	28	6	33	1	0	1
7	1997-1998	43	3	46	2	0	2
8	1998-1999	60	6	66	2	0	2
9	1999-2000	60	6	67	2	0	2
10	2000-2001	253	12	265	9	0	9
11	2001-2002	444	0	444	16	0	16
12	2002-2003	22	4	26	1	0	1
13	2003-2004	10	0	10	0	0	0
14	2004-2005	10	0	10	0	0	0
15	2005-2006	0	0	0	0	0	0
16	2006-2007	50	1	50	2	0	2
17	2007-2008	1	0	1	0	0	0
18	2008-2009	1	0	1	0	0	0
19	2009-2010	15	7	21	1	0	1
20	2010-2011	67	4	71	2	0	2
21	2011-2012	282	23	305	10	1	11
22	2012-2013	7	0	7	0	0	0
23	2013-2014	1	0	1	0	0	0
24	2014-2015	2	0	2	0	0	0
25	2015-2016	69	0	69	2	0	2
26	2016-2017	66	2	69	2	0	2
27	2017-2018	0	0	0	0	0	0
28	2018-2019	0		0	0	0	0
29	2019-2020	367	127	494	13	4	17
Average		89	9	2	3	0	3
75% Dependable flow (MCM)				5.955			
90 % Dependable flow (MCM)				1.167			

Stage-Discharge Data for the period 2019 - 2020

Station Name : KELLODU (AKL50T9)

Division : Cauvery Division, Bangalore

Local River : Vedavathi

Sub-Division : Upper Tunga Subdn, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000	646.070	0.000	647.850	29.20	648.900	110.6
2		0.000		0.000		0.000	646.070	0.000	647.350	14.01 *	648.520	82.05
3		0.000		0.000		0.000		0.000	647.250	11.10	648.130	51.94 *
4		0.000		0.000		0.000		0.000	647.550	19.14	648.030	51.60
5		0.000		0.000		0.000		0.000	647.300	12.36	647.950	47.06
6		0.000		0.000		0.000		0.000	647.300	12.48 *	647.900	43.91
7		0.000		0.000		0.000		0.000	647.110	7.579 *	648.220	62.74
8		0.000		0.000		0.000		0.000	646.920	4.016 *	648.200	61.50
9		0.000		0.000		0.000		0.000	646.900	4.559	647.900	43.91
10		0.000		0.000	647.750	34.08		0.000	647.020	6.712	647.900	48.53 *
11		0.000		0.000	647.700	32.09 *		0.000	647.100	8.101	647.860	41.99
12		0.000		0.000	647.380	20.66 *		0.000	647.250	11.10	647.800	39.85 *
13		0.000		0.000	646.450	1.598 #		0.000	647.370	14.65 *	647.750	38.41
14		0.000		0.000	646.320	0.615		0.000	647.550	19.11	647.730	35.26
15		0.000		0.000	646.150	0.000		0.000	647.500	17.50	647.700	33.92
16		0.000		0.000	646.070	0.000		0.000	647.400	12.85	647.700	33.92
17		0.000		0.000	646.070	0.000		0.000	647.390	12.60	647.420	15.18 *
18		0.000		0.000	646.070	0.000		0.000	647.450	13.94	647.180	5.944 #
19		0.000		0.000	646.070	0.000		0.000	647.370	12.16	647.260	8.507 #
20		0.000		0.000	646.540	2.482		0.000	647.370	14.65 *	647.370	12.87 #
21		0.000		0.000	646.370	0.915		0.000	652.000	744.3	647.250	8.158 #
22		0.000		0.000	646.350	0.871		0.000	653.060	1118 *	647.250	8.158 #
23		0.000		0.000	646.240	0.226		0.000	651.010	491.6	647.250	8.158 #
24		0.000		0.000	646.160	0.000	646.600	3.209	650.300	320.6	646.970	1.510 *
25		0.000		0.000	646.130	0.000	646.420	1.379	648.500	80.61	646.960	1.267
26		0.000		0.000	646.090	0.000	646.340	0.807	647.700	26.82	646.960	1.242
27		0.000		0.000	646.070	0.000	646.310	0.720	647.850	35.13 *	646.920	0.958
28		0.000		0.000	646.070	0.000	646.490	1.872	647.850	38.59	646.920	0.957
29		0.000		0.000	646.070	0.000	646.570	2.860 *	647.780	35.55	646.920	0.959
30		0.000		0.000	646.070	0.000	646.450	1.515	647.640	24.56	647.200	20.77
31				0.000	646.070	0.000			648.000	49.92		
Ten-Daily Mean												
I Ten-Daily		0.000		0.000	647.750	3.408	646.070	0.000	647.255	12.12	648.165	60.38
II Ten-Daily		0.000		0.000	646.482	5.745		0.000	647.375	13.67	647.577	26.59
III Ten-Daily		0.000		0.000	646.154	0.183	646.454	1.236	649.245	269.6	647.060	5.214
Monthly												
Min.		0.000		0.000	646.070	0.000	646.070	0.000	646.900	4.016	646.920	0.957
Max.		0.000		0.000	647.750	34.08	646.600	3.209	653.060	1118	648.900	110.6
Mean		0		0	646.375	3.017	646.369	0.412	648.000	104	647.601	30.73

Annual Runoff in MCM = 494 Annual Runoff in mm = 114

Peak Observed Discharge = 744.3 cumecs on 21/10/2019 Corres. Water Level :652 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : KELLODU (AKL50T9)

Division : Cauvery Division, Bangalore

Local River : Vedavathi

Sub-Division : Upper Tunga Subdn, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	647.700	49.76 *	647.520	37.21	646.560	0.000	646.350	0.000	0.000	0.000		
2	647.700	46.53	647.520	37.21	646.560	0.000	646.350	0.000	0.000	0.000		
3	647.700	46.53	647.400	32.82	646.560	0.000	646.350	0.000	0.000	0.000		
4	647.700	46.53	647.400	35.12	646.560	0.000	646.350	0.000	0.000	0.000		
5	647.750	47.89	647.300	21.94 *	646.550	0.000	646.350	0.000	0.000	0.000		
6	647.720	47.83	646.770	0.353	646.540	0.000	646.350	0.000	0.000	0.000		
7	647.720	47.83 *	646.770	0.474	646.520	0.000	646.350	0.000	0.000	0.000		
8	647.720	51.35 *	646.750	0.000	646.500	0.000	646.350	0.000	0.000	0.000		
9	647.650	44.65	646.730	0.000	646.480	0.000	646.350	0.000	0.000	0.000		
10	647.650	44.65	646.710	0.000 *	646.480	0.000	646.350	0.000	0.000	0.000		
11	647.630	43.27	646.710	0.000	646.480	0.000	646.350	0.000	0.000	0.000		
12	647.630	43.27	646.700	0.000	646.480	0.000	646.350	0.000	0.000	0.000		
13	647.620	42.59	646.690	0.000	646.450	0.000	646.350	0.000	0.000	0.000		
14	647.620	42.59	646.670	0.000	646.430	0.000	646.350	0.000	0.000	0.000		
15	647.620	43.57 *	646.670	0.000	646.410	0.000	646.350	0.000	0.000	0.000		
16	647.600	41.36	646.670	0.000	646.390	0.000	646.330	0.000	0.000	0.000		
17	647.580	40.06	646.660	0.000	646.390	0.000	646.330	0.000	0.000	0.000		
18	647.580	40.06	646.660	0.000	646.390	0.000	646.330	0.000	0.000	0.000		
19	647.580	40.06	646.660	0.000	646.390	0.000	646.330	0.000	0.000	0.000		
20	647.570	39.42	646.660	0.000	646.390	0.000	646.330	0.000	0.000	0.000		
21	647.560	38.77	646.660	0.000	646.370	0.000	646.330	0.000	0.000	0.000		
22	647.560	39.13 *	646.660	0.000	646.370	0.000	646.330	0.000	0.000	0.000		
23	647.370	29.75	646.650	0.000	646.350	0.000	646.330	0.000	0.000	0.000		
24	647.540	38.43	646.650	0.000	646.350	0.000	646.330	0.000	0.000	0.000		
25	647.540	37.68 *	646.640	0.000	646.350	0.000	646.330	0.000	0.000	0.000		
26	647.540	38.43	646.640	0.000	646.350	0.000	646.330	0.000	0.000	0.000		
27	647.540	38.43	646.640	0.000	646.350	0.000	646.330	0.000	0.000	0.000		
28	647.540	38.43	646.640	0.000	646.350	0.000	646.330	0.000	0.000	0.000		
29	647.540	37.68 *	646.620	0.000	646.350	0.000	646.330	0.000	0.000	0.000		
30	647.530	37.81	646.600	0.000			646.330	0.000	0.000	0.000		
31	647.520	37.20	646.480	0.000			646.330	0.000				
Ten-Daily Mean												
I Ten-Daily	647.701	47.36	647.087	16.51	646.531	0.000	646.350	0.000	0.000	0.000		
II Ten-Daily	647.603	41.63	646.675	0.000	646.420	0.000	646.340	0.000	0.000	0.000		
III Ten-Daily	647.525	37.43	646.626	0.000	646.354	0.000	646.330	0.000	0.000	0.000		
Monthly												
Min.	647.370	29.75	646.480	0.000	646.350	0.000	646.330	0.000	0.000	0.000		
Max.	647.750	51.35	647.520	37.21	646.560	0.000	646.350	0.000	0.000	0.000		
Mean	647.607	41.99	646.790	5.327	646.438	0	646.340	0	0	0		

Peak Computed Discharge = 1118 cumecs on 22/10/2019

Corres. Water Level :653.06 m

Lowest Computed Discharge = 0.000 cumecs on 10/01/2020

Corres. Water Level :646.71 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

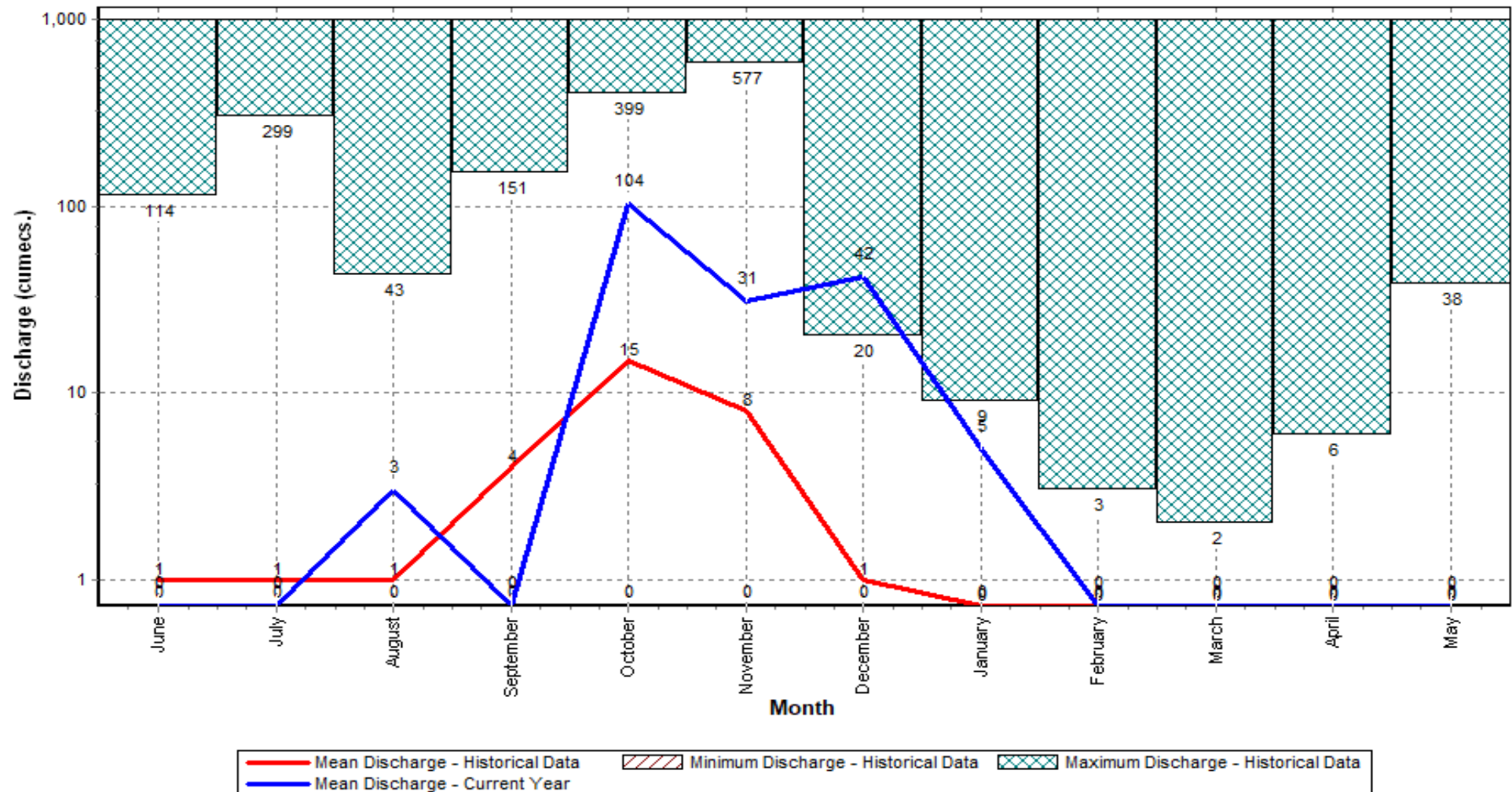
Station Name : KELLODU (AKL50T9)

Data considered : 1991-2020

Division : Cauvery Division, Bangalore

Local River : Vedavathi

Sub-Division : Upper Tunga Subdn, Devangere



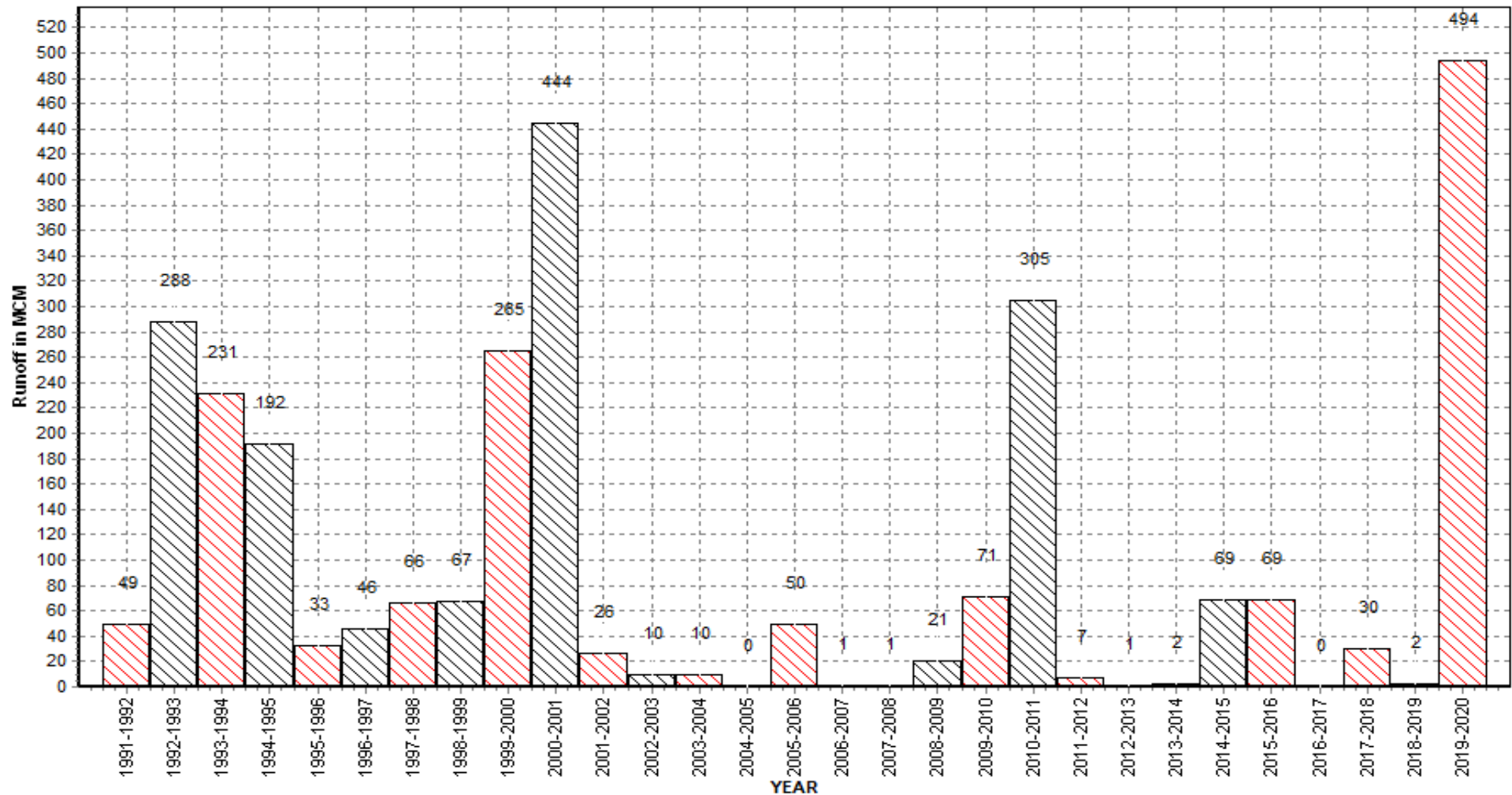
Annual Runoff Values for the period: 1991 - 2020

Station Name : KELLODU (AKL50T9)

Local River : Vedavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

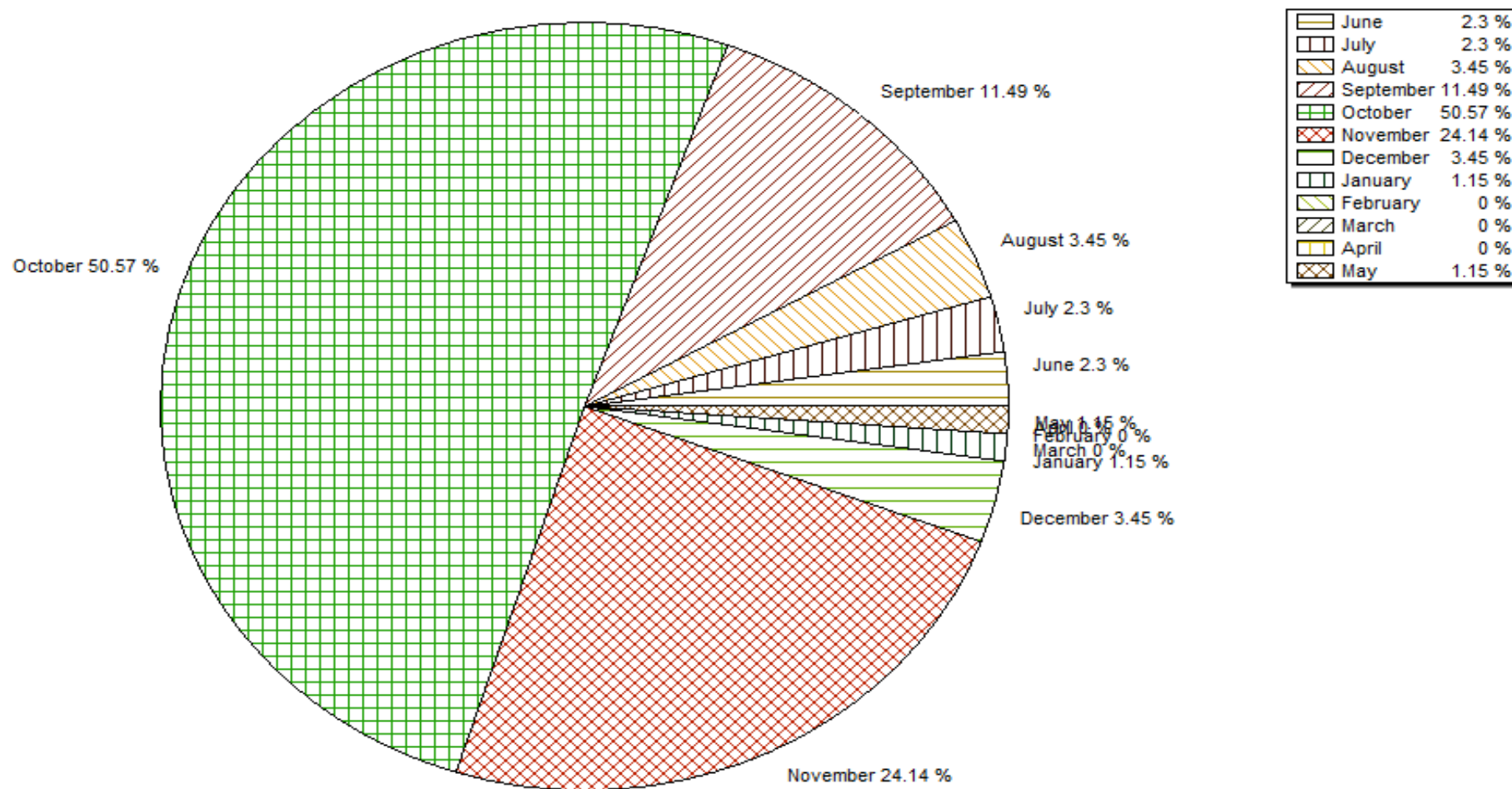
Monthly Average Runoff based on period : 1991-2019

Station Name : KELLODU (AKL50T9)

Local River : Vedavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



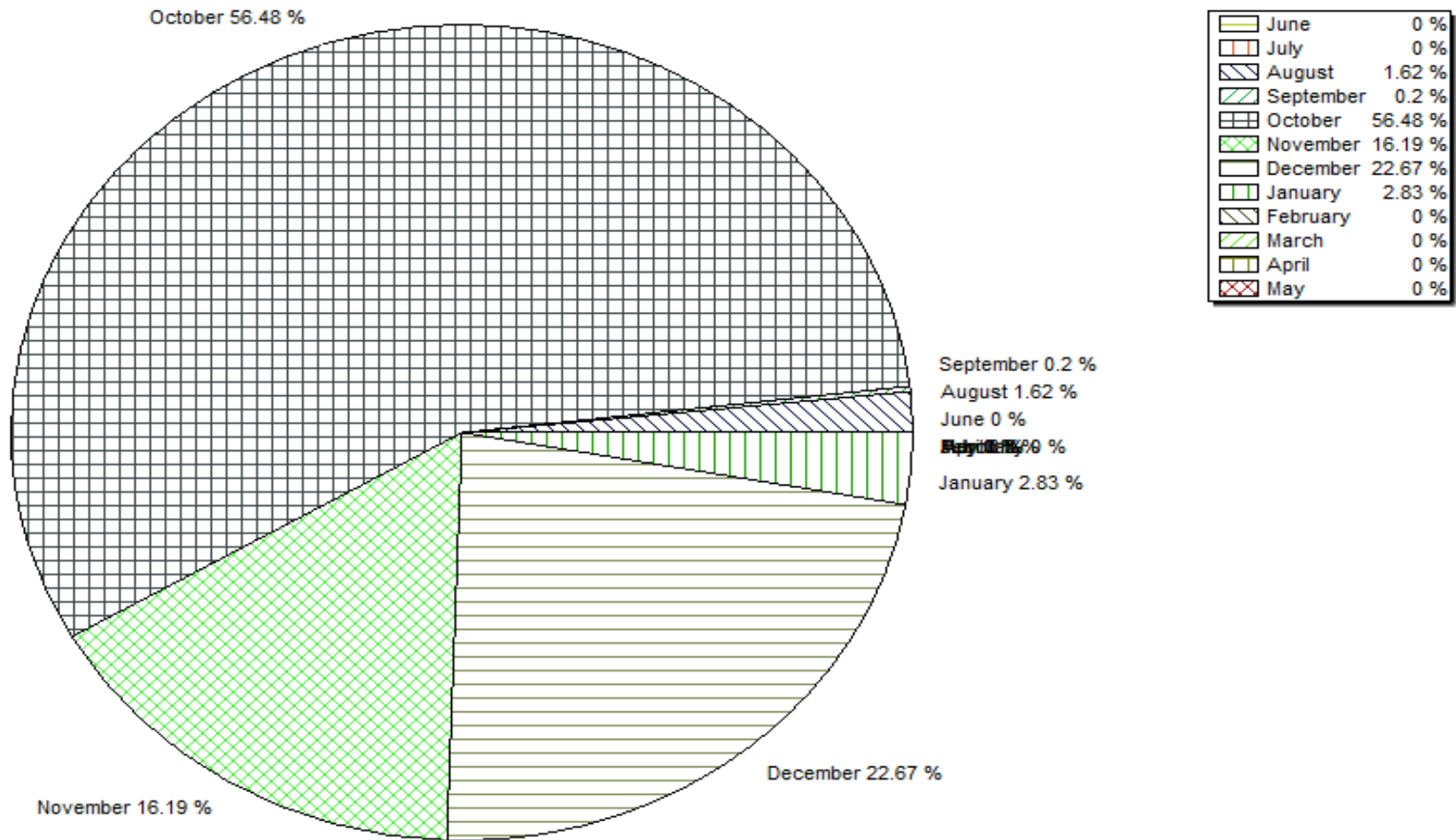
Monthly Runoff for the Year : 2019-2020

Station Name : KELLODU (AKL50T9)

Local River : Vedavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



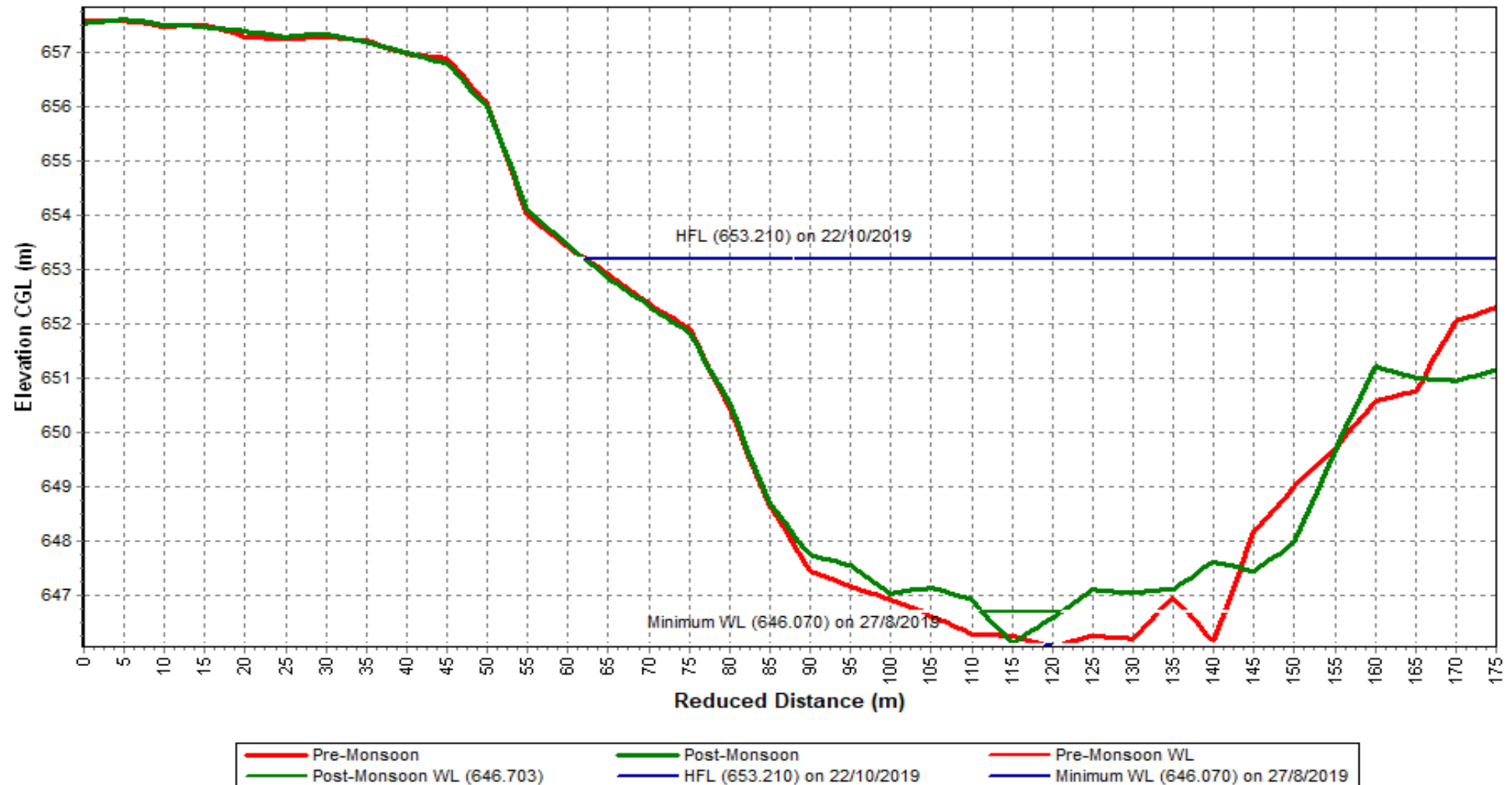
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : KELLODU (AKL50T9)

Local River : Vedavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



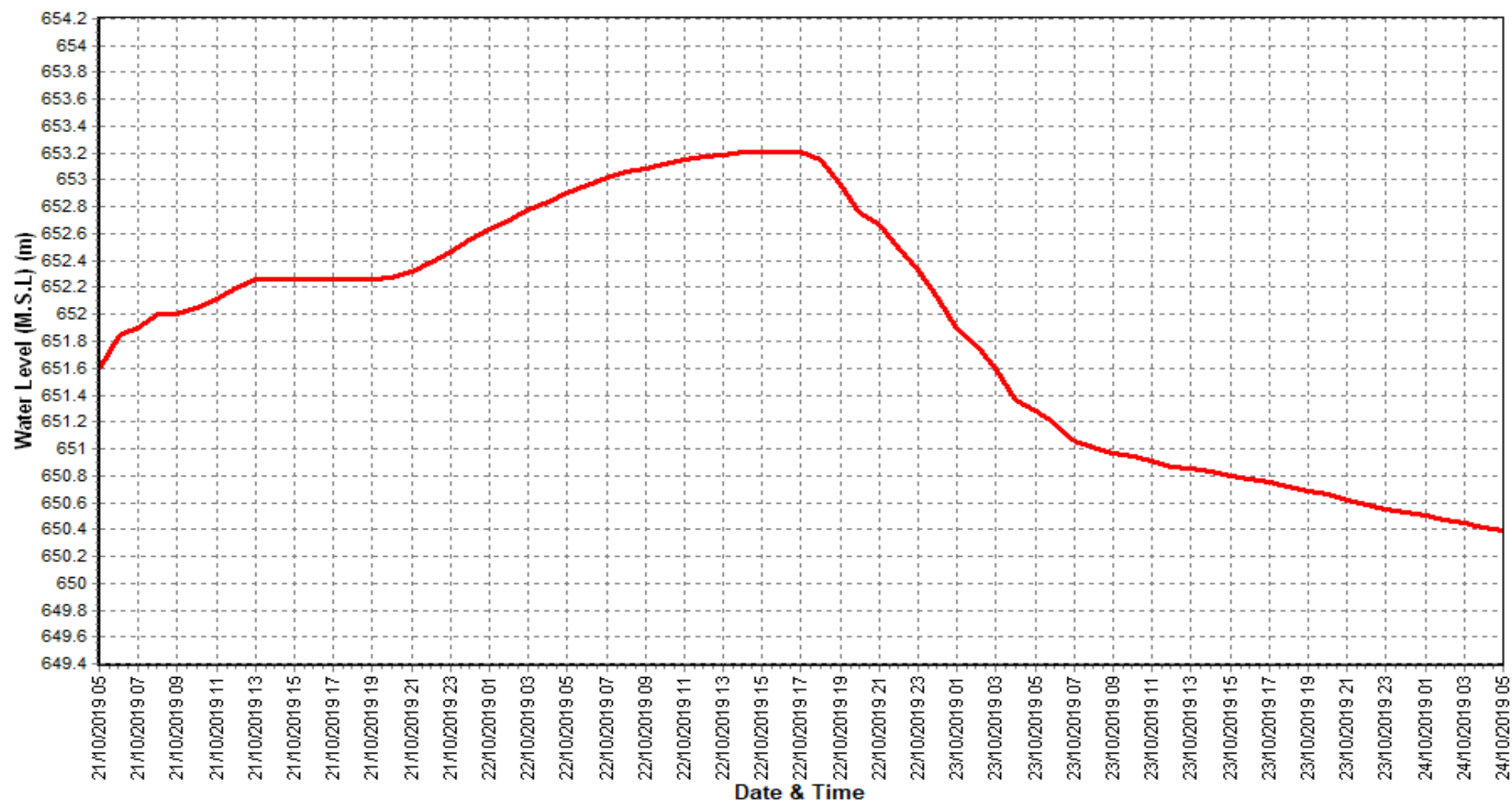
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : KELLODU (AKL50T9)

Local River : Vedavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



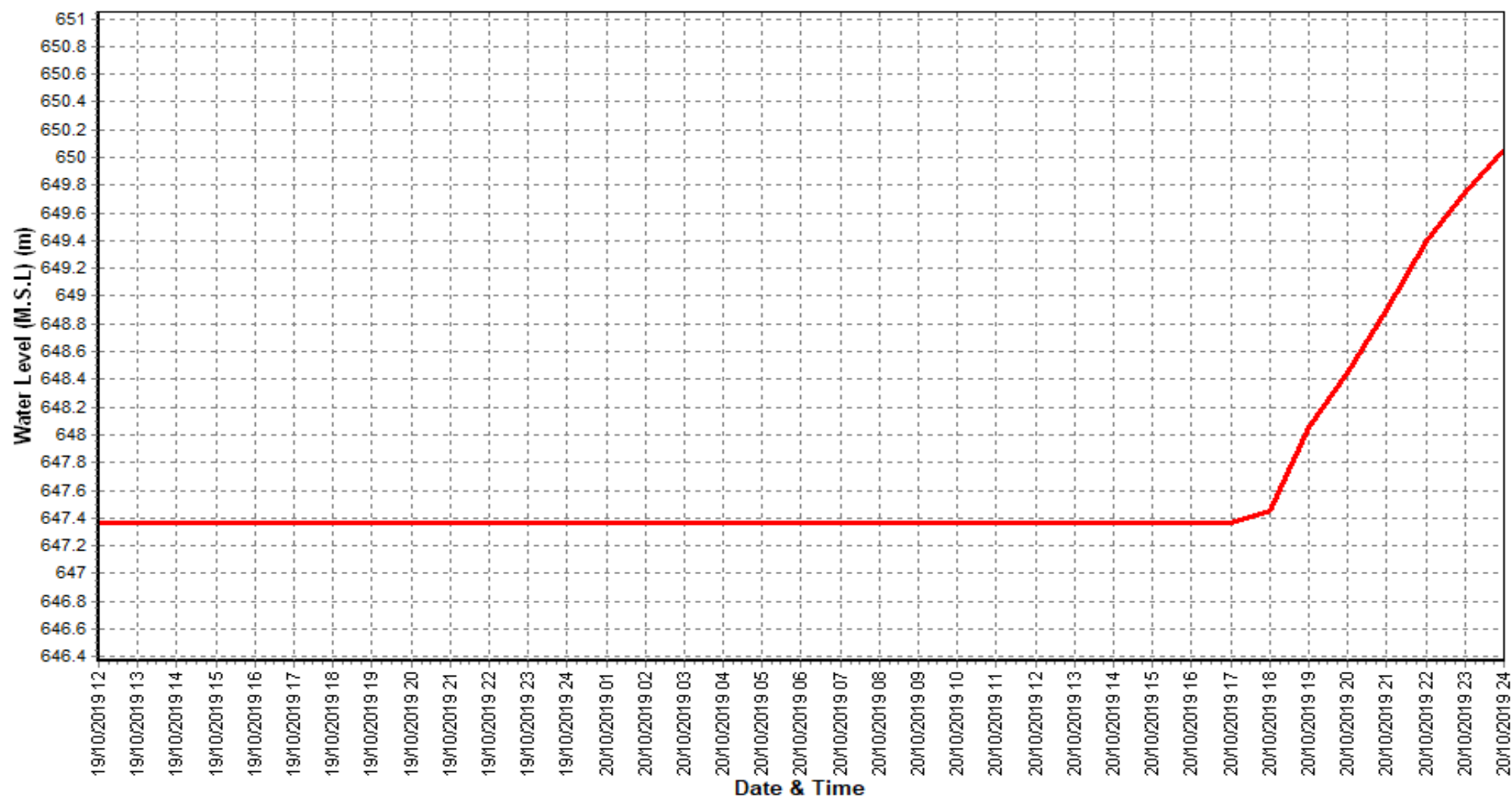
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : KELLODU (AKL50T9)

Local River : Vedavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



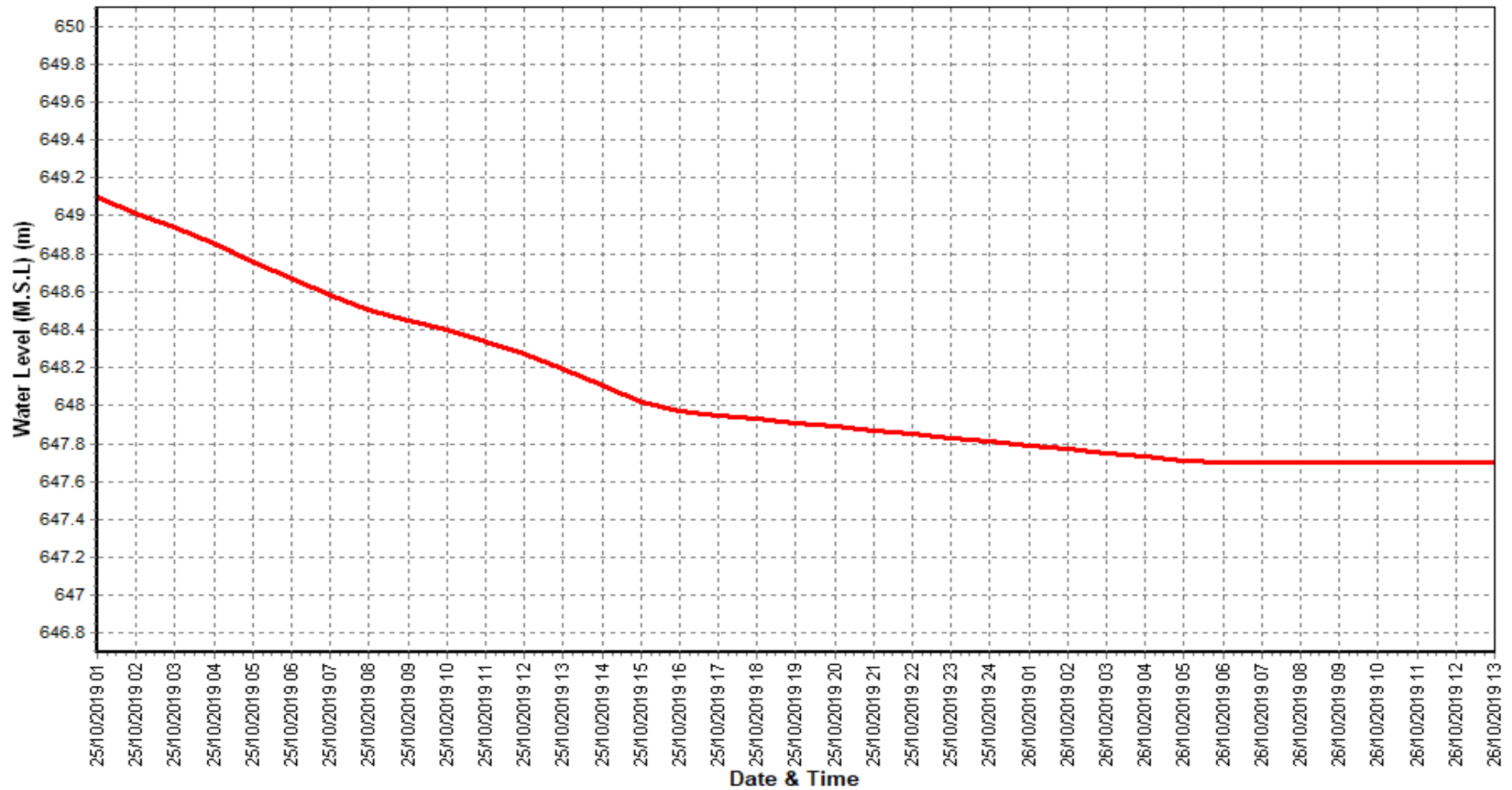
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : KELLODU (AKL50T9)

Local River : Vedavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : HOOVINAHOLE

Code : HOOVINAHOLE

State : Karnataka

District : Chitradurga

Basin : Krishna

Independent River : Krishna

Tributary :

Sub Tributary :

Sub-Sub Tributary :

Local River : Suvarnamukhi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere

Drainage Area : 2585 Sq. Km.

Bank : Right

Latitude : 13°58'57"

Longitude : 76°44'57"

Zero of Gauge (m) : 93.5 (m.s.l)

28/11/1997

Opening Date

Closing Date

Gauge : 28/11/1997

Discharge : 02/10/2001

Sediment :

Water Quality : 01/06/2008

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2002-2003	16.39	95.100	30/10/2002	0.000	94.240	07/12/2002
2003-2004	0.000		05/10/2003	0.000		26/01/2004
2004-2005	0.000		04/10/2004	0.000		25/01/2005
2005-2006	13.37	95.500	03/11/2005	0.000		06/04/2006
2006-2007	2.576	94.860	20/06/2006	0.000		03/01/2007
2007-2008	5.331	94.840	10/09/2007	0.000		26/01/2008
2008-2009	75.85	95.820	06/09/2008	0.000		17/03/2009
2009-2010	67.38	95.580	24/09/2009	0.000	94.450	27/12/2009
2010-2011	75.13	95.755	03/11/2010	0.000	94.230	23/01/2011
2011-2012	0.000		21/02/2012	0.000		18/05/2012
2012-2013	0.000		12/07/2012	0.000		09/12/2012
2013-2014	43.01	95.355	13/09/2013	0.000		01/10/2013
2014-2015	0.000		17/11/2014	0.000		25/01/2015
2015-2016	7.174	94.080	27/11/2015	0.000		30/05/2016
2016-2017	0.000		06/05/2017	0.000		27/08/2016
2017-2018	16.50	94.950	15/10/2017	0.000	0.000	07/02/2018

Annual Runoff of Suvarnamukhi at Hoovinahole							
Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2002-2003	11	0	11	0	0	0
2	2003-2004	0	0	0	0	0	0
3	2004-2005	0	0	0	0	0	0
4	2005-2006	17	1	18	1	0	0
5	2006-2007	2	0	2	0	0	0
6	2007-2008	4	0	4	0	0	0
7	2008-2009	50	8	58	2	0	0
8	2009-2010	42	1	43	1	0	0
9	2010-2011	62	7	69	2	0	0
10	2011-2012		0	0	0	0	0
11	2012-2013	0	0	0	0	0	0
12	2013-2014	4	0	4	0	0	0
13	2014-2015	0	0	0	0	0	0
14	2015-2016	3	2	5	0	0	0
15	2016-2017	0	0	0	0	0	0
16	2017-2018	0		0	0	0	0
17	2018-2019	0	0	0	0	0	0
18	2019-2020	0	0	0	0	0	0
Average		11	1	12	0	0	0
75% Dependable flow (MCM)				0			
90 % Dependable flow (MCM)				0			

Stage-Discharge Data for the period 2019 - 2020

Station Name : HOOVINAHOLE (HOOVINAHOLE)

Division : Cauvery Division, Bangalore

Local River : Suvarnamukhi

Sub-Division : Upper Tunga SD, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000		0.000		0.000		0.000
2		0.000		0.000		0.000		0.000		0.000		0.000
3		0.000		0.000		0.000		0.000		0.000		0.000
4		0.000		0.000		0.000		0.000		0.000		0.000
5		0.000		0.000		0.000		0.000		0.000		0.000
6		0.000		0.000		0.000		0.000		0.000		0.000
7		0.000		0.000		0.000		0.000		0.000		0.000
8		0.000		0.000		0.000		0.000		0.000		0.000
9		0.000		0.000		0.000		0.000		0.000		0.000
10		0.000		0.000		0.000		0.000		0.000		0.000
11		0.000		0.000		0.000		0.000		0.000		0.000
12		0.000		0.000		0.000		0.000		0.000		0.000
13		0.000		0.000		0.000		0.000		0.000		0.000
14		0.000		0.000		0.000		0.000		0.000		0.000
15		0.000		0.000		0.000		0.000		0.000		0.000
16		0.000		0.000		0.000		0.000		0.000		0.000
17		0.000		0.000		0.000		0.000		0.000		0.000
18		0.000		0.000		0.000		0.000		0.000		0.000
19		0.000		0.000		0.000		0.000		0.000		0.000
20		0.000		0.000		0.000		0.000		0.000		0.000
21		0.000		0.000		0.000		0.000		0.000		0.000
22		0.000		0.000		0.000		0.000		0.000		0.000
23		0.000		0.000		0.000		0.000		0.000		0.000
24		0.000		0.000		0.000		0.000		0.000		0.000
25		0.000		0.000		0.000		0.000		0.000		0.000
26		0.000		0.000		0.000		0.000		0.000		0.000
27		0.000		0.000		0.000		0.000		0.000		0.000
28		0.000		0.000		0.000		0.000		0.000		0.000
29		0.000		0.000		0.000		0.000		0.000		0.000
30		0.000		0.000		0.000		0.000		0.000		0.000
31				0.000		0.000				0.000		
Ten-Daily Mean												
I Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
II Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
III Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
Monthly												
Min.		0.000		0.000		0.000		0.000		0.000		0.000
Max.		0.000		0.000		0.000		0.000		0.000		0.000
Mean		0		0		0		0		0		0

Annual Runoff in MCM = 0 Annual Runoff in mm = 0

Peak Observed Discharge = 0.000 cumecs on 01/06/2019

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Stage-Discharge Data for the period 2019 - 2020

Station Name : HOOVINAHOLE (HOOVINAHOLE)

Division : Cauvery Division, Bangalore

Local River : Suvarnamukhi

Sub-Division : Upper Tunga SD, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1		0.000		0.000		0.000		0.000		0.000		0.000
2		0.000		0.000		0.000		0.000		0.000		0.000
3		0.000		0.000		0.000		0.000		0.000		0.000
4		0.000		0.000		0.000		0.000		0.000		0.000
5		0.000		0.000		0.000		0.000		0.000		0.000
6		0.000		0.000		0.000		0.000		0.000		0.000
7		0.000		0.000		0.000		0.000		0.000		0.000
8		0.000		0.000		0.000		0.000		0.000		0.000
9		0.000		0.000		0.000		0.000		0.000		0.000
10		0.000		0.000		0.000		0.000		0.000		0.000
11		0.000		0.000		0.000		0.000		0.000		0.000
12		0.000		0.000		0.000		0.000		0.000		0.000
13		0.000		0.000		0.000		0.000		0.000		0.000
14		0.000		0.000		0.000		0.000		0.000		0.000
15		0.000		0.000		0.000		0.000		0.000		0.000
16		0.000		0.000		0.000		0.000		0.000		0.000
17		0.000		0.000		0.000		0.000		0.000		0.000
18		0.000		0.000		0.000		0.000		0.000		0.000
19		0.000		0.000		0.000		0.000		0.000		0.000
20		0.000		0.000		0.000		0.000		0.000		0.000
21		0.000		0.000		0.000		0.000		0.000		0.000
22		0.000		0.000		0.000		0.000		0.000		0.000
23		0.000		0.000		0.000		0.000		0.000		0.000
24		0.000		0.000		0.000		0.000		0.000		0.000
25		0.000		0.000		0.000		0.000		0.000		0.000
26		0.000		0.000		0.000		0.000		0.000		0.000
27		0.000		0.000		0.000		0.000		0.000		0.000
28		0.000		0.000		0.000		0.000		0.000		0.000
29		0.000		0.000		0.000		0.000		0.000		0.000
30		0.000		0.000				0.000		0.000		0.000
31		0.000		0.000				0.000				0.000
Ten-Daily Mean												
I Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
II Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
III Ten-Daily		0.000		0.000		0.000		0.000		0.000		0.000
Monthly												
Min.		0.000		0.000		0.000		0.000		0.000		0.000
Max.		0.000		0.000		0.000		0.000		0.000		0.000
Mean		0		0		0		0		0		0

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

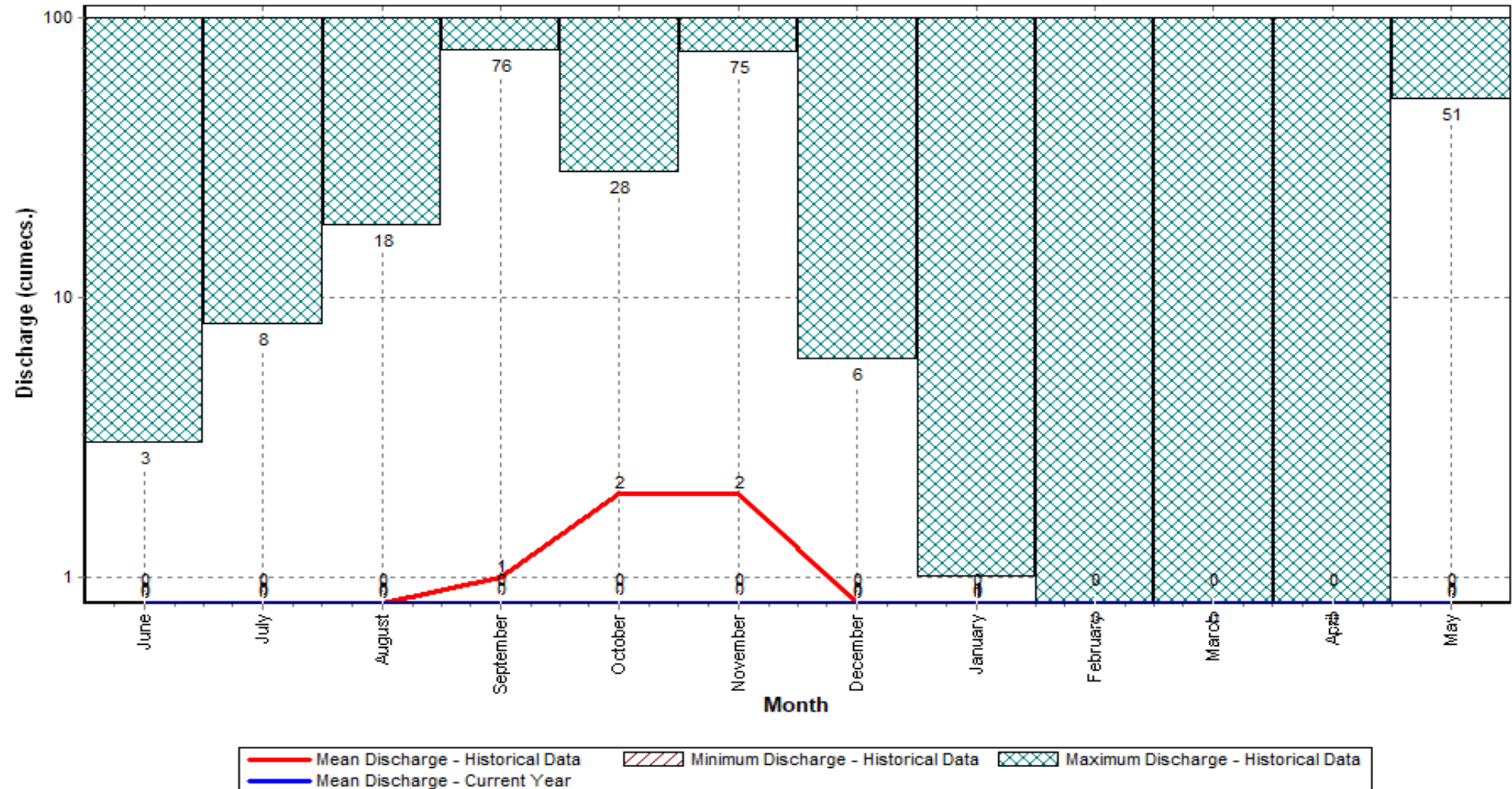
Station Name : HOOVINAHOLE (HOOVINAHOLE)

Data considered : 2002-2020

Division : Cauvery Division, Bangalore

Local River : Suvarnamukhi

Sub-Division : Upper Tunga SD, Devangere



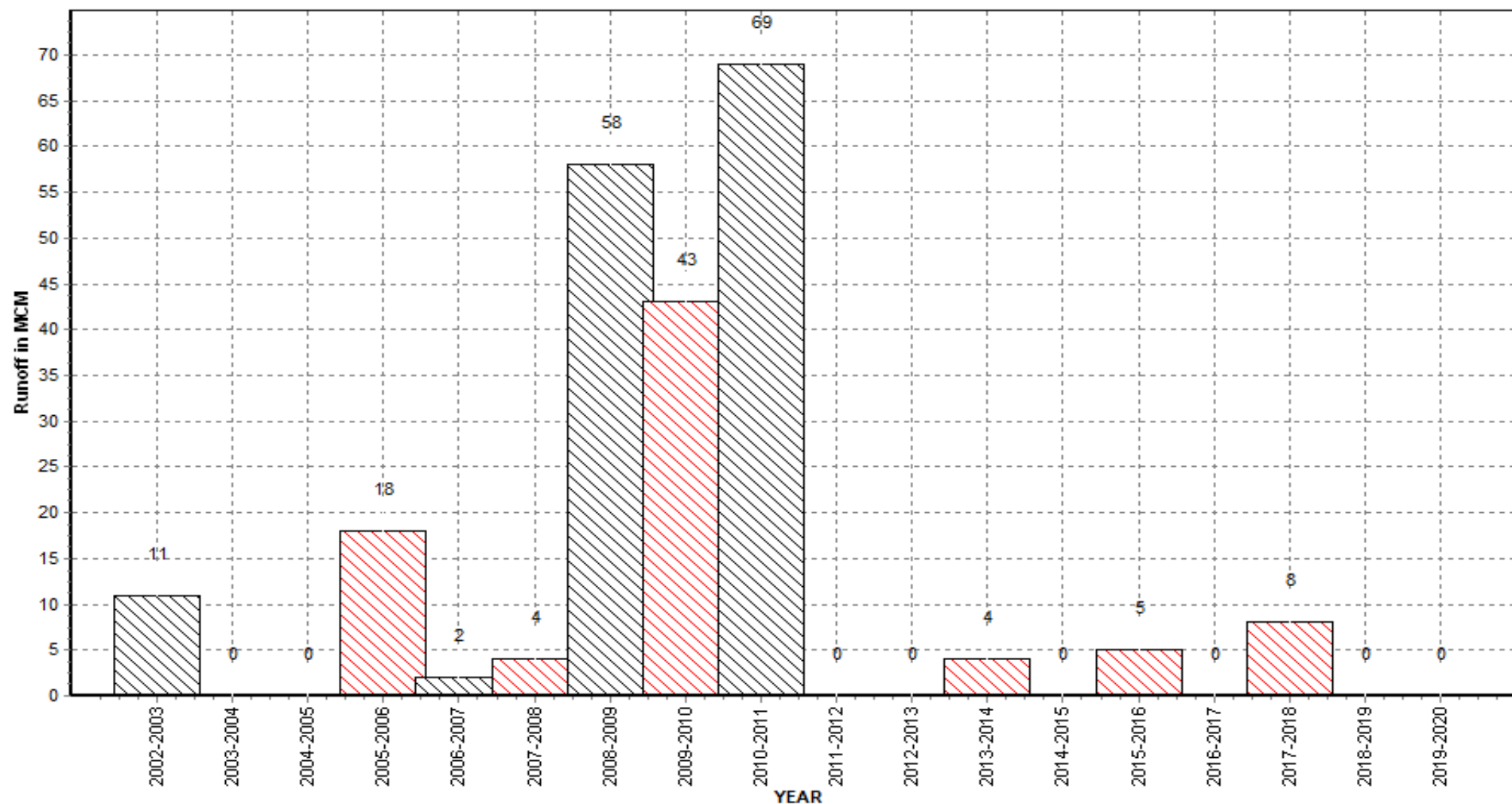
Annual Runoff Values for the period: 2002 - 2020

Station Name : HOOVINAHOLE (HOOVINAHOLE)

Local River : Suvarnamukhi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

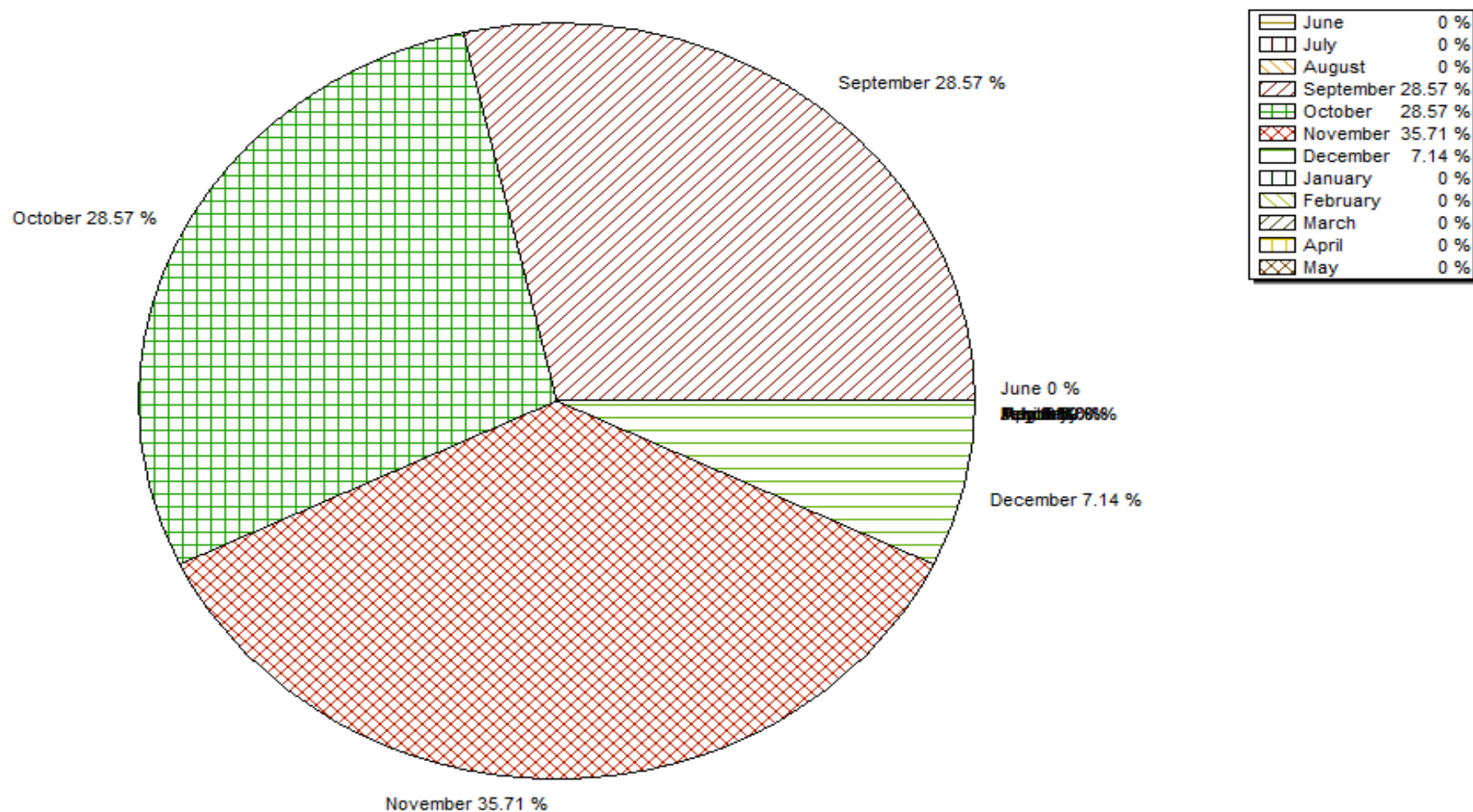
Monthly Average Runoff based on period : 2002-2019

Station Name : HOOVINAHOLE (HOOVINAHOLE)

Local River : Suvarnamukhi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



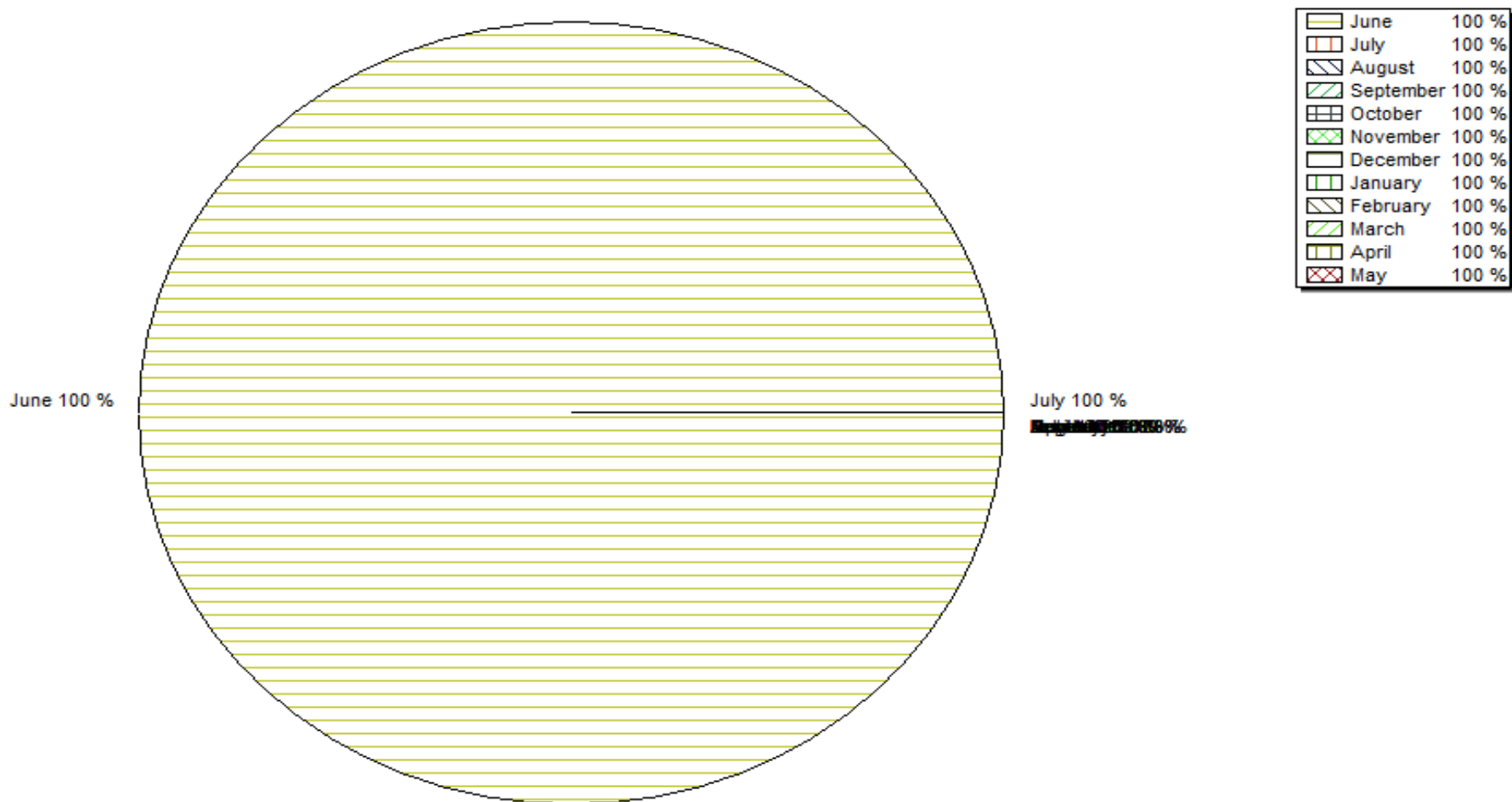
Monthly Runoff for the Year : 2019-2020

Station Name : HOOVINAHOLE (HOOVINAHOLE)

Local River : Suvarnamukhi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



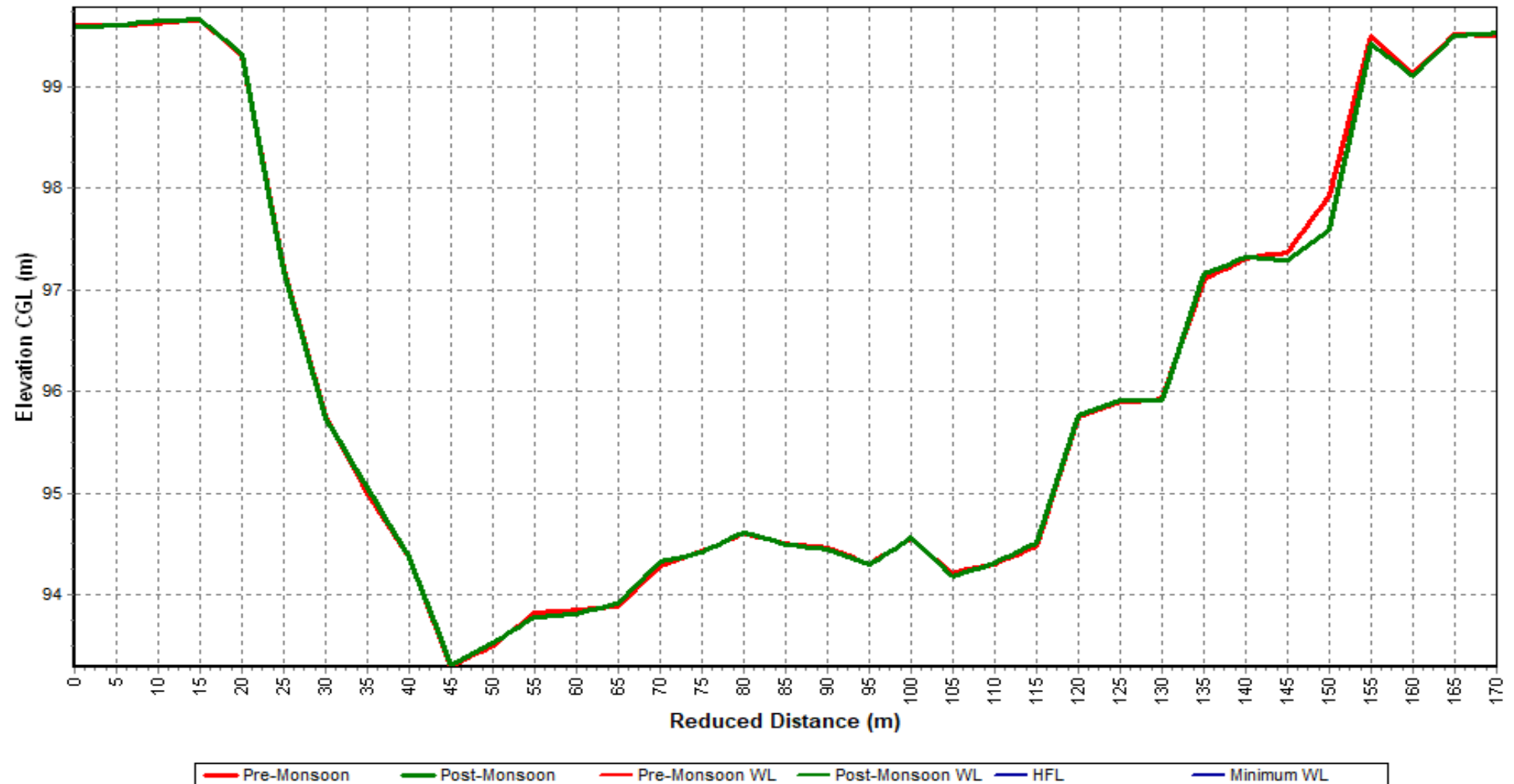
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : HOOVINAHOLE (HOOVINAHOLE)

Local River : Suvarnamukhi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : MAROL

Code : AKLA0C4

State : Karnataka

District : Haveri

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Varada

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere

Drainage Area : 4901 Sq. Km.

Bank : Right

Latitude : 14°56'20"

Longitude : 75°37'05"

Zero of Gauge (m) : 507.551 (m.s.l)
507.551 (m.s.l)11/08/1965
05/02/1965

Opening Date

Closing Date

Gauge : 05/02/1965

Discharge : 01/02/1966

Sediment : 16/09/1972

Water Quality : 01/02/1973

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1966-1967	185.0	511.096	03/12/1966	0.100	508.321	14/05/1967
1967-1968	1000	515.671	05/08/1967	0.110	508.316	04/04/1968
1968-1969	499.0	512.721	22/07/1968	0.000		06/05/1969
1969-1970	895.6	514.379	26/07/1969	0.000	508.306	22/04/1970
1970-1971	1008	514.819	23/08/1970	0.000		10/04/1971
1971-1972	440.0	512.821	07/06/1971	0.000		10/04/1972
1972-1973	869.8	514.844	11/07/1972	0.000		29/03/1973
1973-1974	588.0	513.651	11/07/1973	0.000		28/02/1974
1974-1975	462.0	512.754	08/07/1974	0.000		27/03/1975
1975-1976	1017	514.756	12/07/1975	0.000	508.046	25/05/1976
1976-1977	304.1	511.961	03/08/1976	0.000	507.711	25/03/1977
1977-1978	482.9	512.714	26/07/1977	0.000		14/03/1978
1978-1979	601.6	513.581	27/09/1978	0.000		24/04/1979
1979-1980	799.7	514.379	12/08/1979	0.000		30/03/1980
1980-1981	1525	516.751	05/07/1980	0.000		29/03/1981
1981-1982	588.5	513.291	21/08/1981	0.000		02/03/1982
1982-1983	1430	516.881	06/08/1982	0.000	507.851	10/04/1983
1983-1984	1010	514.871	14/08/1983	0.000		17/04/1984
1984-1985	752.5	513.971	03/07/1984	0.000	508.231	27/02/1985
1985-1986	576.9	513.156	05/08/1985	0.000	508.301	06/02/1986
1986-1987	751.7	513.931	14/08/1986	0.000	508.051	10/02/1987

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1987-1988	305.5	511.531	11/07/1987	0.000	509.551	02/02/1988
1988-1989	1180	515.511	22/07/1988	0.000		24/01/1989
1989-1990	644.9	513.799	27/07/1989	0.000	509.161	25/01/1990
1990-1991	485.0	512.854	20/08/1990	0.000		25/01/1991
1991-1992	1194	514.311	19/07/1991	0.000		28/01/1992
1992-1993	1525	517.459	18/11/1992	0.000	508.111	17/02/1993
1993-1994	640.5	513.406	18/10/1993	0.000		21/02/1994
1994-1995	1320	516.861	17/07/1994	0.000	510.051	01/02/1995
1995-1996	476.0	512.581	23/07/1995	0.000	509.001	26/01/1996
1996-1997	377.8	512.156	30/07/1996	0.000	509.991	25/01/1997
1997-1998	1191	515.861	09/08/1997	0.000	508.621	10/02/1998
1998-1999	475.0	512.971	06/07/1998	0.000	509.413	01/02/1999
1999-2000	1107	516.521	25/07/1999	0.000		29/01/2000
2000-2001	807.5	514.821	16/07/2000	0.000	510.261	25/01/2001
2001-2002	249.1	511.486	11/07/2001	0.000		25/01/2002
2002-2003	380.9	512.306	13/08/2002	0.000		25/01/2003
2003-2004	315.1	511.841	06/10/2003	0.000		26/01/2004
2004-2005	605.0	513.521	07/08/2004	0.000		25/01/2005
2005-2006	919.6	515.361	29/07/2005	0.000		25/01/2006
2006-2007	780.4	514.491	14/08/2006	0.000	508.901	25/01/2007
2007-2008	1540	517.451	09/08/2007	0.000	508.061	04/04/2008
2008-2009	1317	516.471	15/08/2008	0.000	509.051	25/01/2009
2009-2010	1076	515.591	19/07/2009	0.000	510.011	25/01/2010
2010-2011	677.5	513.951	05/10/2010	0.000		03/05/2011
2011-2012	700.4	514.031	05/09/2011	0.000	508.161	24/01/2012
2012-2013	571.6	513.316	10/08/2012	0.000	509.771	02/12/2012
2013-2014	915.6	515.141	05/08/2013	0.000		29/04/2014
2014-2015	1121	515.871	04/08/2014	0.000	510.821	26/12/2014
2015-2016	260.2	511.301	27/06/2015	0.000		22/05/2016
2016-2017	241.8	511.151	07/07/2016	0.000	508.381	16/09/2016
2017-2018	381.2	511.681	23/07/2017	0.000	509.071	04/12/2017
2018-2019	1025	514.701	16/08/2018	0.000		25/01/2019

Annual Runoff of Varada at Marol

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1966-1967	97	139	236	3	5	8
2	1967-1968	1767	40	1807	62	1	64
3	1968-1969	1390	17	1407	49	1	50
4	1969-1970	2234	53	2287	79	2	81
5	1970-1971	2800	38	2838	99	1	100
6	1971-1972	1393	31	1425	49	1	50
7	1972-1973	1258	11	1268	44	0	45
8	1973-1974	1591	13	1604	56	0	57
9	1974-1975	1604	29	1633	57	1	58
10	1975-1976	2497	46	2544	88	2	90
11	1976-1977	842	74	916	30	3	32
12	1977-1978	1321	62	1383	47	2	49
13	1978-1979	2491	26	2518	88	1	89
14	1979-1980	1446	52	1497	51	2	53
15	1980-1981	3345	25	3370	118	1	119
16	1981-1982	1835	17	1853	65	1	65
17	1982-1983	2860	16	2876	101	1	102
18	1983-1984	2396	13	2409	85	0	85
19	1984-1985	2162	8	2169	76	0	77
20	1985-1986	1320	2	1322	47	0	47
21	1986-1987	1498	3	1502	53	0	53
22	1987-1988	812	8	820	29	0	29
23	1988-1989	1908	0	1908	67	0	67
24	1989-1990	1251	0	1251	44	0	44
25	1990-1991	1822	0	1822	64	0	64
26	1991-1992	3253	1	3255	115	0	115
27	1992-1993	3406	87	3494	120	3	123
28	1993-1994	1902	99	2000	67	3	71
29	1994-1995	3428	4	3432	121	0	121
30	1995-1996	1225	0	1225	43	0	43
31	1996-1997	1045	0	1045	37	0	37
32	1997-1998	2517	48	2565	89	2	91
33	1998-1999	1835	2	1837	65	0	65
34	1999-2000	2120	0	2120	75	0	75
35	2000-2001	2017	0	2017	71	0	71
36	2001-2002	803	0	803	28	0	28
37	2002-2003	805	0	805	28	0	28
38	2003-2004	847	0	847	30	0	30
39	2004-2005	1394	0	1394	49	0	49
40	2005-2006	2325	0	2325	82	0	82
41	2006-2007	2541	0	2541	90	0	90
42	2007-2008	3420	0	3420	121	0	121
43	2008-2009	1901	0	1901	67	0	67
44	2009-2010	2325	0	2325	82	0	82
45	2010-2011	2025	41	2065	72	1	73
46	2011-2012	2528	40	2568	89	1	91
47	2012-2013	1344	0	1344	47	0	47
48	2013-2014	2622	0	2622	93	0	93
49	2014-2015	2727	0	2727	96	0	96
50	2015-2016	528	0	528	19	0	19
51	2016-2017	360	0	360	13	0	13
52	2017-2018	688	0	688	24	0	24
53	2018-2019	1585	0	1585	56	0	56
54	2019-2020	3234	0	3234	114	0	114
Average		1865	19	1884	66	1	67
75% Dependable flow (MCM)				1309			
90 % Dependable flow (MCM)				804			

Stage-Discharge Data for the period 2019 - 2020

Station Name : MAROL (AKLA0C4)

Division : Cauvery Division, Bangalore

Local River : Varada

Sub-Division : Upper Tunga Subdn, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000	511.631	308.5	509.821	90.75 *	509.331	50.61	510.101	118.4
2		0.000		0.000	511.661	312.2	510.501	158.8 *	509.321	50.53 *	510.081	116.2
3		0.000		0.000	511.421	278.5	510.751	188.0	509.291	47.53	509.971	104.5 *
4		0.000		0.000	511.251	249.7 *	511.011	219.9	509.451	60.64	509.761	86.46
5		0.000		0.000	511.581	301.4	511.451	288.9	510.201	128.0	509.551	68.58
6		0.000		0.000	512.331	406.2	512.321	405.1	509.911	98.91 *	509.481	63.25
7		0.000	509.291	48.41 *	513.761	658.0	513.261	559.5	512.551	442.1 *	509.691	80.62
8		0.000	509.571	71.15	515.371	983.0	513.571	620.8 *	511.111	231.6 *	509.741	84.37
9		0.000	510.441	153.0	516.731	1311 *	513.521	611.0	510.471	154.0	509.661	77.82
10		0.000	510.281	136.6	517.961	1629 *	513.301	571.2 *	511.181	243.1	509.421	87.84 *
11		0.000	510.491	158.1	518.071	1659 *	513.001	509.9	510.691	180.3	509.341	52.44
12		0.000	511.101	233.8	517.711	1562 *	512.481	427.8	510.291	135.9	509.181	40.93 *
13		0.000	511.201	247.9	517.311	1458 *	511.961	353.1	509.871	95.25 *	509.091	32.22
14		0.000	511.031	221.4 *	516.771	1320 *	511.551	297.1	509.801	89.57	509.051	29.51
15		0.000	510.831	198.5	515.891	1108 *	511.141	235.4 *	510.051	112.0	508.991	24.75
16		0.000	510.391	147.9	514.781	864.9	510.771	190.1	510.291	135.9	508.951	22.40
17		0.000	510.201	125.9	513.901	689.5	510.491	158.1	510.151	121.9	508.901	24.18 *
18		0.000	510.271	135.0	513.301	571.2 *	510.351	143.4	509.951	102.4	508.861	18.60
19		0.000	509.711	82.29	512.621	446.6	510.251	133.0	510.041	111.1	508.791	15.60
20		0.000	509.571	71.15	512.141	379.0	510.121	119.5	510.431	151.2 *	508.671	11.20
21		0.000	509.401	56.35 *	511.711	319.2	510.041	111.5	512.711	460.0	508.591	8.103
22		0.000	509.561	70.20	511.241	252.8	509.941	101.7 *	515.031	909.2	508.351	4.502
23		0.000	509.571	71.15	510.621	173.7	509.641	75.63	514.611	826.7	508.201	0.000
24		0.000	509.651	77.55	510.231	132.1	509.531	66.39	513.651	633.0	508.321	0.000
25		0.000	509.991	106.5	510.121	119.0 #	509.401	56.49	512.301	402.8	508.491	0.000
26		0.000	510.321	139.7	510.221	130.5	509.461	60.79	511.891	344.0	508.491	0.000
27		0.000	510.601	170.5	510.241	132.9	509.551	68.58	511.831	330.4 *	508.631	0.000
28		0.000	510.761	188.5 *	510.031	110.4	509.521	65.67	511.901	345.9	508.761	0.000
29		0.000	510.891	205.2 *	509.801	89.57 *	509.491	63.19 *	511.271	257.7	508.831	0.000
30		0.000	510.781	192.4 *	509.681	79.57	509.411	57.41	510.721	184.6	508.911	0.000
31			511.191	245.2 *	509.611	73.84 *			510.421	150.9		
Ten-Daily Mean												
I Ten-Daily		0.000	509.896	40.92	513.370	643.8	511.951	371.4	510.282	150.7	509.746	88.80
II Ten-Daily		0.000	510.480	162.2	515.250	1006	511.212	256.7	510.157	123.6	508.983	27.18
III Ten-Daily		0.000	510.247	138.5	510.319	146.7	509.599	72.74	512.395	440.5	508.558	1.261
Monthly												
Min.		0.000	509.291	0.000	509.611	73.84	509.401	56.49	509.291	47.53	508.201	0.000
Max.		0.000	511.201	247.9	518.071	1659	513.571	620.8	515.031	909.2	510.101	118.4
Mean		0	510.284	114.7	512.894	584.2	510.921	233.6	510.991	244.8	509.096	39.08

Annual Runoff in MCM = 3234 Annual Runoff in mm = 660

Peak Observed Discharge = 983.0 cumecs on 08/08/2019 Corres. Water Level :515.371 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : MAROL (AKLA0C4)

Division : Cauvery Division, Bangalore

Local River : Varada

Sub-Division : Upper Tunga Subdn, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	509.001	0.000	508.201	0.000		0.000		0.000		0.000		0.000
2	509.081	0.000	508.181	0.000		0.000		0.000		0.000		0.000
3	509.141	0.000	508.151	0.000		0.000		0.000		0.000		0.000
4	509.261	0.000	508.101	0.000		0.000		0.000		0.000		0.000
5	509.211	0.000	508.041	0.000		0.000		0.000		0.000		0.000
6	509.211	0.000	507.971	0.000		0.000		0.000		0.000		0.000
7	509.201	0.000	507.891	0.000		0.000		0.000		0.000		0.000
8	509.201	0.000	507.751	0.000		0.000		0.000		0.000		0.000
9	509.191	0.000	507.621	0.000		0.000		0.000		0.000		0.000
10	509.181	0.000	507.551	0.000		0.000		0.000		0.000		0.000
11	509.161	0.000		0.000		0.000		0.000		0.000		0.000
12	509.151	0.000		0.000		0.000		0.000		0.000		0.000
13	509.111	0.000		0.000		0.000		0.000		0.000		0.000
14	509.061	0.000		0.000		0.000		0.000		0.000		0.000
15	509.031	0.000		0.000		0.000		0.000		0.000		0.000
16	508.991	0.000		0.000		0.000		0.000		0.000		0.000
17	508.951	0.000		0.000		0.000		0.000		0.000		0.000
18	508.911	0.000		0.000		0.000		0.000		0.000		0.000
19	508.861	0.000		0.000		0.000		0.000		0.000		0.000
20	508.811	0.000		0.000		0.000		0.000		0.000		0.000
21	508.761	0.000		0.000		0.000		0.000		0.000		0.000
22	508.721	0.000		0.000		0.000		0.000		0.000		0.000
23	508.661	0.000		0.000		0.000		0.000		0.000		0.000
24	508.611	0.000		0.000		0.000		0.000		0.000		0.000
25	508.551	0.000		0.000		0.000		0.000		0.000		0.000
26	508.521	0.000		0.000		0.000		0.000		0.000		0.000
27	508.481	0.000		0.000		0.000		0.000		0.000		0.000
28	508.421	0.000		0.000		0.000		0.000		0.000		0.000
29	508.361	0.000		0.000		0.000		0.000		0.000		0.000
30	508.301	0.000		0.000				0.000		0.000		0.000
31	508.251	0.000		0.000				0.000				0.000
Ten-Daily Mean												
I Ten-Daily	509.168	0.000	507.946	0.000		0.000		0.000		0.000		0.000
II Ten-Daily	509.004	0.000		0.000		0.000		0.000		0.000		0.000
III Ten-Daily	508.513	0.000		0.000		0.000		0.000		0.000		0.000
Monthly												
Min.	508.251	0.000	507.551	0.000		0.000		0.000		0.000		0.000
Max.	509.261	0.000	508.201	0.000		0.000		0.000		0.000		0.000
Mean	508.883	0	507.946	0		0		0		0		0

Peak Computed Discharge = 1659 cumecs on 11/08/2019

Corres. Water Level :518.071 m

Lowest Computed Discharge = 24.18 cumecs on 17/11/2019

Corres. Water Level :508.901 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

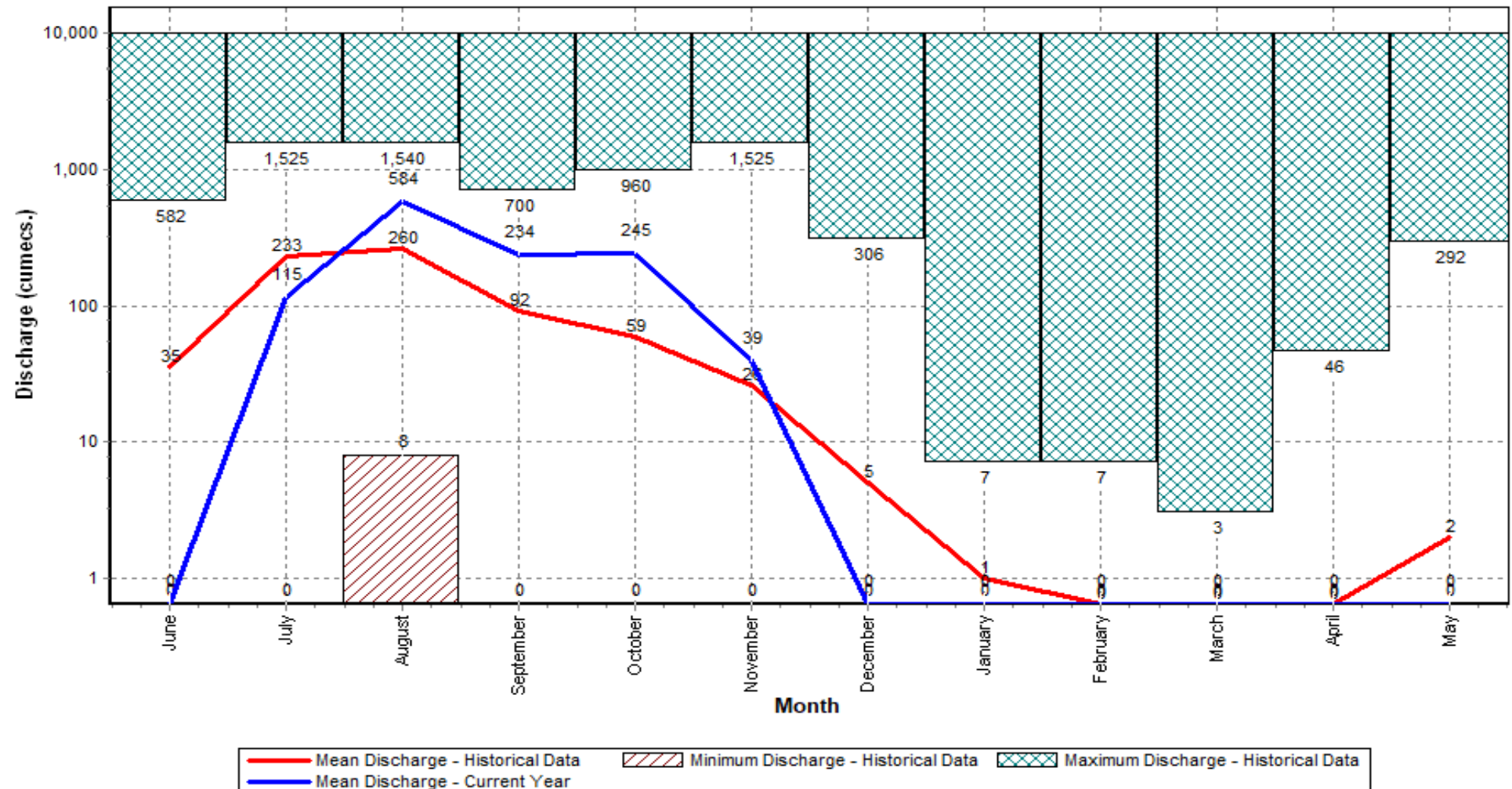
Station Name : MAROL (AKLA0C4)

Data considered : 1966-2020

Division : Cauvery Division, Bangalore

Local River : Varada

Sub-Division : Upper Tunga Subdn, Devangere



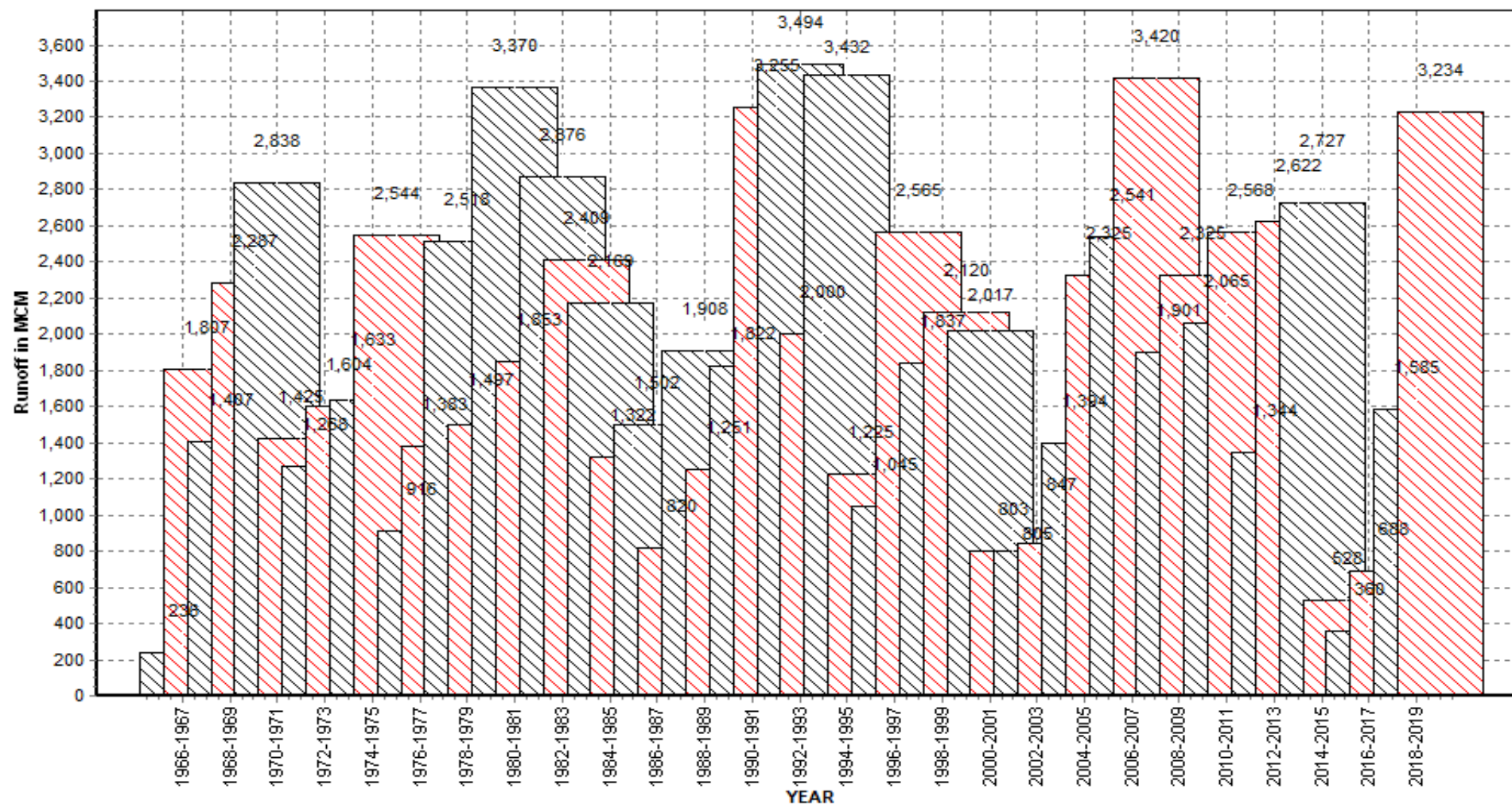
Annual Runoff Values for the period: 1966 - 2020

Station Name : MAROL (AKLA0C4)

Local River : Varada

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

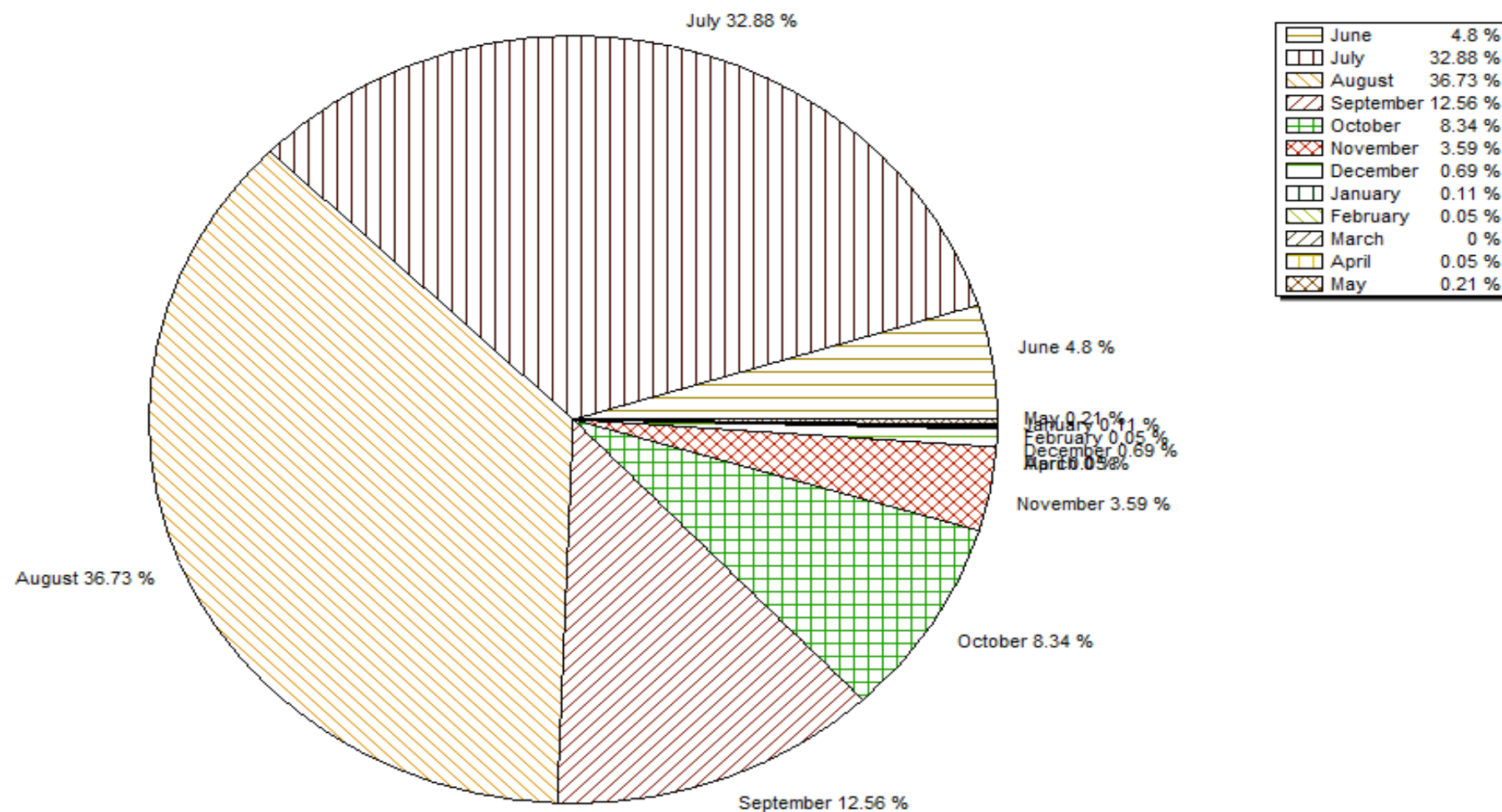
Monthly Average Runoff based on period : 1966-2019

Station Name : MAROL (AKLA0C4)

Local River : Varada

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



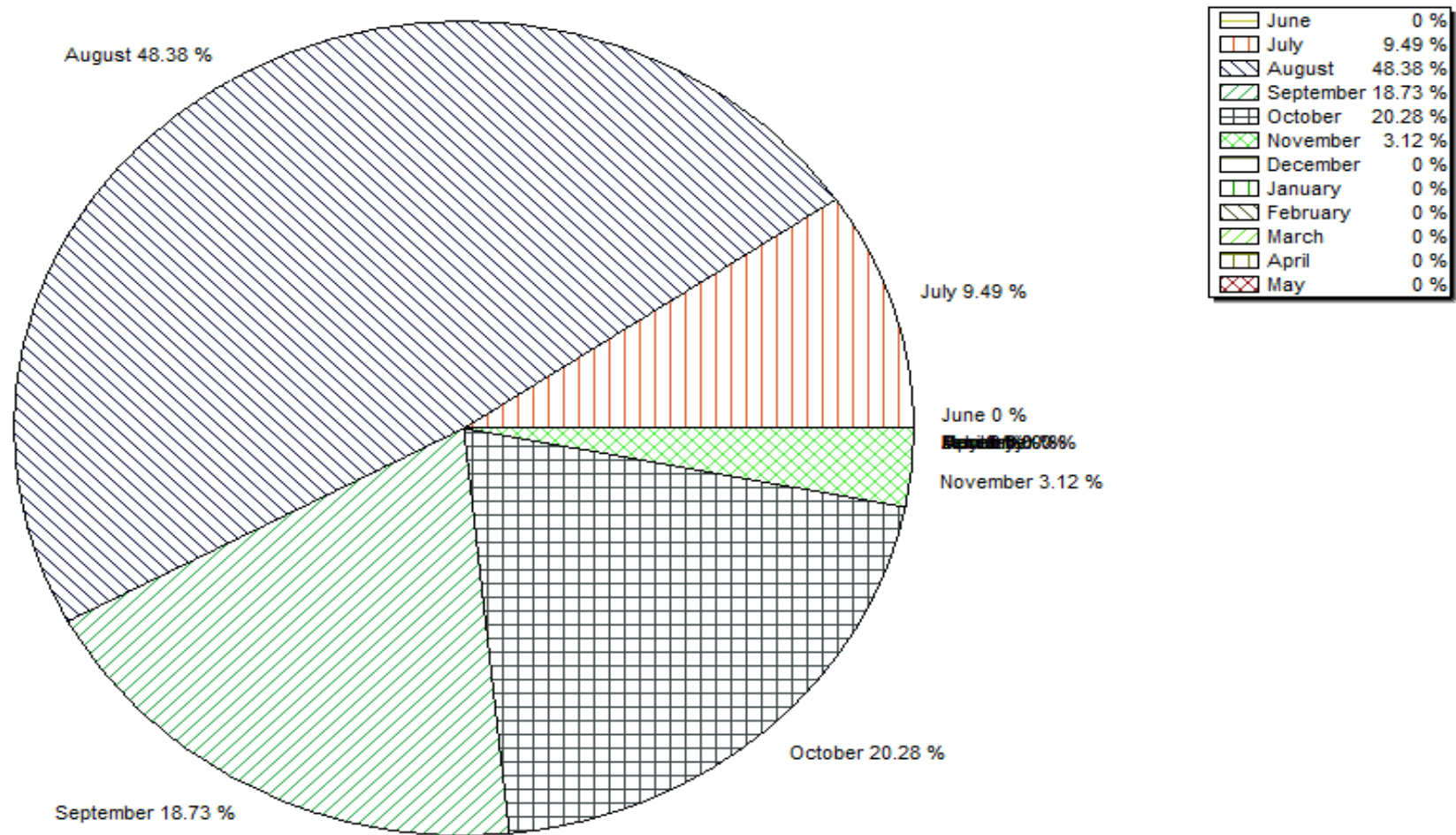
Monthly Runoff for the Year : 2019-2020

Station Name : MAROL (AKLA0C4)

Local River : Varada

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



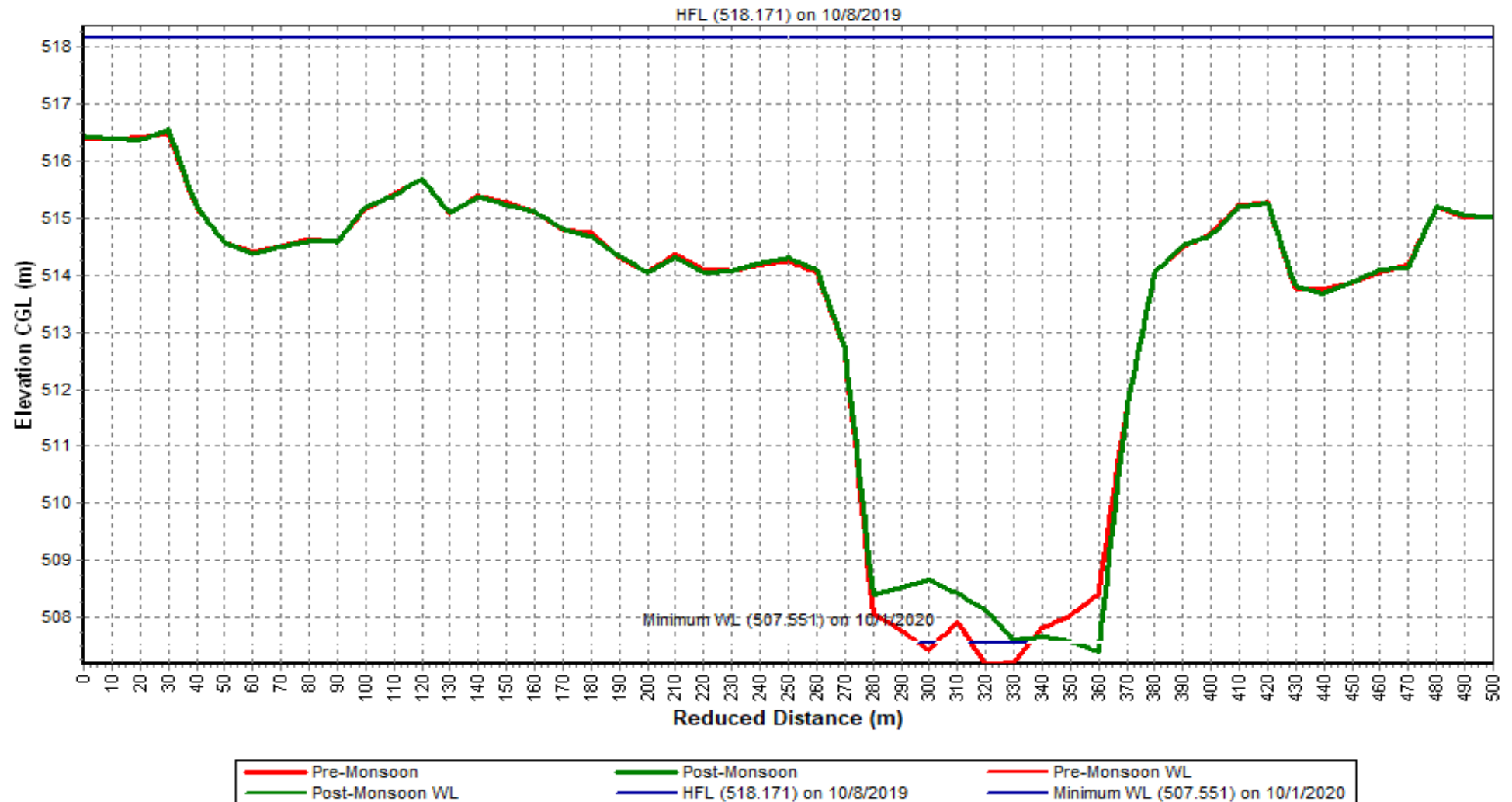
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : MAROL (AKLA0C4)

Local River : Varada

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



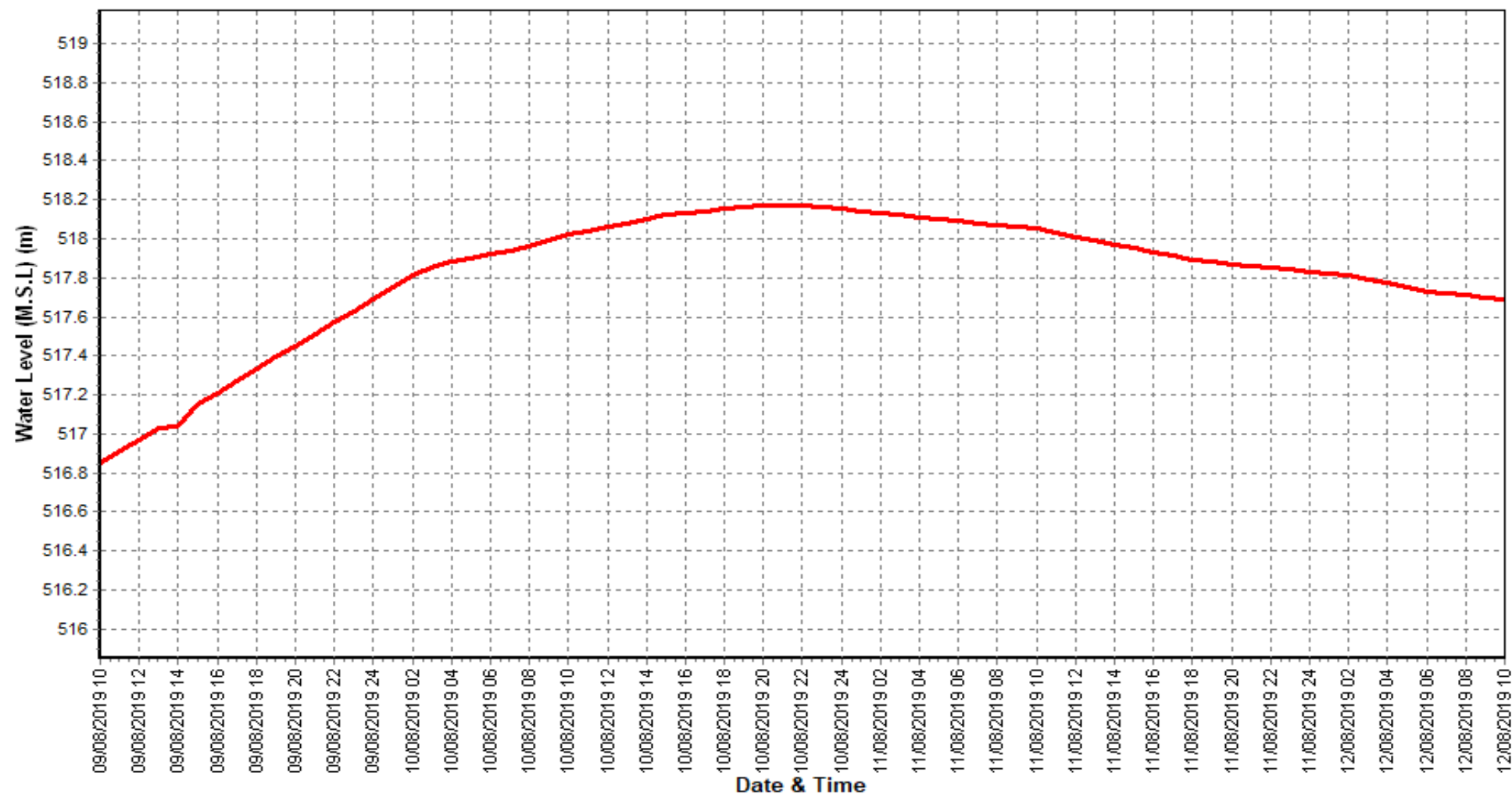
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : MAROL (AKLA0C4)

Local River : Varada

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



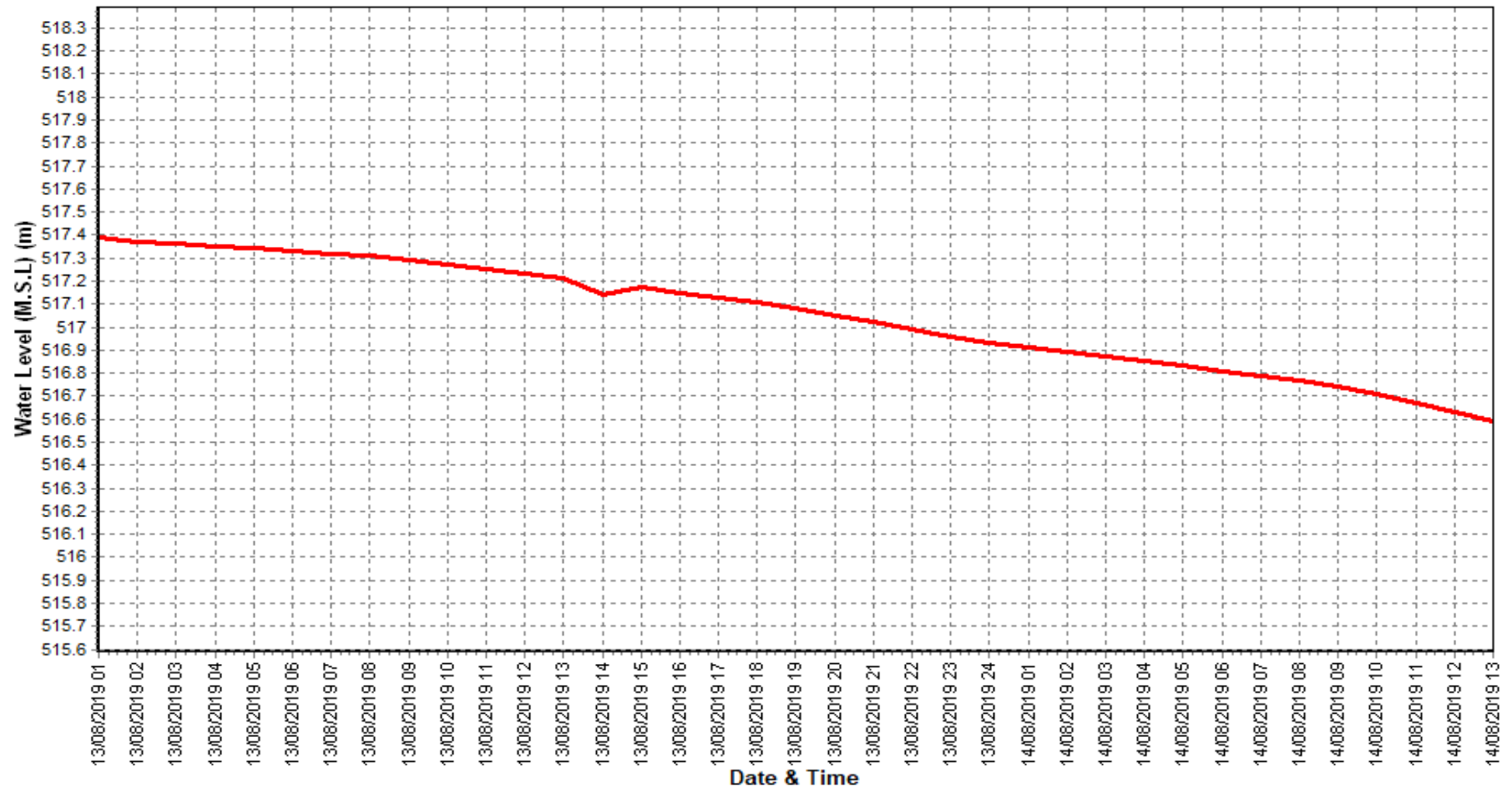
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : MAROL (AKLA0C4)

Local River : Varada

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



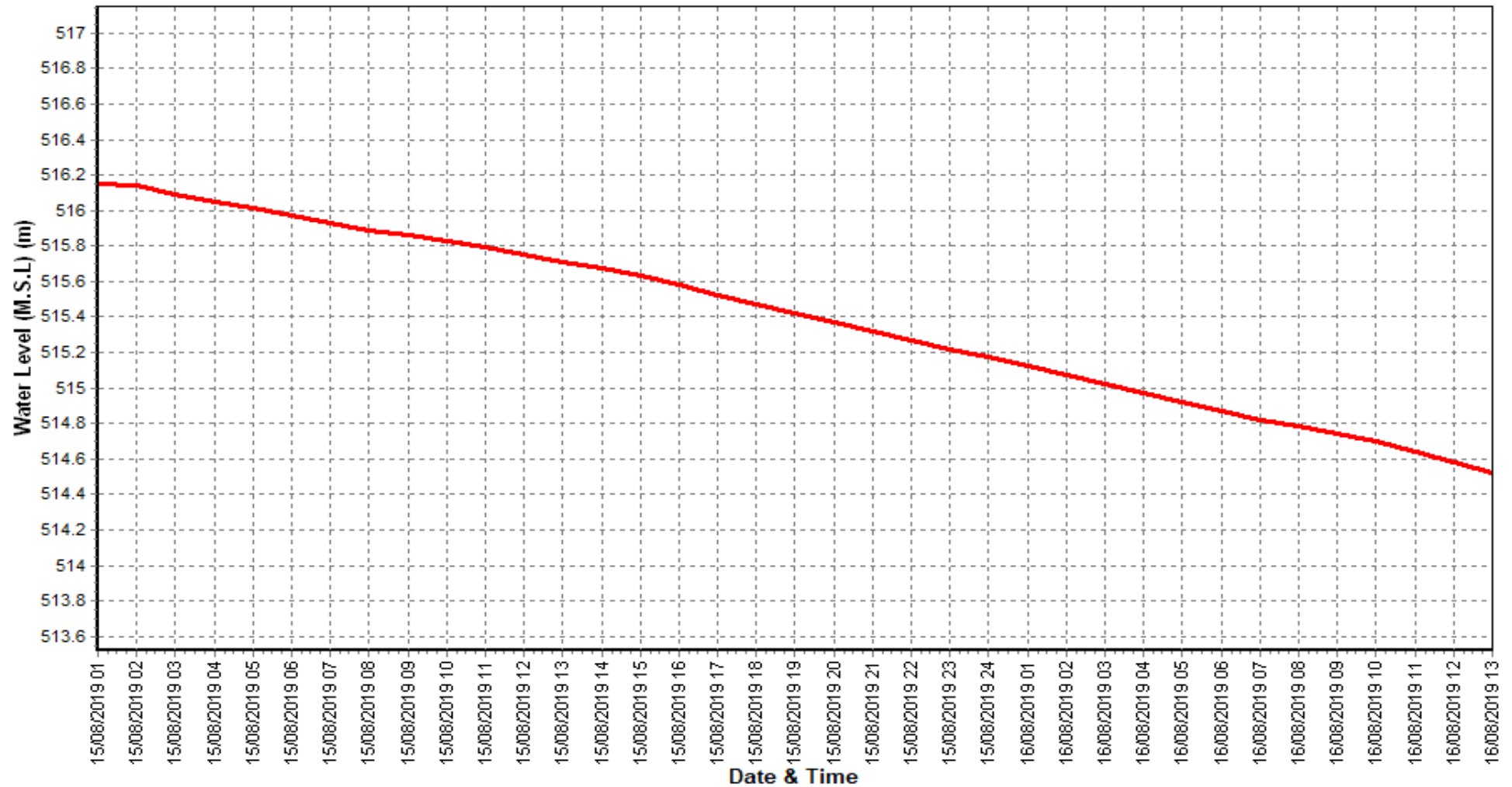
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : MAROL (AKLA0C4)

Local River : Varada

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : HARALAHALLI

Code : AKL00S8

State : Karnataka

District : Haveri

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere

Drainage Area : 14582 Sq. Km.

Bank : Left

Latitude : 14°49'50"

Longitude : 75°40'28"

Zero of Gauge (m) : 507.436 (m.s.l)
507.436 (m.s.l)11/08/1965
28/03/1964

Opening Date

Closing Date

Gauge : 11/08/1965

Discharge : 13/12/1966

Sediment : 01/11/1972

Water Quality : 01/11/1972

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1967-1968	2550	514.701	29/07/1967	15.40	507.911	09/06/1967
1968-1969	1809	513.608	21/07/1968	21.40	507.981	19/06/1968
1969-1970	3788	515.066	24/07/1969	25.30	508.091	18/02/1970
1970-1971	2745	514.238	24/08/1970	31.70	508.146	01/04/1971
1971-1972	2550	514.176	22/07/1971	26.60	508.131	30/04/1972
1972-1973	2226	513.746	09/07/1972	5.400	507.821	13/04/1973
1973-1974	2419	514.136	10/07/1973	15.30	507.971	27/02/1974
1974-1975	2189	513.596	27/07/1974	15.00	508.071	23/06/1974
1975-1976	2902	514.546	12/07/1975	22.60	508.121	10/05/1976
1976-1977	1758	512.996	24/07/1976	3.100	507.751	22/04/1977
1977-1978	1741	513.014	26/07/1977	10.90	507.919	13/06/1977
1978-1979	2805	514.651	19/08/1978	16.10	507.951	06/04/1979
1979-1980	2033	514.015	04/08/1979	15.30	507.959	17/01/1980
1980-1981	3066	515.454	04/07/1980	14.10	507.966	23/04/1981
1981-1982	2578	514.454	20/08/1981	11.70	507.901	16/03/1982
1982-1983	4559	516.426	04/08/1982	8.500	507.816	11/04/1983
1983-1984	2617	514.537	24/07/1983	9.700	507.886	07/03/1984
1984-1985	2595	514.664	20/07/1984	7.600	507.861	11/05/1985
1985-1986	1902	513.506	28/06/1985	0.400	507.661	03/04/1986
1986-1987	2498	514.431	11/08/1986	2.300	507.656	20/04/1987
1987-1988	1076	511.949	28/08/1987	0.000	507.466	13/04/1988

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1988-1989	2743	514.496	20/07/1988	0.000	507.466	16/04/1989
1989-1990	2974	514.621	26/07/1989	2.000	507.721	15/04/1990
1990-1991	2314	513.936	19/08/1990	7.000	507.836	31/03/1991
1991-1992	3414	515.049	30/07/1991	0.000		26/03/1992
1992-1993	7357	518.109	18/11/1992	3.466	507.796	06/04/1993
1993-1994	1684	513.106	17/08/1993	7.226	507.818	03/06/1993
1994-1995	5840	517.566	17/07/1994	3.500	507.636	13/04/1995
1995-1996	1788	513.306	03/09/1995	2.000	507.586	10/05/1996
1996-1997	1538	512.761	25/07/1996	6.453	507.761	21/04/1997
1997-1998	3388	515.236	09/08/1997	2.500	507.666	22/04/1998
1998-1999	2286	513.891	15/09/1998	3.200	507.586	18/06/1998
1999-2000	2975	514.736	20/07/1999	7.212	507.766	24/03/2000
2000-2001	3036	514.846	15/07/2000	5.106	507.596	31/03/2001
2001-2002	1417	512.396	10/07/2001	0.000	507.076	07/04/2002
2002-2003	1452	512.476	19/08/2002	0.000		15/03/2003
2003-2004	1375	512.276	06/10/2003	0.000	507.186	17/02/2004
2004-2005	2993	514.736	06/08/2004	0.000		09/03/2005
2005-2006	3030	514.806	04/08/2005	0.000		21/01/2006
2006-2007	3516	515.146	14/08/2006	0.000		24/03/2007
2007-2008	5239	517.276	08/08/2007	0.000		10/02/2008
2008-2009	4550	516.676	15/08/2008	0.000	507.286	06/04/2009
2009-2010	3629	515.486	18/07/2009	0.000	507.276	12/04/2010
2010-2011	1741	513.016	31/07/2010	0.000	507.216	22/03/2011
2011-2012	2593	514.051	03/09/2011	0.000	507.376	19/03/2012
2012-2013	2544	513.946	09/08/2012	0.000	507.436	01/04/2013
2013-2014	3728	515.516	04/08/2013	0.000	507.296	02/02/2014
2014-2015	3986	515.376	08/08/2014	0.000	507.336	18/02/2015
2015-2016	1712	512.946	21/07/2015	0.000		17/01/2016
2016-2017	911.6	511.411	06/07/2016	0.000		17/04/2017
2017-2018	1002	511.636	21/07/2017	0.000	0.000	15/01/2018
2018-2019	6048	516.236	16/08/2018	0.000	506.136	21/01/2019

Annual Runoff of Tungabhadra at Harlahalli

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1966-1967		506	506	0	18	0
2	1967-1968	6201	676	6877	219	24	8
3	1968-1969	5968	887	6855	211	31	7
4	1969-1970	7639	895	8534	270	32	10
5	1970-1971	8474	1052	9527	299	37	11
6	1971-1972	6235	1048	7283	220	37	8
7	1972-1973	5018	571	5589	177	20	6
8	1973-1974	6672	608	7280	236	21	8
9	1974-1975	5845	634	6479	207	22	7
10	1975-1976	9790	728	10519	346	26	12
11	1976-1977	4348	425	4773	154	15	5
12	1977-1978	6057	667	6723	214	24	8
13	1978-1979	11516	619	12135	407	22	14
14	1979-1980	5402	723	6126	191	26	7
15	1980-1981	9567	734	10302	338	26	12
16	1981-1982	7062	539	7601	250	19	9
17	1982-1983	6550	446	6996	231	16	8
18	1983-1984	6518	554	7072	230	20	8
19	1984-1985	6576	501	7077	232	18	8
20	1985-1986	5294	262	5557	187	9	7
21	1986-1987	5113	321	5434	181	11	6
22	1987-1988	3582	344	3926	127	12	4
23	1988-1989	4919	377	5297	174	13	6
24	1989-1990	5532	318	5850	195	11	7
25	1990-1991	7141	570	7711	252	20	9
26	1991-1992	8167	381	8548	289	13	10
27	1992-1993	10976	690	11666	388	24	14
28	1993-1994	6746	505	7251	238	18	8
29	1994-1995	11754	426	12180	415	15	15
30	1995-1996	4648	356	5004	164	13	6
31	1996-1997	4885	388	5273	173	14	6
32	1997-1998	7375	480	7855	261	17	9
33	1998-1999	7033	614	7647	249	22	9
34	1999-2000	7902	576	8478	279	20	10
35	2000-2001	7062	710	7772	250	25	9
36	2001-2002	4747	329	5077	168	12	6
37	2002-2003	3583	121	3703	127	4	4
38	2003-2004	3274	95	3369	116	3	4
39	2004-2005	4841	131	4972	171	5	6
40	2005-2006	7208	352	7560	255	12	9
41	2006-2007	6839	340	7179	242	12	9
42	2007-2008	9667	565	10232	342	20	12
43	2008-2009	6269	399	6668	222	14	8
44	2009-2010	7248	576	7824	256	20	9
45	2010-2011	6554	539	7094	232	19	8
46	2011-2012	6034	451	6484	213	16	8

47	2012-2013	3993	160	4153	141	6	5
48	2013-2014	8167	303	8470	289	11	10
49	2014-2015	7025	243	7269	248	9	9
50	2015-2016	2985	79	3063	105	3	4
51	2016-2017	2170	43	2213	77	2	3
52	2017-2018	2323	111	2433	82	4	3
53	2018-2019	7291	54	7345	258	2	9
54	2019-2020	7163	256	7419	253	9	262
Average		6433	468	6782	223	17	13
75% Dependable flow (MCM)				5291			
90 % Dependable flow (MCM)				3536			

Stage-Discharge Data for the period 2019 - 2020

Station Name : HARALAHALLI (AKL00S8)

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga Subdn, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	507.326	0.000	507.476	11.89	509.936	417.3	509.206	228.9 *	509.086	205.1	509.636	328.7
2	507.336	0.000	507.406	0.000	509.476	286.3	509.116	211.6 *	509.316	251.3 *	509.686	341.0
3	507.346	0.000	507.366	0.000	509.256	240.8	509.686	341.0	508.916	175.2	509.346	257.6 *
4	507.346	0.000	507.356	0.000	509.196	231.2 *	510.466	575.5	508.886	169.6	508.996	186.4
5	507.326	0.000	507.336	0.000	509.676	339.3	510.966	752.3	508.876	167.8	508.836	161.5
6	507.316	0.000	508.686	140.2	510.056	454.8	511.986	1195	508.836	162.7 *	508.736	146.0
7	507.336	0.000	509.046	200.8 *	513.096	1865	512.716	1595	509.696	338.2 *	508.746	147.6
8	507.346	0.000	510.046	451.2	514.456	3070	512.446	1493 *	510.306	511.5 *	508.856	165.1
9	507.326	0.000	509.746	359.2	515.236	3879	512.536	1470	509.616	322.9	509.516	289.6
10	507.316	0.000	509.526	296.3	515.906	4918	513.086	1912 *	509.746	359.2	509.196	227.0 *
11	507.306	0.000	509.756	363.2	516.796	5691 *	512.676	1564	509.586	309.5	508.836	161.3
12	507.286	0.000	510.356	545.9	516.506	5306 *	511.216	839.2	509.516	289.6	508.746	148.6 *
13	507.266	0.000	509.446	280.0	515.046	3614	510.326	535.0	509.486	288.3 *	508.506	112.0
14	507.256	0.000	509.176	227.0 *	511.796	1095	510.206	497.6	509.926	412.5	508.456	106.7
15	507.246	0.000	508.806	163.4	511.226	858.2 *	509.736	348.3 *	509.836	385.8	508.296	90.46
16	507.196	0.000	508.646	135.0	511.216	839.2	509.806	379.1	509.336	255.3	508.336	94.60
17	507.166	0.000	508.576	124.4	511.396	907.9	509.636	328.7	508.896	170.8	508.306	90.38 *
18	507.146	0.000	508.466	109.5	510.636	623.6 *	509.756	363.4	508.846	163.0	508.246	85.29
19	507.126	0.000	508.316	94.62	510.576	609.5	509.406	271.7	509.006	188.4	508.166	76.54
20	507.116	0.000	508.356	98.36	510.306	528.7	509.736	356.9	509.736	348.3 *	508.216	81.24
21	507.096	0.000	508.056	55.70 *	509.856	392.4	509.386	266.4	511.126	806.3	508.426	103.7
22	507.076	0.000	509.556	304.7	510.036	447.9	509.276	243.0 *	513.716	2373	508.336	94.60
23	507.056	0.000	509.476	286.2	509.356	260.2	508.946	183.2	512.986	1763	508.206	80.83
24	507.206	0.000	509.716	349.6	509.366	262.4	508.736	146.0	511.856	1126	508.216	80.54 *
25	507.376	0.000	509.516	294.1	509.416	272.7 *	508.996	186.4	511.076	790.2	508.186	79.61
26	507.396	0.000	509.336	255.3	509.626	325.6	509.146	217.1	511.016	772.6	508.246	85.29
27	507.406	0.000	509.156	219.8	509.436	277.1	509.176	223.7	511.036	777.7 *	508.076	67.37
28	507.416	0.000	509.126	216.7 *	509.246	237.6	509.436	277.1	511.326	878.4	507.796	39.53
29	507.506	15.05	509.286	246.6	509.086	205.1	509.236	234.9 *	510.746	667.9	507.906	50.33
30	507.536	16.50 *	509.186	225.4	509.016	190.6	509.306	250.4	509.846	388.6	507.956	55.40
31			509.786	372.8	508.856	165.1			509.516	289.6		
Ten-Daily Mean												
I Ten-Daily	507.332	0.000	508.399	146.0	511.629	1570	511.221	977.4	509.328	266.4	509.155	225.1
II Ten-Daily	507.211	0.000	508.990	214.1	512.550	2007	510.250	548.4	509.417	281.2	508.411	104.7
III Ten-Daily	507.307	3.155	509.291	257.0	509.391	276.1	509.164	222.8	511.295	966.7	508.135	73.72
Monthly												
Min.	507.056	0.000	507.336	0.000	508.856	165.1	508.736	146.0	508.836	162.7	507.796	39.53
Max.	507.536	16.50	510.356	545.9	516.796	5691	513.086	1912	513.716	2373	509.686	341.0
Mean	507.283	1.052	508.906	207.4	511.132	1252	510.212	582.9	510.055	519.6	508.567	134.5

Annual Runoff in MCM = 7419 Annual Runoff in mm = 509

Peak Observed Discharge = 4918 cumecs on 10/08/2019 Corres. Water Level :515.906 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :507.326 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : HARALAHALLI (AKL00S8)

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga Subdn, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	507.986	57.78 *	507.426	0.000	507.276	0.000	506.866	0.000	507.026	0.000	507.336	0.000
2	507.986	58.45	507.416	0.000	507.256	0.000	506.996	0.000	506.986	0.000	507.306	0.000
3	508.096	69.59	507.406	0.000	507.246	0.000	507.256	0.000	506.956	0.000	507.276	0.000
4	508.266	87.11	507.396	0.000	507.236	0.000	507.916	51.85	506.946	0.000	507.386	0.000
5	508.346	95.66	507.386	0.000	507.226	0.000	507.886	48.87	506.916	0.000	507.406	0.000
6	508.306	91.17	507.376	0.000	507.226	0.000	507.736	35.31	508.036	0.000	507.916	51.85
7	508.166	76.54	507.376	0.000	507.206	0.000	507.636	26.59	508.156	0.000	508.196	85.72 *
8	508.166	76.39 *	507.356	0.000	507.196	0.000	507.556	18.21 *	508.106	0.000	508.216	82.00
9	508.086	68.44	507.346	0.000	507.186	0.000	507.356	0.000	508.066	0.000	508.176	77.94
10	507.966	56.41	507.336	0.000	507.176	0.000	507.296	0.000	508.126	0.000	508.146	79.32 *
11	507.926	52.40	507.326	0.000	507.156	0.000	507.246	0.000	508.146	0.000	507.886	48.87
12	507.886	48.25	507.316	0.000	507.146	0.000	507.226	0.000	508.216	0.000	507.816	41.74
13	507.806	40.59	507.306	0.000	507.146	0.000	507.186	0.000	508.226	0.000	507.816	41.74
14	507.796	39.53	507.276	0.000	507.136	0.000	507.136	0.000	508.156	0.000	507.736	35.31
15	507.786	39.25 *	507.276	0.000	507.116	0.000	507.116	0.000	507.886	48.87	507.916	51.85
16	507.766	37.51	507.256	0.000	507.106	0.000	507.096	0.000	507.536	16.25	507.916	51.85
17	507.746	35.82	507.236	0.000	507.096	0.000	507.056	0.000	507.416	0.000	507.856	45.71 *
18	507.726	34.51	507.216	0.000	507.086	0.000	507.016	0.000	507.356	0.000	507.736	35.31
19	507.706	32.84	507.186	0.000	507.076	0.000	506.996	0.000	507.296	0.000	507.916	51.85
20	507.676	30.45	507.166	0.000	507.056	0.000	506.956	0.000	507.256	0.000	507.976	58.15
21	507.656	28.35	507.356	0.000	507.046	0.000	506.896	0.000	507.206	0.000	508.176	77.94
22	507.616	23.03 *	507.536	16.25	507.026	0.000	506.836	0.000	507.176	0.000	508.156	75.89
23	507.606	23.28	507.566	19.36	506.996	0.000	506.806	0.000	507.156	0.000	507.976	58.15
24	507.606	23.28	507.576	20.32	506.976	0.000	506.756	0.000	507.136	0.000	507.896	49.97 *
25	507.566	18.99 *	507.586	21.42	506.966	0.000	506.706	0.000	507.116	0.000	507.756	35.64 *
26	507.506	13.27	507.606	22.20 *	506.946	0.000	506.786	0.000	507.096	0.000	507.636	26.59
27	507.536	16.29	507.606	23.34	506.926	0.000	506.956	0.000	507.486	11.02	507.616	24.49
28	507.576	20.29	507.536	16.25	506.916	0.000	507.006	0.000	507.536	16.25	507.606	23.38
29	507.546	17.45 *	507.346	0.000	506.886	0.000	507.026	0.000	507.416	0.000	507.406	0.000
30	507.506	13.27	507.306	0.000			507.036	0.000	507.356	0.000	507.316	0.000
31	507.496	12.24	507.286	0.000			507.036	0.000			507.266	0.000
Ten-Daily Mean												
I Ten-Daily	508.137	73.75	507.382	0.000	507.223	0.000	507.450	18.08	507.532	0.000	507.736	37.68
II Ten-Daily	507.782	39.12	507.256	0.000	507.112	0.000	507.103	0.000	507.749	6.512	507.857	46.24
III Ten-Daily	507.565	19.07	507.482	12.65	506.965	0.000	506.895	0.000	507.268	2.727	507.710	33.82
Monthly												
Min.	507.496	12.24	507.166	0.000	506.886	0.000	506.706	0.000	506.916	0.000	507.266	0.000
Max.	508.346	95.66	507.606	23.34	507.276	0.000	507.916	51.85	508.226	48.87	508.216	85.72
Mean	507.820	43.18	507.377	4.489	507.105	0	507.141	5.833	507.516	3.08	507.766	39.07

Peak Computed Discharge = 5691 cumecs on 11/08/2019

Corres. Water Level :516.796 m

Lowest Computed Discharge = 16.50 cumecs on 30/06/2019

Corres. Water Level :507.536 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

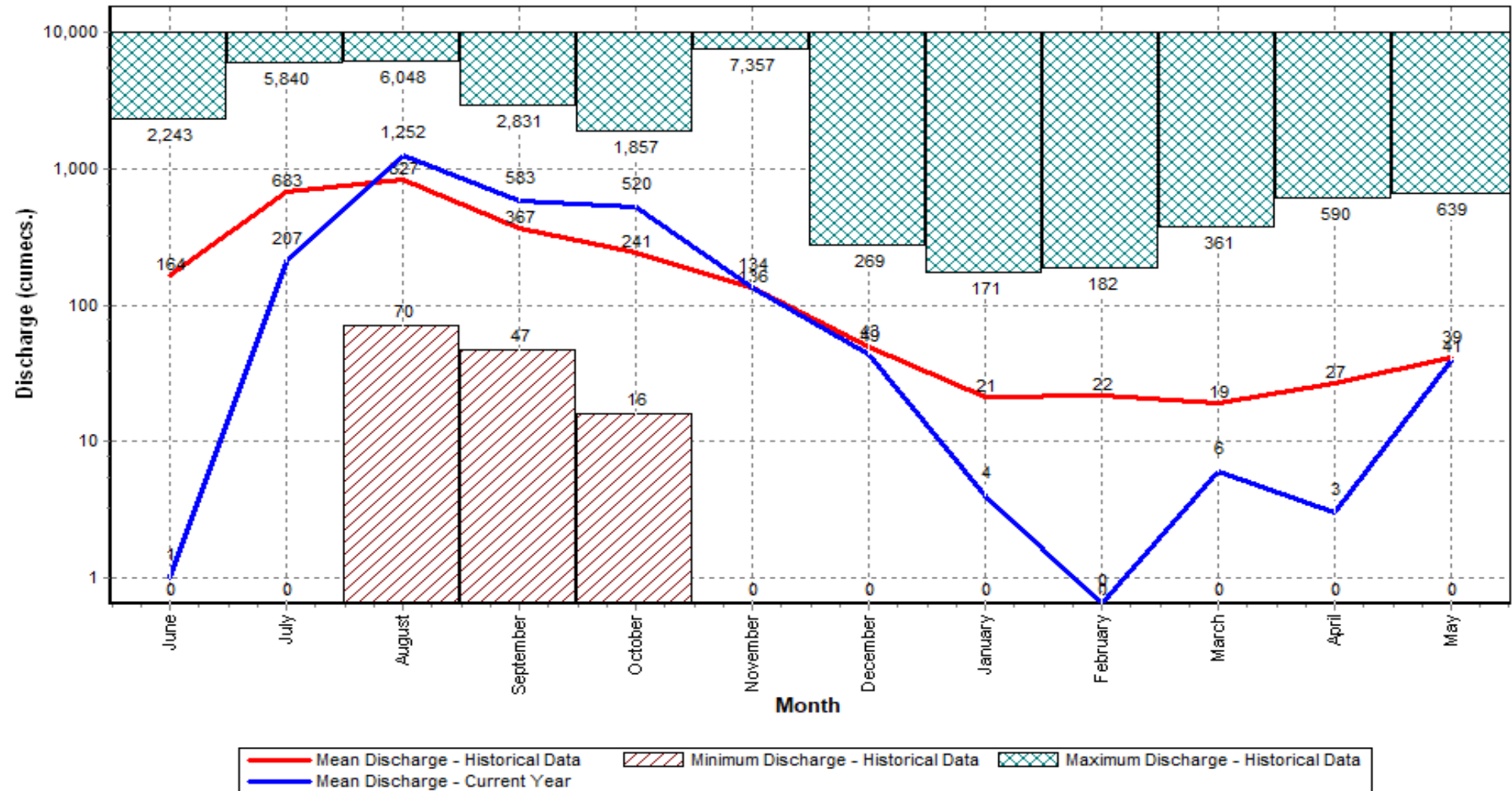
Station Name : HARALAHALLI (AKL00S8)

Data considered : 1967-2020

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga Subdn, Devangere



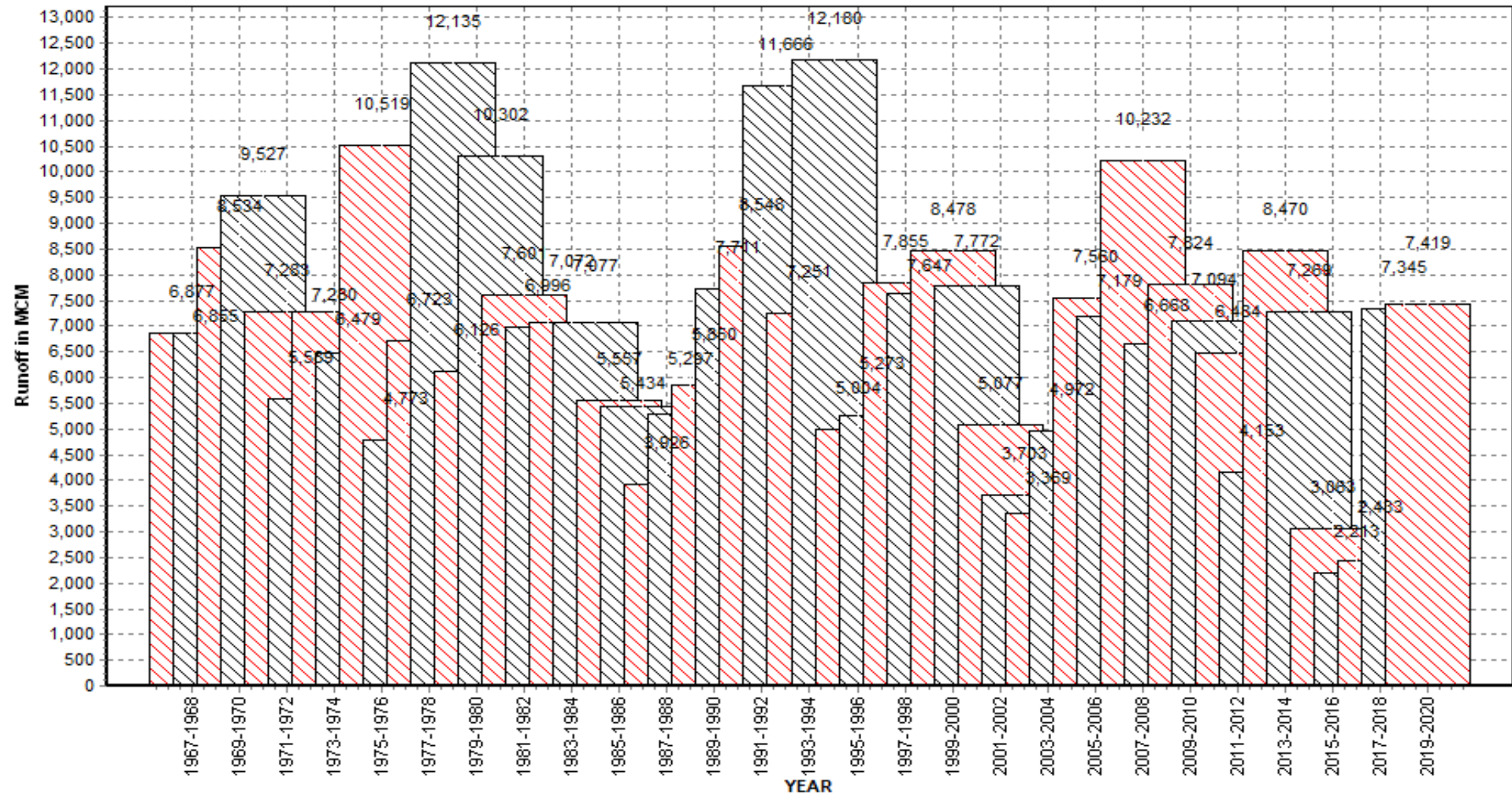
Annual Runoff Values for the period: 1967 - 2020

Station Name : HARALAHALLI (AKL00S8)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

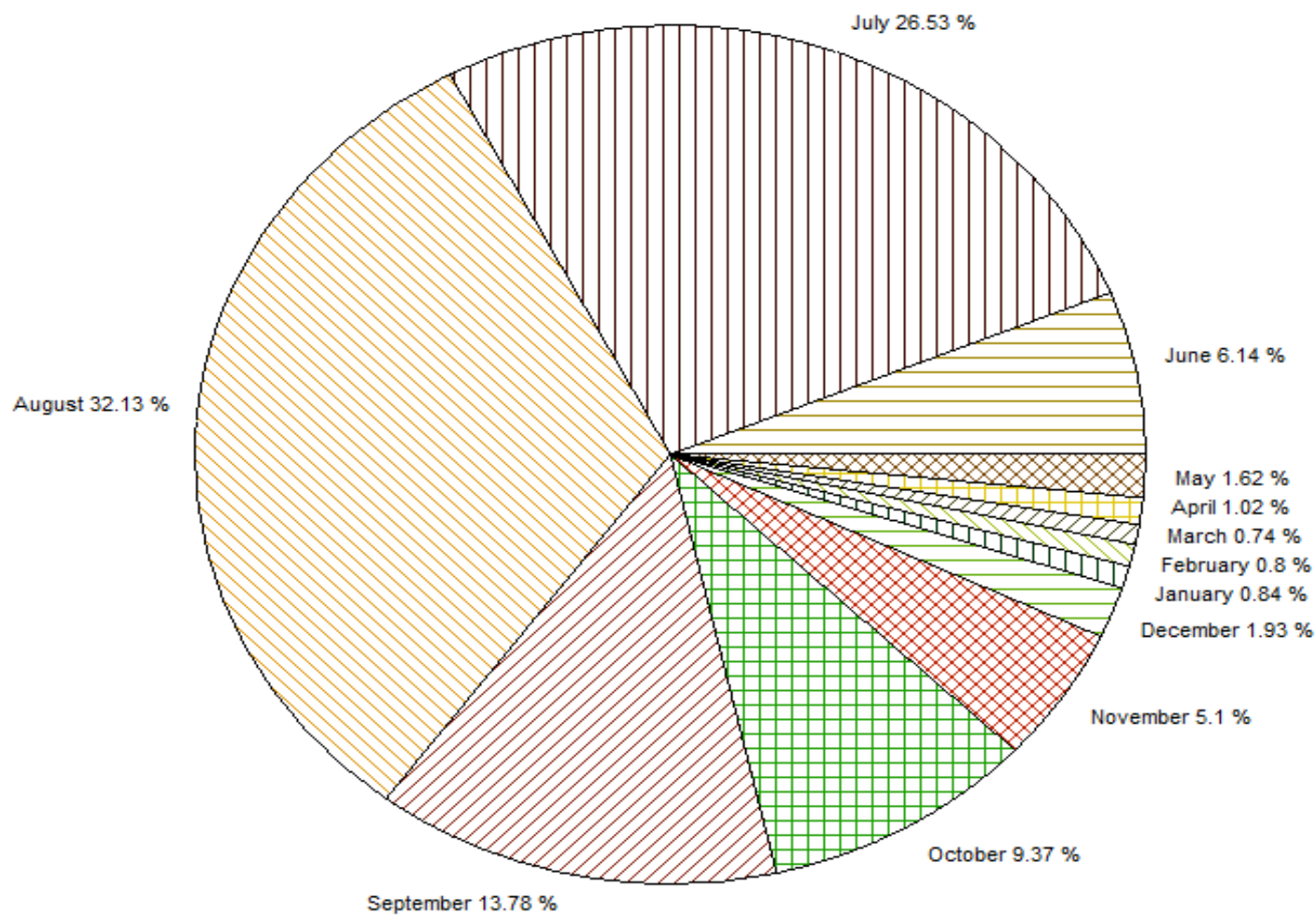
Monthly Average Runoff based on period : 1967-2019

Station Name : HARALAHALLI (AKL00S8)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



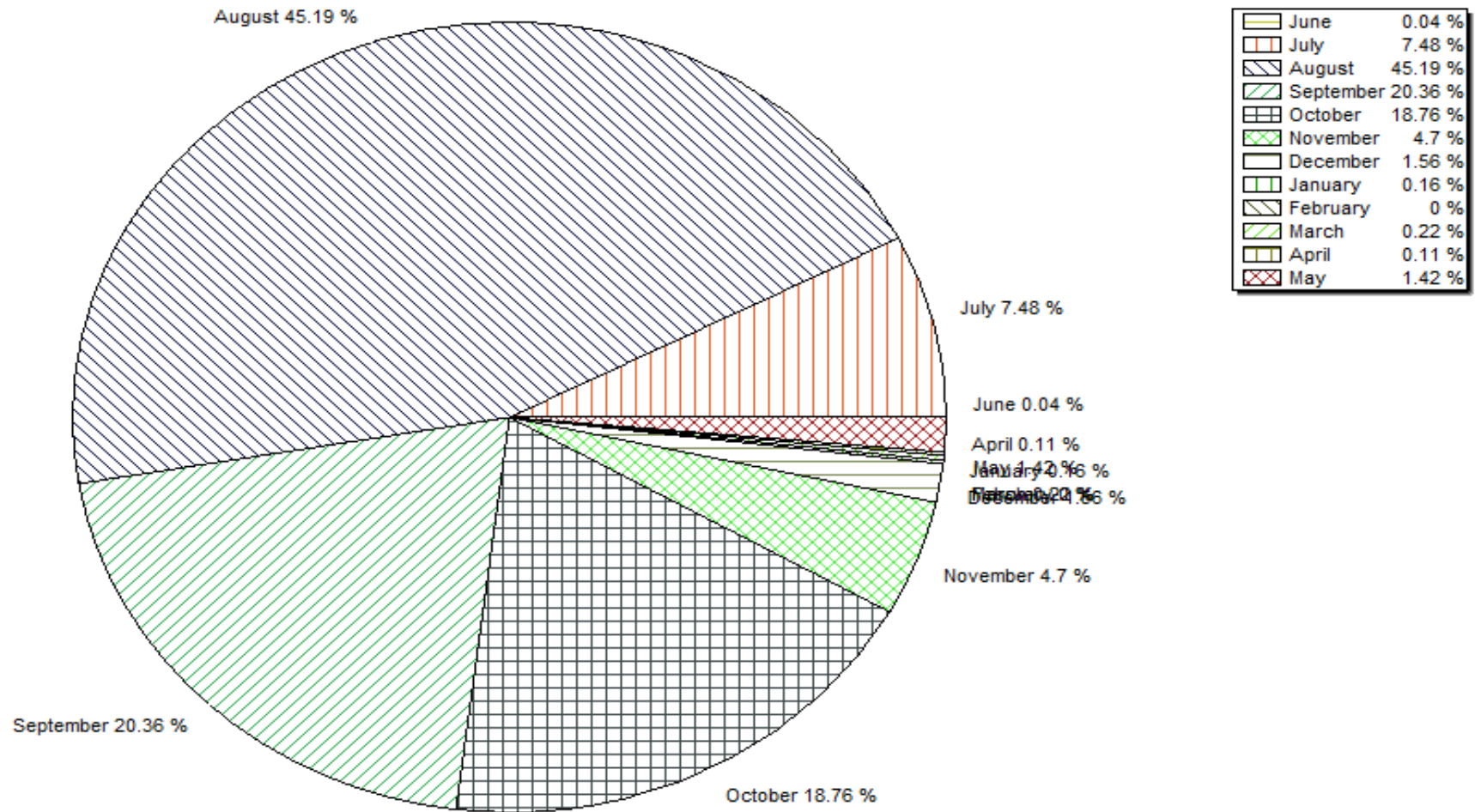
Monthly Runoff for the Year : 2019-2020

Station Name : HARALAHALLI (AKL00S8)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



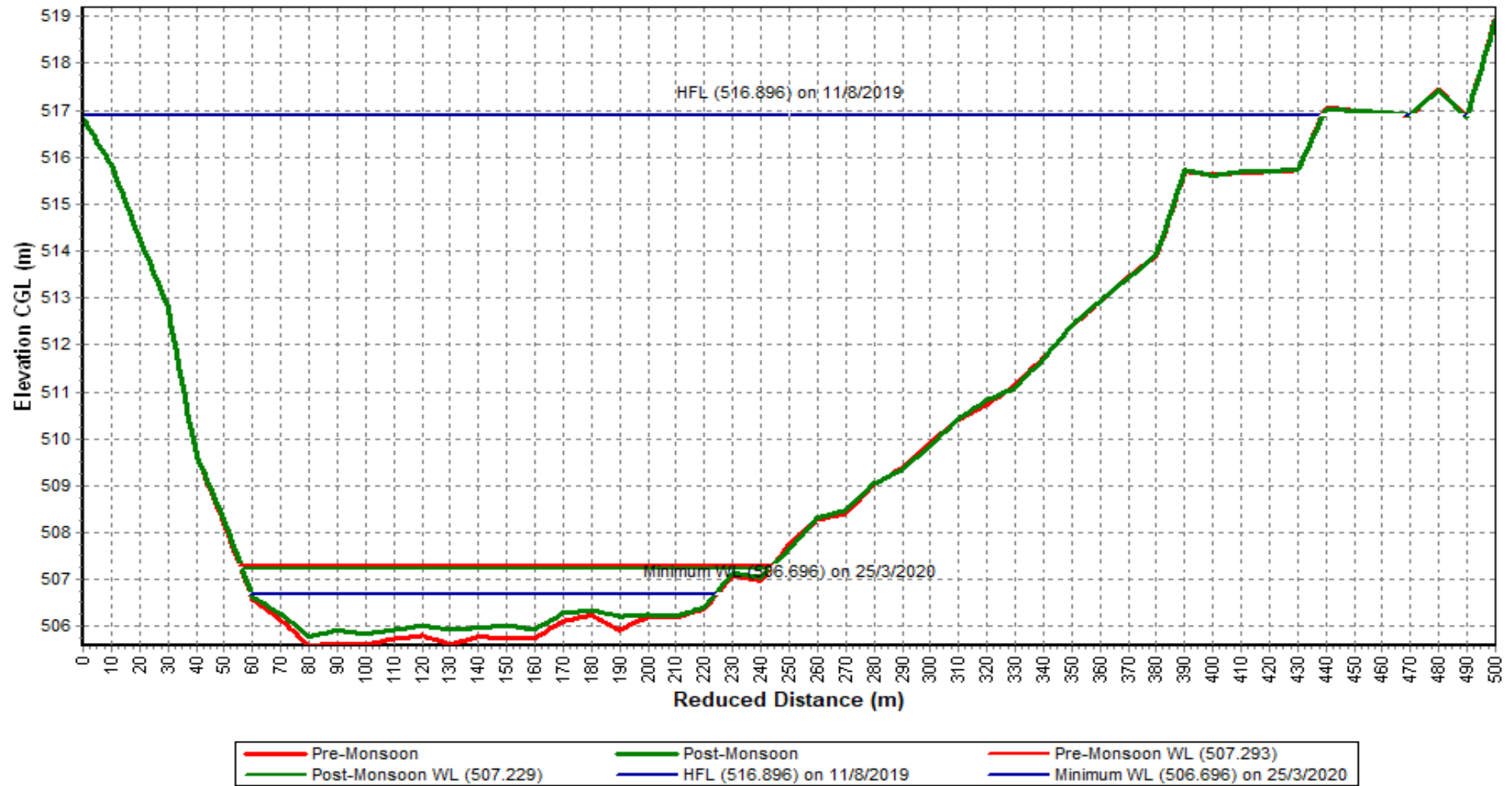
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : HARALAHALLI (AKL00S8)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



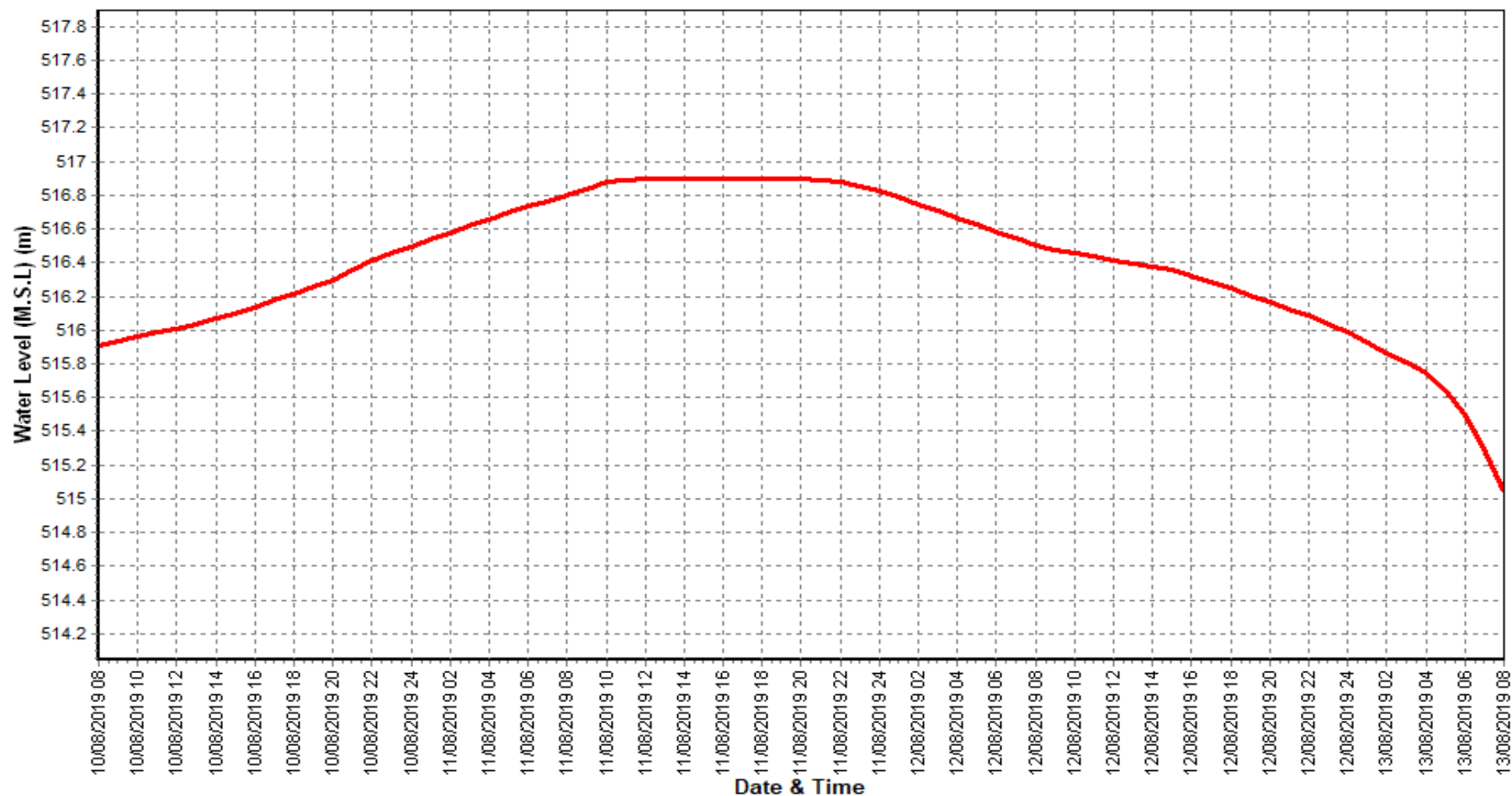
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : HARALAHALLI (AKL00S8)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



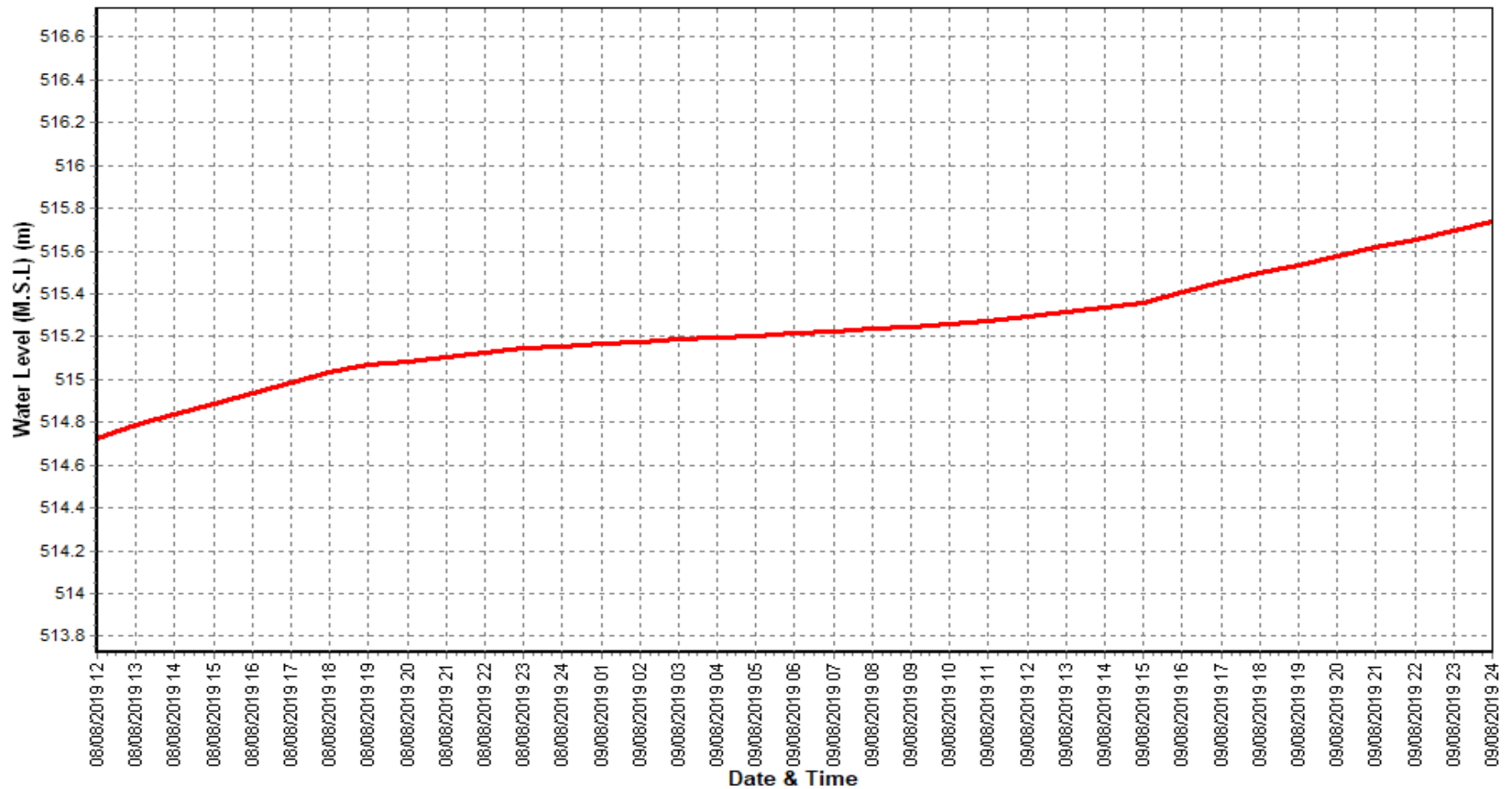
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : HARALAHALLI (AKL00S8)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



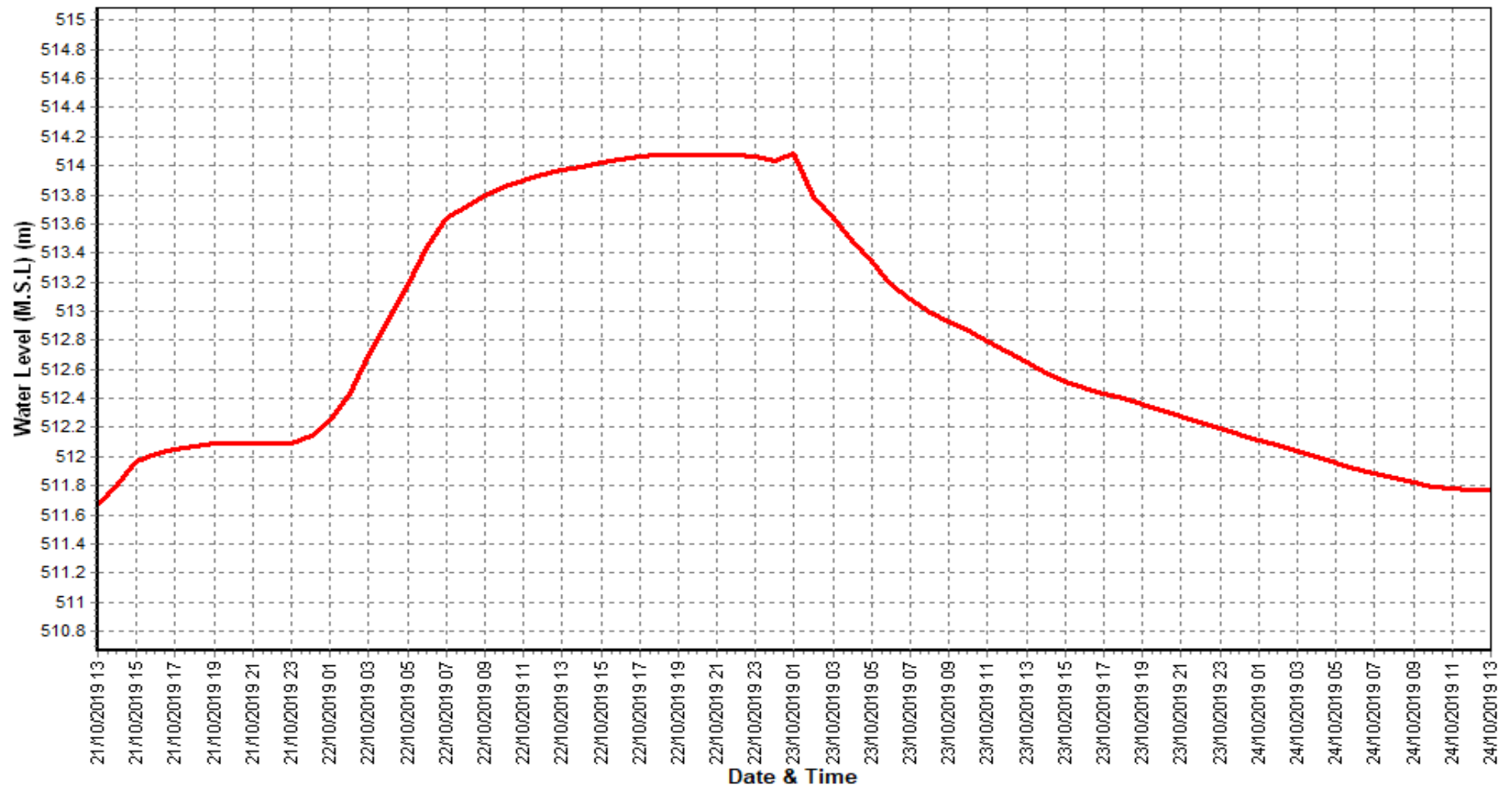
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : HARALAHALLI (AKL00S8)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : KALMANE

Code : KALMANE

State : Karnataka

District : Shimoga

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Malathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere

Drainage Area : 256 Sq. Km.

Bank : Left

Latitude : 13°39'07"

Longitude : 75°10'45"

Zero of Gauge (m) : 710 (m.s.l)

25/08/2016

Opening Date

Closing Date

Gauge : 25/08/2016

Discharge : 17/12/2018

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Stage-Discharge Data for the period 2019 - 2020

Station Name : KALMANE (KALMANE)

Division : Cauvery Division, Bangalore

Local River : Malathi

Sub-Division : Upper Tunga SD, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	713.590	0.000	715.600	34.89	715.750	33.56	607.670	13.18 *	606.430	18.55	606.410	18.02
2	713.590	0.000	715.630	39.62	715.670	32.30	608.110	28.41 *	606.280	13.34 *	606.310	14.63
3	713.590	0.000	715.540	34.82	716.290	55.17	608.110	30.47	606.240	9.695	606.250	12.52 *
4	713.580	0.000	715.100	30.03	716.540	63.01 *	608.390	33.22	606.240	9.635	606.230	10.03
5	713.580	0.000	715.600	38.39	717.220	246.8	609.620	122.2	606.220	9.560	606.260	11.11
6	713.580	0.000	715.850	44.10	719.400	412.6	609.250	52.21	606.480	19.61 *	606.150	8.210
7	713.570	0.000	715.200	28.78 *	720.230	310.9 *	609.450	119.6 *	606.430	17.91 *	606.120	8.051
8	713.570	0.000	715.740	40.72	720.340	321.9 *	610.080	188.7 *	606.360	15.68 *	606.120	8.172
9	713.570	0.000	716.190	50.18	720.380	326.0 *	610.260	237.5	606.500	20.08	606.090	8.002
10	713.570	0.000	716.790	165.7	719.990	287.7 *	608.980	79.39 *	606.320	15.04	606.050	7.767 *
11	713.560	0.000	715.880	46.44	719.140	213.9 *	608.190	29.87	606.300	14.80	606.060	7.400
12	713.560	0.000	715.550	35.56	718.140	143.2 *	607.880	17.73	606.310	14.92	606.040	7.563 *
13	713.600	0.000	715.100	32.36	716.990	228.1	607.600	12.46	606.400	16.94 *	606.060	8.400
14	713.610	0.000	715.070	25.95 *	716.200	51.60	607.370	9.081	606.450	17.52	606.060	8.670
15	713.650	0.000	715.100	31.53	717.000	57.36	607.280	7.742 *	606.200	8.001	606.030	7.820
16	713.690	0.000	715.100	30.94	716.360	57.36	607.350	8.743	606.440	18.30	606.030	7.990
17	713.730	2.037	715.050	29.67	716.310	53.67	607.160	6.208	606.240	10.26	606.060	7.975 *
18	713.730	2.042	714.930	20.16	715.500	30.30 *	607.000	5.580	606.320	14.60	606.040	8.290
19	713.760	2.046	715.300	31.91	715.140	32.64	606.840	5.243	606.700	27.80	606.020	7.608
20	713.800	2.031	716.250	52.83	714.850	16.99	606.740	4.761	606.760	30.75 *	606.010	7.410
21	714.100	7.574 *	716.280	53.50 *	714.900	18.27	606.660	4.005	606.920	45.20	606.000	7.340
22	713.820	2.053	716.410	61.13	714.890	17.10	606.570	3.902 *	606.500	22.80	606.000	7.200
23	713.820	1.895 *	716.130	44.46	715.660	31.82	606.510	3.800	606.530	23.50	606.000	7.290
24	713.850	2.081	715.770	35.29	715.100	30.19	606.500	3.800	606.900	42.63	605.980	6.401 *
25	713.850	2.081	715.460	30.99	715.030	19.93 *	606.470	8.743	607.110	56.56	605.980	7.090
26	713.870	2.166	715.570	37.05	715.000	26.71	606.700	12.46	607.400	61.33	605.980	6.430
27	714.100	7.855	715.550	36.51	714.840	15.65	606.640	11.23	606.900	37.39 *	605.930	6.104
28	714.100	7.965	715.450	29.07 *	714.710	12.42	606.450	8.740	606.700	26.98	605.920	5.990
29	714.600	12.14	716.900	219.4	714.780	14.63	606.350	7.224 *	606.800	36.98	605.920	6.060
30	714.700	18.72 *	716.660	126.4	714.990	22.47	606.270	6.208	606.500	20.13	605.910	5.800
31			716.060	43.77	714.530	11.93			606.410	17.91		
Ten-Daily Mean												
I Ten-Daily	713.579	0.000	715.724	50.72	718.181	209.0	608.992	90.49	606.350	14.91	606.199	10.65
II Ten-Daily	713.669	0.816	715.333	33.74	716.563	88.51	607.341	10.74	606.412	17.39	606.041	7.913
III Ten-Daily	714.081	6.453	716.022	65.23	714.948	20.10	606.512	7.011	606.788	35.58	605.962	6.571
Monthly												
Min.	713.560	0.000	714.930	20.16	714.530	11.93	606.270	3.800	606.200	8.001	605.910	5.800
Max.	714.700	18.72	716.900	219.4	720.380	412.6	610.260	237.5	607.400	61.33	606.410	18.02
Mean	713.776	2.423	715.704	50.39	716.512	103.1	607.615	36.08	606.525	23.05	606.067	8.378

Annual Runoff in MCM = 644 Annual Runoff in mm = 2515

Peak Observed Discharge = 412.6 cumecs on 06/08/2019 Corres. Water Level :719.4 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :713.59 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : KALMANE (KALMANE)

Division : Cauvery Division, Bangalore

Local River : Malathi

Sub-Division : Upper Tunga SD, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	605.900	5.711 *	605.760	3.980	605.510	2.953	605.460	2.457 *	605.480	2.571 *	605.440	1.912
2	605.900	5.720	605.750	3.890	605.510	2.750 *	605.460	2.845	605.480	2.571 *	605.430	1.957
3	605.930	6.110	605.740	3.760	605.510	2.819	605.470	2.868	605.480	2.571 *	605.430	2.290 *
4	605.920	6.020	605.730	3.690	605.510	2.747	605.490	2.967	605.480	2.571 *	605.430	1.957
5	605.920	6.060	605.720	4.191 *	605.500	2.928	605.520	2.979	605.480	2.571 *	605.430	1.957
6	605.900	5.720	605.710	3.710	605.500	2.933	605.510	2.954	605.470	2.513 *	605.430	1.957
7	605.900	5.720	605.700	3.714	605.500	2.918	605.510	2.960	605.470	2.513 *	605.430	2.290 *
8	605.890	5.619 *	605.700	3.658	605.500	2.938	605.510	2.750 *	605.470	2.513 *	605.440	2.203
9	605.890	5.650	605.690	3.594	605.500	2.689 *	605.500	2.942	605.470	2.513 *	605.440	2.107
10	605.870	5.610	605.680	3.515	605.500	2.925	605.500	2.930	605.470	2.513 *	605.440	2.345 *
11	605.860	5.590	605.670	3.330	605.490	2.911	605.490	2.907	605.470	2.513 *	605.440	2.108
12	605.850	5.430	605.670	3.817 *	605.490	2.918	605.490	2.929	605.480	2.571 *	605.430	1.979
13	605.850	5.515	605.660	3.498	605.490	2.911	605.490	2.914	605.480	2.571 *	605.430	1.957
14	605.850	5.342	605.650	3.280	605.490	2.898	605.490	2.902	605.480	2.571 *	605.430	1.940
15	605.840	5.175 *	605.640	3.601 *	605.490	2.961	605.490	2.630 *	605.480	2.571 *	605.430	1.946
16	605.830	5.200	605.630	3.708	605.490	2.630 *	605.480	2.891	605.470	2.824	605.430	1.957
17	605.820	5.000	605.630	3.771	605.480	2.877	605.480	3.008	605.470	2.756	605.420	2.235 *
18	605.810	4.990	605.620	3.695	605.480	2.894	605.480	2.896	605.460	2.581	605.420	1.697
19	605.800	4.697	605.610	3.393 *	605.480	2.898	605.480	2.889	605.460	2.457 *	605.420	1.697
20	605.800	4.590	605.610	3.701	605.470	2.899	605.480	2.896	605.460	2.821	605.420	1.697
21	605.790	4.350	605.600	3.756	605.470	2.513 *	605.480	2.906	605.460	2.571	605.420	1.697
22	605.790	4.750 *	605.570	3.532	605.470	2.874	605.480	2.571 *	605.450	2.354	605.440	1.562
23	605.780	4.240	605.570	3.447	605.470	2.513 *	605.470	2.891	605.450	2.344	605.410	1.562
24	605.790	4.691	605.560	3.495	605.470	2.883	605.470	2.864	605.450	2.344	605.410	2.182 *
25	605.780	4.668 *	605.550	3.484	605.470	2.878	605.480	2.571 *	605.450	2.344	605.420	2.235 *
26	605.770	4.110	605.550	2.998 *	605.470	2.888	605.490	2.630 *	605.450	2.400 *	605.420	1.697
27	605.780	4.230	605.550	3.300	605.470	2.853	605.490	2.630 *	605.440	2.120	605.420	1.697
28	605.780	4.223	605.550	3.484	605.470	2.879	605.490	2.630 *	605.440	2.108	605.430	1.946
29	605.770	4.587 *	605.540	3.456	605.470	2.724	605.490	2.630 *	605.440	2.108	605.430	1.963
30	605.770	4.048	605.530	3.489			605.490	2.630 *	605.440	2.108	605.440	1.977
31	605.760	3.960	605.520	3.491			605.480	2.571 *			605.440	2.345 *
Ten-Daily Mean												
I Ten-Daily	605.902	5.794	605.718	3.770	605.504	2.860	605.493	2.865	605.475	2.542	605.434	2.097
II Ten-Daily	605.831	5.153	605.639	3.579	605.485	2.880	605.485	2.886	605.471	2.624	605.427	1.921
III Ten-Daily	605.778	4.351	605.554	3.448	605.470	2.778	605.483	2.684	605.447	2.280	605.425	1.896
Monthly												
Min.	605.760	3.960	605.520	2.998	605.470	2.513	605.460	2.457	605.440	2.108	605.410	1.562
Max.	605.930	6.110	605.760	4.191	605.510	2.961	605.520	3.008	605.480	2.824	605.440	2.345
Mean	605.835	5.075	605.634	3.594	605.487	2.841	605.487	2.808	605.464	2.482	605.429	1.969

Peak Computed Discharge = 326.0 cumecs on 09/08/2019

Corres. Water Level :720.38 m

Lowest Computed Discharge = 1.895 cumecs on 23/06/2019

Corres. Water Level :713.82 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

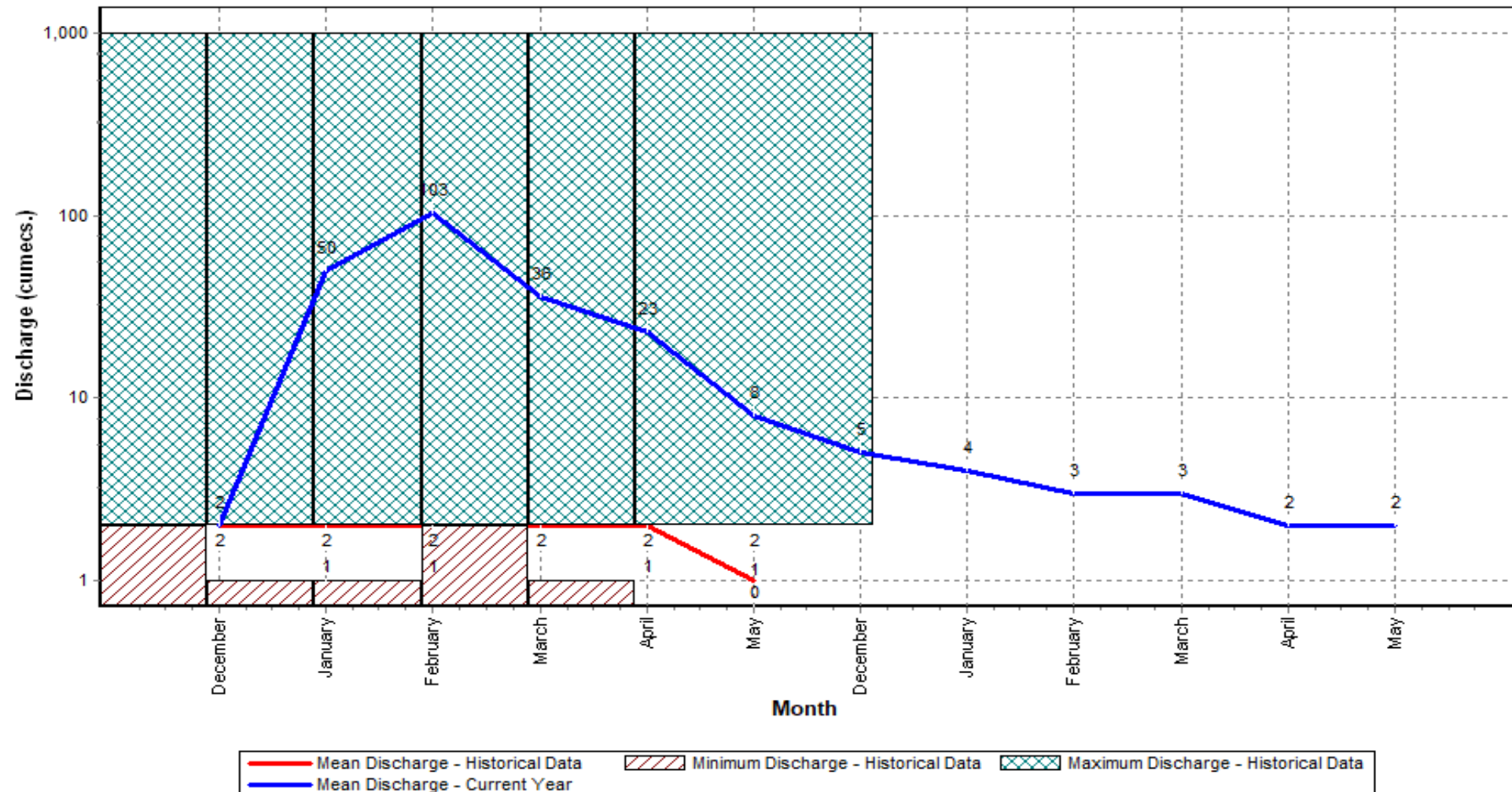
Station Name : KALMANE (KALMANE)

Data considered : 2019-2020

Division : Cauvery Division, Bangalore

Local River : Malathi

Sub-Division : Upper Tunga SD, Devangere



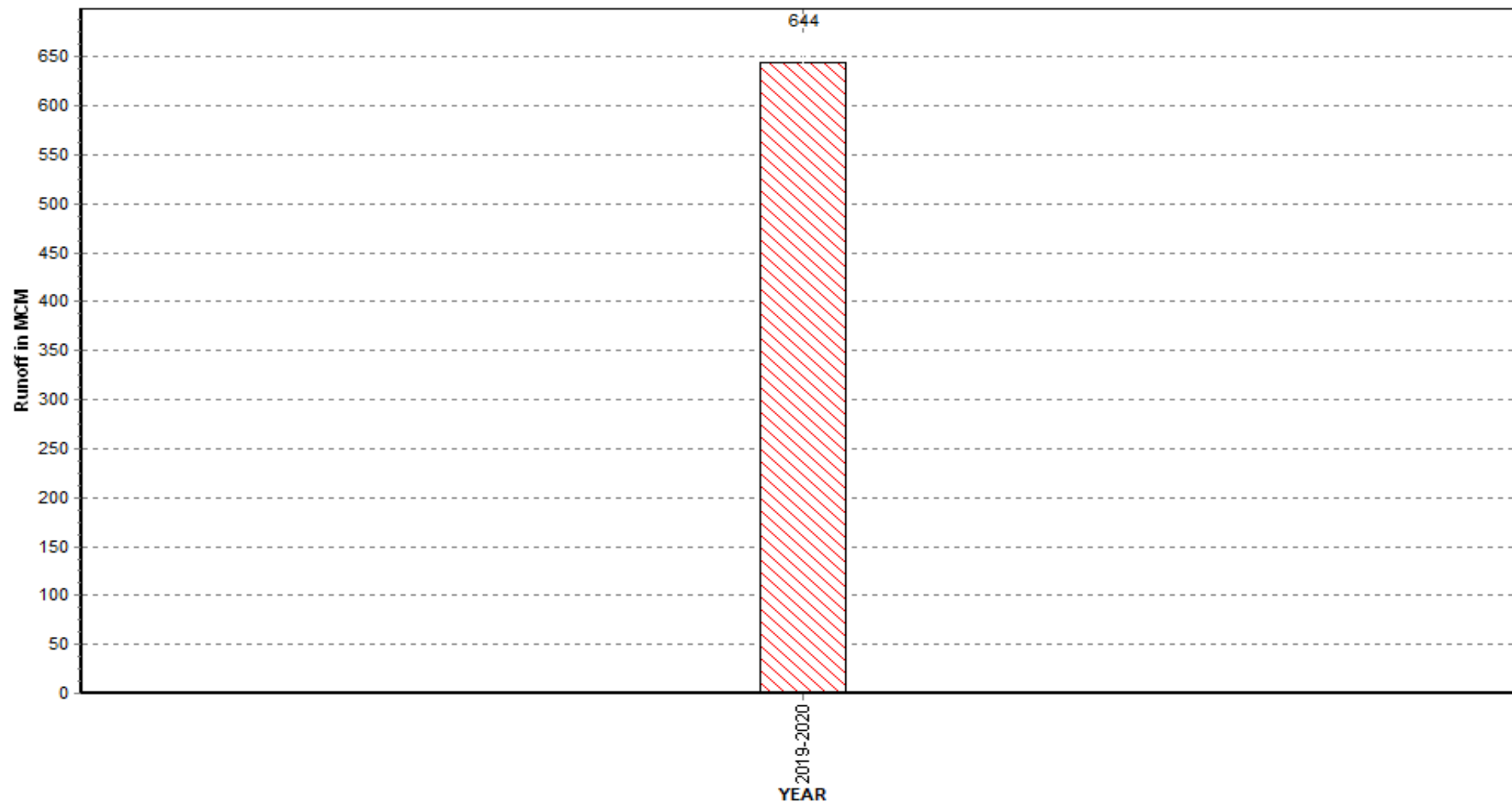
Annual Runoff Values for the period: 2019 - 2020

Station Name : KALMANE (KALMANE)

Local River : Malathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

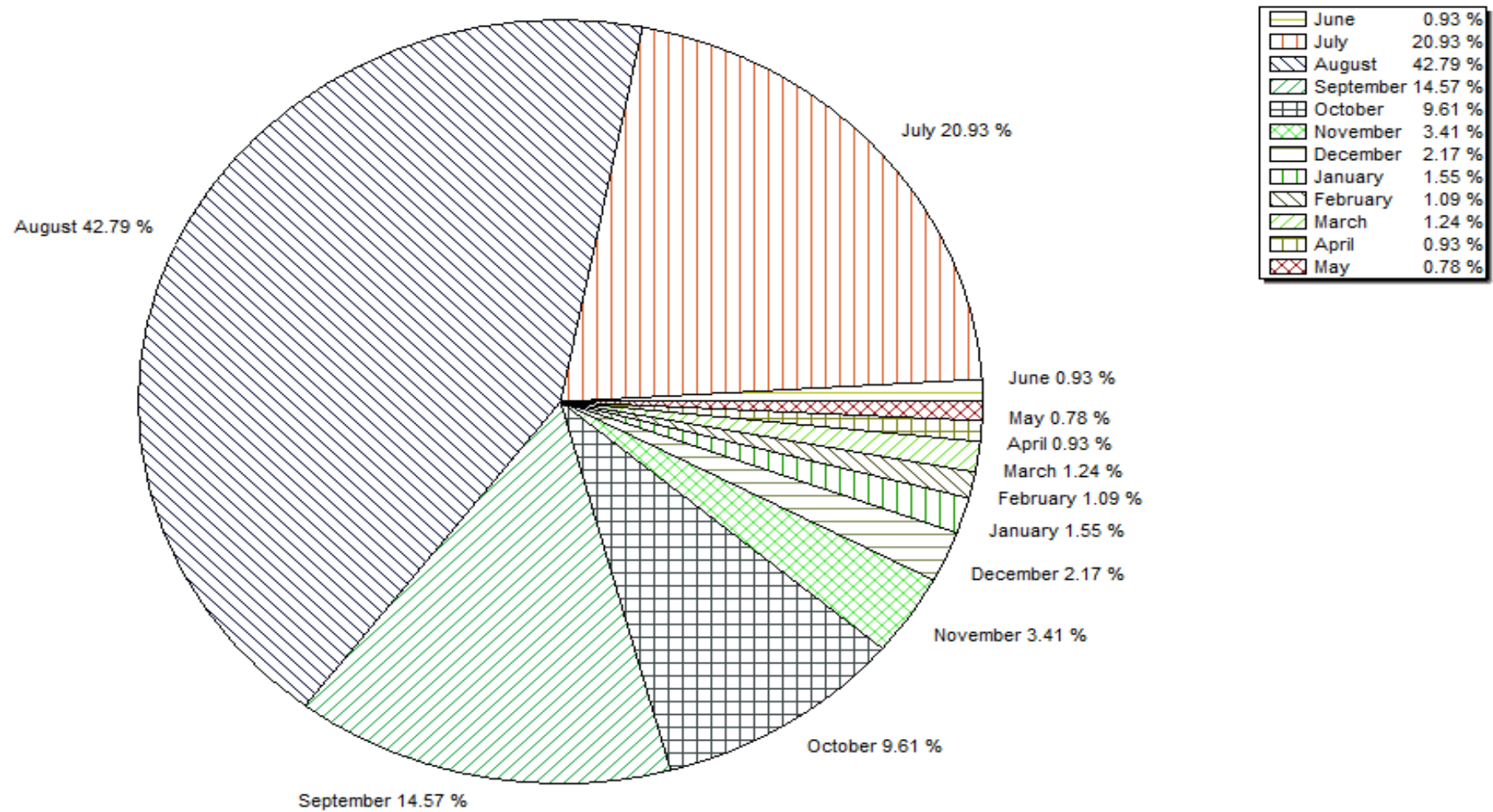
Monthly Runoff for the Year : 2019-2020

Station Name : KALMANE (KALMANE)

Local River : Malathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



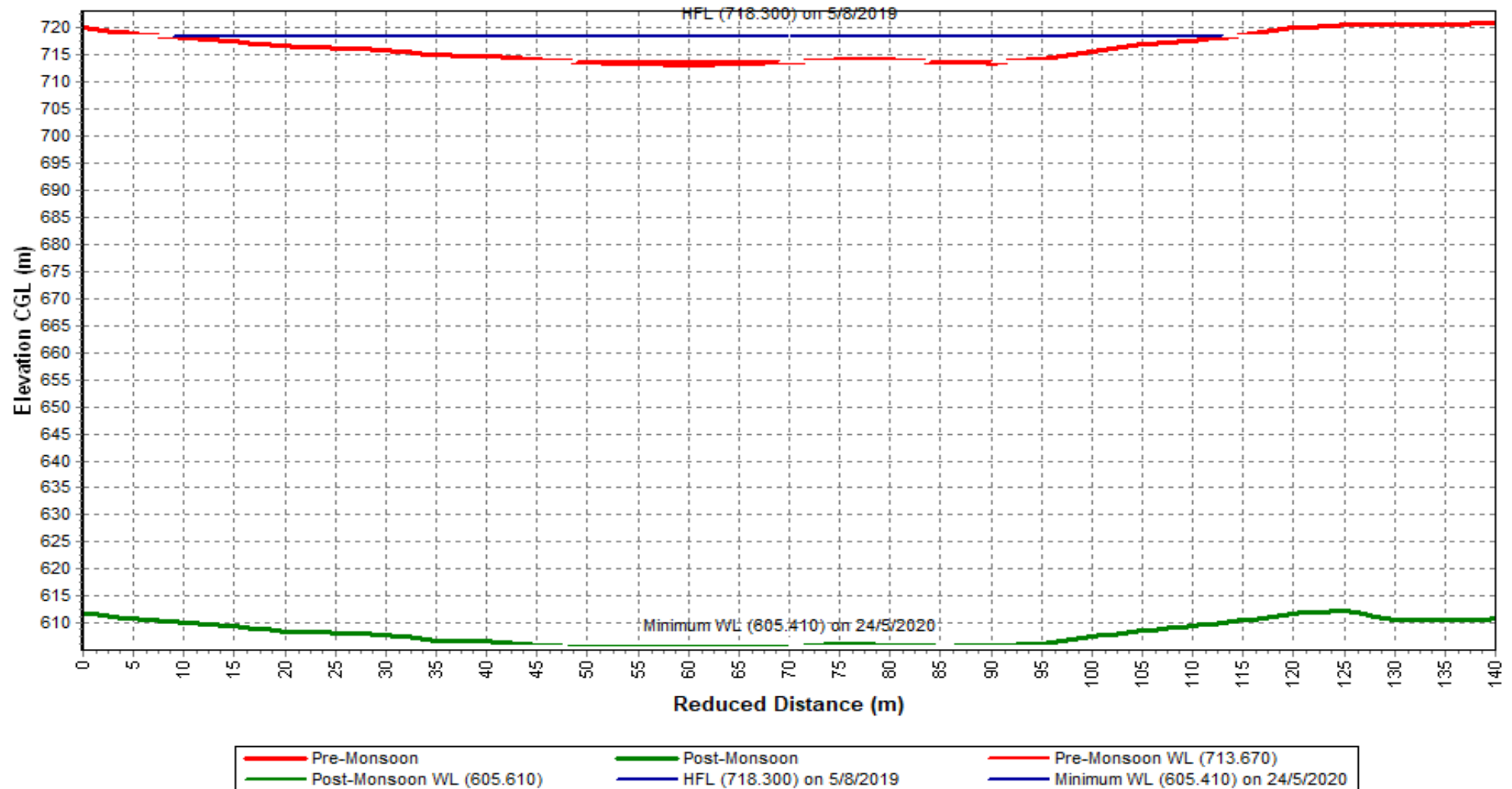
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : KALMANE (KALMANE)

Local River : Malathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



X section Difference due to Change of Zero of gauge

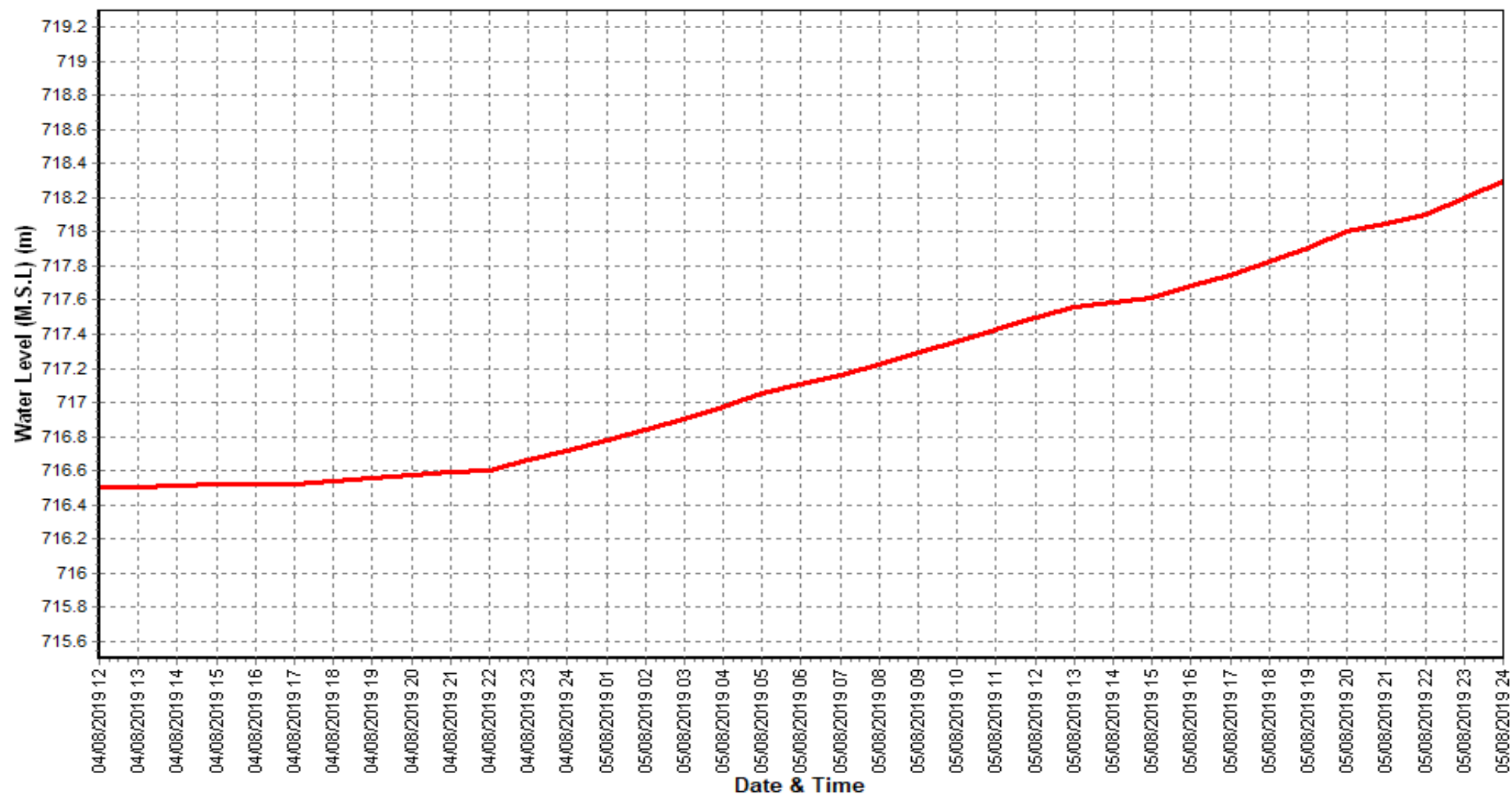
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : KALMANE (KALMANE)

Local River : Malathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



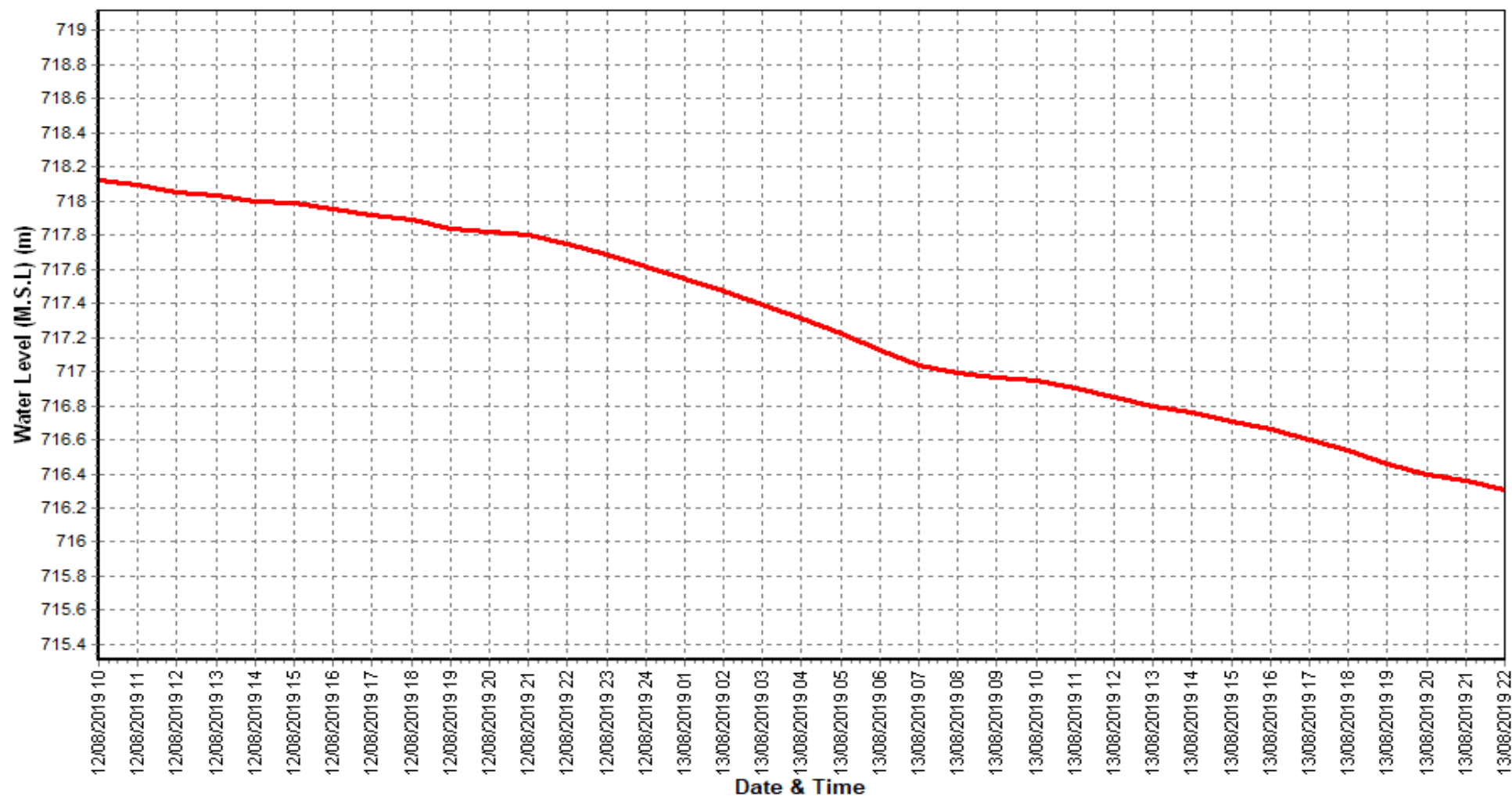
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : KALMANE (KALMANE)

Local River : Malathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



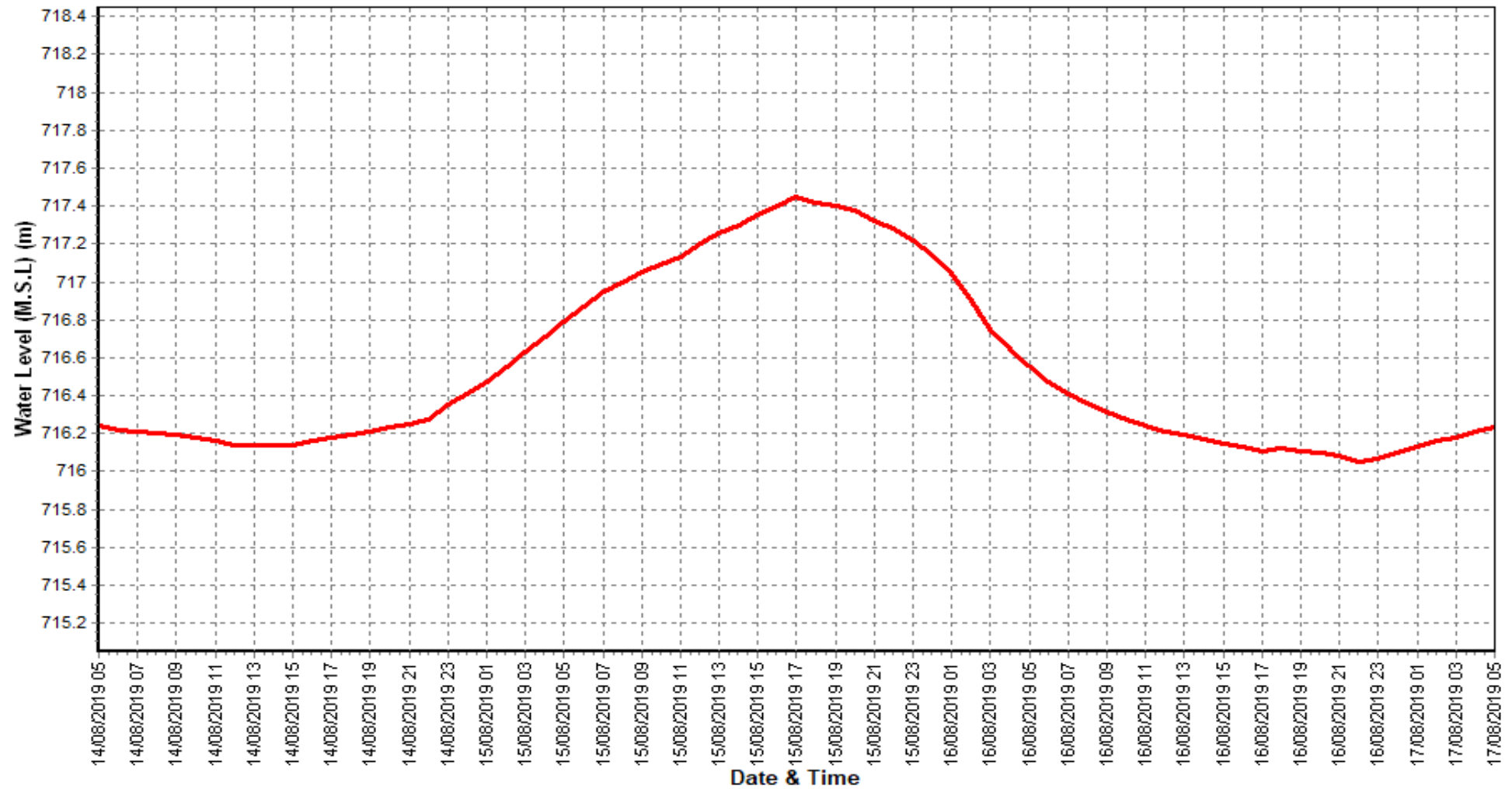
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : KALMANE (KALMANE)

Local River : Malathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : BYLADAHALLI

Code : AKLB0D3

State : Karnataka

District : Davanagere

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Haridra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere

Drainage Area : 2300 Sq. Km.

Bank : Right

Latitude : 14°26'02"

Longitude : 75°46'47"

Zero of Gauge (m) : 528.4 (m.s.l)

21/03/1985

Opening Date

Closing Date

Gauge : 21/03/1985

Discharge : 11/06/1985

Sediment : 10/12/1997

Water Quality : 02/06/1986

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1986-1987	145.1	533.425	07/11/1986	0.500	531.160	08/06/1986
1987-1988	154.5	533.460	02/10/1987	0.500	530.800	07/06/1987
1988-1989	120.1	532.985	29/08/1988	0.200	531.060	05/03/1989
1989-1990	82.29	532.535	09/10/1989	0.169	531.080	06/07/1989
1990-1991	88.00	532.680	11/08/1990	0.511	531.180	12/06/1990
1991-1992	121.1	532.965	02/08/1991	0.000	530.878	25/02/1992
1992-1993	928.1	537.433	17/11/1992	0.668	530.945	02/06/1992
1993-1994	229.5	533.420	16/10/1993	0.317	530.720	03/07/1993
1994-1995	166.6	532.940	26/10/1994	0.325	530.750	21/12/1994
1995-1996	102.0	532.520	17/09/1995	0.000	530.750	09/05/1996
1996-1997	241.1	533.710	21/10/1996	0.000	530.800	08/07/1996
1997-1998	157.5	532.960	26/10/1997	0.000	530.700	12/05/1998
1998-1999	236.5	533.460	11/10/1998	0.000	530.700	12/12/1998
1999-2000	224.8	533.700	05/10/1999	0.000	530.700	07/02/2000
2000-2001	251.0	534.020	10/10/2000	0.000	530.620	30/01/2001
2001-2002	112.8	532.685	02/08/2001	0.000	530.460	04/02/2002
2002-2003	116.1	533.045	16/10/2002	0.000	530.480	06/01/2003
2003-2004	138.8	532.920	06/10/2003	0.000	530.580	24/01/2004
2004-2005	49.21	531.900	07/09/2004	0.000		27/02/2005
2005-2006	190.1	533.460	27/07/2005	0.000		21/02/2006
2006-2007	179.9	533.740	04/11/2006	0.000	530.410	31/01/2007
2007-2008	99.30	532.580	19/09/2007	0.000		10/01/2008

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2008-2009	104.3	532.570	06/10/2008	0.000		08/02/2009
2009-2010	167.8	533.470	02/10/2009	0.000		12/03/2010
2010-2011	257.3	534.040	09/11/2010	0.000	530.030	18/03/2011
2011-2012	90.51	532.200	15/10/2011	0.000	530.100	28/03/2012
2012-2013	339.9	534.650	02/11/2012	0.000		12/02/2013
2013-2014	92.30	532.370	18/09/2013	0.000	530.120	02/01/2014
2014-2015	243.0	534.000	28/10/2014	0.000	530.070	20/02/2015
2015-2016	117.3	532.680	09/09/2015	0.000	530.020	31/01/2016
2016-2017	23.65	531.380	26/09/2016	0.000	530.090	02/07/2016
2017-2018	178.2	533.320	04/10/2017	0.000	0.000	02/01/2018
2018-2019	69.61	532.190	21/11/2018	0.000	529.950	19/03/2019

Annual Runoff of Haridra at Byladahalli

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1985-1986	230	38	268	8	1	9
1	1986-1987	234	56	290	8	2	10
2	1987-1988	244	51	296	9	2	10
3	1988-1989	190	72	262	7	3	9
4	1989-1990	232	98	329	8	3	12
5	1990-1991	297	211	508	10	7	18
6	1991-1992	387	4	391	14	0	14
7	1992-1993	591	74	666	21	3	24
8	1993-1994	456	103	559	16	4	20
9	1994-1995	494	70	564	17	2	20
10	1995-1996	245	46	290	9	2	10
11	1996-1997	406	84	490	14	3	17
12	1997-1998	353	44	397	12	2	14
13	1998-1999	410	111	521	14	4	18
14	1999-2000	317	28	345	11	1	12
15	2000-2001	460	115	576	16	4	20
16	2001-2002	233	10	244	8	0	9
17	2002-2003	127	4	131	4	0	5
18	2003-2004	47	0	47	2	0	2
19	2004-2005	100	0	100	4	0	4
20	2005-2006	344	51	395	12	2	14
21	2006-2007	189	41	230	7	1	8
22	2007-2008	127	38	166	4	1	6
23	2008-2009	244	40	283	9	1	10
24	2009-2010	322	8	330	11	0	12
25	2010-2011	617	35	652	22	1	23
26	2011-2012	261	60	321	9	2	11
27	2012-2013	212	1	213	7	0	8
28	2013-2014	351	2	353	12	0	12
29	2014-2015	340	18	358	12	1	13
30	2015-2016	243	6	249	9	0	9
31	2016-2017	62	2	65	2	0	2
32	2017-2018	98	0	98	3	0	3
33	2018-2019	194	18	212	7	1	8
34	2019-2020	210	45	255	7	2	9
Average		282	45	327	10	2	12
75% Dependable flow (MCM)				230			
90 % Dependable flow (MCM)				99			

Stage-Discharge Data for the period 2019 - 2020

Station Name : BYLADAHALLI (AKLB0D3)

Division : Cauvery Division, Bangalore

Local River : Haridra

Sub-Division : Upper Tunga SD, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	529.960	0.000	529.970	0.000	529.980	0.000	530.480	4.124 *	530.540	4.935	531.280	22.77
2	529.960	0.000	529.970	0.000	529.980	0.000	530.480	4.124 *	530.540	4.979 *	531.280	22.74
3	529.970	0.000	529.980	0.000	529.980	0.000	530.480	3.975	530.530	4.809	531.220	21.41 *
4	529.970	0.000	529.980	0.000	529.980	0.000	530.490	4.079	530.530	4.808	531.180	20.18
5	529.970	0.000	529.980	0.000	529.980	0.000	530.500	4.224	530.530	4.819	531.180	20.12
6	529.970	0.000	529.980	0.000	529.990	0.000	530.500	4.213	530.550	5.130 *	531.120	17.35
7	529.970	0.000	529.980	0.000	529.990	0.000	530.520	4.552	530.550	5.130 *	531.120	17.46
8	529.970	0.000	529.980	0.000	530.000	0.000	530.520	4.684 *	530.550	5.130 *	531.180	20.17
9	529.970	0.000	529.980	0.000	530.020	0.000	530.520	4.570	530.550	5.088	531.180	20.07 *
10	529.970	0.000	529.980	0.000	530.030	0.000	530.520	4.684 *	530.560	5.192	531.180	20.08 *
11	529.970	0.000	529.980	0.000	530.030	0.000	530.510	4.443	531.070	15.06	531.170	19.78
12	529.960	0.000	529.990	0.000	530.040	0.000	530.510	4.440	531.110	16.40	531.120	18.17 *
13	529.960	0.000	529.990	0.000	530.300	2.082 #	530.510	4.452	531.110	17.87 *	531.090	16.40
14	529.970	0.000	529.990	0.000	530.340	2.470 #	530.490	4.043	531.110	16.47	530.450	4.107
15	529.970	0.000	529.990	0.000	530.380	2.895 *	530.490	4.260 *	531.070	15.19	530.500	4.697
16	529.970	0.000	529.990	0.000	530.410	2.925	530.520	4.586	531.070	15.12	530.500	4.700
17	529.970	0.000	529.990	0.000	530.400	2.809	530.520	4.574	531.070	15.21	530.500	4.399 *
18	529.970	0.000	529.990	0.000	530.410	3.238 *	530.520	4.580	531.040	14.23	530.720	9.956
19	529.970	0.000	529.990	0.000	530.430	3.257	530.520	4.576	531.040	14.21	530.750	10.63
20	529.970	0.000	529.990	0.000	530.450	3.532	530.500	4.202	531.040	15.80 *	530.750	10.58
21	529.970	0.000	529.990	0.000	530.450	3.535	530.500	4.204	534.300	290.0	530.760	10.86
22	529.970	0.000	529.990	0.000	530.460	3.677	530.500	4.399 *	534.820	372.4	530.760	10.82
23	529.960	0.000	529.990	0.000	530.460	3.670	530.500	4.206	534.820	363.6	530.740	10.25
24	529.960	0.000	529.990	0.000	530.490	4.062	530.530	4.803	534.350	287.3	530.740	8.495 *
25	529.960	0.000	529.980	0.000	530.500	4.399 *	530.530	4.787	533.250	157.7 #	530.740	10.29
26	529.960	0.000	529.980	0.000	530.490	4.080	530.540	4.927	531.400	27.41	530.730	10.10
27	529.960	0.000	529.980	0.000	530.490	4.054	530.540	4.943	531.340	25.41 *	530.730	10.03
28	529.960	0.000	529.980	0.000	530.500	4.184	530.530	4.780	531.320	23.98	530.720	9.786
29	529.960	0.000	529.980	0.000	530.500	4.216	530.530	4.831 *	531.320	24.06	530.720	9.851
30	529.970	0.000	529.980	0.000	530.500	4.198	530.540	4.941	531.280	22.62	530.740	10.46
31			529.980	0.000	530.480	3.954			531.280	22.67		
Ten-Daily Mean												
I Ten-Daily	529.968	0.000	529.978	0.000	529.993	0.000	530.501	4.323	530.543	5.002	531.192	20.24
II Ten-Daily	529.968	0.000	529.989	0.000	530.319	2.321	530.509	4.416	531.073	15.56	530.755	10.34
III Ten-Daily	529.963	0.000	529.984	0.000	530.484	4.003	530.524	4.682	532.680	147.0	530.738	10.09
Monthly												
Min.	529.960	0.000	529.970	0.000	529.980	0.000	530.480	3.975	530.530	4.808	530.450	4.107
Max.	529.970	0.000	529.990	0.000	530.500	4.399	530.540	4.943	534.820	372.4	531.280	22.77
Mean	529.966	0	529.984	0	530.272	2.169	530.511	4.474	531.472	58.8	530.895	13.56

Annual Runoff in MCM = 255 Annual Runoff in mm = 111

Peak Observed Discharge = 372.4 cumecs on 22/10/2019 Corres. Water Level :534.82 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :529.96 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : BYLADAHALLI (AKLB0D3)

Division : Cauvery Division, Bangalore

Local River : Haridra

Sub-Division : Upper Tunga SD, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	530.740	10.33 *	530.690	8.931	530.070	0.000	530.090	0.000	530.080	0.000	530.070	0.000
2	530.750	10.65	530.670	8.384	530.070	0.000	530.090	0.000	530.080	0.000	530.050	0.000
3	530.760	10.87	530.670	8.391	530.070	0.000	530.090	0.000	530.080	0.000	530.060	0.000
4	530.760	10.89	530.670	8.390	530.060	0.000	530.090	0.000	530.080	0.000	530.080	0.000
5	530.760	10.86	530.670	8.377 *	530.060	0.000	530.100	0.000	530.060	0.000	530.080	0.000
6	530.760	10.87	530.660	8.159	530.060	0.000	530.100	0.000	530.070	0.000	530.080	0.000
7	530.760	10.88	530.660	8.188	530.060	0.000	530.100	0.000	530.070	0.000	530.080	0.000
8	530.760	10.93 *	530.660	8.155	530.070	0.000	530.110	0.000	530.080	0.000	530.090	0.000
9	530.750	10.63	530.660	8.175	530.070	0.000	530.110	0.000	530.080	0.000	530.090	0.000
10	530.750	10.67	530.660	8.187	530.070	0.000	530.110	0.000	530.080	0.000	530.100	0.000
11	530.750	10.64	530.660	8.179	530.050	0.000	530.100	0.000	530.080	0.000	530.100	0.000
12	530.750	10.64	530.660	8.114 *	530.050	0.000	530.100	0.000	530.080	0.000	530.100	0.000
13	530.730	10.07	530.640	7.670	530.060	0.000	530.100	0.000	530.070	0.000	530.110	0.000
14	530.730	10.12	530.640	7.132	530.060	0.000	530.100	0.000	530.070	0.000	530.110	0.000
15	530.730	10.04 *	530.640	7.605 *	530.070	0.000	530.100	0.000	530.070	0.000	530.130	0.000
16	530.730	10.10	530.630	7.474	530.070	0.000	530.110	0.000	530.070	0.000	530.130	0.000
17	530.730	10.07	530.630	7.460	530.070	0.000	530.110	0.000	530.060	0.000	530.130	0.000
18	530.730	10.06	530.630	7.481	530.070	0.000	530.120	0.000	530.060	0.000	530.130	0.000
19	530.730	10.07	530.630	7.356 *	530.080	0.000	530.120	0.000	530.060	0.000	530.140	0.000
20	530.730	10.07	530.630	7.434	530.080	0.000	530.120	0.000	530.080	0.000	530.140	0.000
21	530.730	10.11	530.600	6.586	530.080	0.000	530.120	0.000	530.080	0.000	530.140	0.000
22	530.710	9.469 *	530.600	6.541	530.080	0.000	530.100	0.000	530.080	0.000	530.140	0.000
23	530.700	9.171	530.580	6.130	530.080	0.000	530.100	0.000	530.080	0.000	530.130	0.000
24	530.700	9.166	530.580	6.094	530.090	0.000	530.100	0.000	530.090	0.000	530.130	0.000
25	530.700	9.189 *	530.580	6.111	530.090	0.000	530.110	0.000	530.090	0.000	530.130	0.000
26	530.700	9.187	530.580	6.177 *	530.090	0.000	530.110	0.000	530.090	0.000	530.130	0.000
27	530.700	9.163	530.560	5.679	530.100	0.000	530.100	0.000	530.090	0.000	530.130	0.000
28	530.690	8.911	530.480	4.168	530.100	0.000	530.100	0.000	530.080	0.000	530.140	0.000
29	530.690	8.914 *	530.450	3.716	530.100	0.000	530.100	0.000	530.070	0.000	530.140	0.000
30	530.690	8.890	530.380	2.502			530.090	0.000	530.070	0.000	530.140	0.000
31	530.690	8.923	530.100	0.000			530.080	0.000			530.140	0.000
Ten-Daily Mean												
I Ten-Daily	530.755	10.76	530.667	8.334	530.066	0.000	530.099	0.000	530.076	0.000	530.078	0.000
II Ten-Daily	530.734	10.19	530.639	7.591	530.066	0.000	530.108	0.000	530.070	0.000	530.122	0.000
III Ten-Daily	530.700	9.190	530.499	4.882	530.090	0.000	530.101	0.000	530.082	0.000	530.135	0.000
Monthly												
Min.	530.690	8.890	530.100	0.000	530.050	0.000	530.080	0.000	530.060	0.000	530.050	0.000
Max.	530.760	10.93	530.690	8.931	530.100	0.000	530.120	0.000	530.090	0.000	530.140	0.000
Mean	530.729	10.02	530.598	6.869	530.073	0	530.103	0	530.076	0	530.113	0

Peak Computed Discharge = 25.41 cumecs on 27/10/2019

Corres. Water Level :531.34 m

Lowest Computed Discharge = 2.895 cumecs on 15/08/2019

Corres. Water Level :530.38 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

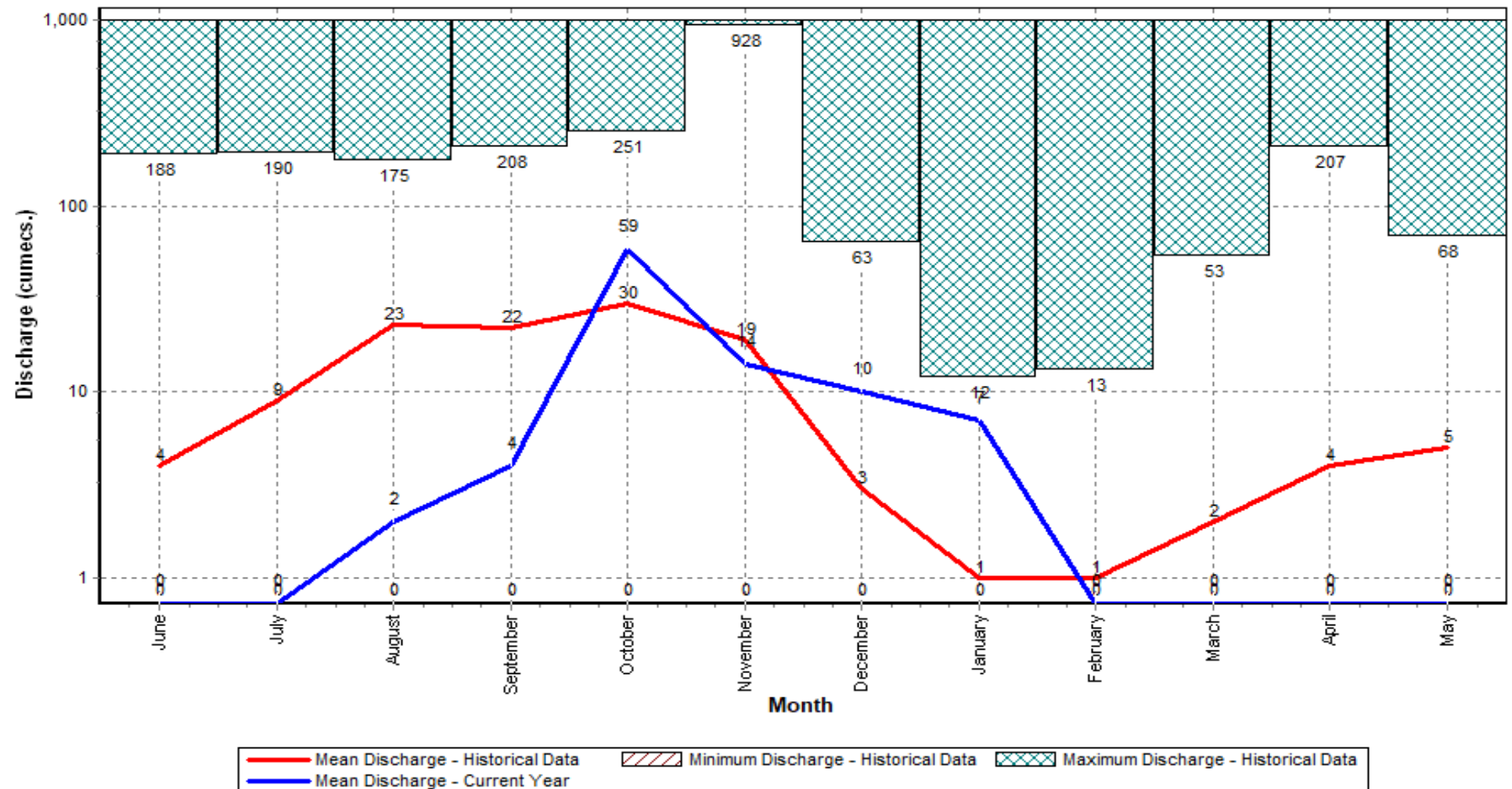
Station Name : BYLADAHALLI (AKLB0D3)

Data considered : 1986-2020

Division : Cauvery Division, Bangalore

Local River : Haridra

Sub-Division : Upper Tunga SD, Devangere



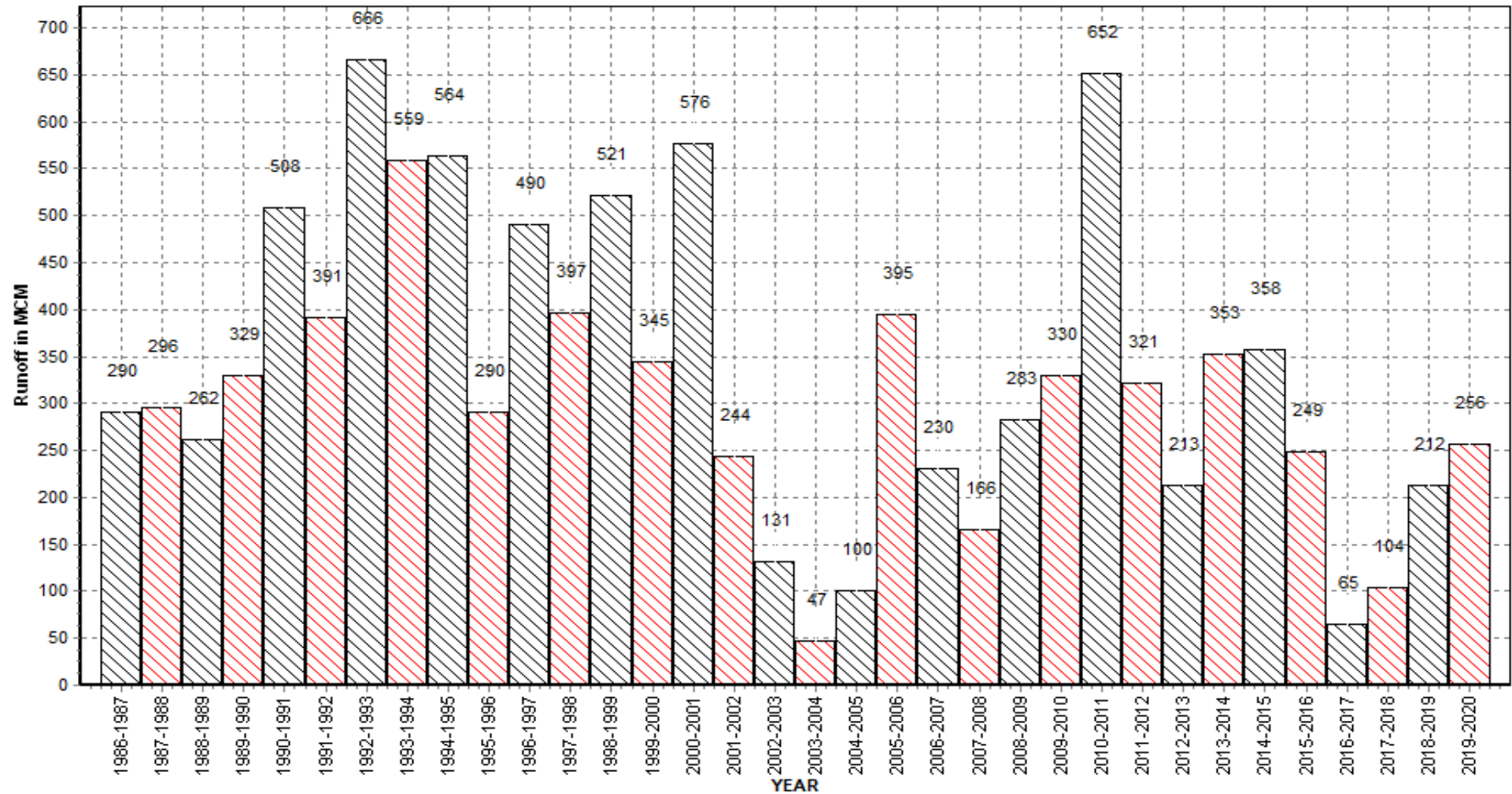
Annual Runoff Values for the period: 1986 - 2020

Station Name : BYLADAHALLI (AKLB0D3)

Local River : Haridra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

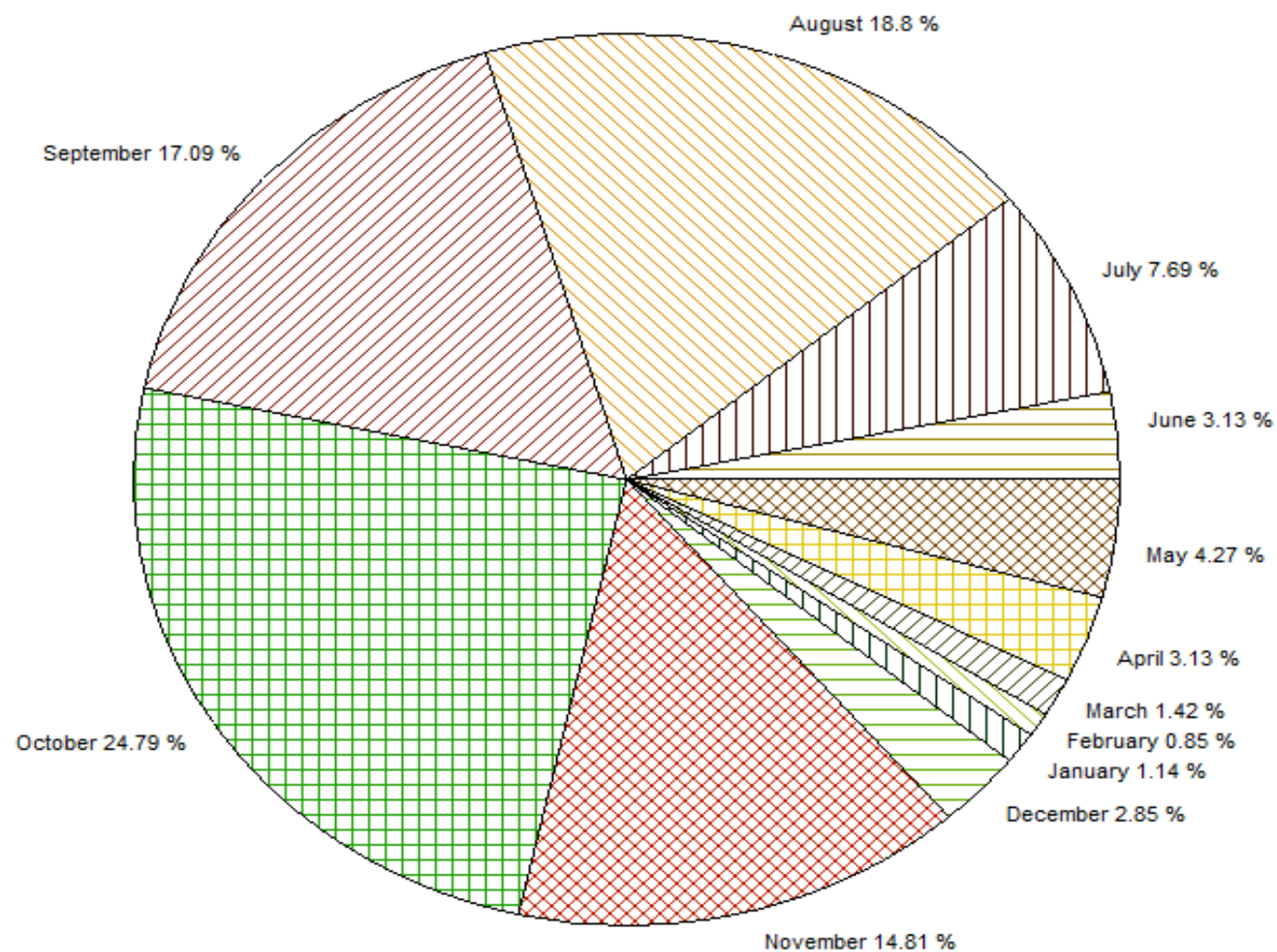
Monthly Average Runoff based on period : 1986-2019

Station Name : BYLADAHALLI (AKLB0D3)

Local River : Haridra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



June	3.13 %
July	7.69 %
August	18.8 %
September	17.09 %
October	24.79 %
November	14.81 %
December	2.85 %
January	1.14 %
February	0.85 %
March	1.42 %
April	3.13 %
May	4.27 %

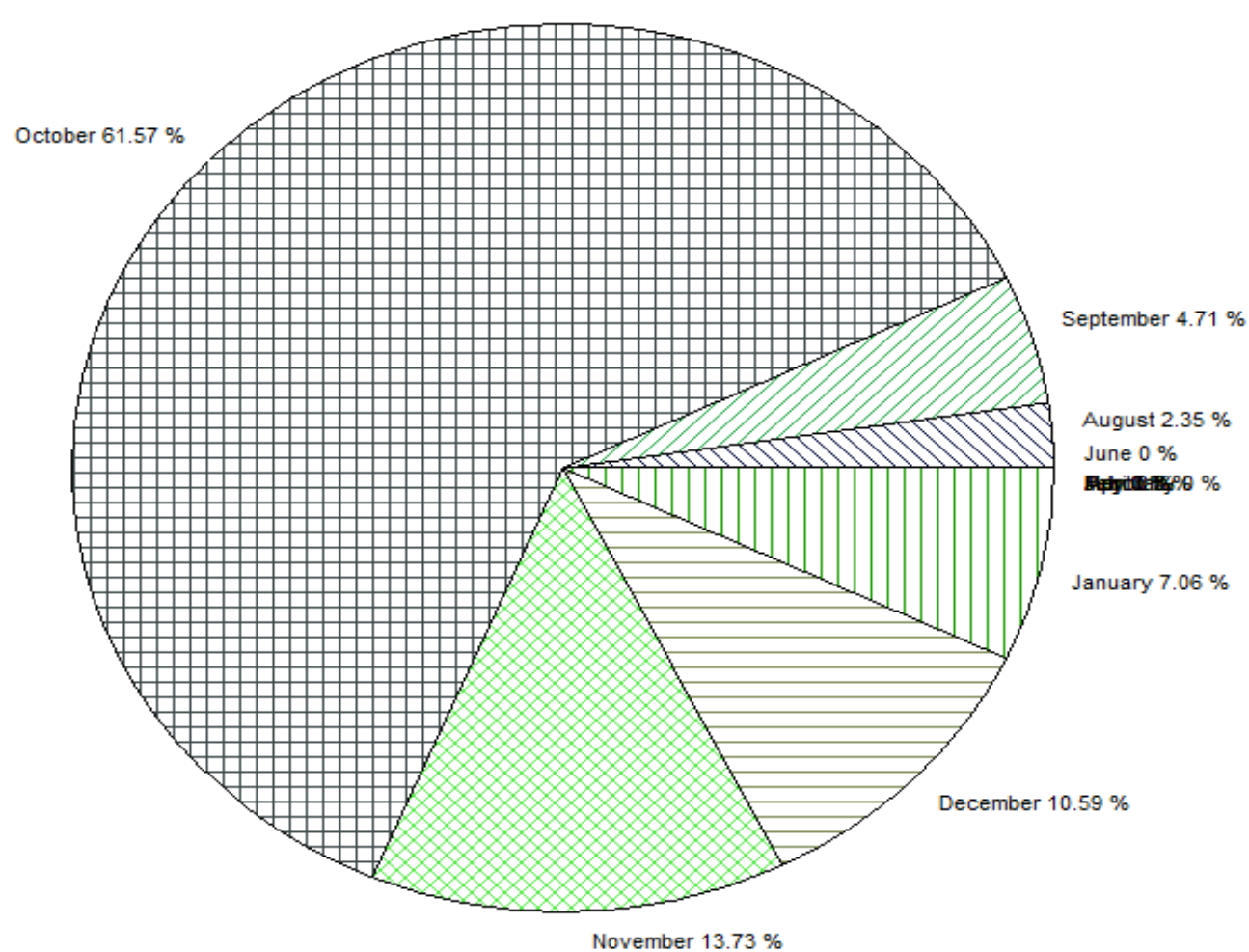
Monthly Runoff for the Year : 2019-2020

Station Name : BYLADAHALLI (AKLB0D3)

Local River : Haridra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



June	0 %
July	0 %
August	2.35 %
September	4.71 %
October	61.57 %
November	13.73 %
December	10.59 %
January	7.06 %
February	0 %
March	0 %
April	0 %
May	0 %

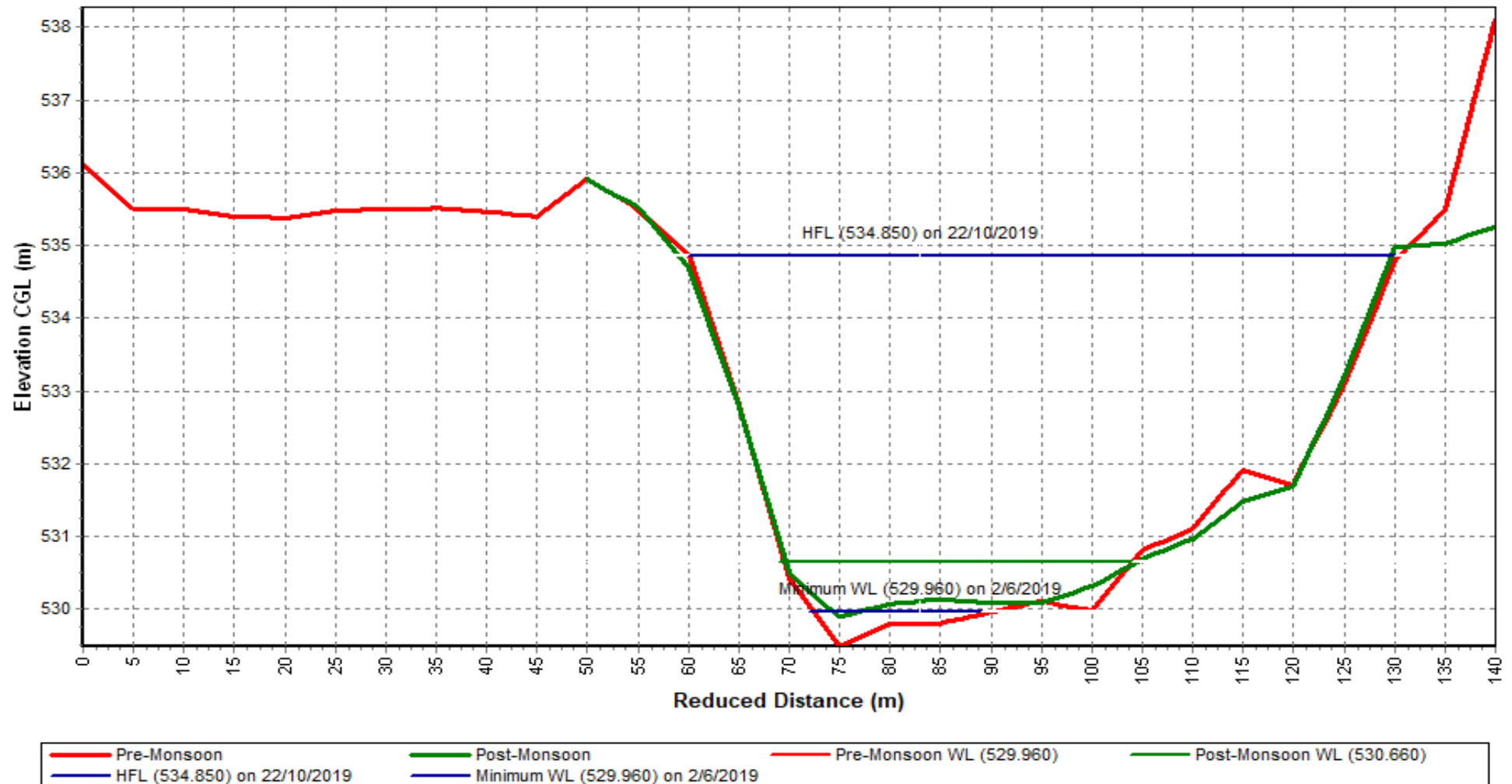
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : BYLADAHALLI (AKLB0D3)

Local River : Haridra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



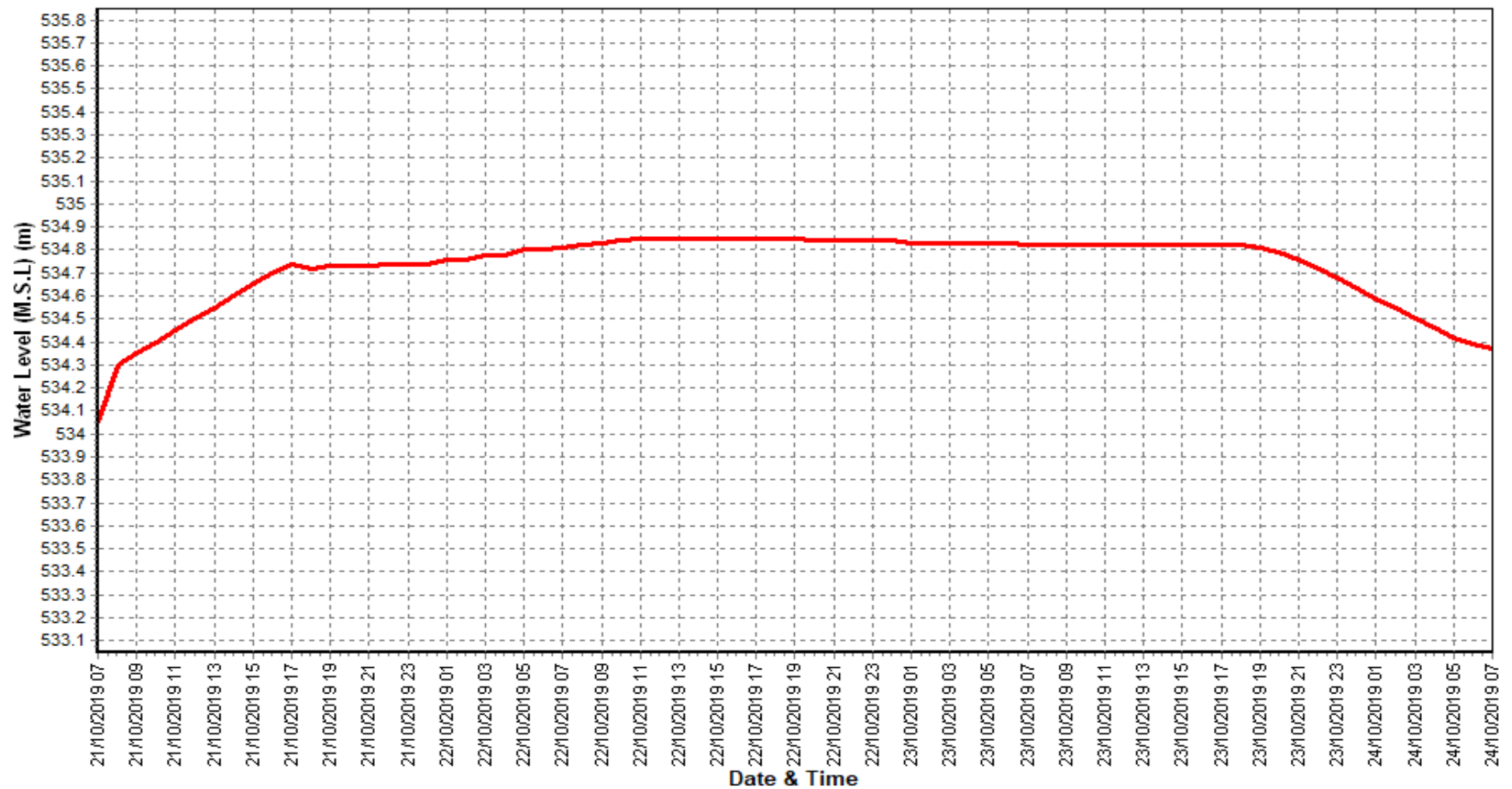
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : BYLADAHALLI (AKLB0D3)

Local River : Haridra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



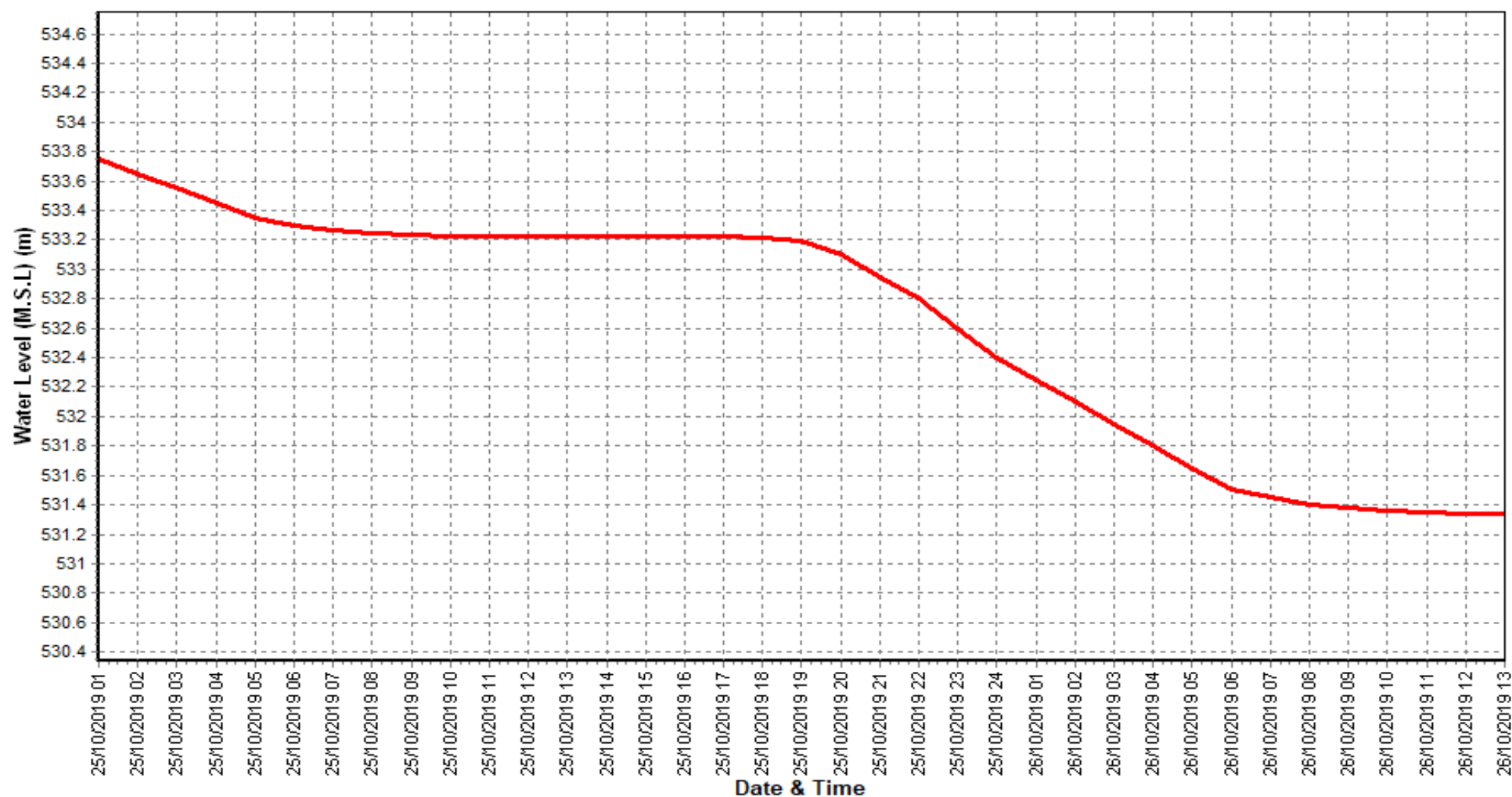
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : BYLADAHALLI (AKLB0D3)

Local River : Haridra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



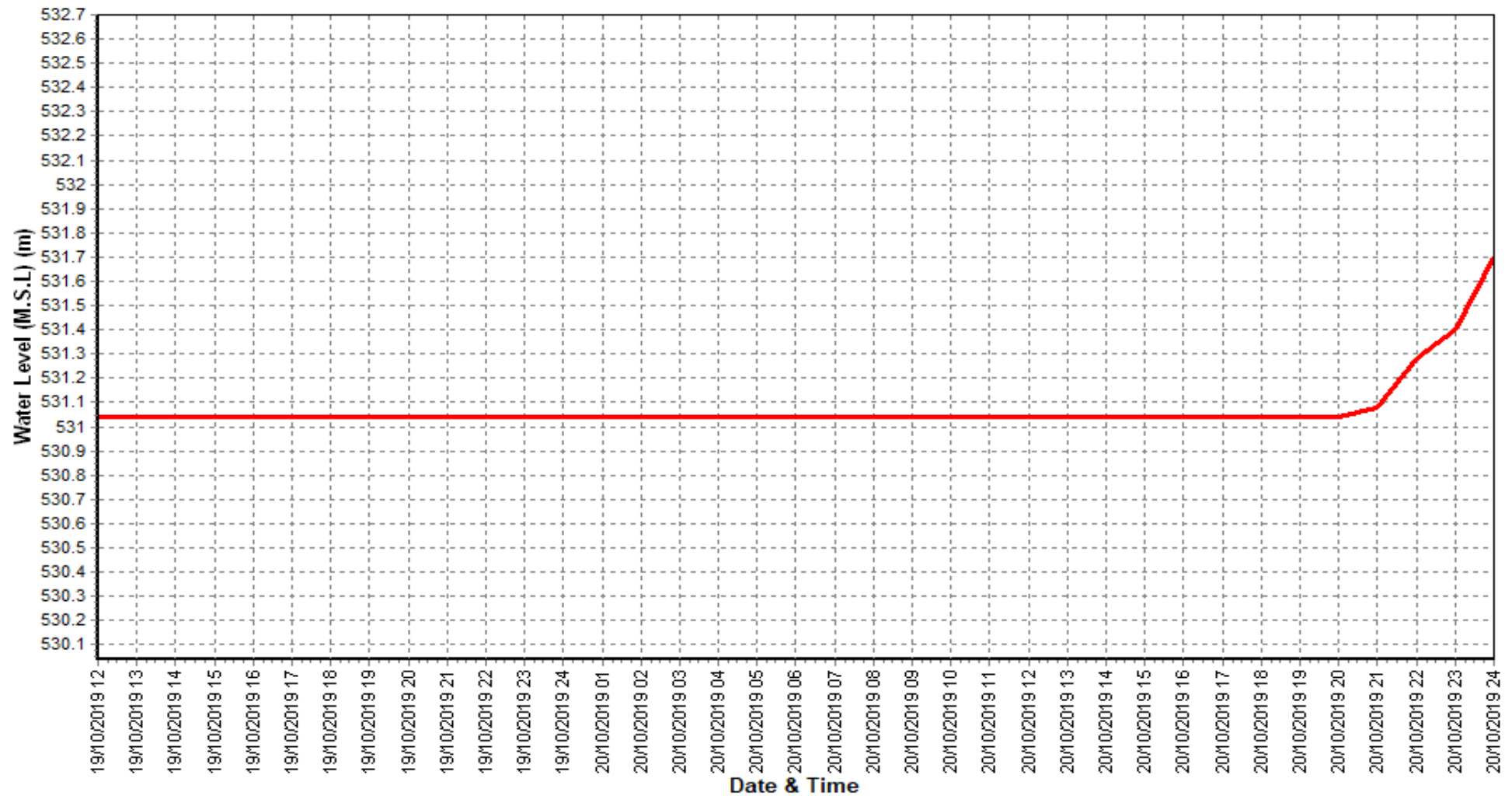
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : BYLADAHALLI (AKLB0D3)

Local River : Haridra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : KUPPELUR

Code : AKLC0B8

State : Karnataka

District : Haveri

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Kumudavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere

Drainage Area : 1850 Sq. Km.

Bank : Left

Latitude : 14°30'00"

Longitude : 75°38'02"

Zero of Gauge (m) : 531.67 (m.s.l)

01/06/1990

Opening Date

Closing Date

Gauge : 01/06/1990

Discharge : 24/07/1990

Sediment : 23/07/2014

Water Quality : 01/07/1994

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1991-1992	206.9	98.566	29/07/1991	0.000		18/02/1992
1992-1993	538.3	100.919	18/11/1992	0.000	94.157	02/05/1993
1993-1994	145.2	97.698	17/10/1993	0.000	94.950	08/02/1994
1994-1995	430.0	100.590	17/07/1994	0.000	93.575	11/03/1995
1995-1996	91.85	536.770	05/09/1995	0.000		23/02/1996
1996-1997	48.13	536.530	31/07/1996	0.000		07/03/1997
1997-1998	412.6	539.650	08/08/1997	0.000		06/03/1998
1998-1999	149.4	538.060	13/10/1998	0.000	534.965	25/02/1999
1999-2000	293.2	539.410	24/07/1999	0.000		17/02/2000
2000-2001	215.7	538.830	15/07/2000	0.000		12/02/2001
2001-2002	29.82	536.210	30/09/2001	0.000		25/01/2002
2002-2003	30.26	536.380	15/10/2002	0.000	535.350	01/12/2002
2003-2004	173.3	538.040	04/10/2003	0.000		18/06/2003
2004-2005	312.4	538.945	07/08/2004	0.000		23/02/2005
2005-2006	301.7	539.670	04/08/2005	0.000	534.500	30/01/2006
2006-2007	283.3	538.600	13/08/2006	0.000		30/01/2007
2007-2008	776.3	541.840	08/08/2007	0.000	534.840	15/01/2008
2008-2009	509.7	540.500	14/08/2008	0.000	535.100	30/03/2009
2009-2010	394.1	540.050	18/07/2009	0.000	535.190	30/01/2010
2010-2011	798.2	539.970	04/10/2010	0.000	534.640	24/06/2010
2011-2012	133.3	536.940	05/09/2011	0.000	535.170	31/12/2011
2012-2013	64.26	536.090	03/11/2012	0.000	534.740	25/01/2013

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2013-2014	594.4	539.370	03/08/2013	0.000	535.200	07/01/2014
2014-2015	421.5	539.670	02/08/2014	0.000	535.110	14/12/2014
2015-2016	34.12	535.665	21/07/2015	0.000		10/05/2016
2016-2017	8.782	535.490	15/09/2016	0.000	534.680	06/07/2016
2017-2018	0.000	536.090	29/09/2017	0.000	534.090	20/12/2017
2018-2019	300.0	538.010	16/08/2018	0.000	534.490	25/01/2019

Annual Runoff of Kumudavathi at Kuppelur

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1990-1991	165	0	165	5.835627	0	5.83563
2	1991-1992	474	2	476	16.76236	0.059045088	16.8214
3	1992-1993	634	24	658	22.385614	0.851323929	23.2369
4	1993-1994	292	14	306	10.315833	0.491017611	10.8069
5	1994-1995	658	18	676	23.256282	0.642046643	23.8983
6	1995-1996	176	2	178	6.2086033	0.086494643	6.2951
7	1996-1997	133	4	138	4.716286	0.147982134	4.86427
8	1997-1998	428	10	438	15.123596	0.337878954	15.4615
9	1998-1999	398	5	403	14.071073	0.181162177	14.2522
10	1999-2000	329	2	331	11.623767	0.084671103	11.7084
11	2000-2001	407	2	408	14.370738	0.06207825	14.4328
12	2001-2002	45	0	45	1.6061978	0	1.6062
13	2002-2003	49	1	50	1.7364837	0.031848338	1.76833
14	2003-2004	73	1	74	2.5912986	0.026999073	2.6183
15	2004-2005	240	0	240	8.4772904	0	8.47729
16	2005-2006	472	2	475	16.685794	0.087712792	16.7735
17	2006-2007	301	0	301	10.639838	0.004893965	10.6447
18	2007-2008	773	9	782	27.311741	0.306355026	27.6181
19	2008-2009	400	6	406	14.142566	0.215422982	14.358
20	2009-2010	586	2	588	20.721558	0.060619633	20.7822
21	2010-2011	930	27	957	32.8529	0.956736901	33.8096
22	2011-2012	360	29	389	12.731992	1.020867175	13.7529
23	2012-2013	88	0	88	3.113441	0	3.11344
24	2013-2014	615	0	615	21.736342	0	21.7363
25	2014-2015	609	0	609	21.517512	0	21.5175
26	2015-2016	96	0	96	3.376008	0	3.37601
27	2016-2017	23	0	23	0.8037984	0	0.8038
28	2017-2018	0	0	0	0	0	0
29	2018-2019	235	0	235	8.3020569	0	8.30206
30	2019-2020	807	13	820	28.529228	0.442267251	28.9715
Average		360	6	366	13	0	13
75% Dependable flow (MCM)				96			
90 % Dependable flow (MCM)				27			

Stage-Discharge Data for the period 2019 - 2020

Station Name : KUPPELUR (AKLC0B8)

Division : Cauvery Division, Bangalore

Local River : Kumudavathi

Sub-Division : Upper Tunga SD, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000	534.420	0.000	535.440	29.62 *	535.470	34.84	535.820	51.38
2		0.000		0.000	534.410	0.000	535.510	33.80 *	535.410	27.89 *	535.870	60.17
3		0.000		0.000	534.390	0.000	535.470	35.59	535.390	31.33	535.810	53.85 *
4		0.000		0.000	534.390	0.000	535.510	38.06	535.480	35.45	535.750	46.39
5		0.000		0.000	534.420	0.000	535.910	61.15	535.570	39.85	535.650	42.09
6		0.000		0.000	534.590	0.000	536.370	93.70	535.560	36.90 *	535.620	41.13
7		0.000		0.000	535.190	0.000	536.870	146.9	535.520	34.41 *	535.600	40.55
8		0.000		0.000	535.610	35.86	536.690	130.1 *	535.800	53.13 *	535.620	41.80
9		0.000		0.000	539.530	510.5 *	536.300	91.29	535.920	62.53	535.570	39.22
10		0.000		0.000	540.110	608.9 *	536.570	118.3 *	536.610	116.9	535.550	36.27 *
11		0.000		0.000	540.320	646.0 *	536.560	114.2	535.650	42.37	535.520	37.23
12		0.000		0.000	540.330	647.8 *	536.360	93.74	535.870	58.48	535.490	32.58 *
13		0.000		0.000	539.040	432.4 *	535.850	55.87	535.810	53.85 *	535.470	35.43
14		0.000		0.000	538.060	307.6	535.720	44.60	535.740	45.44	535.430	33.03
15		0.000		0.000	536.820	143.3 *	535.620	40.75 *	536.390	96.01	535.370	29.45
16		0.000		0.000	536.220	66.43	535.570	39.92	535.920	62.78	535.350	28.48
17		0.000		0.000	536.420	85.33	535.520	37.54	535.660	42.77	535.210	17.38 *
18		0.000		0.000	536.280	91.59 *	535.450	34.26	535.620	41.25	535.130	9.818
19		0.000	534.450	0.000	536.170	62.09	535.470	34.88	535.570	39.78	535.110	9.584
20		0.000	534.630	0.000	535.910	50.12	535.520	35.79	536.450	107.0 *	535.090	9.041
21		0.000	534.520	0.000	535.870	48.46	535.450	34.32	537.340	192.8	535.050	8.058
22		0.000	534.480	0.000	536.060	77.53	535.420	28.46 *	538.570	362.0 *	535.020	7.277
23		0.000	534.450	0.000	535.990	75.17	535.400	33.22	537.400	208.2	535.000	7.071
24		0.000	534.420	0.000	535.780	51.12	535.380	30.61	537.260	184.2	534.990	8.069 *
25		0.000	534.400	0.000	535.670	44.07 *	535.390	31.20	536.690	127.8	534.970	6.797
26		0.000	534.390	0.000	535.620	41.35	535.420	33.70	536.870	147.9	535.020	7.306
27		0.000	534.380	0.000	535.570	39.31	535.460	34.39	536.840	145.4 *	535.000	7.022
28		0.000	534.370	0.000	535.530	38.05	535.530	37.79	536.430	99.72	534.930	5.943
29		0.000	534.400	0.000	535.500	37.43	535.490	32.58 *	536.020	67.05	534.890	5.804
30		0.000	534.430	0.000	535.470	35.65	535.620	41.06	535.940	64.52	534.890	5.633
31			534.420	0.000	535.450	34.70			535.870	60.09		
<u>Ten-Daily Mean</u>												
I Ten-Daily		0.000		0.000	535.706	115.5	536.064	77.85	535.673	47.32	535.686	45.29
II Ten-Daily		0.000	534.540	0.000	537.557	253.3	535.764	53.16	535.868	58.97	535.317	24.20
III Ten-Daily		0.000	534.424	0.000	535.683	47.53	535.456	33.73	536.839	150.9	534.976	6.898
<u>Monthly</u>												
Min.		0.000	534.370	0.000	534.390	0.000	535.380	28.46	535.390	27.89	534.890	5.633
Max.		0.000	534.630	0.000	540.330	647.8	536.870	146.9	538.570	362.0	535.870	60.17
Mean		0	534.442	0	536.295	135.8	535.761	54.91	536.150	87.83	535.326	25.46

Annual Runoff in MCM = 820 Annual Runoff in mm = 443

Peak Observed Discharge = 307.6 cumecs on 14/08/2019 Corres. Water Level :538.06 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Stage-Discharge Data for the period 2019 - 2020

Station Name : KUPPELUR (AKLC0B8)

Division : Cauvery Division, Bangalore

Local River : Kumudavathi

Sub-Division : Upper Tunga SD, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	534.850	4.942 *	534.700	0.000	533.840	0.000	0.000		0.000		0.000	
2	534.820	4.364	534.680	0.000	533.790	0.000	0.000		0.000		0.000	
3	534.870	5.424	534.660	0.000	533.760	0.000	0.000		0.000		0.000	
4	534.890	5.691	534.640	0.000	533.710	0.000	0.000		0.000		0.000	
5	534.870	5.396	534.610	0.000	533.650	0.000	0.000		0.000		0.000	
6	534.830	4.447	534.570	0.000	533.600	0.000	0.000		0.000		0.000	
7	534.820	4.343	534.550	0.000	533.550	0.000	0.000		0.000		0.000	
8	534.810	4.224 *	534.520	0.000	533.510	0.000	0.000		0.000		0.000	
9	534.800	4.252	534.470	0.000	533.450	0.000	0.000		0.000		0.000	
10	534.770	3.632	534.450	0.000	533.370	0.000	0.000		0.000		0.000	
11	534.770	3.601	534.420	0.000	533.300	0.000	0.000		0.000		0.000	
12	534.790	3.708	534.370	0.000	533.240	0.000	0.000		0.000		0.000	
13	534.470	0.563 *	534.330	0.000	533.120	0.000	0.000		0.000		0.000	
14	534.450	0.466 *	534.270	0.000	533.050	0.000	0.000		0.000		0.000	
15	534.450	0.466 *	534.250	0.000	532.970	0.000	0.000		0.000		0.000	
16	534.440	0.421 *	534.210	0.000	532.890	0.000	0.000		0.000		0.000	
17	534.440	0.421 *	534.190	0.000	532.830	0.000	0.000		0.000		0.000	
18	534.840	4.757 *	534.190	0.000	532.720	0.000	0.000		0.000		0.000	
19	534.880	5.526 *	534.180	0.000	532.650	0.000	0.000		0.000		0.000	
20	534.970	7.512 *	534.170	0.000	532.580	0.000	0.000		0.000		0.000	
21	535.010	8.515 *	534.170	0.000	532.380	0.000	0.000		0.000		0.000	
22	535.000	8.257 *	534.140	0.000		0.000	0.000		0.000		0.000	
23	534.990	8.004 *	534.110	0.000		0.000	0.000		0.000		0.000	
24	534.970	7.512 *	534.100	0.000		0.000	0.000		0.000		0.000	
25	534.950	7.040 *	534.080	0.000		0.000	0.000		0.000		0.000	
26	534.940	6.810 *	534.060	0.000		0.000	0.000		0.000		0.000	
27	534.910	6.147 *	534.030	0.000		0.000	0.000		0.000		0.000	
28	534.880	5.526 *	533.990	0.000		0.000	0.000		0.000		0.000	
29	534.850	4.942 *	533.960	0.000		0.000	0.000		0.000		0.000	
30	534.810	4.224 *	533.930	0.000			0.000		0.000		0.000	
31	534.780	3.730 *	533.880	0.000			0.000				0.000	
Ten-Daily Mean												
I Ten-Daily	534.833	4.672	534.585	0.000	533.623	0.000	0.000		0.000		0.000	
II Ten-Daily	534.650	2.744	534.258	0.000	532.935	0.000	0.000		0.000		0.000	
III Ten-Daily	534.917	6.428	534.041	0.000	532.380	0.000	0.000		0.000		0.000	
Monthly												
Min.	534.440	0.421	533.880	0.000	532.380	0.000	0.000		0.000		0.000	
Max.	535.010	8.515	534.700	0.000	533.840	0.000	0.000		0.000		0.000	
Mean	534.804	4.673	534.286	0	533.236	0	0		0		0	

Peak Computed Discharge = 647.8 cumecs on 12/08/2019

Corres. Water Level :540.33 m

Lowest Computed Discharge = 0.421 cumecs on 16/12/2019

Corres. Water Level :534.44 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

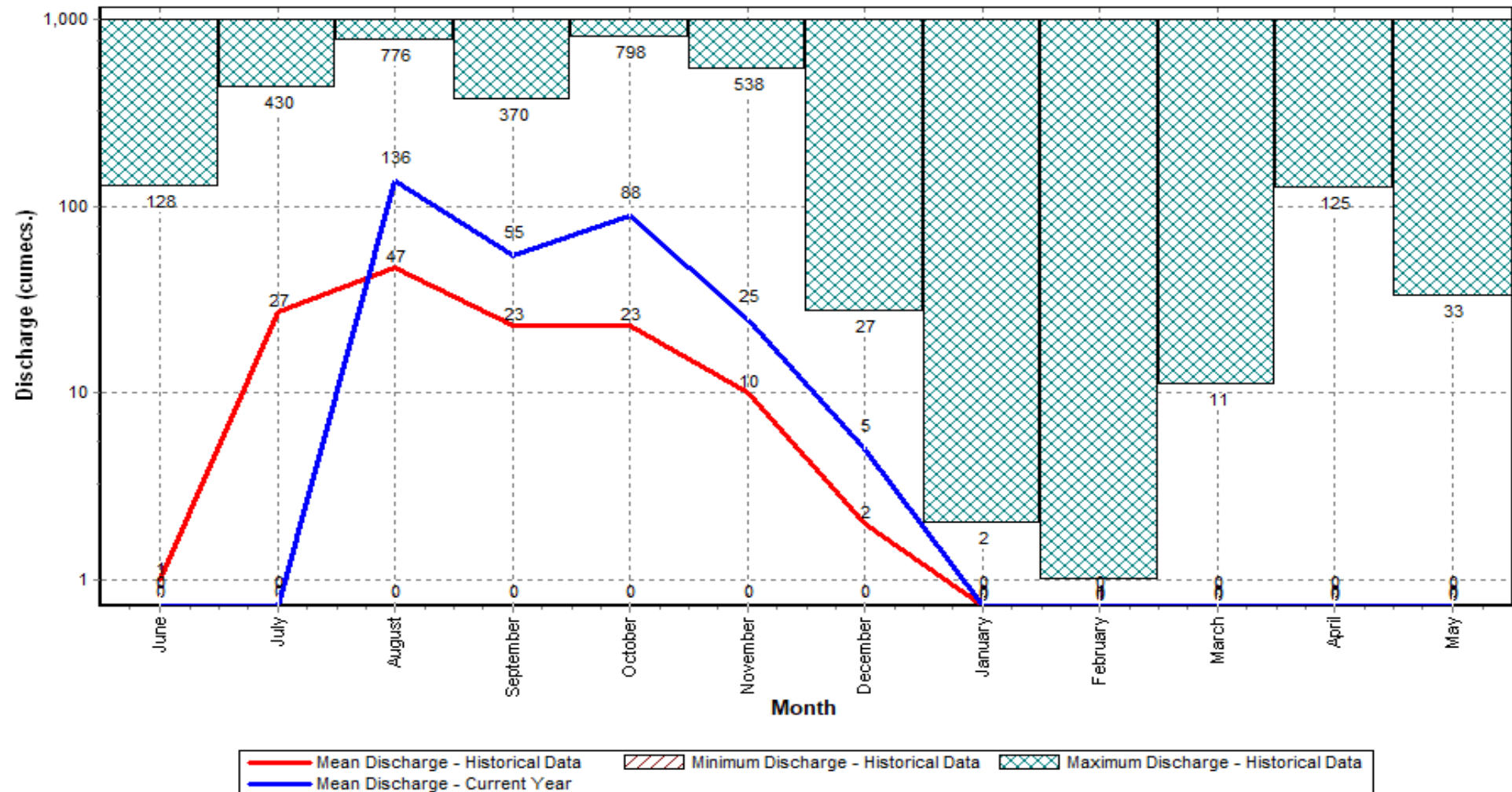
Station Name : KUPPELUR (AKLC0B8)

Data considered : 1991-2020

Division : Cauvery Division, Bangalore

Local River : Kumudavathi

Sub-Division : Upper Tunga SD, Devangere



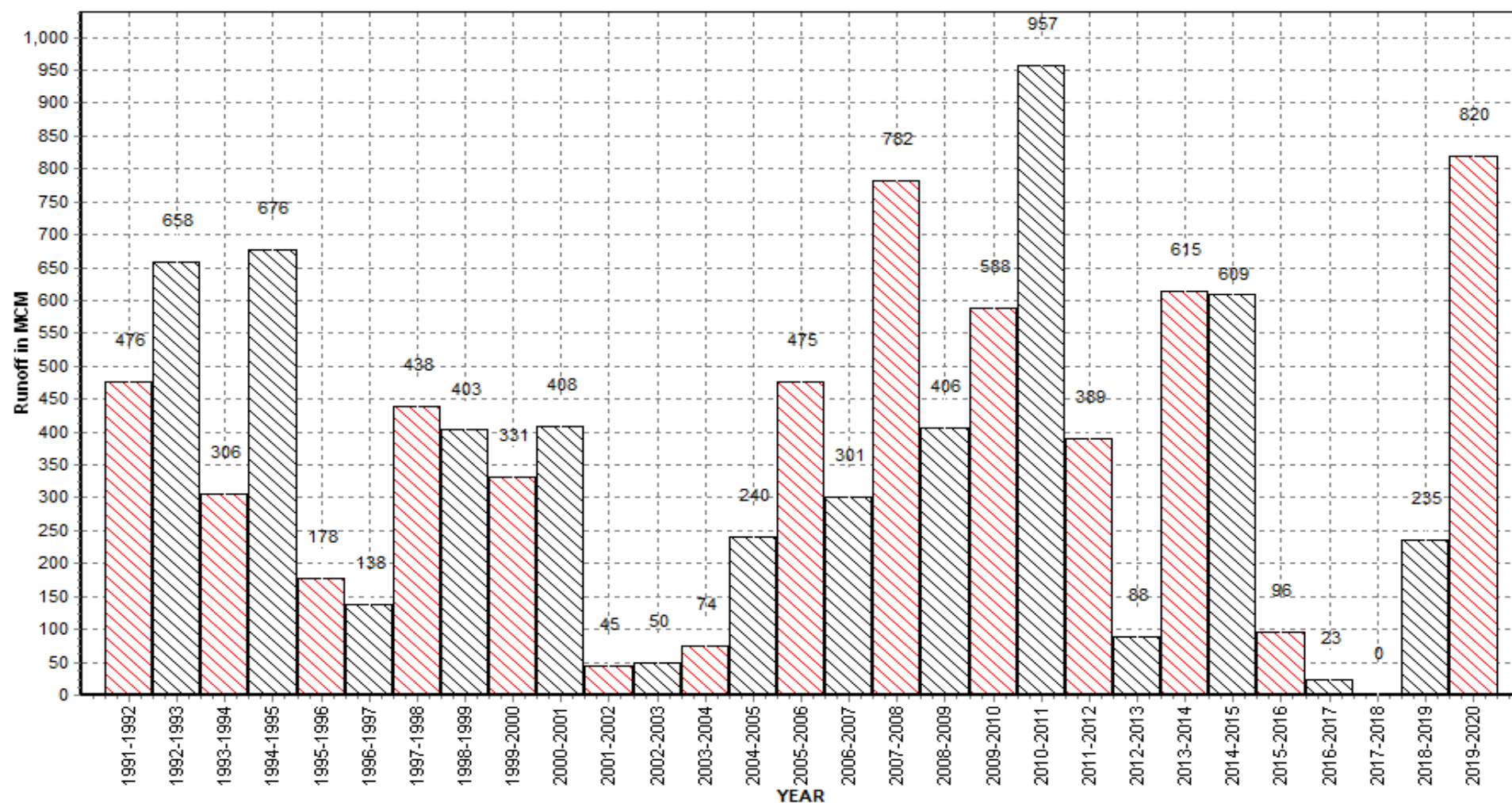
Annual Runoff Values for the period: 1991 - 2020

Station Name : KUPPELUR (AKLC0B8)

Local River : Kumudavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

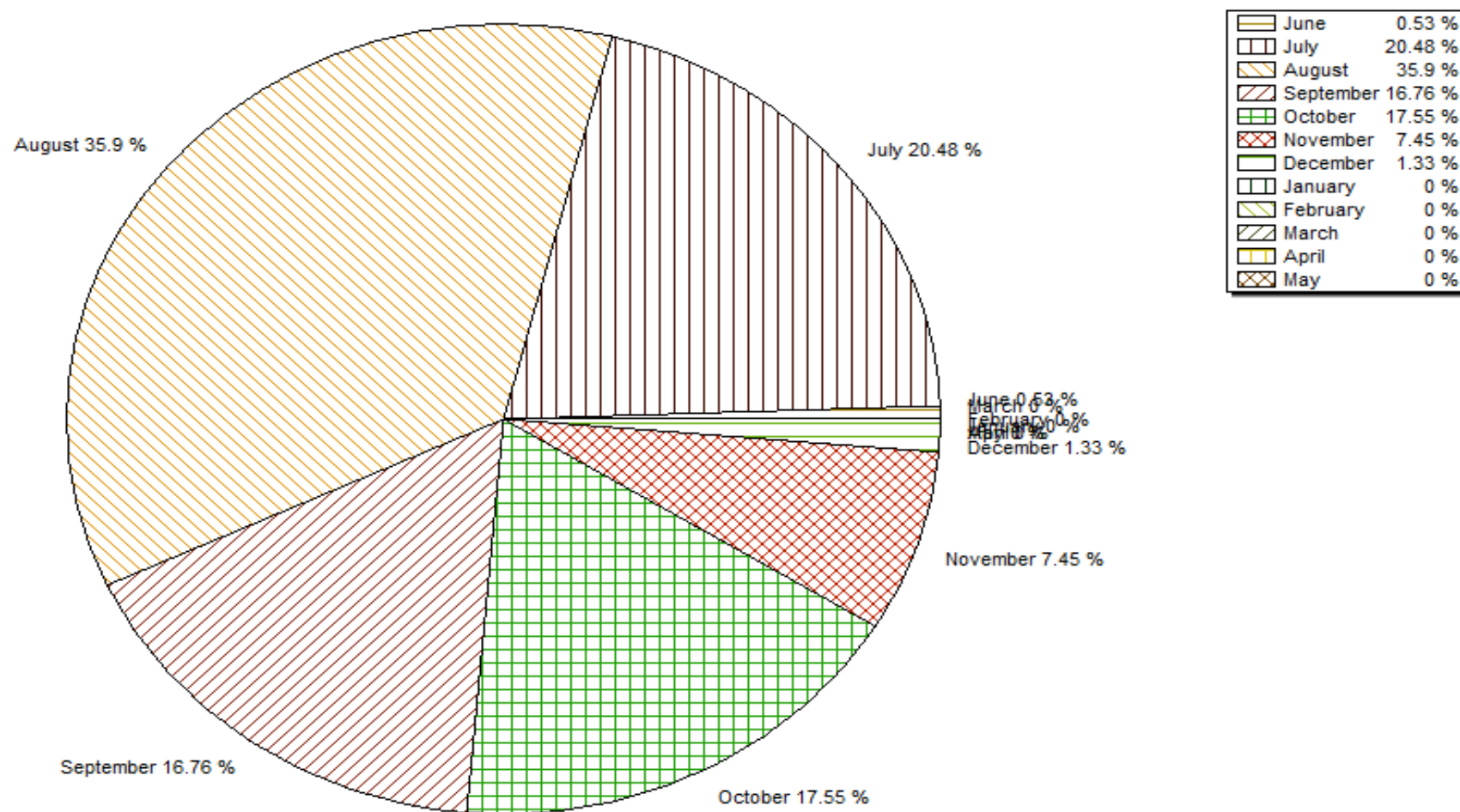
Monthly Average Runoff based on period : 1991-2019

Station Name : KUPPELUR (AKLC0B8)

Local River : Kumudavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



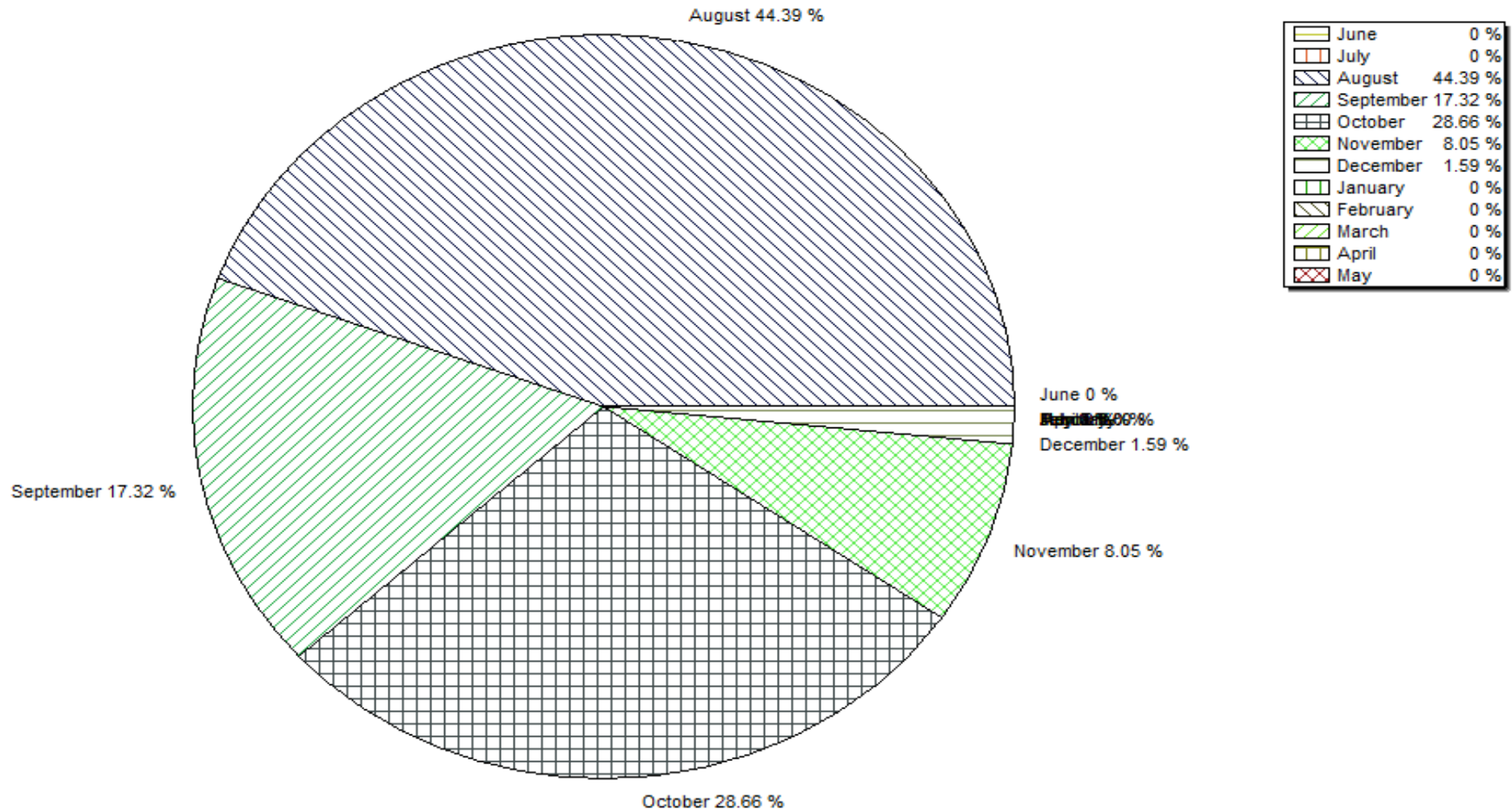
Monthly Runoff for the Year : 2019-2020

Station Name : KUPPELUR (AKLC0B8)

Local River : Kumudavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



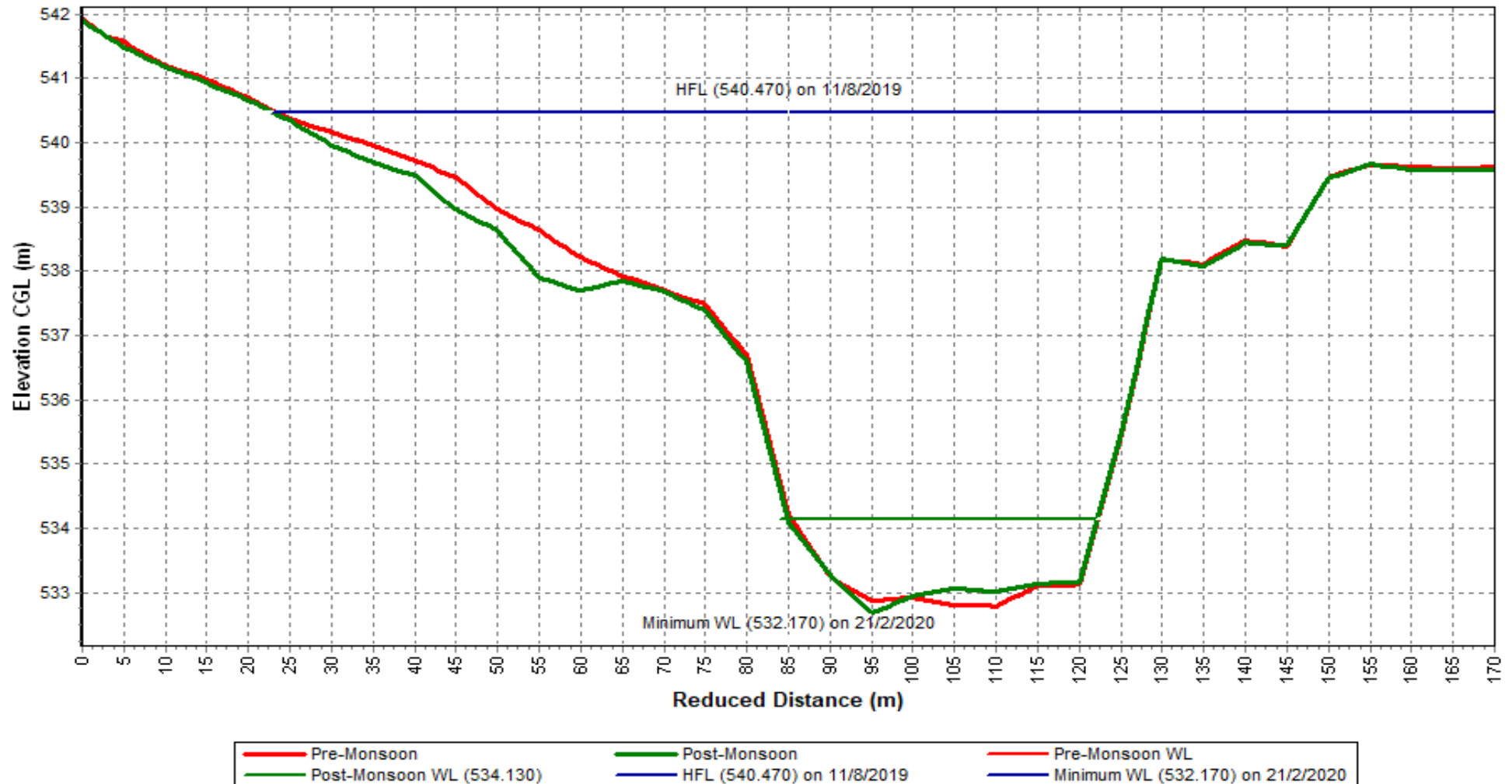
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : KUPPELUR (AKLC0B8)

Local River : Kumudavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



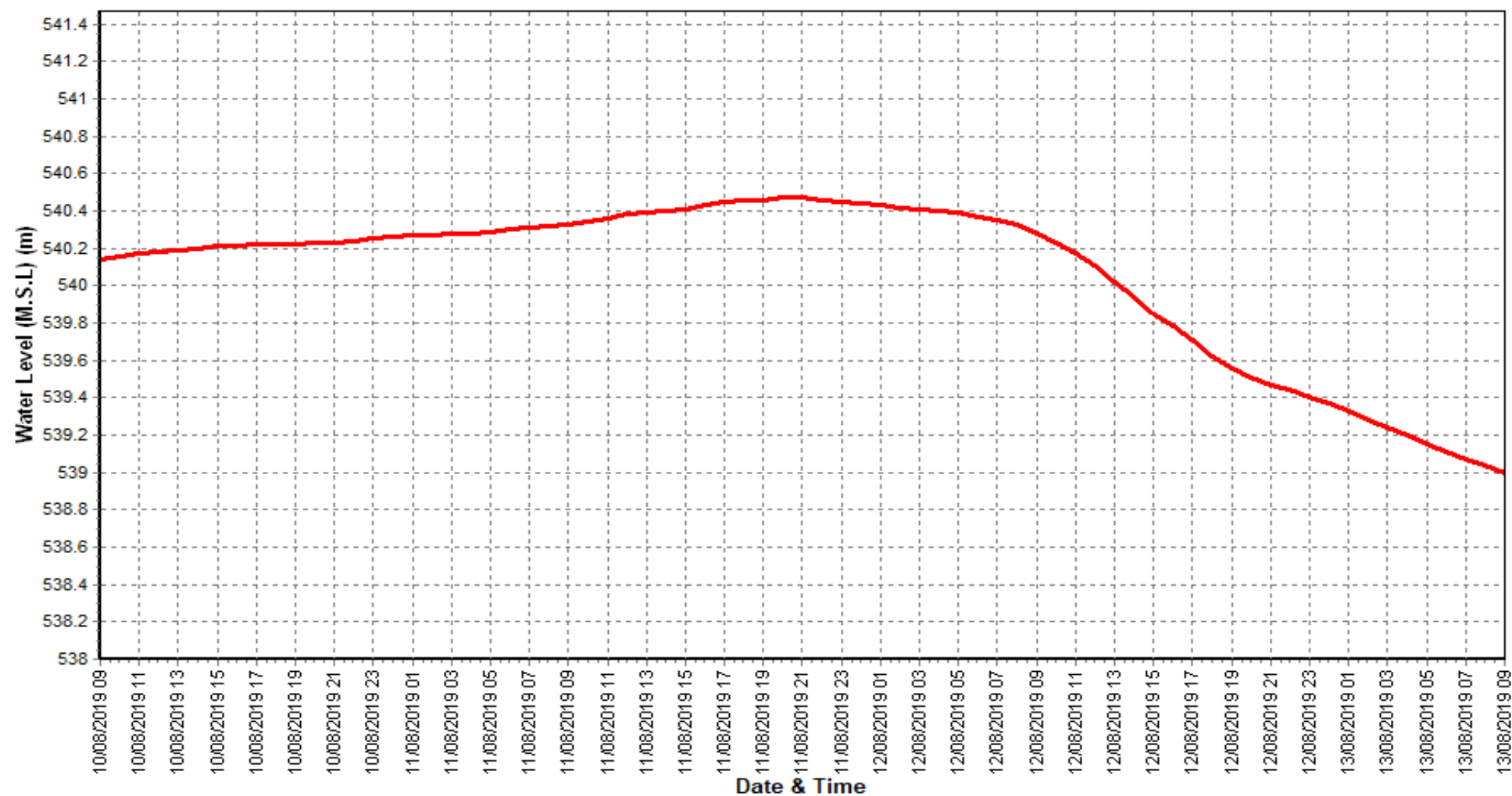
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : KUPPELUR (AKLC0B8)

Local River : Kumudavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



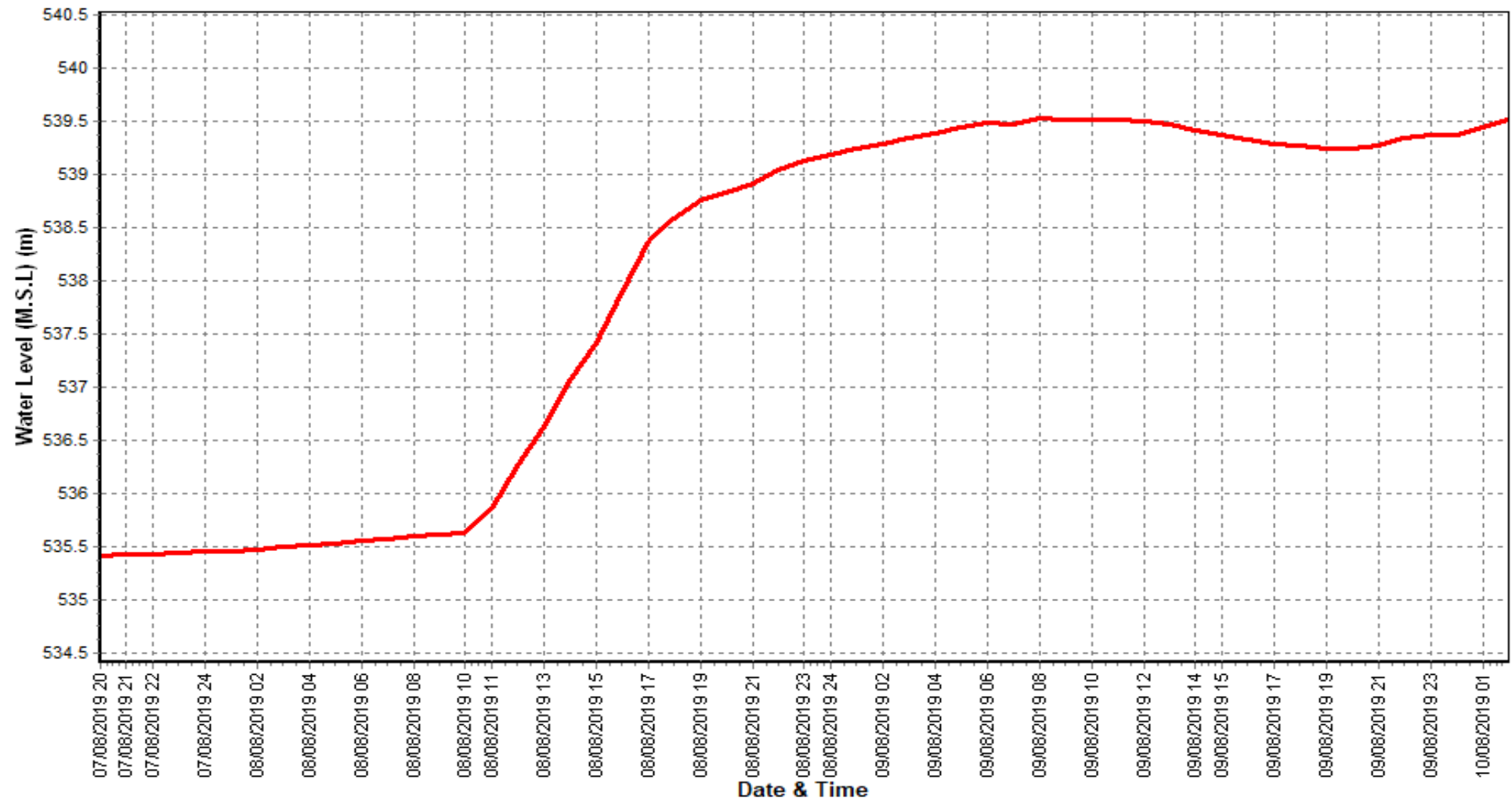
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : KUPPELUR (AKLC0B8)

Local River : Kumudavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



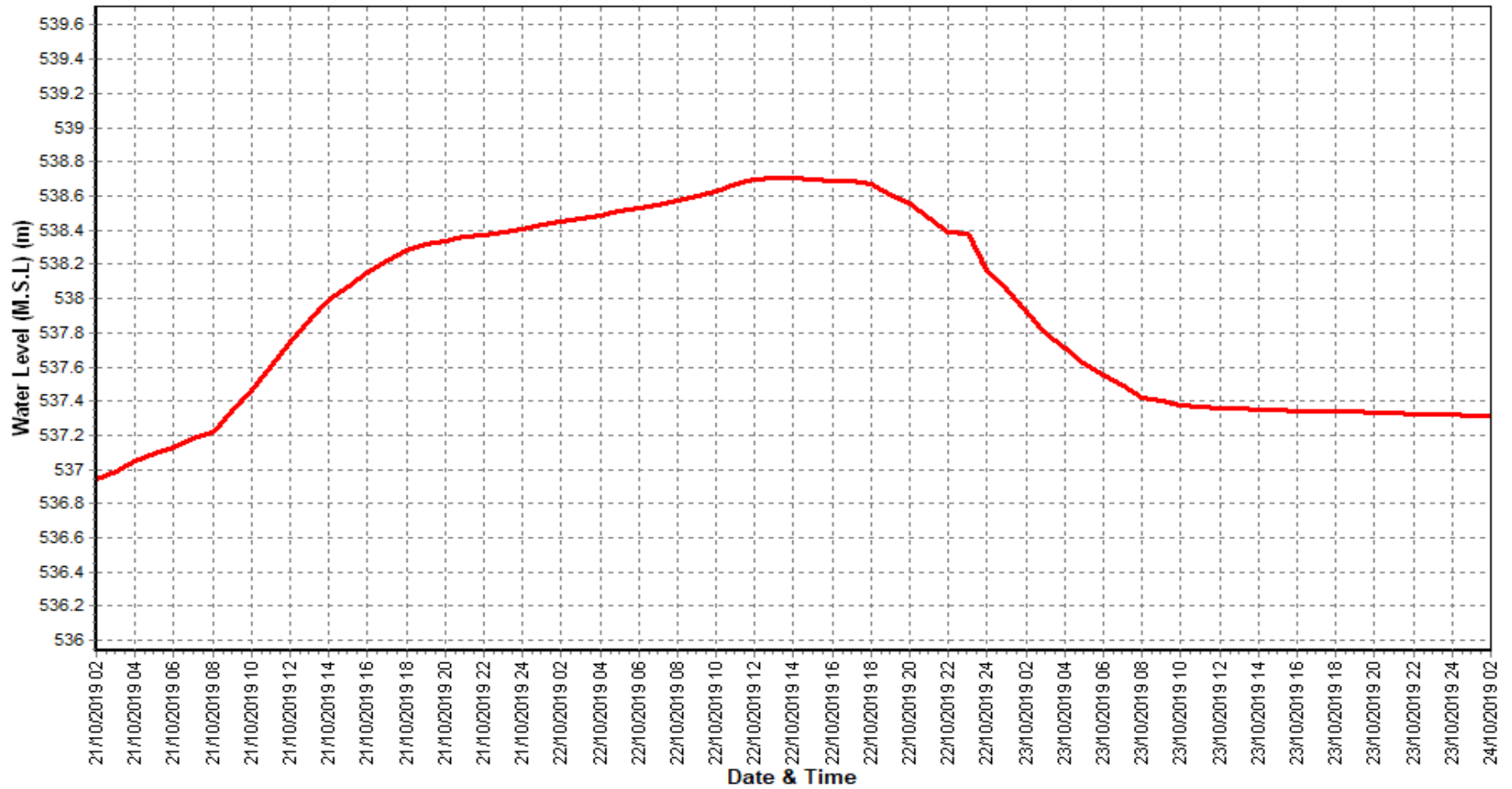
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : KUPPELUR (AKLC0B8)

Local River : Kumudavathi

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : HONNALI

Code : AKL00X6

State : Karnataka

District : Davanagere

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere

Drainage Area : 7075 Sq. Km.

Bank : Left

Latitude : 14°14'14"

Longitude : 75°39'45"

Zero of Gauge (m) : 533.9 (m.s.l)

21/06/1978

Opening Date

Closing Date

Gauge : 01/06/1980

Discharge : 21/06/1980

Sediment : 15/09/1995

Water Quality : 02/06/1986

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1980-1981	3050	93.635	04/07/1980	16.80	87.695	20/04/1981
1981-1982	2337	93.330	19/08/1981	17.20	87.680	05/04/1982
1982-1983	4555	94.910	03/08/1982	12.80	87.620	21/04/1983
1983-1984	2234	93.000	23/07/1983	12.50	87.590	10/06/1983
1984-1985	3003	93.440	19/07/1984	11.20	87.590	10/05/1985
1985-1986	1973	92.450	27/06/1985	3.900	87.380	29/03/1986
1986-1987	2670	543.440	10/08/1986	7.500	537.865	12/06/1986
1987-1988	1223	541.890	27/08/1987	1.726	537.710	05/04/1988
1988-1989	2833	543.795	19/07/1988	2.882	537.730	15/04/1989
1989-1990	2970	543.745	24/07/1989	4.616	537.850	02/06/1989
1990-1991	2075	543.090	16/08/1990	6.287	537.880	02/06/1990
1991-1992	3385	544.027	29/07/1991	7.012	537.970	23/03/1992
1992-1993	3758	544.672	28/07/1992	4.676	538.040	01/05/1993
1993-1994	1510	542.558	16/08/1993	4.533	538.237	13/06/1993
1994-1995	6950	546.400	16/07/1994	11.72	538.045	24/03/1995
1995-1996	1851	542.900	02/09/1995	8.755	538.050	12/06/1995
1996-1997	1531	542.520	24/07/1996	11.91	537.990	21/04/1997
1997-1998	3708	544.250	23/08/1997	7.719	538.080	02/05/1998
1998-1999	2035	543.045	14/09/1998	6.953	537.960	12/06/1998
1999-2000	3561	544.105	19/07/1999	11.80	538.050	31/05/2000
2000-2001	2527	543.770	13/07/2000	9.900	538.010	07/06/2000
2001-2002	1266	542.360	09/07/2001	4.464	537.830	23/03/2002

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2002-2003	1519	542.450	18/08/2002	0.011	537.390	26/05/2003
2003-2004	1146	541.930	24/08/2003	0.000	537.440	23/03/2004
2004-2005	3704	544.220	27/08/2004	5.880	537.880	17/02/2005
2005-2006	3685	544.090	17/08/2005	5.270	537.880	11/01/2006
2006-2007	4042	544.600	13/08/2006	3.024	537.820	13/01/2007
2007-2008	5361	546.300	07/08/2007	3.444	537.860	14/01/2008
2008-2009	6732	545.920	14/08/2008	0.576	537.650	08/01/2009
2009-2010	3651	544.710	17/07/2009	10.87	538.000	29/12/2009
2010-2011	1909	542.935	29/07/2010	15.69	538.100	19/03/2011
2011-2012	2639	543.785	02/09/2011	4.625	537.890	09/01/2012
2012-2013	3126	544.050	08/08/2012	3.056	537.790	17/06/2012
2013-2014	4528	544.975	03/08/2013	11.29	537.920	08/01/2014
2014-2015	4995	545.110	07/08/2014	11.48	537.930	20/06/2014
2015-2016	1870	543.090	20/07/2015	12.30	537.880	15/02/2016
2016-2017	1261	542.220	30/06/2016	5.295	537.480	06/05/2017
2017-2018	1361	542.340	21/07/2017	13.55	537.840	07/06/2017
2018-2019	5170	546.250	15/08/2018	18.40	537.950	31/05/2019

Annual Runoff of Tungabhadra at Honnali

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1980-1981	10716	731	11447	379	26	404
2	1981-1982	6662	585	7247	235	21	256
3	1982-1983	6864	458	7322	243	16	259
4	1983-1984	6749	558	7308	238	20	258
5	1984-1985	6690	510	7200	236	18	254
6	1985-1986	5046	288	5333	178	10	188
7	1986-1987	4832	323	5154	171	11	182
8	1987-1988	2851	252	3102	101	9	110
9	1988-1989	4569	380	4949	161	13	175
10	1989-1990	5113	283	5396	181	10	191
11	1990-1991	6487	440	6927	229	16	245
12	1991-1992	6944	426	7370	245	15	260
13	1992-1993	8707	720	9428	308	25	333
14	1993-1994	5955	504	6459	210	18	228
15	1994-1995	10663	469	11132	377	17	393
16	1995-1996	4469	459	4928	158	16	174
17	1996-1997	4488	378	4866	159	13	172
18	1997-1998	7240	506	7746	256	18	274
19	1998-1999	6301	697	6998	223	25	247
20	1999-2000	7107	635	7742	251	22	274
21	2000-2001	6179	716	6895	218	25	244
22	2001-2002	4175	365	4540	148	13	160
23	2002-2003	3753	224	3977	133	8	141
24	2003-2004	3515	253	3768	124	9	133
25	2004-2005	8197	473	8670	290	17	306
26	2005-2006	4404	582	4987	156	21	176
27	2006-2007	7836	534	8371	277	19	296
28	2007-2008	10367	721	11087	366	25	392
29	2008-2009	7082	521	7604	250	18	269
30	2009-2010	7140	634	7775	252	22	275
31	2010-2011	6062	665	6727	214	24	238
32	2011-2012	6660	560	7219	235	20	255
33	2012-2013	4581	370	4951	162	13	175
34	2013-2014	9004	590	9594	318	21	339
35	2014-2015	7297	647	7944	258	23	281
36	2015-2016	4340	596	4936	153	21	174
37	2016-2017	3443	456	3900	122	16	138
38	2017-2018	3251	601	3851	115	21	136
39	2018-2019	9104	576	9680	322	20	342
40	2019-2020	8387	791	9178	296	28	324
Average		6159	504	6662	218	18	235
75% Dependable flow (MCM)				4949			
90 % Dependable flow (MCM)				3900			

Stage-Discharge Data for the period 2019 - 2020

Station Name : HONNALI (AKL00X6)

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga Subdn, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	537.950	18.73	537.760	9.344	540.370	472.4	540.000	354.5 *	540.100	392.6	540.390	478.3
2	537.800	11.92 *	537.740	8.893	540.190	407.5	540.300	450.6 *	539.740	282.1 *	540.010	355.1
3	537.800	11.37	537.740	8.831	540.260	427.7	541.130	725.5	539.670	287.0	539.610	249.5 *
4	537.800	11.14	539.280	197.8	540.610	564.7 *	541.390	852.2	539.440	230.2	539.540	257.7
5	537.800	11.92 *	539.740	295.7	540.900	635.0	541.910	1119	539.300	202.6	539.500	245.3
6	537.800	10.92	540.050	356.3	542.650	1525	543.010	1862	539.840	308.8 *	539.130	165.4
7	537.580	4.645	541.010	735.1 *	544.040	2824	542.880	1748	540.960	712.3 *	539.350	212.5
8	537.580	4.721	540.490	495.8	544.990	4142	542.940	1965 *	539.940	336.9 *	539.910	334.7
9	537.680	7.742 *	540.220	415.9	545.120	4389	543.270	2113	540.100	393.8	539.810	312.8
10	537.720	8.353	540.760	577.7	545.730	5870	543.440	2405 *	539.900	332.0	539.470	217.0 *
11	537.720	8.093	541.500	911.8	545.440	4721	541.660	985.4	539.900	332.1	539.420	224.8
12	537.720	8.054	540.310	453.5	544.430	3436	541.280	805.5	540.000	386.1	539.200	161.9 *
13	537.720	7.967	540.070	368.5	541.700	1020 *	541.070	703.9	540.620	568.6 *	539.120	161.4
14	537.720	7.907	539.660	261.7 *	541.340	837.1 *	540.520	502.9	540.470	490.2	539.050	147.4
15	537.670	6.335	539.480	239.4	541.320	886.0 #	540.750	621.3 *	540.110	397.0	539.030	142.6
16	537.670	7.441 *	539.480	239.4	542.340	1373 *	540.360	468.7	539.730	293.5	539.000	136.4
17	537.670	6.160	539.300	202.1	541.200	766.4 *	540.620	525.3	539.730	293.5	538.920	114.6 *
18	537.670	6.086	539.130	162.5	540.760	625.4 *	540.350	463.5	539.760	302.2	538.880	112.5
19	538.200	38.72	538.890	125.1	540.250	425.8	540.480	493.6	540.080	391.1	538.980	132.7
20	538.390	53.42	538.850	116.4	540.430	485.3	540.160	404.2	540.670	588.5 *	539.120	161.4
21	538.130	32.18	540.630	572.6 *	540.790	593.0	540.060	386.1	541.090	713.6	538.860	108.3
22	538.290	45.24	540.310	453.5	540.080	370.3	539.700	271.8 *	542.450	1419	538.950	126.6
23	538.290	41.42 *	540.690	558.1	540.220	415.9	539.520	251.5	541.660	988.7	538.800	101.4
24	538.290	45.43	540.480	492.4	540.300	451.4	539.620	274.2	541.210	771.7	538.830	101.4 *
25	538.290	44.39	540.440	461.4	540.500	522.4 *	539.620	274.2	541.190	761.2	539.200	185.0
26	538.290	44.81	540.060	385.1	540.290	447.9	539.760	301.3	541.340	837.2	538.860	108.5
27	538.290	45.67	540.050	381.8	540.100	391.4	540.070	388.1	541.930	1233 *	538.620	79.48
28	538.290	45.26	540.290	447.2 *	539.890	325.7	539.990	351.6	541.340	837.2	538.600	75.69
29	537.995	20.97	540.150	401.0	539.910	335.7	539.900	325.5 *	540.460	485.5	538.730	99.64
30	537.820	12.73 *	540.740	568.3	539.720	291.0	539.640	281.0	540.300	452.9	538.740	101.5
31			541.060	697.3	540.020	358.0			540.160	404.2		
Ten-Daily Mean												
I Ten-Daily	537.751	10.15	539.479	310.1	542.486	2126	542.027	1359	539.899	347.8	539.672	282.8
II Ten-Daily	537.815	15.02	539.667	308.0	541.921	1458	540.725	597.4	540.107	404.3	539.072	149.6
III Ten-Daily	538.198	37.81	540.445	492.6	540.165	409.3	539.788	310.5	541.194	809.4	538.819	108.8
Monthly												
Min.	537.580	4.645	537.740	8.831	539.720	291.0	539.520	251.5	539.300	202.6	538.600	75.69
Max.	538.390	53.42	541.500	911.8	545.730	5870	543.440	2405	542.450	1419	540.390	478.3
Mean	537.921	20.99	539.883	374.2	541.480	1301	540.847	755.8	540.425	529.8	539.188	180.4

Annual Runoff in MCM = 9178 Annual Runoff in mm = 1297

Peak Observed Discharge = 5870 cumecs on 10/08/2019 Corres. Water Level :545.73 m

Lowest Observed Discharge = 4.645 cumecs on 07/06/2019 Corres. Water Level :537.58 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : HONNALI (AKL00X6)

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga Subdn, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	538.800	105.7 *	538.400	52.33	538.300	47.57	538.100	28.02 *	538.100	28.02 *	538.200	35.49
2	538.900	115.7	538.410	53.46	538.280	42.51 *	538.080	25.41	538.060	25.28 *	538.200	35.40
3	539.160	171.5	538.400	52.33	538.250	41.47	538.080	25.52	538.200	35.63 *	538.300	44.33 *
4	539.020	140.4	538.400	52.33	538.250	41.19	538.080	25.72	538.410	55.21 *	538.590	76.19
5	538.940	124.7	538.380	52.11 *	538.250	41.82	538.080	25.36	538.530	68.73 *	539.000	136.4
6	538.820	105.5	538.300	47.89	538.220	36.92	538.130	30.67	538.650	84.00 *	538.880	112.5
7	538.820	106.4	538.300	46.98	538.220	37.02	538.130	30.65	538.710	92.32 *	538.670	86.72 *
8	538.760	99.60 *	538.300	47.34	538.220	37.52	538.130	30.19 *	538.760	99.60 *	538.550	71.36
9	538.700	88.79	538.250	42.21	538.220	37.28 *	538.120	29.20	538.860	115.2 *	538.450	58.96
10	538.670	84.49	538.250	38.31	538.200	34.35	538.120	29.15	538.950	130.3 *	538.400	54.17 *
11	538.590	76.21	538.250	41.82	538.200	35.07	538.120	29.47	539.000	139.2 *	538.400	52.33
12	538.530	69.62	538.240	38.98 *	538.200	35.00	538.120	29.98	538.820	108.8 *	538.350	50.56
13	538.510	67.21	538.180	35.55	538.200	35.28	538.110	27.51	538.520	67.53 *	538.350	50.50
14	538.500	65.76	538.180	35.50	538.180	34.45	538.110	27.25	538.440	58.43 *	538.350	50.70
15	538.500	65.18 *	538.180	34.02 *	538.180	34.14	538.110	28.74 *	538.400	52.21	538.330	48.06
16	538.490	64.45	538.100	28.40	538.180	34.02 *	538.080	25.36	538.260	44.19	538.330	48.24
17	538.480	63.10	538.100	28.15	538.150	32.28	538.080	25.40	538.260	44.15	538.330	47.16 *
18	538.470	61.76	538.100	28.10	538.150	32.50	538.080	25.31	538.260	43.56	538.300	46.17
19	538.450	58.95	538.400	54.17 *	538.150	32.91	538.080	25.36	538.220	37.28 *	538.350	50.53
20	538.450	58.87	538.460	60.17	538.120	29.82	538.070	24.09	538.300	47.77	538.350	50.04
21	538.450	58.87	538.460	60.25	538.120	29.46 *	538.070	24.30	538.330	49.26	538.390	53.82
22	538.440	58.43 *	538.480	63.09	538.120	29.45	538.060	25.28 *	538.330	48.61	538.390	53.29
23	538.430	56.11	538.480	63.18	538.110	28.74 *	538.100	26.88	538.330	48.40	538.390	53.03
24	538.420	54.70	538.500	65.84	538.110	27.77	538.100	26.57	538.350	50.86	538.290	43.41 *
25	538.420	56.28 *	538.500	65.84	538.110	27.75	538.100	28.02 *	538.350	50.55	538.200	35.63 *
26	538.420	54.70	538.500	65.18 *	538.110	27.33	538.100	28.02 *	538.350	49.10 *	538.000	21.19
27	538.420	54.53	538.420	54.68	538.100	26.36	538.100	28.02 *	538.250	42.37	538.000	21.12
28	538.410	53.34	538.350	49.93	538.100	26.51	538.100	28.02 *	538.250	42.72	538.000	23.15
29	538.410	55.21 *	538.350	49.18	538.100	26.66	538.100	28.02 *	538.250	42.34	538.000	21.57
30	538.400	52.21	538.350	49.98			538.080	28.02 *	538.250	42.90	538.000	21.79
31	538.400	52.21	538.350	49.33			538.080	28.02 *			537.980	20.28 *
Ten-Daily Mean												
I Ten-Daily	538.859	114.3	538.339	48.53	538.241	39.76	538.105	27.99	538.523	73.43	538.524	71.15
II Ten-Daily	538.497	65.11	538.219	38.49	538.171	33.55	538.096	26.85	538.448	64.31	538.344	49.43
III Ten-Daily	538.420	55.14	538.431	57.86	538.109	27.78	538.090	27.20	538.304	46.71	538.149	33.48
Monthly												
Min.	538.400	52.21	538.100	28.10	538.100	26.36	538.060	24.09	538.060	25.28	537.980	20.28
Max.	539.160	171.5	538.500	65.84	538.300	47.57	538.130	30.67	539.000	139.2	539.000	136.4
Mean	538.586	77.43	538.333	48.6	538.176	33.9	538.097	27.34	538.425	61.48	538.333	50.78

Peak Computed Discharge = 2405 cumecs on 10/09/2019

Corres. Water Level :543.44 m

Lowest Computed Discharge = 7.441 cumecs on 16/06/2019

Corres. Water Level :537.67 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

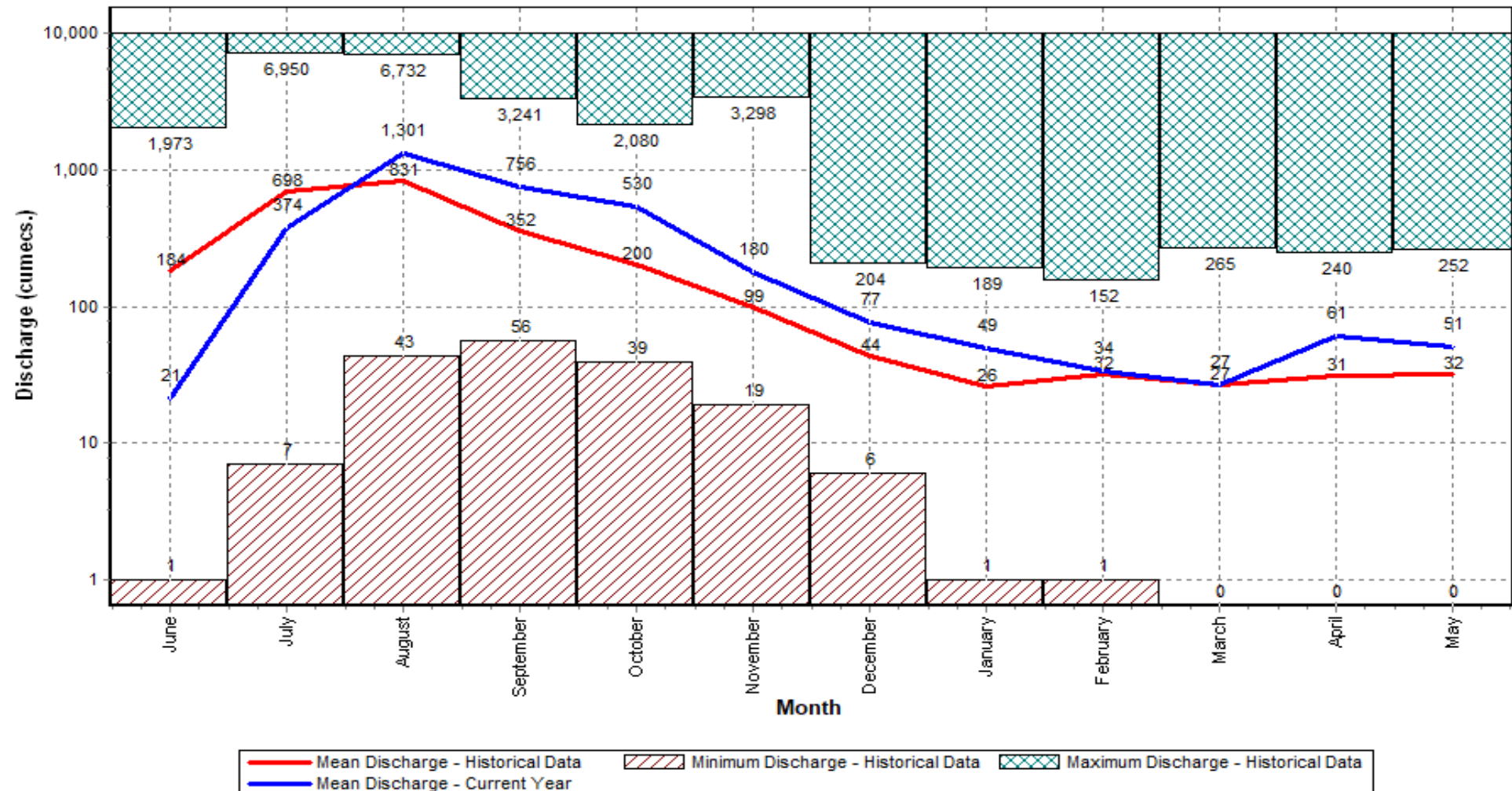
Station Name : HONNALI (AKL00X6)

Data considered : 1980-2020

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga Subdn, Devangere



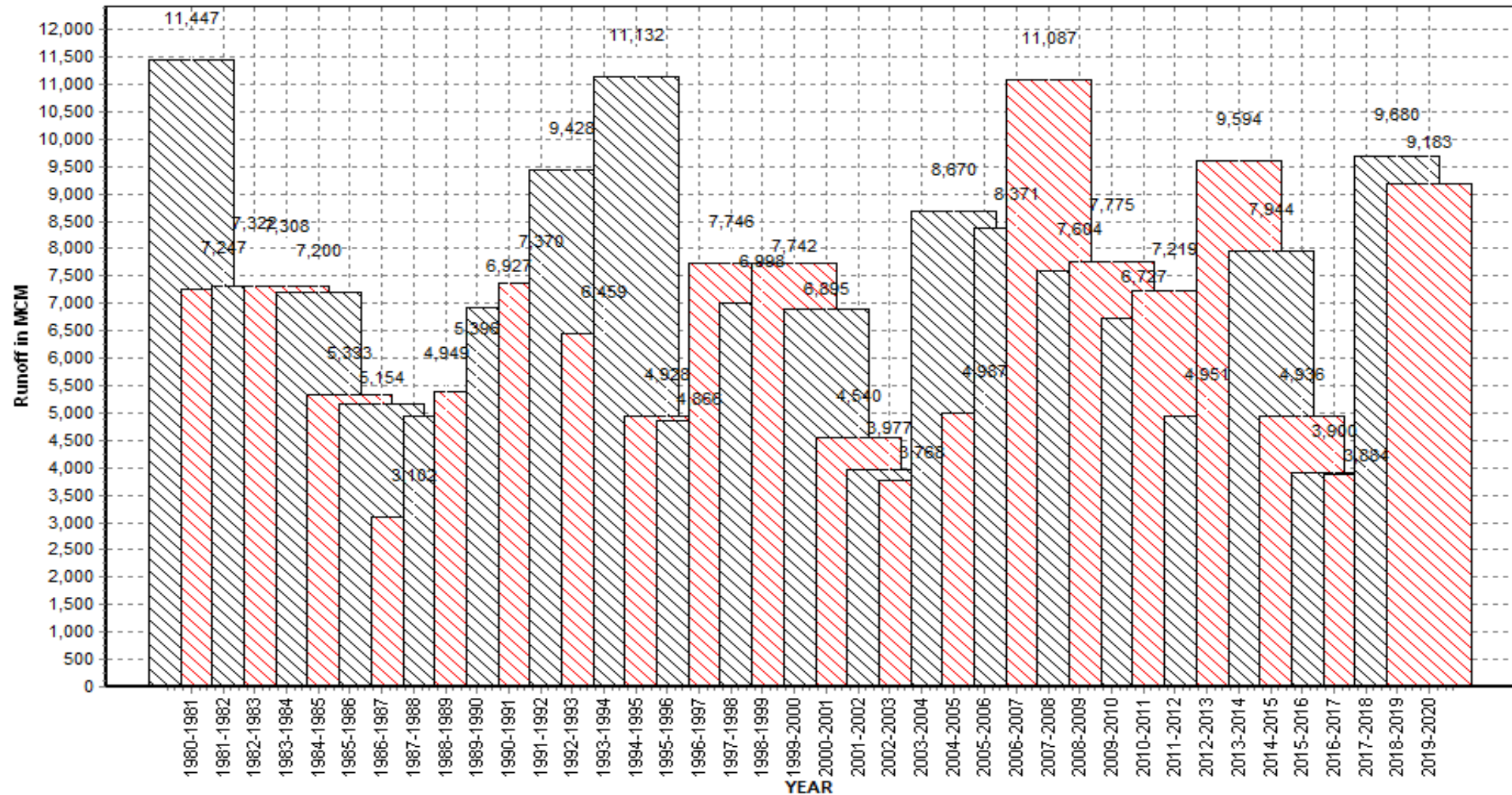
Annual Runoff Values for the period: 1980 - 2020

Station Name : HONNALI (AKL00X6)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

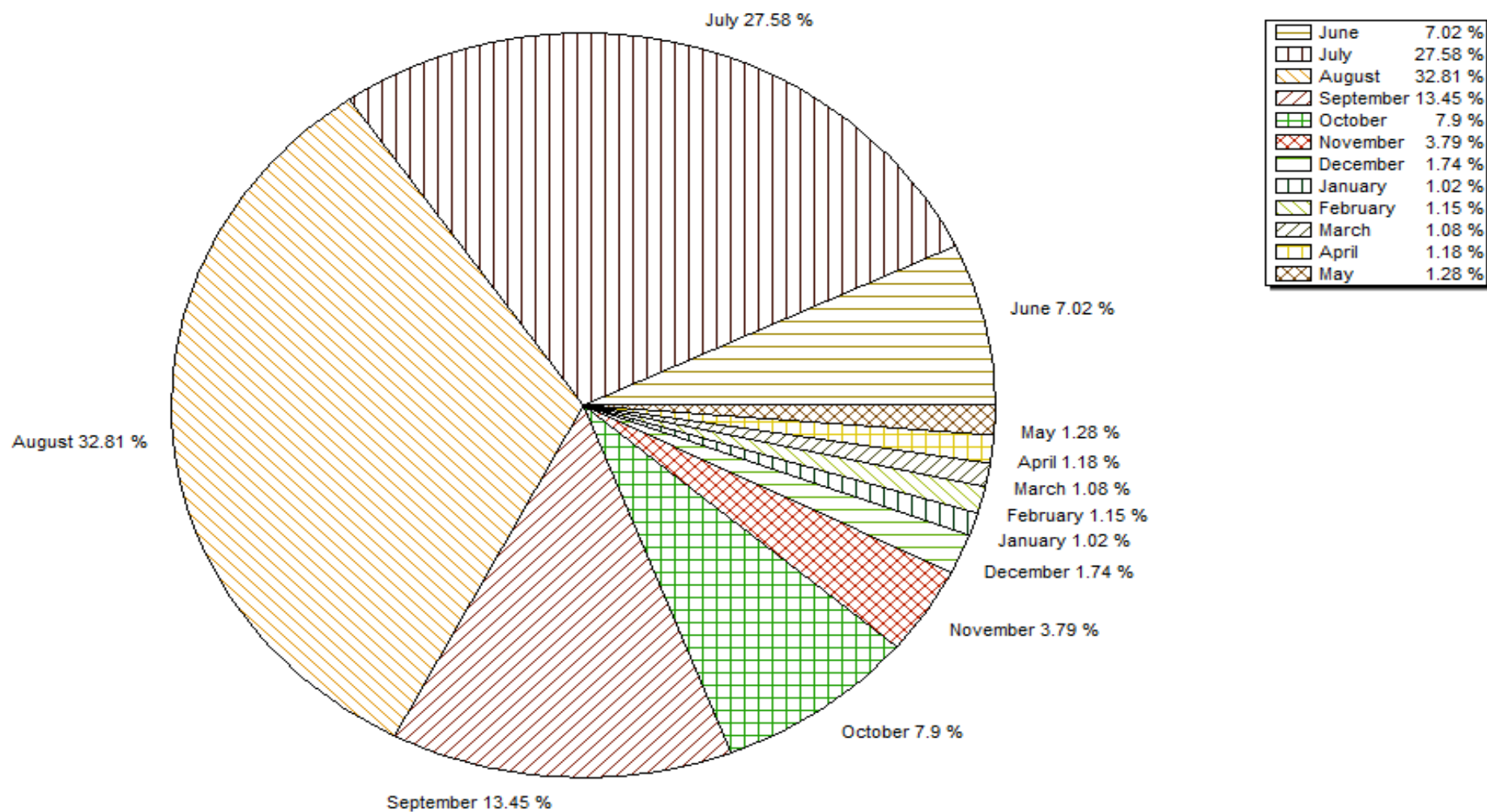
Monthly Average Runoff based on period : 1980-2019

Station Name : HONNALI (AKL00X6)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

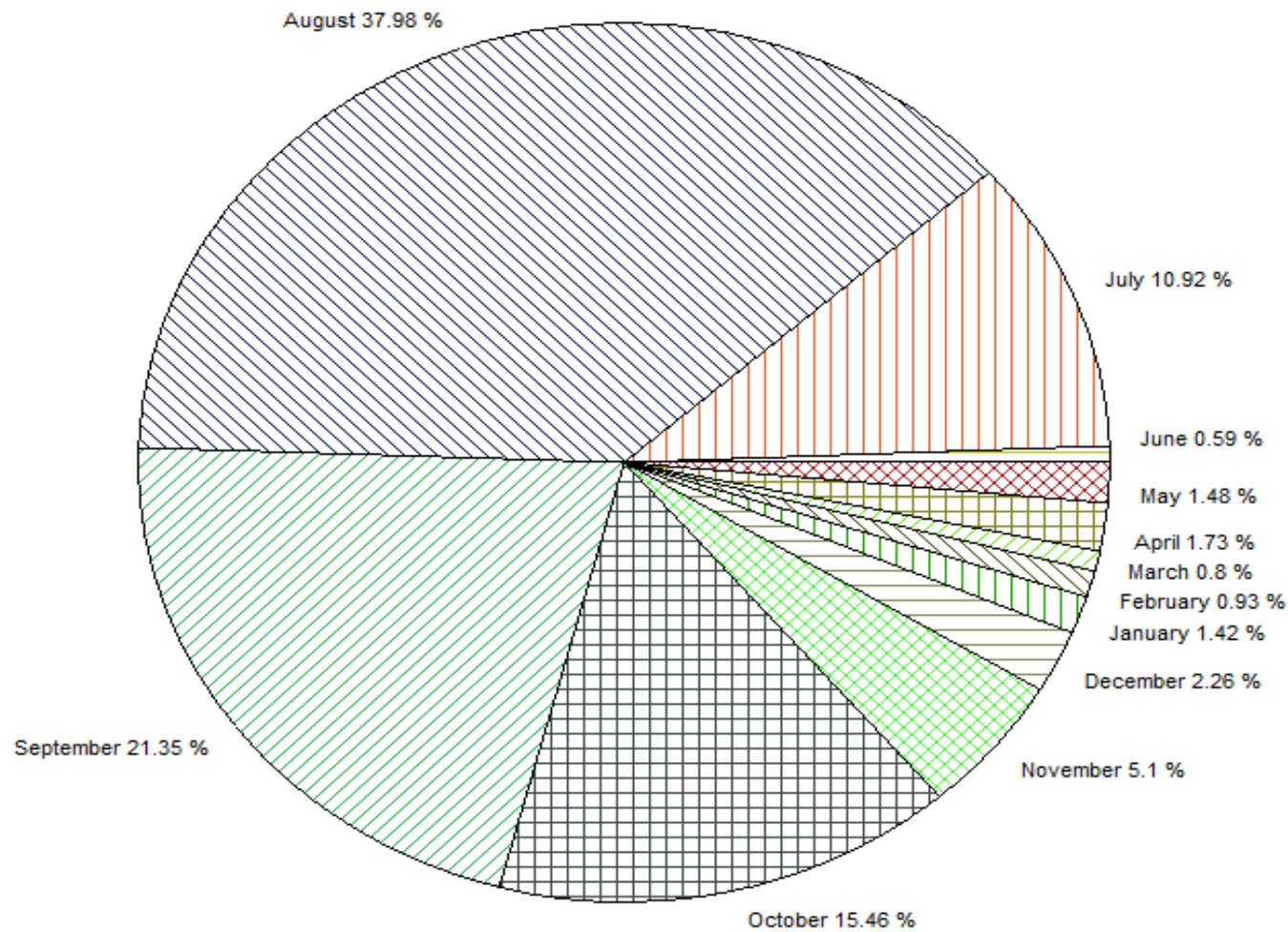
Sub-Division : Upper Tunga Subdn, Devangere



Monthly Runoff for the Year : 2019-2020

Station Name : HONNALI (AKL00X6)
Local River : Tungabhadra

Division : Cauvery Division, Bangalore
Sub-Division : Upper Tunga Subdn, Devangere



June	0.59 %
July	10.92 %
August	37.98 %
September	21.35 %
October	15.46 %
November	5.1 %
December	2.26 %
January	1.42 %
February	0.93 %
March	0.8 %
April	1.73 %
May	1.48 %

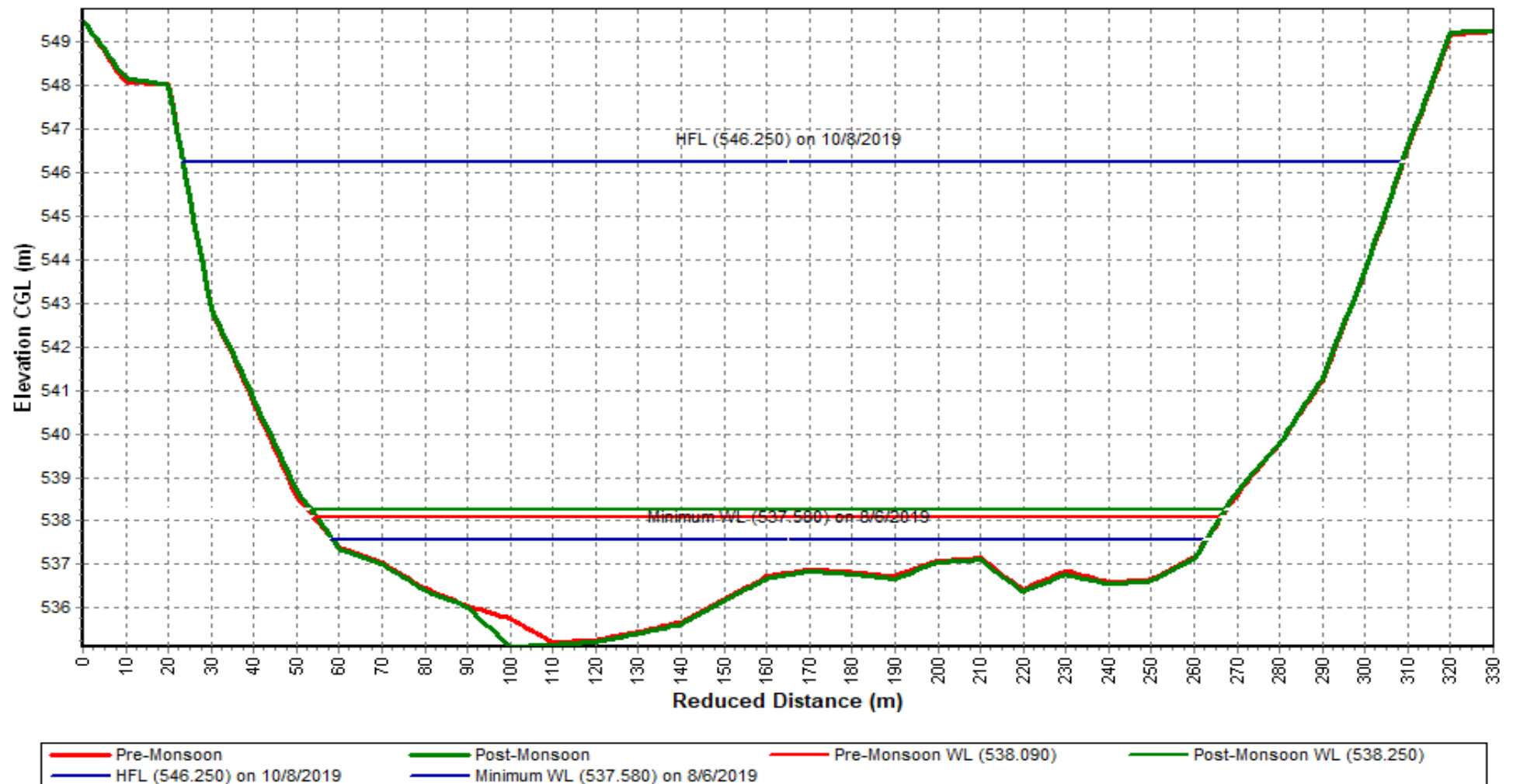
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : HONNALI (AKL00X6)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



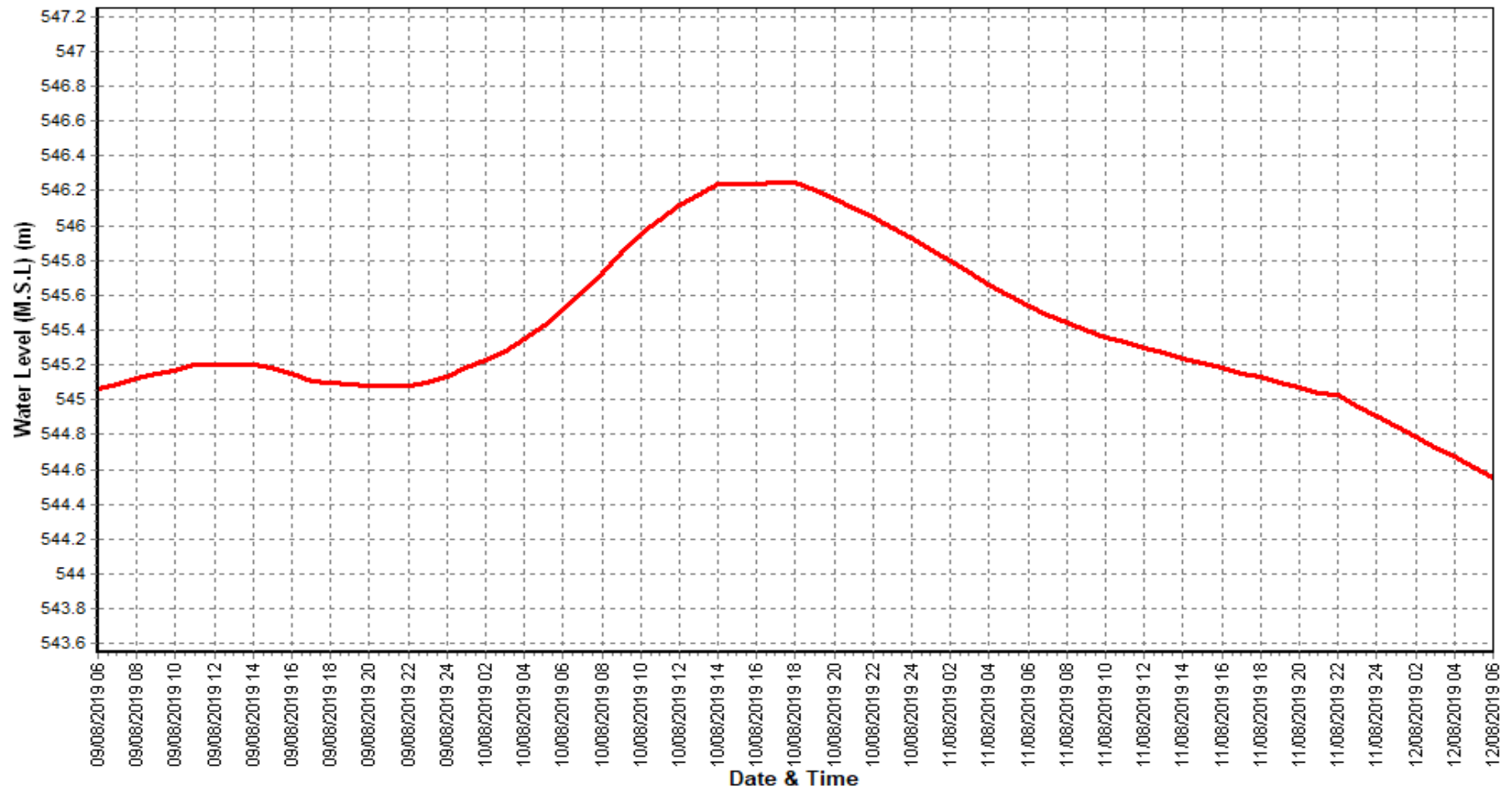
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : HONNALI (AKL00X6)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



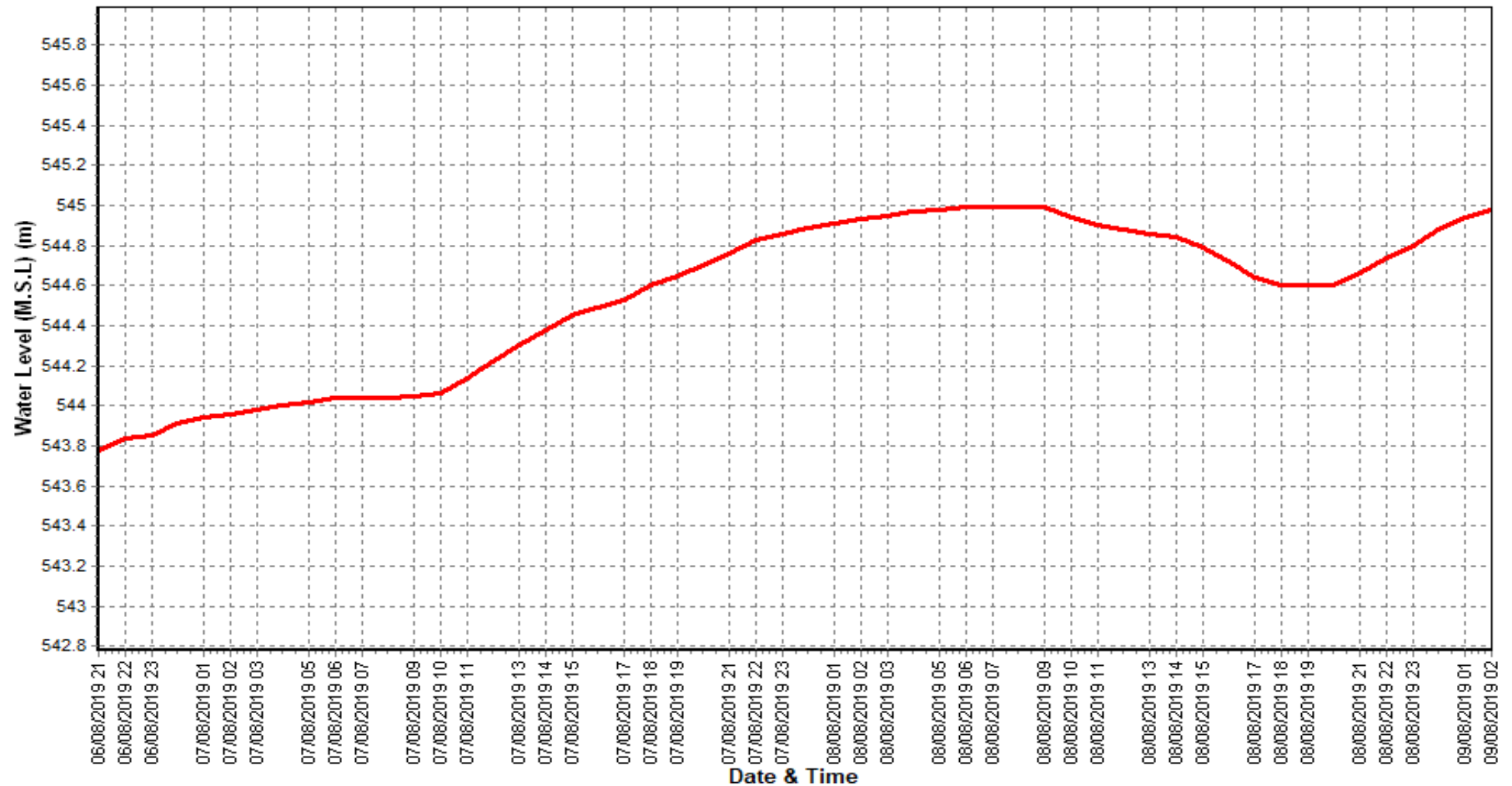
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : HONNALI (AKL00X6)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



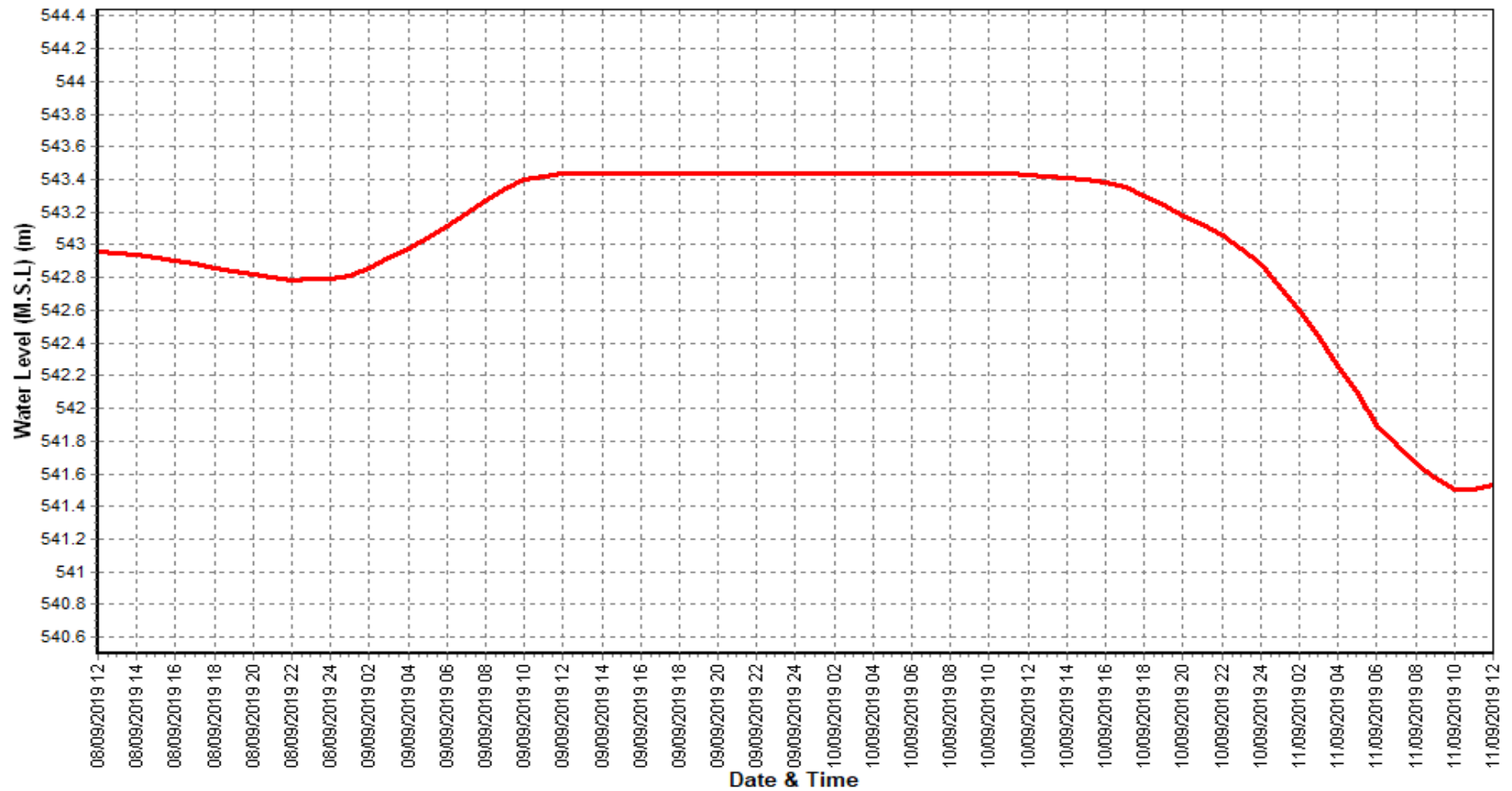
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : HONNALI (AKL00X6)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : SHIMOGA

Code : AKLD0C6

State : Karnataka

District : Shimoga

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere

Drainage Area : 2831 Sq. Km.

Bank : Right

Latitude : 13°55'37"

Longitude : 75°35'06"

Zero of Gauge (m) : 558.33 (m.s.l)

21/06/1971

Opening Date

Closing Date

Gauge : 21/06/1971

Discharge : 22/01/1972

Sediment : 14/09/1972

Water Quality : 01/01/1973

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1972-1973	1822	562.165	08/07/1972	1.700	557.170	09/04/1973
1973-1974	2623	562.895	09/07/1973	1.900	557.230	17/04/1974
1974-1975	2512	562.865	26/07/1974	1.800	557.250	26/05/1975
1975-1976	2587	563.290	11/07/1975	1.700	557.250	31/05/1976
1976-1977	1752	562.263	23/07/1976	1.900	557.270	01/06/1976
1977-1978	1829	561.730	25/07/1977	0.400	557.210	31/05/1978
1978-1979	3130	563.455	26/07/1978	0.100	557.160	04/06/1978
1979-1980	2196	562.680	03/08/1979	0.400	557.155	10/03/1980
1980-1981	2346	563.411	03/07/1980	0.400	557.120	25/04/1981
1981-1982	2326	562.874	19/08/1981	0.300	557.110	18/04/1982
1982-1983	4124	564.760	03/08/1982	0.000	557.000	03/05/1983
1983-1984	2588	563.170	23/07/1983	0.000	557.040	10/06/1983
1984-1985	2907	563.420	19/07/1984	0.800	557.180	06/05/1985
1985-1986	2034	562.590	27/06/1985	0.600	557.170	29/05/1986
1986-1987	2452	562.910	10/08/1986	0.000	557.120	04/05/1987
1987-1988	1146	561.070	09/07/1987	0.370	557.140	02/03/1988
1988-1989	2513	563.080	19/07/1988	0.230	557.080	31/05/1989
1989-1990	2687	563.265	25/07/1989	0.000	557.100	14/04/1990
1990-1991	2141	562.570	18/08/1990	0.069	557.090	18/03/1991
1991-1992	2715	563.258	28/07/1991	0.027	557.083	03/04/1992
1992-1993	2238	562.658	27/07/1992	0.947	557.232	02/06/1992
1993-1994	1622	561.749	16/08/1993	0.167	557.187	13/03/1994

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1994-1995	3080	563.950	16/07/1994	0.194	557.150	07/04/1995
1995-1996	1820	562.075	01/09/1995	0.000	557.030	08/05/1996
1996-1997	1546	561.650	24/07/1996	0.000	557.060	11/06/1996
1997-1998	2890	563.400	08/08/1997	0.000	557.180	04/05/1998
1998-1999	1890	562.240	04/07/1998	0.451	557.240	22/04/1999
1999-2000	3215	563.460	19/07/1999	0.286	557.240	04/04/2000
2000-2001	3020	563.340	14/07/2000	0.000	557.150	03/04/2001
2001-2002	1367	561.435	09/07/2001	0.000	557.150	06/04/2002
2002-2003	1539	561.430	18/08/2002	0.000	557.170	14/04/2003
2003-2004	1314	561.140	24/06/2003	0.000	557.160	08/04/2004
2004-2005	2203	563.530	05/08/2004	0.000	557.210	23/04/2005
2005-2006	2695	563.370	03/08/2005	0.010	557.120	04/04/2006
2006-2007	2452	563.460	12/08/2006	0.000	557.060	31/01/2007
2007-2008	2563	564.110	07/08/2007	0.000	557.185	19/06/2007
2008-2009	3069	564.120	12/08/2008	0.000	558.030	12/04/2009
2009-2010	3688	564.260	17/07/2009	0.000	557.630	05/02/2010
2010-2011	2017	566.110	29/07/2010	0.000	561.510	12/06/2010
2011-2012	2321	566.755	18/07/2011	0.000	561.370	01/06/2011
2012-2013	3153	567.635	08/08/2012	0.210	561.130	02/05/2013
2013-2014	2450	566.885	05/07/2013	0.078	561.470	30/11/2013
2014-2015	2834	567.910	02/08/2014	0.058	561.590	02/07/2014
2015-2016	2023	566.620	20/07/2015	0.708	561.080	18/04/2016
2016-2017	1394	565.520	05/07/2016	0.000	561.630	15/04/2017
2017-2018	1625	565.750	20/07/2017	0.000	561.470	21/03/2018
2018-2019	3607	568.180	15/08/2018	0.000	561.530	13/02/2019

Annual Runoff of Tunga at Shimoga							
Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1971-1972		53	53	0	2	2
2	1972-1973	3669	105	3774	130	4	133
3	1973-1974	5242	110	5352	185	4	189
4	1974-1975	4851	111	4962	171	4	175
5	1975-1976	6543	158	6701	231	6	237
6	1976-1977	3385	96	3481	120	3	123
7	1977-1978	5001	175	5175	177	6	183
8	1978-1979	7736	163	7899	273	6	279
9	1979-1980	4162	121	4283	147	4	151
10	1980-1981	7300	151	7451	258	5	263
11	1981-1982	5744	119	5862	203	4	207
12	1982-1983	5272	86	5358	186	3	189
13	1983-1984	4953	199	5153	175	7	182
14	1984-1985	5097	119	5217	180	4	184
15	1985-1986	4104	115	4220	145	4	149
16	1986-1987	4100	90	4190	145	3	148
17	1987-1988	2464	145	2609	87	5	92
18	1988-1989	3962	80	4042	140	3	143
19	1989-1990	4507	85	4592	159	3	162
20	1990-1991	5866	126	5993	207	4	212
21	1991-1992	5615	91	5705	198	3	202
22	1992-1993	6438	252	6690	227	9	236
23	1993-1994	5141	196	5337	182	7	189
24	1994-1995	8325	150	8475	294	5	299
25	1995-1996	4064	78	4142	144	3	146
26	1996-1997	4040	105	4145	143	4	146
27	1997-1998	6163	188	6351	218	7	224
28	1998-1999	5318	213	5531	188	8	195
29	1999-2000	6065	120	6185	214	4	219
30	2000-2001	5481	96	5577	194	3	197
31	2001-2002	4218	76	4294	149	3	152
32	2002-2003	3538	77	3615	125	3	128
33	2003-2004	3426	57	3482	121	2	123
34	2004-2005	4218	56	4274	149	2	151
35	2005-2006	6070	150	6220	214	5	220
36	2006-2007	6277	89	6366	222	3	225
37	2007-2008	6989	314	7303	247	11	258
38	2008-2009	5743	147	5890	203	5	208
39	2009-2010	6010	75	6086	212	3	215
40	2010-2011	4989	73	5062	176	3	179
41	2011-2012	5902	117	6020	209	4	213
42	2012-2013	4497	75	4572	159	3	162
43	2013-2014	7577	136	7712	268	5	273
44	2014-2015	6497	176	6673	230	6	236

45	2015-2016	3542	128	3670	125	5	130
46	2016-2017	3439	93	3532	122	3	125
47	2017-2018	3643	105	3748	129	4	132
48	2018-2019	8162	95	8257	288	3	292
49	2019-2020	7406	239	7645	262	8	270
Average		5266	126	5284	182	4	187
75% Dependable flow (MCM)				4168			
90 % Dependable flow (MCM)				3532			

Stage-Discharge Data for the period 2019 - 2020

Station Name : SHIMOGA (AKLD0C6)

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga Subdn, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	561.180	0.000	561.250	0.000	563.740	590.0	563.330	349.3 *	562.850	179.2	563.150	319.3
2	561.180	0.000	562.940	193.6	563.060	264.7	564.060	666.2 *	562.980	223.9 *	562.940	243.0
3	561.170	0.000	562.960	248.6	564.040	688.0	564.280	772.0	562.950	245.0	562.940	210.8 *
4	561.180	0.000	563.070	269.4	563.900	598.6 *	564.680	875.0	562.700	122.0	562.690	121.0
5	561.160	0.000	563.500	398.1	564.640	859.0	565.390	1205	563.230	297.1	562.690	121.0
6	561.150	0.000	563.890	636.4	566.940	2394	565.630	1563	562.730	146.7 *	562.890	185.0
7	561.150	0.000	564.470	919.8 *	568.260	3664	565.450	1460	562.800	167.2 *	562.950	245.0
8	561.150	0.000	563.570	415.7	568.440	3507	565.550	1501 *	562.790	164.2 *	563.000	253.6
9	561.150	0.000	564.540	866.1	568.510	3559	566.240	1930	562.720	123.2	562.750	125.6
10	561.150	0.000	564.280	771.8	570.140	4195	565.680	1584 *	563.070	267.0	562.850	182.4 *
11	561.150	0.000	564.110	715.2	568.940	4116 *	564.890	977.0	563.290	350.3	562.670	118.1
12	561.150	0.000	563.500	398.1	567.140	2618 *	564.050	690.0	563.890	636.4	562.720	143.9 *
13	561.160	0.000	563.150	319.3	564.810	968.1	564.010	677.0	563.400	376.6 *	562.710	122.2
14	561.160	0.000	563.070	251.9 *	564.600	880.0	563.870	630.0	563.330	359.0	562.710	122.2
15	561.160	0.000	563.050	263.0	564.660	974.6 *	563.680	492.6 *	562.950	245.0	562.700	122.2
16	561.150	0.000	563.000	253.6	564.550	859.3	563.810	610.0	562.940	243.0	562.330	43.00
17	561.150	0.000	562.850	179.2	564.360	797.0	563.710	552.0	563.110	274.1	562.470	79.20 *
18	561.150	0.000	562.720	123.2	564.100	685.5 *	563.140	317.0	562.730	124.2	562.700	121.2
19	561.140	0.000	562.710	123.2	563.990	670.3	563.530	405.4	563.350	363.1	562.720	123.2
20	561.130	0.000	564.350	793.0	563.670	539.8	563.110	274.1	563.400	376.6 *	562.310	43.60
21	561.140	0.000	563.550	434.8 *	563.530	405.3	563.290	350.3	564.350	793.0	562.720	123.2
22	561.160	0.000	564.140	719.8	563.060	264.7	562.930	207.6 *	563.320	356.3	562.410	46.86
23	561.170	0.000	563.990	670.3	563.450	386.4	563.050	263.0	563.110	274.1	562.410	46.86
24	561.240	0.000	563.840	591.9	563.450	386.4	563.050	263.0	563.110	274.1	562.910	100.1 *
25	561.210	0.000	563.480	393.4	563.680	492.6 *	562.950	245.0	563.870	630.0	562.210	34.34
26	561.180	0.000	563.530	405.4	563.390	372.3	563.110	274.1	563.720	555.1	562.060	30.27
27	561.190	0.000	563.890	636.4	563.330	352.6	563.110	274.1	563.700	501.3 *	562.430	46.20
28	561.180	0.000	563.560	439.1 *	563.090	269.0	562.940	243.0	563.670	540.0	562.510	69.23
29	561.160	0.000	563.990	670.3	563.180	326.0	562.840	179.3 *	563.540	408.0	562.510	69.23
30	561.180	0.000	563.970	663.5	563.330	358.6	563.000	254.0	562.940	243.3	562.340	44.30
31			563.890	636.4	563.330	358.6			563.140	317.1		
Ten-Daily Mean												
I Ten-Daily	561.162	0.000	563.447	472.0	566.167	2032	565.029	1191	562.882	193.6	562.885	200.7
II Ten-Daily	561.150	0.000	563.251	342.0	565.082	1311	563.780	562.5	563.239	334.8	562.604	103.9
III Ten-Daily	561.181	0.000	563.803	569.2	563.347	361.1	563.027	255.3	563.497	444.8	562.451	61.06
Monthly												
Min.	561.130	0.000	561.250	0.000	563.060	264.7	562.840	179.3	562.700	122.0	562.060	30.27
Max.	561.240	0.000	564.540	919.8	570.140	4195	566.240	1930	564.350	793.0	563.150	319.3
Mean	561.164	0	563.510	464.5	564.816	1206	563.945	669.5	563.215	328.3	562.647	121.9

Annual Runoff in MCM = 7645 Annual Runoff in mm = 2701

Peak Observed Discharge = 4195 cumecs on 10/08/2019 Corres. Water Level :570.14 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :561.18 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : SHIMOGA (AKLD0C6)

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga Subdn, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	562.450	59.78 *	562.310	43.58	561.660	0.000	561.630	0.000	561.380	0.000	561.650	0.000
2	562.790	129.7	562.140	32.20	561.640	0.000	561.590	0.000	561.370	0.000	561.640	0.000
3	562.550	71.40	562.060	30.75	561.590	0.000	561.540	0.000	561.360	0.000	561.650	0.000
4	562.550	71.40	562.140	32.20	561.560	0.000	561.490	0.000	561.360	0.000	561.640	0.000
5	562.480	67.61	562.200	36.11 *	561.560	0.000	561.470	0.000	561.380	0.000	561.710	0.000
6	562.550	71.40	562.200	34.03	561.550	0.000	561.470	0.000	561.470	0.000	561.640	0.000
7	562.540	70.90	562.120	29.98	561.550	0.000	561.460	0.000	561.490	0.000	561.630	0.000
8	562.560	72.49 *	562.110	31.29	561.530	0.000	561.470	0.000	561.700	0.000	561.630	0.000
9	562.560	71.41	562.110	31.29	561.630	0.000	561.420	0.000	561.710	0.000	561.630	0.000
10	562.480	67.61	562.090	30.70	561.560	0.000	561.420	0.000	561.710	0.000	561.600	0.000
11	562.460	66.53	561.940	29.73	561.540	0.000	561.410	0.000	561.760	0.000	561.560	0.000
12	562.510	69.23	561.940	27.89 *	561.460	0.000	561.380	0.000	561.680	0.000	561.610	0.000
13	562.510	69.23	561.940	29.73	561.470	0.000	561.380	0.000	561.620	0.000	561.600	0.000
14	562.510	69.23	561.910	28.79	561.460	0.000	561.370	0.000	561.490	0.000	561.570	0.000
15	562.430	57.62 *	561.940	27.89 *	561.450	0.000	561.400	0.000	561.470	0.000	561.520	0.000
16	562.430	47.67	561.960	30.36	561.500	0.000	561.430	0.000	561.390	0.000	561.530	0.000
17	562.460	66.53	562.010	32.00	561.580	0.000	561.500	0.000	561.390	0.000	561.500	0.000
18	562.460	66.53	561.990	31.36	561.490	0.000	561.520	0.000	561.390	0.000	561.480	0.000
19	562.410	46.86	561.970	31.20 *	561.540	0.000	561.550	0.000	561.380	0.000	561.640	0.000
20	562.390	46.16	561.960	30.36	561.560	0.000	561.560	0.000	561.410	0.000	561.580	0.000
21	562.360	45.01	561.954	32.00	561.530	0.000	561.570	0.000	561.410	0.000	561.540	0.000
22	561.950	19.14 *	562.010	32.00	561.530	0.000	561.580	0.000	561.430	0.000	561.490	0.000
23	562.340	44.30	562.010	32.00	561.550	0.000	561.560	0.000	561.420	0.000	561.470	0.000
24	562.340	44.30	562.010	32.00	561.550	0.000	561.550	0.000	561.410	0.000	561.440	0.000
25	562.320	46.59 *	561.940	29.73	561.570	0.000	561.490	0.000	561.400	0.000	561.430	0.000
26	562.290	42.82	561.960	30.08 *	561.670	0.000	561.440	0.000	561.420	0.000	561.410	0.000
27	562.340	44.30	561.930	29.42	561.680	0.000	561.440	0.000	561.460	0.000	561.410	0.000
28	562.340	48.49 *	561.930	29.42	561.530	0.000	561.420	0.000	561.490	0.000	561.410	0.000
29	562.340	48.49 *	561.910	28.79	561.650	0.000	561.420	0.000	561.540	0.000	561.390	0.000
30	562.340	44.31	561.870	21.32			561.390	0.000	561.610	0.000	561.390	0.000
31	562.340	44.31	561.810	11.54			561.370	0.000			561.480	0.000
Ten-Daily Mean												
I Ten-Daily	562.551	75.37	562.148	33.21	561.583	0.000	561.496	0.000	561.493	0.000	561.642	0.000
II Ten-Daily	562.457	60.56	561.956	29.93	561.505	0.000	561.450	0.000	561.498	0.000	561.559	0.000
III Ten-Daily	562.300	42.91	561.939	28.03	561.584	0.000	561.475	0.000	561.459	0.000	561.442	0.000
Monthly												
Min.	561.950	19.14	561.810	11.54	561.450	0.000	561.370	0.000	561.360	0.000	561.390	0.000
Max.	562.790	129.7	562.310	43.58	561.680	0.000	561.630	0.000	561.760	0.000	561.710	0.000
Mean	562.432	59.08	562.012	30.31	561.557	0	561.474	0	561.483	0	561.544	0

Peak Computed Discharge = 4116 cumecs on 11/08/2019

Corres. Water Level :568.94 m

Lowest Computed Discharge = 19.14 cumecs on 22/12/2019

Corres. Water Level :561.95 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

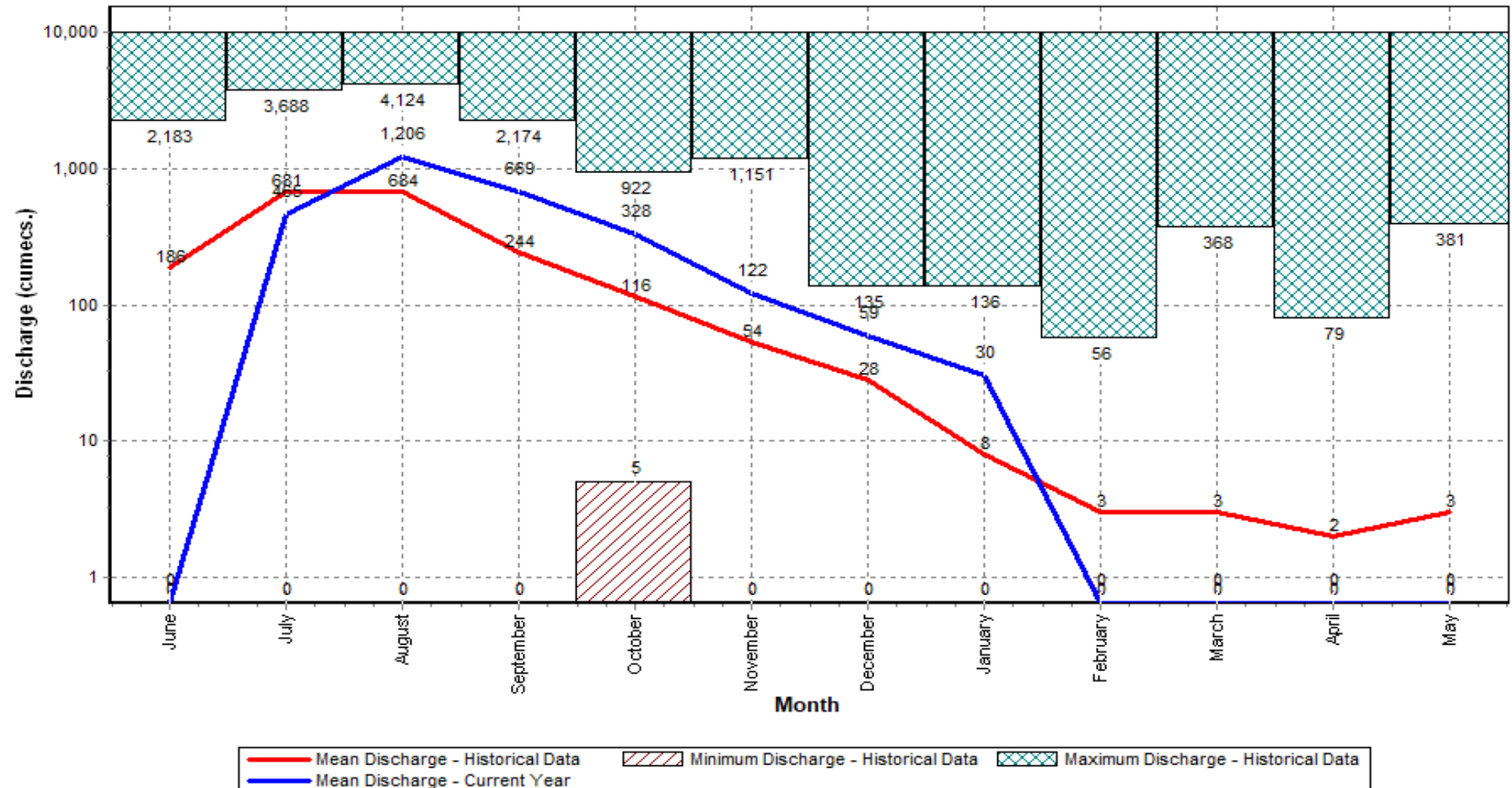
Station Name : SHIMOGA (AKLD0C6)

Data considered : 1972-2020

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga Subdn, Devangere



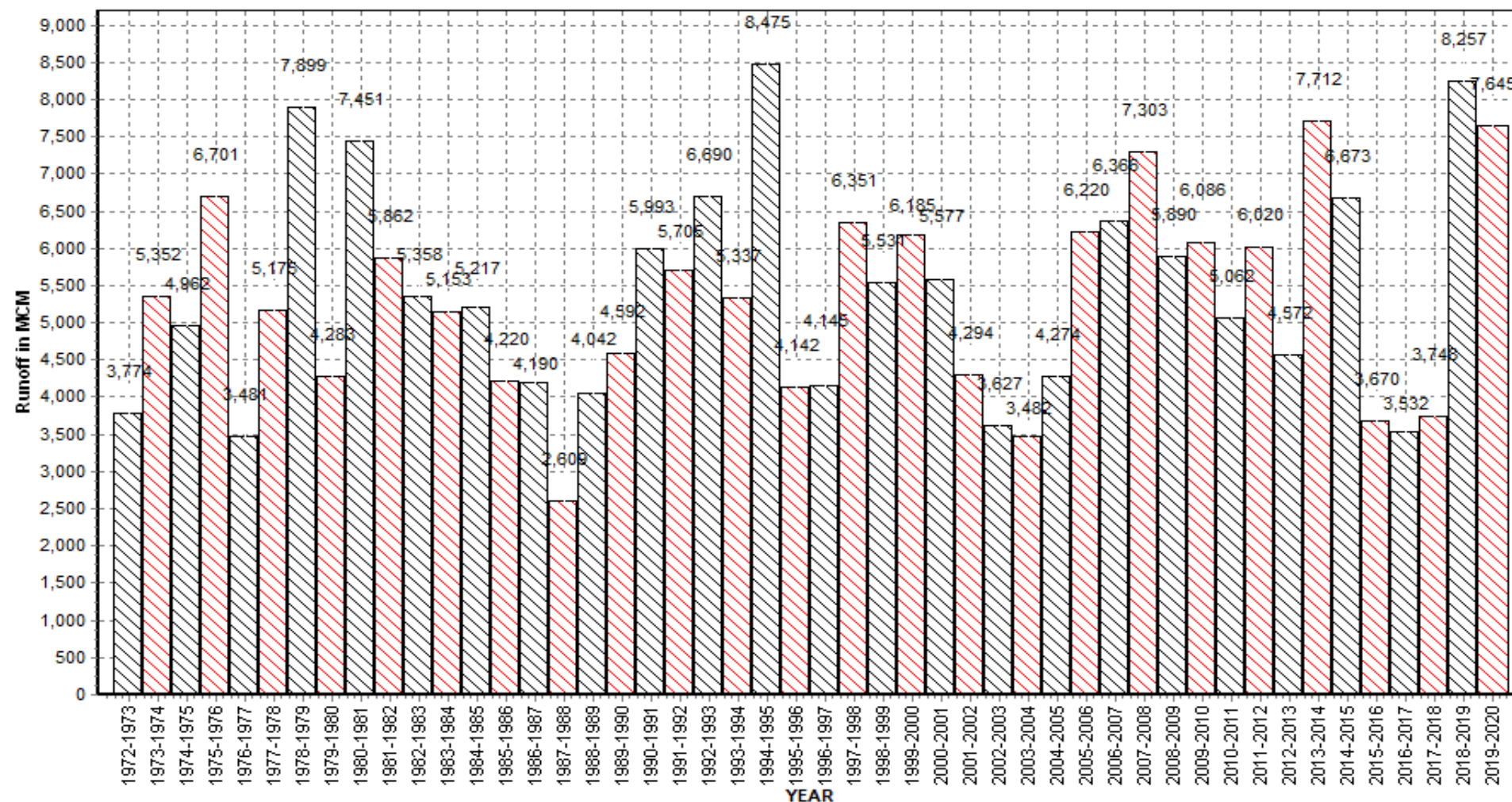
Annual Runoff Values for the period: 1972 - 2020

Station Name : SHIMOGA (AKLD0C6)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

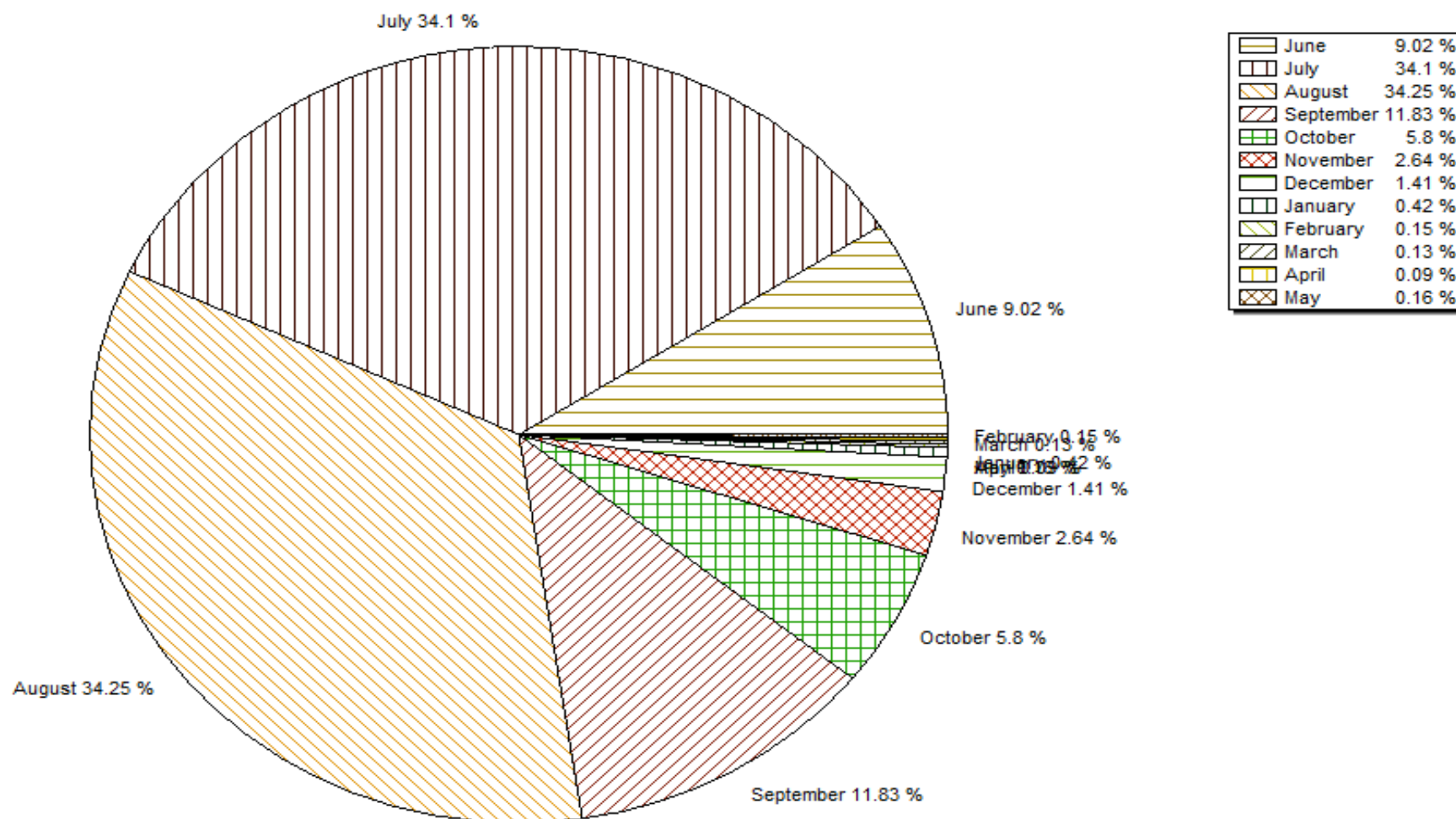
Monthly Average Runoff based on period : 1972-2019

Station Name : SHIMOGA (AKLD0C6)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



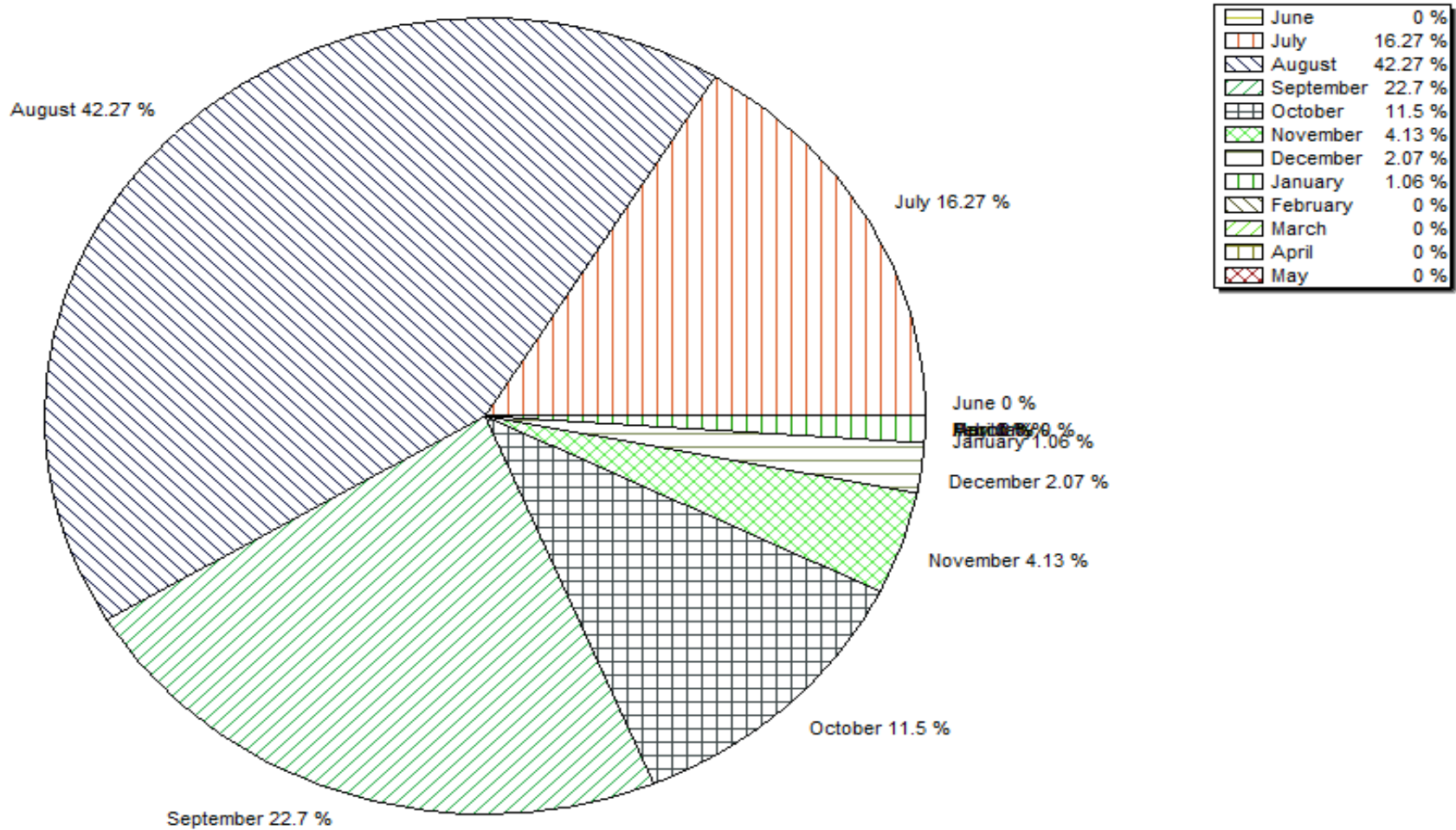
Monthly Runoff for the Year : 2019-2020

Station Name : SHIMOGA (AKLD0C6)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



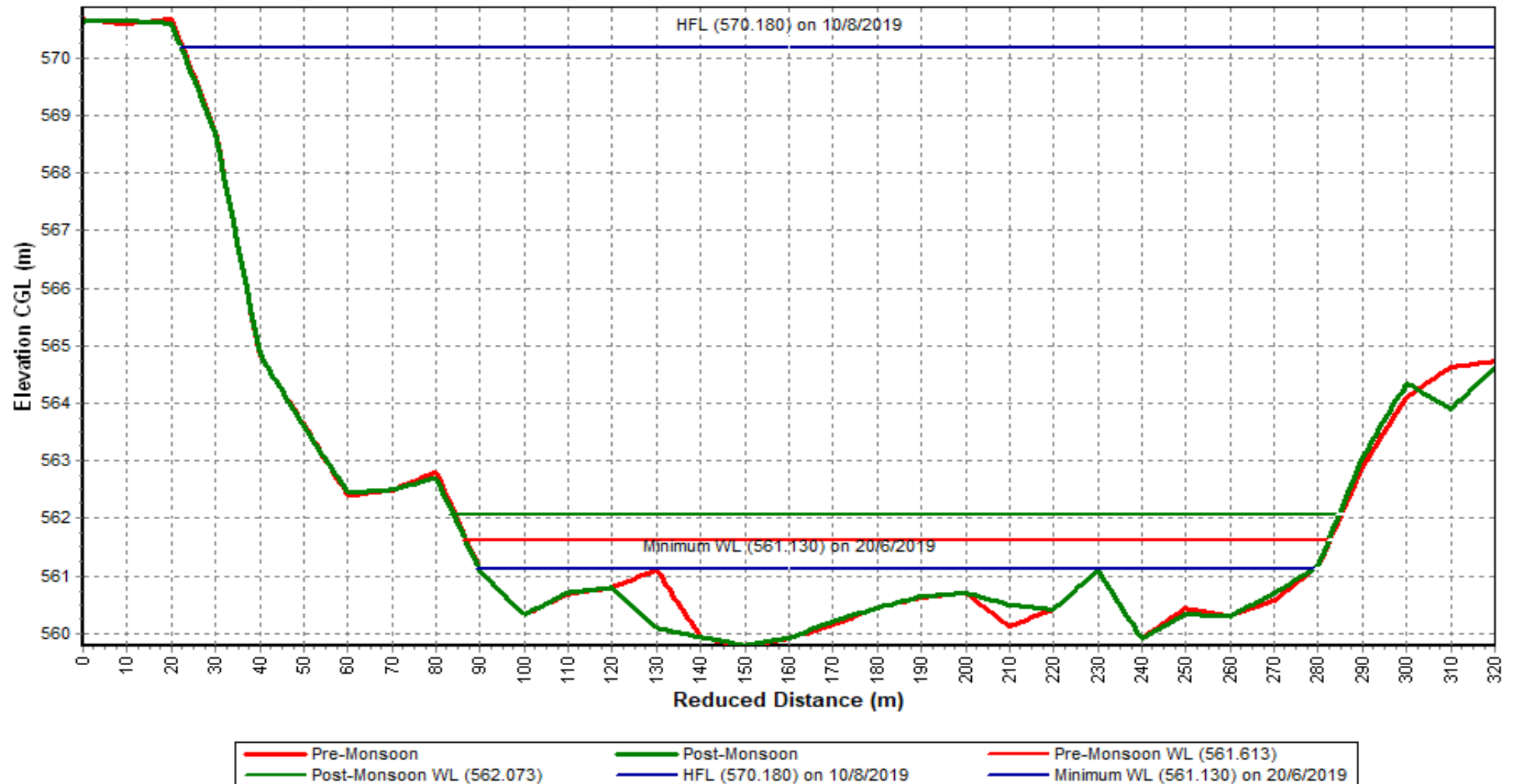
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : SHIMOGA (AKLD0C6)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



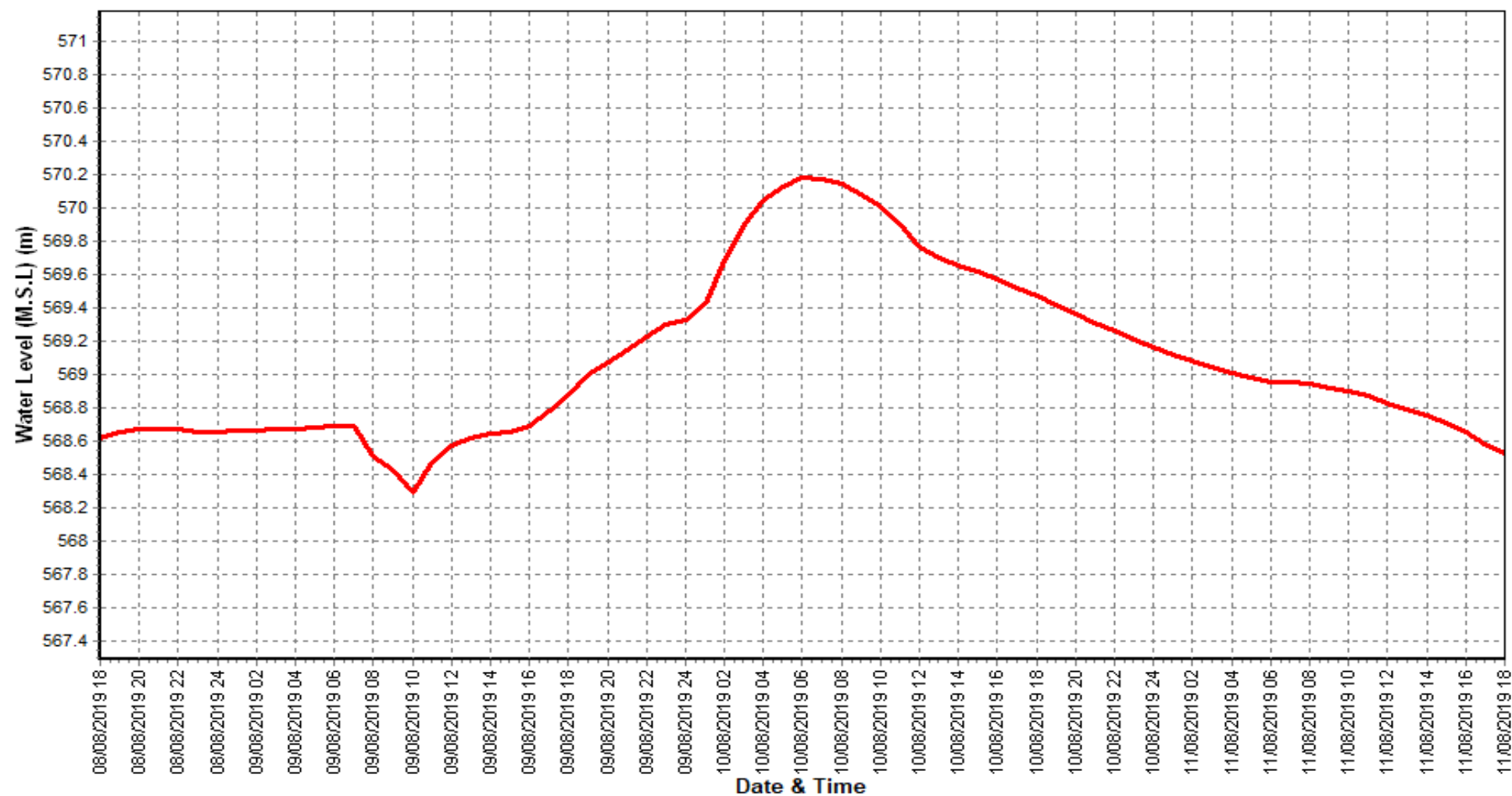
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : SHIMOGA (AKLD0C6)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



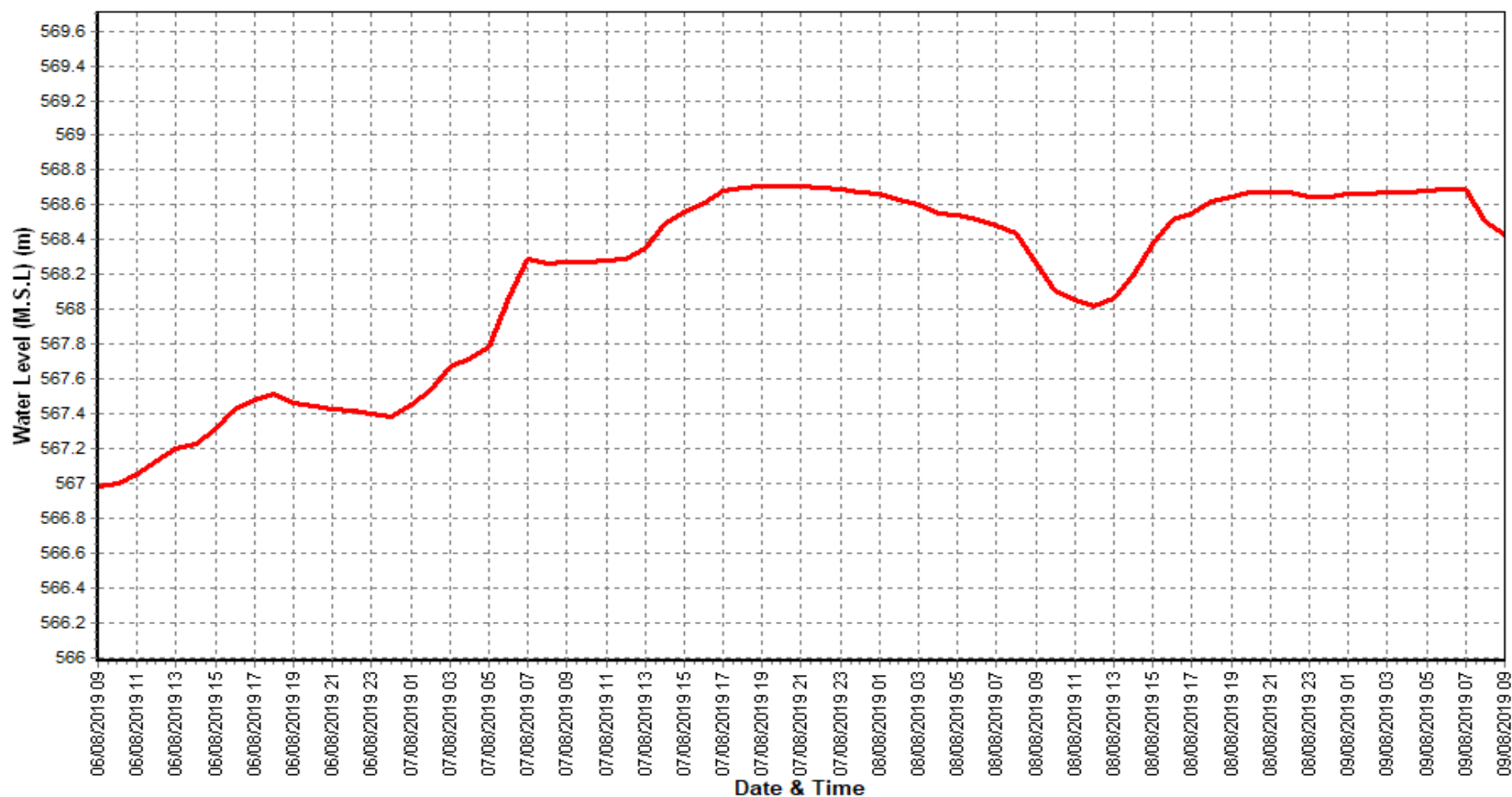
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : SHIMOGA (AKLD0C6)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



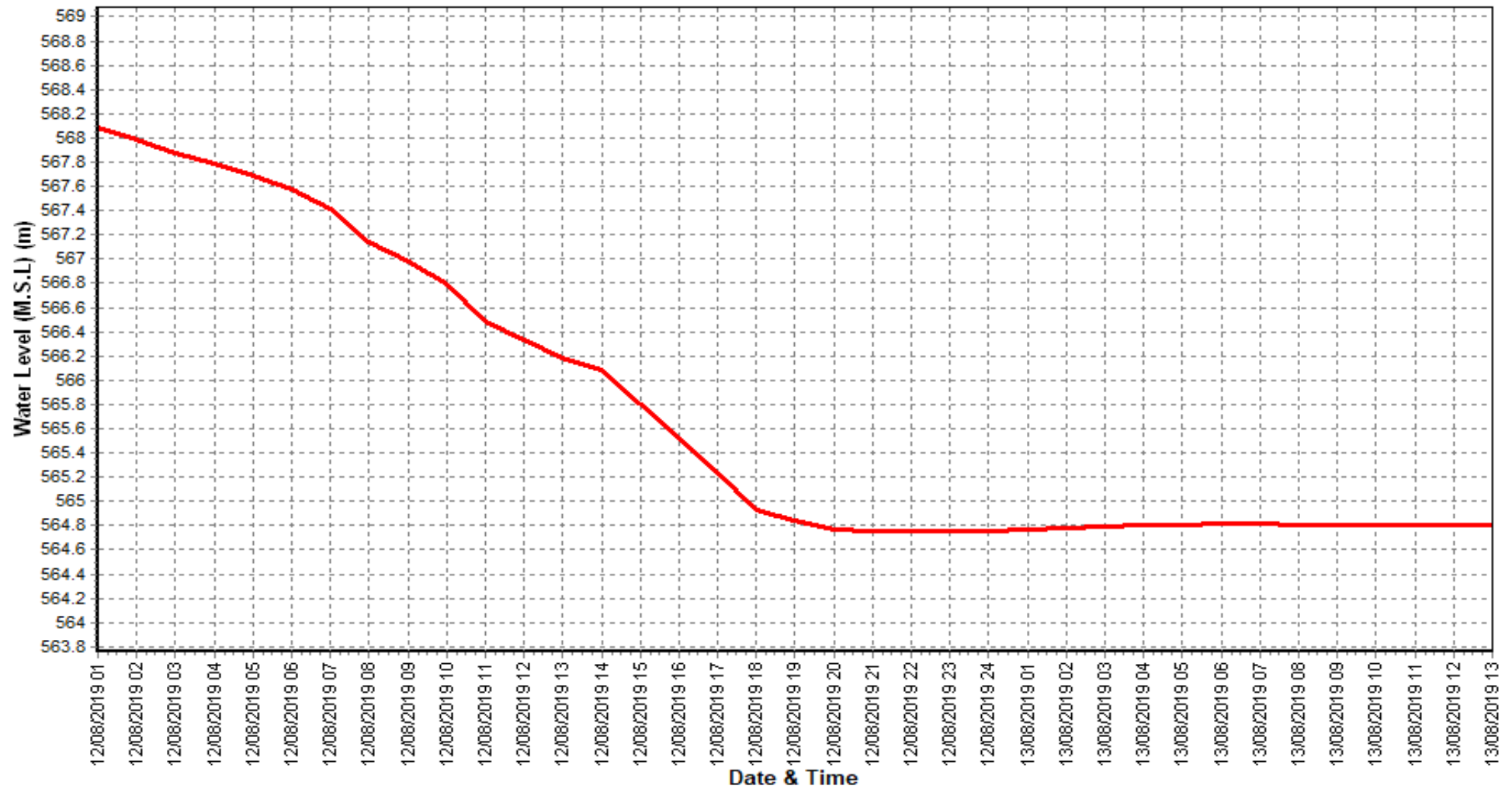
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : SHIMOGA (AKLD0C6)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : MAHISHI

Code : MAHISHI

State : Karnataka

District : Shimoga

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere

Drainage Area : 1406 Sq. Km.

Bank : Left

Latitude : 13°41'50"

Longitude : 75°20'08"

Zero of Gauge (m) : 807 (m.s.l)

29/10/2014

Opening Date

Closing Date

Gauge : 29/10/2014

Discharge : 21/12/2018

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Stage-Discharge Data for the period 2019 - 2020

Station Name : MAHISHI (MAHISHI)

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga SD, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000	811.500	317.3 *	811.780	375.0	590.010	342.1 *	589.210	205.0	589.010	170.0
2		0.000	811.110	250.4 *	811.620	340.0	590.920	522.4 *	589.030	180.7 *	588.980	167.0
3		0.000	811.460	310.1 *	812.160	440.0	590.880	574.6	588.910	155.0	588.850	155.2 *
4		0.000	811.130	253.6 *	812.430	509.8 *	591.300	620.1	588.990	170.0	588.770	150.0
5		0.000	811.530	322.8 *	813.600	746.0	592.430	850.6	588.850	145.0	588.750	145.0
6		0.000	812.360	493.7 *	815.000	1653	592.600	900.1	589.470	248.7 *	588.730	140.0
7		0.000	812.280	475.6 *	817.340	2302 *	592.710	945.0	589.200	206.0 *	588.710	135.0
8		0.000	811.790	384.8	818.520	2929 *	592.900	1000 *	588.800	148.4 *	588.700	133.0
9		0.000	812.520	475.1	818.890	3142 *	593.310	1055	589.040	175.4	588.650	115.0
10		0.000	813.500	717.8	818.980	3195 *	591.990	767.1 *	589.040	175.4	588.610	123.4 *
11		0.000	812.050	425.4	816.760	2021 *	591.040	565.0	589.030	175.4	588.590	108.0
12		0.000	811.600	344.5	814.970	1273 *	590.450	427.2	589.250	215.0	588.570	118.4 *
13		0.000	811.190	250.3	813.240	760.0	590.430	435.0	589.670	282.0 *	588.540	115.0
14		0.000	811.150	256.9 *	812.940	625.1	590.190	380.0	589.150	200.0	588.510	110.0
15		0.000	810.960	240.3	814.560	1126 *	590.040	347.6 *	588.960	165.0	588.490	108.0
16		0.000	810.910	230.5	813.020	615.0	590.090	365.0	589.050	180.0	588.470	106.0
17	808.200	1.427 *	810.840	214.6	812.730	565.0	589.930	324.0	588.960	165.0	588.460	104.9 *
18	809.230	10.58	810.660	190.3	812.100	436.2 *	589.750	325.0	588.940	160.0	588.550	117.0
19	809.560	13.17	810.820	206.3	811.770	375.0	589.590	260.1	589.250	215.0	588.450	110.0
20	809.340	10.89	812.270	464.6	811.600	340.2	589.490	250.1	589.500	253.6 *	588.440	108.0
21	809.380	11.35	812.000	415.0 *	811.390	300.1	589.360	245.0	589.800	310.0	588.420	105.0
22	809.800	84.13 *	812.400	504.7	811.310	285.6	589.270	216.8 *	589.330	230.0	588.410	104.0
23	809.960	99.62 *	812.250	470.0	811.620	340.0	589.210	206.3	589.280	224.0	588.410	104.0
24	809.800	84.13 *	811.980	415.0	811.610	342.0	589.180	200.0	589.600	270.0	588.400	97.82 *
25	809.680	73.38 *	811.520	320.0	811.510	319.2 *	589.140	195.0	590.300	400.0	588.360	95.00
26	809.680	73.38 *	811.540	324.0	811.420	300.0	589.310	225.0	590.260	380.0	588.360	95.00
27	809.710	76.00 *	811.740	360.0	811.310	285.0	589.270	220.0	589.870	316.9 *	588.350	93.00
28	809.820	85.99 *	811.620	339.6 *	811.200	260.1	589.100	190.0	589.350	234.0	588.350	93.00
29	810.130	117.5 *	812.240	449.6	811.100	250.1	589.030	180.7 *	589.400	245.0	588.350	93.00
30	810.460	156.6 *	812.530	520.1	811.200	260.1	589.100	190.0	589.170	205.0	588.340	92.00
31			812.220	445.0	811.390	300.1			589.070	185.0		
Ten-Daily Mean												
I Ten-Daily		0.000	811.918	400.1	815.032	1563	591.905	757.7	589.054	181.0	588.776	143.4
II Ten-Daily	809.083	3.607	811.245	282.4	813.369	813.7	590.100	367.9	589.176	201.1	588.507	110.5
III Ten-Daily	809.842	86.21	812.004	414.8	811.369	294.8	589.197	206.9	589.585	272.7	588.375	97.18
Monthly												
Min.	808.200	0.000	810.660	190.3	811.100	250.1	589.030	180.7	588.800	145.0	588.340	92.00
Max.	810.460	156.6	813.500	717.8	818.980	3195	593.310	1055	590.300	400.0	589.010	170.0
Mean	809.625	29.94	811.731	367.4	813.196	871.3	590.401	444.2	589.282	220	588.553	117

Annual Runoff in MCM = 5889 Annual Runoff in mm = 4188

Peak Observed Discharge = 1653 cumecs on 06/08/2019 Corres. Water Level :815 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : MAHISHI (MAHISHI)

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga SD, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	588.330	94.47 *	588.090	65.98	587.920	48.98	587.550	2.910 *	587.270	1.549 *	587.350	2.141
2	588.330	91.00	588.090	65.98	587.910	47.34 *	587.500	2.517	587.260	1.508 *	587.310	1.974
3	588.330	91.00	588.080	65.02	587.900	47.00	587.490	2.507	587.260	1.508 *	587.330	1.804 *
4	588.330	91.00	588.080	65.02	587.900	47.00	587.490	2.503	587.260	1.508 *	587.300	1.928
5	588.320	90.00	588.070	63.20 *	587.890	46.02	587.490	2.503	587.250	1.468 *	587.330	2.037
6	588.320	90.00	588.060	62.99	587.880	45.02	587.490	2.504	587.250	1.468 *	587.330	2.044
7	588.320	90.00	588.060	62.99	587.860	43.00	587.490	2.470	587.250	1.468 *	587.450	2.374 *
8	588.300	90.50 *	588.050	62.13	587.842	40.98	587.490	2.582 *	587.240	1.428 *	587.520	2.907
9	588.300	88.00	588.040	62.56	587.790	37.09 *	587.480	2.456	587.240	1.428 *	587.540	2.921
10	588.280	86.00	588.030	60.98	587.790	36.02	587.480	2.480	587.240	1.428 *	587.570	3.024 *
11	588.280	86.00	588.030	60.98	587.780	34.99	587.480	2.490	587.240	1.428 *	587.530	2.883
12	588.260	84.00	588.030	59.00 *	587.760	32.98	587.480	2.495	587.230	1.389 *	587.520	2.864
13	588.260	84.00	588.020	60.01	587.760	32.98	587.480	2.920 *	587.230	1.389 *	587.550	2.938
14	588.240	82.00	588.020	60.01	587.760	32.98	587.470	2.488	587.230	1.389 *	587.570	3.091
15	588.240	82.86 *	588.010	59.96 *	587.760	32.98	587.450	2.374 *	587.200	1.351 #	587.550	2.952
16	588.240	82.00	588.010	58.01	587.760	34.74 *	587.400	2.284	587.220	1.351 #	587.530	2.813
17	588.220	82.00	588.000	57.01	587.760	32.98	587.400	2.322	587.270	1.549 #	587.510	2.689 *
18	588.220	80.03	588.000	57.01	587.750	3.989	587.400	2.288	587.320	1.760 #	587.590	3.580
19	588.210	79.00	587.990	54.96 *	587.755	3.725	587.400	2.280	587.280	1.590 *	587.620	4.016
20	588.180	76.03	587.990	55.81	587.750	3.549	587.400	2.058	587.260	1.508 #	587.720	4.346
21	588.150	74.01	587.970	54.02	587.750	3.620	587.400	2.283	587.240	1.428 #	587.750	4.482
22	588.140	70.94 *	587.970	54.02	587.750	3.562	587.360	1.939 *	587.320	1.307	587.690	4.242
23	588.140	70.98	587.970	54.02	587.750	4.149 *	587.310	1.320	587.350	1.416	587.650	4.061
24	588.140	70.98	587.960	52.99	587.710	3.369	587.310	1.320	587.380	1.436	587.600	3.199 *
25	588.130	69.80 *	587.960	52.99	587.710	3.739	587.310	1.717 *	587.440	2.044	587.520	2.744 *
26	588.120	69.00	587.960	52.03 *	587.710	3.634	587.300	1.674 *	587.460	2.425 *	587.480	2.567
27	588.120	69.00	587.950	52.00	587.590	3.278	587.270	1.549 *	587.490	2.582 #	587.480	2.620
28	588.110	68.00 *	587.950	52.00	587.580	3.273	587.270	1.549 *	587.400	2.315	587.430	2.445
29	588.110	67.56 *	587.950	52.00	587.580	3.261	587.270	1.549 *	587.370	2.240	587.430	2.426
30	588.100	66.99	587.940	50.99			587.270	1.549 *	587.350	2.146	587.420	2.393
31	588.090	65.98	587.940	50.99			587.270	1.549 *			587.410	2.175 *
Ten-Daily Mean												
I Ten-Daily	588.316	90.20	588.065	63.69	587.868	43.84	587.495	2.543	587.252	1.476	587.403	2.315
II Ten-Daily	588.235	81.79	588.010	58.28	587.759	24.59	587.436	2.400	587.248	1.470	587.569	3.217
III Ten-Daily	588.123	69.39	587.956	52.55	587.681	3.543	587.304	1.636	587.380	1.934	587.533	3.032
Monthly												
Min.	588.090	65.98	587.940	50.99	587.580	3.261	587.270	1.320	587.200	1.307	587.300	1.804
Max.	588.330	94.47	588.090	65.98	587.920	48.98	587.550	2.920	587.490	2.582	587.750	4.482
Mean	588.221	80.1	588.009	57.99	587.773	24.7	587.408	2.175	587.293	1.627	587.503	2.861

Peak Computed Discharge = 3195 cumecs on 10/08/2019

Corres. Water Level :818.98 m

Lowest Computed Discharge = 1.389 cumecs on 12/04/2020

Corres. Water Level :587.23 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

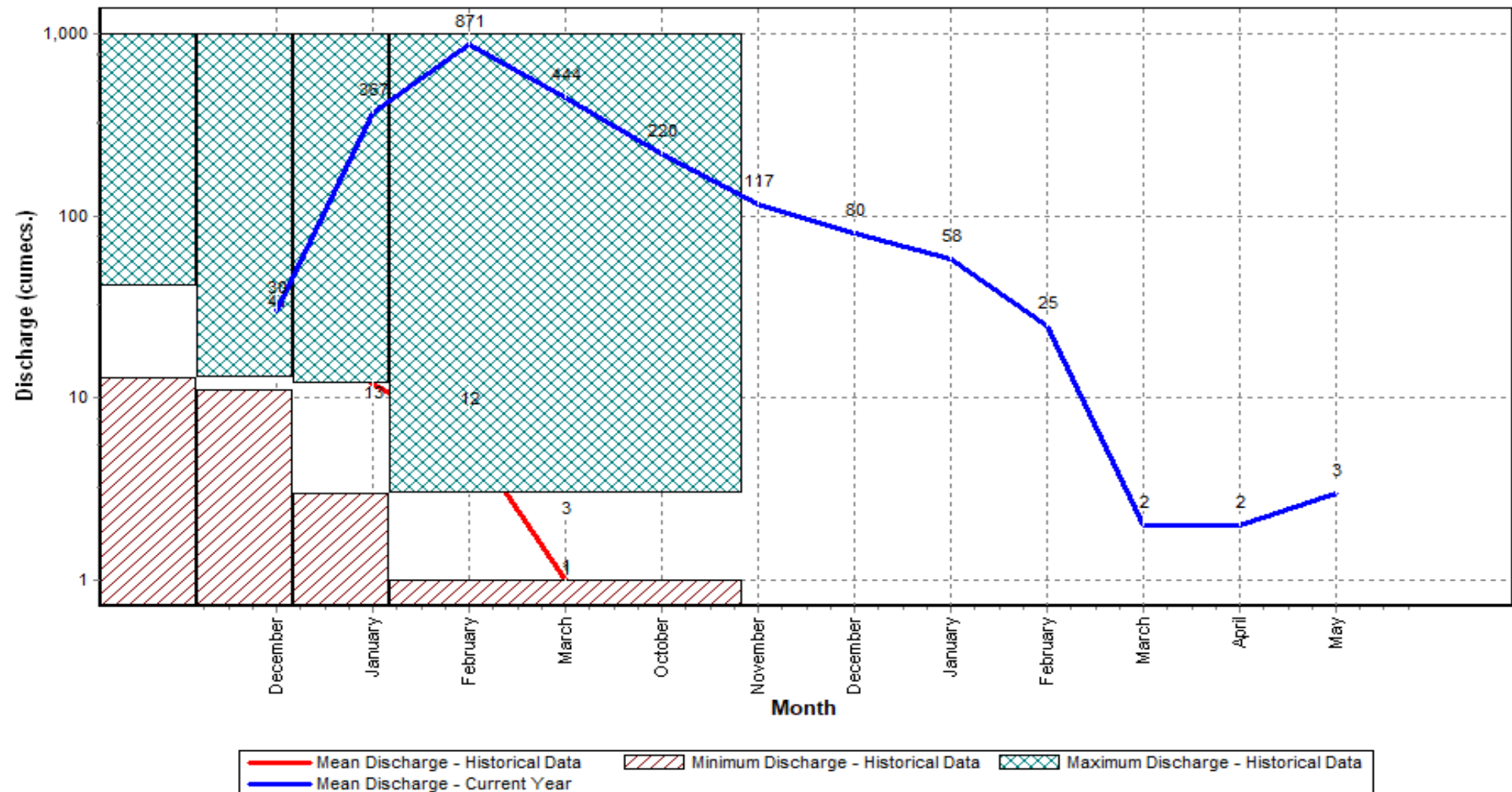
Station Name : MAHISHI (MAHISHI)

Data considered : 2019-2020

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga SD, Devangere



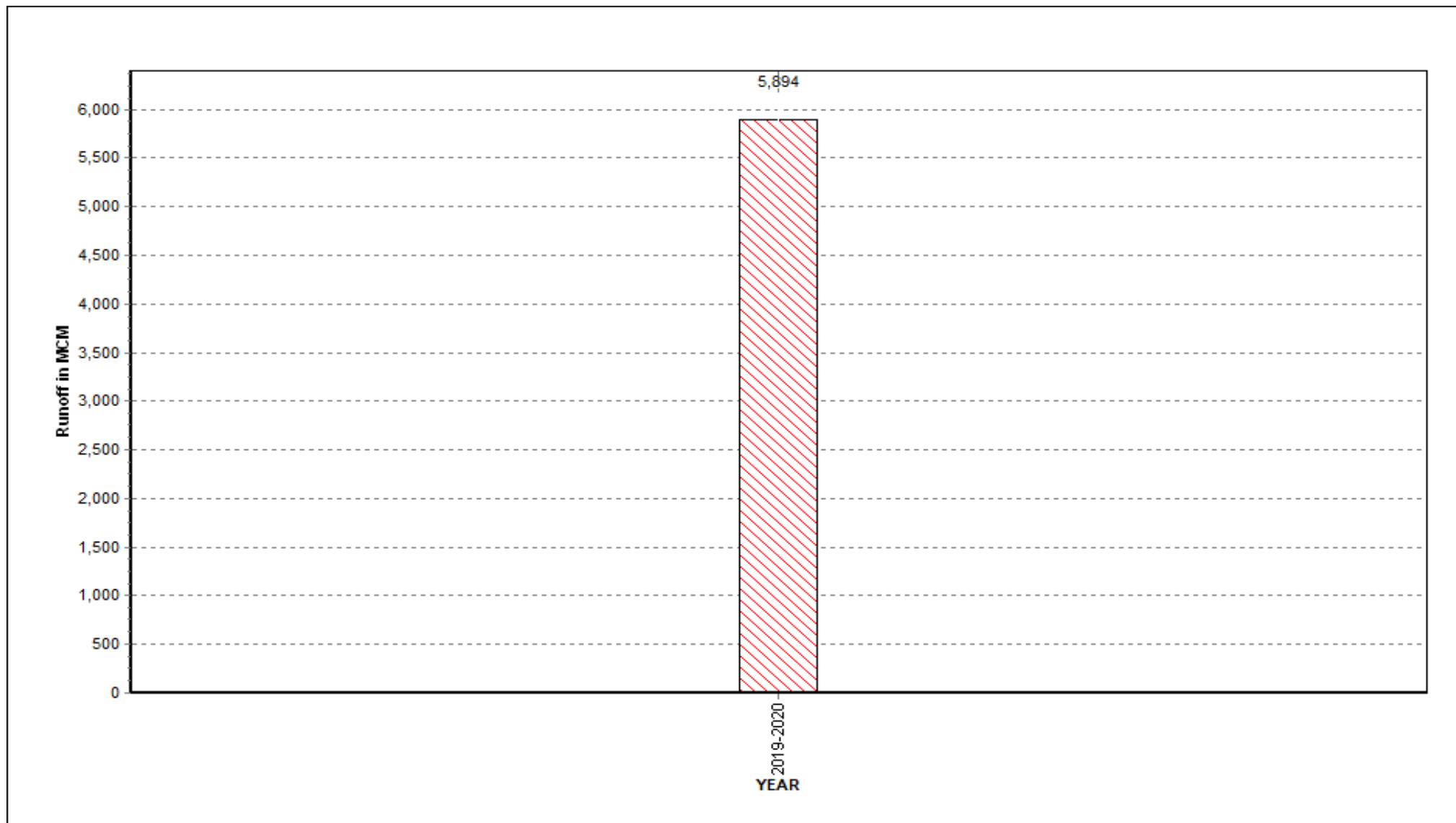
Annual Runoff Values for the period: 2019 - 2020

Station Name : MAHISHI (MAHISHI)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

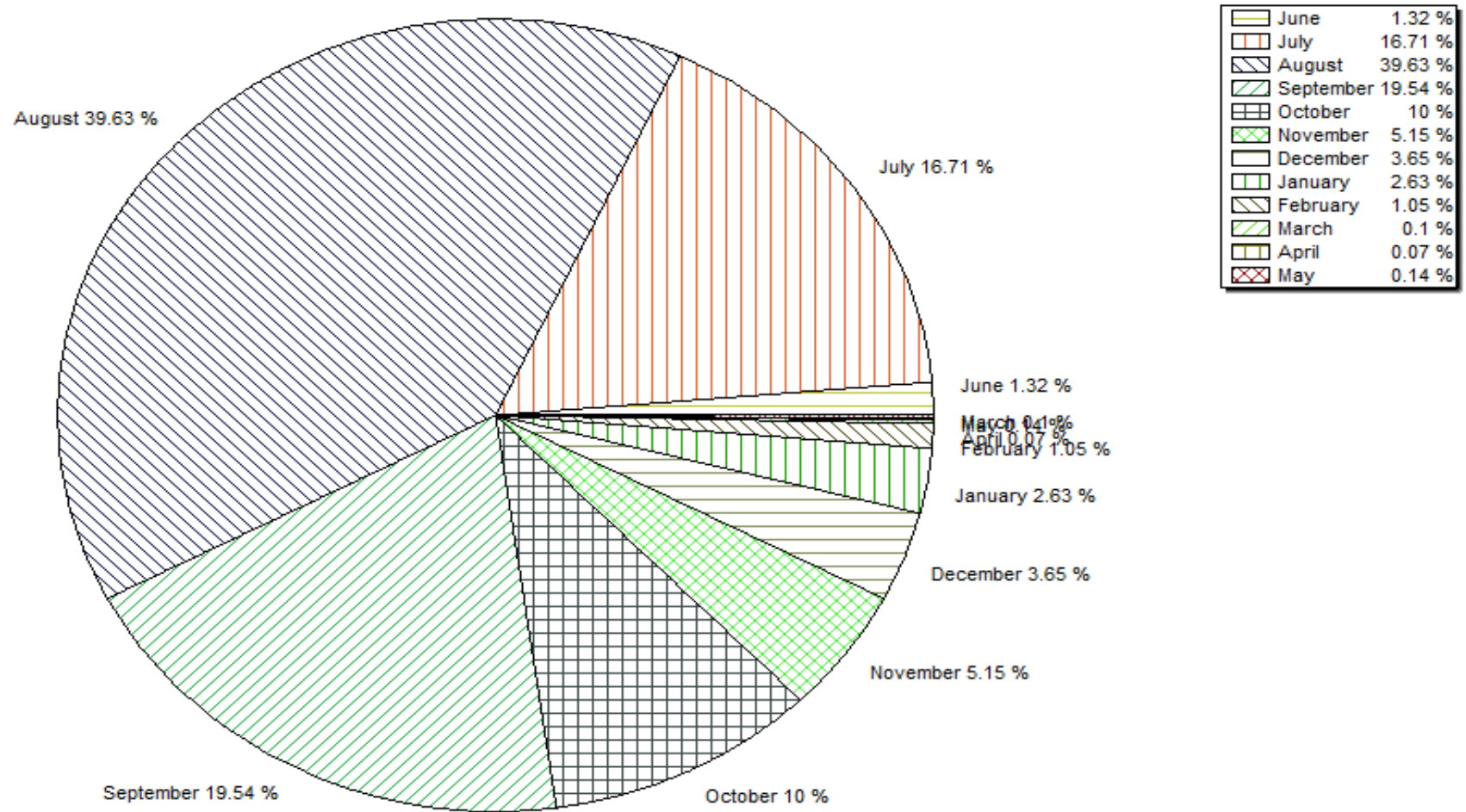
Monthly Runoff for the Year : 2019-2020

Station Name : MAHISHI (MAHISHI)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



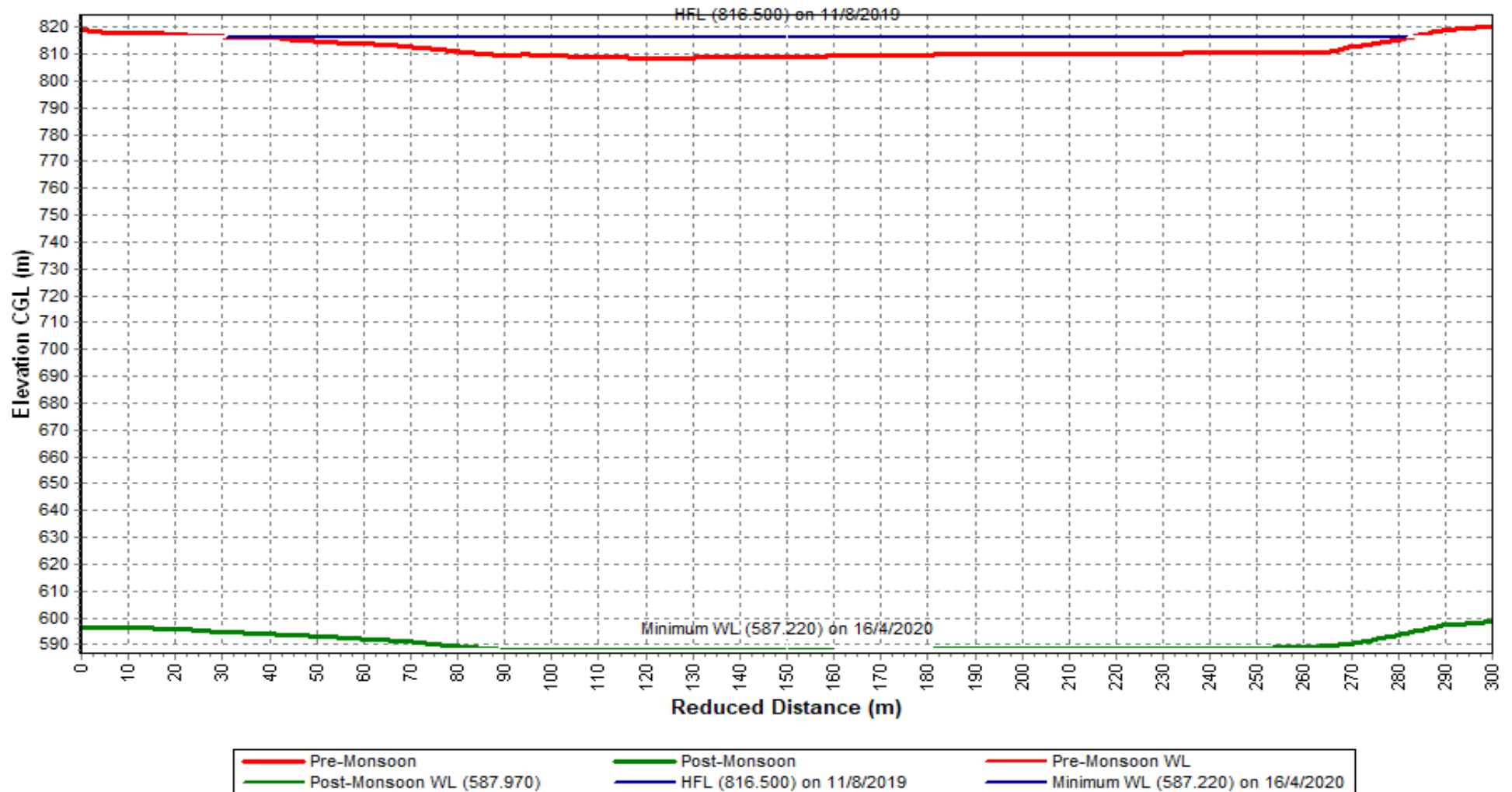
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : MAHISHI (MAHISHI)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



X section Differance due to Change of Zero of gauge

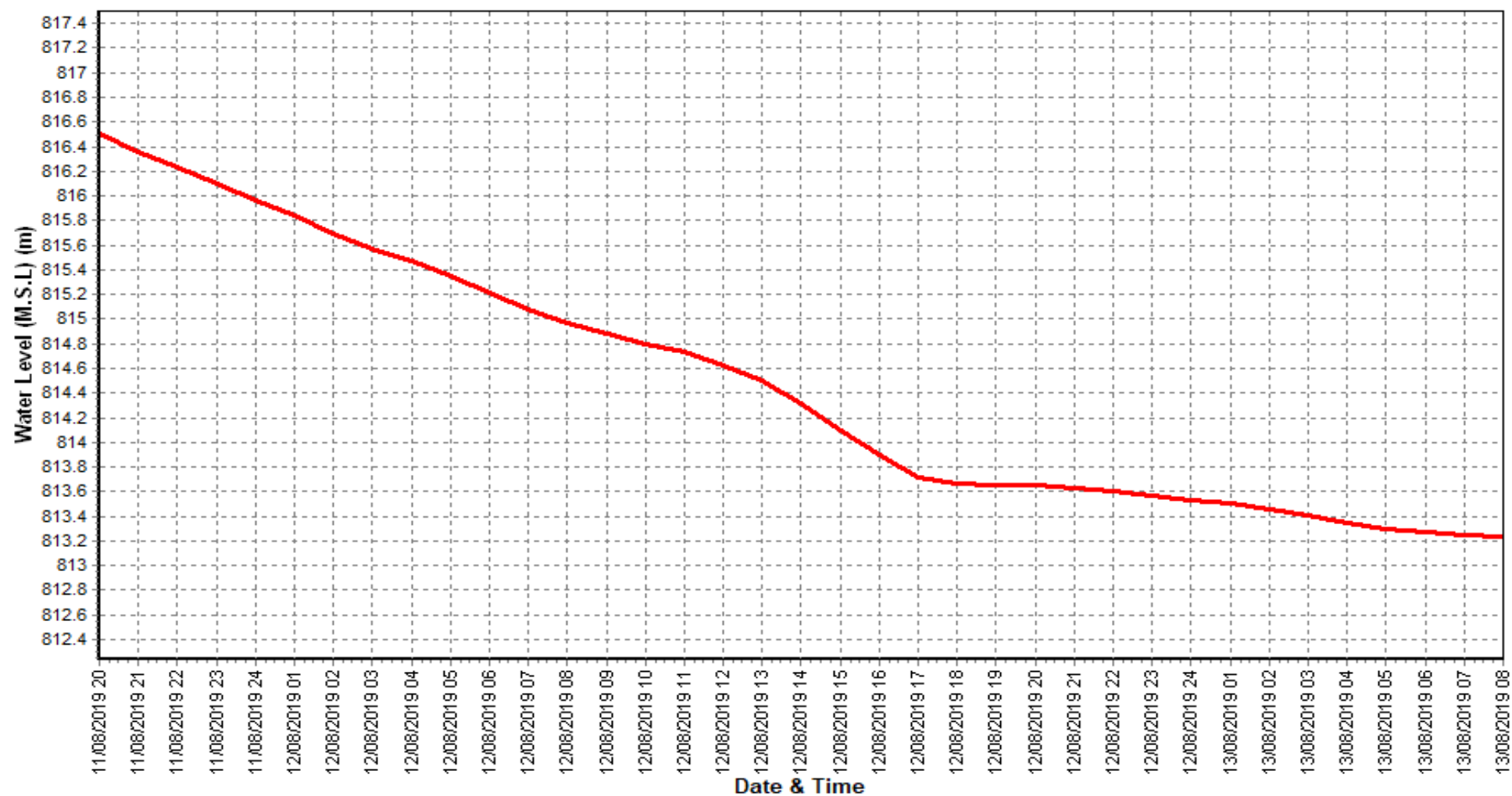
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : MAHISHI (MAHISHI)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



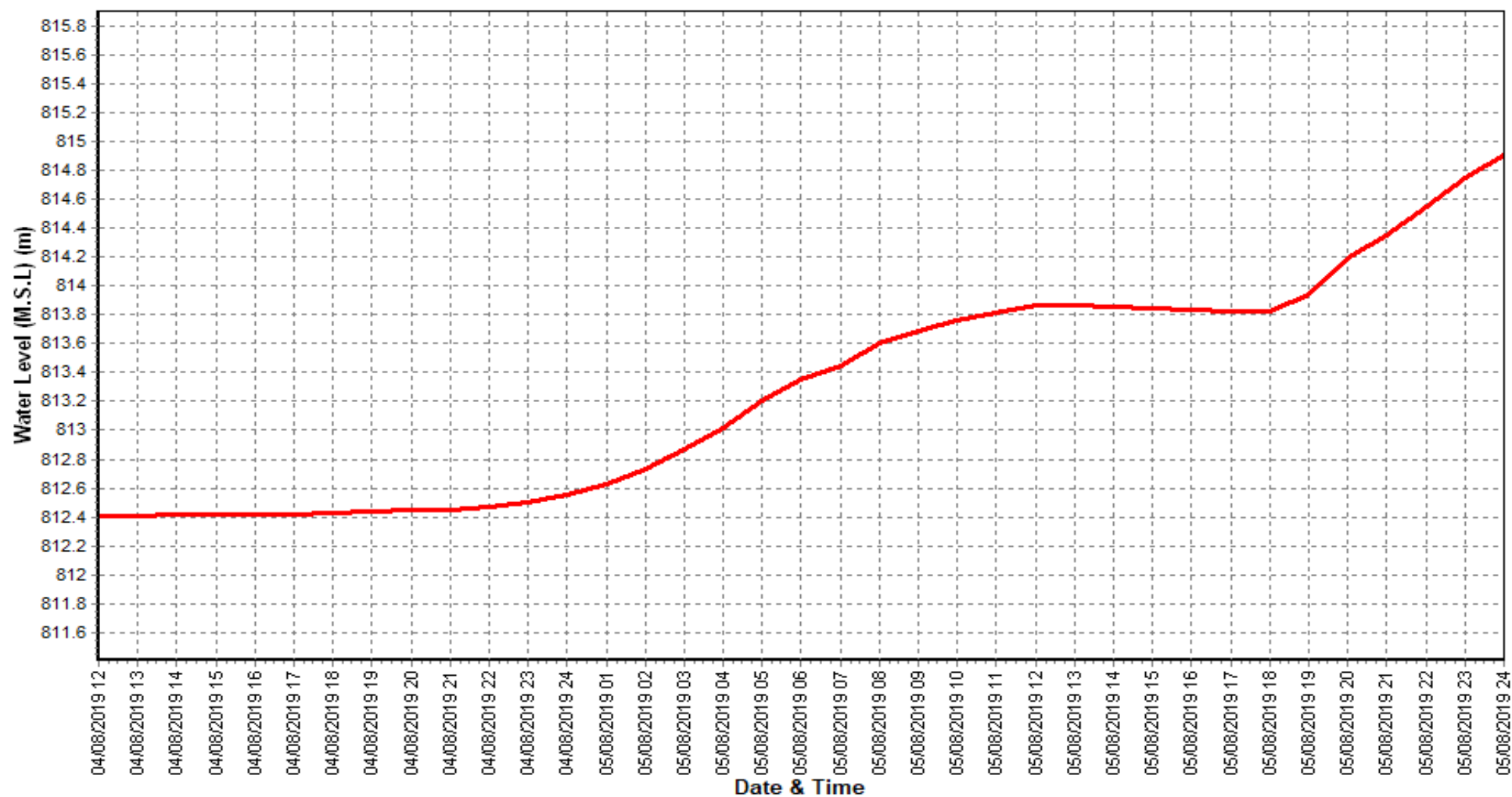
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : MAHISHI (MAHISHI)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



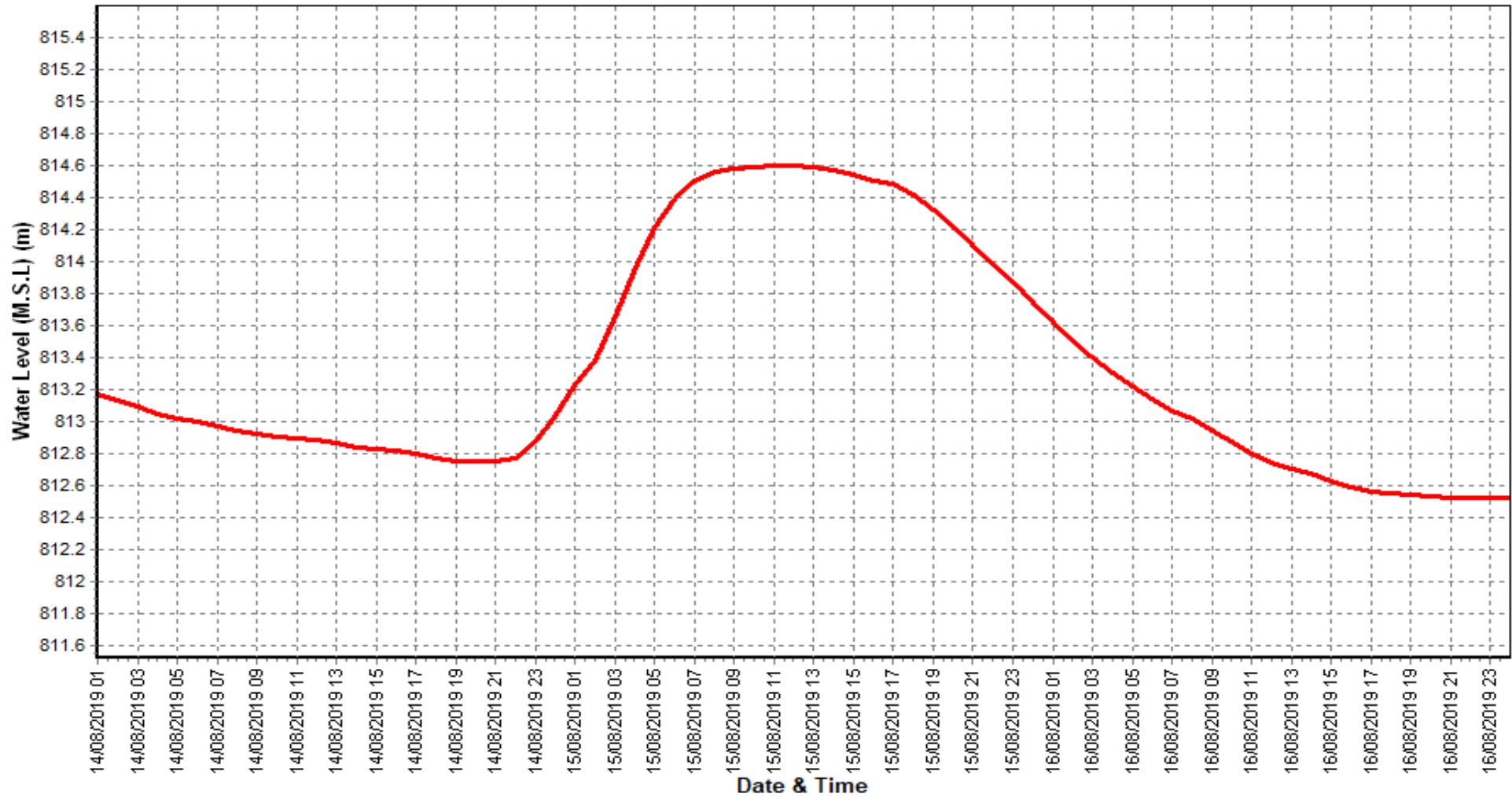
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : MAHISHI (MAHISHI)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : AIRANI

Code : AIRANI

State : Karnataka

District : Haveri

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere

Drainage Area : 7075 Sq. Km.

Bank : Left

Latitude : 14°36'21"

Longitude : 75°48'15"

Zero of Gauge (m) : 83 (m.s.l)

24/10/2016 - 29/02/2020

Opening Date

Closing Date

Gauge : 24/10/2016

Discharge : 28/12/2018

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Stage-Discharge Data for the period 2019 - 2020

Station Name : AIRANI (AIRANI)

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga SD, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	86.320	2.950	86.680	19.55	88.920	530.0	88.530	417.0 *	88.480	420.0	89.000	563.3
2	86.280	1.827 *	86.560	12.54	88.660	459.9	88.310	361.0 *	88.320	363.4 *	88.850	510.4
3	86.260	1.518 #	86.530	8.350	88.250	350.0	89.270	650.4	88.340	380.0	88.430	390.9 *
4	86.240	0.972	86.530	8.430	88.560	425.0 *	89.750	800.5	87.970	290.0	88.100	321.0
5	86.240	1.244 *	87.740	236.9 *	88.860	510.0	90.340	1040	87.980	300.1	88.020	301.0
6	86.240	0.971	88.070	305.1 *	89.900	870.6	91.580	1672	88.400	383.3 *	88.090	320.6
7	86.210	0.785	88.460	398.6 *	92.360	2187	91.760	1750	88.590	433.0 *	87.700	230.4
8	86.210	0.741	89.250	522.9	94.300	4040	91.910	1915 *	89.000	552.4 *	88.480	419.5
9	86.180	0.607 *	88.750	444.9	95.400	5170	91.780	1779 *	88.620	440.8	88.650	451.1
10	86.160	0.530	89.300	649.9	95.870	5423	92.280	2158 *	88.870	510.0	88.300	358.5 *
11	86.160	0.541	89.300	649.9	96.030	5488	91.140	1430	88.850	509.4	88.060	310.5
12	86.160	0.547	89.130	601.4	95.050	4655	90.200	980.0	88.670	460.0	87.910	270.8 *
13	86.160	0.503	88.450	402.9	92.050	1951	89.560	730.0	88.760	480.5 *	87.730	240.3
14	86.130	0.333	88.280	353.7 *	90.100	939.7	89.360	670.6	89.050	569.8	87.580	210.8
15	86.180	0.592	87.910	270.0	89.890	870.3 *	89.130	593.7 *	89.010	555.5 *	87.540	200.2
16	86.260	1.518 *	87.840	250.3	91.100	1400	89.080	589.7	88.360	379.3	87.540	200.2
17	86.260	1.518 #	87.730	240.1	90.100	939.7	89.100	590.2	88.200	340.4	87.490	191.7 *
18	86.260	1.518 #	87.630	209.8	89.450	702.8 *	89.020	560.0	88.360	379.3	87.420	169.8
19	86.210	0.775	87.550	190.2	89.290	650.2	88.630	459.6	88.260	350.0	87.380	170.8
20	86.210	0.713	87.360	170.0	89.450	689.8	89.050	570.6	89.330	660.7 *	87.590	210.2
21	86.350	3.025	88.120	316.3 *	89.220	620.0	88.500	419.1	90.500	1100	87.640	220.0
22	86.840	29.28	88.650	460.0	89.090	589.3	88.520	414.3 *	93.970	3364	87.440	180.9
23	86.800	25.03 *	89.040	570.1	88.410	390.4	87.950	290.2	91.600	1672	87.480	190.3
24	86.870	31.10	88.900	530.2	88.680	470.0	88.080	320.6	90.700	1192	87.430	181.6 *
25	86.880	31.73	88.750	490.5	88.730	471.0 *	88.300	359.5	89.910	864.4	87.330	160.3
26	86.900	33.39	88.380	389.6	88.850	510.0	88.320	360.1	90.060	912.0	87.460	180.3
27	86.900	33.39	88.420	390.0	88.710	470.1	88.560	429.9	90.250	1023 *	87.260	140.2
28	86.900	33.91	88.590	433.0 *	88.530	429.5	88.700	469.0	90.180	981.0	87.190	132.0
29	86.900	33.23	88.290	360.0	88.320	360.0	88.520	414.3 *	89.790	830.6	87.280	150.1
30	86.780	23.50 *	88.530	489.9	88.330	380.0	88.350	380.1	89.050	570.7	87.230	140.1
31			88.990	560.0	88.180	340.0			88.560	431.6		
Ten-Daily Mean												
I Ten-Daily	86.234	1.215	87.787	260.7	91.108	1997	90.551	1254	88.457	407.3	88.362	386.7
II Ten-Daily	86.199	0.856	88.118	333.8	91.251	1829	89.427	717.4	88.685	468.5	87.624	217.5
III Ten-Daily	86.812	27.76	88.605	453.6	88.641	457.3	88.380	385.7	90.415	1176	87.374	167.6
Monthly												
Min.	86.130	0.333	86.530	8.350	88.180	340.0	87.950	290.2	87.970	290.0	87.190	132.0
Max.	86.900	33.91	89.300	649.9	96.030	5488	92.280	2158	93.970	3364	89.000	563.3
Mean	86.415	9.943	88.184	352.7	90.279	1396	89.453	785.8	89.225	700	87.787	257.3

Annual Runoff in MCM = 10113 Annual Runoff in mm = 1429

Peak Observed Discharge = 5488 cumecs on 11/08/2019 Corres. Water Level :96.03 m

Lowest Observed Discharge = 0.333 cumecs on 14/06/2019 Corres. Water Level :86.13 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : AIRANI (AIRANI)

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga SD, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	87.230	128.6 *	86.800	33.11	86.820	26.98	517.690	25.31 *	517.530	10.59 *	517.680	19.20
2	87.230	140.2	86.780	33.47	86.820	27.14 *	517.720	23.10	517.500	9.313 *	517.680	18.91
3	87.400	170.4	86.780	33.63	86.820	26.98	518.300	151.9	517.450	7.396 *	518.200	135.4 *
4	87.650	220.0	86.780	33.89	86.790	23.57	518.180	131.3	517.550	11.49 *	518.400	175.5
5	87.600	210.1	86.720	30.77 *	86.790	23.31	518.000	100.6	518.050	49.77 *	518.400	175.5
6	87.450	182.0	86.720	32.25	86.790	22.80	518.000	100.1	518.200	67.81 *	518.400	175.5
7	87.400	170.3	86.720	31.87	86.760	19.25	518.000	100.1	518.200	67.81 *	518.200	135.4 *
8	87.400	170.3 *	86.720	31.14	86.760	19.22	517.820	47.96 *	518.300	81.67 *	518.300	150.7
9	87.270	140.0	86.720	30.71	86.730	18.89 *	517.640	12.59	518.300	81.67 *	518.100	116.3
10	87.270	140.0	86.690	28.47	86.730	17.32	517.640	12.66	518.360	90.73 *	517.900	61.55 *
11	87.200	130.5	86.690	26.29	86.730	17.77	517.580	11.01	518.420	100.3 *	518.000	100.4
12	87.150	121.1	86.650	21.31 *	86.700	15.78	517.580	11.34	518.390	95.47 *	517.940	80.27
13	87.100	110.0	86.620	22.66	86.700	15.39	517.580	11.13	518.360	90.73 *	517.940	80.27
14	87.100	110.0	86.600	18.13	86.700	15.48	517.580	11.23	518.030	47.62 *	518.050	102.2
15	87.100	99.51 *	86.600	15.31 *	86.700	14.10	517.550	11.49 *	517.850	27.89	518.180	135.0
16	87.050	99.84	86.580	16.09	86.700	16.52 *	517.520	9.910	517.760	23.28	518.050	102.2
17	87.050	100.0	86.560	12.29	86.700	14.05	517.520	9.899	517.700	19.66	518.000	82.86 *
18	87.000	91.94	86.560	10.74	86.700	14.03	517.520	9.868	517.630	16.89	518.000	100.4
19	87.000	91.95	86.850	30.29 *	86.700	14.02	517.520	9.855	517.630	15.56 *	518.100	116.3
20	86.950	85.00	86.850	33.69	86.670	13.34	517.520	9.835	517.630	17.88	518.300	150.7
21	86.950	85.00	86.880	37.77	86.670	14.34 *	517.520	9.824	517.630	16.51	518.350	160.3
22	86.950	69.25 *	86.880	37.19	86.670	13.37	517.520	10.15 *	517.780	25.22	518.200	136.7
23	86.900	60.02 #	86.880	37.16	86.880	14.34 *	517.520	10.10	517.780	25.08	518.100	116.3
24	86.900	60.02 #	86.900	38.00	86.640	12.46	517.520	10.01	517.780	24.96	517.950	71.80 *
25	86.750	35.20	86.900	38.24	86.640	12.21	517.520	10.15 *	517.810	26.94	517.850	52.11 *
26	86.800	35.20	86.900	35.99 *	86.600	11.18	517.620	15.01 *	517.810	27.45 *	517.780	40.28 #
27	86.800	35.18	86.870	35.28	86.600	11.23	517.620	15.01 *	517.780	25.30	517.630	16.70
28	86.800	35.10	86.810	30.89	86.570	9.850	517.590	13.44 *	517.720	20.72	517.550	9.956
29	86.800	42.96 *	86.700	16.52 #	86.570	10.18	517.560	11.96 *	517.720	20.63	517.500	8.888
30	86.800	34.90	86.700	21.46			517.560	11.96 *	517.680	18.91	517.410	3.343 #
31	86.800	34.80	86.790	23.69			517.530	10.59 *			517.410	3.343 *
Ten-Daily Mean												
I Ten-Daily	87.390	167.2	86.743	31.93	86.781	22.55	517.899	70.56	517.944	47.82	518.126	116.4
II Ten-Daily	87.070	104.0	86.656	20.68	86.700	15.05	517.547	10.56	517.940	45.53	518.056	105.1
III Ten-Daily	86.841	47.97	86.837	32.02	86.649	12.13	517.553	11.66	517.749	23.17	517.794	56.33
Monthly												
Min.	86.750	34.80	86.560	10.74	86.570	9.850	517.520	9.824	517.450	7.396	517.410	3.343
Max.	87.650	220.0	86.900	38.24	86.880	27.14	518.300	151.9	518.420	100.3	518.400	175.5
Mean	87.092	104.5	86.748	28.33	86.712	16.73	517.663	30.3	517.878	38.84	517.985	91.42

Peak Computed Discharge = 2158 cumecs on 10/09/2019

Corres. Water Level :92.28 m

Lowest Computed Discharge = 0.607 cumecs on 09/06/2019

Corres. Water Level :86.18 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

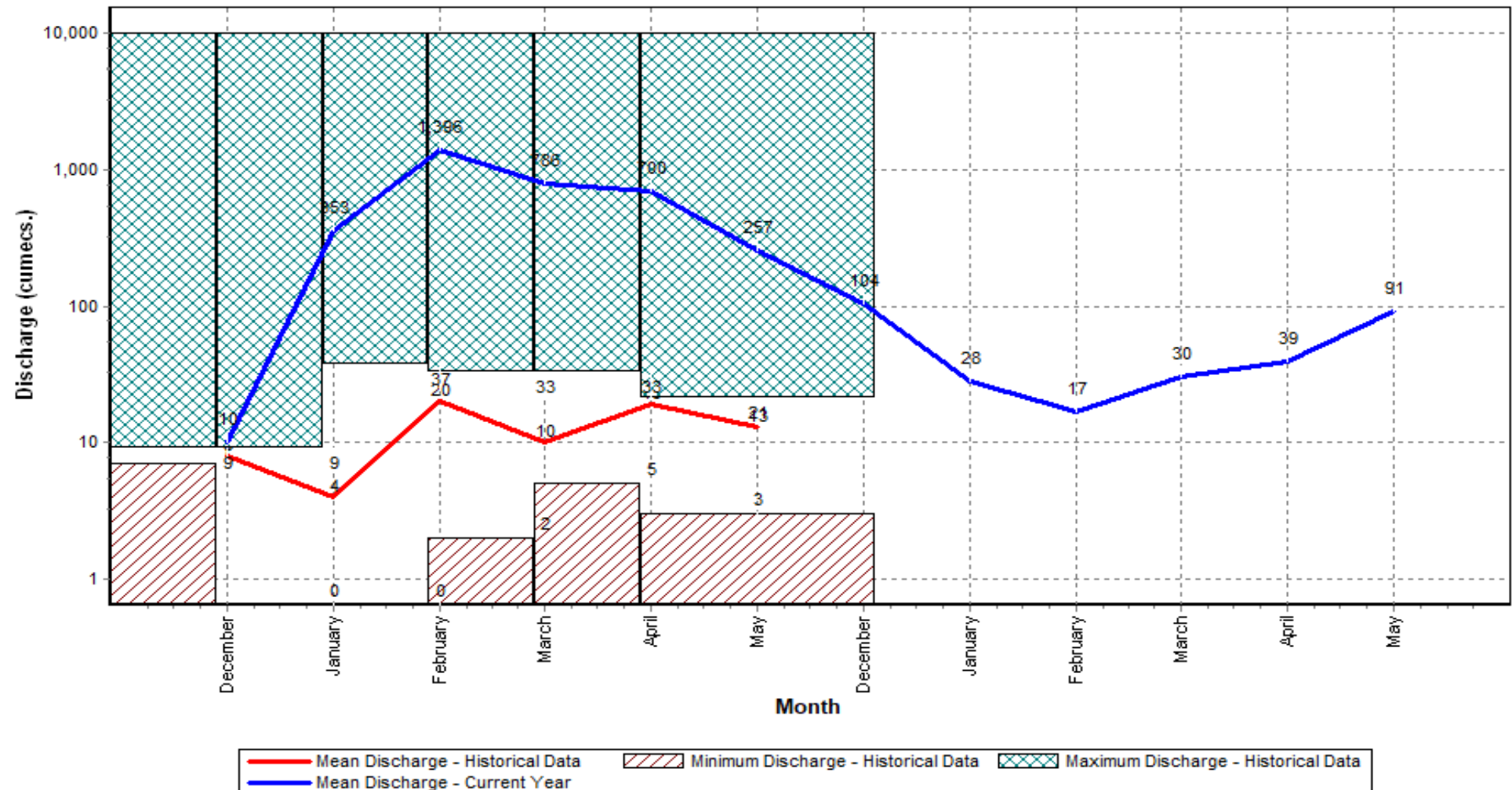
Station Name : AIRANI (AIRANI)

Data considered : 2019-2020

Division : Cauvery Division, Bangalore

Local River : Tungabhadra

Sub-Division : Upper Tunga SD, Devangere



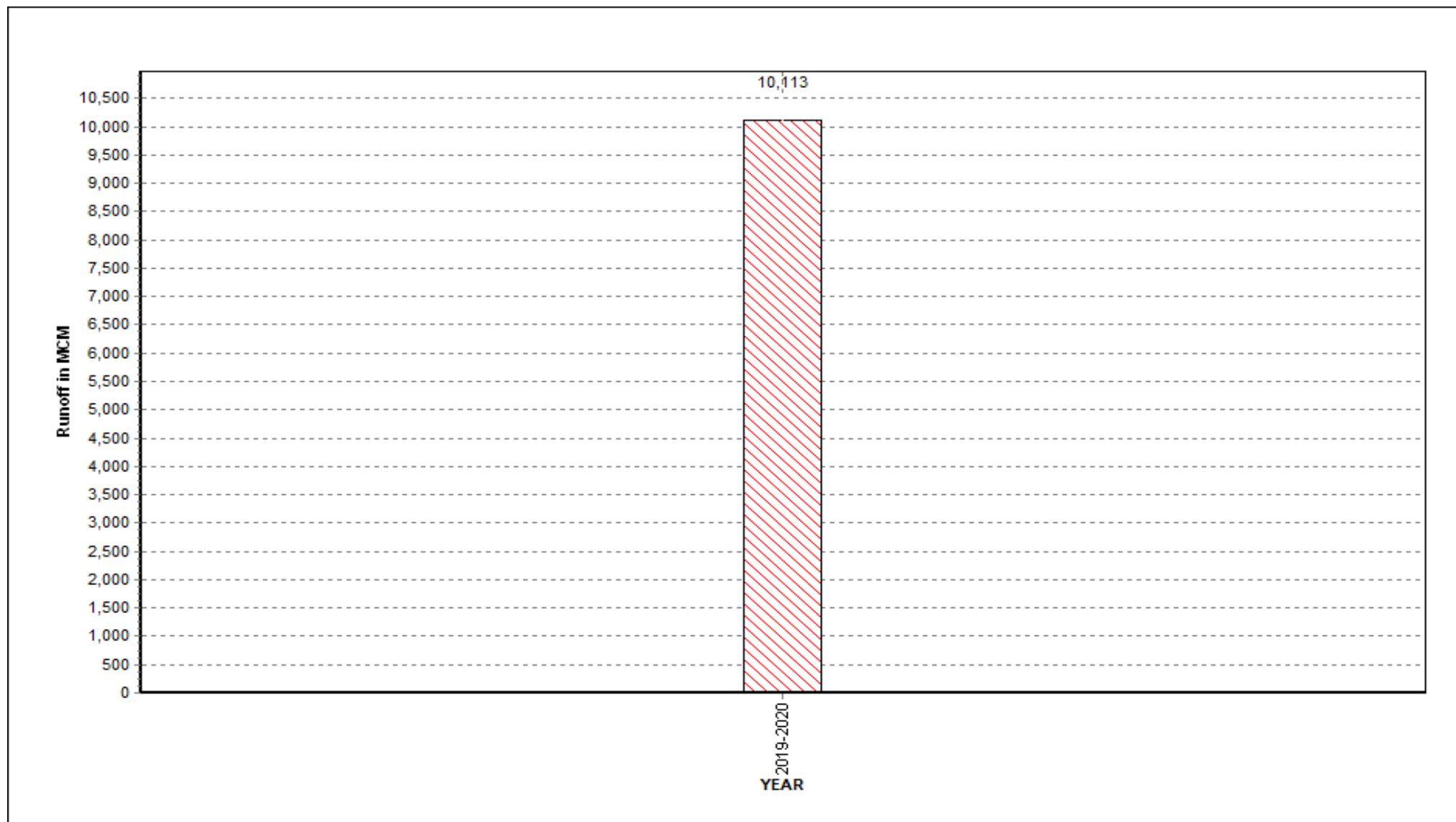
Annual Runoff Values for the period: 2019 - 2020

Station Name : AIRANI (AIRANI)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

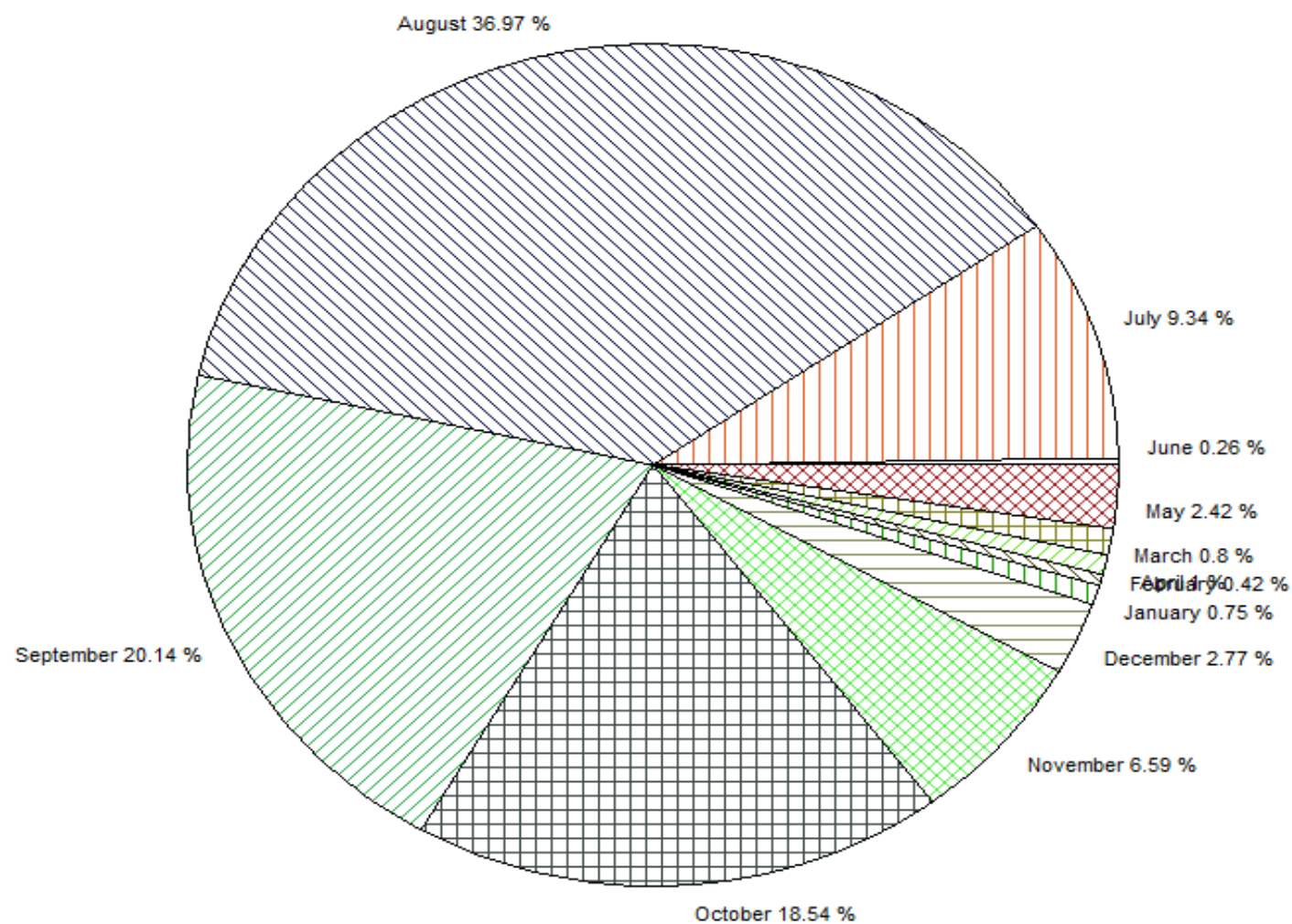
Monthly Runoff for the Year : 2019-2020

Station Name : AIRANI (AIRANI)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



June	0.26 %
July	9.34 %
August	36.97 %
September	20.14 %
October	18.54 %
November	6.59 %
December	2.77 %
January	0.75 %
February	0.42 %
March	0.8 %
April	1 %
May	2.42 %

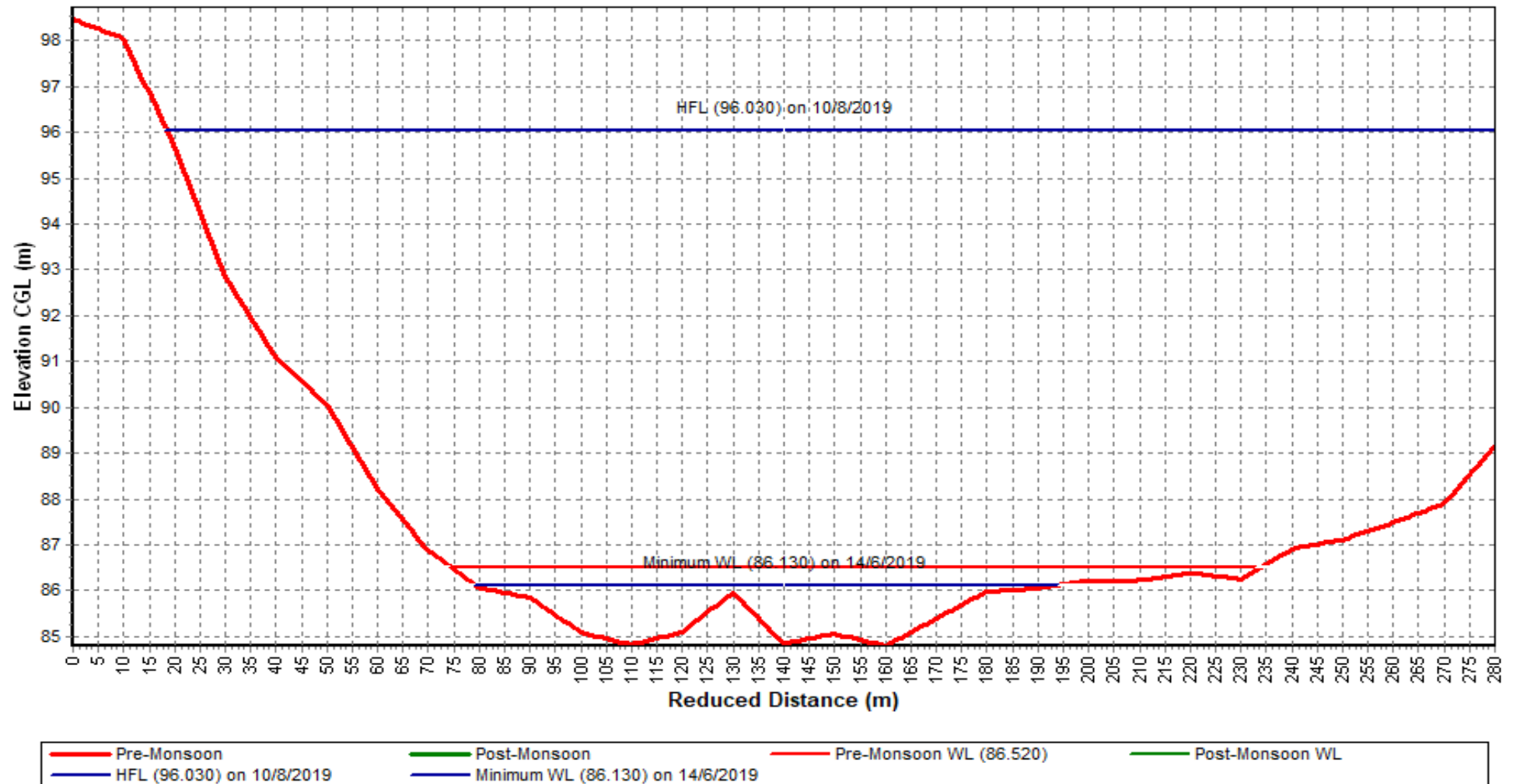
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : AIRANI (AIRANI)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



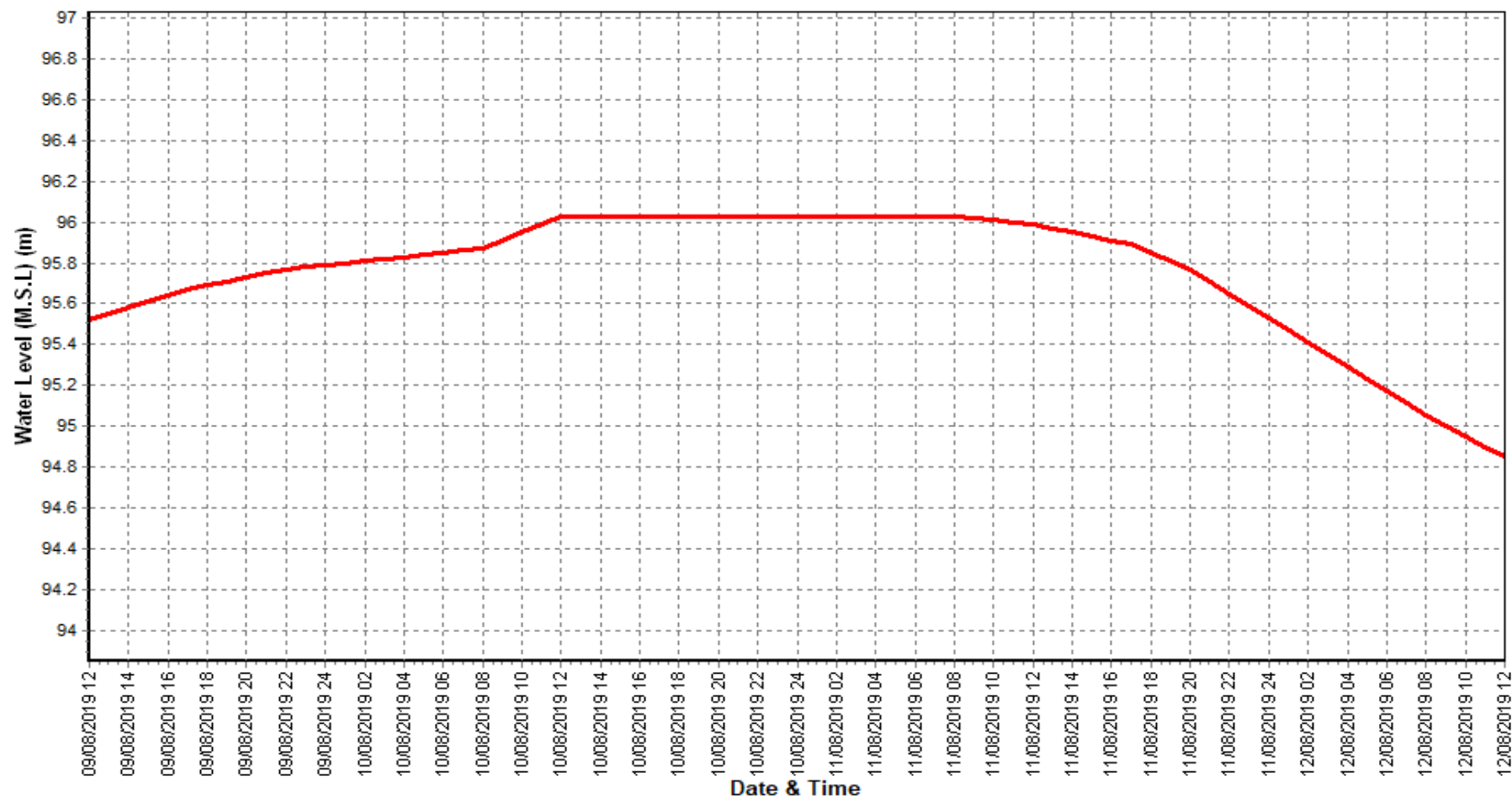
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : AIRANI (AIRANI)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



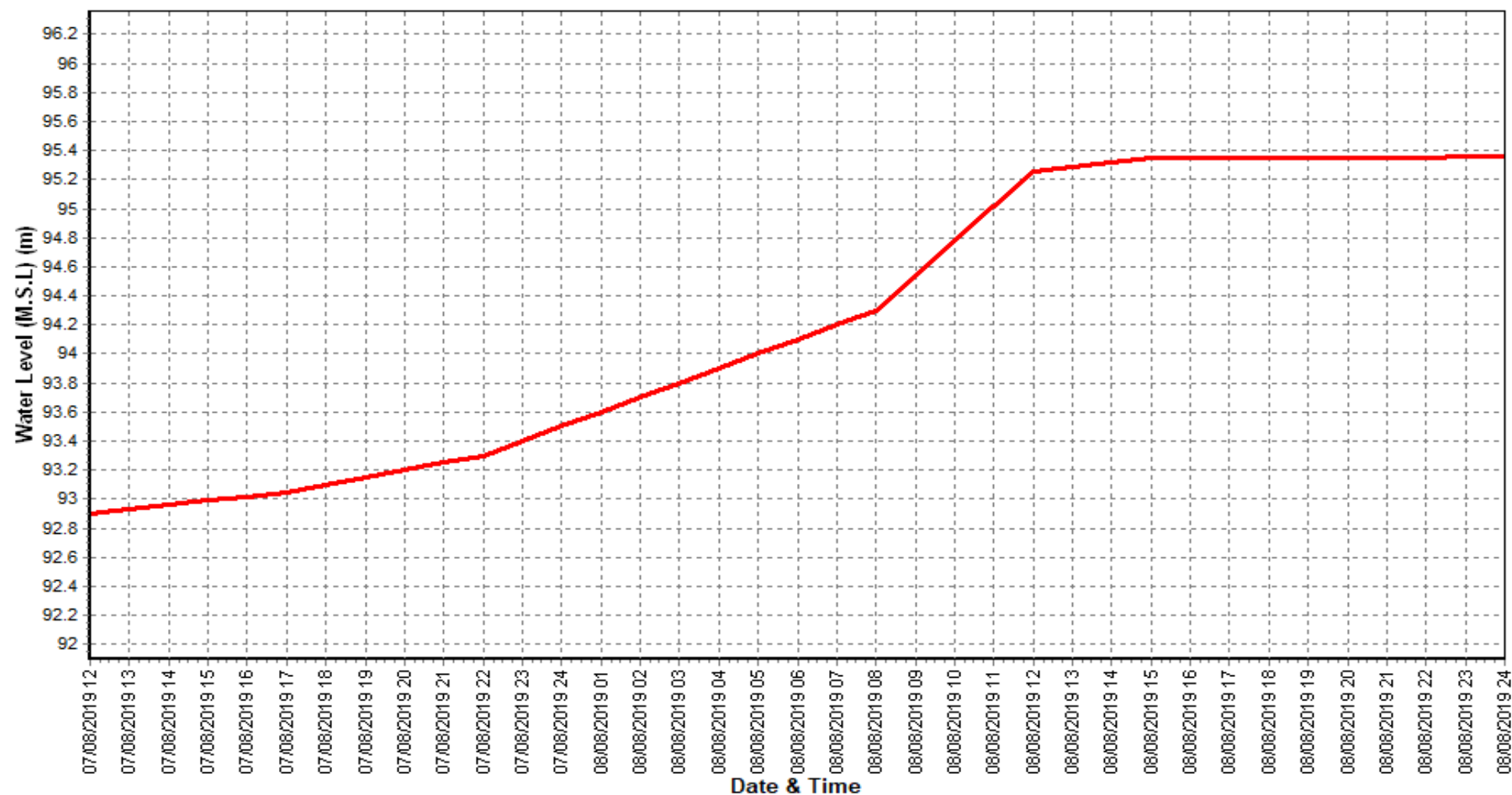
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : AIRANI (AIRANI)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



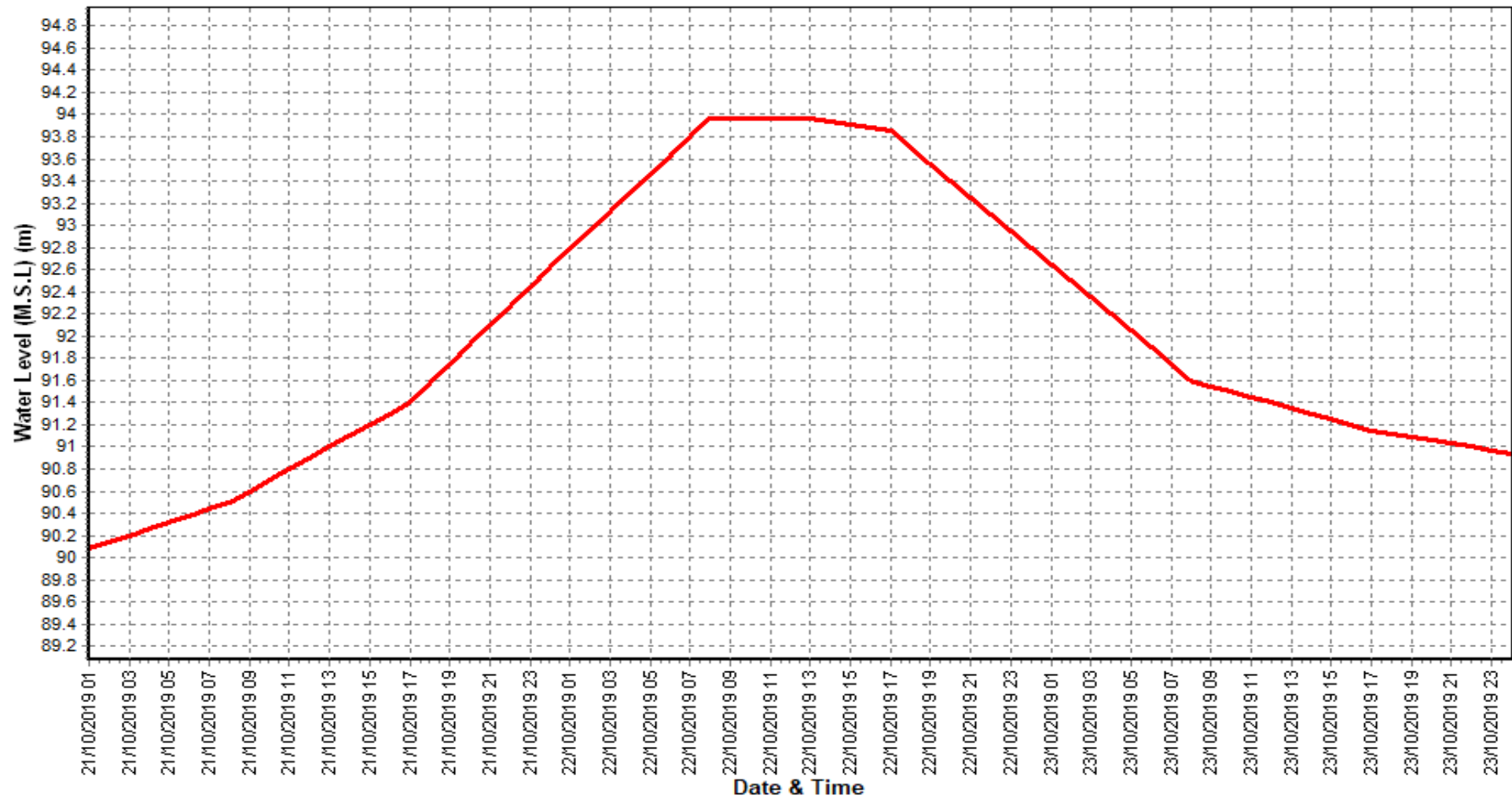
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : AIRANI (AIRANI)

Local River : Tungabhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : HARIHARAPURA

Code : HARIHARAPURA

State : Karnataka

District : Chikmagalur

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere

Drainage Area : 663 Sq. Km.

Bank : Left

Latitude : 13°31'20"

Longitude : 75°18'12"

Zero of Gauge (m) : 837 (m.s.l)

29/10/2014

Opening Date

Closing Date

Gauge : 29/10/2014

Discharge : 14/12/2018

Sediment :

Water Quality : 01/05/2019

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Stage-Discharge Data for the period 2019 - 2020

Station Name : HARIHARAPURA (HARIHARAPURA)

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga SD, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	838.840	8.783	840.340	62.99 #	840.430	73.73	613.975	68.76 *	613.250	59.20	613.150	56.20
2	838.840	8.808 *	840.030	35.80	840.370	70.52	615.025	180.2 *	613.020	52.10 *	612.910	45.82
3	838.830	9.044	840.420	55.21	840.850	102.5	614.730	142.7	612.910	45.71	612.830	45.68 *
4	839.020	11.61	840.190	50.74	840.950	106.2 *	614.660	142.1	612.910	45.64	612.840	43.43
5	839.050	13.23 *	840.390	54.84	842.030	248.9	615.830	284.3	612.900	45.40	612.770	42.19
6	839.020	12.12	841.680	176.4 #	843.810	600.5	615.610	265.7	613.050	53.16 *	612.700	41.67
7	839.000	11.96	841.080	117.2 *	844.690	718.1 *	615.760	277.2	613.050	53.16 *	612.750	42.09
8	838.960	11.68	840.710	88.40	846.110	1137 *	616.260	391.0 *	612.850	46.33 *	612.680	41.42
9	838.960	11.22 *	841.020	94.35	846.400	1237 *	616.540	498.9	613.150	56.15	612.600	39.55
10	838.960	11.62	842.760	314.9	846.680	1338 *	615.060	185.0 *	612.920	45.71	612.580	37.95 *
11	838.970	11.51	840.900	105.9	845.540	955.2 *	614.640	141.3	613.150	56.20	612.560	38.83
12	838.990	11.71	840.670	85.19	842.340	258.8 *	614.210	94.46	613.040	50.47	612.550	37.08 *
13	839.110	13.59	840.200	54.91 #	842.230	241.7	614.320	105.6	613.270	61.30 *	612.520	37.91
14	839.290	21.15	840.050	46.98 *	841.780	169.5	614.000	93.37	613.050	50.73	612.520	38.00
15	839.230	25.43 #	840.030	36.14	843.270	408.1 *	614.100	98.15 *	612.840	43.32	612.510	37.74
16	839.260	26.16 *	840.080	53.36	841.710	162.9	614.140	102.1	613.380	65.99	612.500	37.27
17	839.240	25.68 #	839.660	31.33	842.100	239.6	613.860	88.82	613.020	50.17	612.630	39.43 *
18	839.140	21.61	839.530	28.57	841.270	134.4 *	613.690	81.93	613.100	54.45	612.510	37.79
19	839.120	21.14	840.880	102.6	840.950	108.1	613.580	75.03	613.610	76.31	612.480	36.52
20	839.260	24.65	841.360	120.1	840.760	93.23	613.480	70.48	613.640	76.51 *	612.480	36.60
21	839.330	29.62	841.750	184.2 *	840.710	89.33	613.380	65.84	613.720	82.79	612.480	36.56
22	839.200	26.75	841.660	146.7	840.730	90.32	613.340	64.03 *	613.770	85.30	612.470	36.13
23	839.180	24.25 *	841.220	114.0	840.970	110.1	613.230	58.85	613.820	88.42	612.460	35.28
24	839.240	26.21	840.940	107.9	840.990	111.1	613.170	56.52	613.700	82.88	612.460	34.53 *
25	839.170	25.58	840.940	107.4	840.730	89.06 *	613.390	66.05	614.240	97.59	612.460	35.21
26	839.100	24.43	840.510	81.88	840.640	85.45	613.280	61.35	614.740	143.1	612.460	35.13
27	839.240	24.44	840.810	100.9	840.480	76.53	613.380	65.94	614.030	94.66 *	612.450	34.50
28	839.270	25.79	840.610	80.46 *	840.390	73.64	613.170	56.65	613.610	76.42	612.430	32.88
29	839.270	25.83	840.810	101.6	840.370	73.37	613.060	53.52 *	613.350	65.16	612.430	32.74
30	839.570	26.36 *	841.080	114.9	840.430	75.87	613.150	56.10	613.180	56.88	612.460	34.60
31			840.880	103.9	840.530	82.57			613.050	50.80		
Ten-Daily Mean												
I Ten-Daily	838.948	11.01	840.862	105.1	843.232	563.2	615.345	243.6	613.001	50.26	612.781	43.60
II Ten-Daily	839.161	20.26	840.336	66.51	842.195	277.2	614.002	95.12	613.210	58.55	612.526	37.72
III Ten-Daily	839.257	25.93	841.019	113.1	840.634	87.03	613.255	60.49	613.746	84.00	612.456	34.76
Monthly												
Min.	838.830	8.783	839.530	28.57	840.370	70.52	613.060	53.52	612.840	43.32	612.430	32.74
Max.	839.570	29.62	842.760	314.9	846.680	1338	616.540	498.9	614.740	143.1	613.150	56.20
Mean	839.122	19.07	840.748	95.48	841.975	302	614.201	133.1	613.333	64.9	612.588	38.69

Annual Runoff in MCM = 2027 Annual Runoff in mm = 3058

Peak Observed Discharge = 600.5 cumecs on 06/08/2019 Corres. Water Level :843.81 m

Lowest Observed Discharge = 7.143 cumecs on 20/04/2020 Corres. Water Level :611.91 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : HARIHARAPURA (HARIHARAPURA)

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga SD, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	612.460	38.36 *	612.330	27.62	612.200	20.95	612.100	14.21 *	611.960	8.229 *	611.950	8.244
2	612.460	34.55	612.330	31.34	612.200	19.62 *	612.100	12.49	611.960	8.229 *	611.950	8.231
3	612.460	34.60	612.330	30.34	612.200	20.85	612.100	12.57	611.960	8.229 *	612.040	11.42 *
4	612.460	34.58	612.320	29.91	612.190	20.19	612.090	12.35	611.950	7.869 *	612.080	11.94
5	612.460	34.56	612.320	27.41 *	612.190	19.98	612.090	12.39	611.950	7.869 *	612.100	12.61
6	612.450	34.00	612.310	29.08	612.180	19.63	612.090	11.93	611.940	7.519 *	612.080	12.10
7	612.450	33.92	612.310	29.44	612.180	19.49	612.080	11.98	611.940	7.519 *	612.060	12.32 *
8	612.450	37.51 *	612.310	29.34	612.180	17.90	612.080	13.25 *	611.940	7.519 *	612.150	17.06
9	612.430	32.84	612.300	26.88	612.180	18.46 *	612.070	11.69	611.940	7.519 *	612.110	13.28
10	612.430	32.76	612.300	28.79	612.170	18.89	612.070	11.65	611.940	7.519 *	612.100	14.21 *
11	612.430	32.68	612.300	26.75	612.170	18.81	612.060	11.31	611.930	7.177 *	612.150	17.08
12	612.420	32.31	612.300	26.01 *	612.170	18.75	612.060	11.23	611.930	7.177 *	612.130	15.21
13	612.420	32.21	612.290	26.95	612.160	18.00	612.050	10.95	611.930	7.177 *	612.120	14.11
14	612.410	31.84	612.290	28.08	612.160	17.90	612.050	10.88	611.930	7.117 *	612.120	14.14
15	612.410	34.21 *	612.280	24.65 *	612.160	17.80	612.050	11.87 *	611.920	7.527	612.180	19.70
16	612.400	30.77	612.270	27.64	612.150	16.79 *	612.050	10.85	611.920	7.476	612.200	19.68
17	612.400	30.65	612.270	27.55	612.150	16.90	612.040	10.60	611.920	7.449	612.160	17.34 *
18	612.390	30.33	612.270	27.50	612.150	16.93	612.040	10.57	611.920	7.418	612.150	17.10
19	612.370	29.88	612.270	23.99 *	612.140	15.76	612.030	10.32	611.920	6.844 *	612.500	43.45
20	612.360	29.67	612.270	22.60	612.140	15.68	612.030	10.29	611.910	7.143	612.300	33.61
21	612.360	29.54	612.250	24.99	612.140	16.26 *	612.020	10.02	611.910	7.170	612.250	26.72
22	612.360	30.33 *	612.250	24.75	612.140	15.60	612.020	10.57 *	611.910	7.154	612.200	20.73
23	612.350	29.20	612.250	24.68	612.130	15.73 *	612.020	10.00	611.970	8.867	612.180	19.67
24	612.350	29.09	612.240	27.66	612.130	14.73	612.000	9.839	611.970	8.697	612.160	17.34 *
25	612.350	29.58 *	612.240	27.08	612.130	14.63	612.000	9.754 *	611.960	8.497	612.160	17.34 *
26	612.340	28.74	612.230	21.43 *	612.120	13.78	612.000	9.754 *	611.960	8.229 *	612.150	17.01
27	612.370	29.88	612.230	27.37	612.110	13.08	611.990	9.358 *	611.960	8.471	612.130	14.97
28	612.350	29.18	612.230	24.28	612.110	12.90	611.990	9.358 *	611.950	8.294	612.130	14.95
29	612.340	28.80 *	612.230	23.32	612.110	12.83	611.990	9.358 *	611.950	8.273	612.120	14.09
30	612.340	29.71	612.220	23.56			611.970	8.595 *	611.950	8.254	612.120	14.06
31	612.340	28.62	612.220	22.86			611.970	8.595 *			612.150	16.79 *
Ten-Daily Mean												
I Ten-Daily	612.451	34.77	612.316	29.01	612.187	19.60	612.087	12.45	611.948	7.802	612.062	12.14
II Ten-Daily	612.401	31.46	612.281	26.17	612.155	17.33	612.046	10.89	611.923	7.250	612.201	21.14
III Ten-Daily	612.350	29.33	612.235	24.73	612.124	14.39	611.997	9.564	611.949	8.191	612.159	17.61
Monthly												
Min.	612.340	28.62	612.220	21.43	612.110	12.83	611.970	8.595	611.910	6.844	611.950	8.231
Max.	612.460	38.36	612.330	31.34	612.200	20.95	612.100	14.21	611.970	8.867	612.500	43.45
Mean	612.399	31.77	612.276	26.58	612.157	17.2	612.042	10.92	611.940	7.748	612.141	16.98

Peak Computed Discharge = 1338 cumecs on 10/08/2019

Corres. Water Level :846.68 m

Lowest Computed Discharge = 6.844 cumecs on 19/04/2020

Corres. Water Level :611.92 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

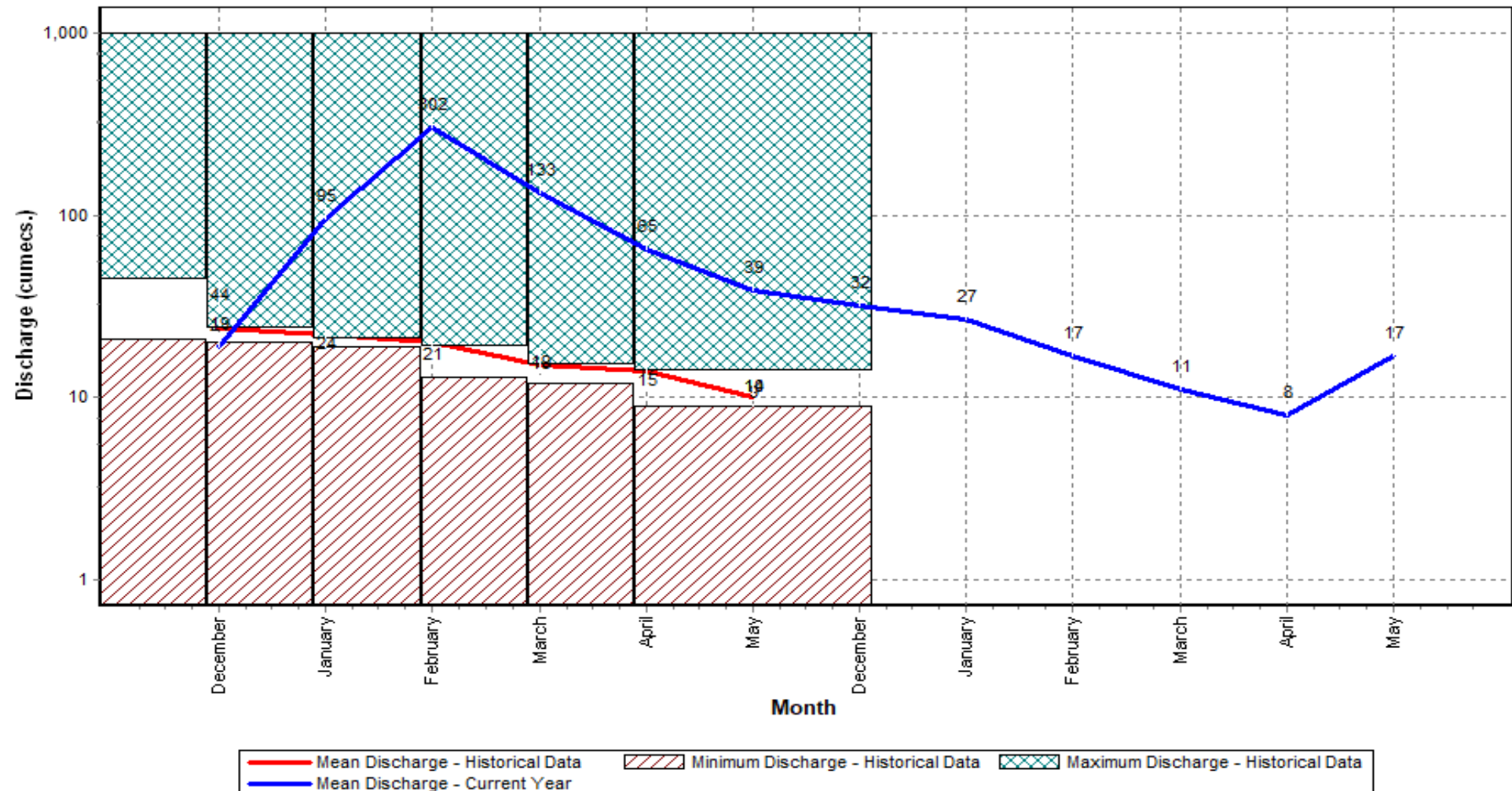
Station Name : HARIHARAPURA (HARIHARAPURA)

Data considered : 2019-2020

Division : Cauvery Division, Bangalore

Local River : Tunga

Sub-Division : Upper Tunga SD, Devangere



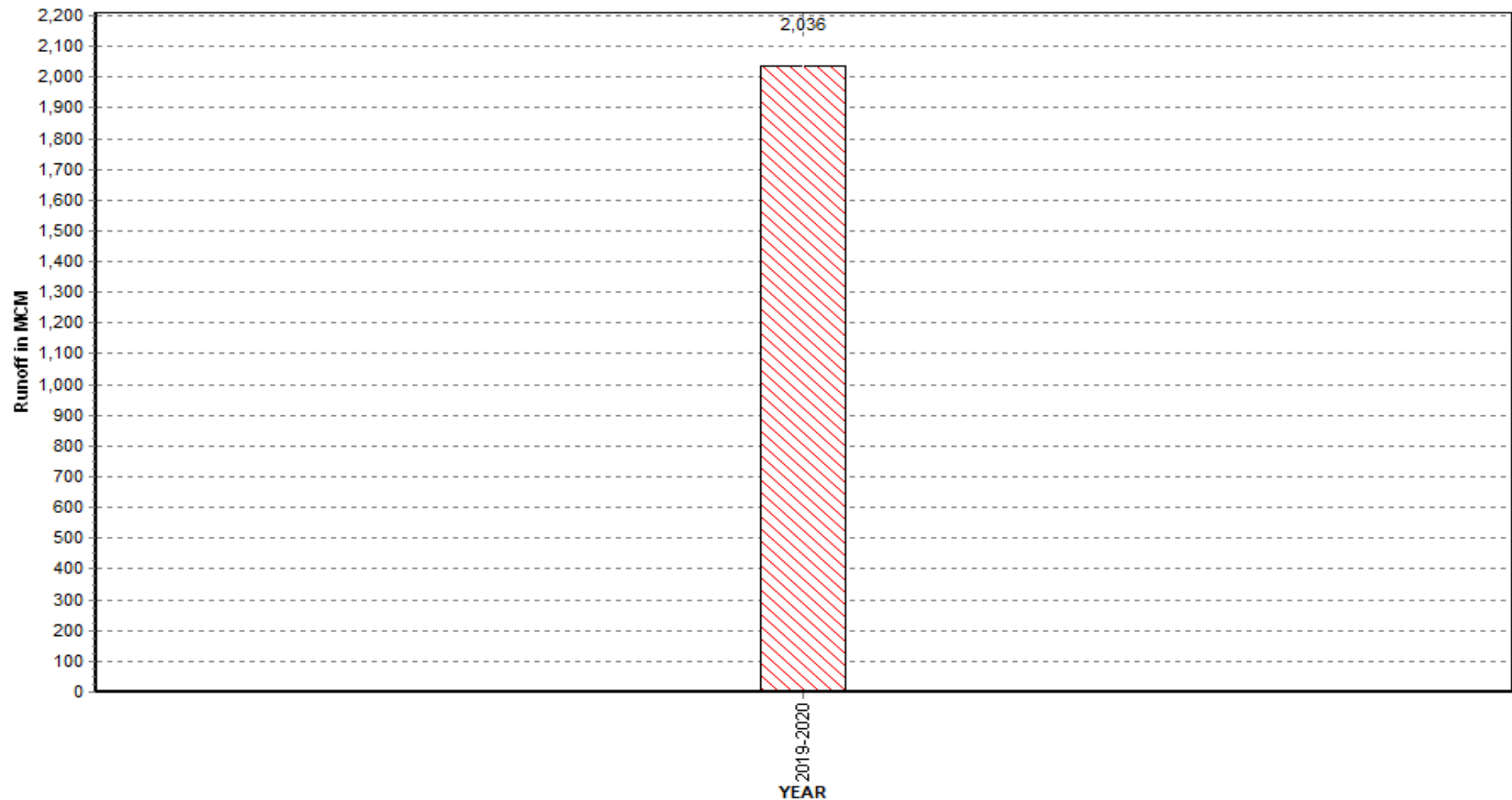
Annual Runoff Values for the period: 2019 - 2020

Station Name : HARIHARAPURA (HARIHARAPURA)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

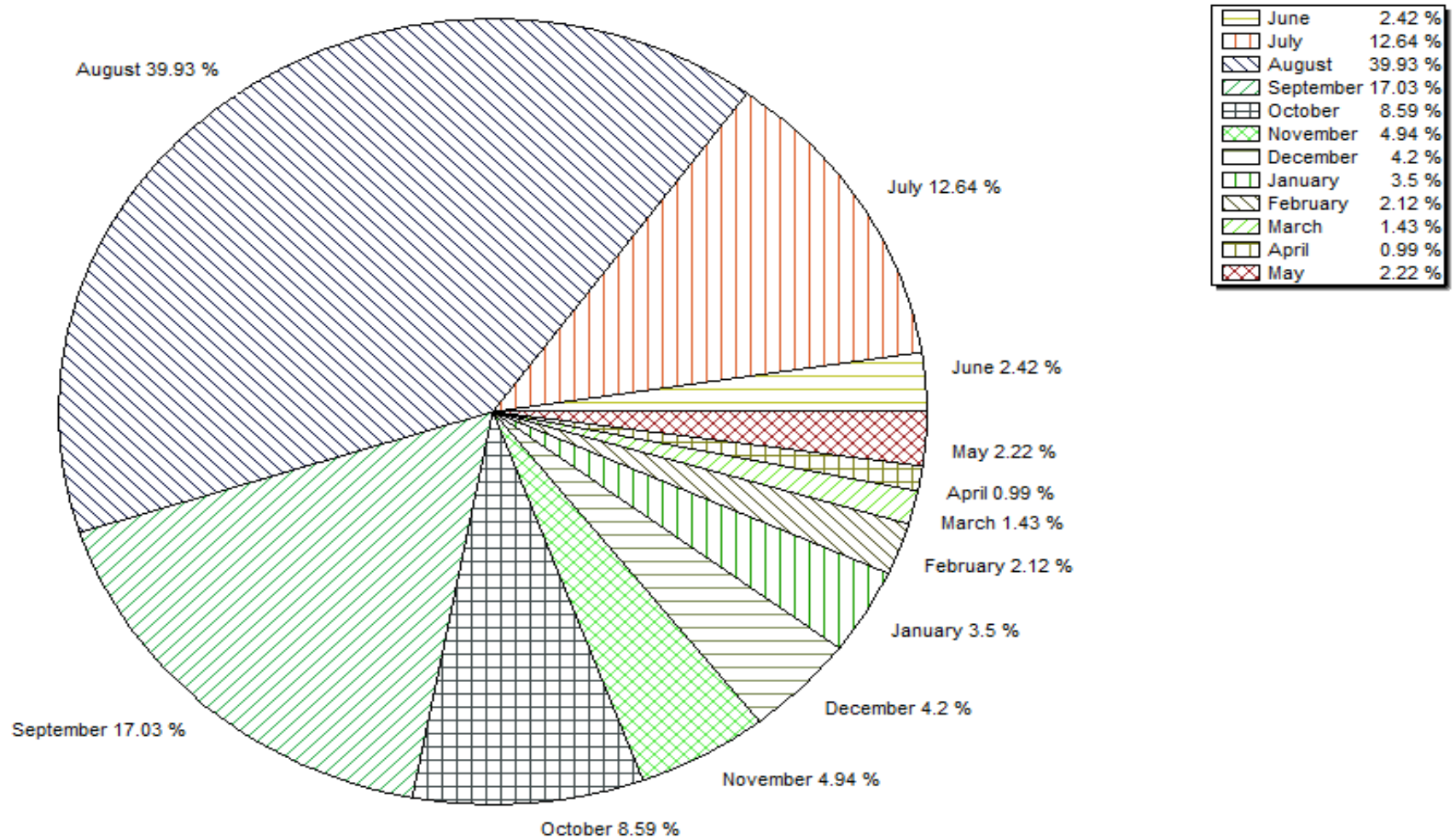
Monthly Runoff for the Year : 2019-2020

Station Name : HARIHARAPURA (HARIHARAPURA)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



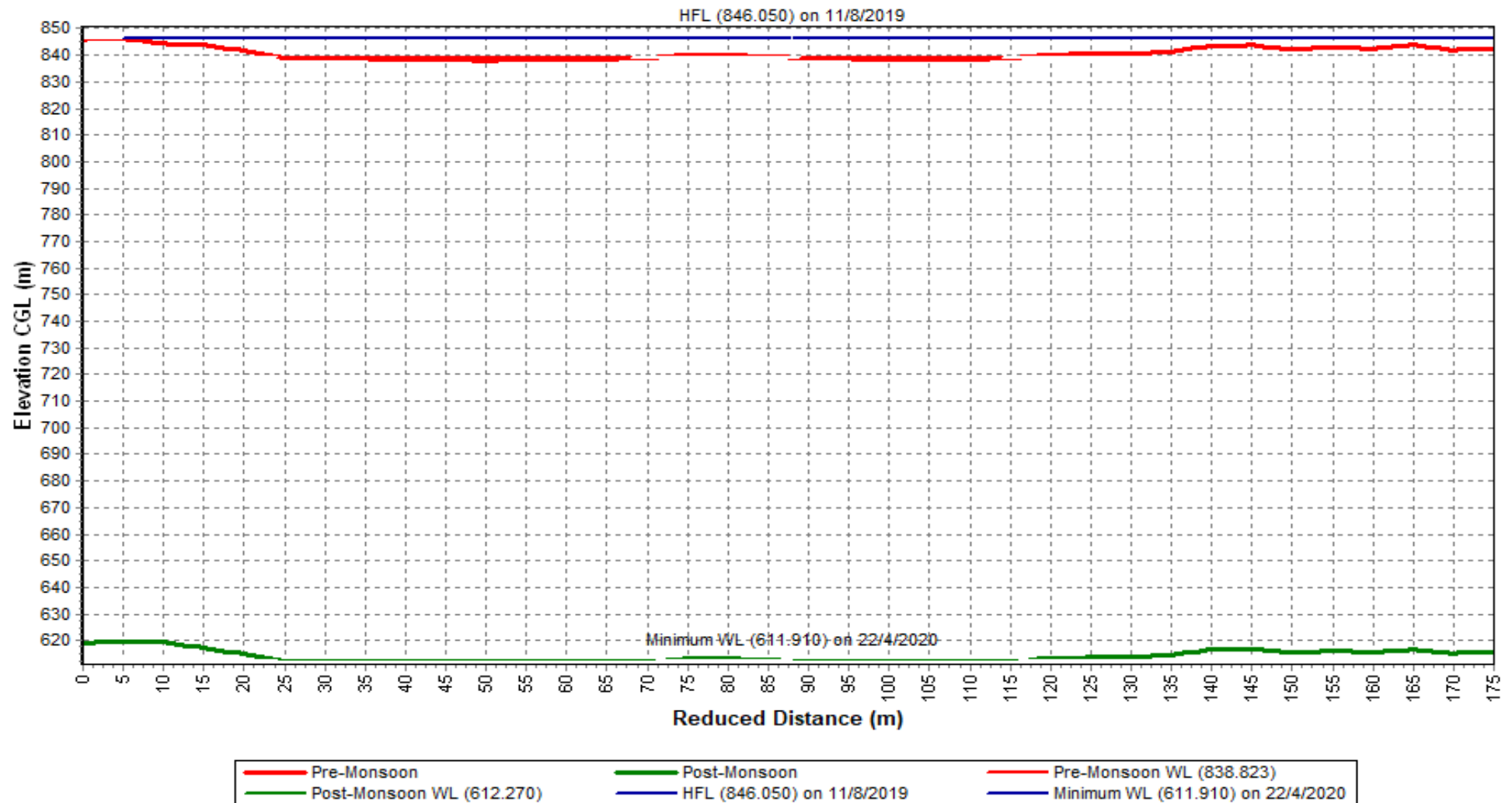
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : HARIHARAPURA (HARIHARAPURA)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



X section Differance due to Change of Zero of gauge

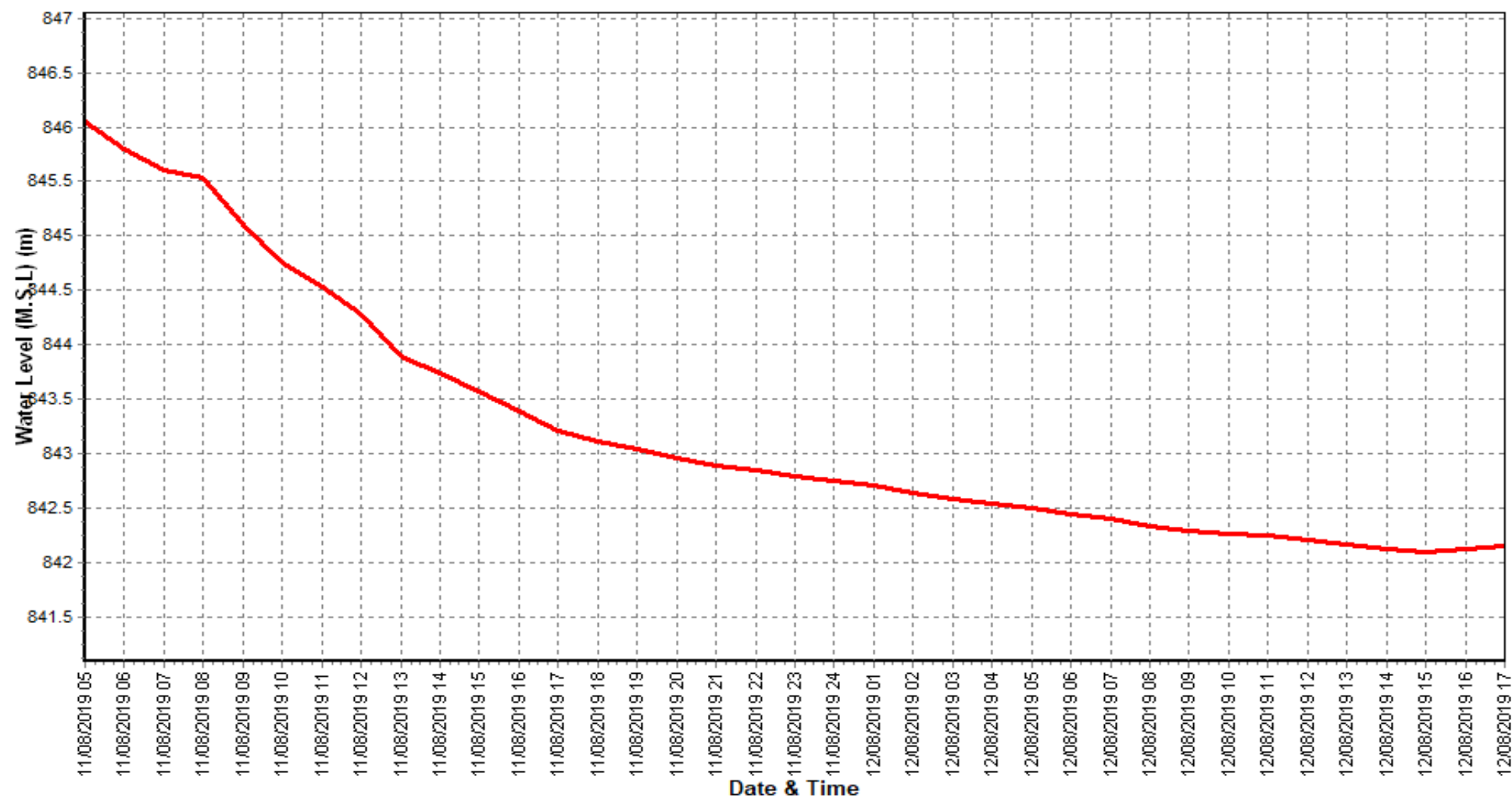
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : HARIHARAPURA (HARIHARAPURA)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



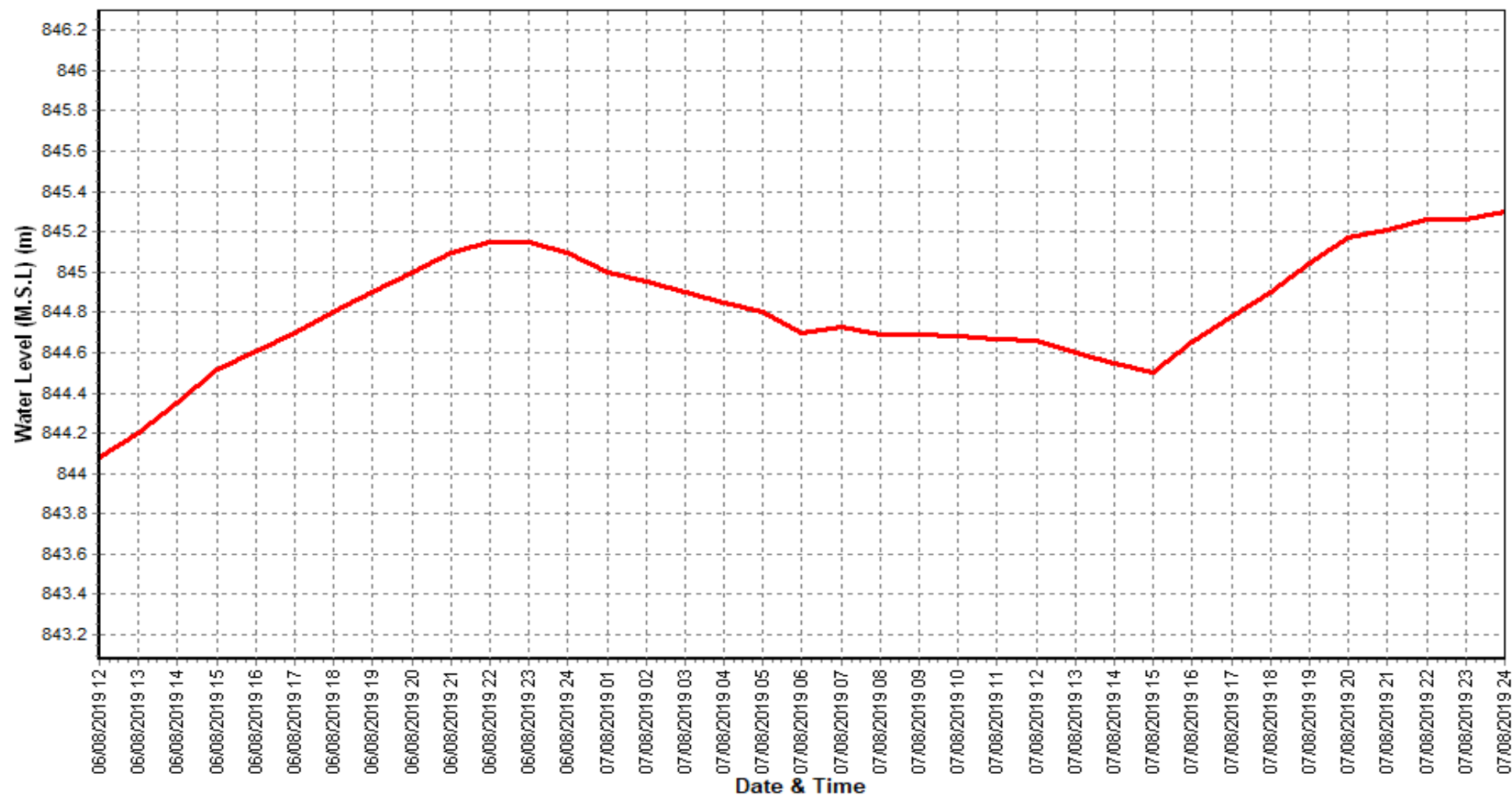
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : HARIHARAPURA (HARIHARAPURA)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



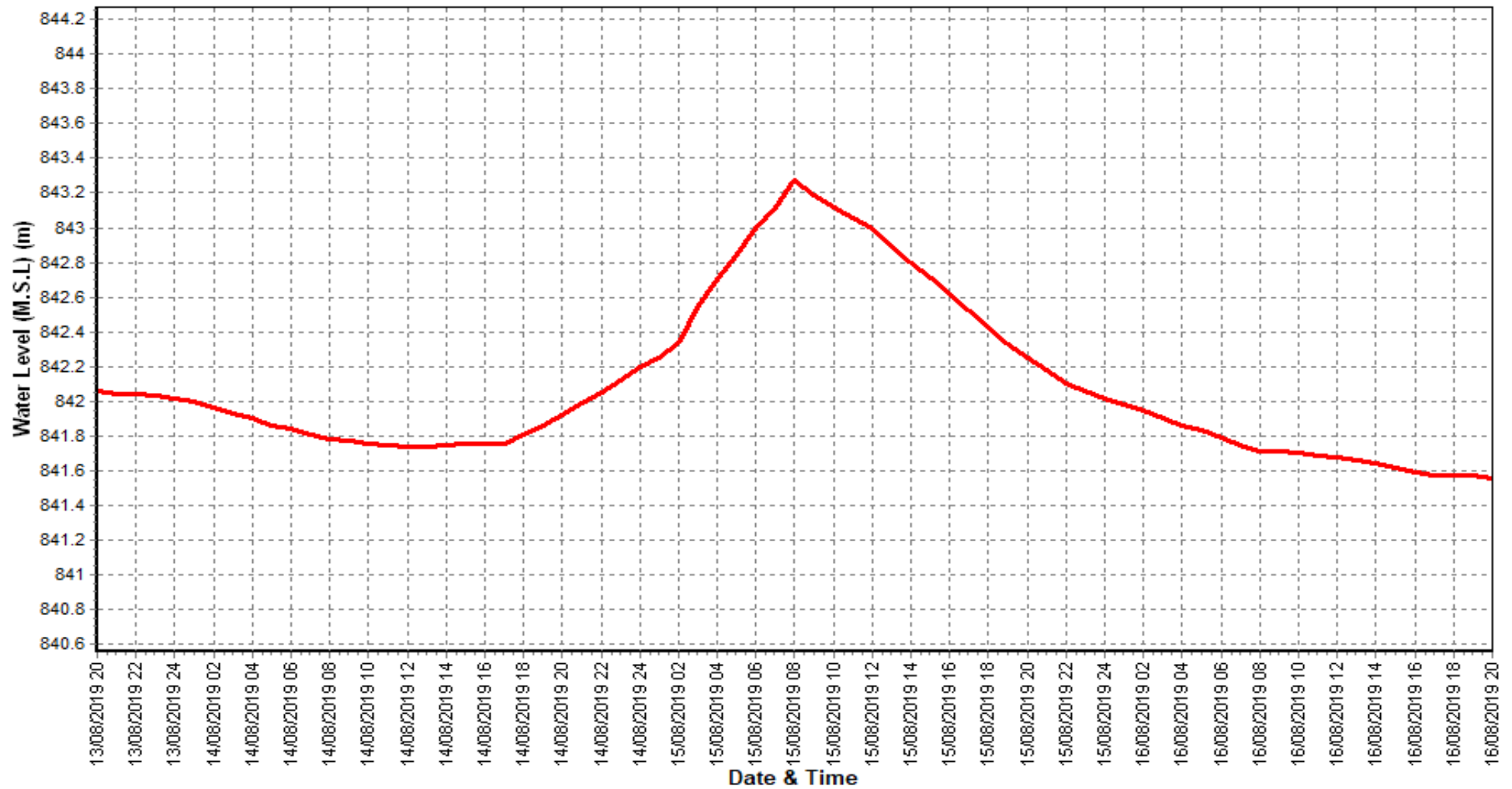
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : HARIHARAPURA (HARIHARAPURA)

Local River : Tunga

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : LAKKAVALLI

Code : LAKKAVALLI

State : Karnataka

District : Shimoga

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary :

Sub-Sub Tributary :

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere

Drainage Area : 1975 Sq. Km.

Bank : Right

Latitude : 13°42'22"

Longitude : 75°38'42"

Zero of Gauge (m) : 85 (m.s.l)

11/07/2016

Opening Date

Closing Date

Gauge : 11/07/2016

Discharge : 13/12/2018

Sediment :

Water Quality : 01/05/2019

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Stage-Discharge Data for the period 2019 - 2020

Station Name : LAKKAVALLI (LAKKAVALLI)

Division : Cauvery Division, Bangalore

Local River : Bhadra

Sub-Division : Upper Tunga SD, Devangere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	86.860	4.084	86.810	3.326	86.860	4.067 *	87.620	44.85 *	87.640	49.56	87.990	98.70
2	86.860	4.067	86.820	3.394	86.860	4.067 *	88.490	139.9 *	87.640	46.48 *	87.660	50.99
3	86.860	4.086	86.830	3.425	86.860	4.067 *	88.480	133.9	86.920	5.172	87.660	48.15 *
4	86.850	4.042 *	86.830	3.414	86.860	4.067 *	88.890	172.2	86.920	5.181	87.660	50.99
5	86.850	3.875 *	86.830	3.443	86.890	4.476	89.910	381.9	86.920	5.178	86.900	4.581
6	86.850	4.045	86.830	3.440	86.920	5.150	89.900	381.5	86.970	6.909 *	86.890	4.480
7	86.840	3.791	86.830	3.505 *	86.980	6.953	91.020	592.7	88.440	133.1 *	86.900	4.576
8	86.840	3.792	86.830	3.484	86.960	6.727	90.560	547.3 *	88.440	133.1 *	87.660	50.99
9	86.840	3.688 *	86.830	3.484	86.970	6.884	90.540	590.6	88.440	97.24	87.660	50.99
10	86.830	3.428	86.860	4.115	87.000	7.185	90.780	604.7 *	88.440	97.24	87.660	48.15 *
11	86.830	3.428	86.870	4.245	88.850	162.6 *	88.400	132.1	88.440	97.24	86.880	4.402
12	86.830	3.427	86.880	4.406	86.900	4.888 *	88.420	134.2	87.640	49.56	86.980	7.257 *
13	86.850	4.040	86.880	4.417	86.900	4.581	87.960	95.24	88.440	133.1 *	86.980	6.948
14	86.850	4.036	86.880	4.468 *	86.895	4.472	87.960	95.24	88.440	97.24	86.980	6.956
15	86.860	4.075	86.880	4.426	86.920	5.330 *	87.960	76.24 *	87.660	50.99	86.980	6.953
16	86.860	4.067 *	86.880	4.489	87.900	46.14	87.960	95.25	87.620	46.89	86.980	6.952
17	87.400	22.54 *	86.880	4.431	86.920	5.178	87.500	39.38	87.620	46.83	86.980	7.257 *
18	87.390	22.04 *	86.880	4.423	87.630	45.66 *	87.930	92.20	87.640	49.56	86.980	6.949
19	86.870	4.233	86.830	3.463	88.445	97.81	87.960	92.24	88.460	88.57	86.870	4.252
20	87.360	20.60 *	86.830	3.454	88.440	97.24	87.930	92.20	88.460	135.8 *	86.900	4.587
21	87.360	20.60 *	86.830	3.505 *	87.900	80.95	86.900	4.580	90.920	591.2	86.900	4.576
22	87.360	20.60 *	86.830	3.453	87.640	49.57	86.900	4.692 *	89.780	371.8	86.900	4.593
23	87.370	21.07 *	86.830	3.453	87.640	49.58	86.900	4.580	90.500	582.1	86.900	4.591
24	87.370	21.07 *	86.830	3.465	87.640	49.58	86.900	4.584	89.420	311.6	86.900	4.692 *
25	87.370	21.07 *	86.830	3.453	88.000	80.43 *	87.640	49.56	89.420	311.6	86.900	4.595
26	87.370	21.07 *	86.830	3.455	88.050	84.54	87.640	49.56	90.150	522.9	86.900	4.597
27	86.830	3.426	86.870	4.254	87.440	26.84	88.130	87.81	90.920	642.6 *	86.900	4.593
28	86.810	3.326	86.870	4.265 *	86.900	5.172	88.440	99.24	89.420	311.6	86.900	4.592
29	86.810	3.326	86.870	4.255	87.470	26.91	87.630	45.66 *	88.130	127.7	86.900	4.588
30	86.810	3.156 *	86.870	4.255	87.620	39.63	87.640	49.56	89.430	321.4	86.900	4.589
31			86.860	4.115	87.620	29.63			89.120	276.4		
Ten-Daily Mean												
I Ten-Daily	86.848	3.890	86.830	3.503	86.916	5.364	89.619	359.0	87.677	57.92	87.464	41.26
II Ten-Daily	87.010	9.249	86.869	4.222	87.580	47.39	87.998	94.42	88.042	79.58	86.951	6.251
III Ten-Daily	87.146	13.87	86.847	3.812	87.629	47.53	87.472	39.98	89.746	397.4	86.900	4.601
Monthly												
Min.	86.810	3.156	86.810	3.326	86.860	4.067	86.900	4.580	86.920	5.172	86.870	4.252
Max.	87.400	22.54	86.880	4.489	88.850	162.6	91.020	604.7	90.920	642.6	87.990	98.70
Mean	87.001	9.003	86.849	3.845	87.383	33.88	88.363	164.5	88.529	185.4	87.105	17.37

Annual Runoff in MCM = 1379 Annual Runoff in mm = 698

Peak Observed Discharge = 592.7 cumecs on 07/09/2019 Corres. Water Level :91.02 m

Lowest Observed Discharge = 3.326 cumecs on 28/06/2019 Corres. Water Level :86.81 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : LAKKAVALLI (LAKKAVALLI)

Division : Cauvery Division, Bangalore

Local River : Bhadra

Sub-Division : Upper Tunga SD, Devangere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	86.900	3.879 *	86.920	5.171	86.910	4.688	604.870	4.299 *	604.870	4.299 *	605.470	27.69
2	86.910	4.600	86.920	5.167	86.910	4.695 *	604.870	4.281	604.870	4.299 *	605.470	27.69
3	86.910	4.602	86.920	5.147	86.910	4.699	604.870	4.287	604.870	4.299 *	605.470	28.26 *
4	86.900	4.582	86.920	5.165	86.910	4.693	604.870	4.304	605.650	38.12 *	605.470	27.69
5	86.900	4.581	86.920	5.601 *	86.910	4.705	604.870	4.294	605.650	38.12 *	605.470	27.69
6	86.900	4.583	86.900	4.569	86.910	4.694	604.870	4.374	605.650	38.12 *	605.470	27.69
7	86.900	4.586	86.910	4.777	86.910	4.694	604.870	4.383	605.650	38.12 *	604.870	4.299 *
8	86.900	3.879 *	86.910	4.616	86.910	4.768	604.870	4.299 *	605.650	38.12 *	604.870	4.319
9	86.900	4.584	86.910	4.627	86.910	4.695 *	604.870	4.263	605.650	38.12 *	604.870	3.976
10	86.900	4.587	86.910	4.732	86.910	4.672	604.870	4.270	605.650	38.12 *	604.870	4.299 *
11	86.900	4.580	86.910	4.632	86.910	4.678	604.870	4.284	605.650	38.12 *	604.870	4.317
12	86.900	4.592	86.910	4.695 *	86.910	4.672	604.870	4.124	604.870	4.299 *	604.870	4.314
13	86.920	5.182	86.910	4.744	86.910	4.655	604.870	4.290	604.870	4.299 *	604.870	4.083
14	86.920	5.184	86.910	4.646	86.910	4.664	604.870	4.294	604.870	4.299 *	604.870	4.080
15	86.920	5.601 *	86.910	4.695 *	86.910	4.684	604.870	4.299 *	604.870	4.790	604.870	4.315
16	86.920	5.176	86.910	4.650	86.910	4.695 *	604.870	4.315	604.870	4.303	604.870	4.319
17	86.920	5.187	87.470	253.9	86.910	4.675	604.870	4.288	604.870	4.282	604.870	4.299 *
18	86.920	5.181	87.470	257.2	86.910	4.697	604.870	4.250	604.870	4.314	604.870	4.311
19	86.920	5.177	87.470	251.0 *	87.480	261.3	604.870	4.095	604.870	4.299 *	604.870	4.325
20	86.920	5.172	87.470	257.2	86.910	4.686	604.870	4.276	604.870	4.325	604.870	4.298
21	86.920	5.179	87.470	257.1	86.910	4.695 *	604.870	4.273	604.870	4.320	604.870	4.305
22	86.920	5.601 *	87.470	257.2	86.910	4.697	604.870	4.299 *	604.870	4.319	604.870	4.302
23	86.920	5.183	87.470	257.2	86.910	4.695 *	604.870	4.317	604.870	4.312	604.870	4.318
24	86.920	5.176	86.910	4.690	86.910	4.678	604.870	4.280	604.870	4.276	604.870	4.299 *
25	86.920	5.601 *	86.910	4.677	86.910	4.672	604.870	4.299 *	604.870	4.309	604.870	4.299 *
26	86.920	5.190	86.910	4.695 *	86.910	4.666	604.870	4.299 *	605.070	10.56 *	604.870	4.323
27	86.920	5.191	86.910	4.680	86.910	4.675	604.870	4.299 *	605.070	11.50	605.200	4.319
28	86.920	5.188	86.910	4.709	86.910	4.687	604.870	4.299 *	605.070	11.50	605.200	4.340
29	86.920	5.601 *	86.910	4.692	86.910	4.673	604.870	4.299 *	605.070	11.50	605.200	4.314
30	86.920	5.185	86.910	4.700			604.870	4.299 *	605.470	27.69	605.200	4.322
31	86.920	5.175	86.910	4.704			604.870	4.299 *			605.200	15.62 *
Ten-Daily Mean												
I Ten-Daily	86.902	4.446	86.914	4.957	86.910	4.700	604.870	4.305	605.416	27.97	605.230	18.36
II Ten-Daily	86.916	5.103	87.134	104.7	86.967	30.34	604.870	4.251	604.948	7.733	604.870	4.266
III Ten-Daily	86.920	5.297	87.063	73.55	86.910	4.682	604.870	4.296	605.010	9.429	605.020	5.342
Monthly												
Min.	86.900	3.879	86.900	4.569	86.910	4.655	604.870	4.095	604.870	4.276	604.870	3.976
Max.	86.920	5.601	87.470	257.2	87.480	261.3	604.870	4.383	605.650	38.12	605.470	28.26
Mean	86.913	4.96	87.038	61.48	86.930	13.54	604.870	4.285	605.125	15.05	605.039	9.194

Peak Computed Discharge = 642.6 cumecs on 27/10/2019

Corres. Water Level :90.92 m

Lowest Computed Discharge = 3.156 cumecs on 30/06/2019

Corres. Water Level :86.81 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

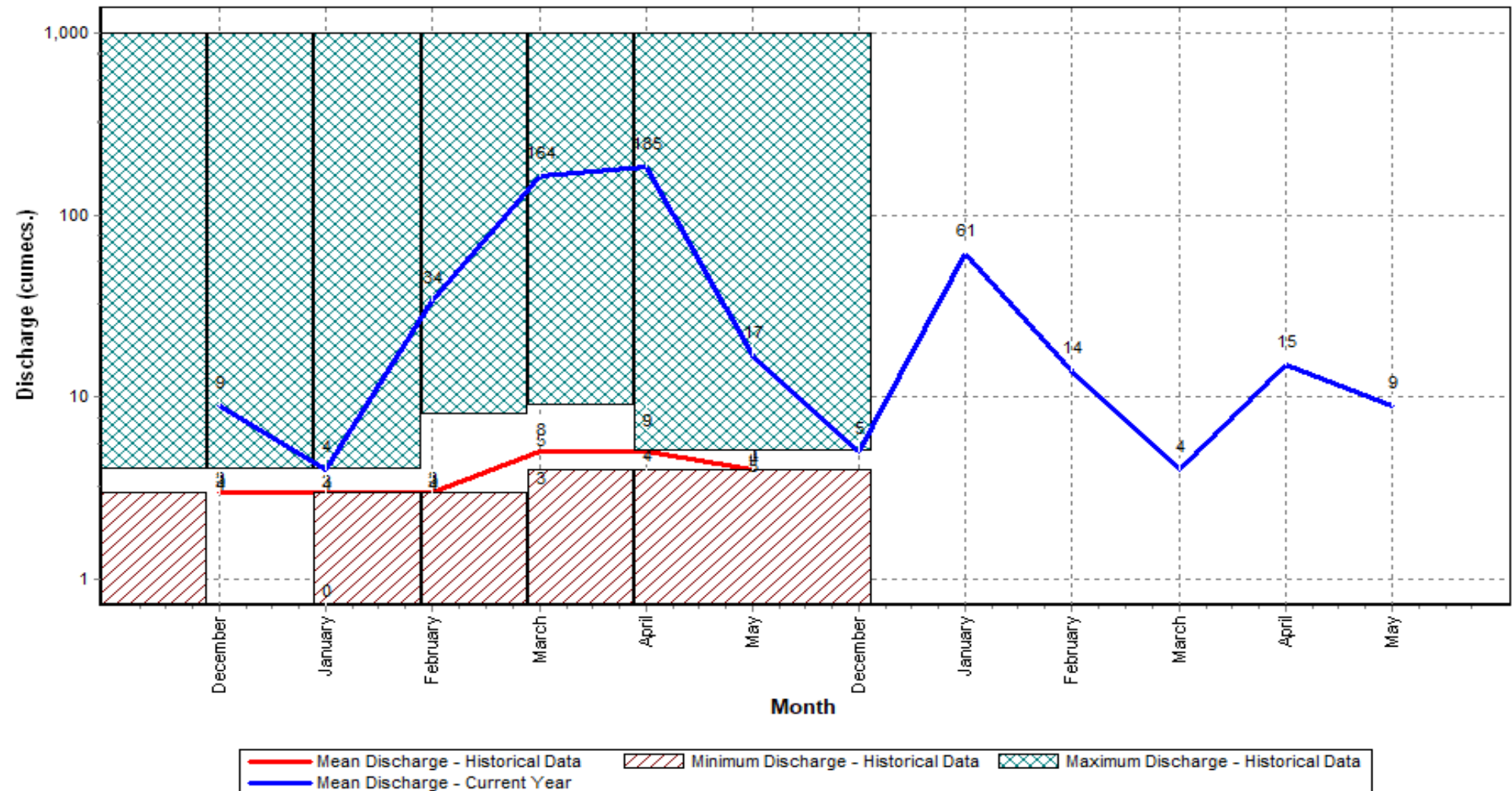
Station Name : LAKKAVALLI (LAKKAVALLI)

Data considered : 2019-2020

Division : Cauvery Division, Bangalore

Local River : Bhadra

Sub-Division : Upper Tunga SD, Devangere



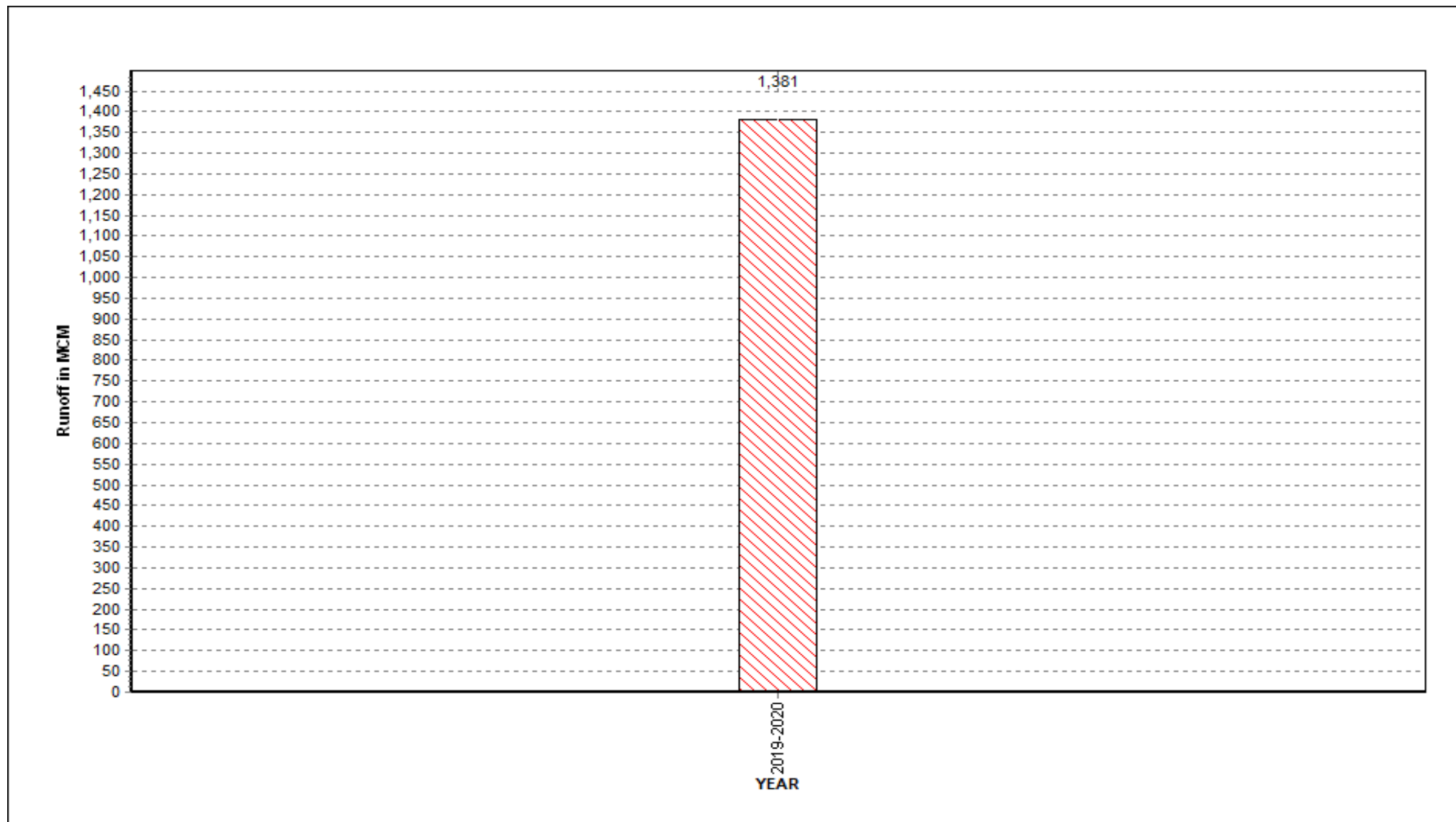
Annual Runoff Values for the period: 2019 - 2020

Station Name : LAKKAVALLI (LAKKAVALLI)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



Note: Missing values have not been considered while arriving at Annual Runoff

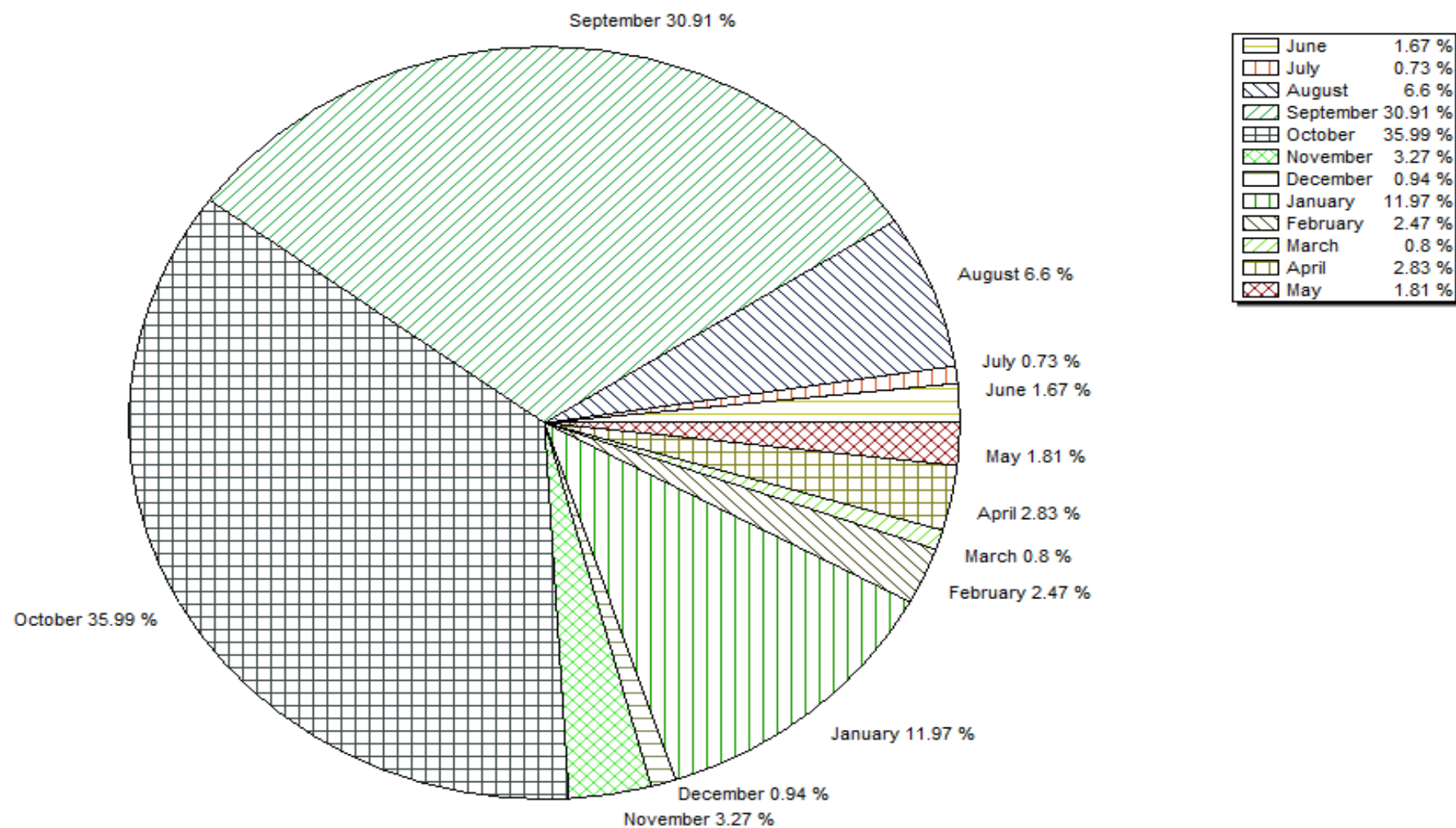
Monthly Runoff for the Year : 2019-2020

Station Name : LAKKAVALLI (LAKKAVALLI)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



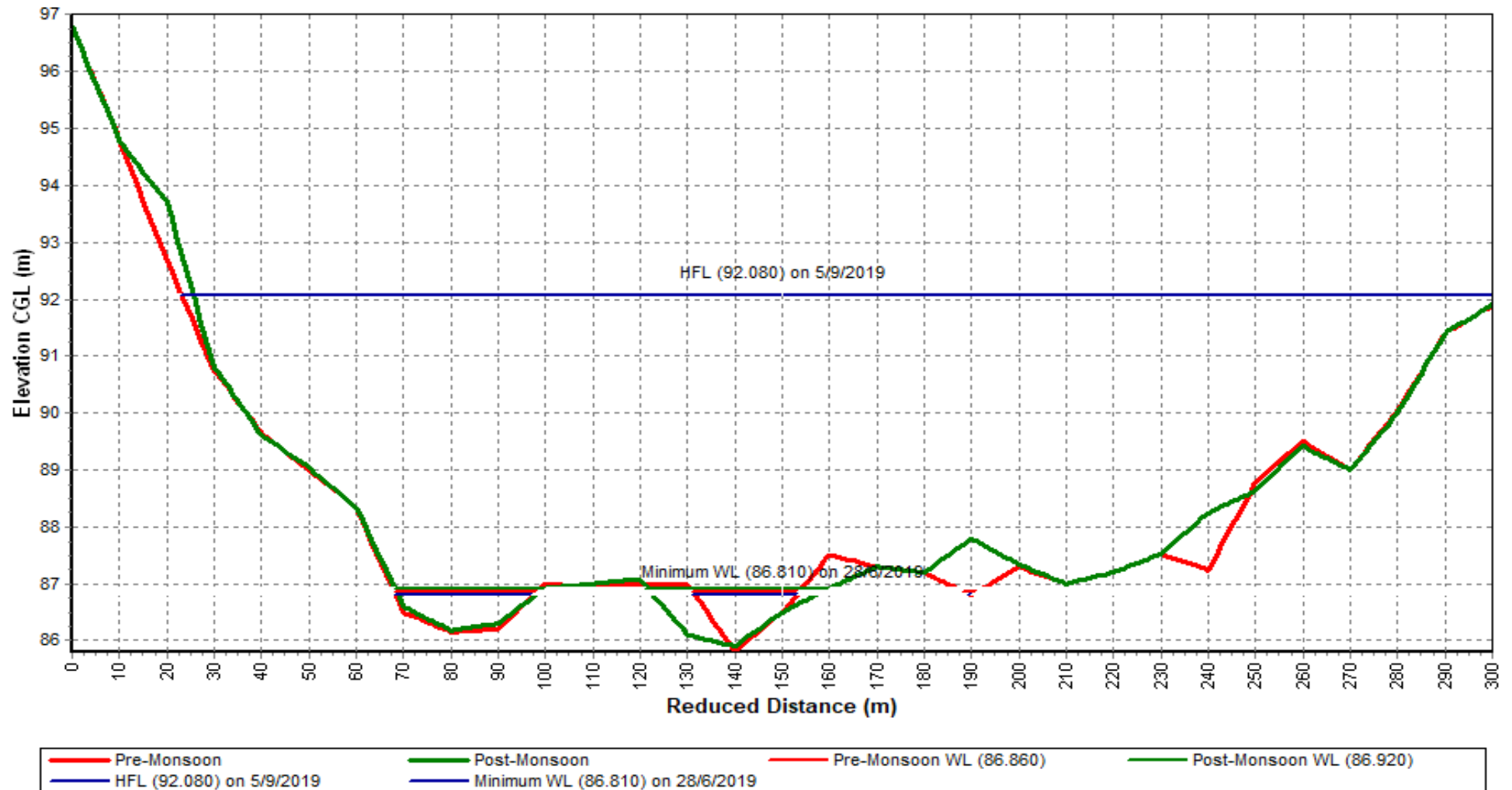
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : LAKKAVALLI (LAKKAVALLI)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



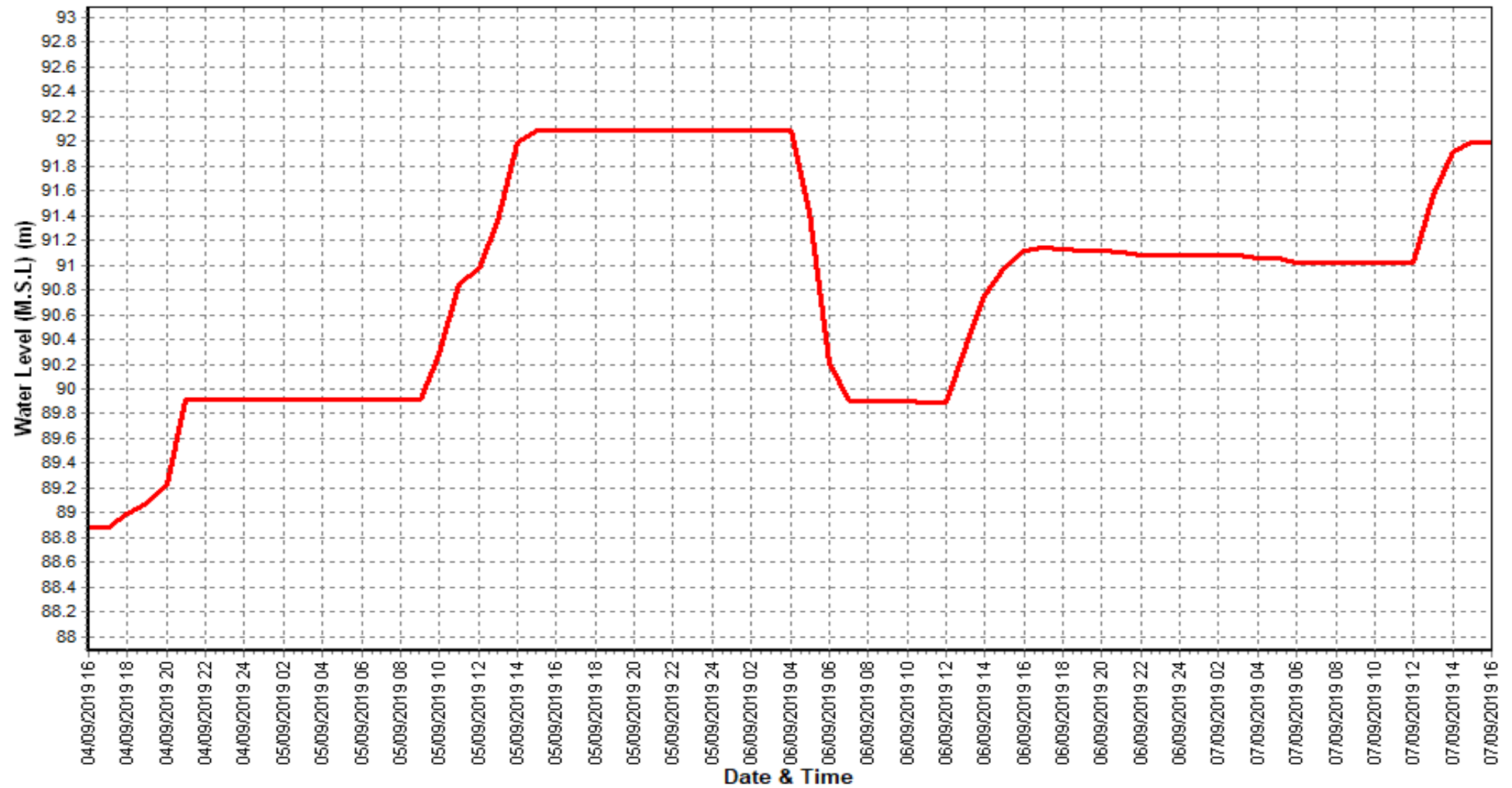
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : LAKKAVALLI (LAKKAVALLI)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



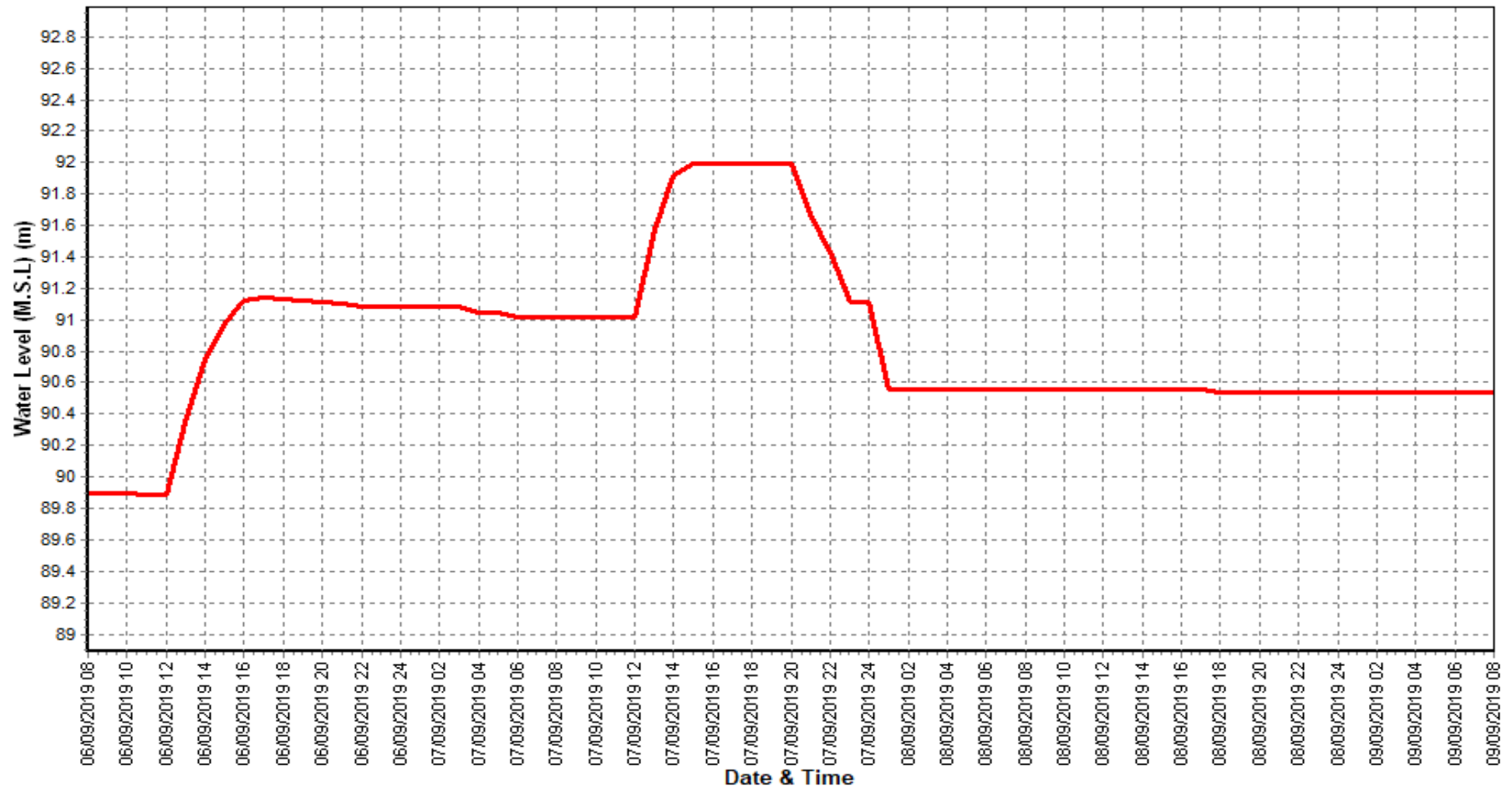
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : LAKKAVALLI (LAKKAVALLI)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



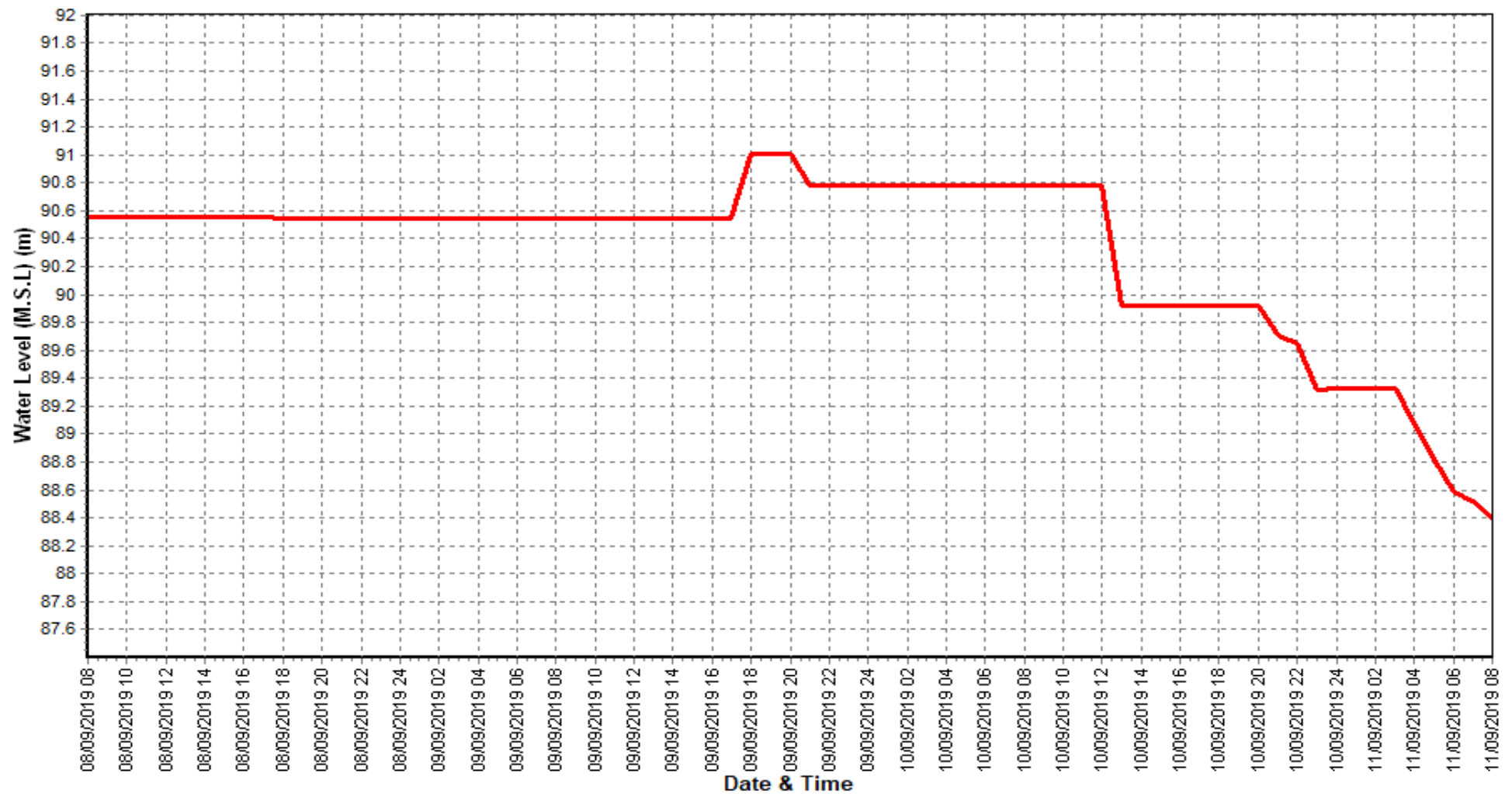
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : LAKKAVALLI (LAKKAVALLI)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga SD, Devangere



HISTORY SHEET

Water Year : 2019-2020

Site : HOLEHONNUR

Code : AKLE0A4

State : Karnataka

District : Shimoga

Basin : Krishna

Independent River : Krishna

Tributary : Tungabhadra

Sub Tributary : Bhadra

Sub-Sub Tributary : -

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Davanagere

Drainage Area : 2990 Sq. Km.

Bank : Right

Latitude : 13°58'34"

Longitude : 75°41'07"

Zero of Gauge (m) : 552.725 (m.s.l)

26/11/1997

Opening Date

Closing Date

Gauge : 26/11/1997

Discharge : 01/07/2003

Sediment :

Water Quality : 01/07/2003

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2004-2005	19.05	89.810	03/01/2005	0.000	90.060	23/10/2004
2005-2006	623.5	94.580	17/08/2005	1.620	89.450	09/01/2006
2006-2007	722.7	94.260	18/08/2006	1.205	89.268	06/01/2007
2007-2008	1176	95.760	07/08/2007	5.273	89.650	19/06/2007
2008-2009	1758	96.390	14/08/2008	0.000	90.130	20/04/2009
2009-2010	1114	94.850	06/09/2009	0.846	89.380	16/01/2010
2010-2011	629.7	559.570	05/10/2010	4.707	555.635	20/12/2010
2011-2012	939.0	560.870	02/09/2011	3.811	555.495	08/01/2012
2012-2013	462.0	559.215	08/08/2012	1.223	555.545	19/05/2013
2013-2014	1242	561.985	03/08/2013	8.715	555.705	13/12/2013
2014-2015	963.1	561.040	06/08/2014	6.642	555.625	30/06/2014
2015-2016	383.7	558.405	20/07/2015	9.460	555.735	05/01/2016
2016-2017	105.7	556.695	29/03/2017	10.98	555.785	06/03/2017
2017-2018	174.5	557.085	25/03/2018	9.252	555.755	04/11/2017
2018-2019	1479	562.640	15/08/2018	3.559	555.560	19/12/2018

Annual Runoff of Bhadra at Hollehonnur

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2003-2004	2	5	6	0.06	0.16	0.22
2	2004-2005	40	45	85	1.41	1.60	3.01
3	2005-2006	1074	382	1456	37.96	13.48	51.45
4	2006-2007	1057	414	1471	37.35	14.62	51.98
5	2007-2008	2426	482	2907	85.71	17.03	102.73
6	2008-2009	1501	761	2262	53.04	26.90	79.94
7	2009-2010	1834	683	2517	64.82	24.13	88.94
8	2010-2011	1579	776	2355	55.81	27.41	83.22
9	2011-2012	1507	735	2242	53.26	25.98	79.24
10	2012-2013	805	655	1460	28.43	23.15	51.58
11	2013-2014	2187	708	2895	77.27	25.02	102.29
12	2014-2015	1754	447	2201	61.97	15.80	77.77
13	2015-2016	920	540	1460	32.50	19.08	51.58
14	2016-2017	473	510	983	16.71	18.02	34.73
15	2017-2018	1		1	0.04	0.00	0.04
16	2018-2019	2195	555	2750	77.57	19.62	97.19
17	2019-2020	2169	681	2850	76.64	24.08	100.71
Average		1266	524	1759	45	17	62
75% Dependable flow (MCM)				1219			
90 % Dependable flow (MCM)				69			

Stage-Discharge Data for the period 2019 - 2020

Station Name : HOLEHONNUR (AKLE0A4)

Division : Cauvery Division, Bangalore

Local River : Bhadra

Sub-Division : Upper Tunga Subdn, Davanagere

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	555.835	13.90	555.985	26.51	555.955	24.05	556.605	87.75 *	557.005	135.7	557.995	301.6
2	555.835	15.71 *	555.925	21.46	555.945	23.00	556.655	93.75 *	556.905	125.8 *	556.875	120.9
3	555.835	13.88	555.905	23.09	555.885	14.95	556.695	102.0	556.725	106.0	556.705	99.89 *
4	555.865	14.80	555.865	14.74	555.895	19.72 *	557.645	210.0	556.405	73.91	556.675	102.6
5	555.865	17.67 *	555.845	14.29	555.945	23.40	558.695	452.6	556.505	84.68	556.655	102.2
6	555.835	13.57	555.835	13.97	558.025	328.8	559.345	585.2	556.855	119.1 *	556.045	33.30
7	555.825	13.53	555.865	17.67 *	559.445	606.3	558.805	471.9	557.255	176.0 *	556.615	100.7
8	555.805	13.16	555.905	22.98	560.155	760.2	559.375	589.8 *	557.375	194.6 *	556.785	116.0
9	555.835	15.71 *	555.945	23.56	560.485	829.1	559.805	708.7	557.365	176.6	556.805	118.4 *
10	555.845	14.34	556.005	27.83	560.605	901.2 *	559.975	735.8 *	557.085	143.6	556.775	108.7 *
11	555.825	13.62	556.025	28.98	560.215	797.4 *	559.775	688.7	556.855	121.9	556.765	113.2
12	555.825	13.53	556.005	27.73	557.075	149.4 *	557.585	174.0	557.225	161.3	556.675	96.19 *
13	555.815	13.53	555.965	25.15 *	556.275	51.89 #	557.195	156.5	557.215	170.0 *	556.065	36.07
14	555.815	13.67	555.935	22.58 *	556.555	60.19	557.105	146.4	557.185	155.5	556.045	36.54
15	555.805	13.37	555.905	22.08	556.955	132.6 *	557.085	150.9 *	557.295	166.6	556.055	36.94
16	555.815	14.44 *	555.885	21.32	556.875	119.4	557.075	139.5	557.005	134.6	556.045	36.30
17	555.855	14.83	555.855	14.43	556.875	113.1	557.295	166.8	556.785	115.7	556.045	31.11 *
18	556.645	98.48	555.855	14.34	556.875	121.8 *	557.175	154.9	556.755	111.8	556.055	37.14
19	556.765	111.0	555.875	15.03	557.505	167.0	557.245	161.8	557.185	156.4	556.025	34.72
20	556.765	111.3	555.875	15.24	557.395	187.0	556.825	115.1	557.485	212.2 *	556.025	34.85
21	556.655	99.27	555.885	19.03 *	556.785	110.0 #	556.565	90.08	557.545	194.8	556.045	35.80
22	556.555	88.41	555.895	22.43	556.625	108.3	556.495	75.06 *	559.645	671.3	556.055	36.82
23	556.525	78.46 *	555.895	22.21	556.725	90.48	556.475	80.51	560.355	844.4	556.055	36.70
24	556.505	84.27	555.865	14.44	556.745	106.5	556.455	80.69	559.075	522.9	556.055	31.93 *
25	556.475	81.01	555.845	13.15	556.715	101.1 *	556.425	74.09	558.705	454.8	556.025	34.06
26	556.435	75.45	555.945	23.88	556.745	100.7	556.625	98.25	558.805	470.1	556.035	34.56
27	556.425	70.03	555.985	26.59	556.435	68.44 #	557.175	155.7	559.145	536.9 *	556.045	34.91
28	556.225	54.12	555.965	24.81 *	556.055	31.93 #	557.165	148.8	559.015	513.4	556.055	35.80
29	556.045	29.90 *	555.935	23.28	556.055	31.98	556.995	138.1 *	557.345	162.8	556.045	35.06
30	556.005	27.90 *	555.905	22.47	556.525	78.46 #	557.135	150.7	557.135	153.7	556.035	34.76
31			555.925	23.12	556.425	85.18			557.775	257.9		
Ten-Daily Mean												
I Ten-Daily	555.838	14.63	555.908	20.61	557.834	353.1	558.360	403.8	556.948	133.6	556.793	120.4
II Ten-Daily	556.093	41.78	555.918	20.69	557.260	190.0	557.436	205.5	557.099	150.6	556.180	49.31
III Ten-Daily	556.385	68.88	555.913	21.40	556.530	83.01	556.751	109.2	558.595	434.8	556.045	35.04
Monthly												
Min.	555.805	13.16	555.835	13.15	555.885	14.95	556.425	74.09	556.405	73.91	556.025	31.11
Max.	556.765	111.3	556.025	28.98	560.605	901.2	559.975	735.8	560.355	844.4	557.995	301.6
Mean	556.105	41.76	555.913	20.92	557.186	204.6	557.516	239.5	557.581	246	556.339	68.26

Annual Runoff in MCM = 2850 Annual Runoff in mm = 953

Peak Observed Discharge = 844.4 cumecs on 23/10/2019 Corres. Water Level :560.355 m

Lowest Observed Discharge = 11.29 cumecs on 04/01/2020 Corres. Water Level :555.675 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : HOLEHONNUR (AKLE0A4)

Division : Cauvery Division, Bangalore

Local River : Bhadra

Sub-Division : Upper Tunga Subdn, Davanagere

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	556.035	31.93 *	555.735	12.68	556.055	32.99	556.045	32.71 *	555.965	26.74 *	556.035	32.42
2	556.055	36.36	555.705	12.21	556.055	33.49 *	556.055	32.29	556.045	32.71 *	556.045	33.14
3	556.675	101.1	555.685	11.59	556.045	32.21	556.025	31.04	556.805	116.1 *	556.455	71.82 *
4	556.735	107.8	555.675	11.29	556.045	32.55	556.035	31.45	556.875	126.1 *	556.815	118.0
5	556.055	35.91	555.965	26.74 *	556.045	32.51	556.035	31.03	556.875	126.1 *	556.825	119.5
6	556.055	36.18	555.905	22.70	556.055	33.08	556.005	29.83	556.975	141.1 *	556.865	119.0
7	556.035	34.46	555.875	21.66	556.055	33.31	556.005	30.04	557.075	156.8 *	556.935	135.0 *
8	555.965	26.74 *	555.875	21.62	556.045	32.66	556.005	29.65 *	557.085	158.4 *	556.705	99.50
9	555.935	24.28	555.855	21.16	556.055	33.49 *	556.035	31.50	557.135	166.6 *	556.615	88.49
10	555.965	23.54	555.865	21.20	556.055	33.13	556.045	31.93	557.135	166.6 *	556.485	75.22 *
11	555.945	22.90	555.845	21.03	556.055	32.65	556.025	30.78	557.075	156.8 *	556.405	67.48
12	555.885	16.10	555.845	18.84 *	556.035	31.85	556.015	30.85	556.975	141.0 *	556.495	77.50
13	555.925	25.42	555.835	20.55	556.035	32.32	556.035	31.86	556.515	78.71 *	556.055	33.27
14	555.845	18.00	555.955	26.45	556.045	32.69	556.045	32.03	556.285	53.89 *	556.055	33.06
15	555.825	17.65 *	555.965	26.74 *	556.055	33.44	556.005	29.65 *	556.175	46.49	556.045	32.24
16	555.815	16.63	555.995	27.45	556.055	33.49 *	555.995	27.18	556.455	78.51	556.055	32.55
17	555.845	17.26	556.055	35.13	556.035	32.24	555.975	25.71	556.335	56.50	556.055	33.49 *
18	555.835	16.77	556.055	32.77	556.035	31.86	556.035	31.45	556.255	51.49	556.045	31.95
19	555.815	16.62	556.055	33.49 *	556.025	31.34	556.015	31.33	556.315	56.89 *	556.045	32.68
20	555.805	16.55	556.415	67.51	556.055	32.94	555.965	25.39	556.295	54.51	556.055	33.05
21	555.805	16.74	556.615	89.51	556.055	33.49 *	556.005	30.73	556.275	50.50	556.055	33.62
22	555.805	16.49 *	556.515	78.51	556.015	30.95	556.005	29.65 *	556.495	81.52	556.025	31.35
23	555.775	15.66	556.515	78.30	556.025	31.16 *	555.985	27.09	556.465	72.95	556.025	31.77
24	555.775	14.20	556.375	68.50	556.035	31.90	556.015	30.80	556.435	79.50	556.025	31.16 *
25	555.755	13.76 *	556.355	67.63	556.055	32.99	556.035	31.93 *	556.375	63.09	555.975	27.45 *
26	555.755	12.94	556.315	56.89 *	556.005	29.71	556.035	31.93 *	556.375	63.09 *	555.955	25.58
27	555.775	15.57	556.005	28.29	556.015	30.53	556.045	32.71 *	556.055	32.52	555.905	21.67
28	555.765	13.82	556.005	31.71	556.025	30.97	556.045	32.71 *	556.055	32.62	555.925	22.03
29	555.745	13.24 *	556.055	32.26	556.045	31.87	555.985	28.18 *	556.045	31.58	555.915	21.54
30	555.725	12.64	556.045	31.96			555.985	28.18 *	556.045	33.20	555.905	21.38
31	555.715	12.34	556.055	32.12			555.965	26.74 *			555.905	22.63 *
Ten-Daily Mean												
I Ten-Daily	556.151	45.83	555.814	18.29	556.051	32.94	556.029	31.14	556.797	121.7	556.578	89.21
II Ten-Daily	555.854	18.39	556.002	30.99	556.043	32.48	556.011	29.62	556.468	77.48	556.131	40.73
III Ten-Daily	555.763	14.31	556.260	54.15	556.031	31.51	556.010	30.06	556.262	54.06	555.965	26.38
Monthly												
Min.	555.715	12.34	555.675	11.29	556.005	29.71	555.965	25.39	555.965	26.74	555.905	21.38
Max.	556.735	107.8	556.615	89.51	556.055	33.49	556.055	32.71	557.135	166.6	556.935	135.0
Mean	555.918	25.79	556.033	35.11	556.042	32.34	556.016	30.27	556.509	84.42	556.216	51.28

Peak Computed Discharge = 901.2 cumecs on 10/08/2019

Corres. Water Level :560.605 m

Lowest Computed Discharge = 13.24 cumecs on 29/12/2019

Corres. Water Level :555.745 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

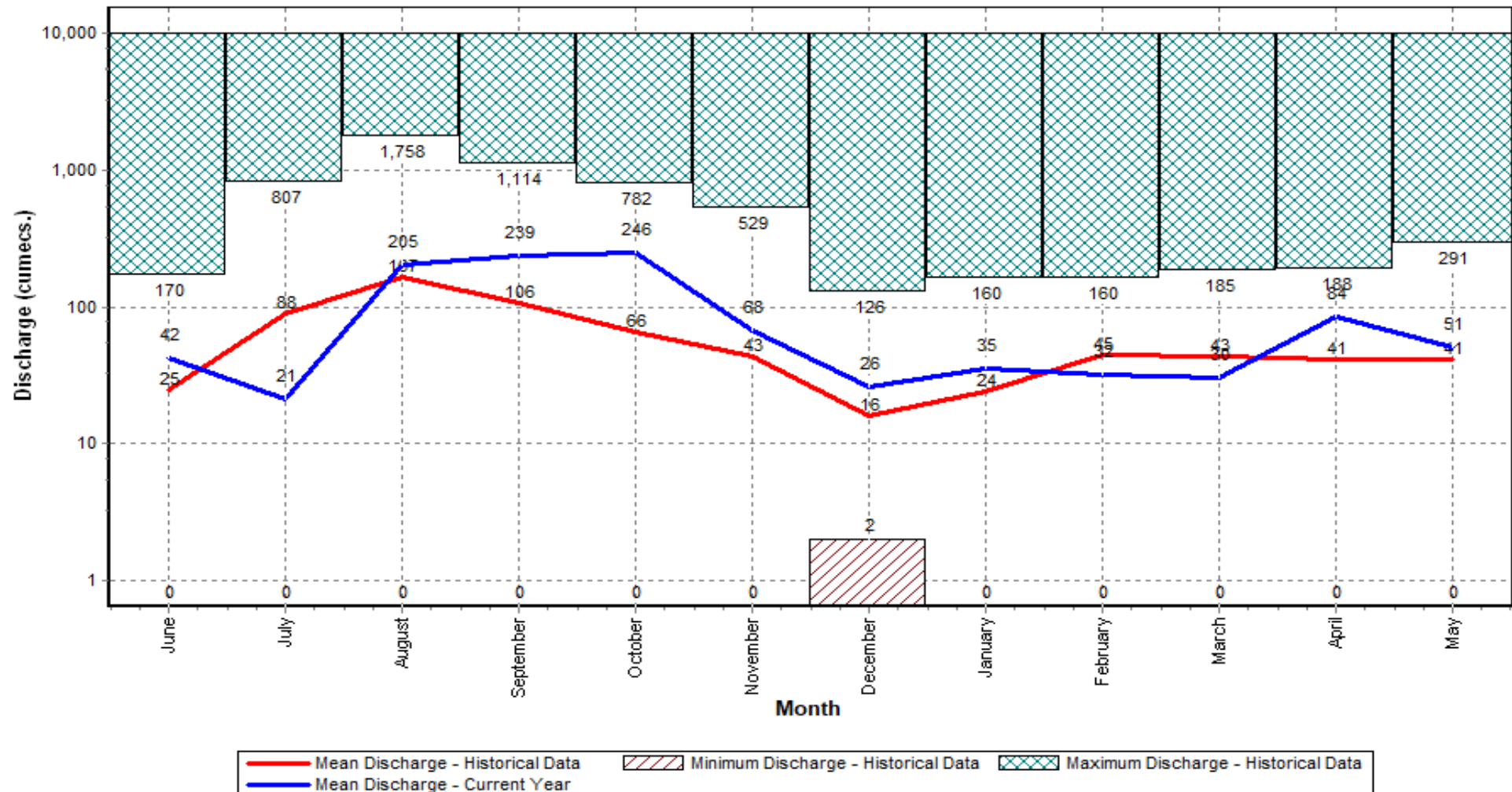
Station Name : HOLEHONNUR (AKLE0A4)

Data considered : 2004-2020

Division : Cauvery Division, Bangalore

Local River : Bhadra

Sub-Division : Upper Tunga Subdn, Davanagere



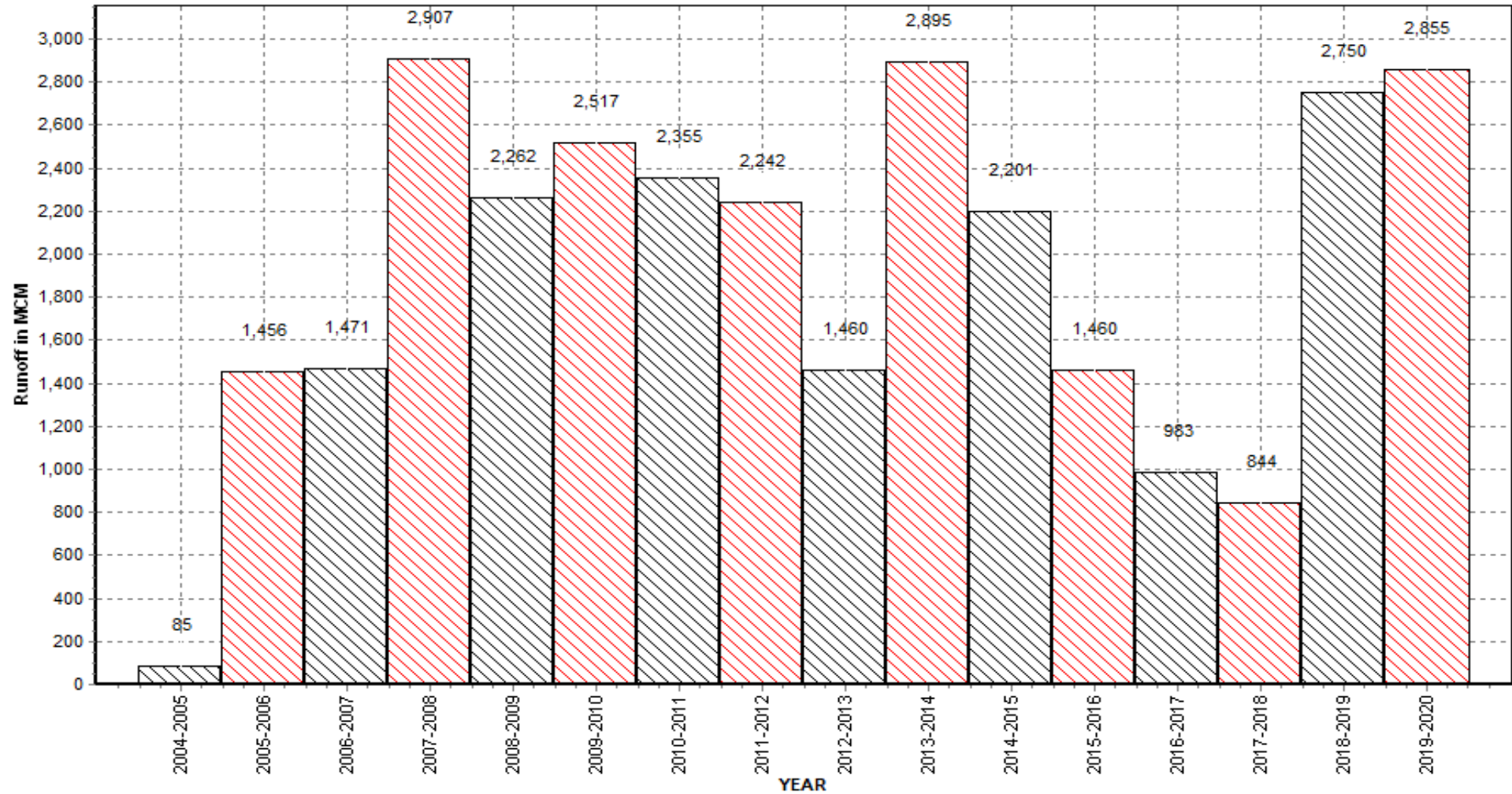
Annual Runoff Values for the period: 2004 - 2020

Station Name : HOLEHONNUR (AKLE0A4)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Davanagere



Note: Missing values have not been considered while arriving at Annual Runoff

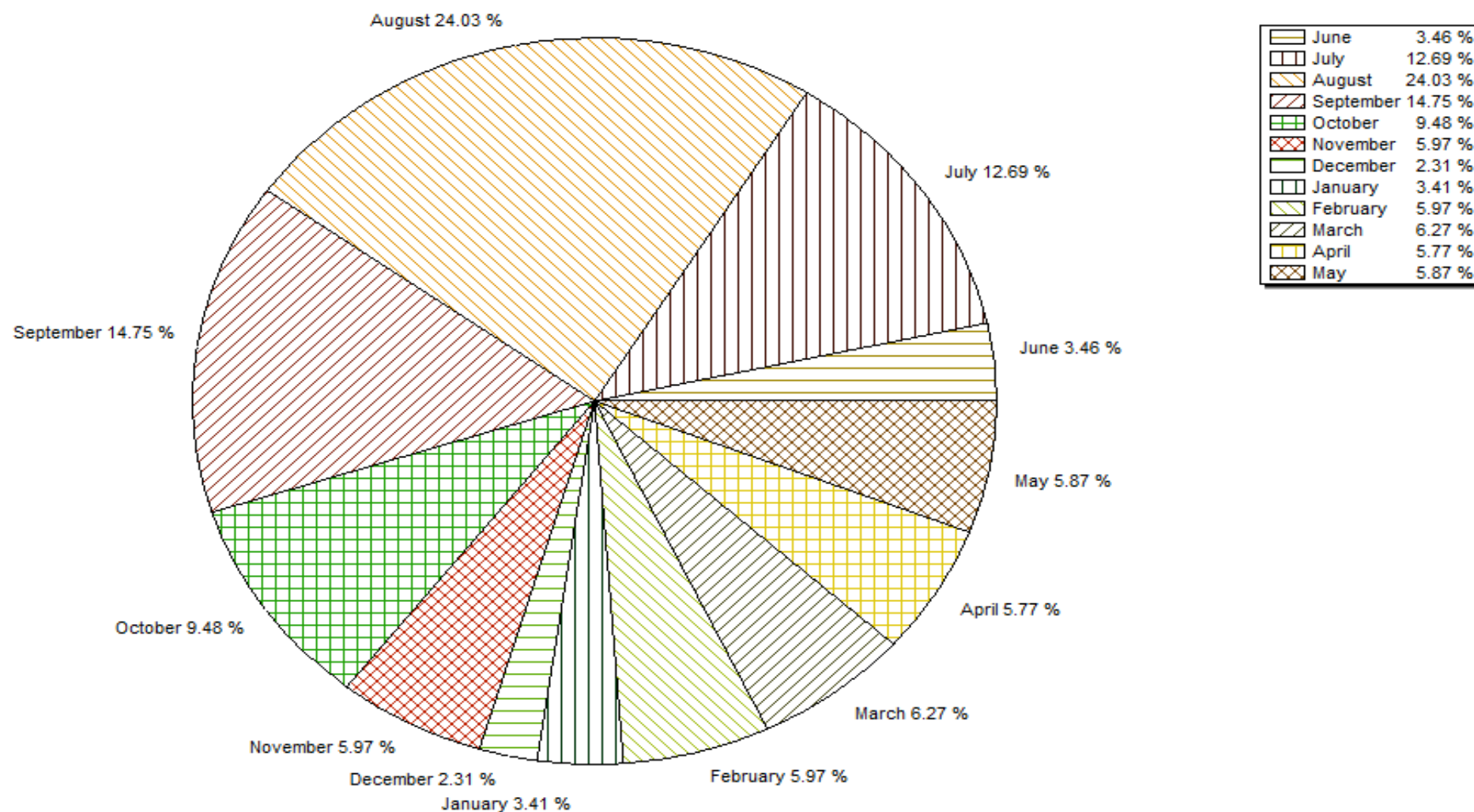
Monthly Average Runoff based on period : 2004-2019

Station Name : HOLEHONNUR (AKLE0A4)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Davanagere



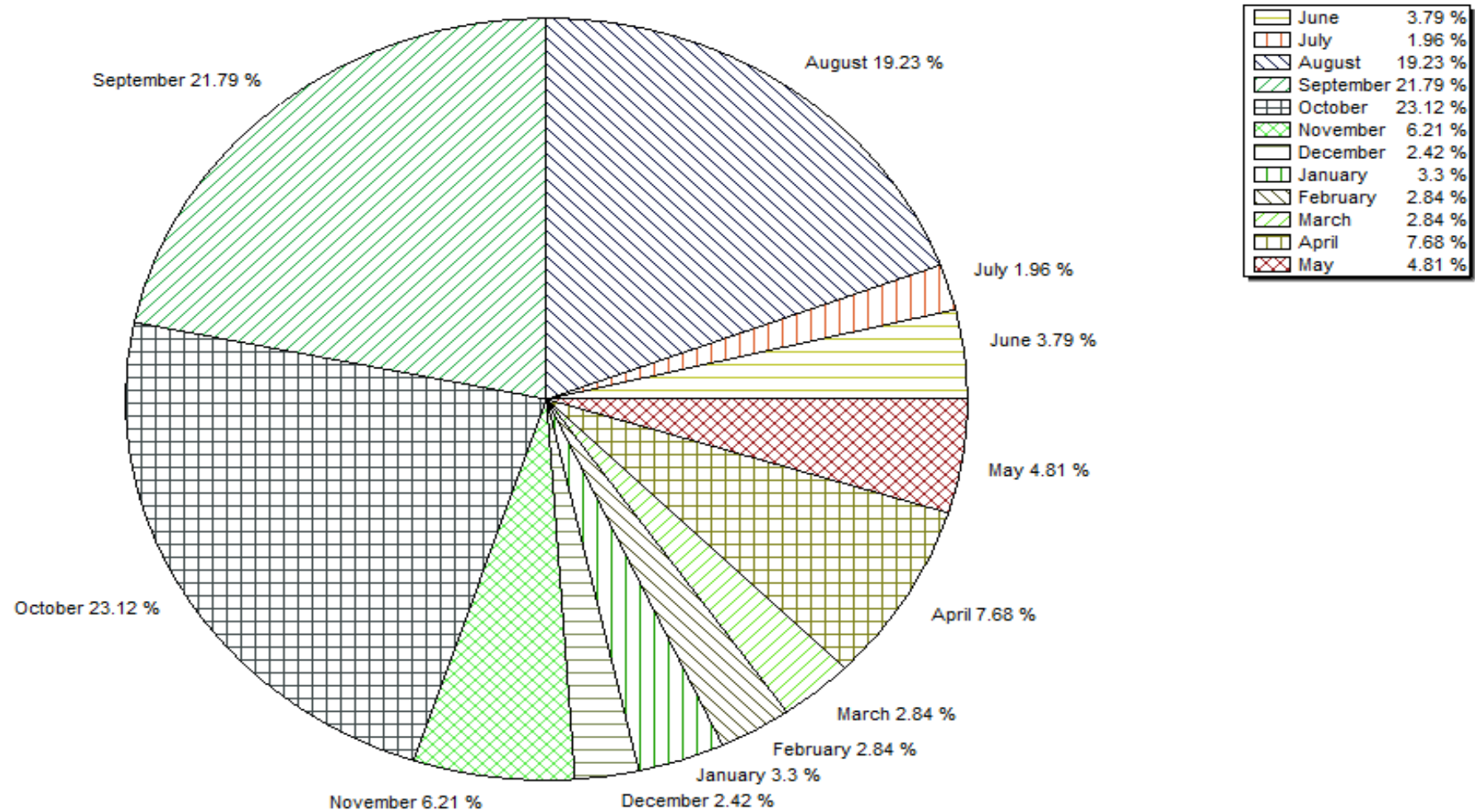
Monthly Runoff for the Year : 2019-2020

Station Name : HOLEHONNUR (AKLE0A4)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Davanagere



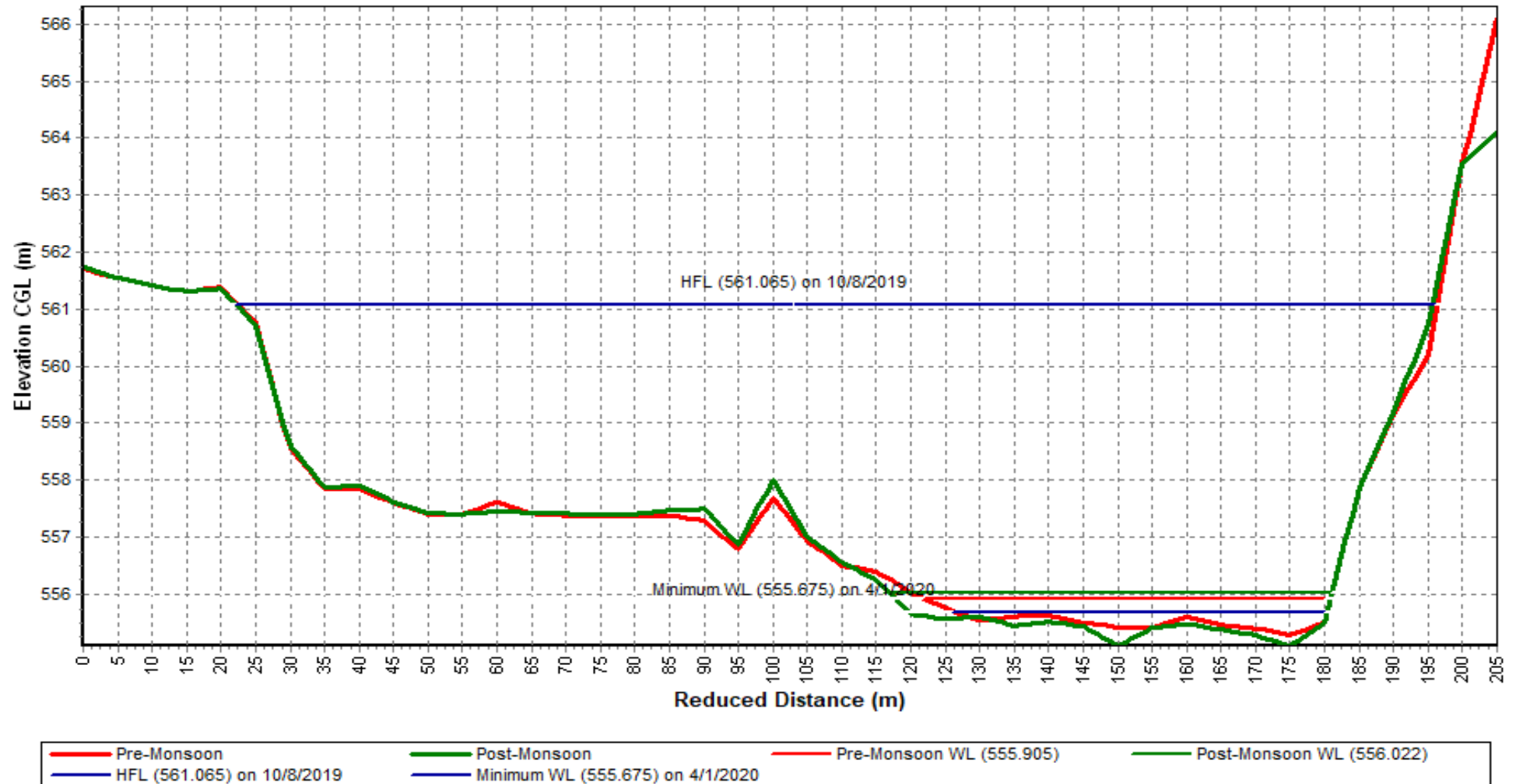
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : HOLEHONNUR (AKLE0A4)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Davanagere



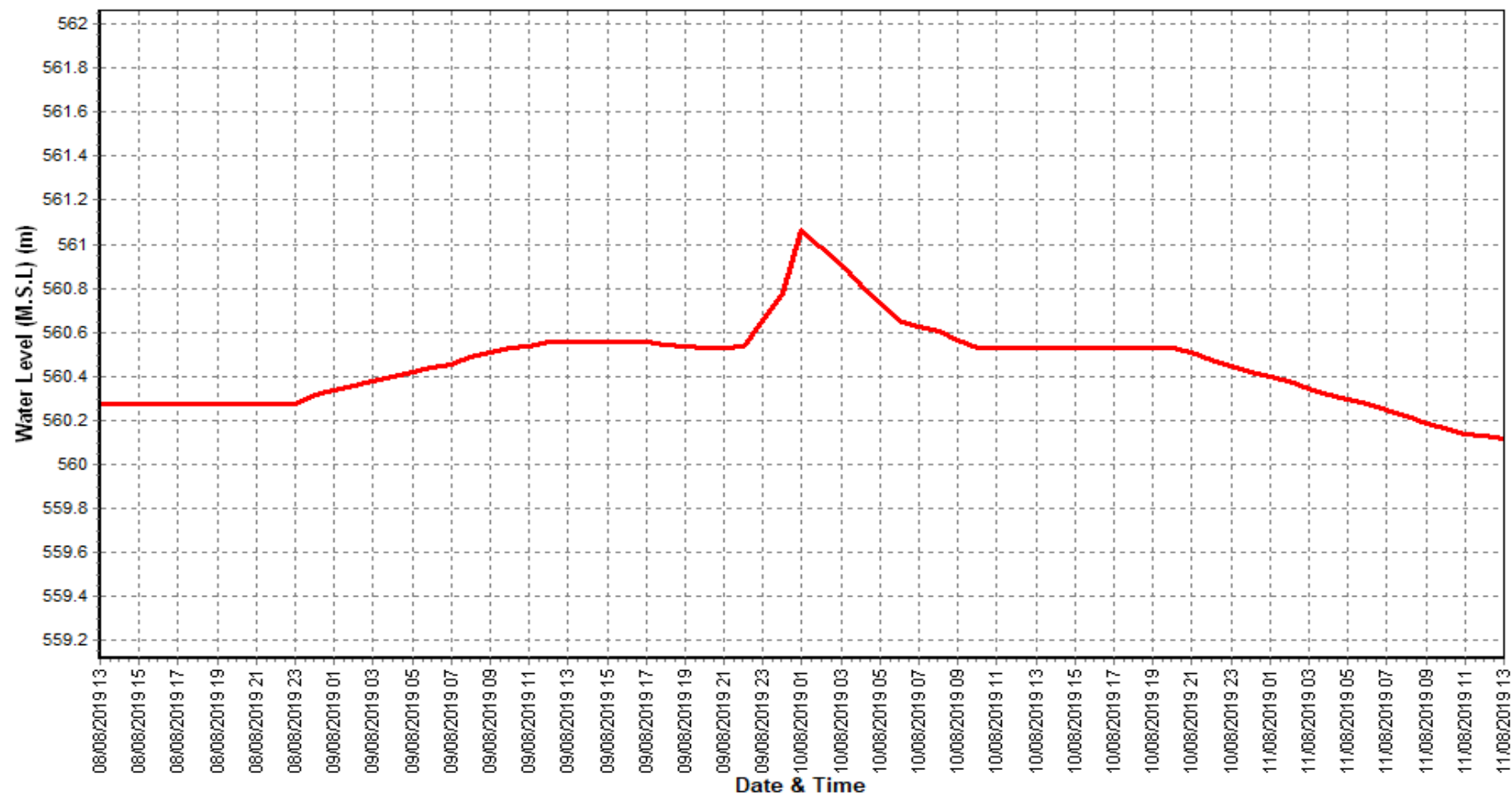
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : HOLEHONNUR (AKLE0A4)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Davanagere



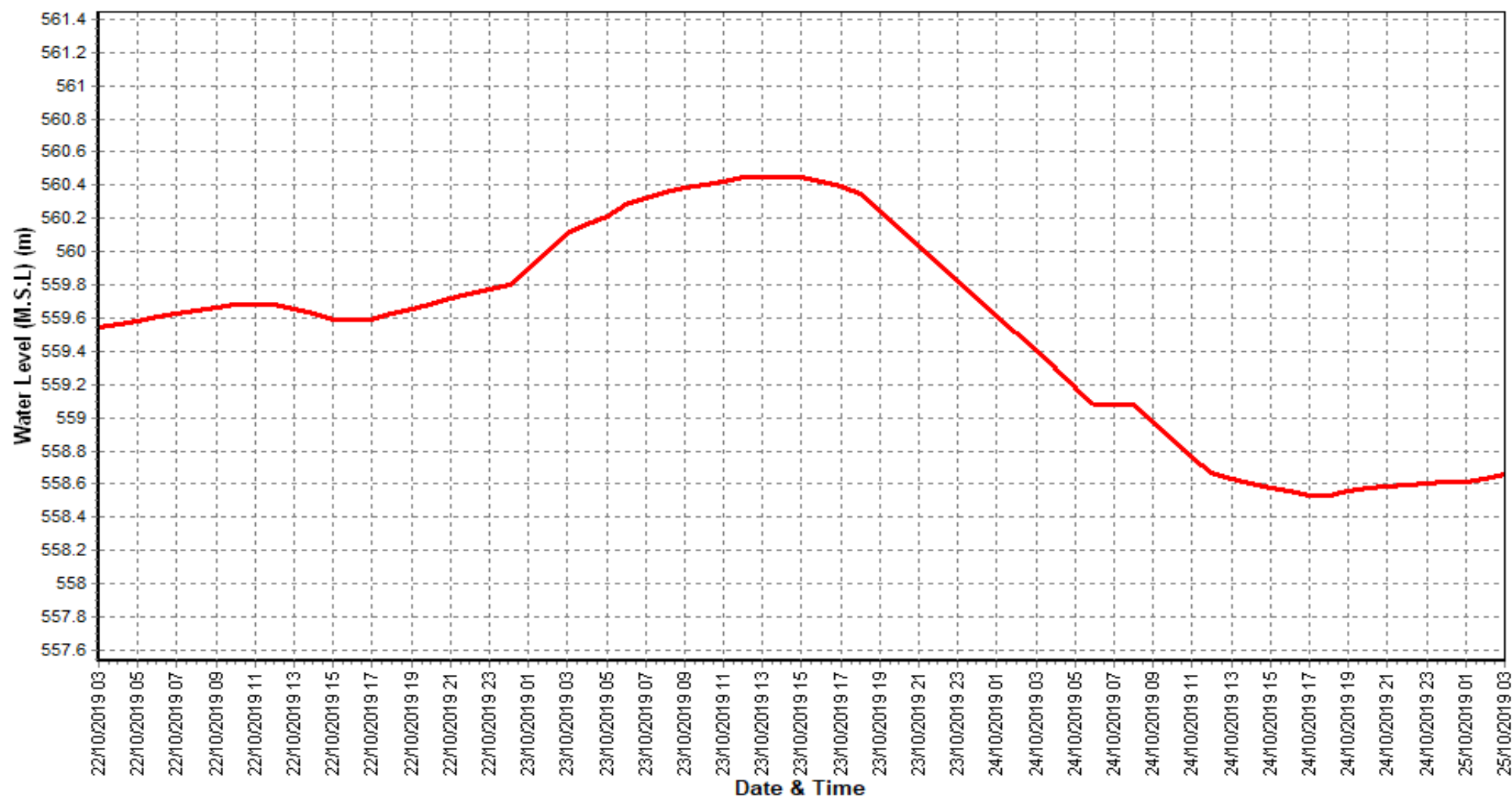
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : HOLEHONNUR (AKLE0A4)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Davanagere



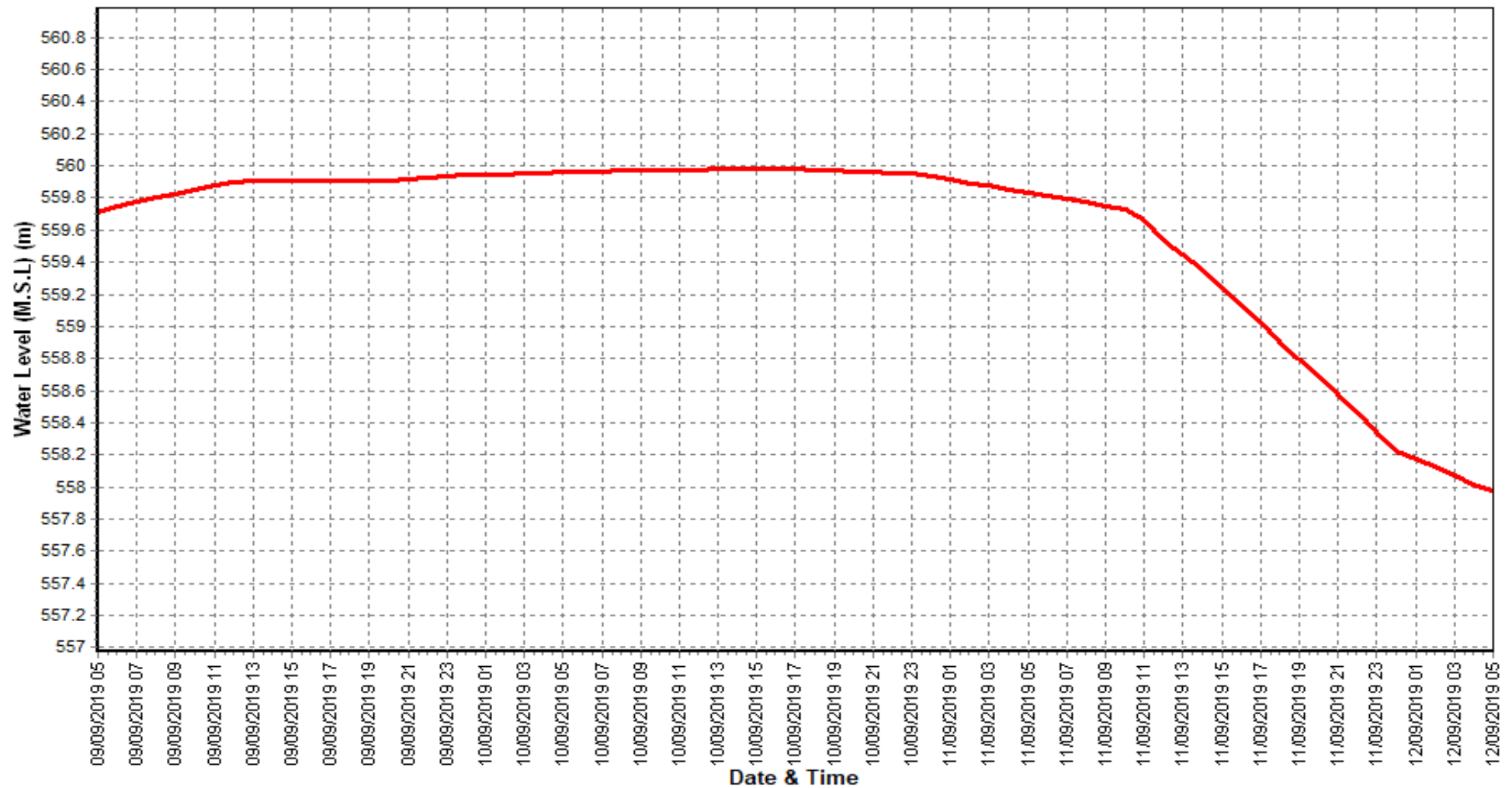
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : HOLEHONNUR (AKLE0A4)

Local River : Bhadra

Division : Cauvery Division, Bangalore

Sub-Division : Upper Tunga Subdn, Davanagere



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Yadgir	Code	: AKP00B6
State	: Karnataka	District	: Yadgir
Basin	: Krishna	Independent River	: Krishna
Tributary	: Bhima	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Bhima
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Middle Krishna SD 2 , Kurnool
Drainage Area	: 69863 Sq. Km.	Bank	: Left
Latitude	: 16°44'15"	Longitude	: 77°07'31"
Zero of Gauge (m)	: 350.503 (m.s.l)	01/01/1960	
	: 350.503 (m.s.l)	11/11/1964	- 31/05/2020
	: 350.503 (m.s.l)	01/01/1999	- 31/12/2005
	Opening Date	Closing Date	
Gauge	: 05/09/1963	HFL During 2019-20	: 358.983 m
		Corres. Discharge	: 1373 (Estimated)
Discharge	: 11/11/1964	Date & Time of	: 12/08/2019
		occurrence	: 04:00 Hrs
Sediment	: 01/06/1965		
Water Quality	: 01/01/1972		

HFL Recorded so far in m : 361.913 dt 07-09-1969

Corresponding Discharge (cumecs) : 10609 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	4909	357.798	21/09/1965	0.456	350.703	23/04/1966
1966-1967	3607	356.745	03/08/1966	0.665	350.713	02/05/1967
1967-1968	7780	359.763	03/08/1967	0.000	350.678	03/06/1967
1968-1969	3405	356.785	02/10/1968	0.400	350.668	11/05/1969
1969-1970	10255	361.873	07/09/1969	0.530	350.623	16/05/1970
1970-1971	4903	359.033	21/09/1970	0.940	350.693	15/05/1971
1971-1972	4349	357.480	28/09/1971	0.000	350.513	03/05/1972
1972-1973	2796	356.513	13/07/1972	0.000	350.048	21/04/1973
1973-1974	4719	357.528	29/10/1973	0.000		08/06/1973
1974-1975	4408	357.813	24/10/1974	5.400	350.918	13/05/1975
1975-1976	5769	359.203	11/10/1975	0.600	350.663	31/05/1976
1976-1977	6098	359.031	07/08/1976	0.500	350.528	27/04/1977
1977-1978	2149	355.393	13/08/1977	1.800	350.748	07/06/1977
1978-1979	5033	357.828	22/08/1978	1.000	350.668	13/05/1979
1979-1980	9479	360.333	29/09/1979	0.600	350.728	28/05/1980
1980-1981	2600	356.453	09/07/1980	0.200	350.473	12/05/1981

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1981-1982	6940	359.708	24/09/1981	4.100	350.813	01/05/1982
1982-1983	2006	355.253	23/08/1982	0.000	350.423	26/05/1983
1983-1984	6986	359.633	25/09/1983	0.000	350.393	01/06/1983
1984-1985	4213	357.583	12/10/1984	3.500	350.863	02/06/1984
1985-1986	2247	355.523	07/08/1985	0.000	350.513	23/04/1986
1986-1987	2297	355.698	14/08/1986	0.000		23/04/1987
1987-1988	1619	354.878	16/08/1987	0.000		15/06/1987
1988-1989	6579	359.293	21/09/1988	0.113	350.568	01/06/1988
1989-1990	8487	359.968	29/09/1989	0.000		29/04/1990
1990-1991	6041	358.888	17/08/1990	1.000	350.753	12/05/1991
1991-1992	3691	356.899	01/08/1991	0.000		14/04/1992
1992-1993	2519	356.005	02/09/1992	0.000		15/05/1993
1993-1994	2133	355.885	21/10/1993	0.000		12/05/1994
1994-1995	5178	358.523	20/07/1994	0.000		24/04/1995
1995-1996	1301	354.633	18/10/1995	0.000		24/04/1996
1996-1997	4112	357.518	08/10/1996	0.000		29/05/1997
1997-1998	6164	359.083	30/08/1997	0.000	350.803	06/04/1998
1998-1999	10057	361.543	16/10/1998	0.000	350.773	13/05/1999
1999-2000	1645	354.818	03/08/1999	0.000	350.593	06/05/2000
2000-2001	1538	354.743	31/08/2000	0.000	351.833	28/03/2001
2001-2002	2468	355.708	11/10/2001	0.000	352.193	15/03/2002
2002-2003	681.6	353.538	17/10/2002	0.000	351.333	09/01/2003
2003-2004	1370	354.403	24/08/2003	0.000	350.793	06/05/2004
2004-2005	869.6	353.953	05/10/2004	0.000	352.103	14/02/2005
2005-2006	7899	359.703	09/08/2005	0.000	352.353	12/02/2006
2006-2007	9807	360.343	16/08/2006	0.000	352.053	25/01/2007
2007-2008	3177	356.613	23/09/2007	0.000	352.193	25/01/2008
2008-2009	3189	356.563	13/09/2008	0.000	351.443	25/01/2009
2009-2010	7980	359.733	04/10/2009	0.000	352.023	01/04/2010
2010-2011	3013	356.403	26/08/2010	0.000	352.173	27/02/2011
2011-2012	4939	357.253	08/09/2011	0.000	351.333	27/04/2012
2012-2013	415.5	352.803	05/09/2012	0.000	350.393	24/03/2013
2013-2014	3306	357.483	22/09/2013	0.000	351.173	25/02/2014
2014-2015	2084	355.293	02/09/2014	0.000	352.043	29/12/2014
2015-2016	297.0	352.383	18/09/2015	0.000	350.123	10/04/2016
2016-2017	2640	357.523	25/09/2016	0.000	350.713	25/01/2017
2017-2018	3414	356.803	19/09/2017	0.000	352.013	26/02/2018
2018-2019	1140	354.308	31/08/2018	0.000	351.103	17/12/2018

Annual Runoff of Bhima at Yadgir

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966	9509	653	10162	336	23	359
2	1966-1967	7762	272	8034	274	10	284
3	1967-1968	14211	694	14905	502	25	527
4	1968-1969	8198	229	8426	290	8	298
5	1969-1970	15058	351	15409	532	12	544
6	1970-1971	11301	261	11562	399	9	409
7	1971-1972	10840	253	11094	383	9	392
8	1972-1973	3290	17	3307	116	1	117
9	1973-1974	13988	411	14399	494	15	509
10	1974-1975	11173	634	11807	395	22	417
11	1975-1976	19829	831	20660	701	29	730
12	1976-1977	12771	304	13075	451	11	462
13	1977-1978	7450	1314	8764	263	46	310
14	1978-1979	11529	481	12011	407	17	424
15	1979-1980	11867	1111	12979	419	39	459
16	1980-1981	8329	234	8564	294	8	303
17	1981-1982	12795	525	13320	452	19	471
18	1982-1983	4223	131	4354	149	5	154
19	1983-1984	14827	342	15169	524	12	536
20	1984-1985	7437	248	7685	263	9	272
21	1985-1986	3881	67	3947	137	2	139
22	1986-1987	3678	52	3731	130	2	132
23	1987-1988	3286	303	3588	116	11	127
24	1988-1989	13834	230	14064	489	8	497
25	1989-1990	10238	312	10550	362	11	373
26	1990-1991	14777	313	15089	522	11	533
27	1991-1992	9201	64	9265	325	2	327
28	1992-1993	2669	44	2714	94	2	96
29	1993-1994	4845	357	5203	171	13	184
30	1994-1995	10491	86	10577	371	3	374
31	1995-1996	2761	99	2860	98	4	101
32	1996-1997	8206	158	8364	290	6	296

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	5068	136	5203	179	5	184
34	1998-1999	20729	337	21066	732	12	744
35	1999-2000	3381	122	3503	119	4	124
36	2000-2001	3634	228	3862	128	8	136
37	2001-2002	2421	60	2481	86	2	88
38	2002-2003	724	43	766	26	2	27
39	2003-2004	896	723	1619	32	26	57
40	2004-2005	2473	82	2555	87	3	90
41	2005-2006	13485	55	13541	477	2	478
42	2006-2007	14191	0	14191	501	0	501
43	2007-2008	7322	303	7626	259	11	269
44	2008-2009	4736	0	4736	167	0	167
45	2009-2010	7290	262	7553	258	9	267
46	2010-2011	7835	218	8053	277	8	285
47	2011-2012	3892	64	3956	138	2	140
48	2012-2013	995	48	1043	35	2	37
49	2013-2014	4237	91	4328	150	3	153
50	2014-2015	2195	0	2195	78	0	78
51	2015-2016	401	0	401	14	0	14
52	2016-2017	4143	0	4143	146	0	146
53	2017-2018	6713	0	6713	237	0	237
54	2018-2019	1052	0	1052	37	0	37
55	2019-2020	10476	0	10476	370	0	370
Average		7864	257	8122	278	9	287
75% Dependable flow (MCM)				3731			
90 % Dependable flow (MCM)				1965			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Yadgir (AKP00B6)

Division : Lower Krishna Divn., Hyderabad

Local River : Bhima

Sub-Division : Middle Krishna SD 2 , Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	350.363	0.000	350.383	0.000	350.153	0.000	352.173	75.35 *	354.823	1561	353.603	741.3
2	350.363	0.000	350.383	0.000	350.153	0.000	352.193	79.61 *	353.883	855.2 *	354.048	991.1
3	350.363	0.000	350.383	0.000	350.123	0.000	352.043	56.92	353.503	675.7	354.233	1118 *
4	350.363	0.000	350.383	0.000	350.123	0.000	351.543	0.997 #	353.173	434.0	353.993	929.5
5	350.363	0.000	350.383	0.000	350.283	0.000	352.073	55.78 #	353.353	523.5	354.003	915.7
6	350.363	0.000	350.363	0.000	350.353	0.000	352.333	106.6	353.273	481.0 *	354.033	932.4
7	350.353	0.000	350.343	0.000	350.313	0.000	352.183	93.19 #	353.103	395.7 #	353.853	818.9
8	350.343	0.000	350.323	0.000	354.903	1694	352.163	73.26 *	352.703	227.4 *	354.603	1401
9	350.343	0.000	350.313	0.000	356.853	5048	353.233	442.8	352.868	291.3 #	354.043	956.0
10	350.353	0.000	350.273	0.000	358.123	6136	354.803	1619 *	353.043	367.5 #	353.833	820.5 *
11	350.413	0.000	350.253	0.000	358.743	7579 *	354.773	1668	353.283	486.3 #	353.653	774.9
12	350.393	0.000	350.243	0.000	358.903	7912 *	354.803	1683	353.403	551.9 #	353.403	551.9 *
13	350.323	0.000	350.243	0.000	357.303	5391	355.123	1869	353.533	627.6 *	353.323	507.7 #
14	350.333	0.000	350.343	0.000	356.073	2727	354.803	1683	353.633	677.0	353.053	372.1 #
15	350.333	0.000	350.363	0.000	356.753	4026 *	354.673	1497 *	353.873	873.9	352.903	305.8 #
16	350.343	0.000	350.363	0.000	355.603	2305	353.993	879.2	353.393	546.3 #	353.003	349.3 #
17	350.343	0.000	350.343	0.000	354.573	1475	353.678	791.5	353.303	497.0 #	353.203	444.9 *
18	350.363	0.000	350.343	0.000	353.633	689.1 *	354.753	1679	352.943	322.9 #	352.913	310.0 #
19	350.363	0.000	350.333	0.000	352.693	188.6	354.623	1407	352.893	301.6 #	352.803	265.2 #
20	350.363	0.000	350.333	0.000	352.593	183.4	353.843	852.0	352.933	318.6 *	352.598	173.5
21	350.363	0.000	350.333	0.000	352.863	334.6	353.723	767.5	352.883	297.4 #	352.748	186.9
22	350.363	0.000	350.333	0.000	353.083	484.6	353.713	740.3 *	354.088	1038	352.248	76.31
23	350.363	0.000	350.373	0.000	353.053	468.8	353.563	716.1	354.803	1550	352.433	139.8 #
24	350.373	0.000	350.403	0.000	352.763	272.6	354.013	900.3	355.983	2578	352.373	123.2 *
25	350.373	0.000	350.403	0.000	353.003	349.3 *	353.283	600.0	355.283	2076	352.213	83.99 #
26	350.373	0.000	350.293	0.000	352.813	222.2	353.263	591.8	356.323	3030	352.153	71.20 #
27	350.373	0.000	350.163	0.000	352.603	156.7	353.313	655.6	356.293	3362 *	352.153	71.20 #
28	350.373	0.000	350.163	0.000	352.443	133.9	354.683	1435	355.243	1934	352.173	75.35 #
29	350.363	0.000	350.183	0.000	352.463	125.2	355.903	2519	354.813	1555	351.503	0.253 #
30	350.373	0.000	350.183	0.000	352.163	73.26 #	356.153	2711	354.248	1065	351.393	0.000
31			350.163	0.000	352.153	71.20 #			354.028	946.2		
Ten-Daily Mean												
I Ten-Daily	350.357	0.000	350.353	0.000	352.138	1288	352.474	260.4	353.372	581.3	354.025	962.4
II Ten-Daily	350.357	0.000	350.316	0.000	355.687	3248	354.507	1401	353.319	520.3	353.086	405.5
III Ten-Daily	350.369	0.000	350.272	0.000	352.673	244.8	354.161	1164	354.908	1767	352.139	82.82
Monthly												
Min.	350.323	0.000	350.163	0.000	350.123	0.000	351.543	0.997	352.703	227.4	351.393	0.000
Max.	350.413	0.000	350.403	0.000	358.903	7912	356.153	2711	356.323	3362	354.603	1401
Mean	350.361	0	350.312	0	353.473	1550	353.714	941.6	353.900	982.2	353.083	483.6

Annual Runoff in MCM = 10476 Annual Runoff in mm = 150

Peak Observed Discharge = 6136 cumecs on 10/08/2019 Corres. Water Level :358.123 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :350.363 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Yadgir (AKP00B6)

Division : Lower Krishna Divn., Hyderabad

Local River : Bhima

Sub-Division : Middle Krishna SD 2 , Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	351.253	0.000	351.443	0.000	352.123	0.000	352.013	0.000	Not observed Due to Lock-Down		351.633	0.000
2	351.143	0.000	351.443	0.000	352.133	0.000	351.993	0.000 *			351.653	0.000
3	351.113	0.000	351.663	0.000	352.153	0.000	351.993	0.000			351.483	0.000
4	351.113	0.000	351.673	0.000	352.153	0.000	351.923	0.000			351.343	0.000
5	351.113	0.000	351.883	0.000	352.153	0.000	351.903	0.000			351.343	0.000
6	351.113	0.000	352.133	0.000	352.063	0.000	351.763	0.000			351.343	0.000
7	351.023	0.000	352.173	0.000	352.053	0.000	351.633	0.000			351.343	0.000
8	351.003	0.000	352.163	0.000	352.013	0.000	351.553	0.000			351.343	0.000
9	350.963	0.000	352.163	0.000	351.983	0.000	351.453	0.000			351.343	0.000
10	350.953	0.000	352.163	0.000	351.923	0.000	351.403	0.000			351.483	0.000
11	350.883	0.000	352.133	0.000	351.903	0.000	351.393	0.000			351.483	0.000
12	351.043	0.000	352.113	0.000	351.853	0.000	351.393	0.000			351.483	0.000
13	351.383	0.000	352.073	0.000	351.803	0.000	351.323	0.000			351.453	0.000
14	351.523	0.000	352.073	0.000	351.803	0.000	351.233	0.000			351.413	0.000
15	351.603	0.000	352.053	0.000	351.803	0.000	351.123	0.000			351.343	0.000
16	351.653	0.000	351.953	0.000	351.803	0.000	351.023	0.000			351.293	0.000
17	351.703	0.000	351.923	0.000	351.803	0.000	350.993	0.000			351.243	0.000
18	351.773	0.000	351.853	0.000	351.783	0.000	350.983	0.000			351.143	0.000
19	351.933	0.000	351.813	0.000	351.783	0.000	350.963	0.000			351.133	0.000
20	352.053	0.000	351.753	0.000	351.953	0.000	350.933	0.000	350.913	0.000	351.133	0.000
21	352.053	0.000	351.753	0.000	352.083	0.000	350.923	0.000	350.923	0.000	351.133	0.000
22	352.063	0.000	351.753	0.000	352.153	0.000	350.933	0.000	351.143	0.000	350.983	0.000
23	352.073	0.000	351.703	0.000	352.163	0.000	350.933	0.000	351.293	0.000	350.853	0.000
24	352.103	0.000	351.703	0.000	352.123	0.000	Not observed Due to Lock-Down		351.343	0.000	350.783	0.000
25	352.063	0.000	351.683	0.000	352.123	0.000			351.353	0.000	350.713	0.000
26	351.863	0.000	351.683	0.000	352.103	0.000			351.373	0.000	350.663	0.000
27	351.763	0.000	351.693	0.000	352.103	0.000			351.423	0.000	350.623	0.000
28	351.713	0.000	351.693	0.000	352.103	0.000			351.463	0.000	350.623	0.000
29	351.683	0.000	351.723	0.000	352.053	0.000			351.483	0.000	350.623	0.000
30	351.583	0.000	351.963	0.000					351.483	0.000	350.623	0.000
31	351.503	0.000	352.003	0.000							350.623	0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	351.079	0.000	351.890	0.000	352.075	0.000	351.763	0.000			351.431	0.000
II Ten-Daily	351.555	0.000	351.974	0.000	351.829	0.000	351.136	0.000	350.913	0.000	351.312	0.000
III Ten-Daily	351.860	0.000	351.759	0.000	352.112	0.000	350.930	0.000	351.328	0.000	350.749	0.000
<u>Monthly</u>												
Min.	350.883	0.000	351.443	0.000	351.783	0.000	350.923	0.000	350.913	0.000	350.623	0.000
Max.	352.103	0.000	352.173	0.000	352.163	0.000	352.013	0.000	351.483	0.000	351.653	0.000
Mean	351.510	0	351.871	0	352.002	0	351.382	0	351.290	0	351.151	0

Peak Computed Discharge = 7912 cumecs on 12/08/2019

Corres. Water Level :358.903 m

Lowest Computed Discharge = 0.000 cumecs on 02/03/2020

Corres. Water Level :351.993 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

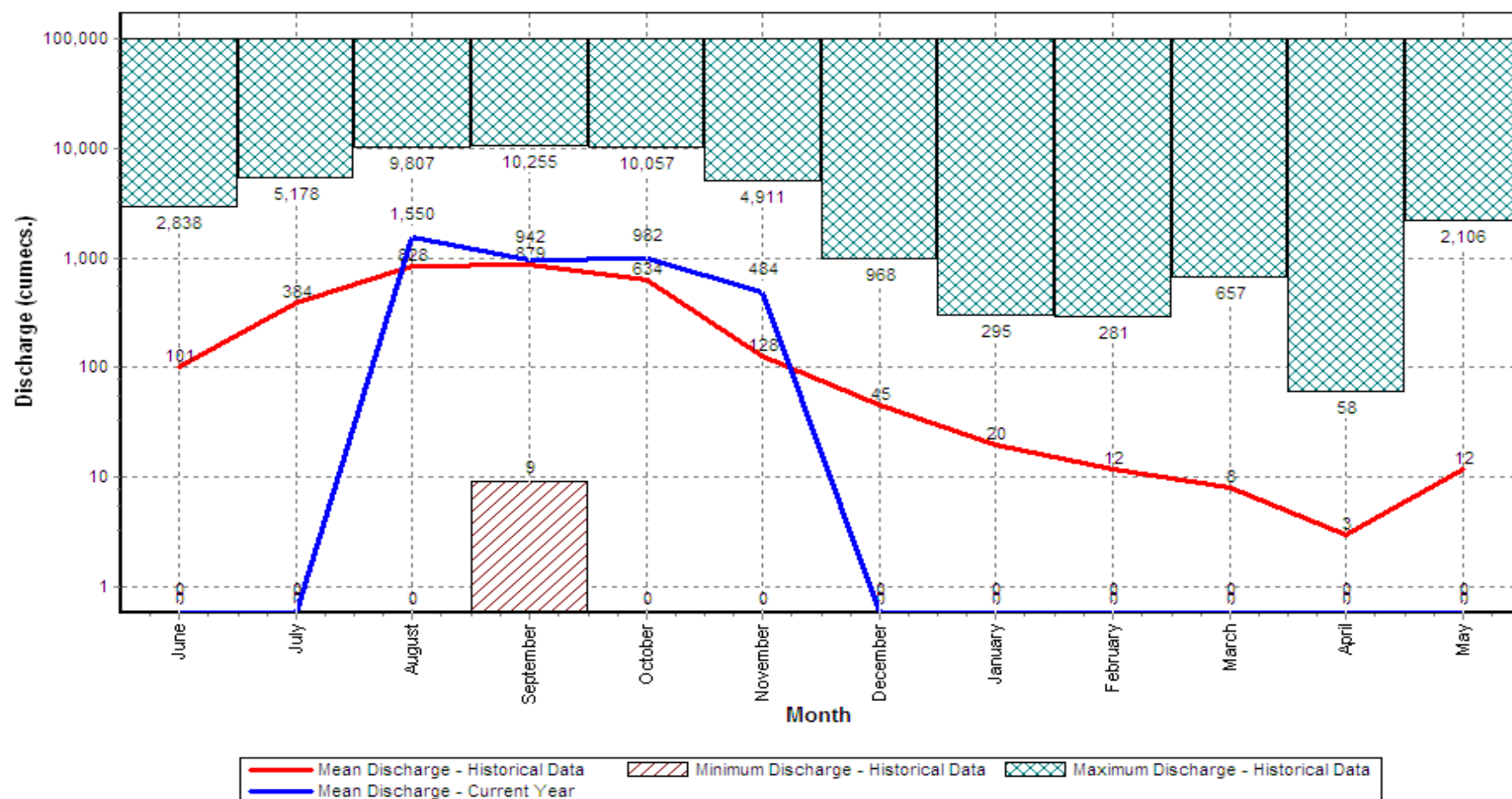
Station Name : Yadgir (AKP00B6)

Data considered : 1965-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Bhima

Sub-Division : Middle Krishna SD 2 , Kurnool



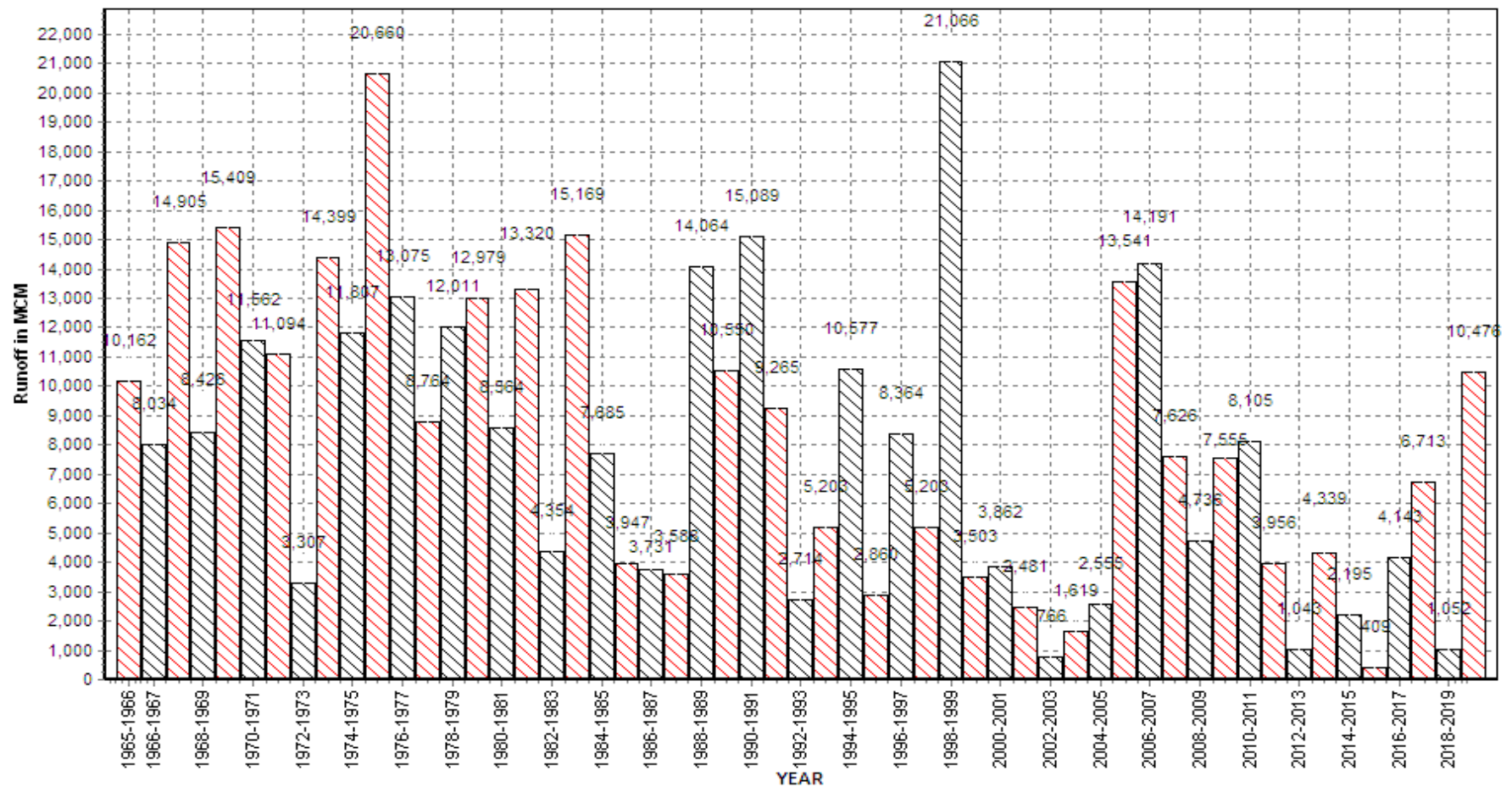
Annual Runoff Values for the period: 1965 - 2020

Station Name : Yadgir (AKP00B6)

Local River : Bhima

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



Note: Missing values have not been considered while arriving at Annual Runoff

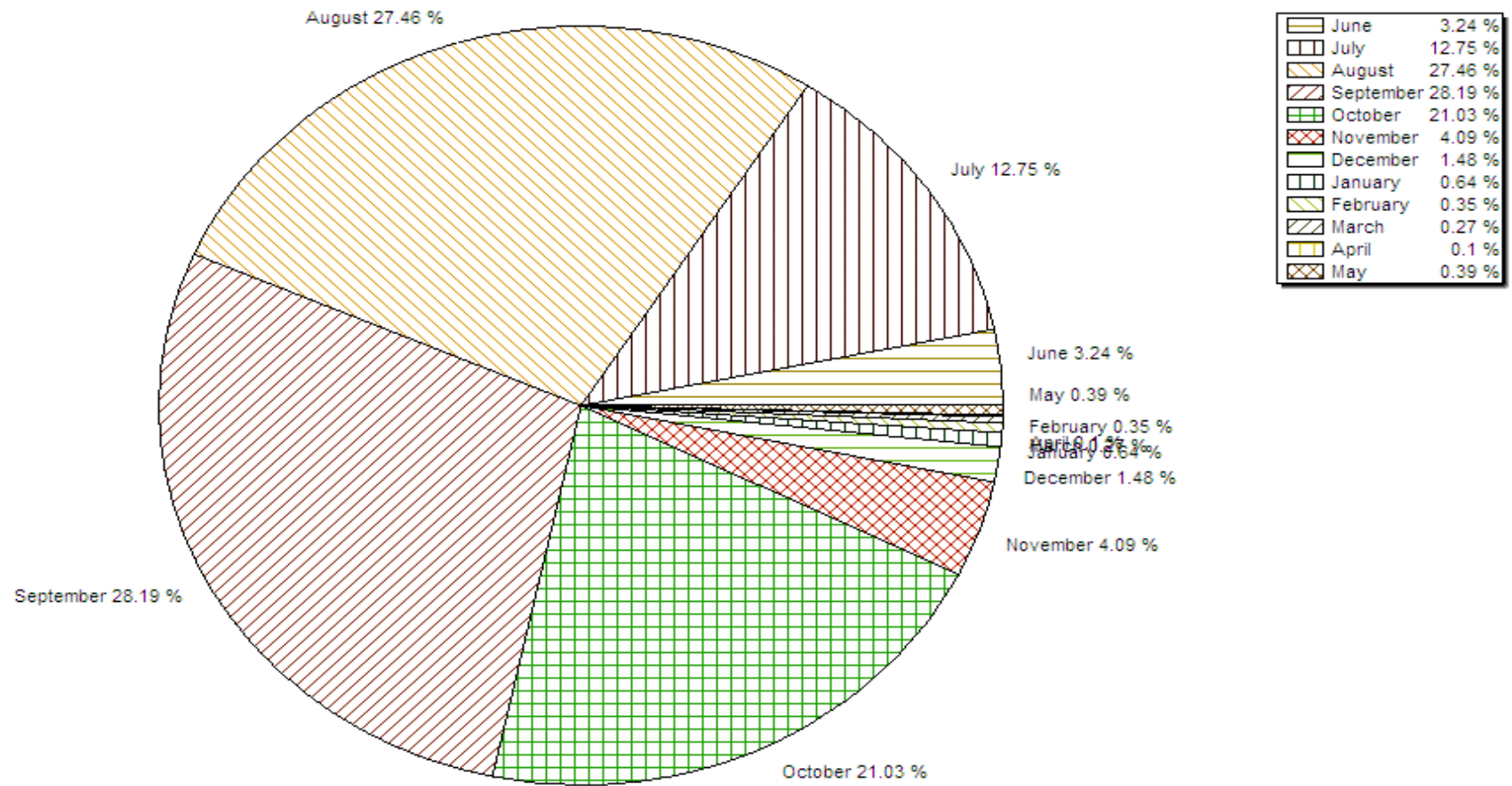
Monthly Average Runoff based on period : 1965-2019

Station Name : Yadgir (AKP00B6)

Local River : Bhima

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



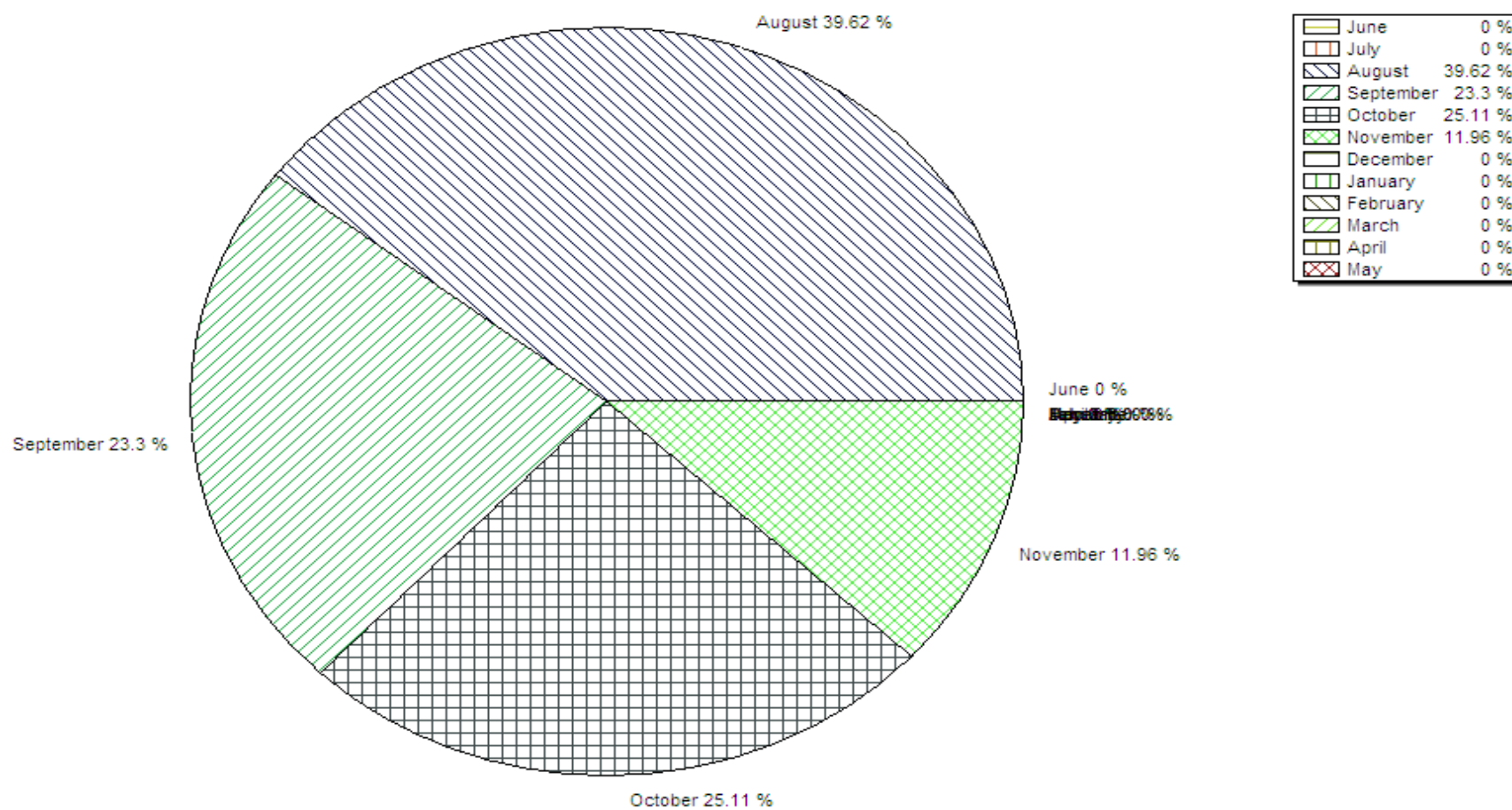
Monthly Runoff for the Year : 2019-2020

Station Name : Yadgir (AKP00B6)

Local River : Bhima

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



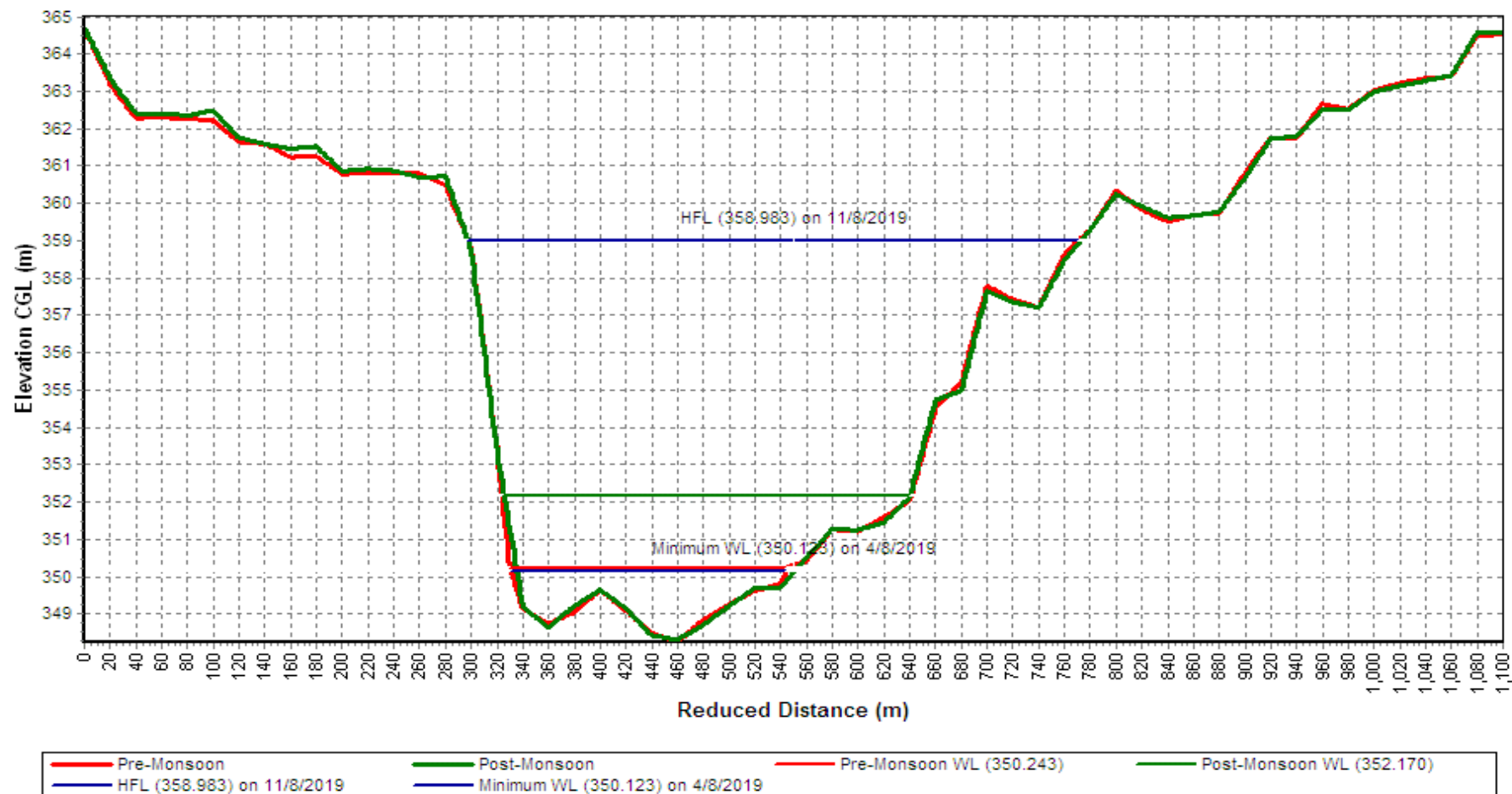
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Yadgir (AKP00B6)

Local River : Bhima

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



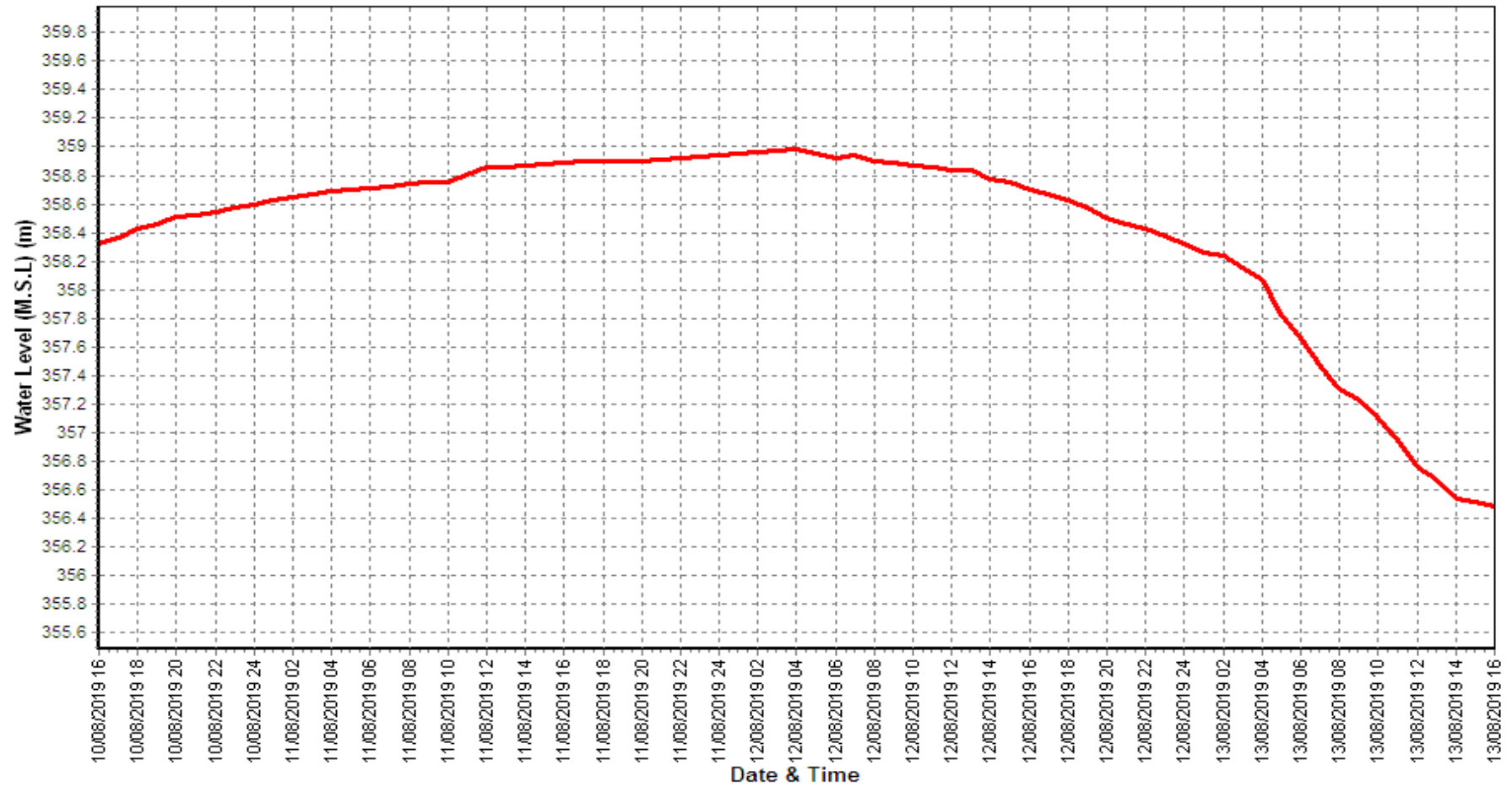
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Yadgir (AKP00B6)

Local River : Bhima

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



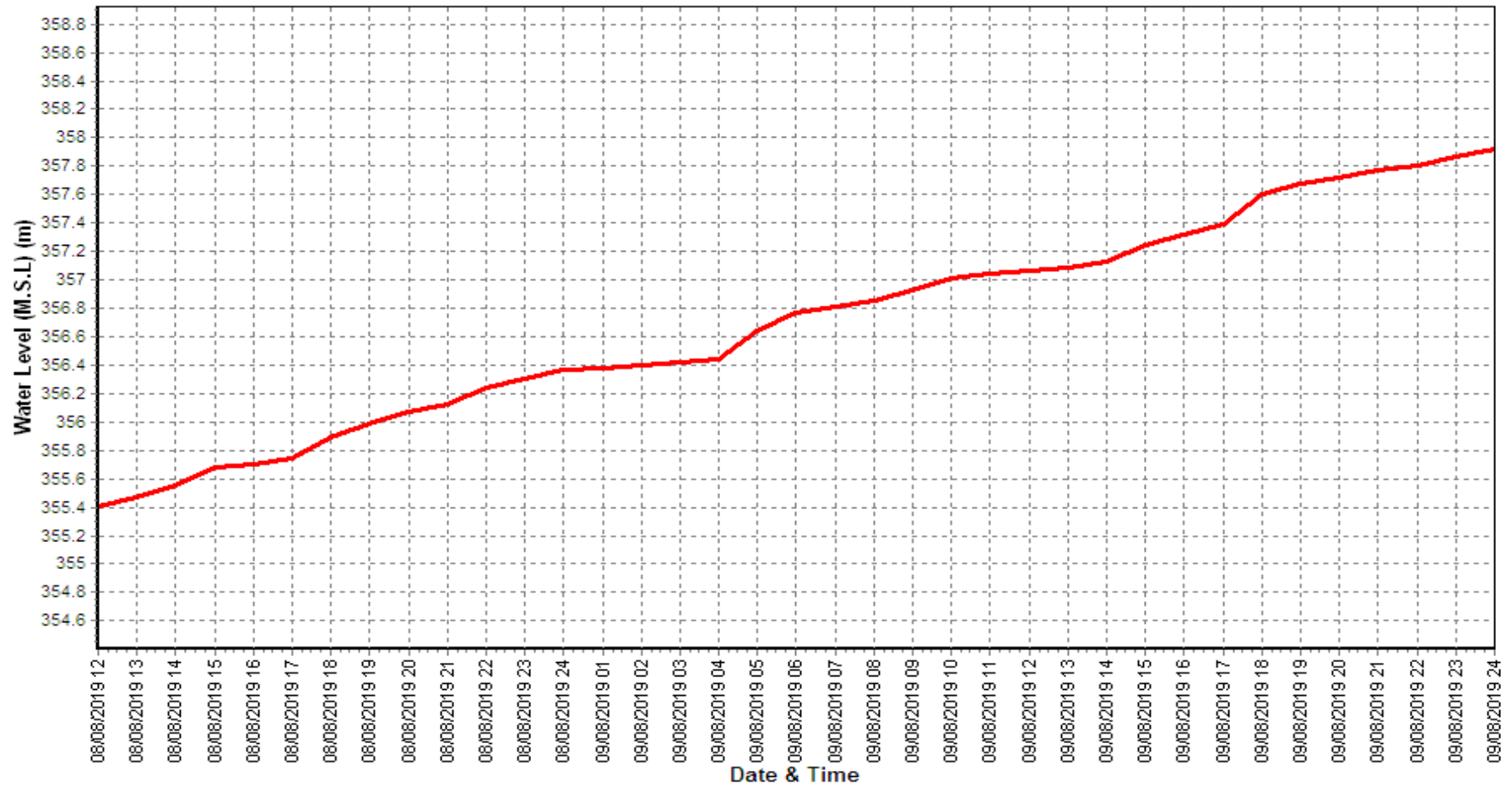
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Yadgir (AKP00B6)

Local River : Bhima

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



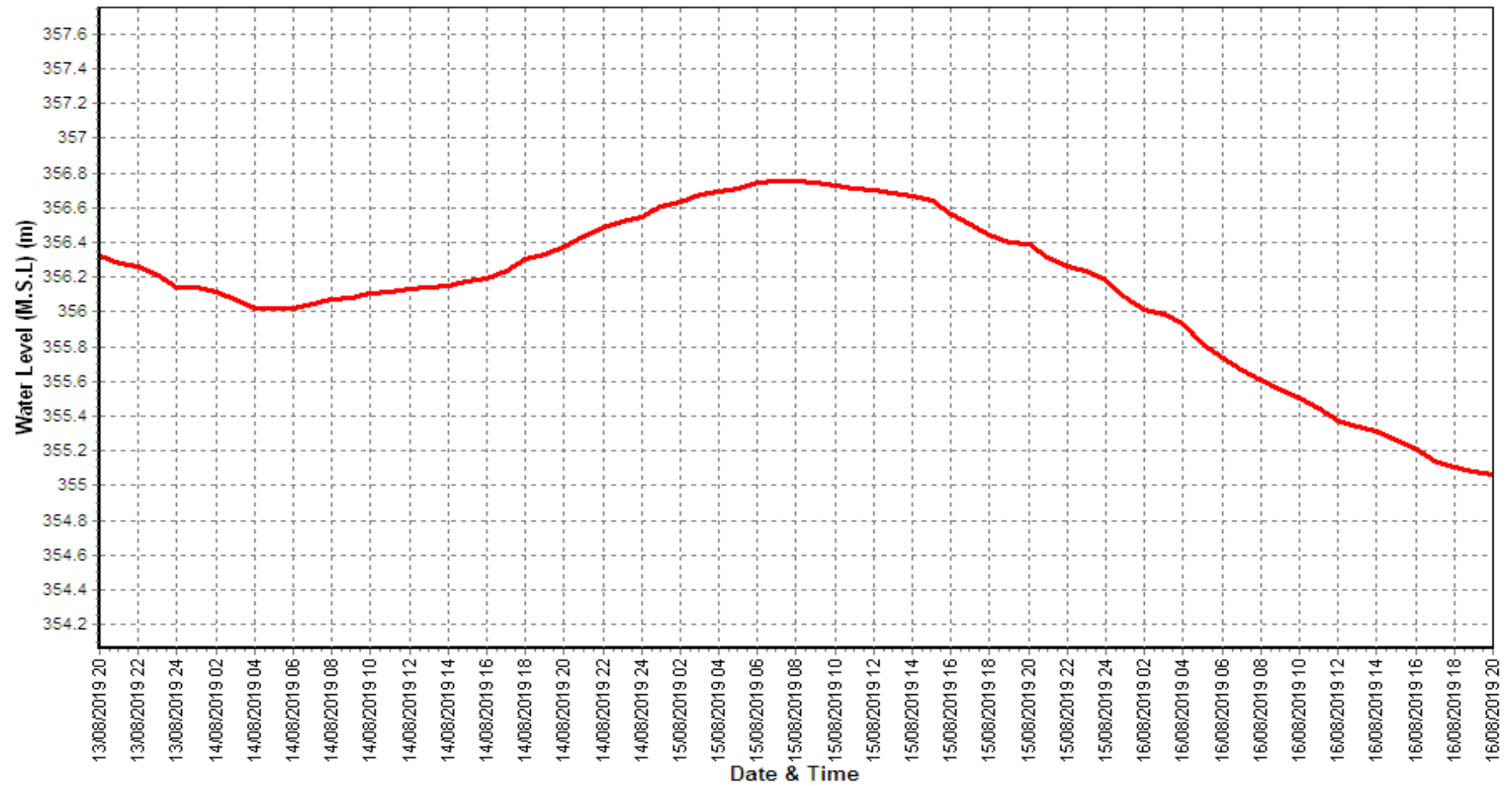
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Yadgir (AKP00B6)

Local River : Bhima

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



HISTORY SHEET

Water Year : 2019-2020

Site : Malkhed

Code : AKP10E1

State : Karnataka

District : Gulbarga

Basin : Krishna

Independent River : Krishna

Tributary : Bhima

Sub Tributary : Kagna

Sub-Sub Tributary : -

Local River : Kagna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool

Drainage Area : 7650 Sq. Km.

Bank : Left

Latitude : 17°12'12"

Longitude : 77°09'23"

Zero of Gauge (m) : 390 (m.s.l)

15/08/1990

390 (m.s.l)

01/01/1999

- 31/12/2005

390 (m.s.l)

01/01/2006

- 31/12/2020

Opening Date

Closing Date

Gauge : 29/09/1989

HFL During 2019-20 : 393.940 m

Corres. Discharge : 130 (Estimated)

Discharge : 15/08/1990

Date & Time of

occurrence : 15/10/2019

Sediment : 08/09/1992

Water Quality : 01/06/1992

HFL Recorded so far in m : 401.010 dt 24-09-2016

Corresponding Discharge (cumecs) : 4209 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1991-1992	979.2	396.154	09/07/1991	0.050	392.450	17/04/1992
1992-1993	1176	396.118	02/09/1992	0.000		01/05/1993
1993-1994	611.3	395.019	22/09/1993	0.000		21/05/1994
1994-1995	274.7	393.990	06/10/1994	0.000		21/04/1995
1995-1996	1101	396.530	17/10/1995	0.000		18/06/1995
1996-1997	959.3	396.285	17/09/1996	0.109	392.150	01/06/1996
1997-1998	148.2	393.600	27/09/1997	0.000		18/05/1998
1998-1999	2215	398.270	15/10/1998	0.000		11/06/1998
1999-2000	414.3	394.600	03/08/1999	0.063	392.140	24/05/2000
2000-2001	1577	396.975	24/08/2000	0.157	391.995	31/05/2001
2001-2002	1228	396.460	01/10/2001	0.152	391.990	04/06/2001
2002-2003	438.9	394.660	16/10/2002	0.000		07/05/2003
2003-2004	711.3	395.440	23/08/2003	0.000		18/03/2004
2004-2005	152.9	393.750	06/10/2004	0.000	392.430	03/03/2005
2005-2006	843.5	396.290	10/09/2005	0.000	392.520	06/07/2005
2006-2007	32.93	393.980	28/09/2006	0.000	392.740	15/05/2007

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2007-2008	922.7	396.450	20/09/2007	0.000	392.820	02/06/2007
2008-2009	1499	397.450	10/08/2008	0.000	392.700	15/07/2008
2009-2010	1254	397.500	03/09/2009	0.000	392.790	04/07/2009
2010-2011	1269	397.580	26/08/2010	0.536	392.800	13/06/2010
2011-2012	1500	397.200	31/07/2011	0.732	392.680	18/03/2012
2012-2013	550.0	395.600	04/09/2012	0.781	392.710	03/06/2012
2013-2014	1188	397.400	20/09/2013	0.457	392.740	04/03/2014
2014-2015	1320	397.720	01/09/2014	0.070	392.720	06/07/2014
2015-2016	120.7	393.850	15/09/2015	0.488	392.700	01/11/2015
2016-2017	2611	400.650	24/09/2016	0.373	392.550	17/06/2016
2017-2018	911.6	396.500	10/10/2017	0.000	392.690	02/06/2017
2018-2019	139.2	393.810	12/08/2018	0.000	392.680	01/03/2019

Annual Runoff of Kagna at Malkhed

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1990-1991	1610	76	1685	57	3	60
2	1991-1992	579	12	591	20	0	21
3	1992-1993	331	14	345	12	0	12
4	1993-1994	416	26	442	15	1	16
5	1994-1995	98	4	102	3	0	4
6	1995-1996	987	50	1037	35	2	37
7	1996-1997	1046	63	1109	37	2	39
8	1997-1998	125	17	142	4	1	5
9	1998-1999	3031	71	3102	107	3	110
10	1999-2000	449	24	472	16	1	17
11	2000-2001	1013	34	1047	36	1	37
12	2001-2002	542	42	584	19	1	21
13	2002-2003	208	21	228	7	1	8
14	2003-2004	218	35	253	8	1	9
15	2004-2005	149	28	177	5	1	6
16	2005-2006	1058	33	1092	37	1	39
17	2006-2007	69	27	95	2	1	3
18	2007-2008	729	192	921	26	7	33
19	2008-2009	818	101	919	29	4	32
20	2009-2010	1207	100	1307	43	4	46
21	2010-2011	2182	114	2297	77	4	81
22	2011-2012	653	31	684	23	1	24
23	2012-2013	564	43	607	20	2	21
24	2013-2014	980	101	1081	35	4	38
25	2014-2015	740	66	806	26	2	28
26	2015-2016	94	57	151	3	2	5
27	2016-2017	2335	50	2386	83	2	84
28	2017-2018	950	30	979	34	1	35
29	2018-2019	154	5	160	5	0	6
30	2019-2020	379	11	390	13	0	14
Average		790	49	840	28	2	30
75% Dependable flow (MCM)				247			
90 % Dependable flow (MCM)				143			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Malkhed (AKP10E1)

Division : Lower Krishna Divn., Hyderabad

Local River : Kagna

Sub-Division : Middle Krishna SD 2 , Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	392.480	0.000	392.630	0.000	392.410	0.000	392.840	20.51 *	393.160	48.58	392.780	3.901
2	392.430	0.000	392.600	0.000	392.450	0.000	393.110	43.94 *	393.130	45.68 *	393.030	40.19
3	392.400	0.000	392.580	0.000	392.500	0.000	393.140	47.47	393.100	44.31	393.370	66.50 *
4	392.380	0.000	392.540	0.000	392.500	0.000	393.250	53.72	393.100	44.31	393.060	41.30
5	392.380	0.000	392.480	0.000	392.500	0.000	393.140	47.47	393.320	58.30	393.060	41.30
6	392.390	0.000	392.440	0.000	392.710	2.505	393.140	47.47	393.220	53.49 *	393.230	55.41
7	392.390	0.000	392.410	0.000	393.140	47.47	393.120	45.23	393.440	70.33	393.250	52.94
8	392.400	0.000	392.390	0.000	392.690	1.934	393.050	38.73 *	393.510	78.65 *	393.060	41.65
9	392.400	0.000	392.370	0.000	392.680	1.785	392.780	5.383	393.320	58.30	393.000	36.69
10	392.410	0.000	392.340	0.000	393.150	48.20	392.770	5.342 *	393.290	58.40	393.100	43.07 *
11	392.390	0.000	392.320	0.000	393.100	43.07 *	392.770	4.665	393.290	58.40	393.190	49.67
12	392.370	0.000	392.320	0.000	393.020	36.13 *	392.750	4.274	393.390	66.22	393.280	58.69 *
13	392.360	0.000	392.330	0.000	393.140	47.47	392.775	5.234	393.280	58.69 *	393.200	49.67
14	392.360	0.000	392.330	0.000	393.150	46.86	392.720	3.947	393.240	54.62	393.090	42.61
15	392.350	0.000	392.330	0.000	393.100	43.07 *	393.070	40.47 *	393.920	128.6	393.060	41.65
16	392.350	0.000	392.340	0.000	392.650	1.027	393.460	72.03	393.550	90.60	393.040	40.19
17	392.340	0.000	392.350	0.000	392.660	1.105	393.280	57.65	393.340	62.16	393.120	44.81 *
18	392.340	0.000	392.360	0.000	392.650	1.100 *	393.200	51.60	393.280	57.70	393.000	36.69
19	392.340	0.000	392.670	0.000	392.640	0.873	393.230	53.86	393.200	51.60	392.980	36.14
20	392.330	0.000	392.660	0.000	392.640	0.874	393.290	58.39	393.390	68.24 *	392.980	36.14
21	392.330	0.000	392.630	0.000	392.650	1.134	393.350	63.03	393.230	53.86	392.960	33.91
22	392.330	0.000	392.500	0.000	392.650	1.076	393.210	52.62 *	393.160	48.58	392.960	33.91
23	392.420	0.000	392.430	0.000	392.660	1.622	393.130	46.42	393.130	46.51	392.945	33.37
24	392.640	0.000	392.695	2.009	392.650	1.691	393.110	45.01	393.220	52.19	392.990	33.53 *
25	392.720	1.476	392.730	3.202	392.630	1.050 *	393.240	54.62	393.000	36.69	392.750	2.498
26	392.730	1.775	392.700	1.802	392.660	2.536	393.200	51.60	393.040	41.30	392.750	2.507
27	392.710	0.680	392.690	1.317	392.660	2.059	393.410	64.62	392.960	30.93 *	392.750	2.497
28	392.740	0.000	392.480	0.000	392.650	1.635	393.310	57.52	393.020	36.69	392.750	2.318
29	392.700	0.000	392.430	0.000	392.640	1.383	393.240	55.22 *	393.490	78.10	392.750	2.344
30	392.670	0.000	392.450	0.000	392.640	1.462	393.190	50.86	393.190	49.67	392.750	2.345
31			392.450	0.000	392.640	1.458			393.080	42.61		
Ten-Daily Mean												
I Ten-Daily	392.406	0.000	392.478	0.000	392.673	10.19	393.034	35.53	393.259	56.03	393.094	42.30
II Ten-Daily	392.353	0.000	392.401	0.000	392.875	22.16	393.055	35.21	393.388	69.68	393.094	43.63
III Ten-Daily	392.599	0.393	392.562	0.757	392.648	1.555	393.239	54.15	393.138	47.01	392.836	14.92
Monthly												
Min.	392.330	0.000	392.320	0.000	392.410	0.000	392.720	3.947	392.960	30.93	392.750	2.318
Max.	392.740	1.775	392.730	3.202	393.150	48.20	393.460	72.03	393.920	128.6	393.370	66.50
Mean	392.453	0.131	392.483	0.269	392.729	10.99	393.109	41.63	393.258	57.23	393.008	33.61

Annual Runoff in MCM = 389 Annual Runoff in mm = 51

Peak Observed Discharge = 128.6 cumecs on 15/10/2019 Corres. Water Level :393.92 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :392.48 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : Malkhed (AKP10E1)

Division : Lower Krishna Divn., Hyderabad

Local River : Kagna

Sub-Division : Middle Krishna SD 2 , Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	392.700	1.790 *	392.670	1.821	392.640	0.802	392.830	0.000	Not observed Due to Lock-Down		392.790	0.000
2	392.710	1.838	392.670	1.855	392.640	0.801 *	392.830	0.000			392.790	0.000
3	392.710	1.804	392.670	1.915	392.640	0.804	392.830	0.000			392.790	0.000
4	392.710	1.808	392.670	1.836	392.640	0.787	392.830	0.000			392.790	0.000
5	392.710	1.801	392.670	1.835 *	392.640	0.789	392.830	0.000			392.780	0.000
6	392.710	1.787	392.670	1.834	392.640	0.786	392.830	0.000			392.780	0.000
7	392.710	1.805	392.670	1.829	392.640	0.830	392.830	0.000			392.780	0.000
8	392.720	2.342 *	392.670	1.820	392.640	0.847	392.830	0.000			392.780	0.000
9	392.720	2.341	392.670	1.602	392.640	0.841 *	392.830	0.000			392.780	0.000
10	392.720	2.339	392.670	1.556	392.640	0.836	392.830	0.000			392.780	0.000
11	392.720	2.320	392.670	1.566	392.730	0.000	392.830	0.000			392.780	0.000
12	392.720	2.324	392.670	1.566 *	392.730	0.000	392.830	0.000			392.780	0.000
13	392.720	2.314	392.670	1.551	392.730	0.000	392.830	0.000			392.780	0.000
14	392.720	2.291	392.670	1.553	392.730	0.000	392.820	0.000			392.770	0.000
15	392.720	2.291 *	392.670	1.600 *	392.730	0.000	392.820	0.000			392.770	0.000
16	392.720	2.280	392.670	1.550	392.730	0.000	392.820	0.000			392.770	0.000
17	392.720	2.152	392.670	1.549	392.730	0.000	392.820	0.000			392.770	0.000
18	392.720	2.185	392.670	1.552	392.730	0.000	392.820	0.000			392.770	0.000
19	392.720	2.180	392.670	1.552 *	392.730	0.000	392.820	0.000			392.770	0.000
20	392.715	2.029	392.670	1.542	392.730	0.000	392.820	0.000	392.780	0.000	392.770	0.000
21	392.715	2.028	392.670	1.531	392.730	0.000	392.820	0.000	392.780	0.000	392.770	0.000
22	392.715	2.028 *	392.670	1.520	392.730	0.000	392.820	0.000	392.770	0.000	392.770	0.000
23	392.715	2.045	392.670	1.514	392.720	0.000	392.820	0.000	392.770	0.000	392.760	0.000
24	392.715	2.015	392.670	1.508	392.720	0.000	Not observed Due to Lock-Down		392.770	0.000	392.760	0.000
25	392.715	2.015 *	392.670	1.483	392.720	0.000			392.770	0.000	392.760	0.000
26	392.715	2.002	392.660	1.458 *	392.730	0.000			392.770	0.000	392.760	0.000
27	392.715	2.002	392.660	1.459	392.730	0.000			392.770	0.000	392.760	0.000
28	392.715	1.996	392.660	1.434	392.730	0.000			392.770	0.000	392.760	0.000
29	392.715	1.995 *	392.660	1.433	392.730	0.000			392.780	0.000	392.760	0.000
30	392.715	1.975	392.660	1.420					392.790	0.000	392.750	0.000
31	392.715	1.977	392.660	1.306							392.750	0.000
Ten-Daily Mean												
I Ten-Daily	392.712	1.966	392.670	1.790	392.640	0.812	392.830	0.000		0.000	392.784	0.000
II Ten-Daily	392.720	2.237	392.670	1.558	392.730	0.000	392.823	0.000	392.780	0.000	392.773	0.000
III Ten-Daily	392.715	2.007	392.665	1.461	392.727	0.000	392.820	0.000	392.774	0.000	392.760	0.000
Monthly												
Min.	392.700	1.787	392.660	1.306	392.640	0.000	392.820	0.000	392.770	0.000	392.750	0.000
Max.	392.720	2.342	392.670	1.915	392.730	0.847	392.830	0.000	392.790	0.000	392.790	0.000
Mean	392.715	2.068	392.668	1.598	392.698	0.28	392.826	0	392.775	0	392.772	0

Peak Computed Discharge = 78.65 cumecs on 08/10/2019

Corres. Water Level :393.51 m

Lowest Computed Discharge = 0.000 cumecs on 24/03/2020

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

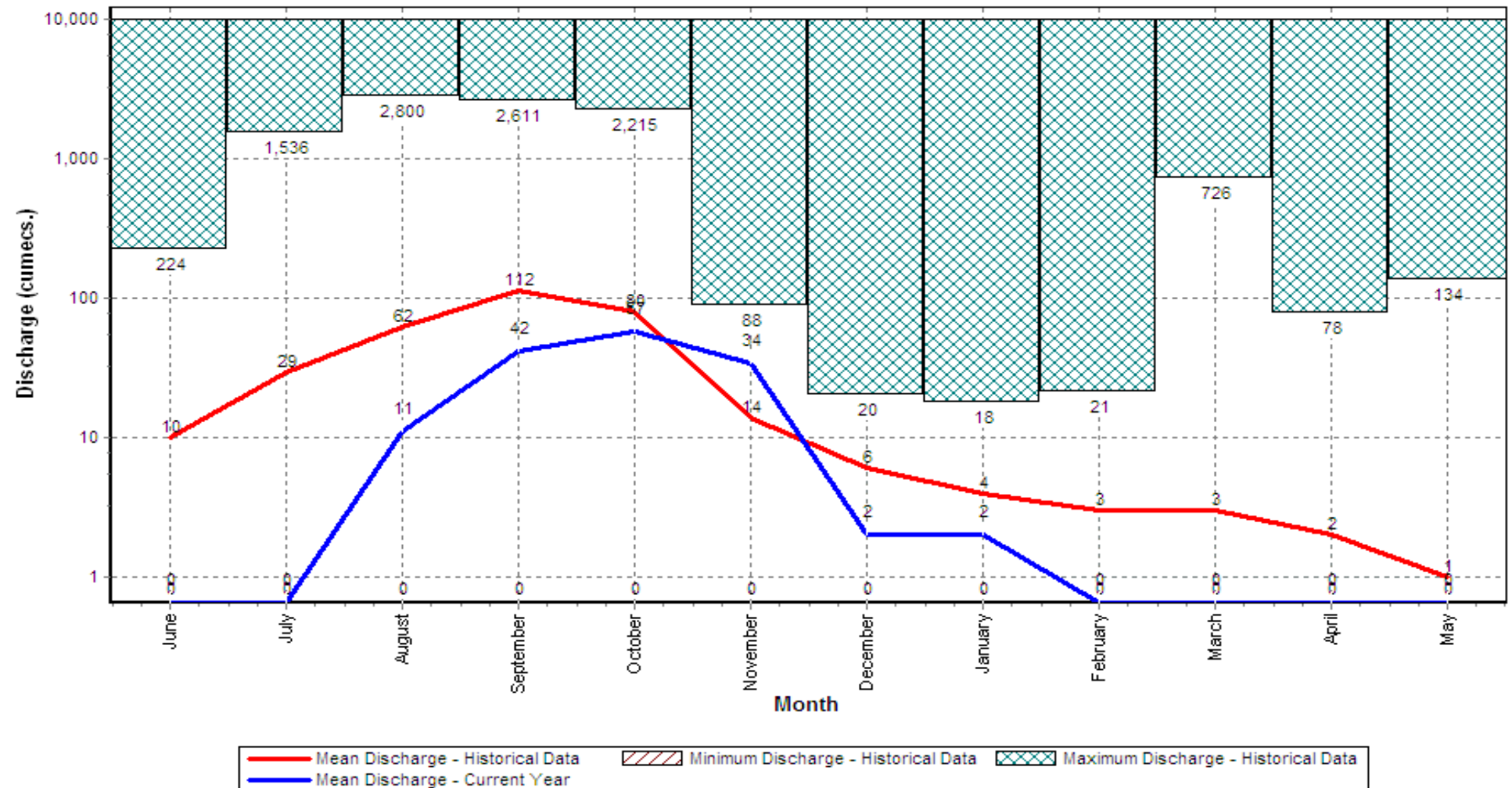
Station Name : Malkhed (AKP10E1)

Data considered : 1991-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Kagna

Sub-Division : Middle Krishna SD 2 , Kurnool



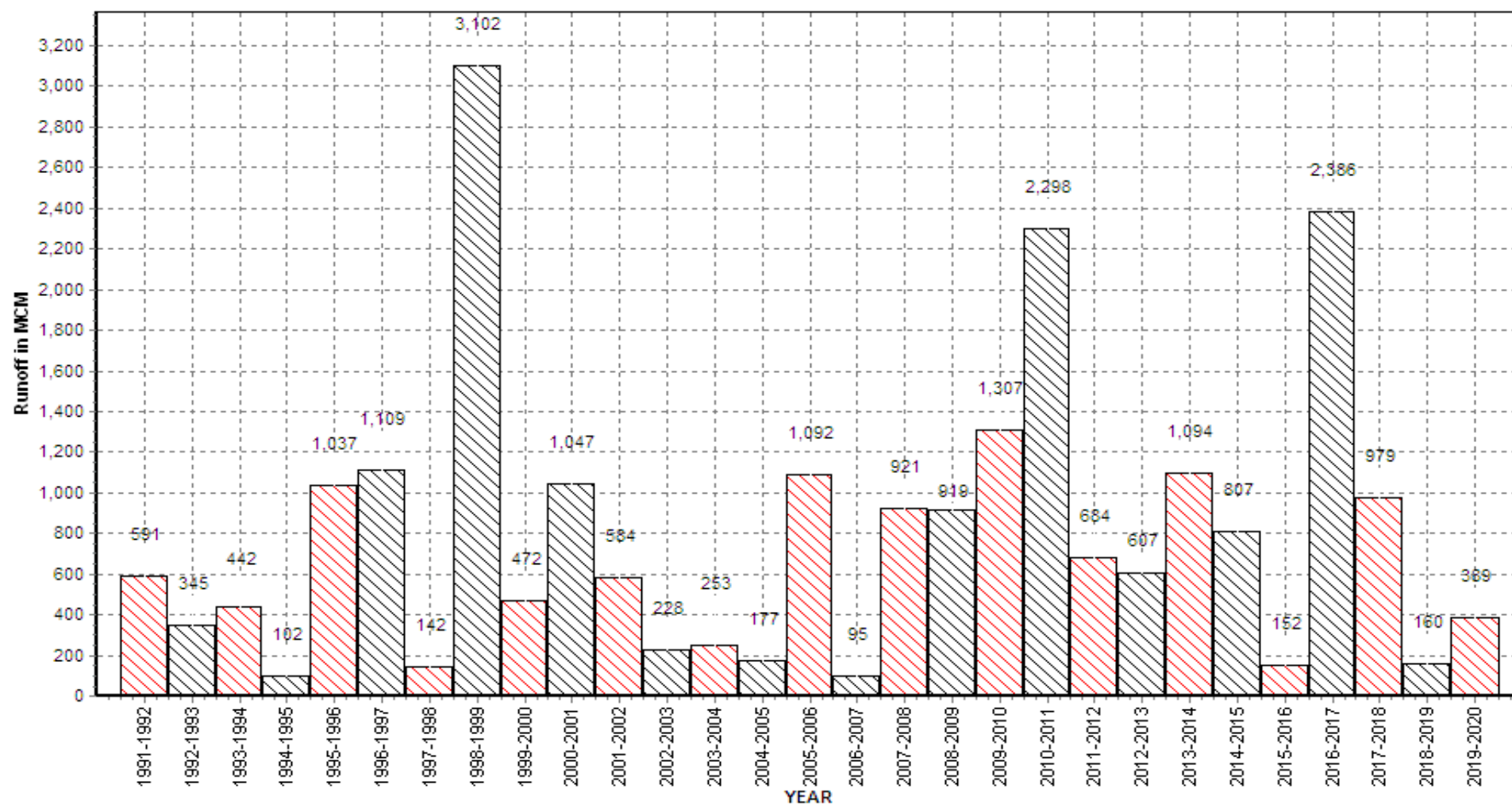
Annual Runoff Values for the period: 1991 - 2020

Station Name : Malkhed (AKP10E1)

Local River : Kagna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



Note: Missing values have not been considered while arriving at Annual Runoff

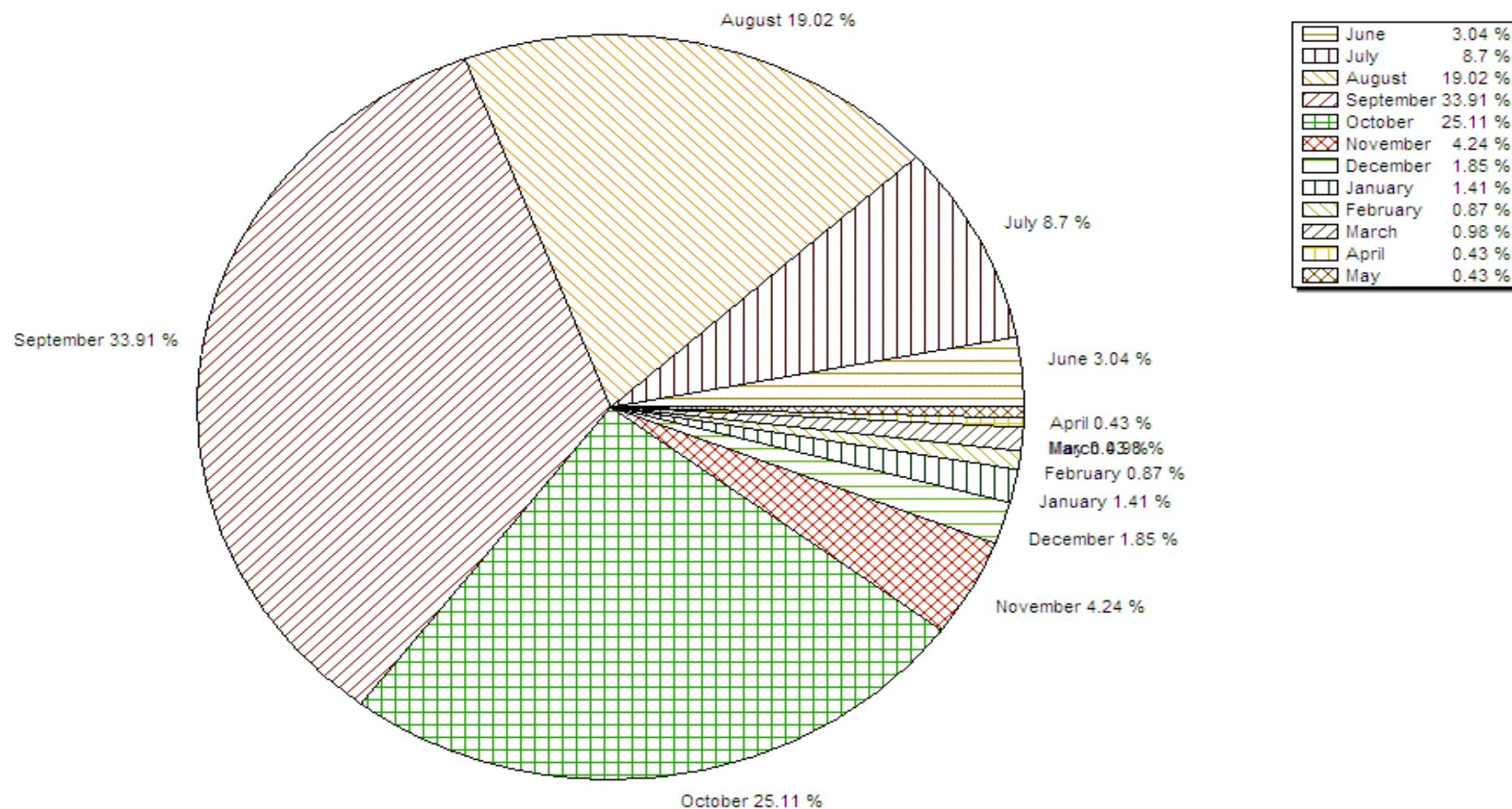
Monthly Average Runoff based on period : 1991-2019

Station Name : Malkhed (AKP10E1)

Local River : Kagna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



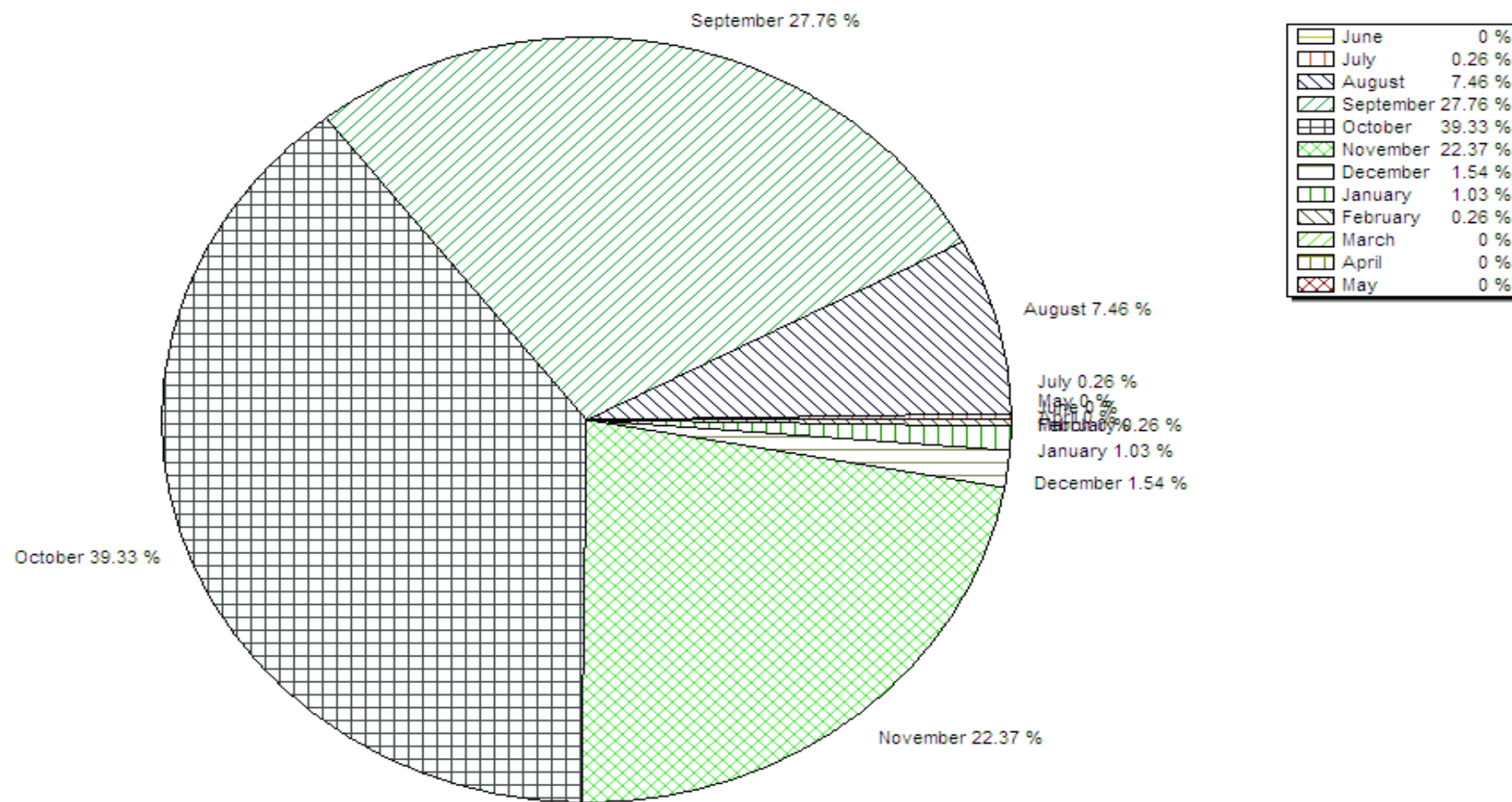
Monthly Runoff for the Year : 2019-2020

Station Name : Malkhed (AKP10E1)

Local River : Kagna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



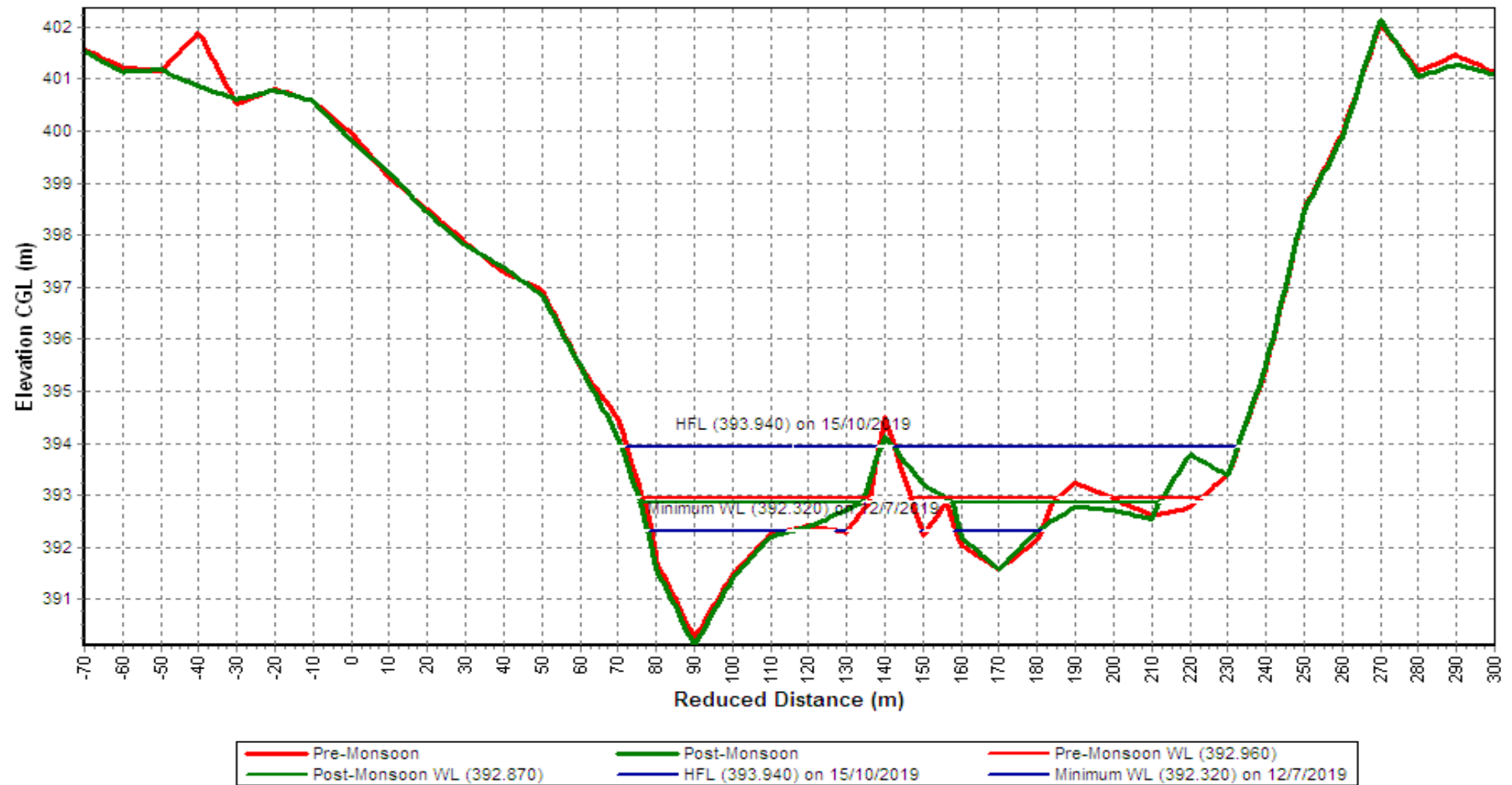
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Malkhed (AKP10E1)

Local River : Kagna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



Cross Section Difference Due to High Flood

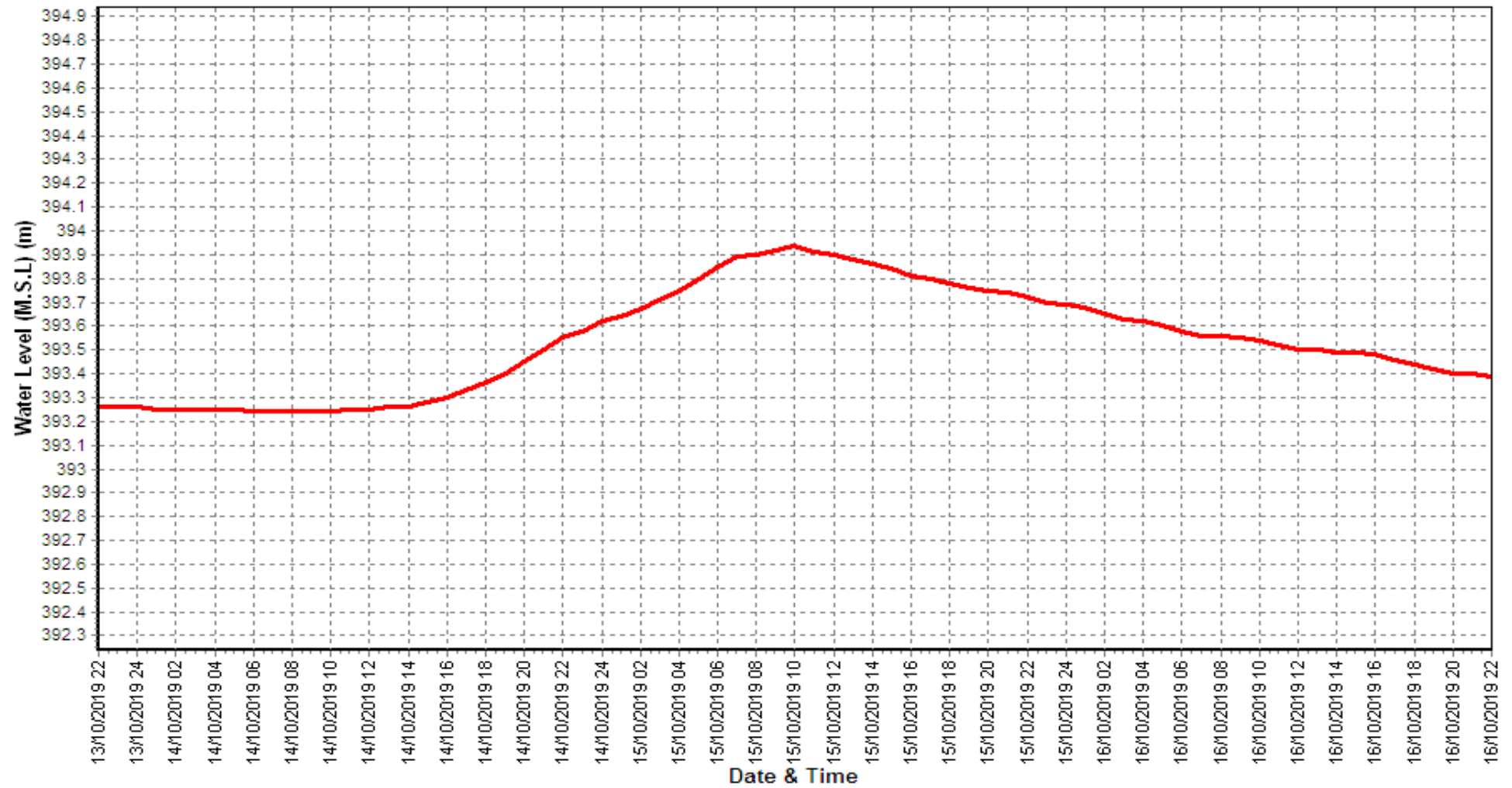
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Malkhed (AKP10E1)

Local River : Kagna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



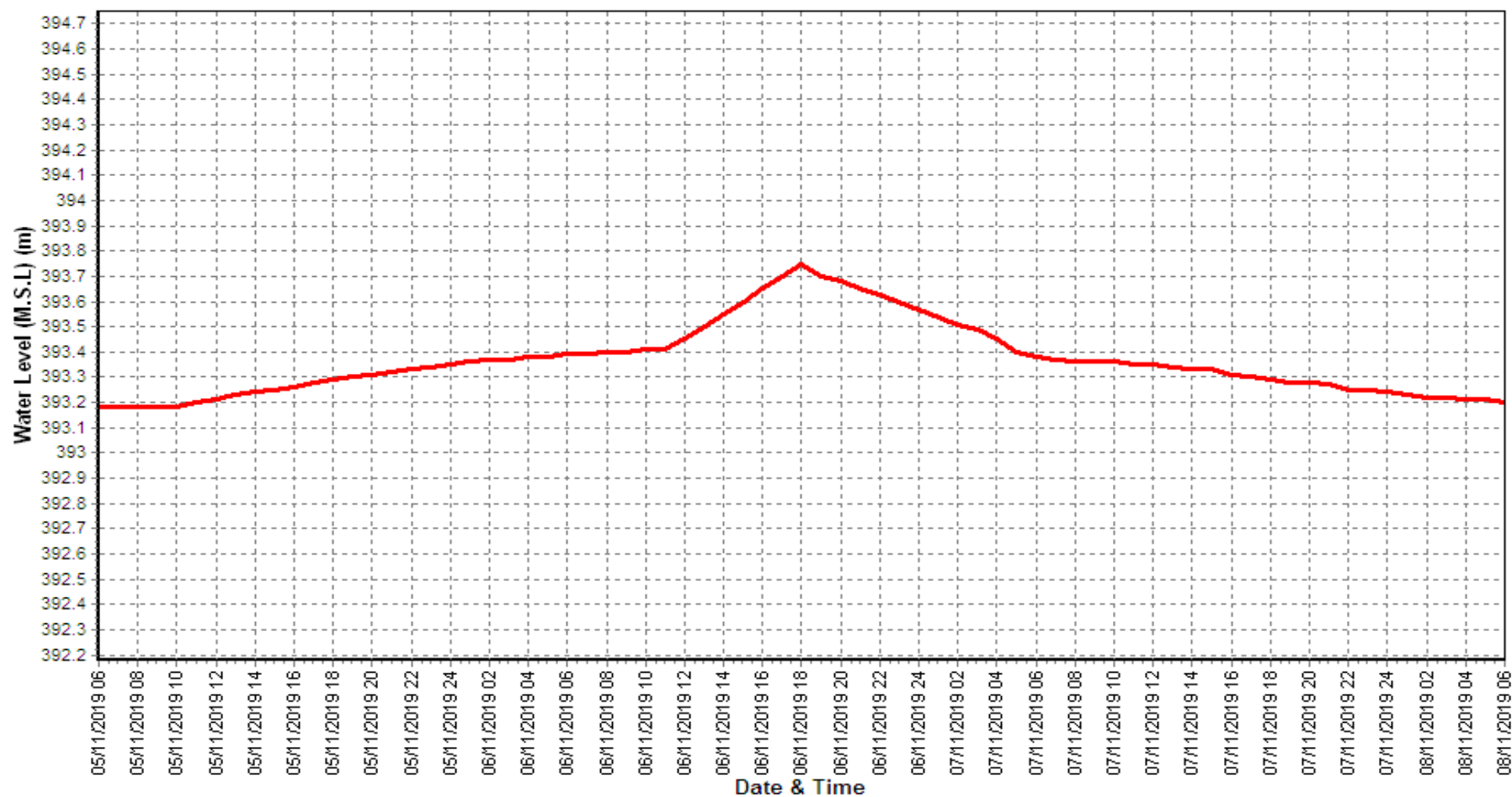
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Malkhed (AKP10E1)

Local River : Kagna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



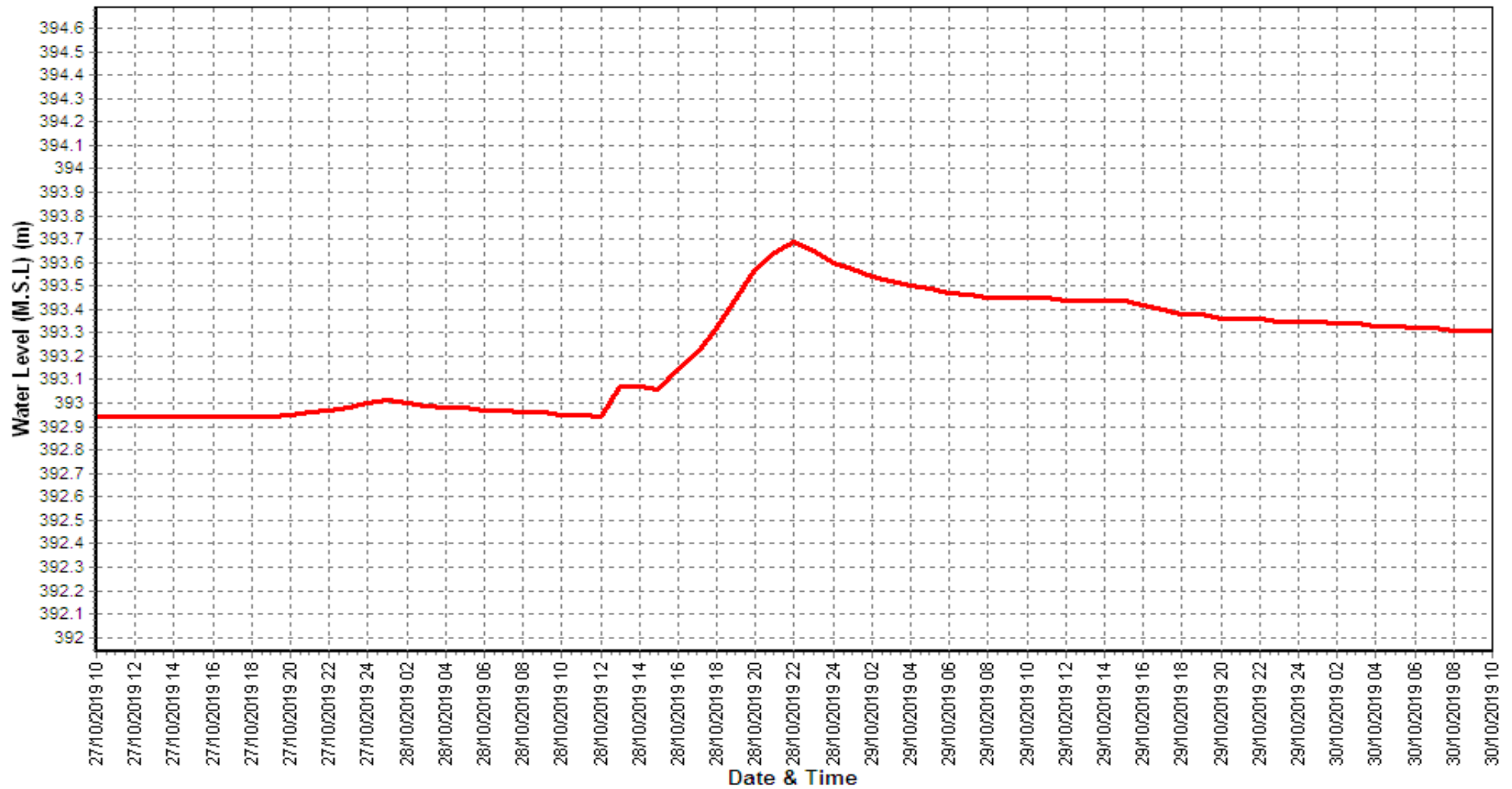
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Malkhed (AKP10E1)

Local River : Kagna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 . Kurnool



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Wadakbal	Code	: AKP60C4
State	: Maharashtra	District	Sholapur
Basin	: Krishna	Independent River	: Krishna
Tributary	: Bhima	Sub Tributary	: Sina
Sub-Sub Tributary	: -	Local River	: Sina
Division	: Upper Krishna Divn, Pune	Sub-Division	: LBSD, Sholapur
Drainage Area	: 12092 Sq. Km.	Bank	: Right
Latitude	: 17°32'03"	Longitude	: 75°53'06"
Zero of Gauge (m)	418.883 (m.s.l) 418.383 (m.s.l) 416.883 (m.s.l) 417 (m.s.l)	19/07/1963 01/11/1966 01/06/1969 01/06/2011	- 31/10/1966 - 31/05/1969 - 31/05/2011
	Opening Date	Closing Date	
Gauge	: 19/07/1963	HFL During 2019-20	: 423.800 m
		Corres. Discharge	: 528 (Estimated)
Discharge	: 06/08/1964	Date & Time of occurrence	: 22/10/2019 : 03:00 Hrs
Sediment	: 01/06/1965	31/05/2006	
Water Quality	: 01/09/1972	31/05/2006	

HFL Recorded so far in m : 428.563 dt 29-09-1989

Corresponding Discharge (cumecs) : 3271 observed

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	1480	425.303	05/05/1966	0.040	418.898	27/03/1966
1966-1967	2025	426.693	15/11/1966	0.030	418.933	19/05/1967
1967-1968	1733	425.793	28/09/1967	0.000	418.848	13/06/1967
1968-1969	762.3	423.603	02/10/1968	0.000		30/04/1969
1969-1970	2488	426.783	05/09/1969	0.000	418.508	02/06/1969
1970-1971	3070	427.753	19/09/1970	0.100	418.728	03/05/1971
1971-1972	1495	425.603	26/09/1971	0.000	418.803	13/05/1972
1972-1973	201.2	421.263	08/09/1972	0.000		03/02/1973
1973-1974	934.7	424.141	20/09/1973	0.000	418.888	08/05/1974
1974-1975	731.1	423.573	23/10/1974	0.000	418.873	06/05/1975
1975-1976	1330	425.343	10/10/1975	0.000	418.763	15/05/1976
1976-1977	359.5	422.176	26/08/1976	0.000	418.633	27/03/1977
1977-1978	882.1	424.435	24/11/1977	0.000	418.618	20/04/1978
1978-1979	1156	425.128	12/06/1978	0.000	418.473	30/04/1979

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1979-1980	1671	426.388	27/09/1979	0.000	418.543	01/07/1979
1980-1981	1051	424.938	22/08/1980	0.000	418.553	05/04/1981
1981-1982	912.9	424.718	22/09/1981	0.000	418.453	09/03/1982
1982-1983	209.7	421.720	23/09/1982	0.000	418.733	25/01/1983
1983-1984	2439	427.709	24/09/1983	0.000	418.673	15/04/1984
1984-1985	1169	425.977	10/10/1984	0.000	418.583	05/02/1985
1985-1986	562.0	423.611	06/10/1985	0.000		10/01/1986
1986-1987	539.2	423.298	23/09/1986	0.000	418.753	10/01/1987
1987-1988	591.5	423.791	19/10/1987	0.000	418.583	03/03/1988
1988-1989	1571	427.148	17/09/1988	0.000	418.663	28/01/1989
1989-1990	2746	428.538	29/09/1989	0.000	418.633	29/01/1990
1990-1991	821.7	424.946	17/08/1990	0.000		03/03/1991
1991-1992	570.6	423.210	09/06/1991	0.000	418.383	26/01/1992
1992-1993	142.1	421.007	03/09/1992	0.000		25/01/1993
1993-1994	558.8	423.854	15/10/1993	0.000	419.383	29/01/1994
1994-1995	20.00	419.963	16/10/1994	0.000	419.763	25/01/1995
1995-1996	321.8	422.508	14/09/1995	0.000	418.513	26/01/1996
1996-1997	631.0	424.653	13/09/1996	0.000	419.883	25/01/1997
1997-1998	325.2	422.508	28/10/1997	0.000	419.463	25/01/1998
1998-1999	2302	428.033	29/09/1998	0.000	419.083	15/02/1999
1999-2000	156.9	421.483	17/06/1999	0.000		24/11/1999
2000-2001	936.0	426.278	28/08/2000	0.000	418.643	23/01/2001
2001-2002	522.1	424.533	09/10/2001	0.000		25/01/2002
2002-2003	73.17	420.498	03/08/2002	0.000	418.723	24/01/2003
2003-2004	8.000	419.218	28/12/2003	0.000		27/01/2004
2004-2005	200.4	421.978	06/06/2004	0.000		25/01/2005
2005-2006	480.0	423.488	10/09/2005	0.000	419.313	22/01/2006
2006-2007	488.6	423.683	24/09/2006	0.000	418.763	21/01/2007
2007-2008	565.6	423.668	21/09/2007	0.000	418.783	16/01/2008
2008-2009	1159	426.543	15/09/2008	0.000		07/01/2009
2009-2010	381.3	422.933	05/10/2009	0.000		15/04/2010
2010-2011	1213	426.423	29/08/2010	0.000	419.763	01/05/2011
2011-2012	64.69	420.155	22/08/2011	0.000		19/01/2012
2012-2013	60.76	420.280	07/10/2012	0.000		14/06/2012
2013-2014	421.5	422.760	21/09/2013	0.000		01/02/2014
2014-2015	120.9	420.740	31/08/2014	0.000		03/07/2014
2015-2016	21.03	419.345	11/09/2015	0.000		13/11/2015
2016-2017	970.6	425.565	04/10/2016	0.000	418.540	23/01/2017
2017-2018	820.2	424.660	24/09/2017	0.000	418.830	15/11/2017
2018-2019	26.35	419.620	18/08/2018	0.000		20/05/2019

Annual Runoff of Sina at Wadakbal

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966	760	192	952	27	7	34
2	1966-1967	801	43	844	28	2	30
3	1967-1968	1347	126	1473	48	4	52
4	1968-1969	658	18	676	23	1	24
5	1969-1970	2378	55	2432	84	2	86
6	1970-1971	1844	54	1897	65	2	67
7	1971-1972	1333	26	1359	47	1	48
8	1972-1973	110	0	110	4	0	4
9	1973-1974	1411	43	1454	50	2	51
10	1974-1975	1255	51	1306	44	2	46
11	1975-1976	2060	99	2159	73	4	76
12	1976-1977	266	3	269	9	0	10
13	1977-1978	460	191	651	16	7	23
14	1978-1979	905	25	930	32	1	33
15	1979-1980	1179	168	1347	42	6	48
16	1980-1981	878	28	906	31	1	32
17	1981-1982	575	7	582	20	0	21
18	1982-1983	142	0	142	5	0	5
19	1983-1984	2646	34	2680	94	1	95
20	1984-1985	555	4	558	20	0	20
21	1985-1986	206	3	209	7	0	7
22	1986-1987	240	5	245	8	0	9
23	1987-1988	486	19	505	17	1	18
24	1988-1989	2416	2	2418	85	0	85
25	1989-1990	1936	46	1982	68	2	70
26	1990-1991	1826	7	1833	65	0	65
27	1991-1992	415	0	415	15	0	15
28	1992-1993	58	0	58	2	0	2
29	1993-1994	417	14	431	15	0	15
30	1994-1995	42	0	42	1	0	1
31	1995-1996	169	0	169	6	0	6
32	1996-1997	565	0	565	20	0	20

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	123	0	123	4	0	4
34	1998-1999	3691	5	3696	130	0	131
35	1999-2000	199	16	215	7	1	8
36	2000-2001	743	6	749	26	0	26
37	2001-2002	188	0	188	7	0	7
38	2002-2003	15	3	18	1	0	1
39	2003-2004	1	2	3	0	0	0
40	2004-2005	193	0	193	7	0	7
41	2005-2006	311	5	316	11	0	11
42	2006-2007	868	4	872	31	0	31
43	2007-2008	550	18	568	19	1	20
44	2008-2009	686	95	781	24	3	28
45	2009-2010	344	189	534	12	7	19
46	2010-2011	2035	101	2136	72	4	75
47	2011-2012	112	2	115	4	0	4
48	2012-2013	17	1	18	1	0	1
49	2013-2014	222	3	225	8	0	8
50	2014-2015	100	7	108	4	0	4
51	2015-2016	3	0	3	0	0	0
52	2016-2017	440	5	445	16	0	16
53	2017-2018	985	4	989	35	0	35
54	2018-2019	16	4	21	1	0	1
55	2019-2020	218	5	223	8	0	8
Average		771	32	802	27	1	28
75% Dependable flow (MCM)				188			
90 % Dependable flow (MCM)				34			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Wadakbal (AKP60C4)

Division : Upper Krishna Divn, Pune

Local River : Sina

Sub-Division : LBSD, Sholapur

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000	419.000	5.763 *	419.850	23.91 #	419.980	29.25
2		0.000		0.000		0.000	419.130	8.055 *	419.745	22.34	420.250	39.27
3		0.000		0.000		0.000	419.450	13.88	419.715	19.76	419.950	28.34 *
4		0.000		0.000		0.000	419.470	14.24	420.205	38.83	419.800	22.86
5		0.000		0.000		0.000	419.600	16.83	420.030	30.34	419.945	28.16
6		0.000		0.000		0.000	419.590	16.13	419.870	24.76 *	420.000	31.28
7		0.000		0.000		0.000	419.355	10.72	419.790	23.59	420.010	30.26
8		0.000		0.000		0.000	419.090	7.301 *	419.975	29.51 #	419.970	28.86
9		0.000		0.000	418.580	0.000	419.000	4.552	419.865	26.36	419.860	25.38
10		0.000		0.000	418.720	0.000	419.220	9.910 *	420.210	39.02	419.730	19.10 *
11		0.000		0.000	418.610	0.000	419.270	0.000	420.340	47.69	419.810	23.19
12		0.000		0.000	418.560	0.000	419.290	0.000	419.975	28.28	419.810	22.24 *
13		0.000		0.000	418.550	0.000	419.270	0.000	419.970	29.28 *	419.650	16.14
14		0.000		0.000	418.530	0.000	419.180	0.000	420.275	40.77	419.600	14.95
15		0.000		0.000	418.520	0.000	418.960	0.000	420.220	39.62	419.460	0.000
16		0.000		0.000	418.510	0.000	418.760	0.000	420.055	32.37	419.590	0.000
17		0.000		0.000	418.845	3.122	418.660	0.000	419.675	17.41	419.930	0.000
18		0.000		0.000	418.780	0.000	418.640	0.000	419.460	11.35	419.970	0.000
19		0.000		0.000	418.690	0.000	418.640	0.000	419.940	27.55	419.980	0.000
20		0.000		0.000	418.540	0.000	418.820	0.000	421.880	178.7	419.980	0.000
21		0.000		0.000	418.510	0.000	420.130	34.40	421.260	114.4	419.950	0.000
22		0.000		0.000	418.490	0.000	419.790	23.29 *	423.365	424.0	419.870	0.000
23		0.000		0.000	418.470	0.000	419.775	22.77	420.355	45.76	419.850	0.000
24		0.000		0.000	418.450	0.000	419.910	26.70	420.500	55.50	419.850	0.000
25		0.000		0.000	418.440	0.000	420.695	63.12	420.370	48.39	419.830	0.000
26		0.000		0.000	418.430	0.000	420.780	72.31	420.305	42.78	419.820	0.000
27		0.000		0.000	418.745	2.781	420.385	49.60	420.160	38.93 *	419.800	0.000
28		0.000		0.000	419.195	8.913	420.025	33.80	419.995	27.12	419.780	0.000
29		0.000		0.000	419.530	14.38	420.030	34.78 *	420.080	32.25	419.740	0.000
30		0.000		0.000	419.540	15.23	419.980	30.38	419.940	26.43	419.550	0.000
31				0.000	418.950	4.496			420.105	34.10		
Ten-Daily Mean												
I Ten-Daily		0.000		0.000	418.650	0.000	419.291	10.74	419.926	27.84	419.950	28.28
II Ten-Daily		0.000		0.000	418.613	0.312	418.949	0.000	420.179	45.30	419.778	7.653
III Ten-Daily		0.000		0.000	418.795	4.164	420.150	39.11	420.585	80.88	419.804	0.000
Monthly												
Min.		0.000		0.000	418.430	0.000	418.640	0.000	419.460	11.35	419.460	0.000
Max.		0.000		0.000	419.540	15.23	420.780	72.31	423.365	424.0	420.250	39.27
Mean		0		0	418.704	1.578	419.463	16.62	420.241	52.3	419.844	11.98

Annual Runoff in MCM = 224 Annual Runoff in mm = 19

Peak Observed Discharge = 424.0 cumecs on 22/10/2019 Corres. Water Level :423.365 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Wadakbal (AKP60C4)

Division : Upper Krishna Divn, Pune

Local River : Sina

Sub-Division : LBSD, Sholapur

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	419.390	0.000	418.520	0.000	418.780	0.000	418.470	0.000	Not observed Due to Lock-Down			0.000
2	419.150	0.000	418.520	0.000	418.670	0.000	418.470	0.000				0.000
3	419.070	0.000	418.520	0.000	418.590	0.000	418.460	0.000				0.000
4	418.960	0.000	418.520	0.000	418.590	0.000	418.460	0.000				0.000
5	418.900	0.000	418.510	0.000	418.580	0.000	418.450	0.000				0.000
6	418.860	0.000	418.620	0.000	418.570	0.000	418.440	0.000				0.000
7	418.810	0.000	418.620	0.000	418.560	0.000	418.430	0.000				0.000
8	418.730	0.000	418.630	0.000	418.560	0.000	418.420	0.000				0.000
9	418.680	0.000	418.630	0.000	418.560	0.000	418.410	0.000				0.000
10	418.670	0.000	418.620	0.000	418.560	0.000	418.410	0.000				0.000
11	418.650	0.000	418.620	0.000	418.550	0.000		0.000				0.000
12	418.620	0.000	418.610	0.000	418.530	0.000		0.000				0.000
13	418.610	0.000	418.610	0.000	418.520	0.000		0.000				0.000
14	418.600	0.000	418.610	0.000	418.520	0.000		0.000				0.000
15	418.600	0.000	418.590	0.000	418.510	0.000		0.000				0.000
16	418.600	0.000	418.590	0.000	418.510	0.000		0.000				0.000
17	418.590	0.000	418.580	0.000	418.510	0.000		0.000				0.000
18	418.580	0.000	418.580	0.000	418.510	0.000		0.000				0.000
19	418.580	0.000	418.580	0.000	418.500	0.000		0.000				0.000
20	418.570	0.000	418.580	0.000	418.500	0.000		0.000	418.530	0.000		0.000
21	418.560	0.000	419.380	15.85	418.500	0.000		0.000	418.520	0.000		0.000
22	418.560	0.000	419.460	10.31 *	418.500	0.000		0.000	418.520	0.000		0.000
23	418.560	0.000	419.840	23.49 *	418.490	0.000		0.000	418.520	0.000		0.000
24	418.550	0.000	419.520	12.02 *	418.490	0.000		0.000	418.510	0.000		0.000
25	418.550	0.000	419.440	0.000	418.480	0.000		0.000	418.500	0.000		0.000
26	418.550	0.000	419.390	0.000	418.480	0.000	Not observed Due to Lock-Down			0.000		0.000
27	418.540	0.000	419.350	0.000	418.480	0.000				0.000		0.000
28	418.530	0.000	419.280	0.000	418.470	0.000				0.000		0.000
29	418.530	0.000	419.150	0.000	418.470	0.000				0.000		0.000
30	418.530	0.000	419.020	0.000						0.000		0.000
31	418.530	0.000	418.980	0.000								0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	418.922	0.000	418.571	0.000	418.602	0.000	418.442	0.000				0.000
II Ten-Daily	418.600	0.000	418.595	0.000	418.516	0.000		0.000	418.530	0.000		0.000
III Ten-Daily	418.545	0.000	419.346	5.606	418.484	0.000		0.000	418.514	0.000		0.000
<u>Monthly</u>												
Min.	418.530	0.000	418.510	0.000	418.470	0.000	418.410	0.000	418.500	0.000		0.000
Max.	419.390	0.000	419.840	23.49	418.780	0.000	418.470	0.000	418.530	0.000		0.000
Mean	418.684	0	418.854	1.989	418.536	0	418.442	0	418.517	0		0

Peak Computed Discharge = 38.93 cumecs on 27/10/2019

Corres. Water Level :420.16 m

Lowest Computed Discharge = 5.763 cumecs on 01/09/2019

Corres. Water Level :419 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

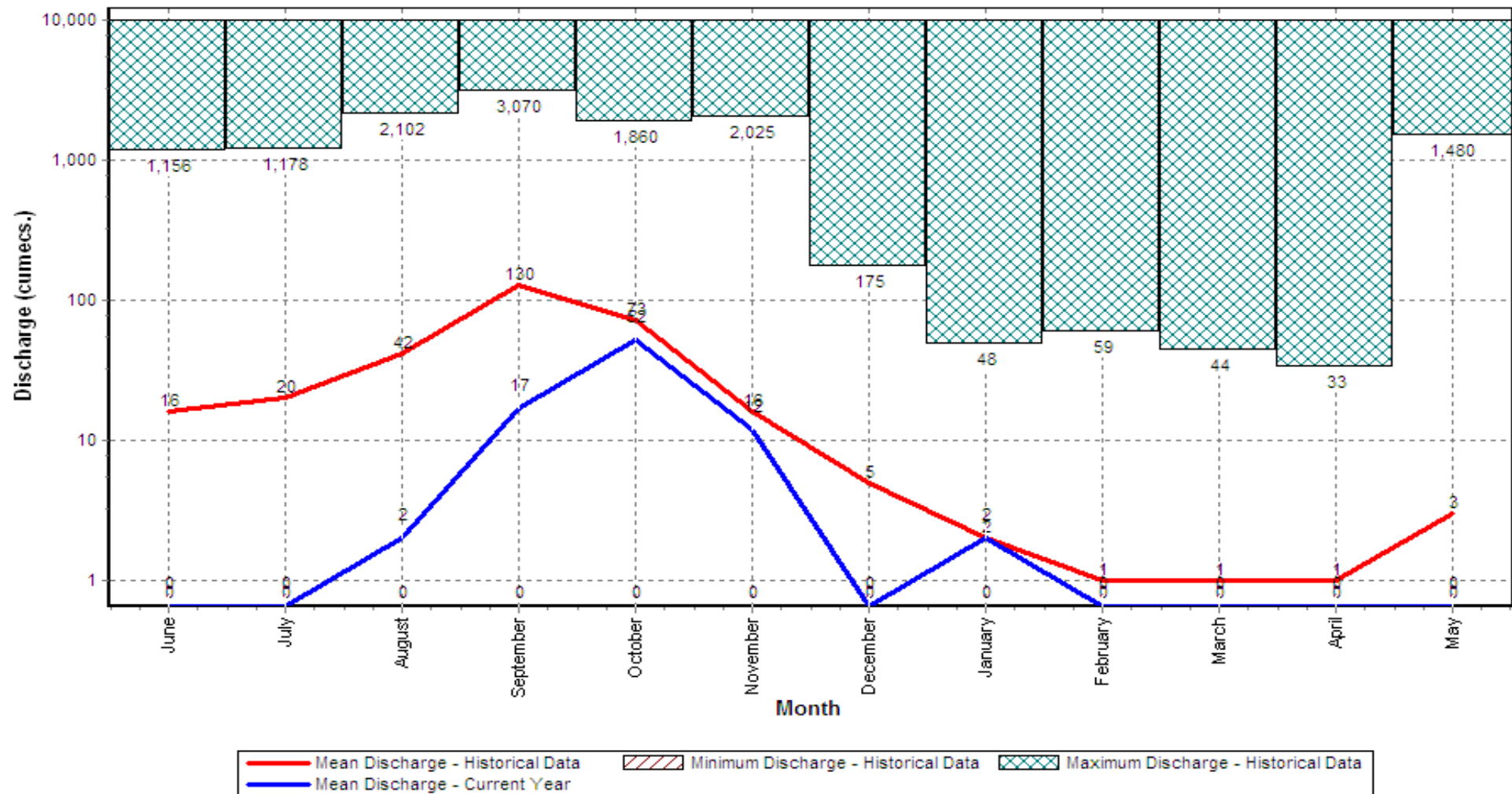
Station Name : Wadakbal (AKP60C4)

Data considered : 1965-2020

Division : Upper Krishna Divn, Pune

Local River : Sina

Sub-Division : LBSD, Sholapur



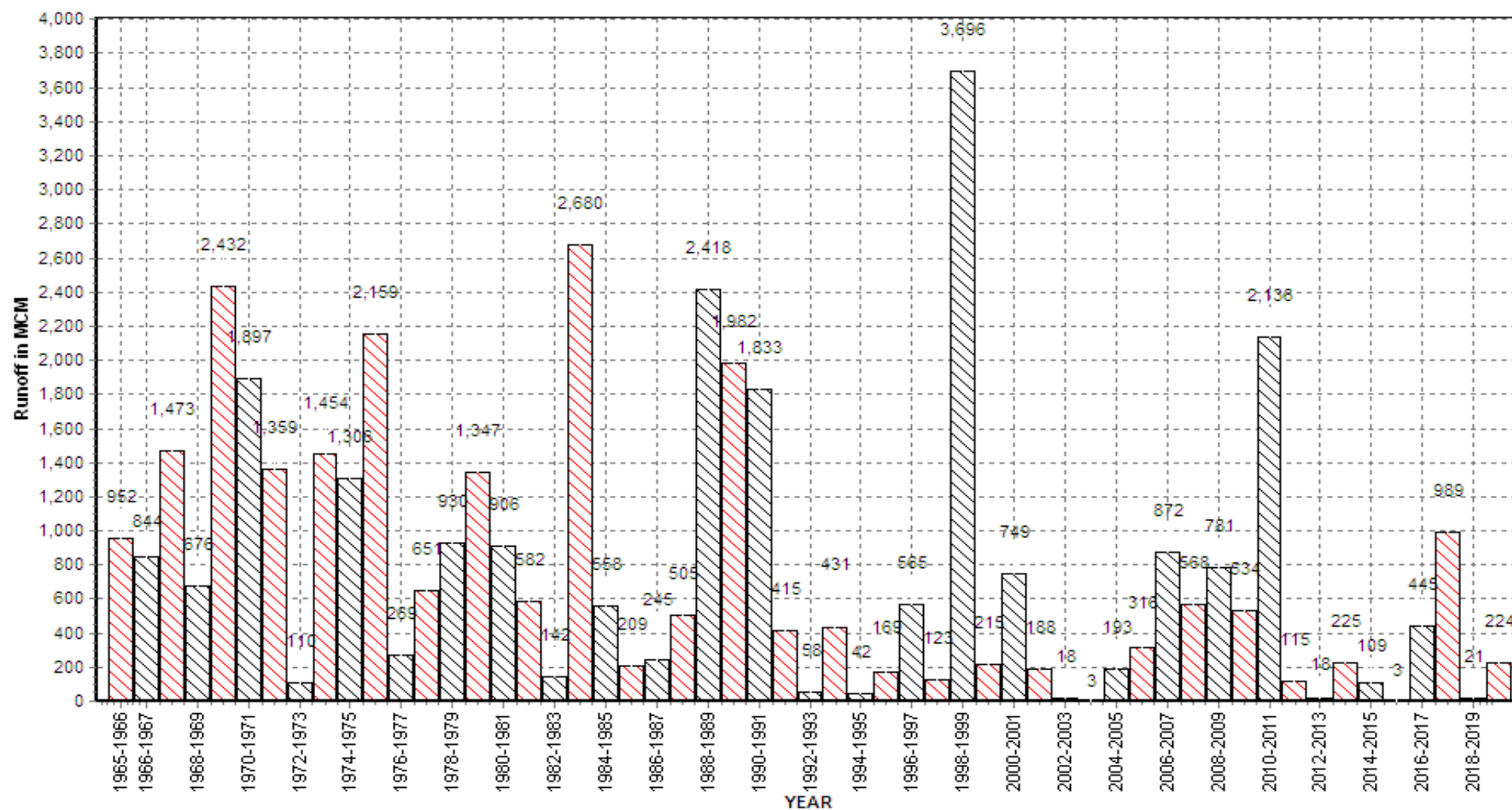
Annual Runoff Values for the period: 1965 - 2020

Station Name : Wadakbal (AKP60C4)

Local River : Sina

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



Note: Missing values have not been considered while arriving at Annual Runoff

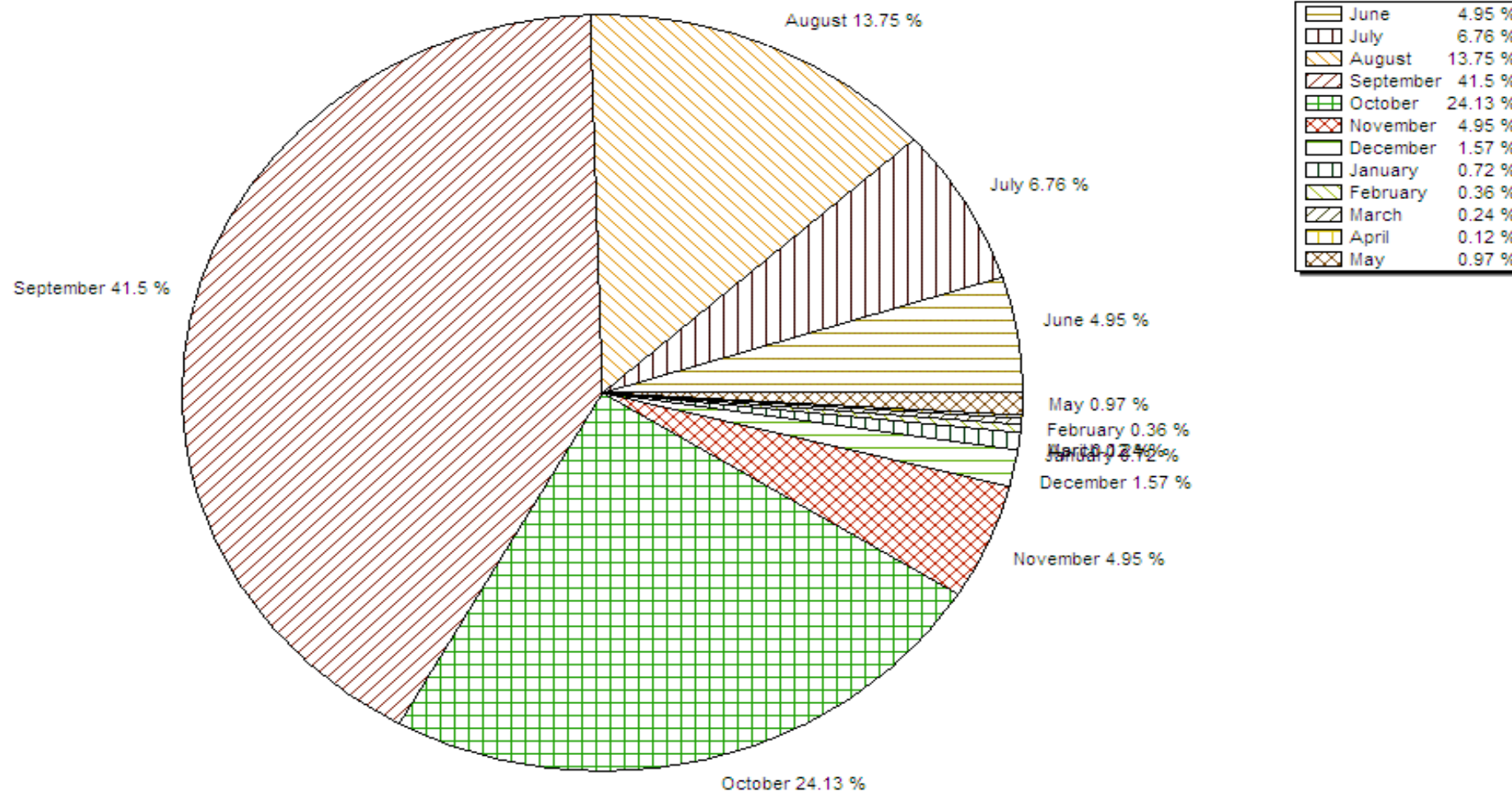
Monthly Average Runoff based on period : 1965-2019

Station Name : Wadakbal (AKP60C4)

Local River : Sina

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



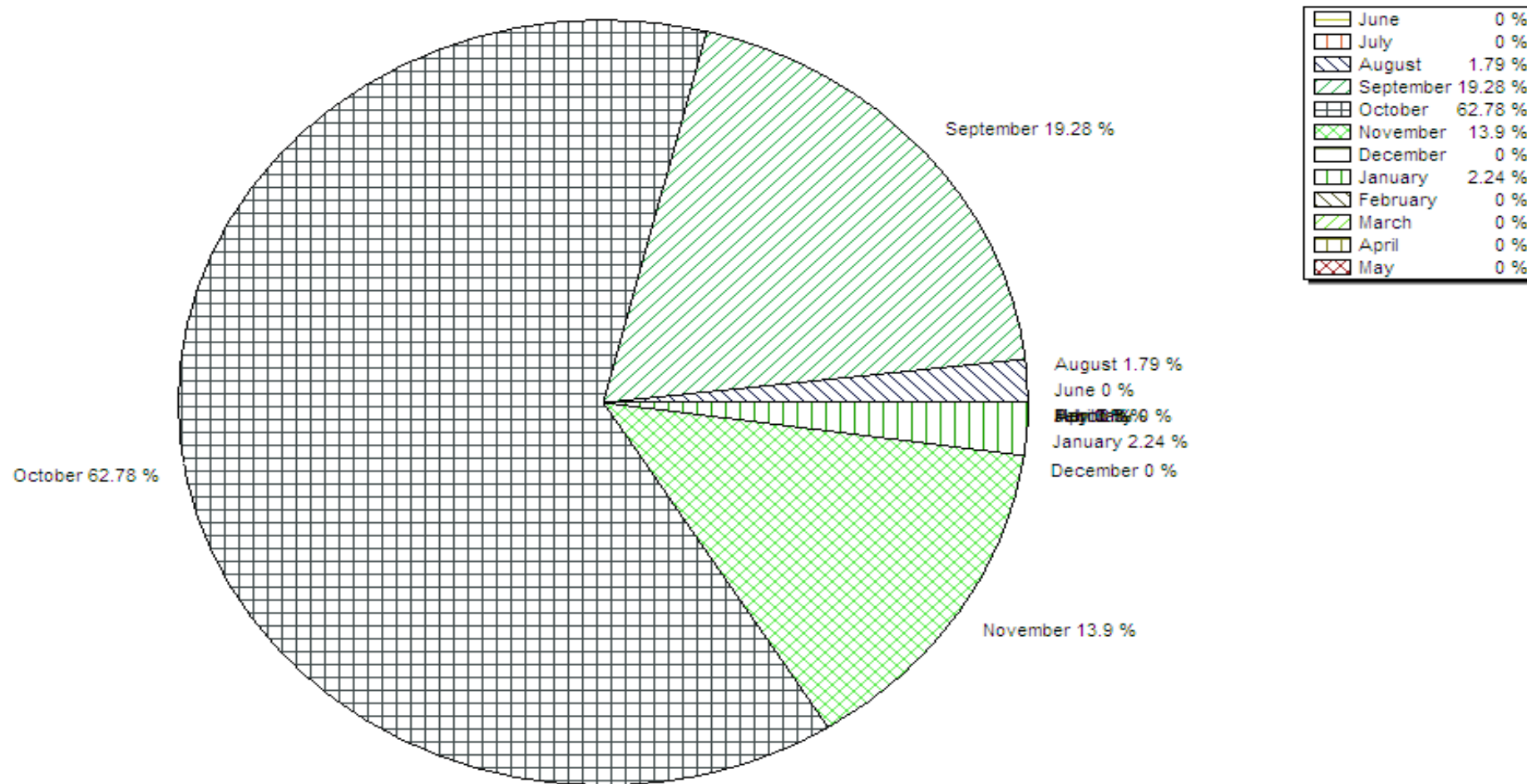
Monthly Runoff for the Year : 2019-2020

Station Name : Wadakbal (AKP60C4)

Local River : Sina

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



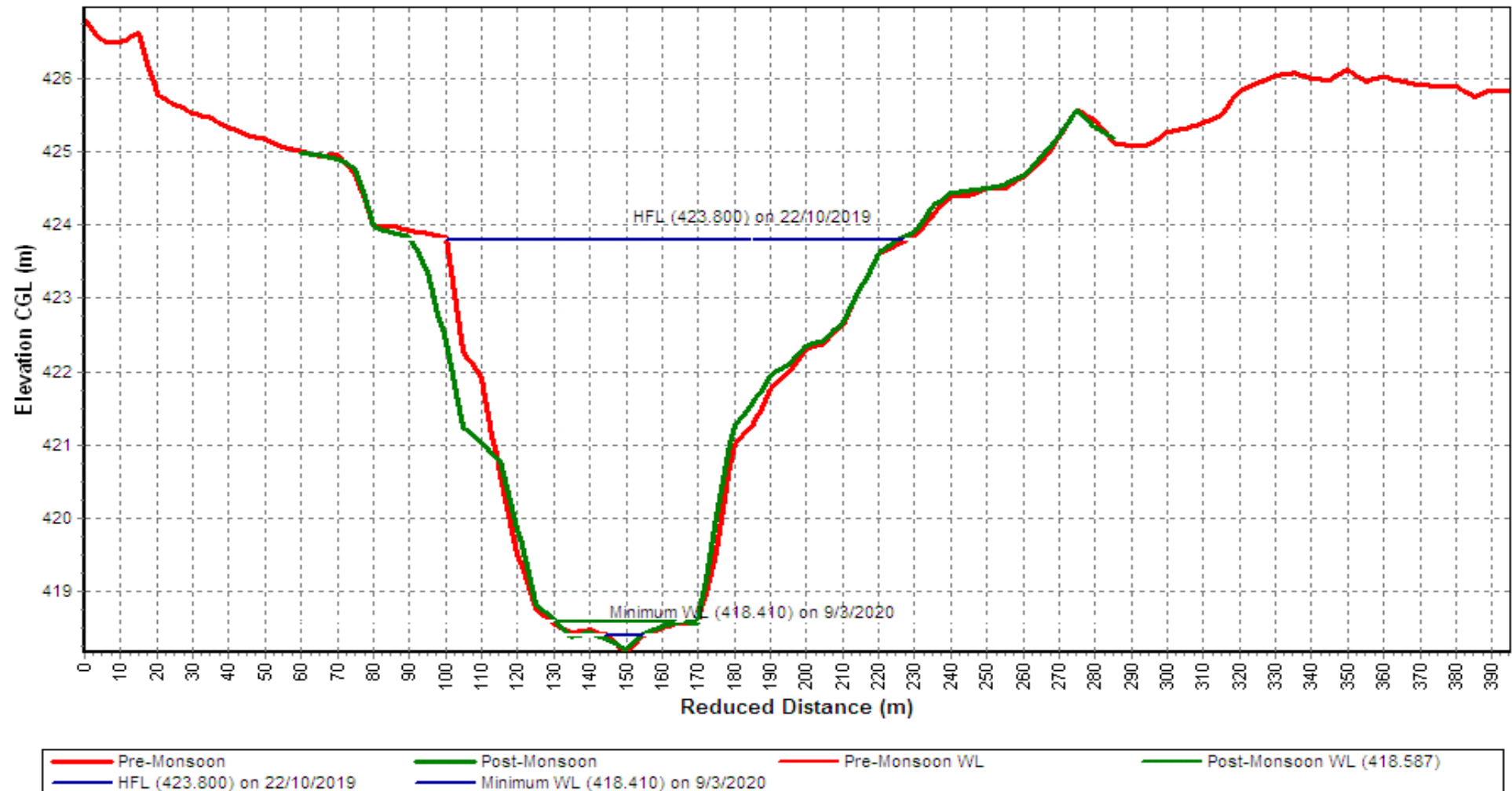
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Wadakbal (AKP60C4)

Local River : Sina

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



Cross Section Difference Due to High Flood

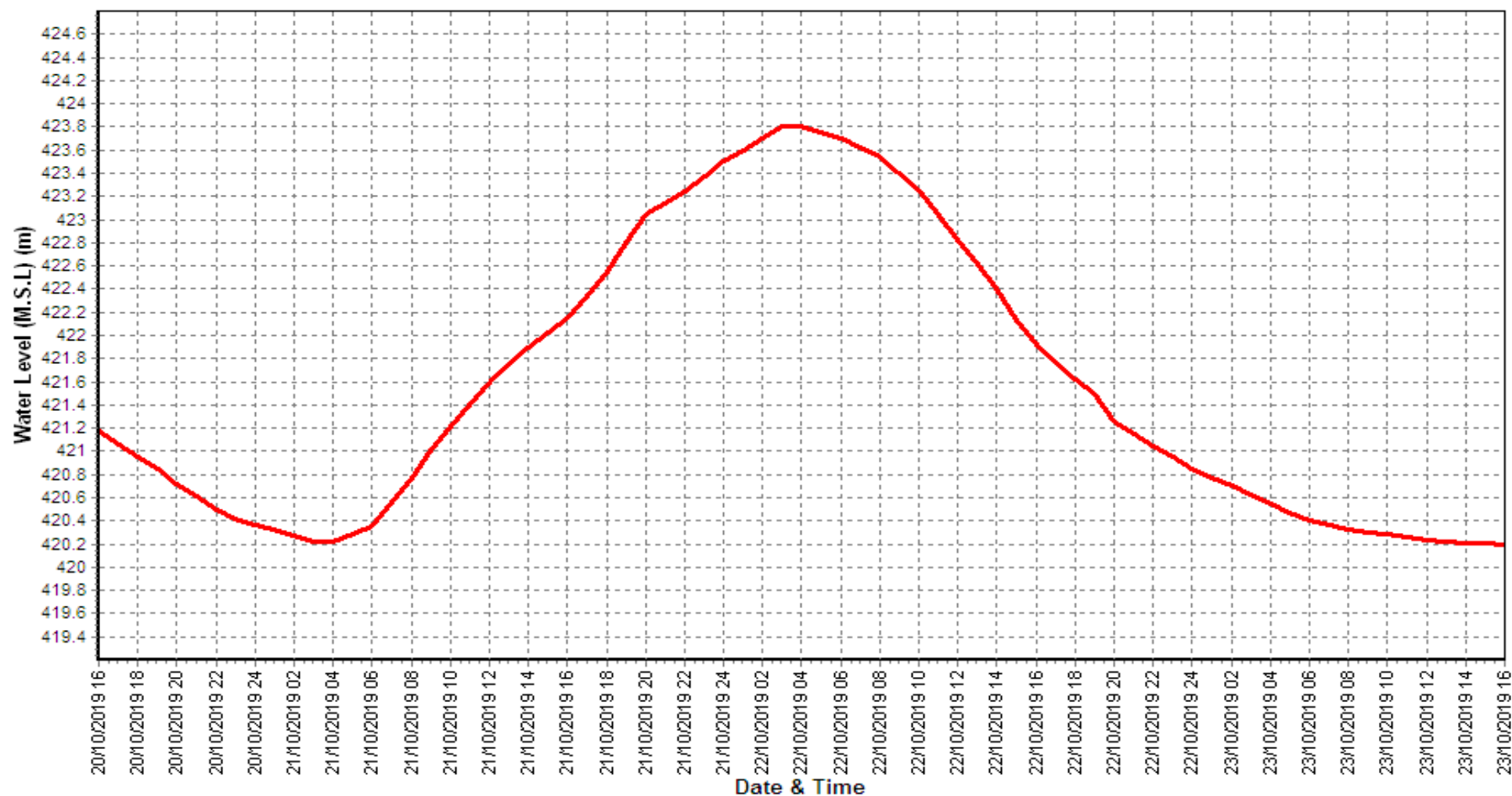
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Wadakbal (AKP60C4)

Local River : Sina

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



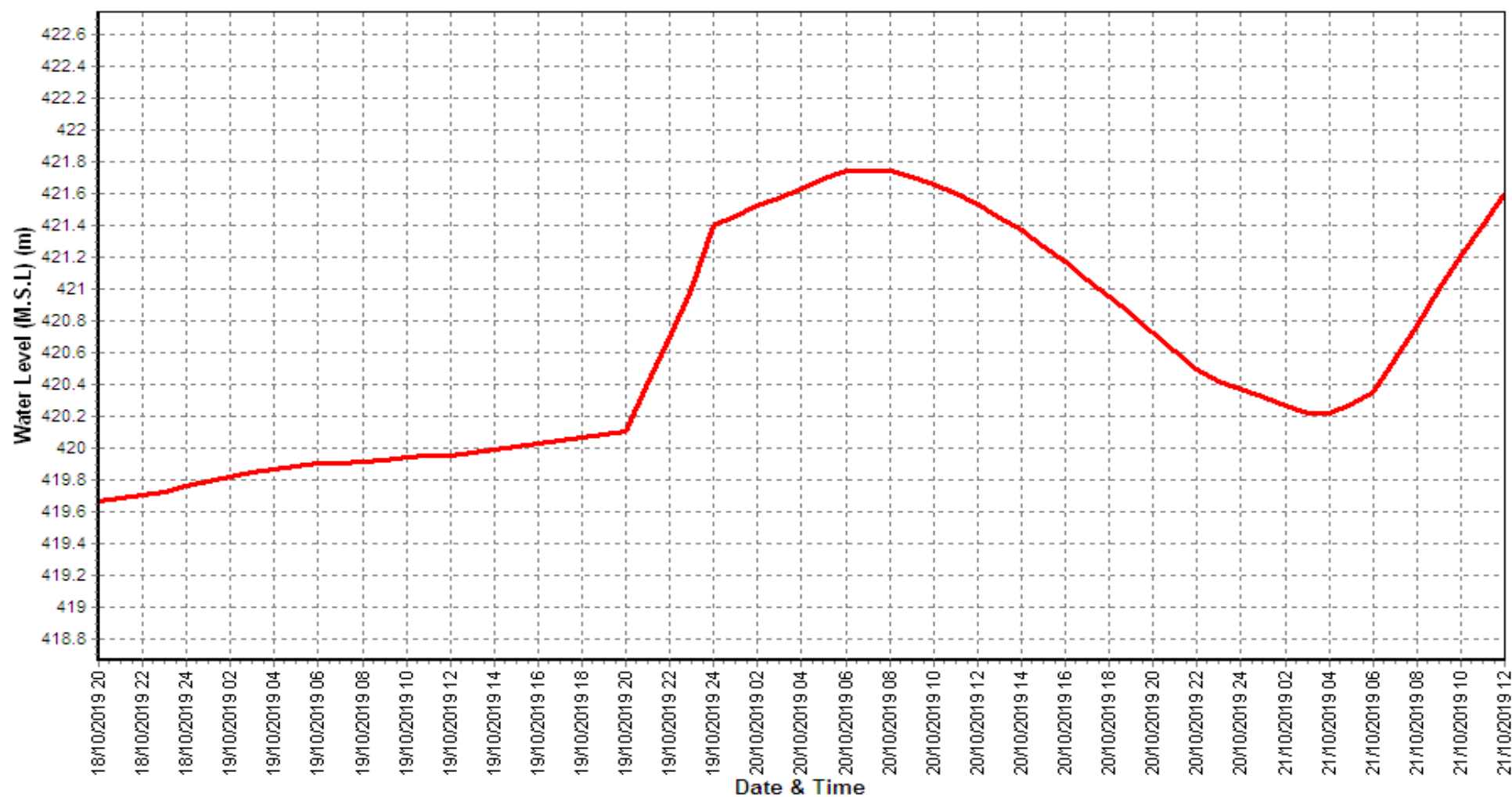
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Wadakbal (AKP60C4)

Local River : Sina

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



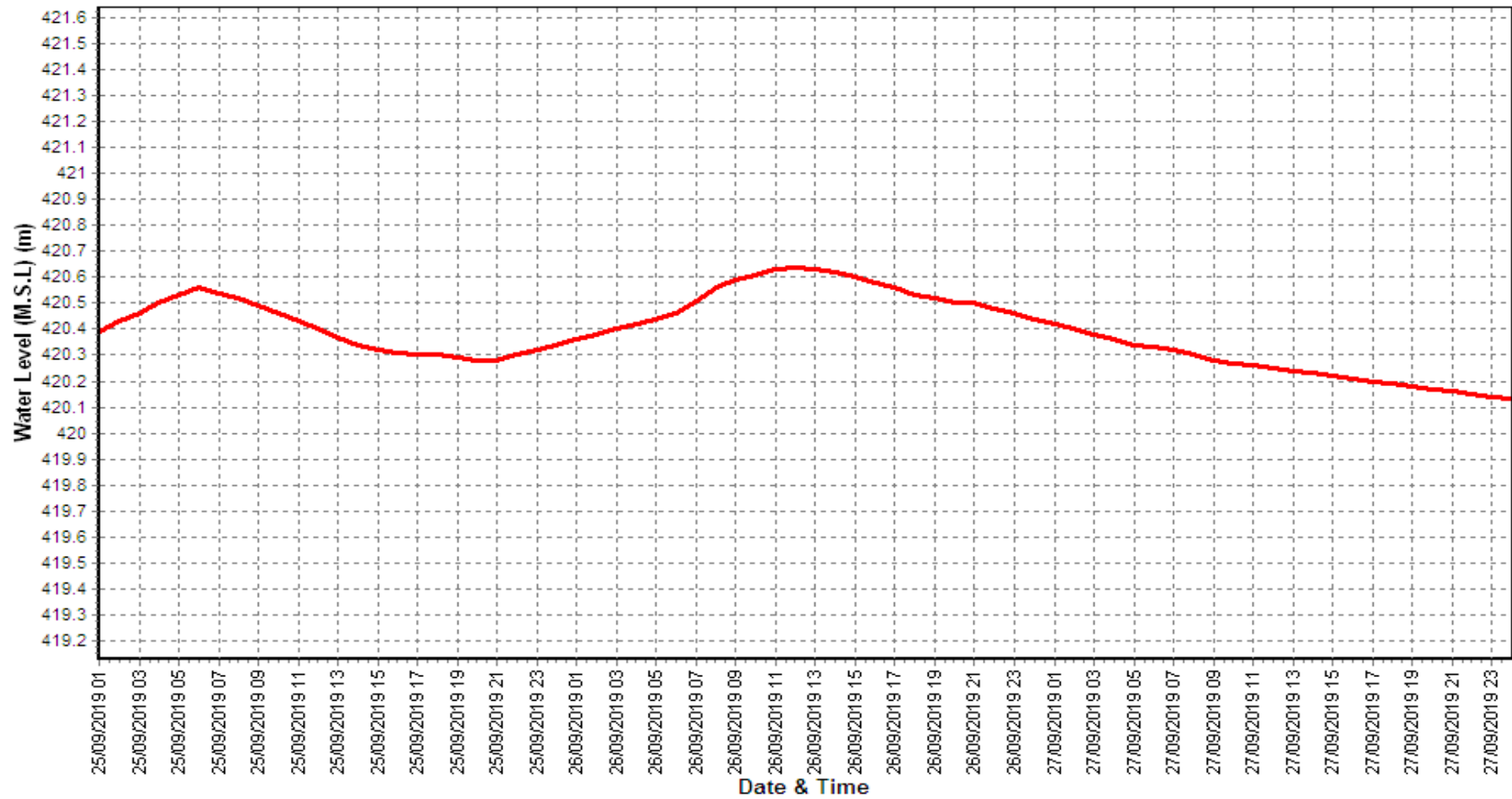
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Wadakbal (AKP60C4)

Local River : Sina

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



HISTORY SHEET

Water Year : 2019-2020

Site : Takli

Code : AKP00K4

State : Maharashtra

District : Sholapur

Basin : Krishna

Independent River : Krishna

Tributary : Bhima

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur

Drainage Area : 33916 Sq. Km.

Bank : Left

Latitude : 17°24'51"

Longitude : 75°50'52"

Zero of Gauge (m) : 410.778 (m.s.l)
409.278 (m.s.l)
408 (m.s.l)20/07/1963 - 24/06/1969
25/06/1969 - 31/05/2011
01/06/2011

Opening Date

Closing Date

Gauge : 14/07/1965

HFL During 2019-20 : 421.570 m
Corres. Discharge : 6015 (Estimated)

Discharge : 01/06/1965

Date & Time of occurrence : 09/08/2019
: 10:00 Hrs

Sediment : 01/12/1966

Water Quality : 01/09/1972

HFL Recorded so far in m : 423.718 dt 12-08-2006

Corresponding Discharge (cumecs) : 7662 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	4240	420.038	02/08/1965	0.400	411.223	02/05/1966
1966-1967	3898	418.868	01/08/1966	0.600	411.048	25/04/1967
1967-1968	8333	422.753	31/07/1967	0.700	411.183	24/05/1968
1968-1969	2480	417.869	09/08/1968	0.000	411.953	21/05/1969
1969-1970	5511	421.123	04/08/1969	0.100	411.163	05/05/1970
1970-1971	2244	416.738	20/09/1970	0.000		01/05/1971
1971-1972	4357	419.588	02/09/1971	0.000		04/05/1972
1972-1973	3351	418.808	11/07/1972	0.000	410.913	27/03/1973
1973-1974	3655	418.593	11/07/1973	0.000	411.133	31/03/1974
1974-1975	3030	418.013	24/09/1974	6.000	411.053	29/04/1975
1975-1976	4150	418.773	17/08/1975	0.000	410.408	19/05/1976
1976-1977	8296	422.094	05/08/1976	0.000	412.026	18/04/1977
1977-1978	1943	416.621	31/07/1977	1.300	411.028	05/04/1978
1978-1979	2164	417.273	04/09/1978	0.000	410.108	24/04/1979
1979-1980	8700	422.843	27/09/1979	0.000	411.125	31/05/1980
1980-1981	3285	419.032	06/08/1980	0.000	411.658	07/04/1981

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1981-1982	4960	420.483	12/07/1981	0.000	411.718	02/04/1982
1982-1983	2036	416.975	25/08/1982	0.000	411.308	21/04/1983
1983-1984	6691	421.942	19/08/1983	2.200	411.113	15/06/1983
1984-1985	2910	418.323	22/07/1984	0.000	411.508	06/06/1984
1985-1986	2373	417.488	05/08/1985	0.000	411.333	26/01/1986
1986-1987	2740	417.443	12/08/1986	0.000	411.403	05/01/1987
1987-1988	821.4	414.296	19/10/1987	0.000	411.428	22/03/1988
1988-1989	4005	420.358	19/09/1988	0.000	411.978	14/03/1989
1989-1990	4887	420.318	29/09/1989	0.000	411.728	08/04/1990
1990-1991	3934	419.588	19/08/1990	0.000	411.878	01/04/1991
1991-1992	4261	419.723	30/07/1991	0.000	411.291	20/10/1991
1992-1993	1624	416.201	08/09/1992	0.000	411.308	05/02/1993
1993-1994	2344	417.617	19/10/1993	0.000	411.608	10/04/1994
1994-1995	7698	422.453	18/07/1994	0.000	411.068	25/01/1995
1995-1996	232.7	412.418	01/07/1995	0.000	411.203	26/01/1996
1996-1997	5211	420.393	06/10/1996	0.000	411.318	20/02/1997
1997-1998	8120	423.293	28/08/1997	0.000	411.643	22/03/1998
1998-1999	5458	420.738	14/10/1998	0.000	411.538	30/03/1999
1999-2000	1050	414.558	01/08/1999	0.000	410.898	03/03/2000
2000-2001	148.6	412.238	30/09/2000	0.000		22/01/2001
2001-2002	1412	415.098	08/10/2001	0.000		25/01/2002
2002-2003	188.9	412.698	19/10/2002	0.000	409.878	16/01/2003
2003-2004	23.78	411.178	12/07/2003	0.000	411.473	26/01/2004
2004-2005	1054	414.563	15/08/2004	0.000	410.938	25/01/2005
2005-2006	7103	419.428	30/07/2005	0.000	410.873	25/01/2006
2006-2007	7672	423.653	12/08/2006	0.000	414.328	25/01/2007
2007-2008	2303	417.313	21/09/2007	0.000	412.978	26/01/2008
2008-2009	2412	417.878	22/09/2008	0.000	414.038	25/01/2009
2009-2010	3669	419.693	04/10/2009	0.000	413.798	25/01/2010
2010-2011	1375	415.188	07/10/2010	0.000	413.658	25/01/2011
2011-2012	4219	419.275	06/09/2011	0.000	411.885	24/02/2012
2012-2013	0.000	413.070	05/04/2013	0.000	411.220	07/06/2012
2013-2014	3399	418.570	21/09/2013	0.000	412.870	27/12/2013
2014-2015	1084	415.160	08/09/2014	0.000	410.430	05/01/2015
2015-2016	0.000	412.845	05/06/2015	0.000	411.325	26/09/2015
2016-2017	927.6	414.975	08/08/2016	0.000	412.980	25/01/2017
2017-2018	2076	417.545	16/09/2017	0.000	410.040	25/01/2018
2018-2019	872.2	415.005	29/08/2018	0.000	414.710	25/01/2019

Annual Runoff of Bhima at Takli

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966	6577	471	7048	232	17	249
2	1966-1967	5009	158	5167	177	6	183
3	1967-1968	8733	404	9137	309	14	323
4	1968-1969	5225	141	5366	185	5	190
5	1969-1970	10442	182	10624	369	6	375
6	1970-1971	7040	228	7269	249	8	257
7	1971-1972	7974	145	8120	282	5	287
8	1972-1973	2719	17	2736	96	1	97
9	1973-1974	8591	237	8828	304	8	312
10	1974-1975	7258	370	7628	256	13	270
11	1975-1976	10813	341	11154	382	12	394
12	1976-1977	11016	236	11252	389	8	398
13	1977-1978	4893	719	5611	173	25	198
14	1978-1979	6029	231	6259	213	8	221
15	1979-1980	8500	539	9040	300	19	319
16	1980-1981	6598	125	6723	233	4	238
17	1981-1982	8997	217	9214	318	8	326
18	1982-1983	2552	85	2636	90	3	93
19	1983-1984	7267	229	7496	257	8	265
20	1984-1985	5189	229	5418	183	8	191
21	1985-1986	2819	6	2824	100	0	100
22	1986-1987	2830	21	2850	100	1	101
23	1987-1988	1003	115	1118	35	4	39
24	1988-1989	7118	69	7188	252	2	254
25	1989-1990	5009	93	5102	177	3	180
26	1990-1991	8773	33	8806	310	1	311
27	1991-1992	8037	92	8129	284	3	287
28	1992-1993	2042	16	2058	72	1	73
29	1993-1994	3151	140	3291	111	5	116
30	1994-1995	11421	0	11421	404	0	404
31	1995-1996	222	0	222	8	0	8
32	1996-1997	4157	23	4179	147	1	148

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	4844	69	4913	171	2	174
34	1998-1999	9071	55	9126	321	2	322
35	1999-2000	2303	12	2315	81	0	82
36	2000-2001	253	26	278	9	1	10
37	2001-2002	726	0	726	26	0	26
38	2002-2003	42	7	49	1	0	2
39	2003-2004	8	0	8	0	0	0
40	2004-2005	1481	0	1481	52	0	52
41	2005-2006	9277	0	9277	328	0	328
42	2006-2007	11671	0	11671	412	0	412
43	2007-2008	5348	0	5348	189	0	189
44	2008-2009	2094	0	2094	74	0	74
45	2009-2010	3490	0	3490	123	0	123
46	2010-2011	1470	0	1470	52	0	52
47	2011-2012	2056	0	2056	73	0	73
48	2012-2013	0	0	0	0	0	0
49	2013-2014	2022	0	2022	71	0	71
50	2014-2015	1733	0	1733	61	0	61
51	2015-2016	0	0	0	0	0	0
52	2016-2017	814	0	814	29	0	29
53	2017-2018	2868	0	2868	101	0	101
54	2018-2019	626	0	626	22	0	22
55	2019-2020	7385	0	7385	261	0	261
Average		4865	111	4976	172	4	176
75% Dependable flow (MCM)				2022			
90 % Dependable flow (MCM)				256			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Takli (AKP00K4)

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : LBSD, Sholapur

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	414.280	0.000	413.080	0.000	411.600	0.000	413.550	0.000	415.165	371.4	415.440	508.9
2	414.080	0.000	413.540	0.000	411.540	0.000	413.400	0.000	414.920	292.0 *	415.610	546.8
3	413.960	0.000	413.690	0.000	415.325	400.2	413.250	0.000	414.890	316.9	415.380	499.7 *
4	414.000	0.000	413.690	0.000	414.780	350.3 *	413.130	0.000	414.690	155.9	415.650	544.6
5	413.930	0.000	413.595	0.000	415.665	565.5	413.020	0.000	414.570	152.8	415.360	491.7
6	413.855	0.000	413.485	0.000	416.775	1337	412.860	0.000	414.470	125.0 *	415.740	564.0
7	413.765	0.000	413.350	0.000	419.900	3833	416.425	1143	414.340	103.8	416.000	679.6
8	413.685	0.000	413.260	0.000	421.020	5326	416.580	1389 *	414.745	251.1	415.520	535.1
9	413.600	0.000	413.200	0.000	421.565	6086	416.365	1101	414.865	302.3	415.410	503.7
10	413.965	0.000	413.090	0.000	421.055	5385	416.500	1320 *	414.925	387.5	415.275	461.7 *
11	414.100	0.000	413.300	0.000	418.320	2325 *	417.950	1911	414.930	376.9	415.050	375.7
12	414.100	0.000	413.220	0.000	418.120	2096	416.250	1113	415.290	515.4	414.860	305.7 *
13	414.010	0.000	413.090	0.000	419.700	3550	416.410	1162	415.290	473.5 *	415.025	365.0
14	413.935	0.000	413.040	0.000	418.150	2138	415.250	415.1	414.875	283.6	415.030	367.0
15	413.825	0.000	412.950	0.000	415.000	380.2 *	415.720	731.4 *	414.740	222.8	415.020	345.7
16	413.725	0.000	412.870	0.000	414.620	277.2	417.150	1505	414.575	140.9	414.900	320.7
17	414.190	0.000	412.765	0.000	413.960	152.4	417.180	1581	414.445	122.0	414.545	255.7 *
18	414.140	0.000	412.685	0.000	413.670	126.9 *	415.410	571.4	414.690	218.8	414.120	152.7
19	414.000	0.000	412.600	0.000	414.010	149.9	415.195	357.1	414.730	240.1	414.110	151.7
20	413.850	0.000	412.540	0.000	414.920	362.4	415.775	814.2	414.510	137.3 *	413.950	138.3
21	413.840	0.000	412.450	0.000	414.565	260.5	415.185	382.0	415.345	559.5	413.940	138.2
22	413.760	0.000	412.430	0.000	414.745	269.1	415.700	718.3 *	418.020	1984	413.910	131.2
23	413.690	0.000	412.370	0.000	414.105	181.1	415.090	279.2	416.690	1207	414.200	0.000
24	413.680	0.000	412.300	0.000	414.335	156.5	414.950	171.0	418.560	2392	414.640	0.000
25	413.590	0.000	412.205	0.000	413.530	66.12 *	414.770	153.1	417.990	1936	414.720	0.000
26	413.535	0.000	412.100	0.000	413.320	0.000	414.900	245.6	416.530	1130	414.390	0.000
27	413.440	0.000	412.040	0.000	413.255	0.000	418.230	2168	416.160	1045 *	414.400	0.000
28	413.330	0.000	411.930	0.000	413.060	0.000	418.845	2545	416.195	896.7	414.730	0.000
29	413.270	0.000	411.865	0.000	412.960	0.000	415.850	818.9 *	415.910	761.7	414.730	0.000
30	413.180	0.000	411.775	0.000	413.460	0.000	415.270	392.7	415.030	410.0	414.650	0.000
31			411.700	0.000	413.599	0.000			416.010	813.4		
Ten-Daily Mean												
I Ten-Daily	413.912	0.000	413.398	0.000	416.923	2328	414.508	495.4	414.758	245.9	415.538	533.6
II Ten-Daily	413.987	0.000	412.906	0.000	416.047	1156	416.229	1016	414.808	273.1	414.661	277.8
III Ten-Daily	413.531	0.000	412.106	0.000	413.721	84.85	415.879	787.3	416.585	1194	414.431	26.94
Monthly												
Min.	413.180	0.000	411.700	0.000	411.540	0.000	412.860	0.000	414.340	103.8	413.910	0.000
Max.	414.280	0.000	413.690	0.000	421.565	6086	418.845	2545	418.560	2392	416.000	679.6
Mean	413.810	0	412.781	0	415.504	1154	415.539	766.3	415.422	591.2	414.877	279.4

Annual Runoff in MCM = 7385 Annual Runoff in mm = 218

Peak Observed Discharge = 6086 cumecs on 09/08/2019 Corres. Water Level :421.565 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :414.28 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : Takli (AKP00K4)

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : LBSD, Sholapur

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	414.670	0.000	413.250	0.000	412.520	0.000	414.310	0.000	Not observed Due to Lock-Down		413.600	0.000
2	414.620	0.000	413.280	0.000	412.570	0.000	414.200	0.000			413.490	0.000
3	414.470	0.000	413.220	0.000	412.810	0.000	414.070	0.000			413.390	0.000
4	414.710	0.000	413.180	0.000	412.870	0.000	414.000	0.000			413.660	0.000
5	414.700	0.000	413.740	0.000	412.830	0.000	413.900	0.000			413.700	0.000
6	414.680	0.000	413.960	0.000	412.700	0.000	413.760	0.000			413.780	0.000
7	414.680	0.000	413.860	0.000	412.530	0.000	413.610	0.000			413.710	0.000
8	414.650	0.000	413.800	0.000	412.440	0.000	413.460	0.000			413.510	0.000
9	414.630	0.000	413.610	0.000	412.280	0.000	413.360	0.000			413.360	0.000
10	414.610	0.000	413.510	0.000	412.140	0.000	413.220	0.000			413.260	0.000
11	414.580	0.000	413.380	0.000	411.960	0.000	413.050	0.000			413.090	0.000
12	414.540	0.000	413.260	0.000	411.750	0.000	412.800	0.000			413.300	0.000
13	414.470	0.000	413.120	0.000	411.580	0.000	413.080	0.000			413.390	0.000
14	414.410	0.000	412.980	0.000	411.470	0.000	413.090	0.000			413.330	0.000
15	414.350	0.000	412.810	0.000	411.320	0.000	412.980	0.000			413.220	0.000
16	414.260	0.000	412.690	0.000	411.170	0.000	413.580	0.000			413.070	0.000
17	414.200	0.000	413.000	0.000	411.120	0.000	413.830	0.000			412.950	0.000
18	414.100	0.000	413.450	0.000	411.000	0.000	413.860	0.000			412.830	0.000
19	414.020	0.000	413.600	0.000	410.700	0.000	413.760	0.000			412.870	0.000
20	414.010	0.000	413.620	0.000	410.500	0.000	413.620	0.000	414.400	0.000	412.780	0.000
21	413.950	0.000	413.560	0.000	411.940	0.000	413.430	0.000	414.370	0.000	412.660	0.000
22	413.900	0.000	413.480	0.000	412.660	0.000	413.260	0.000	414.260	0.000	412.510	0.000
23	413.810	0.000	413.330	0.000	412.800	0.000	413.130	0.000	414.120	0.000	412.380	0.000
24	413.750	0.000	413.200	0.000	412.910	0.000	413.430	0.000	413.990	0.000	412.250	0.000
25	413.690	0.000	412.980	0.000	414.180	0.000	413.450	0.000	413.870	0.000	412.110	0.000
26	413.640	0.000	412.800	0.000	414.760	0.000	Not observed Due to Lock-Down		413.780	0.000	411.900	0.000
27	413.550	0.000	412.630	0.000	414.700	0.000			413.580	0.000	411.780	0.000
28	413.510	0.000	412.460	0.000	414.570	0.000			413.830	0.000	411.650	0.000
29	413.420	0.000	412.250	0.000	414.410	0.000			413.820	0.000	411.500	0.000
30	413.330	0.000	412.130	0.000					413.750	0.000	411.360	0.000
31	413.230	0.000	412.370	0.000							411.210	0.000
Ten-Daily Mean												
I Ten-Daily	414.642	0.000	413.541	0.000	412.569	0.000	413.789	0.000			413.546	0.000
II Ten-Daily	414.294	0.000	413.191	0.000	411.257	0.000	413.365	0.000	414.400	0.000	413.083	0.000
III Ten-Daily	413.616	0.000	412.835	0.000	413.659	0.000	413.340	0.000	413.937	0.000	411.937	0.000
Monthly												
Min.	413.230	0.000	412.130	0.000	410.500	0.000	412.800	0.000	413.580	0.000	411.210	0.000
Max.	414.710	0.000	413.960	0.000	414.760	0.000	414.310	0.000	414.400	0.000	413.780	0.000
Mean	414.166	0	413.178	0	412.455	0	413.530	0	413.979	0	412.826	0

Peak Computed Discharge = 2325 cumecs on 11/08/2019

Corres. Water Level :418.32 m

Lowest Computed Discharge = 66.12 cumecs on 25/08/2019

Corres. Water Level :413.53 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

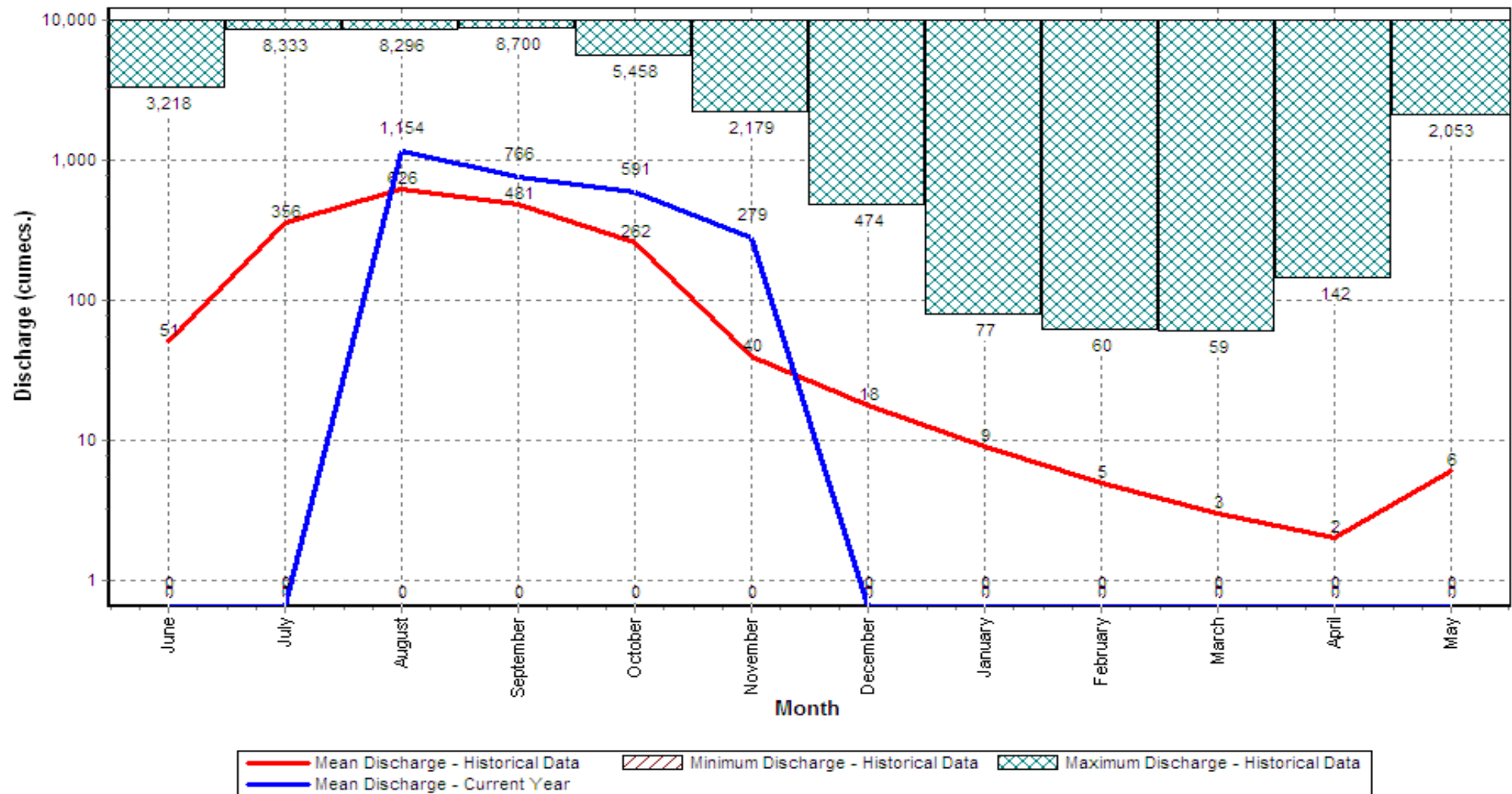
Station Name : Takli (AKP00K4)

Data considered : 1965-2020

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : LBSD, Sholapur



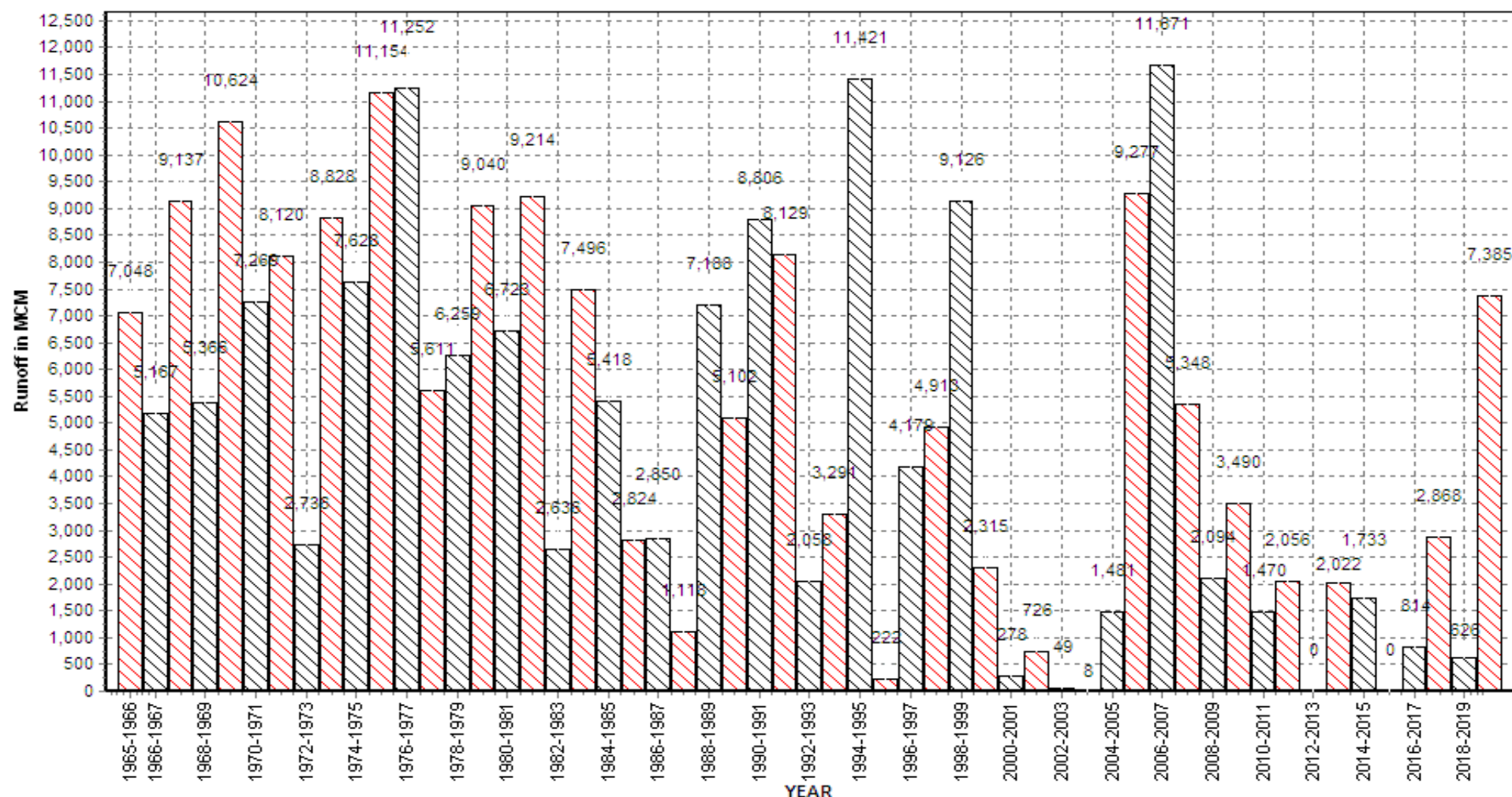
Annual Runoff Values for the period: 1965 - 2020

Station Name : Takli (AKP00K4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



Note: Missing values have not been considered while arriving at Annual Runoff

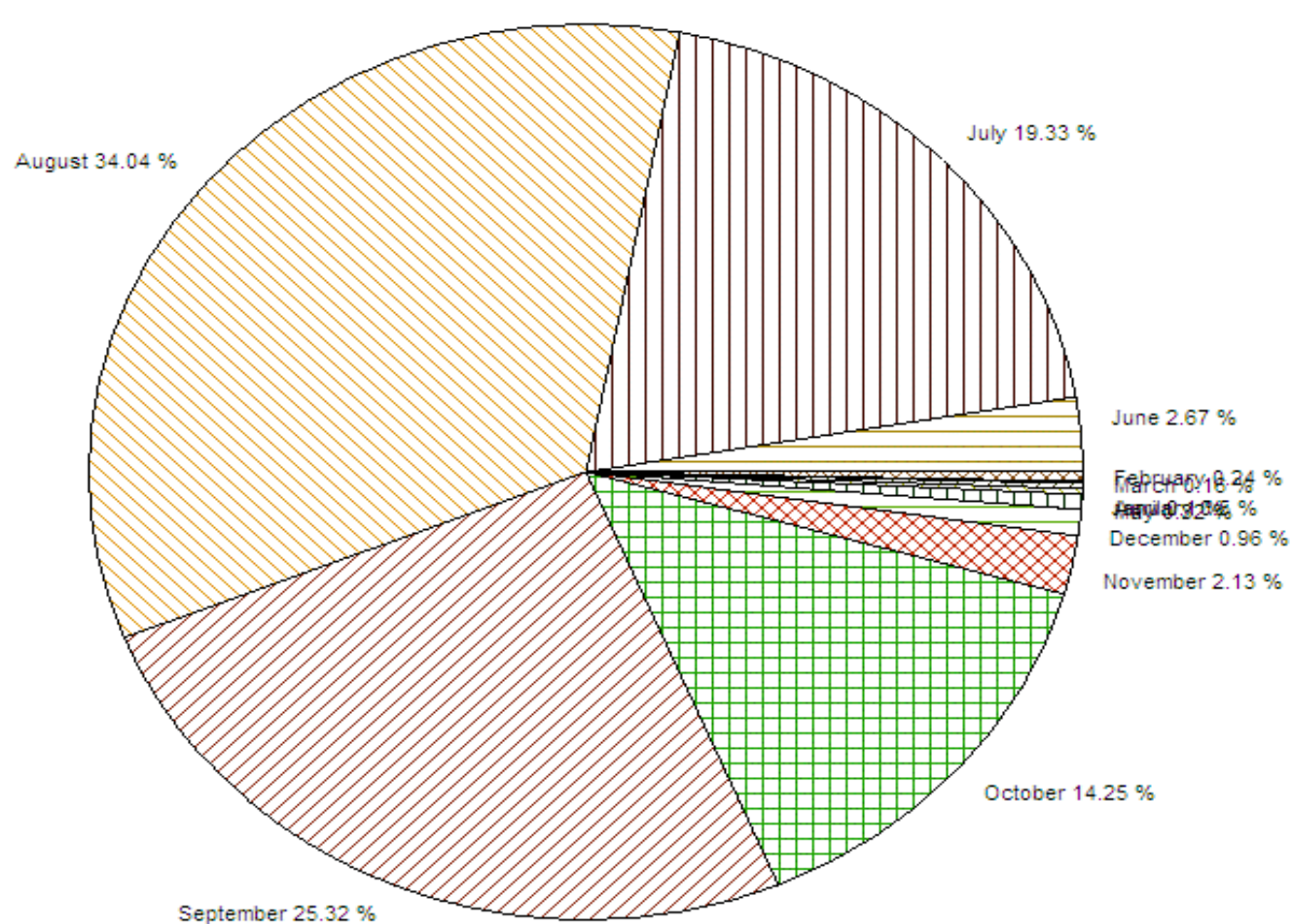
Monthly Average Runoff based on period : 1965-2019

Station Name : Takli (AKP00K4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



June	2.67 %
July	19.33 %
August	34.04 %
September	25.32 %
October	14.25 %
November	2.13 %
December	0.96 %
January	0.5 %
February	0.24 %
March	0.16 %
April	0.1 %
May	0.32 %

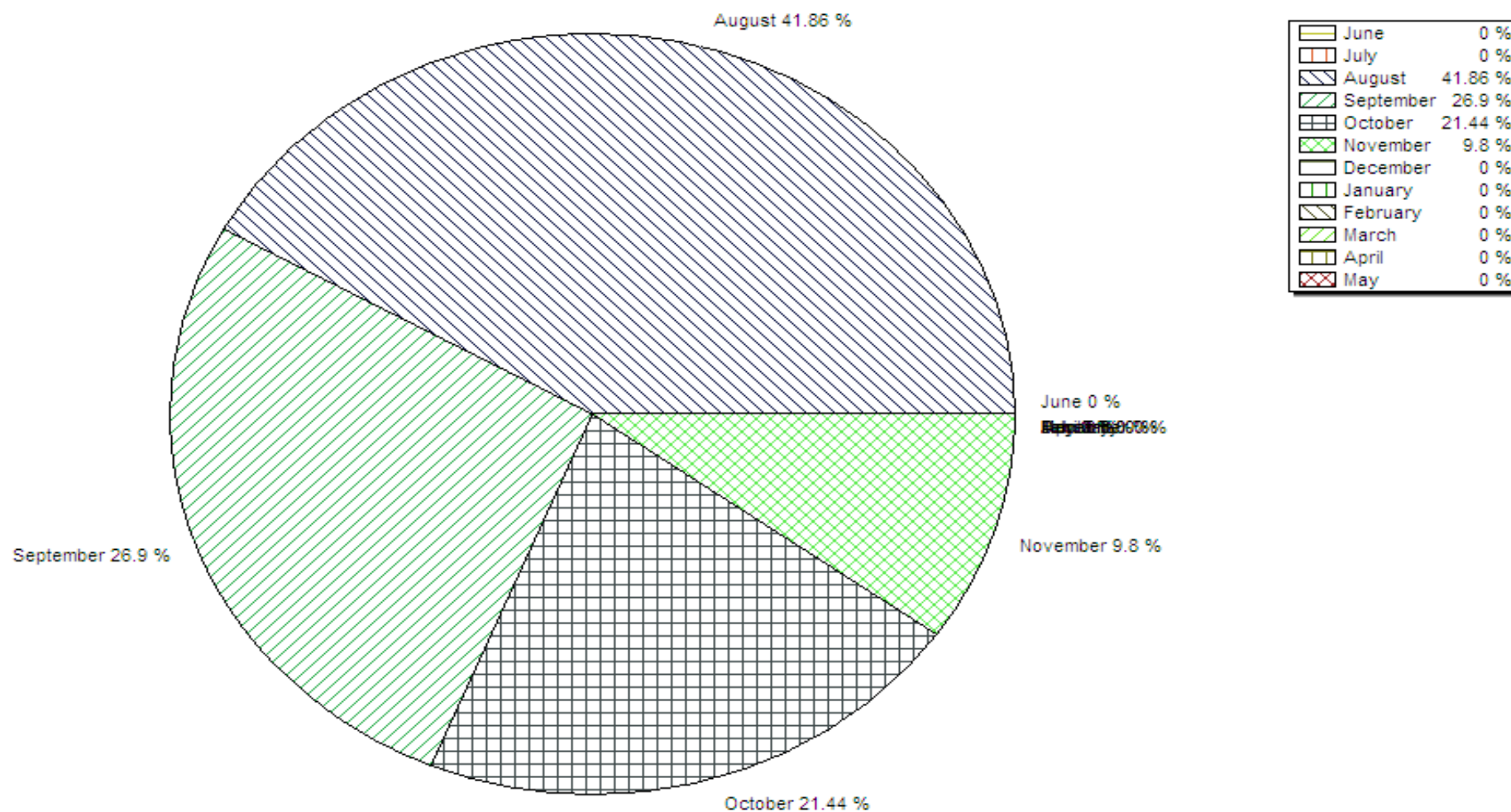
Monthly Runoff for the Year : 2019-2020

Station Name : Takli (AKP00K4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



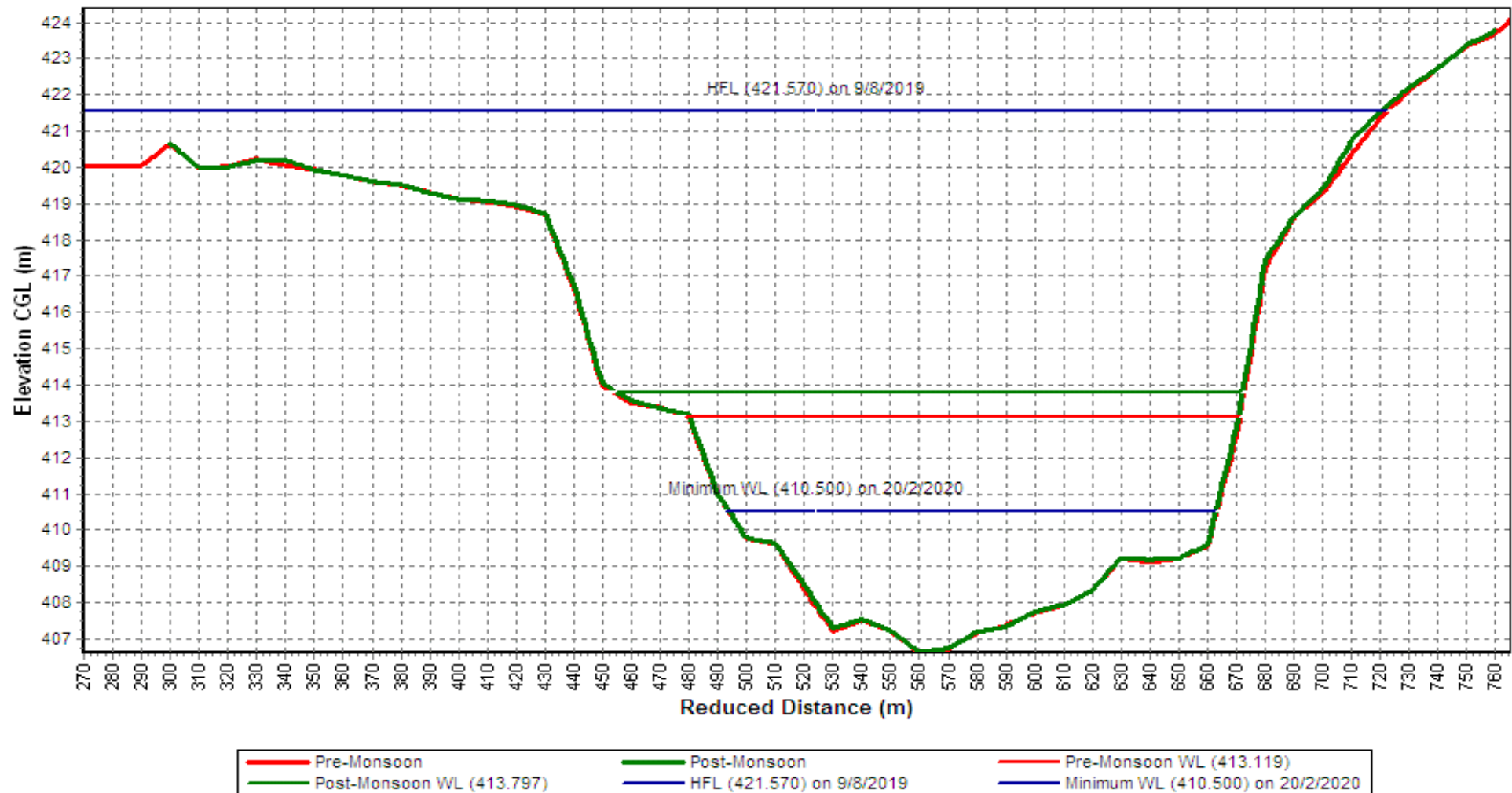
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Takli (AKP00K4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



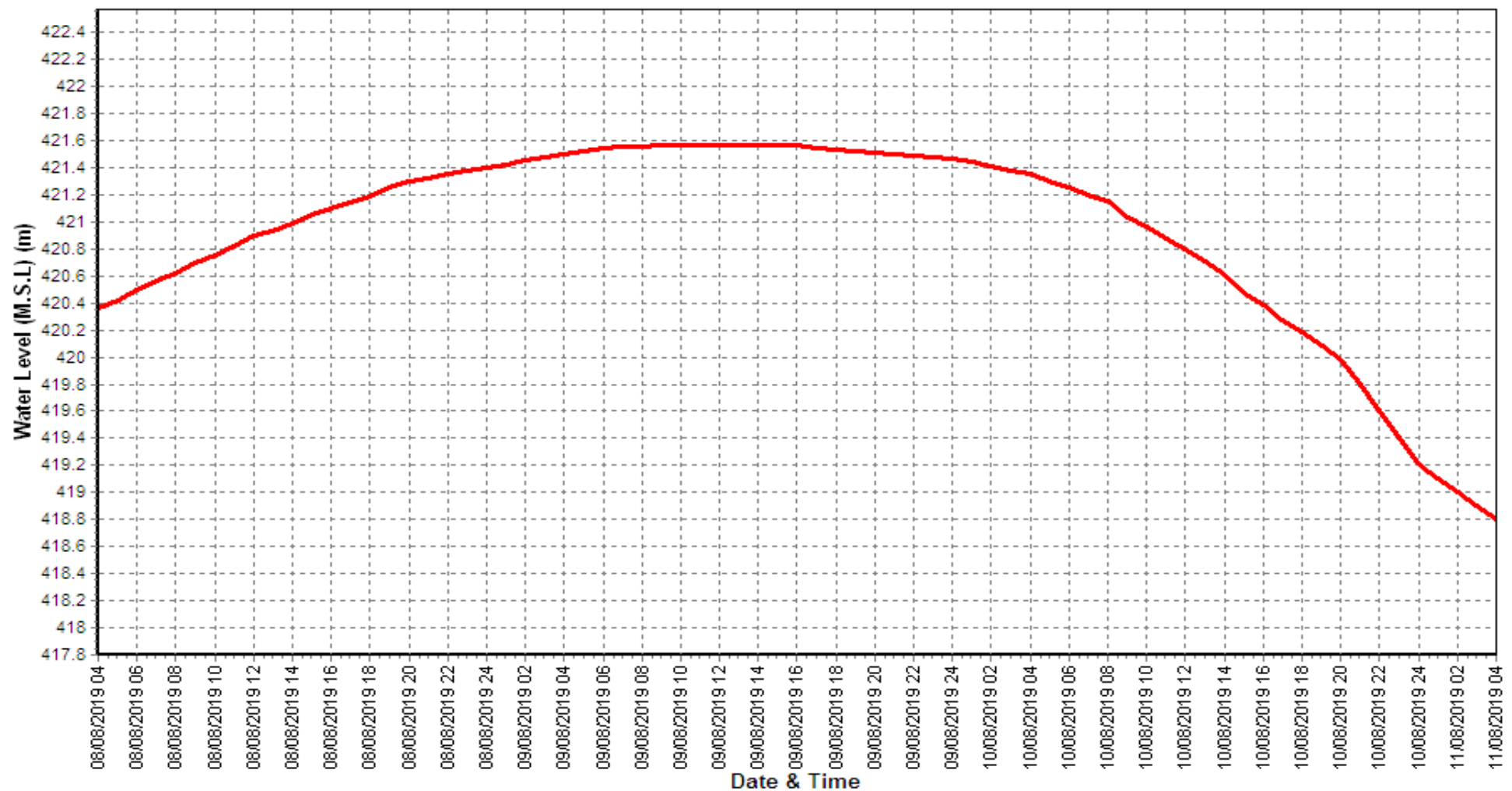
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Takli (AKP00K4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



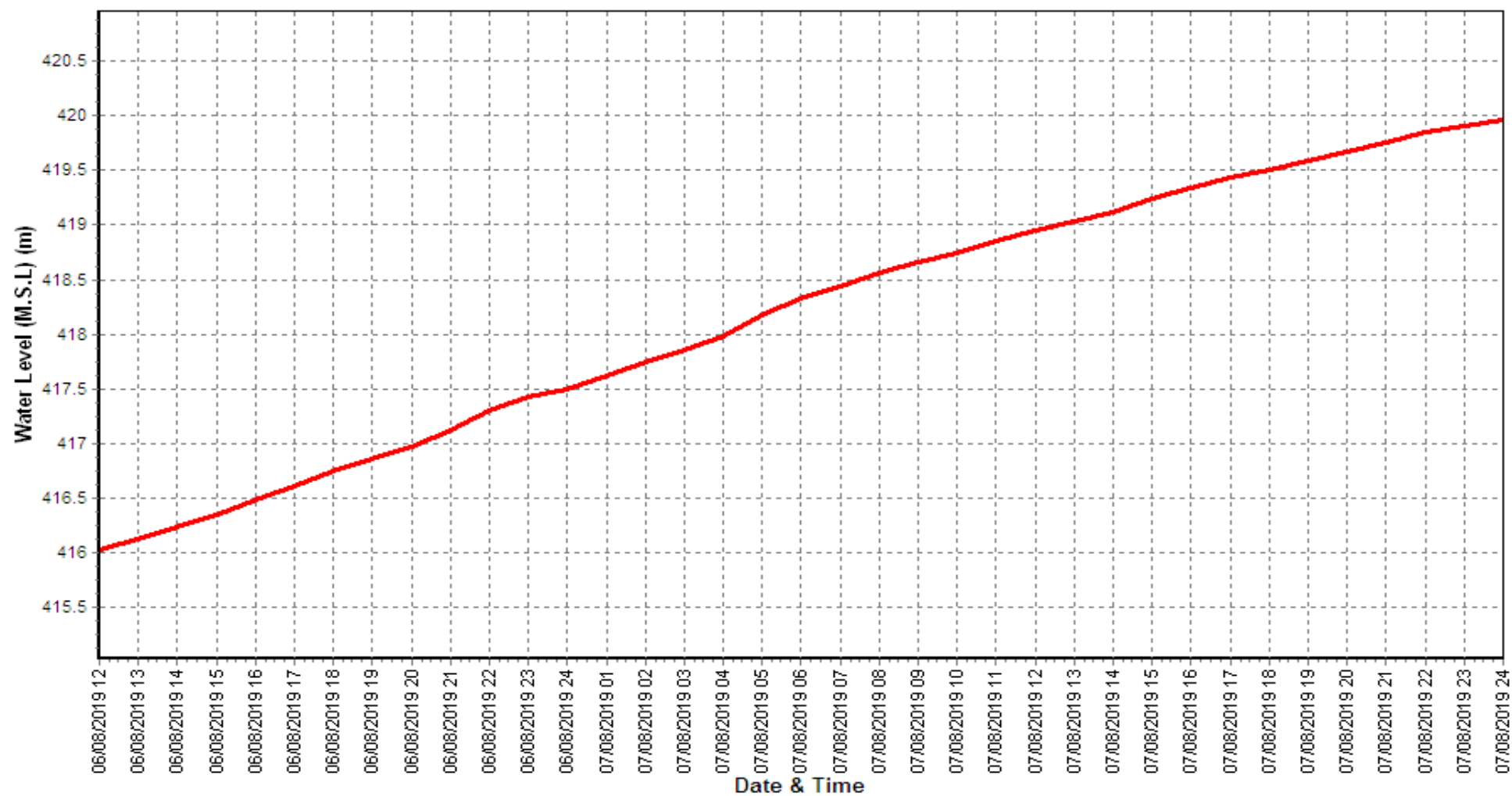
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Takli (AKP00K4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



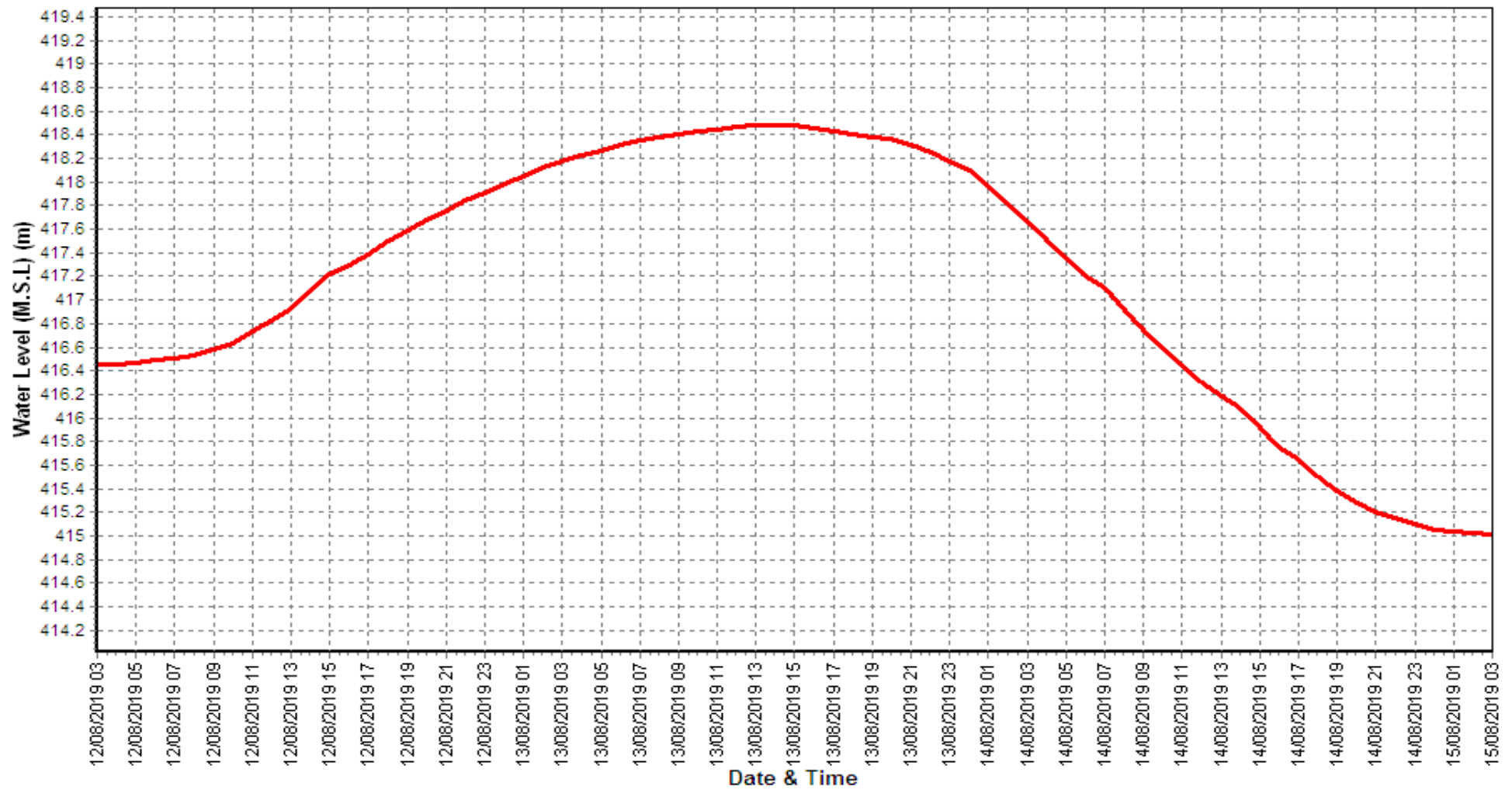
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Takli (AKP00K4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



HISTORY SHEET

Water Year : 2019-2020

Site : Narasingpur

Code : AKP00Q4

State : Maharashtra

District : Sholapur

Basin : Krishna

Independent River : Krishna

Tributary : Bhima

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur

Drainage Area : 22856 Sq. Km.

Bank : Right

Latitude : 17°58'17"

Longitude : 75°08'21"

Zero of Gauge (m) : 448.243 (m.s.l)

01/06/1964

Opening Date

Closing Date

Gauge : 01/06/1965

HFL During 2019-20 : 461.353 m

Corres. Discharge : 7564 (Estimated)

Discharge : 22/02/1966

Date & Time of

occurrence : 08:00 Hrs

Sediment :

Water Quality :

HFL Recorded so far in m : 462.393 dt 10-08-2006

Corresponding Discharge (cumecs) : 8873 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1967-1968	6620	461.498	30/07/1967	1.200	448.563	27/04/1968
1968-1969	3394	455.986	08/08/1968	0.100	448.398	09/05/1969
1969-1970	5988	459.908	02/08/1969	0.300	448.453	21/04/1970
1970-1971	2112	454.238	22/08/1970	0.200	448.333	29/04/1971
1971-1972	5241	457.618	31/08/1971	0.400	448.763	04/05/1972
1972-1973	4350	457.196	10/07/1972	0.000	448.443	16/03/1973
1973-1974	4255	457.156	10/07/1973	2.000	448.743	26/06/1973
1974-1975	1601	453.528	26/10/1974	4.100	448.503	22/06/1974
1975-1976	3967	457.244	16/08/1975	0.700	448.368	15/05/1976
1976-1977	6677	460.218	03/08/1976	0.100	448.573	07/04/1977
1977-1978	2422	454.326	30/07/1977	1.700	448.458	30/03/1978
1978-1979	2470	455.200	03/09/1978	0.000	448.213	19/04/1979
1979-1980	3593	457.108	12/08/1979	0.700	448.658	17/03/1980
1980-1981	3590	456.872	06/07/1980	1.200	448.850	01/03/1981
1981-1982	6990	459.693	11/07/1981	0.500	448.843	03/03/1982
1982-1983	2665	454.821	24/08/1982	0.600	448.583	04/03/1983
1983-1984	7602	460.181	17/08/1983	2.100	448.723	10/06/1983

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1984-1985	3220	456.458	20/07/1984	2.000	449.053	27/11/1984
1985-1986	2509	455.381	03/08/1985	0.500	449.043	25/10/1985
1986-1987	2478	455.318	11/08/1986	0.000	448.738	26/02/1987
1987-1988	726.2	451.763	18/10/1987	0.000	448.838	19/03/1988
1988-1989	3192	456.256	18/09/1988	0.000	448.878	02/03/1989
1989-1990	2998	455.941	28/07/1989	0.000	449.103	23/01/1990
1990-1991	4225	457.066	18/08/1990	0.000	448.983	19/03/1991
1991-1992	3860	457.632	29/07/1991	0.000	449.148	26/01/1992
1992-1993	1824	453.862	07/09/1992	0.000	448.988	25/01/1993
1993-1994	2392	454.510	30/07/1993	0.000		25/03/1994
1994-1995	7290	461.433	16/07/1994	0.000	449.128	25/01/1995
1995-1996	515.1	450.913	24/07/1995	0.000	448.853	26/01/1996
1996-1997	4560	457.473	05/10/1996	0.000	448.843	25/01/1997
1997-1998	7450	462.043	26/08/1997	0.000	449.393	25/01/1998
1998-1999	3446	456.593	13/10/1998	0.000	449.433	25/01/1999
1999-2000	1581	452.963	30/07/1999	0.000	449.143	28/11/1999
2000-2001	152.2	450.323	28/11/2000	0.000	448.813	30/12/2000
2001-2002	350.0	450.693	26/03/2002	0.000	448.533	16/01/2002
2002-2003	450.0	451.213	17/10/2002	0.000	448.833	07/01/2003
2003-2004	148.4	450.408	22/12/2003	0.000		15/01/2004
2004-2005	1606	453.598	13/08/2004	0.000	448.463	09/12/2004
2005-2006	7109	461.793	04/08/2005	0.000	448.933	07/01/2006
2006-2007	8863	462.383	10/08/2006	0.000	448.973	06/01/2007
2007-2008	2533	454.713	10/08/2007	0.000	449.113	20/01/2008
2008-2009	2853	455.643	21/09/2008	0.000	448.883	14/01/2009
2009-2010	1627	453.493	18/11/2009	0.000	449.423	11/12/2009
2010-2011	1321	452.903	01/10/2010	0.000	449.243	18/01/2011
2011-2012	5098	457.733	05/09/2011	0.000	449.843	25/02/2012
2012-2013	128.9	450.110	20/08/2012	0.000	449.560	28/08/2012
2013-2014	3725	456.081	20/09/2013	0.000	449.423	02/01/2014
2014-2015	1493	451.943	07/09/2014	0.000	449.303	10/07/2014
2015-2016	119.3	450.043	20/07/2015	0.000	448.658	24/11/2015
2016-2017	1432	452.323	05/08/2016	0.000	448.313	23/01/2017
2017-2018	2629	454.403	15/09/2017	0.000		16/12/2017
2018-2019	1042	451.733	28/08/2018	0.000	448.233	14/01/2019

Annual Runoff of Bhmia at Narsingpur

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1966-1967		110	110		4	4
2	1967-1968	6443	260	6703	228	9	237
3	1968-1969	5032	98	5131	178	3	181
4	1969-1970	10301	133	10434	364	5	369
5	1970-1971	6263	161	6424	221	6	227
6	1971-1972	7265	115	7380	257	4	261
7	1972-1973	3059	49	3108	108	2	110
8	1973-1974	8010	194	8204	283	7	290
9	1974-1975	5581	333	5914	197	12	209
10	1975-1976	7731	280	8010	273	10	283
11	1976-1977	10466	213	10679	370	8	377
12	1977-1978	5356	709	6065	189	25	214
13	1978-1979	5923	163	6087	209	6	215
14	1979-1980	6627	463	7090	234	16	251
15	1980-1981	7307	140	7446	258	5	263
16	1981-1982	7596	202	7799	268	7	276
17	1982-1983	2520	115	2635	89	4	93
18	1983-1984	6407	244	6651	226	9	235
19	1984-1985	4791	242	5034	169	9	178
20	1985-1986	2400	158	2558	85	6	90
21	1986-1987	2383	12	2395	84	0	85
22	1987-1988	289	51	340	10	2	12
23	1988-1989	5854	10	5863	207	0	207
24	1989-1990	3713	3	3716	131	0	131
25	1990-1991	8495	14	8509	300	0	301
26	1991-1992	7395	0	7395	261	0	261
27	1992-1993	1988	0	1988	70	0	70
28	1993-1994	4083	132	4215	144	5	149
29	1994-1995	11618	0	11618	411	0	411
30	1995-1996	447	0	447	16	0	16
31	1996-1997	3627	0	3627	128	0	128
32	1997-1998	4661	0	4661	165	0	165

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1998-1999	5436	0	5436	192	0	192
34	1999-2000	3049	87	3136	108	3	111
35	2000-2001	130	243	372	5	9	13
36	2001-2002	221	125	346	8	4	12
37	2002-2003	205	196	401	7	7	14
38	2003-2004	106	204	310	4	7	11
39	2004-2005	1573	360	1933	56	13	68
40	2005-2006	10141	307	10448	358	11	369
41	2006-2007	11393	172	11565	403	6	409
42	2007-2008	4562	211	4773	161	7	169
43	2008-2009	2449	365	2814	87	13	99
44	2009-2010	1380	157	1537	49	6	54
45	2010-2011	1772	85	1857	63	3	66
46	2011-2012	2055	0	2055	73	0	73
47	2012-2013	65	0	65	2	0	2
48	2013-2014	1964	0	1964	69	0	69
49	2014-2015	993	0	993	35	0	35
50	2015-2016	10	53	63	0	2	2
51	2016-2017	957	376	1333	34	13	47
52	2017-2018	3102	167	3269	110	6	116
53	2018-2019	1017	157	1173	36	6	41
54	2019-2020	7670	0	7670	271	0	271
Average		4413	146	4477	156	5	158
75% Dependable flow (MCM)				1777			
90 % Dependable flow (MCM)				343			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Narasingpur (AKP00Q4)

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : LBSD,Sholapur

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	447.903	0.000		0.000	450.288	412.4	447.618	0.000	449.523	190.2	451.073	831.5
2	447.803	0.000		0.000	450.163	375.5	447.643	0.000	450.013	343.1 *	450.923	736.2
3	447.753	0.000		0.000	450.988	676.4	447.623	0.000	449.153	111.2	451.633	970.0 *
4	447.778	0.000		0.000	450.793	601.0 *	447.613	0.000	448.993	89.79	450.293	457.9
5	447.743	0.000		0.000	452.748	1421 #	448.253	0.000	449.013	87.52	451.143	755.5 *
6	447.693	0.000		0.000	458.043	4328	452.623	1361 #	449.093	106.7 *	452.753	1441
7	447.653	0.000		0.000	461.323	7730	453.123	1608 #	449.723	247.0	450.903	709.2
8	447.603	0.000		0.000	459.188	5364	452.043	1095 *	449.563	203.2	450.583	590.0
9	447.568	0.000		0.000	456.803	3695	452.603	1352 #	449.438	177.8	450.743	634.6
10	447.548	0.000		0.000	455.273	3085	453.693	1907 *	449.263	137.2	450.063	358.7 *
11		0.000		0.000	452.743	1419 *	451.918	1041 #	450.788	609.5	449.903	274.0
12		0.000		0.000	456.373	3559 *	452.653	1376 #	450.153	374.7	450.008	341.5 *
13		0.000		0.000	452.953	1522 #	449.848	318.9	449.513	202.0 *	450.028	302.9
14		0.000		0.000	451.158	819.3	451.393	912.2	449.288	133.7	449.853	256.1
15		0.000		0.000	449.723	273.6 *	452.393	1253 *	448.943	82.28	449.813	252.6
16		0.000		0.000	448.983	84.42	452.643	1371 #	448.888	82.90	449.743	228.9
17		0.000		0.000	449.988	308.1	450.028	338.6	448.783	67.74	449.713	0.000
18		0.000		0.000	449.963	338.5 *	449.673	260.7 #	448.693	39.05 #	449.708	0.000
19		0.000		0.000	450.043	322.0	451.408	924.9	449.828	287.6 #	449.703	0.000
20		0.000		0.000	449.743	273.4	449.628	248.6	450.313	440.6 *	449.698	0.000
21		0.000		0.000	448.953	115.2	451.383	916.7	454.238	2316	449.693	0.000
22		0.000		0.000	448.433	38.78	449.413	197.8 *	451.953	1138	449.693	0.000
23		0.000		0.000	448.193	0.000	449.033	111.8	454.833	2787	449.743	0.000
24		0.000		0.000	448.128	0.000	448.758	64.61	453.873	2055	449.533	0.000
25		0.000		0.000	448.053	0.000	449.993	330.8	452.438	1500	449.428	0.000
26		0.000		0.000	447.978	0.000	454.778	2797	452.413	1473	449.583	0.000
27		0.000		0.000	447.888	0.000	454.763	2713	451.163	763.9 *	449.583	0.000
28		0.000		0.000	447.783	0.000	451.368	814.5 #	451.128	657.0	449.338	0.000
29		0.000		0.000	447.668	0.000	450.353	454.7 *	450.003	340.0 #	449.068	0.000
30		0.000		0.000	447.643	0.000	450.223	384.7	451.568	862.5	448.983	0.000
31			450.313	447.1	447.623	0.000			450.073	361.8 #		
Ten-Daily Mean												
I Ten-Daily	447.704	0.000		0.000	454.561	2769	450.284	732.3	449.378	169.4	451.011	748.5
II Ten-Daily		0.000		0.000	451.167	892.0	451.159	804.5	449.519	232.0	449.817	165.6
III Ten-Daily		0.000	450.313	40.65	448.031	14.00	451.007	878.6	452.153	1296	449.465	0.000
Monthly												
Min.	447.548	0.000	450.313	0.000	447.623	0.000	447.613	0.000	448.693	39.05	448.983	0.000
Max.	447.903	0.000	450.313	447.1	461.323	7730	454.778	2797	454.833	2787	452.753	1441
Mean	447.704	0	450.313	14.42	451.149	1186	450.816	805.1	450.408	589.3	450.098	304.7

Annual Runoff in MCM = 7670 Annual Runoff in mm = 336

Peak Observed Discharge = 7730 cumecs on 07/08/2019 Corres. Water Level :461.323 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :447.903 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Narasingpur (AKP00Q4)

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : LBSD,Sholapur

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	448.563	0.000	448.033	0.000		0.000	448.363	0.000	Not observed Due to Lock-Down		447.893	0.000
2	448.533	0.000	447.983	0.000		0.000	448.313	0.000			447.818	0.000
3	448.553	0.000	447.923	0.000		0.000	448.273	0.000			447.753	0.000
4	448.573	0.000	447.873	0.000		0.000	447.993	0.000			447.658	0.000
5	448.793	0.000	447.838	0.000		0.000	448.173	0.000				0.000
6	448.793	0.000	447.823	0.000		0.000	448.133	0.000				0.000
7	448.803	0.000	447.793	0.000		0.000	448.083	0.000				0.000
8	448.818	0.000	447.753	0.000		0.000	448.013	0.000				0.000
9	448.893	0.000	447.733	0.000		0.000	447.938	0.000				0.000
10	448.913	0.000	447.708	0.000		0.000	447.863	0.000				0.000
11	448.908	0.000	447.693	0.000		0.000	447.793	0.000				0.000
12	448.898	0.000		0.000		0.000	447.743	0.000				0.000
13	448.833	0.000		0.000		0.000	447.703	0.000				0.000
14	448.793	0.000		0.000	449.593	0.000	447.663	0.000				0.000
15	448.753	0.000		0.000	449.563	0.000	447.628	0.000				0.000
16	448.723	0.000		0.000	449.563	0.000	447.573	0.000				0.000
17	448.703	0.000		0.000	449.563	0.000	447.553	0.000				0.000
18	448.653	0.000		0.000	449.493	0.000		0.000				0.000
19	448.643	0.000		0.000	449.163	0.000		0.000				0.000
20	448.638	0.000		0.000	448.743	0.000		0.000	448.493	0.000		0.000
21	448.633	0.000		0.000	448.443	0.000		0.000	448.323	0.000		0.000
22	448.593	0.000		0.000	449.163	0.000		0.000	448.373	0.000		0.000
23	448.543	0.000		0.000	449.163	0.000		0.000	448.418	0.000		0.000
24	448.483	0.000		0.000	449.163	0.000		0.000	448.423	0.000		0.000
25	448.433	0.000		0.000	449.163	0.000		0.000	448.403	0.000		0.000
26	448.403	0.000		0.000	448.843	0.000	Not observed Due to Lock-Down		448.373	0.000		0.000
27	448.203	0.000		0.000	448.623	0.000			448.323	0.000		0.000
28	448.143	0.000		0.000	448.583	0.000			448.223	0.000		0.000
29	448.113	0.000		0.000	448.453	0.000			448.113	0.000		0.000
30	448.083	0.000		0.000					423.243	0.000		0.000
31	448.058	0.000		0.000								0.000
Ten-Daily Mean												
I Ten-Daily	448.724	0.000	447.846	0.000		0.000	448.115	0.000			447.780	0.000
II Ten-Daily	448.755	0.000	447.693	0.000	449.383	0.000	447.665	0.000	448.493	0.000		0.000
III Ten-Daily	448.335	0.000		0.000	448.844	0.000		0.000	445.821	0.000		0.000
Monthly												
Min.	448.058	0.000	447.693	0.000	448.443	0.000	447.553	0.000	423.243	0.000	447.658	0.000
Max.	448.913	0.000	448.033	0.000	449.593	0.000	448.363	0.000	448.493	0.000	447.893	0.000
Mean	448.596	0	447.832	0	449.080	0	447.929	0	446.064	0	447.780	0

Peak Computed Discharge = 3559 cumecs on 12/08/2019

Corres. Water Level :456.373 m

Lowest Computed Discharge = 106.7 cumecs on 06/10/2019

Corres. Water Level :449.093 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

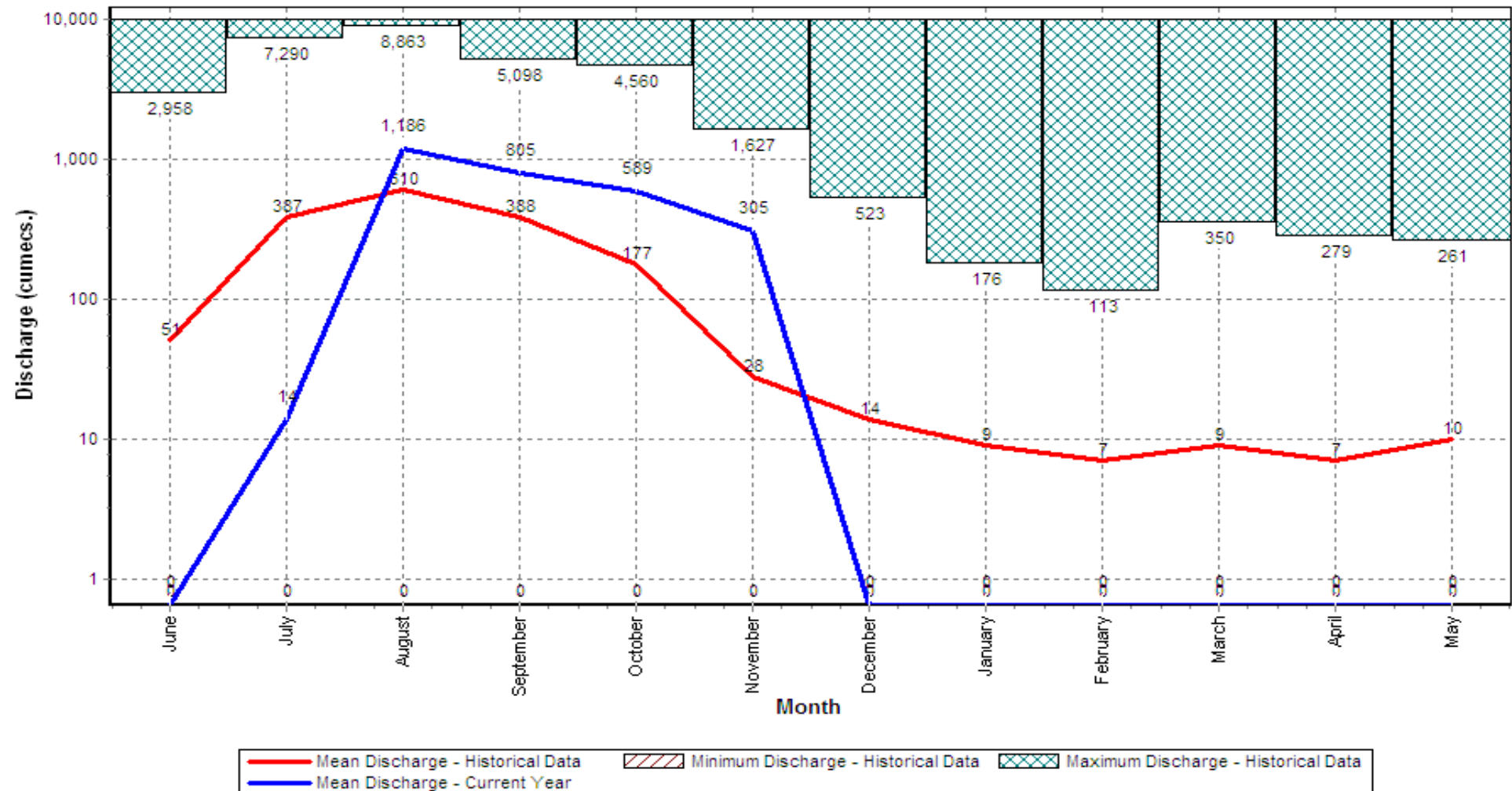
Station Name : Narasingpur (AKP00Q4)

Data considered : 1967-2020

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : LBSD,Sholapur



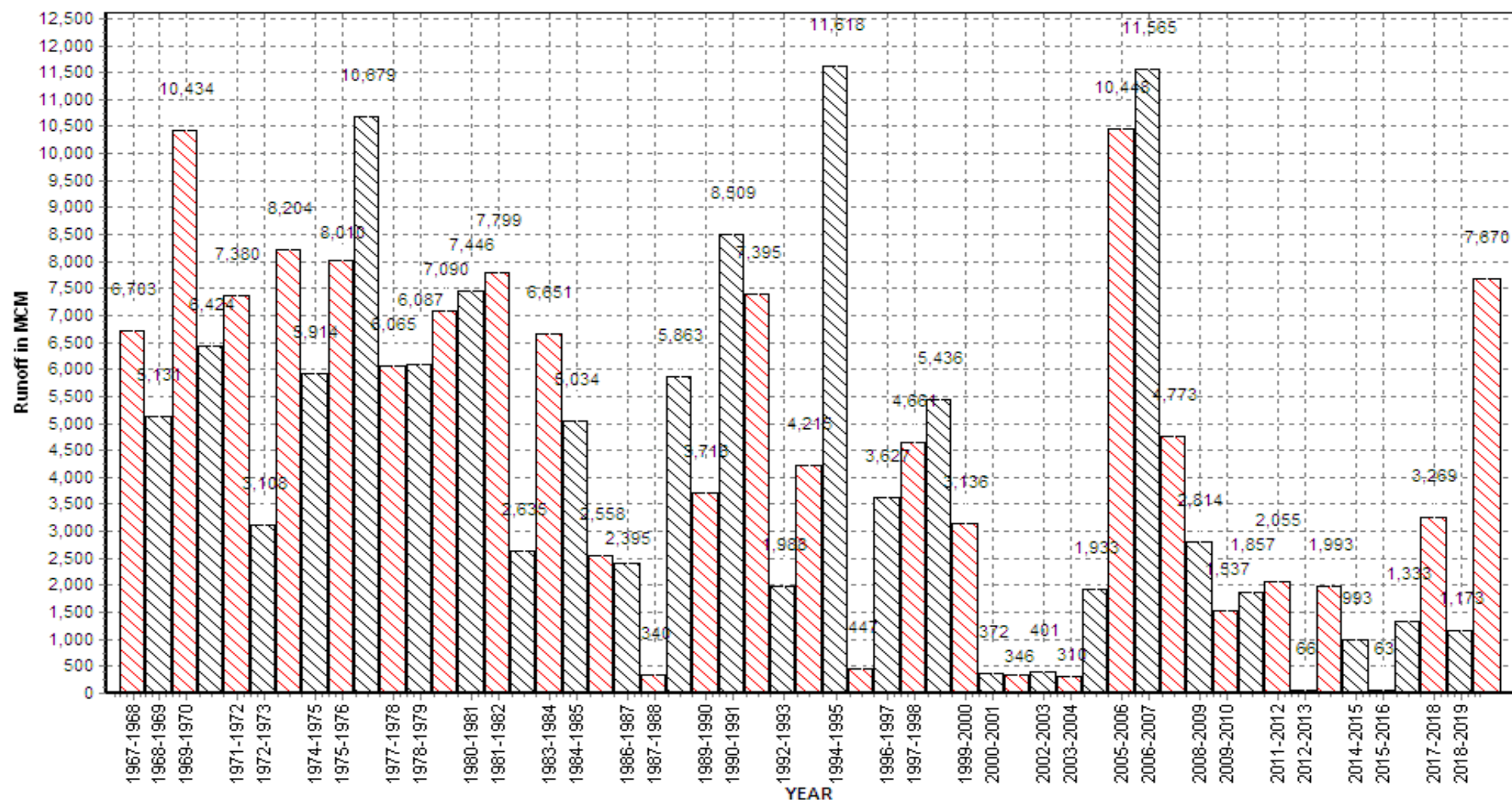
Annual Runoff Values for the period: 1967 - 2020

Station Name : Narasingpur (AKP00Q4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



Note: Missing values have not been considered while arriving at Annual Runoff

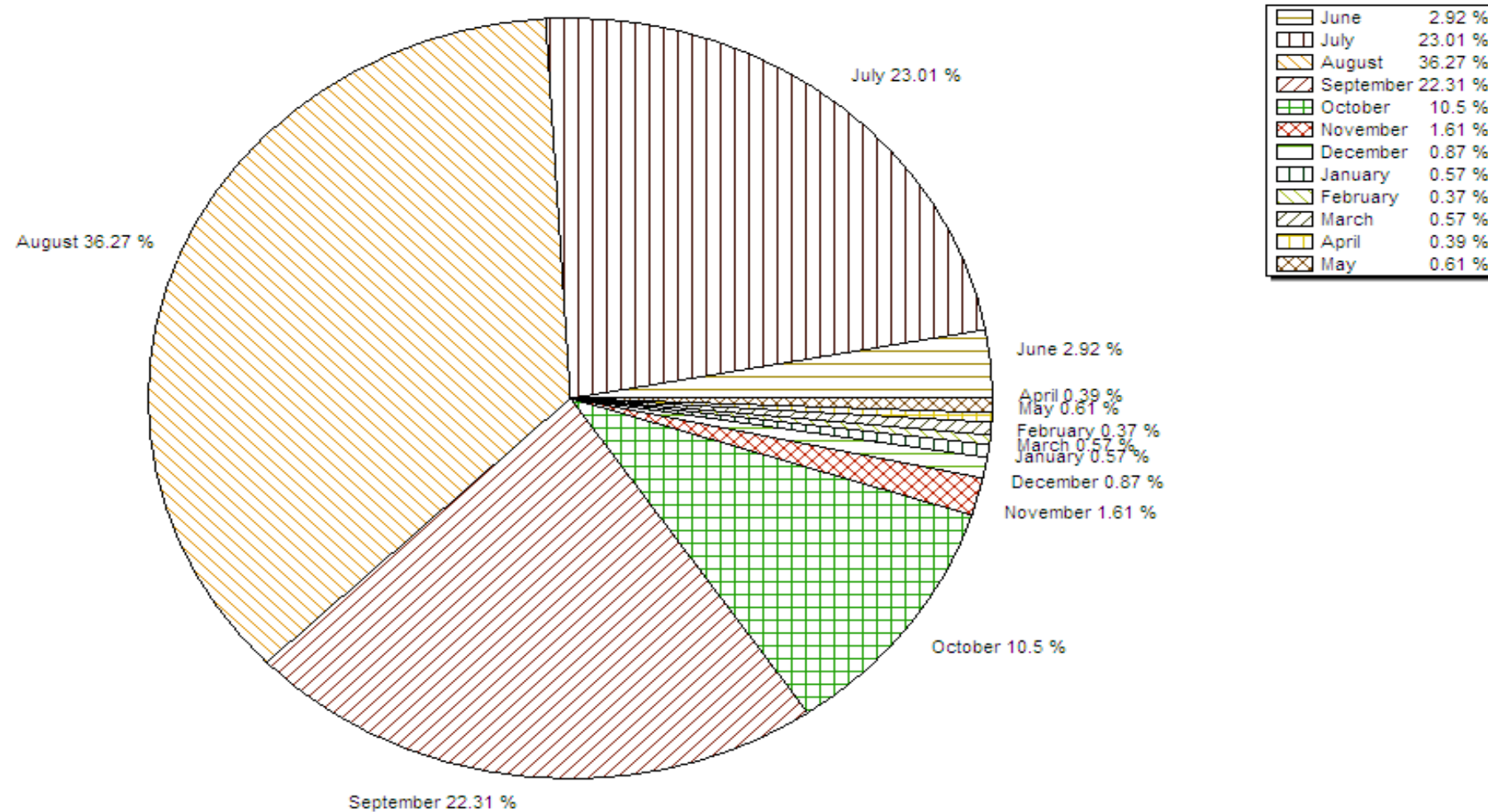
Monthly Average Runoff based on period : 1967-2019

Station Name : Narasingpur (AKP00Q4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



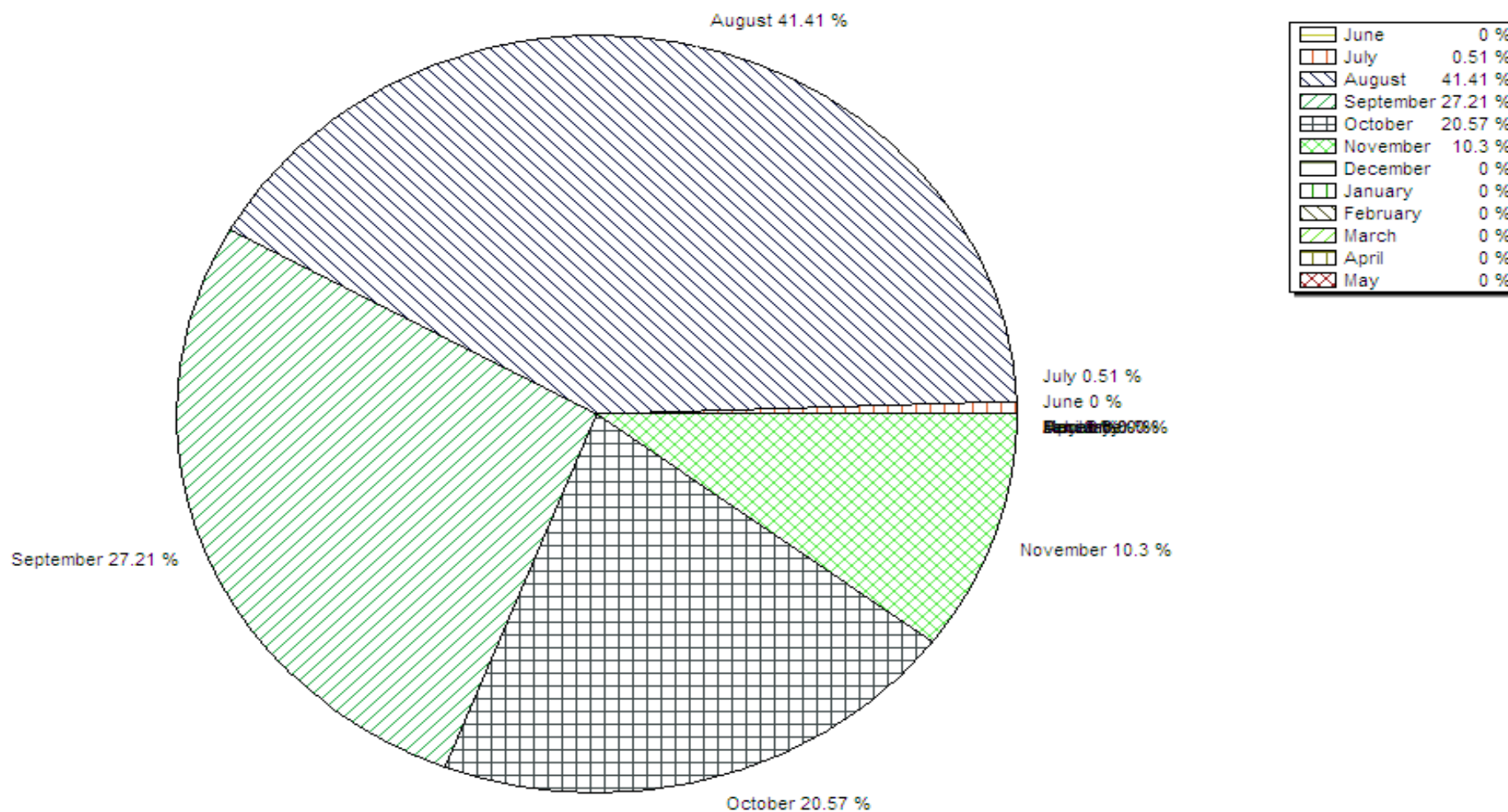
Monthly Runoff for the Year : 2019-2020

Station Name : Narasingpur (AKP00Q4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



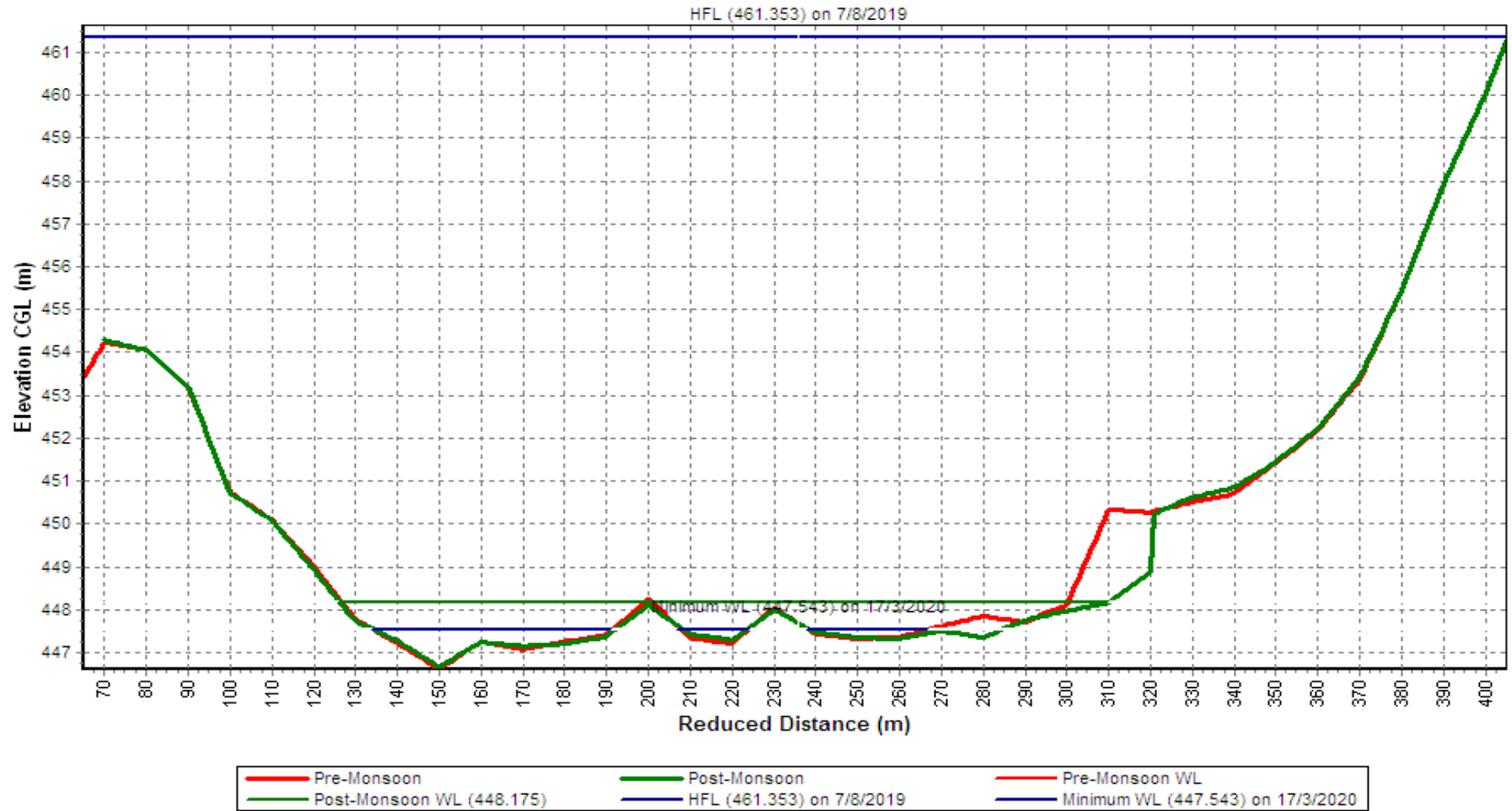
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Narasingpur (AKP00Q4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



Post Monsoon Cross section 2019 difference due to high flood there is a bank erosion at R/B near RD 320

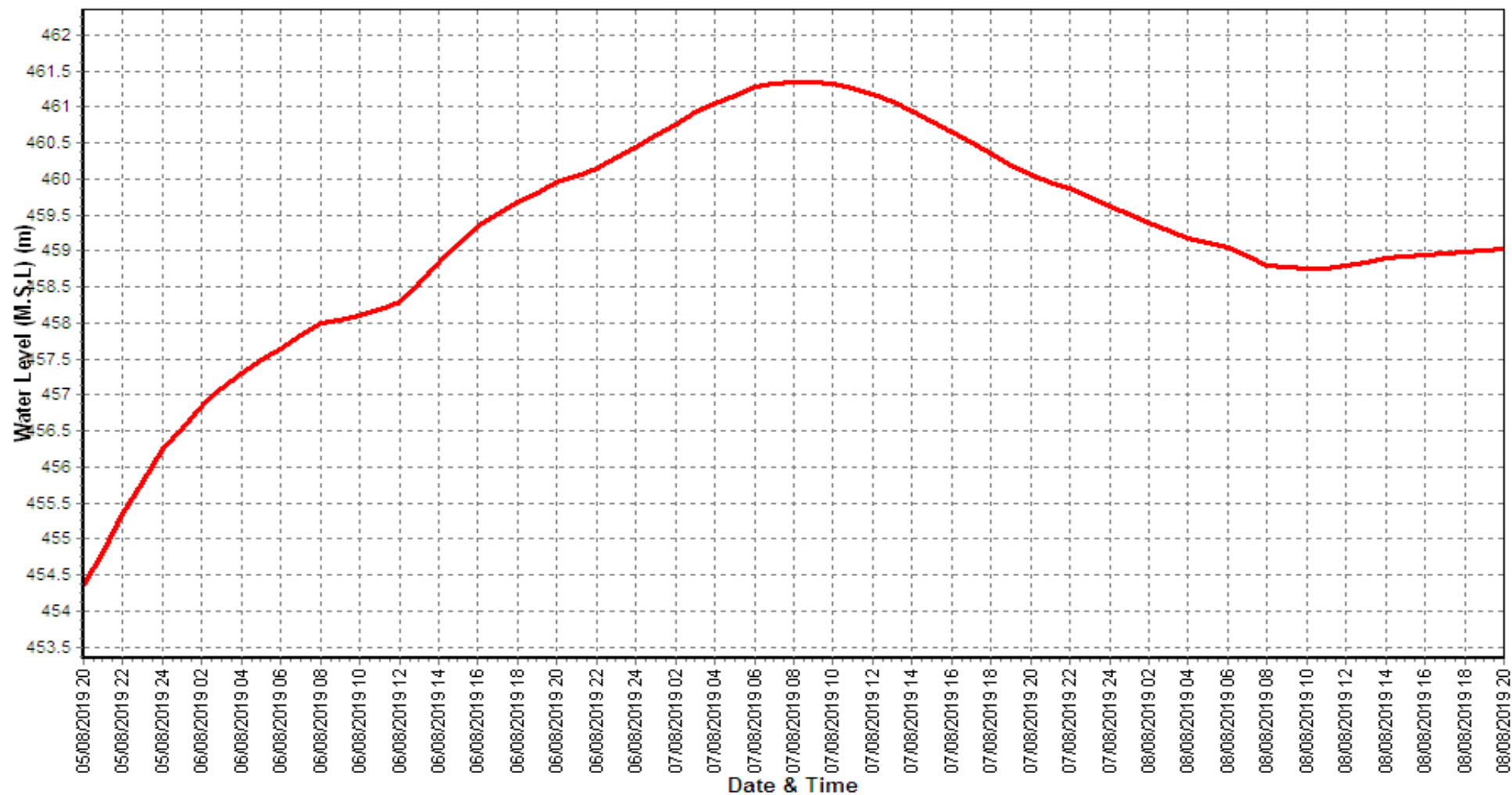
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Narasingpur (AKP00Q4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



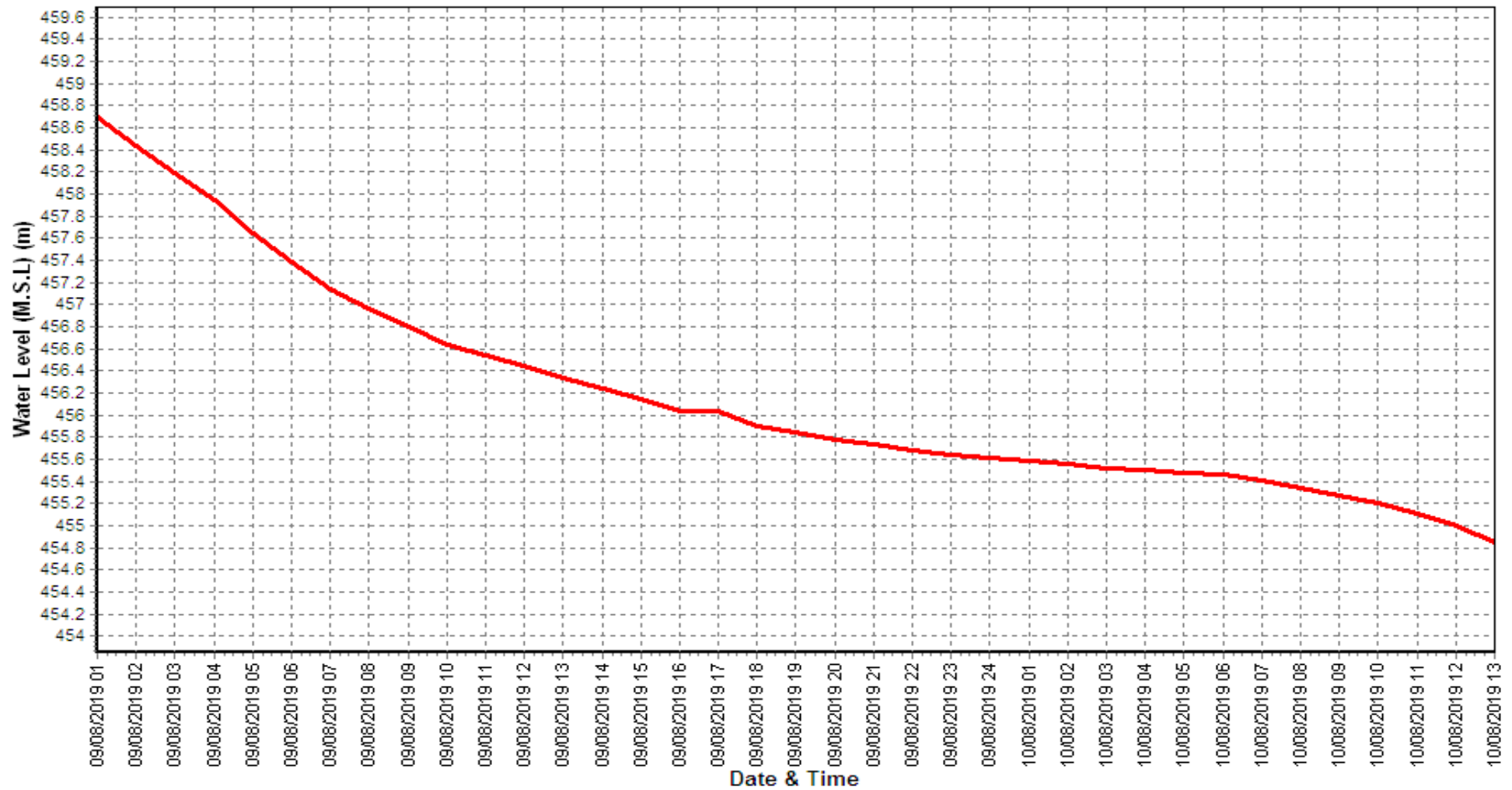
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Narasingpur (AKP00Q4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



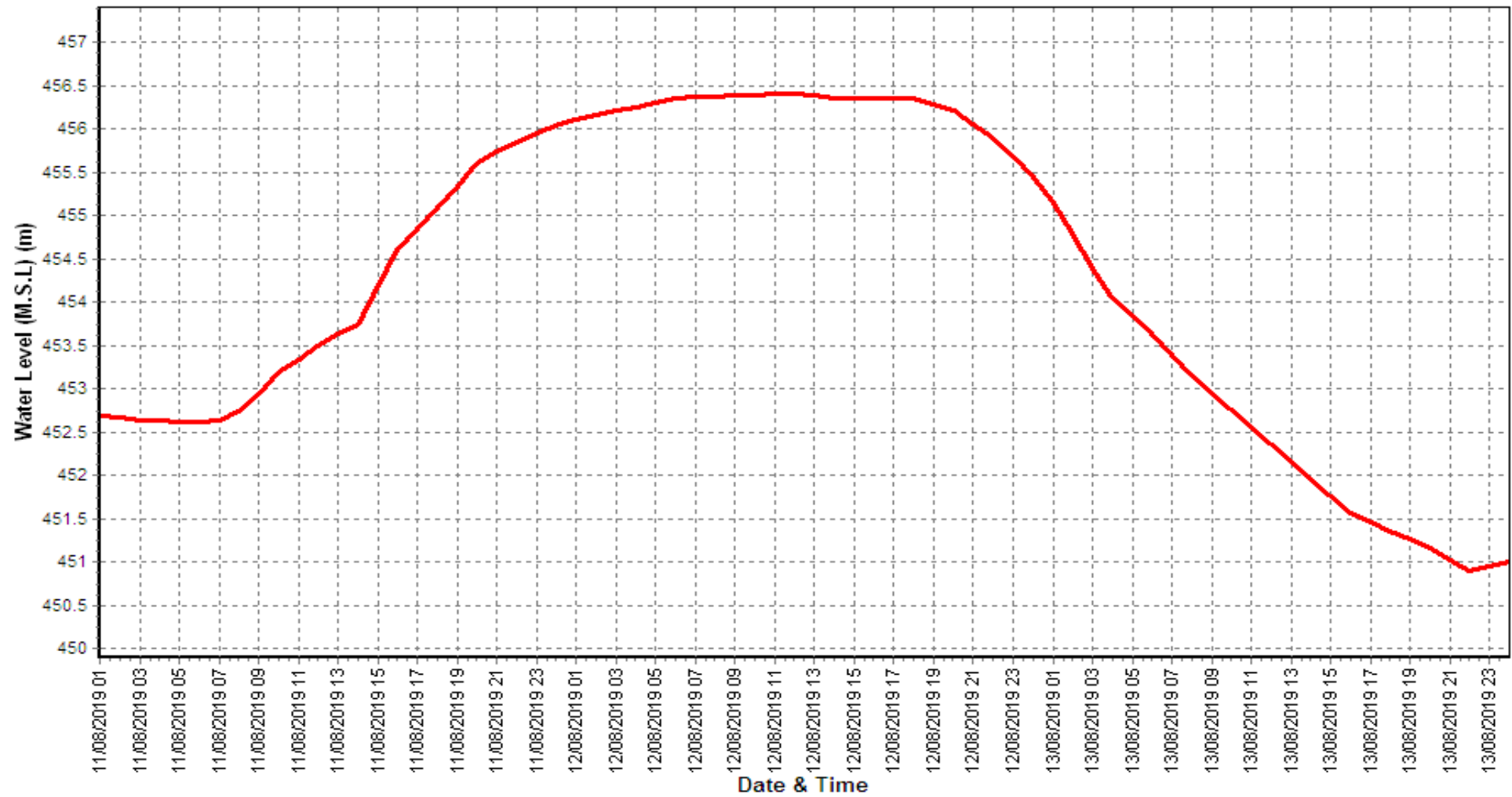
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Narasingpur (AKP00Q4)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Sarati	Code	: AKPA0C2
State	: Maharashtra	District	Pune
Basin	: Krishna	Independent River	: Krishna
Tributary	: Bhima	Sub Tributary	: Nira
Sub-Sub Tributary	: -	Local River	: Nira
Division	: Upper Krishna Divn, Pune	Sub-Division	: LBSD, Sholapur
Drainage Area	: 7200 Sq. Km.	Bank	: Left
Latitude	: 17°54'43"	Longitude	: 75°00'27"
Zero of Gauge (m)	: 468.128 (m.s.l) 466.128 (m.s.l)	25/08/1963 01/06/2003	- 31/05/2003
	Opening Date	Closing Date	
Gauge	: 01/06/1965	HFL During 2019-20	: 475.478 m
Discharge	: 01/06/1965	Corres. Discharge	: 2602 (Estimated)
Sediment	: 01/06/1966	Date & Time of occurrence	: 06/08/2019 : 22:00 Hrs
Water Quality	: 01/09/1972		

HFL Recorded so far in m : 476.788 dt 02-08-1976

Corresponding Discharge (cumecs) : 3233*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	2214	474.843	04/05/1966	0.644	468.608	30/03/1966
1966-1967	1084	472.848	14/11/1966	0.500	468.718	22/04/1967
1967-1968	2404	475.678	28/07/1967	0.925	468.753	07/06/1967
1968-1969	696.2	471.803	01/10/1968	0.000	468.333	10/05/1969
1969-1970	2254	475.008	31/08/1969	0.100	468.343	02/06/1969
1970-1971	772.7	471.968	30/08/1970	0.000	468.293	03/05/1971
1971-1972	1355	473.388	25/09/1971	0.000	468.368	18/04/1972
1972-1973	918.9	472.183	09/07/1972	0.000	468.248	10/04/1973
1973-1974	1104	472.963	09/07/1973	0.000	468.218	20/06/1973
1974-1975	1278	473.011	24/10/1974	0.100	468.308	13/04/1975
1975-1976	1426	473.174	16/08/1975	0.100	468.338	06/05/1976
1976-1977	2757	476.089	02/08/1976	0.000	468.268	16/04/1977
1977-1978	958.7	472.128	23/11/1977	0.000	468.453	25/04/1978
1978-1979	929.6	472.086	30/08/1978	0.000	468.433	25/04/1979
1979-1980	2930	475.178	26/09/1979	0.000	468.393	23/05/1980
1980-1981	1908	474.112	04/08/1980	0.000	468.388	02/05/1981
1981-1982	2120	474.338	21/09/1981	0.000	468.328	16/04/1982

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1982-1983	490.0	470.958	16/08/1982	0.000	468.283	02/04/1983
1983-1984	2410	475.276	16/08/1983	0.000	468.438	17/04/1984
1984-1985	565.3	471.128	05/07/1984	0.000	468.283	31/03/1985
1985-1986	1240	472.888	03/08/1985	0.000	468.433	25/01/1986
1986-1987	507.9	471.011	30/06/1986	0.000	468.388	28/01/1987
1987-1988	502.0	471.163	18/10/1987	0.000	468.423	06/02/1988
1988-1989	1671	473.218	03/08/1988	0.000	468.458	25/01/1989
1989-1990	976.4	471.923	26/07/1989	0.000	468.433	25/01/1990
1990-1991	1733	473.468	17/08/1990	0.000	468.508	12/03/1991
1991-1992	1008	472.663	28/07/1991	0.000	468.298	26/01/1992
1992-1993	1219	473.040	18/08/1992	0.000		25/01/1993
1993-1994	831.3	471.555	18/10/1993	0.000	468.413	15/03/1994
1994-1995	2237	474.173	30/06/1994	0.000	468.468	26/01/1995
1995-1996	251.1	470.443	24/07/1995	0.000		26/01/1996
1996-1997	2046	474.346	05/10/1996	0.000	468.718	25/01/1997
1997-1998	2165	474.628	24/08/1997	0.000	468.438	25/01/1998
1998-1999	1000	472.638	15/10/1998	0.000	468.268	25/01/1999
1999-2000	476.0	471.058	21/07/1999	0.000		26/01/2000
2000-2001	10.00	468.868	09/06/2000	0.000		25/01/2001
2001-2002	225.0	469.828	14/10/2001	0.000		25/01/2002
2002-2003	194.6	469.878	17/10/2002	0.000		25/01/2003
2003-2004	57.59	469.188	18/05/2004	0.000		16/01/2004
2004-2005	1368	472.883	13/08/2004	0.000		25/01/2005
2005-2006	2073	474.078	03/08/2005	0.000	468.138	25/01/2006
2006-2007	2103	474.078	08/08/2006	0.000	468.148	19/02/2007
2007-2008	1341	472.578	09/08/2007	0.000	468.138	26/01/2008
2008-2009	918.5	471.678	09/09/2008	0.000	468.158	25/01/2009
2009-2010	1207	472.378	04/10/2009	0.000	468.108	07/11/2009
2010-2011	613.5	470.953	01/10/2010	0.000	468.213	19/04/2011
2011-2012	1699	473.628	04/09/2011	0.000	468.218	11/02/2012
2012-2013	93.53	469.158	13/09/2012	0.000		19/06/2012
2013-2014	1318	472.348	19/09/2013	0.000	468.208	22/12/2013
2014-2015	120.8	470.508	07/09/2014	0.000		25/01/2015
2015-2016	0.000	468.898	18/09/2015	0.000		24/06/2015
2016-2017	1143	472.608	05/08/2016	0.000		08/12/2016
2017-2018	694.0	471.508	15/09/2017	0.000	467.613	28/01/2018
2018-2019	507.2	471.168	23/08/2018	0.000		25/01/2019

Annual Runoff of Nira at Sarati

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Ion Monsoo	Annual	Monsoon	Ion Monsoo	Annual
1	1965-1966	1232	293	1525	44	10	54
2	1966-1967	826	87	913	29	3	32
3	1967-1968	1445	194	1639	51	7	58
4	1968-1969	721	64	785	25	2	28
5	1969-1970	2197	80	2277	78	3	80
6	1970-1971	1074	109	1183	38	4	42
7	1971-1972	1142	54	1196	40	2	42
8	1972-1973	377	4	381	13	0	13
9	1973-1974	1529	102	1631	54	4	58
10	1974-1975	1359	102	1462	48	4	52
11	1975-1976	1752	99	1852	62	4	65
12	1976-1977	2111	53	2164	75	2	76
13	1977-1978	1466	133	1599	52	5	57
14	1978-1979	1384	55	1439	49	2	51
15	1979-1980	2192	79	2270	77	3	80
16	1980-1981	1902	43	1945	67	2	69
17	1981-1982	2245	39	2283	79	1	81
18	1982-1983	474	22	496	17	1	18
19	1983-1984	1244	33	1278	44	1	45
20	1984-1985	919	12	931	32	0	33
21	1985-1986	414	0	414	15	0	15
22	1986-1987	497	6	504	18	0	18
23	1987-1988	172	31	202	6	1	7
24	1988-1989	1725	0	1725	61	0	61
25	1989-1990	863	0	863	30	0	30
26	1990-1991	1702	10	1712	60	0	61
27	1991-1992	1656	0	1656	59	0	59
28	1992-1993	806	0	806	28	0	28
29	1993-1994	1083	115	1198	38	4	42
30	1994-1995	3603	1	3603	127	0	127
31	1995-1996	192	0	192	7	0	7
32	1996-1997	1210	0	1210	43	0	43

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	1259	0	1259	44	0	44
34	1998-1999	1819	0	1819	64	0	64
35	1999-2000	960	0	960	34	0	34
36	2000-2001	7	0	7	0	0	0
37	2001-2002	133	0	133	5	0	5
38	2002-2003	72	0	72	3	0	3
39	2003-2004	7	7	14	0	0	0
40	2004-2005	991	0	991	35	0	35
41	2005-2006	2600	0	2600	92	0	92
42	2006-2007	3050	18	3068	108	1	108
43	2007-2008	1865	0	1865	66	0	66
44	2008-2009	748	0	748	26	0	26
45	2009-2010	1326	68	1394	47	2	49
46	2010-2011	1026	20	1046	36	1	37
47	2011-2012	678	0	678	24	0	24
48	2012-2013	36	0	36	1	0	1
49	2013-2014	1170	0	1170	41	0	41
50	2014-2015	250	0	250	9	0	9
51	2015-2016	0	0	0	0	0	0
52	2016-2017	644	0	644	23	0	23
53	2017-2018	618	0	618	22	0	22
54	2018-2019	550	0	550	19	0	19
55	2019-2020	2878	0	2878	102	0	102
Average		1167	35	1202	41	1	42
75% Dependable flow (MCM)				550			
90 % Dependable flow (MCM)				108			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Sarati (AKPA0C2)

Division : Upper Krishna Divn, Pune

Local River : Nira

Sub-Division : LBSD, Sholapur

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000	470.513	417.5	467.908	4.938 *	468.903	91.41	470.368	327.8
2		0.000		0.000	470.863	437.0	468.098	0.000	468.718	60.54	469.803	219.7
3		0.000		0.000	471.293	500.8	468.108	0.000	468.123	0.000	470.048	261.7
4		0.000		0.000	472.148	813.4 *	468.058	0.000	468.088	0.000	469.603	194.0
5		0.000		0.000	474.088	1669	471.253	533.8	468.653	54.97	469.898	237.2
6		0.000		0.000	475.163	2437	470.923	452.7	468.918	78.51 *	470.848	444.3
7		0.000		0.000	474.983	2221	470.378	329.0	469.268	129.4	469.968	247.5
8		0.000		0.000	474.768	2165	470.788	440.4 *	468.898	79.42	469.798	221.8
9		0.000		0.000	472.848	1068	470.443	346.0	468.783	68.19	469.708	205.8
10		0.000		0.000	470.283	330.6	470.318	322.2 *	468.718	60.37	469.398	163.9
11		0.000		0.000	472.078	766.5 *	470.748	407.1	469.333	156.9	469.318	151.3
12		0.000		0.000	472.138	802.5 *	469.598	203.1	469.568	186.6	469.168	132.2
13		0.000		0.000	471.428	524.3	469.333	157.7	469.008	89.26 *	469.158	130.8
14		0.000		0.000	469.313	152.1	469.838	231.0	468.868	87.25	469.108	118.7
15		0.000		0.000	468.508	38.18 *	469.968	246.0 *	468.808	66.34	468.988	88.79
16		0.000		0.000	468.368	23.50	469.058	108.0	468.748	61.77	468.948	86.27
17		0.000		0.000	469.628	193.8	468.848	70.62 #	468.618	40.03	468.908	85.90
18		0.000		0.000	469.648	185.3 *	468.833	79.90	468.543	41.07 #	468.818	62.99
19		0.000		0.000	468.543	51.45	468.393	24.66	468.618	40.03	468.668	45.25
20		0.000		0.000	468.928	79.68 #	468.308	25.55	468.818	67.37 *	468.668	42.87
21		0.000		0.000	468.863	72.28 #	468.943	88.40	473.978	1654	468.668	42.87
22		0.000		0.000	468.353	18.82	468.578	44.06 *	470.968	475.1	468.678	46.83
23		0.000		0.000	468.218	18.26 #	468.333	25.99	473.688	1569 *	468.458	27.42
24		0.000		0.000	468.078	0.000	468.348	21.54	472.103	753.4	468.138	0.000
25		0.000		0.000	468.078	0.000	469.898	236.5	470.278	316.6	468.278	21.33
26		0.000		0.000	467.968	0.000	472.013	718.9	470.423	370.5	468.418	26.97
27		0.000		0.000	467.838	0.000	472.038	721.9	470.268	310.7 *	468.178	0.000
28		0.000		0.000	467.828	0.000	469.928	237.4	469.688	185.4	468.118	0.000
29		0.000		0.000	468.008	0.000	469.418	146.8 *	469.688	186.7	468.118	0.000
30		0.000	468.778	63.30	467.998	0.000	469.068	105.2	469.768	191.7	468.108	0.000
31			471.798	654.6	467.928	0.000			469.533	168.9		
Ten-Daily Mean												
I Ten-Daily		0.000		0.000	472.695	1206	469.628	242.9	468.707	62.28	469.944	252.4
II Ten-Daily		0.000		0.000	469.858	281.7	469.292	155.4	468.893	83.66	468.975	94.50
III Ten-Daily		0.000	470.288	65.26	468.105	9.942	469.656	234.7	470.944	562.0	468.316	16.54
Monthly												
Min.		0.000	468.778	0.000	467.828	0.000	467.908	0.000	468.088	0.000	468.108	0.000
Max.		0.000	471.798	654.6	475.163	2437	472.038	721.9	473.978	1654	470.848	444.3
Mean		0	470.288	23.16	470.151	483.4	469.525	211	469.561	246.5	469.078	121.1

Annual Runoff in MCM = 2878 Annual Runoff in mm = 400

Peak Observed Discharge = 2437 cumecs on 06/08/2019 Corres. Water Level :475.163 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Sarati (AKPA0C2)

Division : Upper Krishna Divn, Pune

Local River : Nira

Sub-Division : LBSD, Sholapur

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	468.128	0.000	468.478	0.000	468.268	0.000	467.798	0.000	Not observed Due to Lock-Down			0.000
2	468.688	0.000	468.478	0.000	468.238	0.000	467.778	0.000				0.000
3	468.798	0.000	468.473	0.000	468.238	0.000	467.778	0.000				0.000
4	468.728	0.000	468.473	0.000	468.233	0.000	467.768	0.000				0.000
5	468.748	0.000	468.473	0.000	468.218	0.000	467.738	0.000				0.000
6	468.838	0.000	468.473	0.000	468.203	0.000	467.708	0.000				0.000
7	468.748	0.000	468.473	0.000	468.178	0.000	467.678	0.000				0.000
8	468.608	0.000	468.458	0.000	468.158	0.000	467.648	0.000				0.000
9	468.438	0.000	468.453	0.000	468.128	0.000	467.618	0.000				0.000
10	468.298	0.000	468.438	0.000	468.118	0.000	467.588	0.000				0.000
11	468.158	0.000	468.438	0.000	468.098	0.000	467.498	0.000				0.000
12	468.128	0.000	468.438	0.000	468.098	0.000	467.488	0.000				0.000
13	468.078	0.000	468.438	0.000	468.098	0.000	467.468	0.000				0.000
14	468.068	0.000	468.448	0.000	468.098	0.000	467.438	0.000				0.000
15	468.018	0.000	468.448	0.000	468.093	0.000	467.418	0.000				0.000
16	467.988	0.000	468.443	0.000	468.078	0.000	467.388	0.000				0.000
17	468.008	0.000	468.433	0.000	468.068	0.000	467.358	0.000				0.000
18	468.068	0.000	468.433	0.000	468.053	0.000	467.348	0.000				0.000
19	468.108	0.000	468.433	0.000	468.043	0.000	467.328	0.000				0.000
20	468.148	0.000	468.438	0.000	468.038	0.000	467.328	0.000		0.000		0.000
21	468.398	0.000	468.428	0.000	468.018	0.000	467.318	0.000		0.000		0.000
22	468.428	0.000	468.423	0.000	467.998	0.000	467.288	0.000		0.000		0.000
23	468.398	0.000	468.408	0.000	467.968	0.000	467.258	0.000		0.000		0.000
24	468.398	0.000	468.388	0.000	467.958	0.000	467.228	0.000		0.000		0.000
25	468.398	0.000	468.373	0.000	467.948	0.000	467.138	0.000		0.000		0.000
26	468.408	0.000	468.368	0.000	467.918	0.000	Not observed Due to Lock-Down			0.000		0.000
27	468.418	0.000	468.363	0.000	467.888	0.000				0.000		0.000
28	468.438	0.000	468.348	0.000	467.858	0.000				0.000		0.000
29	468.458	0.000	468.323	0.000	467.828	0.000				0.000		0.000
30	468.478	0.000	468.308	0.000						0.000		0.000
31	468.478	0.000	468.278	0.000								0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	468.602	0.000	468.467	0.000	468.198	0.000	467.710	0.000				0.000
II Ten-Daily	468.077	0.000	468.439	0.000	468.077	0.000	467.406	0.000		0.000		0.000
III Ten-Daily	468.427	0.000	468.364	0.000	467.931	0.000	467.246	0.000		0.000		0.000
<u>Monthly</u>												
Min.	467.988	0.000	468.278	0.000	467.828	0.000	467.138	0.000		0.000		0.000
Max.	468.838	0.000	468.478	0.000	468.268	0.000	467.798	0.000		0.000		0.000
Mean	468.371	0	468.422	0	468.073	0	467.496	0		0		0

Peak Computed Discharge = 1569 cumecs on 23/10/2019

Corres. Water Level :473.688 m

Lowest Computed Discharge = 4.938 cumecs on 01/09/2019

Corres. Water Level :467.908 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

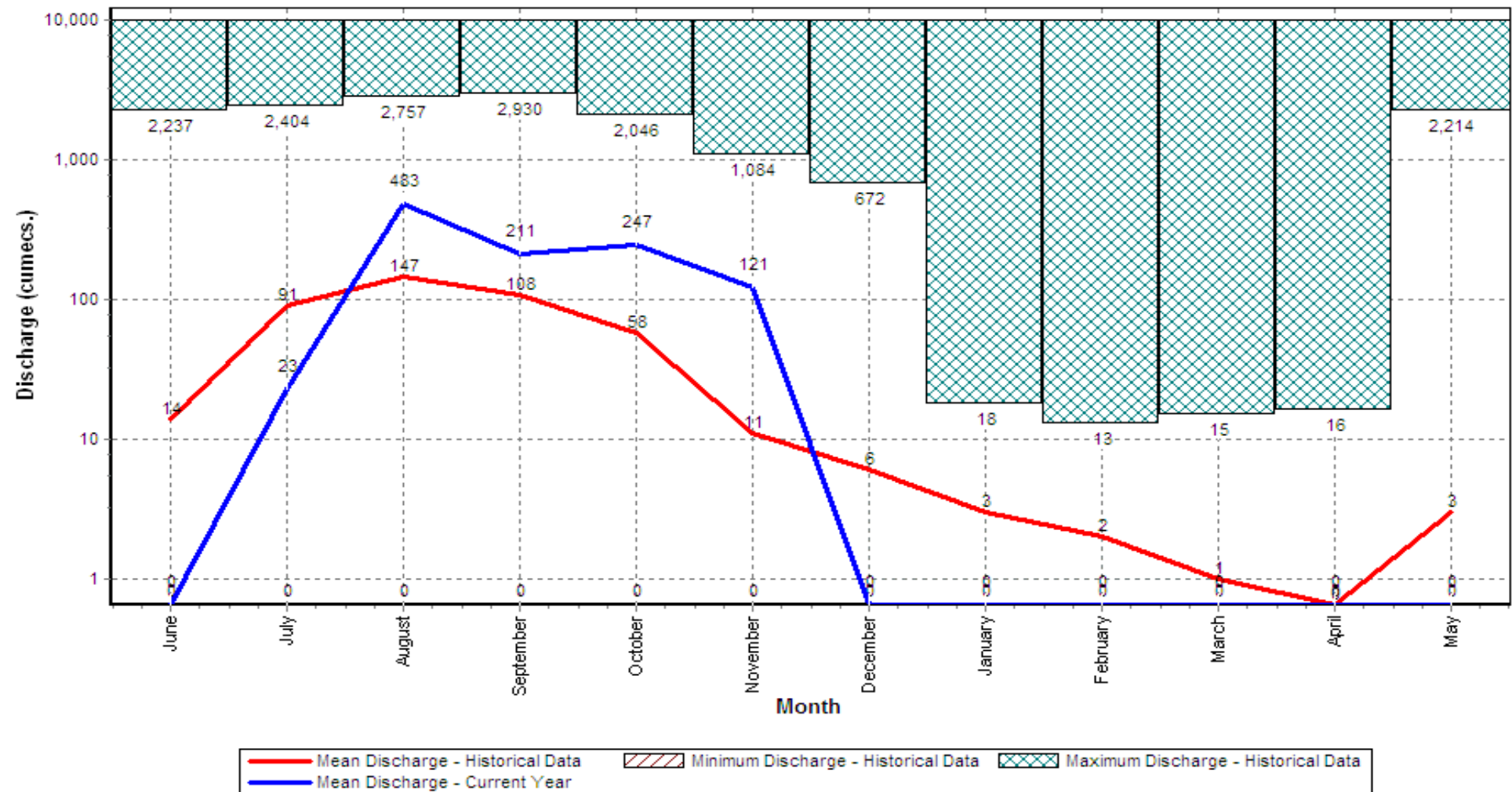
Station Name : Sarati (AKPA0C2)

Data considered : 1965-2020

Division : Upper Krishna Divn, Pune

Local River : Nira

Sub-Division : LBSD, Sholapur



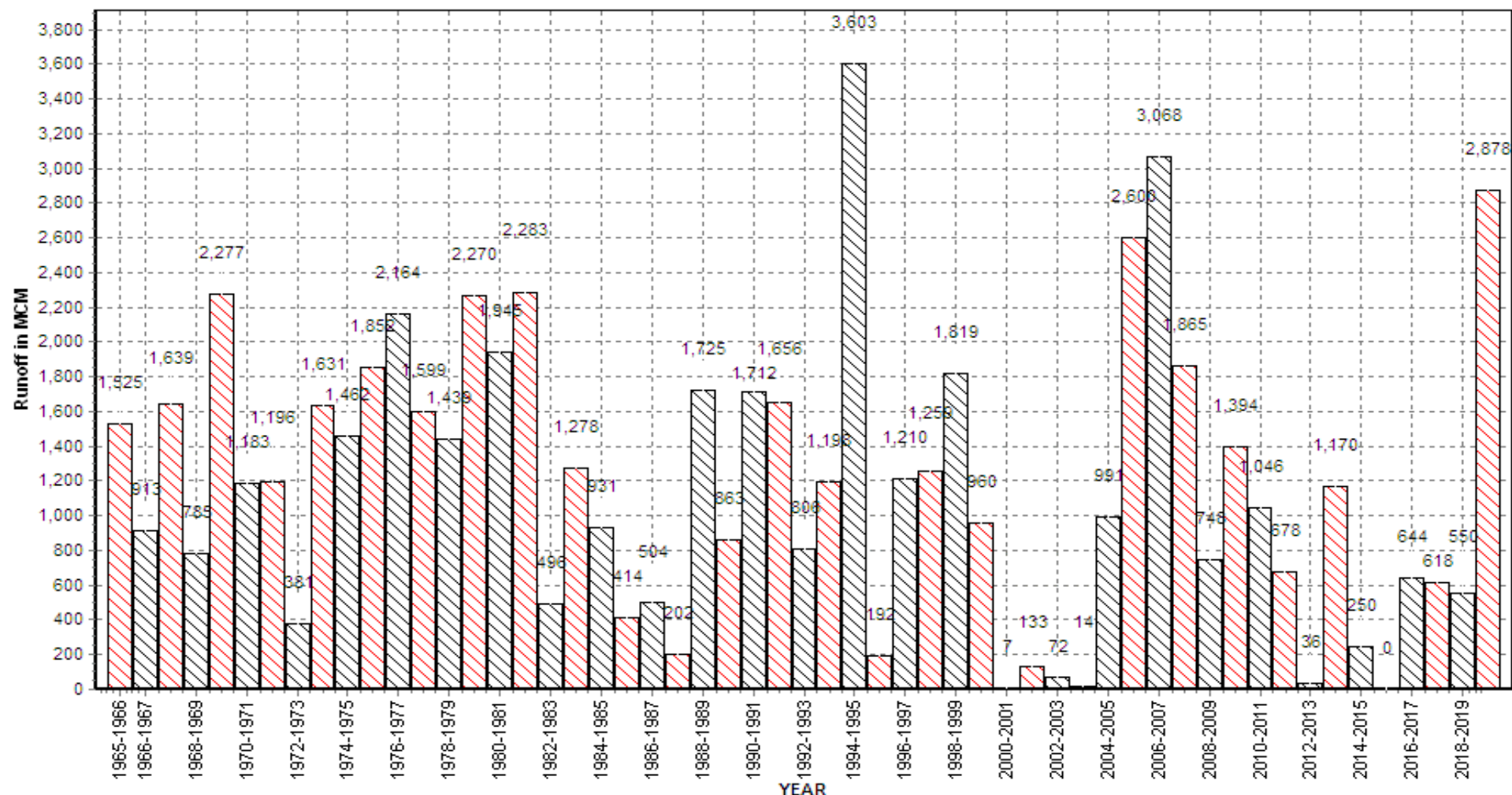
Annual Runoff Values for the period: 1965 - 2020

Station Name : Sarati (AKPA0C2)

Local River : Nira

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



Note: Missing values have not been considered while arriving at Annual Runoff

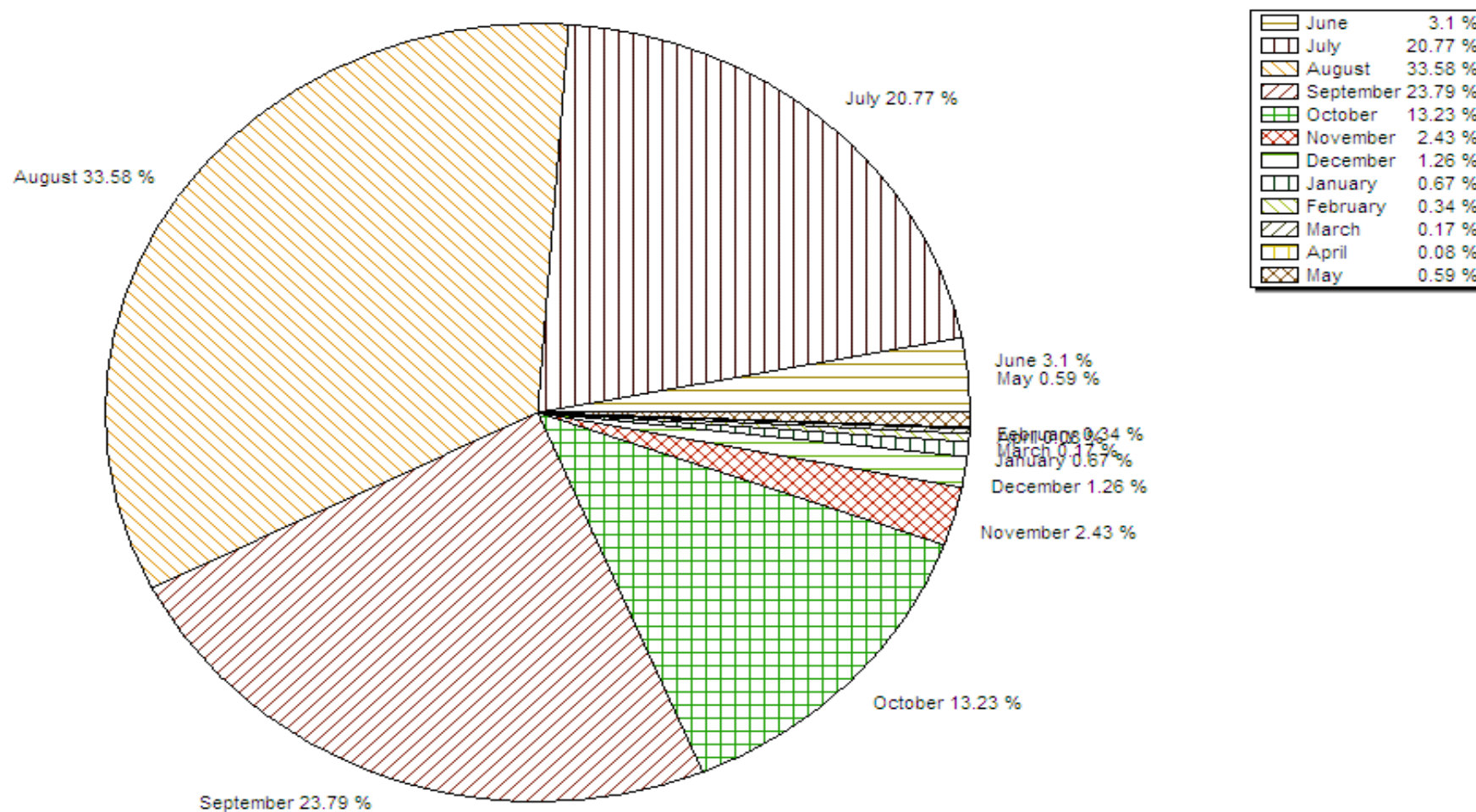
Monthly Average Runoff based on period : 1965-2019

Station Name : Sarati (AKPA0C2)

Local River : Nira

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



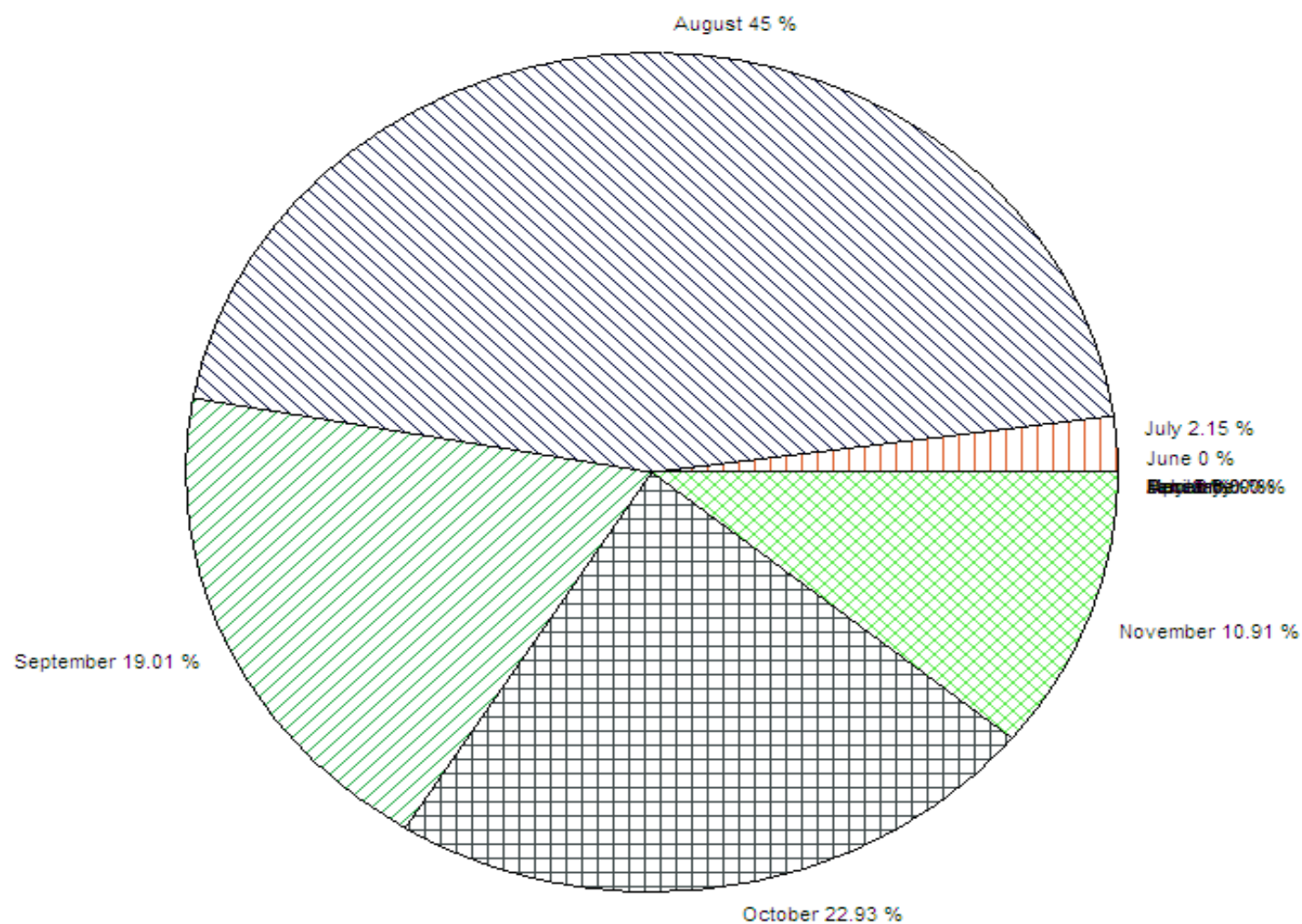
Monthly Runoff for the Year : 2019-2020

Station Name : Sarati (AKPA0C2)

Local River : Nira

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



June	0 %
July	2.15 %
August	45 %
September	19.01 %
October	22.93 %
November	10.91 %
December	0 %
January	0 %
February	0 %
March	0 %
April	0 %
May	0 %

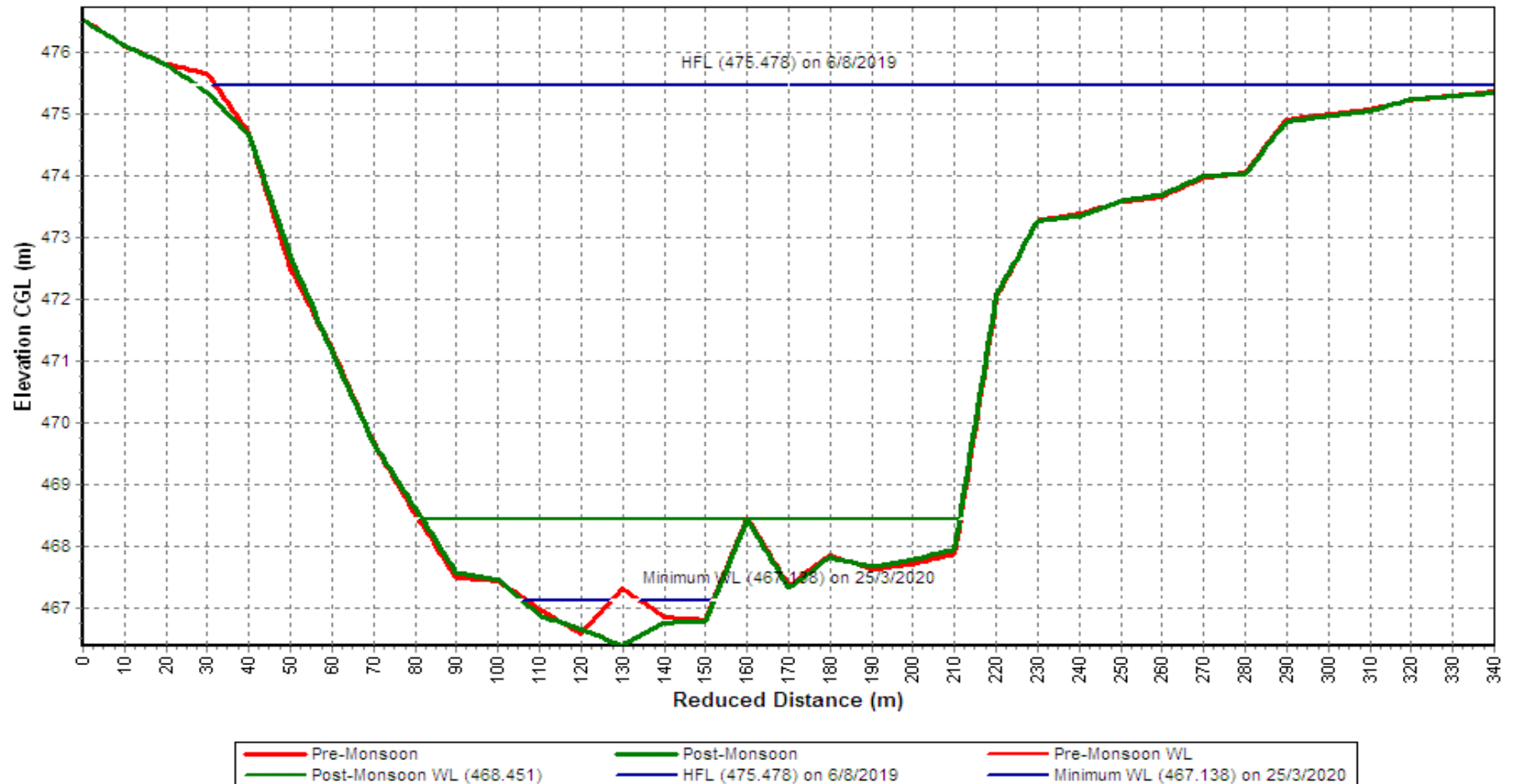
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Sarati (AKPA0C2)

Local River : Nira

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



Cross Section Difference Due to Sand Mining at RD 130m

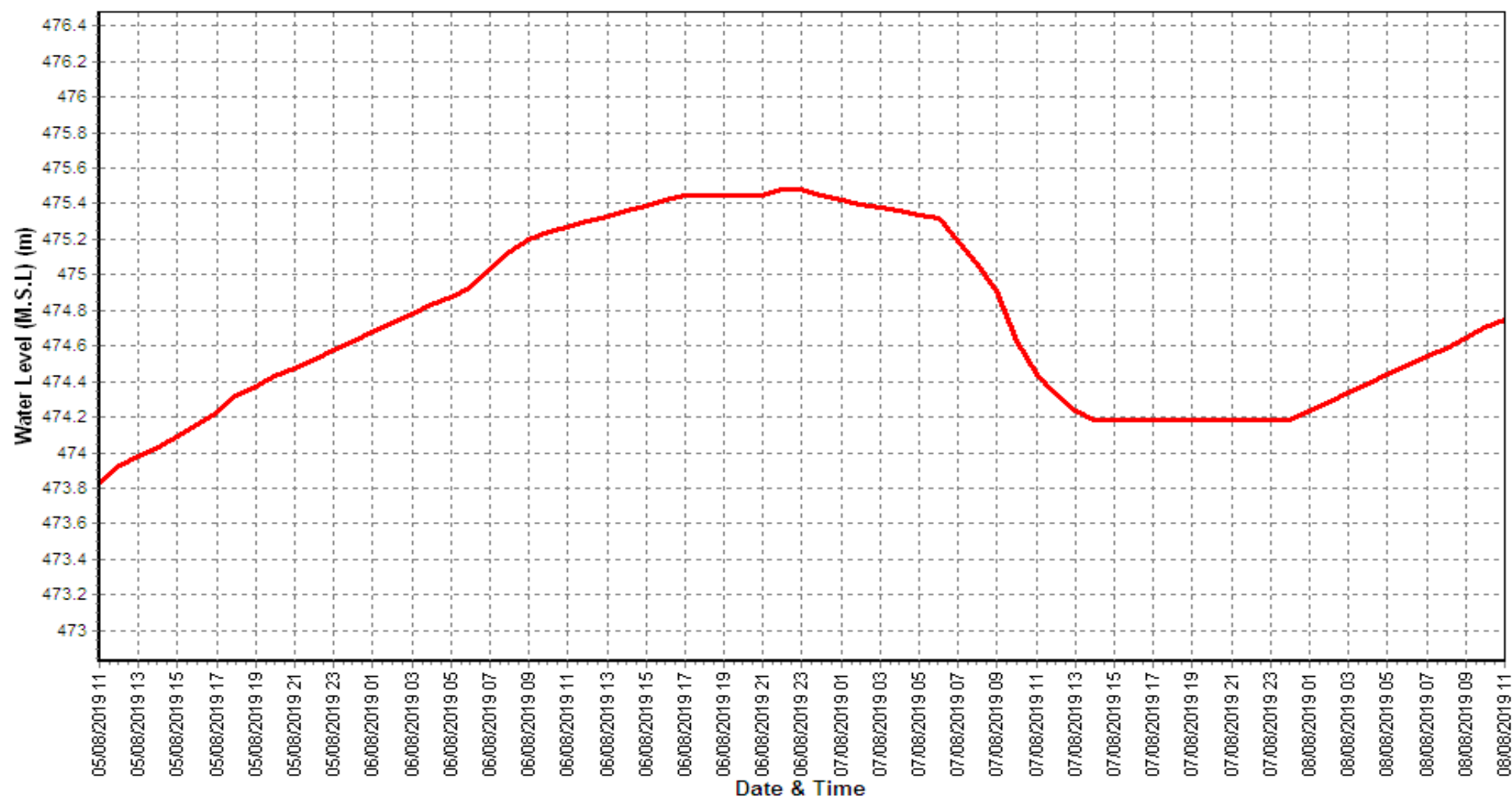
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Sarati (AKPA0C2)

Local River : Nira

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



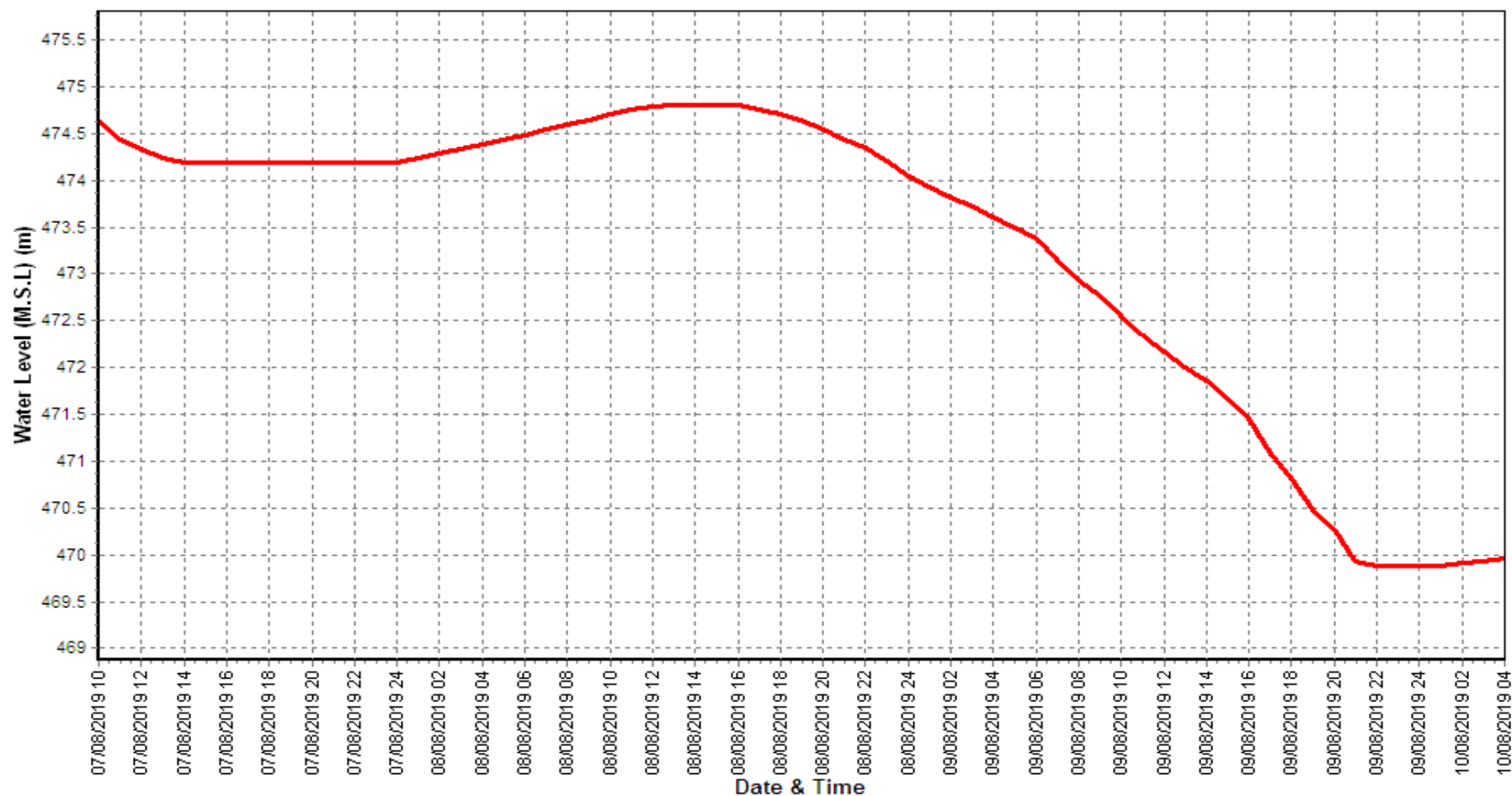
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Sarati (AKPA0C2)

Local River : Nira

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



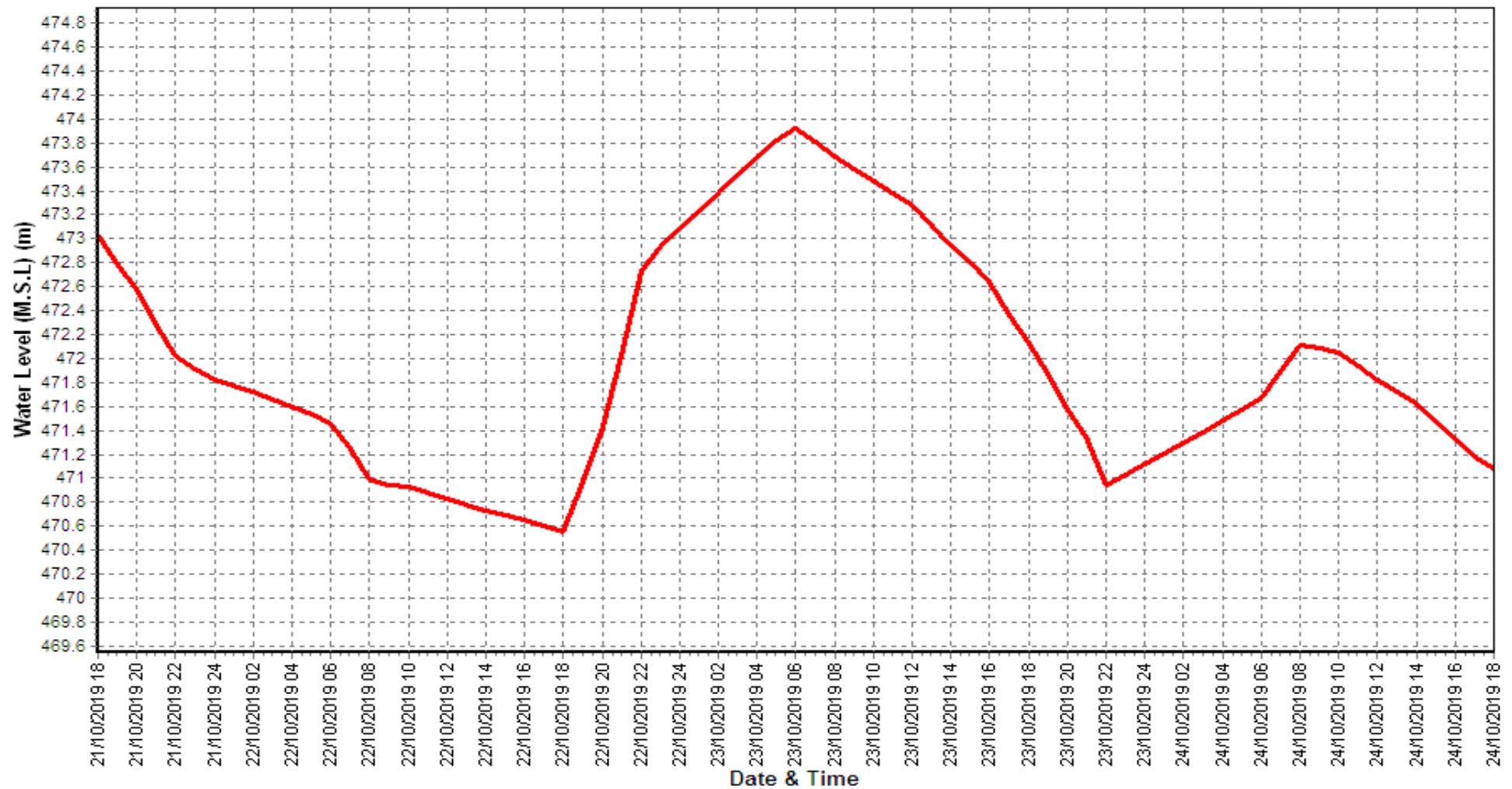
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Sarati (AKPA0C2)

Local River : Nira

Division : Upper Krishna Divn, Pune

Sub-Division : LBSD, Sholapur



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Phulgaon (Seasonal)	Code	: AKP00X5
State	: Maharashtra	District	Pune
Basin	: Krishna	Independent River	: Krishna
Tributary	: Bhima	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Bhima
Division	: Upper Krishna Divn, Pune	Sub-Division	: UBSD, Pune
Drainage Area	: 2205 Sq. Km.	Bank	: Right
Latitude	: 18°40'01"	Longitude	: 74°00'08"
Zero of Gauge (m)	: 81 (m.s.l) 537 (m.s.l)	05/07/1986 01/06/2010	- 31/05/2010
	Opening Date	Closing Date	
Gauge	: 06/06/1986	HFL During 2019-20	: 547.655 m
		Corres. Discharge	: 2150 (Estimated)
Discharge	: 20/06/1992	Date & Time of occurrence	: 04/08/2019 : 18:00 Hrs
Sediment	:		
Water Quality	: 02/08/1993		

HFL Recorded so far in m : 93.950 dt 23-08-1997 (Zero of Guage change w.e.f 01/06/2010)

Corresponding Discharge (cumecs) : 5998*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1992-1993	1022	86.829	14/08/1992	0.000	82.435	25/01/1993
1993-1994	710.4	85.868	13/07/1993	0.000	82.380	02/02/1994
1994-1995	2965	89.880	14/07/1994	0.000	82.370	31/01/1995
1995-1996	1390	87.600	03/09/1995	0.000	84.910	26/01/1996
1996-1997	1580	87.880	03/10/1996	0.000	85.590	25/01/1997
1997-1998	3006	90.300	23/08/1997	0.000	85.250	25/01/1998
1998-1999	402.0	85.250	09/07/1998	0.000	84.400	25/01/1999
1999-2000	465.0	85.560	17/07/1999	0.000	85.830	26/01/2000
2000-2001	519.6	85.680	14/07/2000	0.000	85.670	25/01/2001
2001-2002	387.6	84.980	17/08/2001	0.000	85.500	25/01/2002
2002-2003	724.0	86.350	27/06/2002	0.000	84.950	25/01/2003
2003-2004	2196	88.890	28/07/2003	0.000	85.520	26/01/2004
2004-2005	2297	88.180	12/08/2004	0.000	84.380	25/01/2005
2005-2006	3029	91.475	27/07/2005	0.000	85.180	25/01/2006
2006-2007	2212	90.080	09/08/2006	0.000	86.065	04/11/2006
2007-2008	1256	87.225	08/08/2007	0.000	83.220	17/09/2007
2008-2009	1725	87.950	11/08/2008	0.000	85.080	18/10/2008

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2009-2010	459.9	85.285	16/07/2009	0.000	86.110	23/10/2009
2010-2011	442.9	541.750	01/09/2010	0.000	539.190	07/10/2010
2011-2012	1735	545.000	30/08/2011	0.000	540.060	04/11/2011
2012-2013	300.8	542.200	05/09/2012	0.000	542.180	12/11/2012
2013-2014	1271	543.450	25/07/2013	0.000	540.480	10/07/2013
2014-2015	1101	543.950	05/08/2014	0.000	541.655	09/11/2014
2015-2016	310.8	541.950	24/06/2015	0.000	542.070	24/11/2015
2016-2017	763.8	543.580	04/08/2016	0.000	540.260	10/10/2016
2017-2018	913.6	543.780	22/07/2017	0.000	540.145	13/11/2017
2018-2019	557.7	543.015	17/07/2018	0.000	540.230	25/06/2018

Annual Runoff of Bhima at Phulgaon

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1992-1993	1161	0	1161	41	0	41
2	1993-1994	1358	0	1358	48	0	48
3	1994-1995	2703	0	2703	96	0	96
4	1995-1996	859	0	859	30	0	30
5	1996-1997	1478	0	1478	52	0	52
6	1997-1998	1952	0	1952	69	0	69
7	1998-1999	1284	0	1284	45	0	45
8	1999-2000	957	0	957	34	0	34
9	2000-2001	539	0	539	19	0	19
10	2001-2002	610	0	610	22	0	22
11	2002-2003	964	0	964	34	0	34
12	2003-2004	674	0	674	24	0	24
13	2004-2005	1224	0	1224	43	0	43
14	2005-2006	2801	0	2801	99	0	99
15	2006-2007	2720	Site downgraded as Seasonal Site from 2006-07	2720	96	Site downgraded as Seasonal Site from 2006-07	96
16	2007-2008	964		964	34		34
17	2008-2009	1106		1106	39		39
18	2009-2010	620		620	22		22
19	2010-2011	359		359	13		13
20	2011-2012	890		890	31		31
21	2012-2013	470		470	17		17
22	2013-2014	2672		2672	94		94
23	2014-2015	1170		1170	41		41
24	2015-2016	255		255	9		9
25	2016-2017	1041		1041	37		37
26	2017-2018	1459		1459	52		52
27	2018-2019	902		902	32		32
28	2019-2020	2122		2122	75		75
Average		1261	0	1261	45	0	45
75% Dependable flow (MCM)				721			
90 % Dependable flow (MCM)				459			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Phulgaon (Seasonal) (AKP00X5)

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : UBSD, Pune

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	539.920	0.000	540.810	82.58	542.950	439.2	540.450	35.33 *	540.525	41.64	540.560	0.000
2	539.780	0.000	540.770	68.84	542.615	403.9	540.910	86.00 *	540.470	37.13 *	540.560	0.000
3	539.670	0.000	541.415	154.4	543.615	639.4	540.720	61.40	540.430	34.48	540.490	0.000
4	539.310	0.000	540.670	50.84	543.575	685.3 *	540.680	58.12	540.390	28.91	540.650	0.000
5	539.190	0.000	540.460	40.87	545.885	1661	542.420	362.1	540.805	74.03	540.490	0.000
6	539.090	0.000	540.760	74.44	544.700	1026	541.545	198.7	540.630	52.93 *	540.350	0.000
7	539.030	0.000	541.320	146.0 *	544.030	815.0	541.795	255.3	540.550	43.46	540.760	0.000
8	539.010	0.000	541.970	263.2	543.580	624.3	542.020	277.3 *	540.550	44.74 *	540.380	0.000
9	539.010	0.000	542.145	314.9	542.970	444.7	542.095	302.9	540.560	46.02	540.320	0.000
10	539.530	0.000	541.385	150.0	543.095	500.5	542.230	323.4 *	540.500	39.01	540.280	0.000
11	539.610	0.000	542.238	318.6	543.395	630.4 *	542.025	293.5	540.700	62.17	540.210	0.000
12	539.720	0.000	542.500	382.2	542.370	355.7 *	541.570	199.7	540.680	57.02	540.210	0.000
13	539.760	0.000	541.120	118.4	541.745	212.5	541.055	121.3	540.570	46.73 *	540.180	0.000
14	539.770	0.000	540.790	71.01 *	541.335	144.0	542.550	413.9	540.420	0.000	541.250	0.000
15	539.770	0.000	540.705	65.22	541.115	114.3 *	543.150	558.9 *	540.330	0.000	542.540	0.000
16	539.670	0.000	540.680	57.81	541.115	99.08	542.575	417.5	540.280	0.000	543.330	0.000
17	539.620	0.000	540.490	43.68	541.220	119.7	541.630	218.7	540.150	0.000	543.235	0.000
18	539.560	0.000	540.570	42.74	540.940	89.94 *	541.550	198.4	540.080	0.000	543.230	0.000
19	539.530	0.000	540.390	28.94	540.655	59.69	541.405	171.9	540.050	0.000	543.170	0.000
20	539.780	0.000	540.355	28.74	540.560	45.66	542.060	295.3	540.390	0.000	543.110	0.000
21	539.660	0.000	540.340	26.07 *	540.450	35.54	541.345	159.9	540.950	0.000	543.100	0.000
22	539.620	0.000	540.480	29.47	540.395	21.00	540.910	86.00 *	541.605	210.8	543.160	0.000
23	539.500	0.000	540.400	25.51	540.550	48.37	540.695	60.04	541.785	242.5	543.260	0.000
24	539.600	0.000	540.345	23.93	540.515	44.90	541.418	173.3	541.295	169.5	543.280	0.000
25	539.690	0.000	540.250	21.69	540.460	36.23 *	543.185	487.5	541.185	151.0	543.295	0.000
26	539.750	0.000	540.605	50.22	540.465	40.08	542.020	296.0	541.020	113.8	543.280	0.000
27	539.750	0.000	544.030	828.2	540.395	28.77	541.660	226.3	540.880	82.14 *	543.250	0.000
28	539.690	0.000	544.660	1016 *	540.370	23.22	541.145	132.4	540.650	55.77	543.235	0.000
29	539.720	0.000	543.400	597.6	540.250	20.19	540.810	73.43 *	540.570	0.000	543.230	0.000
30	541.200	0.000	544.535	936.1	540.210	16.69 *	540.665	51.84	540.570	0.000	543.215	0.000
31			544.063	831.2	540.200	16.05 *			540.480	0.000		
Ten-Daily Mean												
I Ten-Daily	539.354	0.000	541.171	134.6	543.701	723.9	541.486	196.1	540.541	44.24	540.484	0.000
II Ten-Daily	539.679	0.000	540.984	115.7	541.445	187.1	541.957	288.9	540.365	16.59	542.047	0.000
III Ten-Daily	539.818	0.000	542.101	398.7	540.387	30.09	541.385	174.7	540.999	93.22	543.230	0.000
Monthly												
Min.	539.010	0.000	540.250	21.69	540.200	16.05	540.450	35.33	540.050	0.000	540.180	0.000
Max.	541.200	0.000	544.660	1016	545.885	1661	543.185	558.9	541.785	242.5	543.330	0.000
Mean	539.617	0	541.440	222.2	541.798	304.6	541.610	219.9	540.647	52.7	541.920	0

Annual Runoff in MCM = 2122 Annual Runoff in mm = 962

Peak Observed Discharge = 1661 cumecs on 05/08/2019 Corres. Water Level :545.885 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :539.92 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

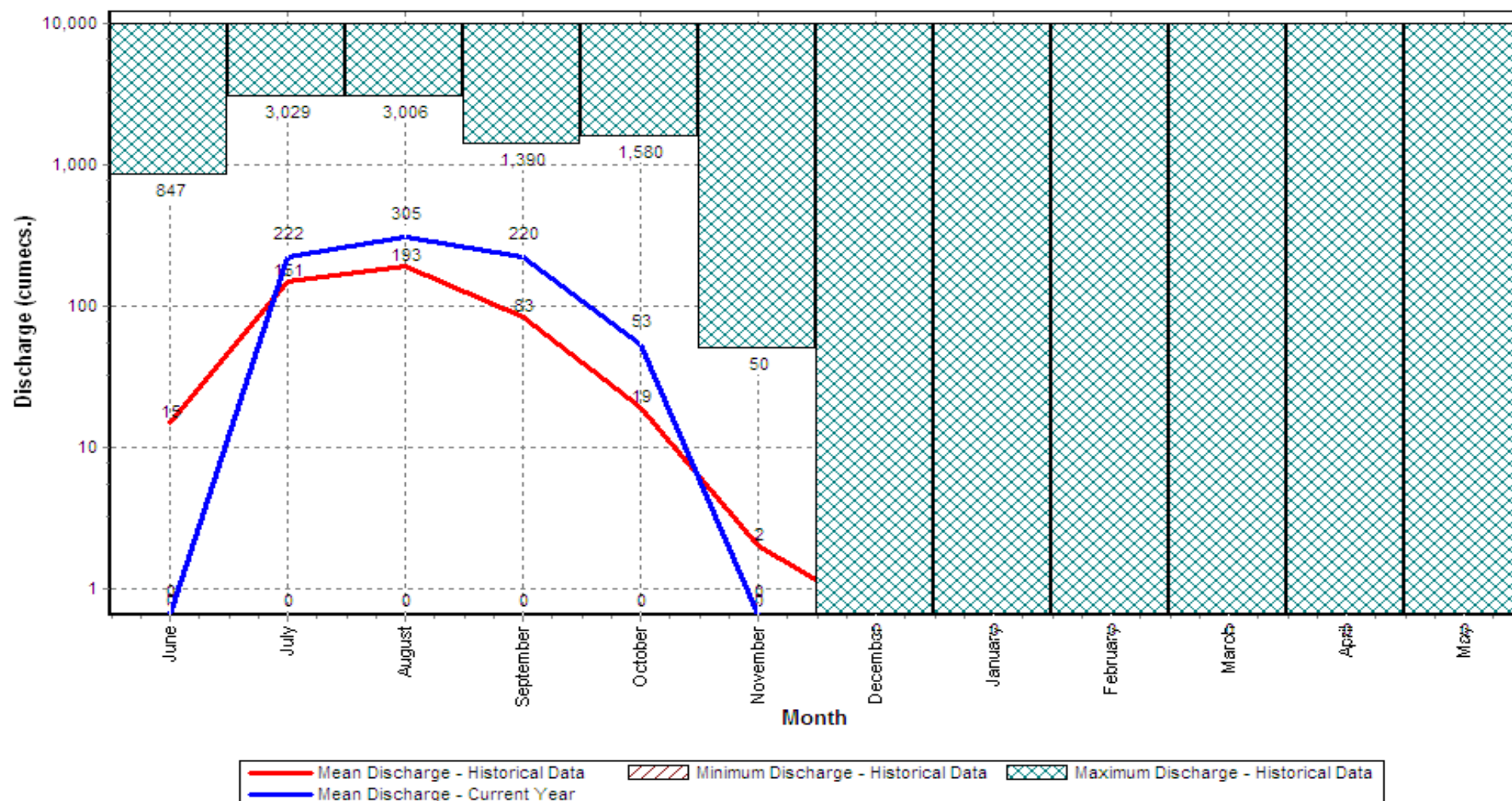
Station Name : Phulgaon (Seasonal) (AKP00X5)

Data considered : 1992-2020

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : UBSD, Pune



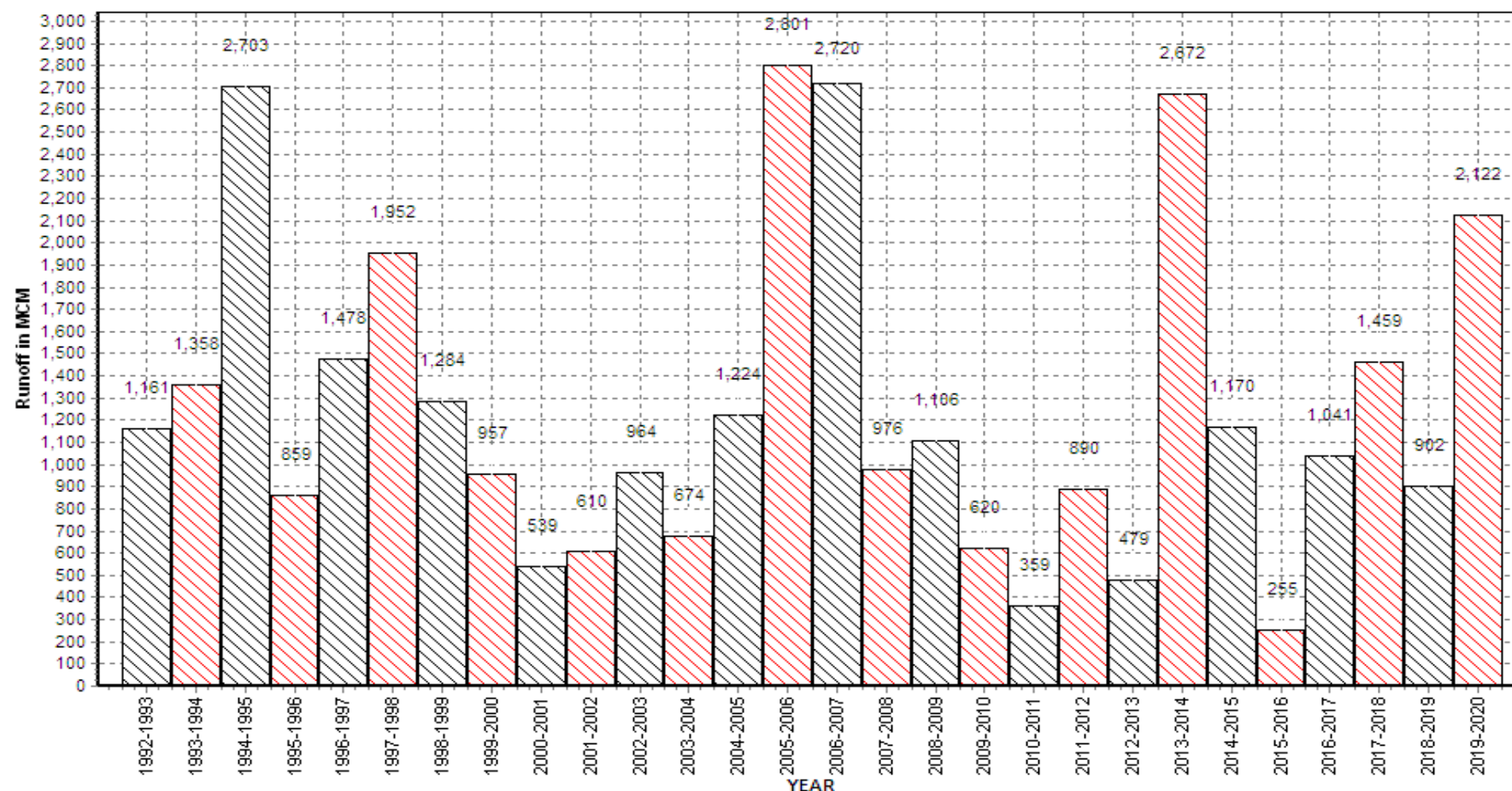
Annual Runoff Values for the period: 1992 - 2020

Station Name : Phulgaon (Seasonal) (AKP00X5)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



Note: Missing values have not been considered while arriving at Annual Runoff

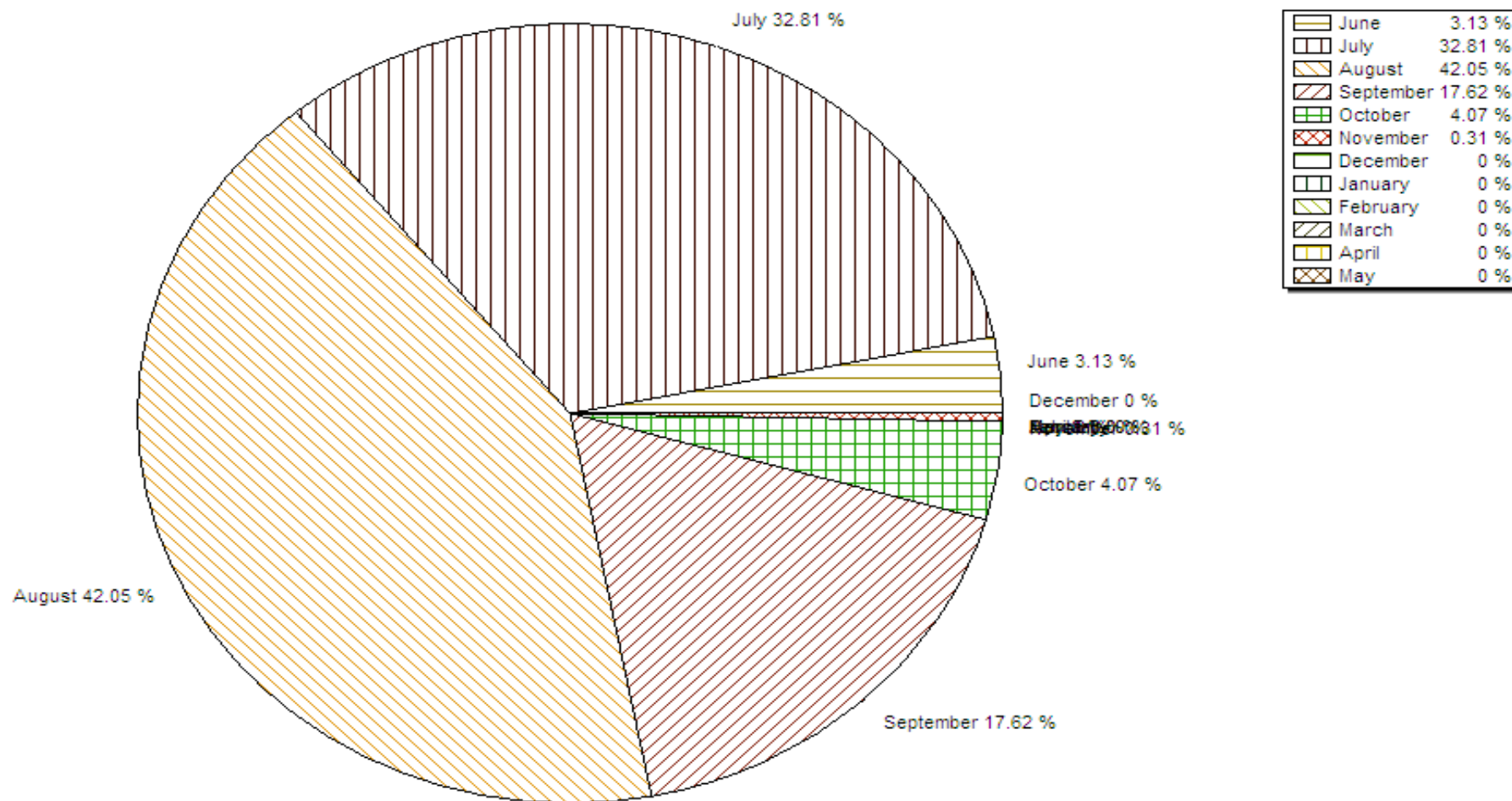
Monthly Average Runoff based on period : 1992-2019

Station Name : Phulgaon (Seasonal) (AKP00X5)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



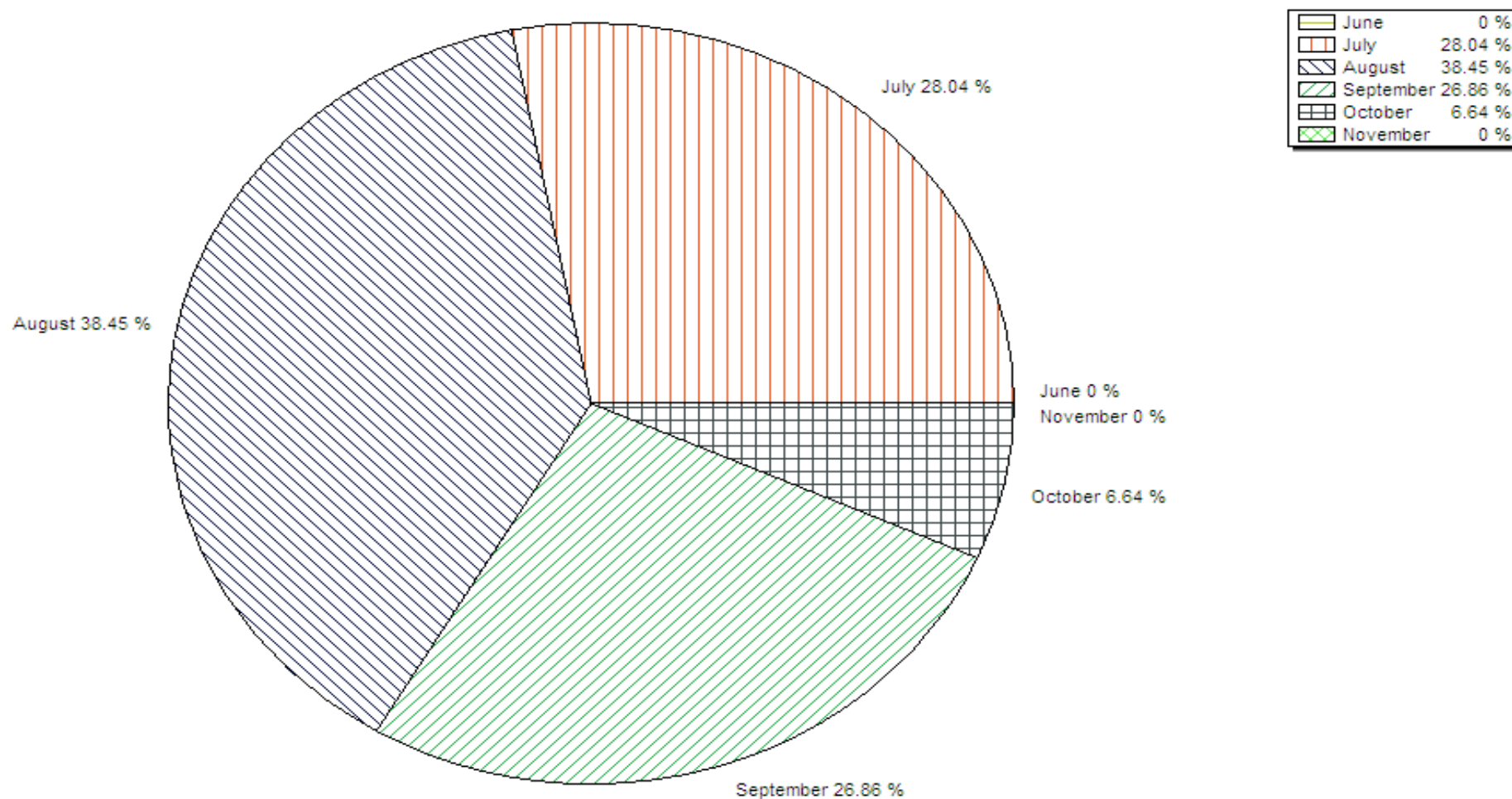
Monthly Runoff for the Year : 2019-2020

Station Name : Phulgaon (Seasonal) (AKP00X5)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



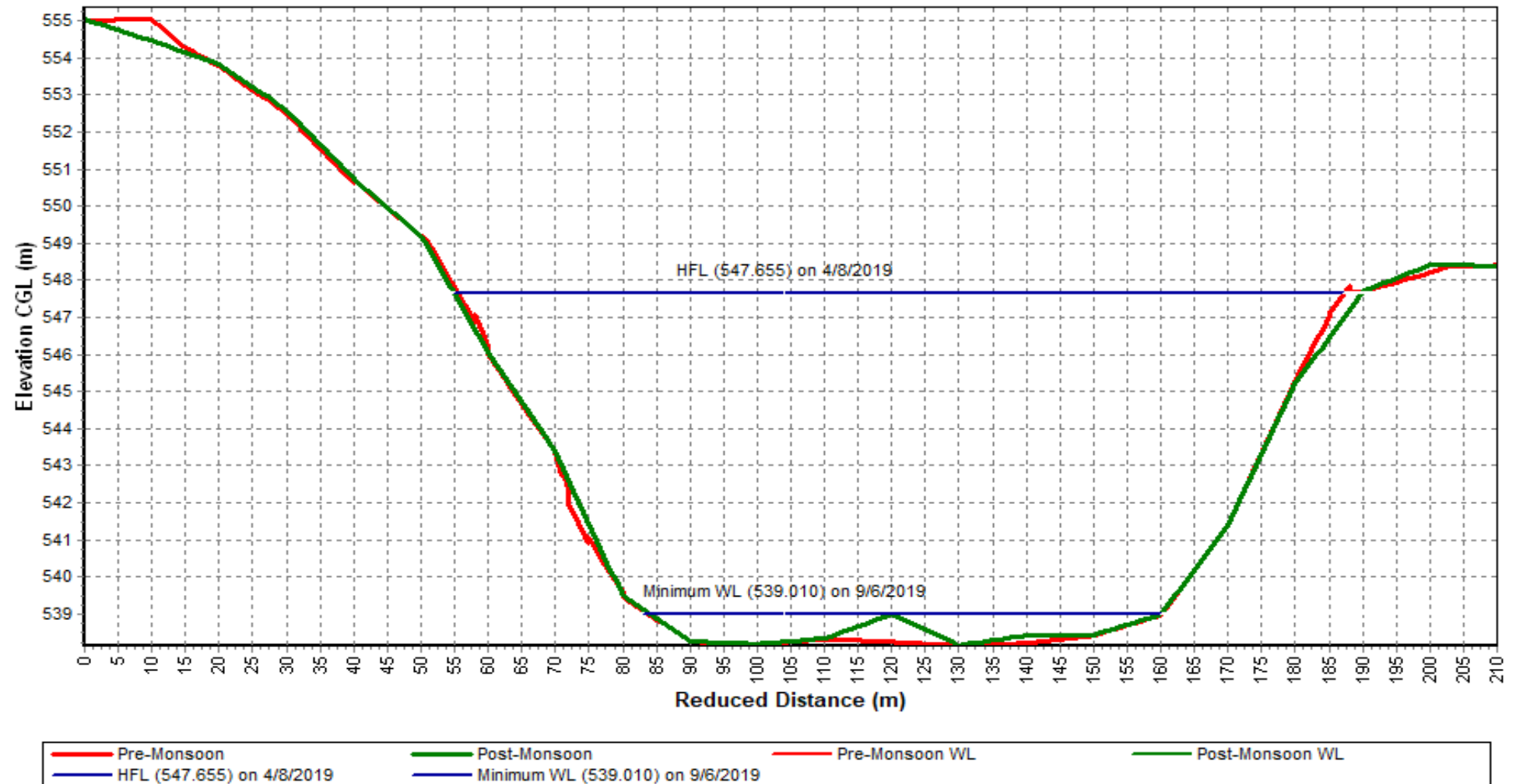
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Phulgaon (Seasonal) (AKP00X5)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



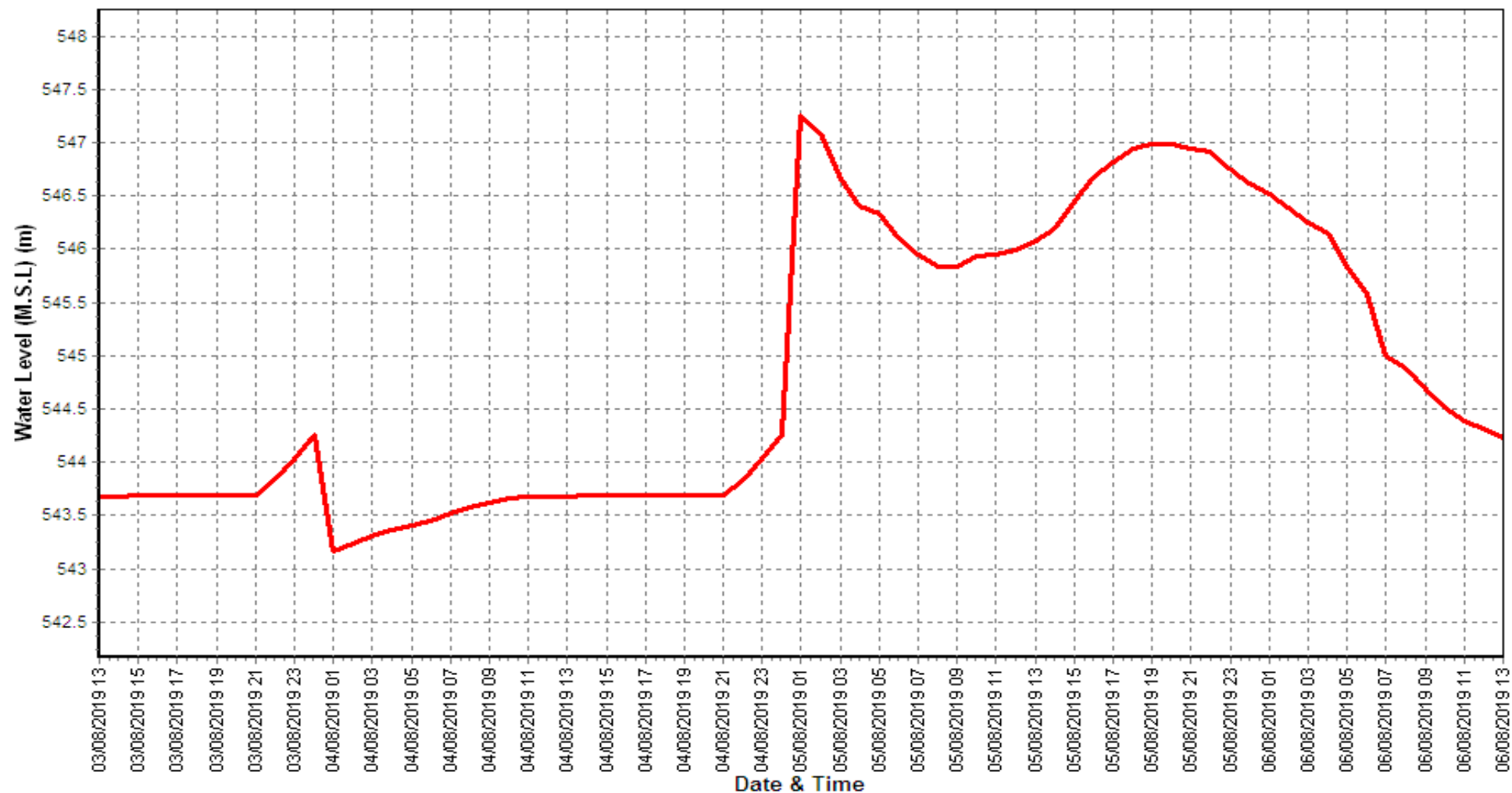
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Phulgaon (Seasonal) (AKP00X5)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



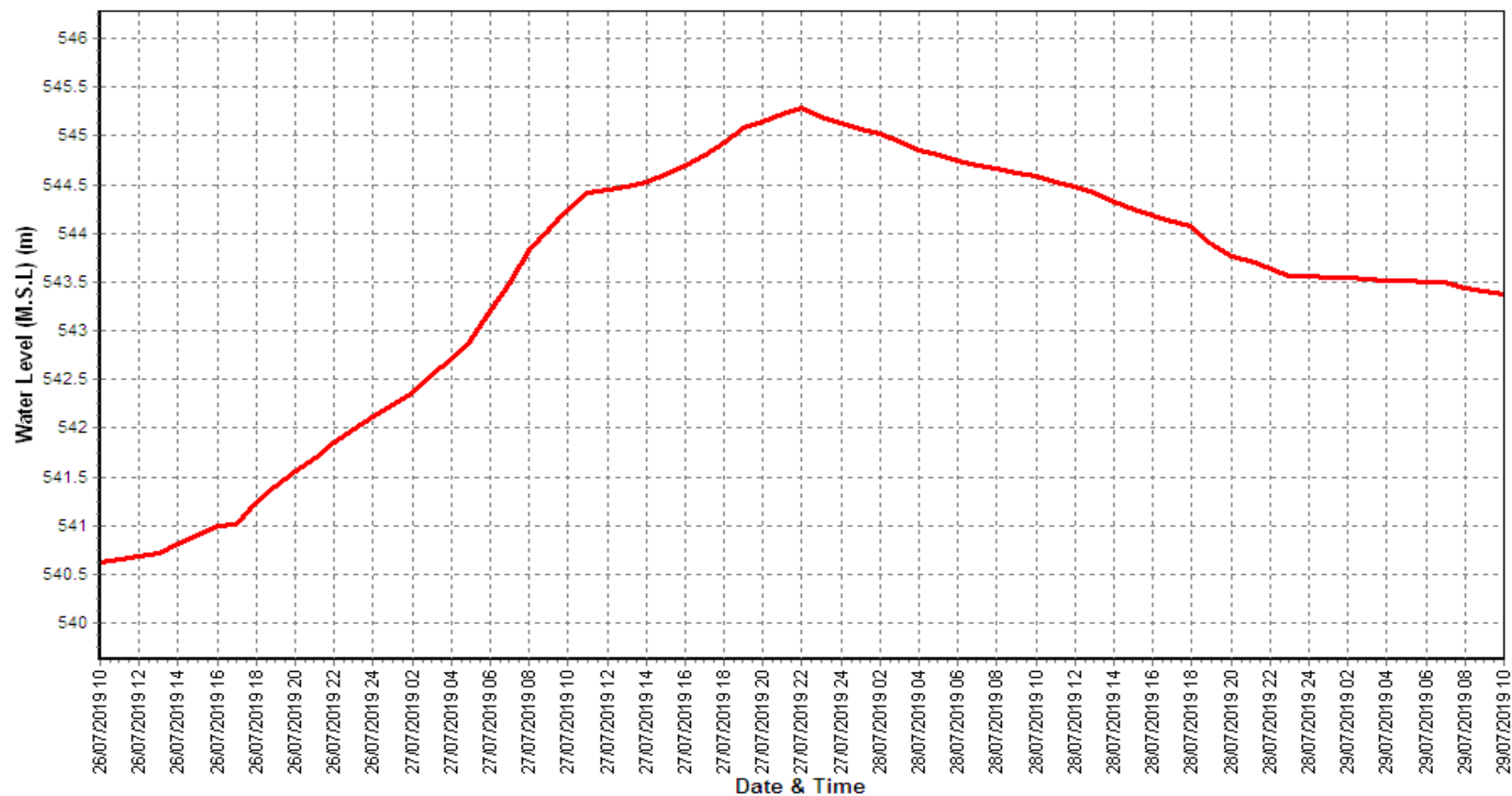
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Phulgaon (Seasonal) (AKP00X5)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



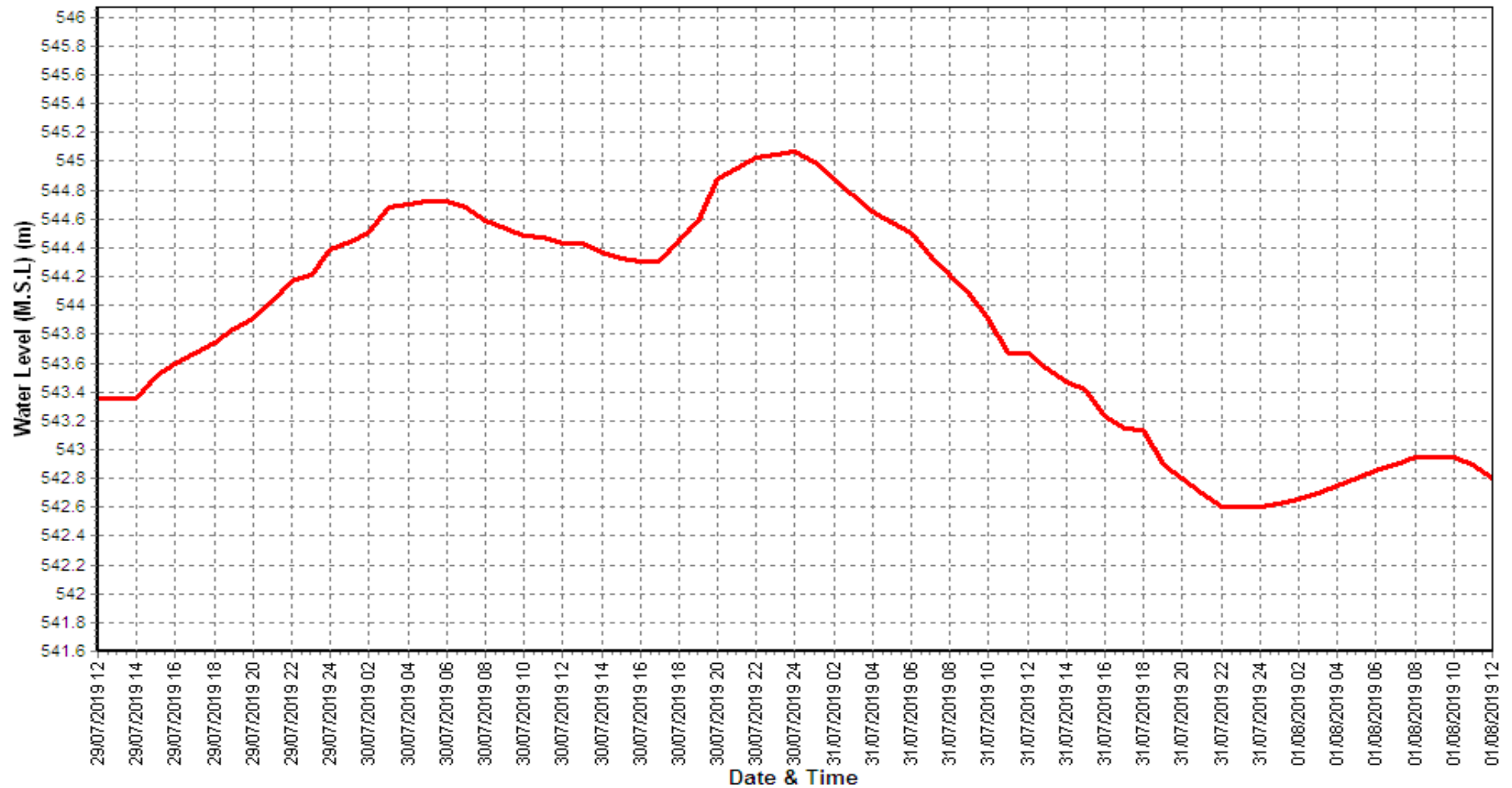
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Phulgaon (Seasonal) (AKP00X5)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Mirawadi	Code	: MIRAWADI
State	: Maharashtra	District	Pune
Basin	: Krishna	Independent River	: -
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Mula
Division	: Upper Krishna Divn, Pune	Sub-Division	: UBSD,Pune
Drainage Area	: 2640 Sq. Km.	Bank	:
Latitude	: 18°32'19"	Longitude	: 74°10'60"
Zero of Gauge (m)	: 508.5 (m.s.l)	01/05/2017	
	Opening Date	Closing Date	
Gauge	: 16/06/2018	HFL During 2019-20	: 521.680 m
Discharge	: 16/06/2018	Corres. Discharge	: 4507 (Estimated)
Sediment	:	Date & Time of occurrence	: 06/08/2019 : 10:00 Hrs
Water Quality	: 03/07/2019		

HFL Recorded so far in m : 521.680 dt 06-08-2019

Corresponding Discharge (cumecs) : 4507*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Annual Runoff of Mula at Mirawadi

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2018-2019	1358	0	1358	48	0	48
2	2019-2020	5003	0	5003	177	0	177
Average		3181	0	3181	112	0	112
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Mirawadi (MIRAWADI)

Division : Upper Krishna Divn, Pune

Local River : Mula

Sub-Division : UBSD,Pune

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	512.030	0.000	512.665	112.3	514.300	539.7	512.200	36.63 *	512.765	130.0	512.690	111.9 *
2	511.590	0.000	512.700	124.5	515.155	790.0	512.390	62.18 *	512.690	111.9 *	512.790	130.7 *
3	511.790	0.000	513.435	298.0	516.270	1208	513.370	263.2	512.623	105.2	512.700	113.7 *
4	512.040	0.000	512.790	135.0	518.520	2460 *	513.430	280.3	512.615	102.0	513.240	228.2 *
5	512.050	0.000	512.600	90.79	521.150	4133 *	516.935	1760	513.125	183.4	513.245	208.2
6	511.950	0.000	512.510	67.01	521.640	4478 *	515.560	994.6	512.790	130.7 *	512.850	129.2
7	511.860	0.000	513.590	317.0 *	517.120	1706 *	516.000	1168	512.750	127.0	512.775	117.8
8	511.900	0.000	514.235	509.8	517.510	1980	515.180	841.7 *	512.690	111.9 *	512.595	95.83
9	511.880	0.000	515.075	781.4	516.130	1180	516.210	1235	512.653	110.0	512.570	90.80
10	511.710	0.000	513.645	377.1	515.595	992.2	514.950	754.7 *	513.320	211.5	512.570	90.71 *
11	511.950	0.000	514.350	521.1	516.110	1228 *	515.140	786.1	513.150	187.0	512.540	89.24
12	512.010	0.000	514.585	557.6	515.960	1162 *	513.590	341.2	512.885	140.9	512.520	82.39 *
13	512.010	0.000	513.345	250.2	514.015	491.4	514.105	502.6	512.725	118.3 *	512.510	80.26
14	511.910	0.000	513.060	186.8 *	513.635	378.8	514.610	620.1	512.648	108.5	512.480	73.27
15	511.640	0.000	512.910	154.7 *	513.310	245.1 *	513.990	431.2 *	512.650	107.0	512.430	66.90
16	511.860	0.000	513.010	183.5	513.330	267.6	514.340	573.5	512.545	90.86	512.450	68.65
17	511.910	0.000	512.775	126.1	513.825	418.6	513.535	325.0	512.485	70.03	512.410	65.15 *
18	511.860	0.000	512.850	151.4	513.550	306.3 *	513.380	269.2	512.400	56.68	512.440	67.73
19	511.840	0.000	512.595	94.03	513.140	199.6	513.350	254.0	512.410	60.00	512.410	57.52
20	511.840	0.000	512.895	164.0	512.600	134.3	513.500	301.2	512.860	144.5 *	512.390	52.73
21	511.800	0.000	512.760	124.9 *	512.540	100.3	513.108	195.4	513.200	199.7 *	512.390	52.37
22	511.820	0.000	512.638	90.45	512.670	141.4	512.620	99.32 *	513.065	170.0	512.360	43.13
23	511.790	0.000	512.580	80.00	512.795	153.8	512.775	132.9	514.418	579.6	512.260	0.000
24	511.830	0.000	512.510	77.23	512.870	160.0	512.820	146.4	513.440	245.0	512.290	0.000
25	511.860	0.000	512.470	65.45	512.640	102.8 *	515.045	773.1	513.455	250.0	512.220	0.000
26	511.980	0.000	512.500	63.23	512.325	60.55	516.035	1167	513.160	193.3	512.180	0.000
27	512.000	0.000	514.660	581.7	512.305	48.53	514.655	642.0	512.950	163.1 *	512.160	0.000
28	511.990	0.000	516.400	1359 *	512.415	58.95	513.480	280.6	512.838	140.7	512.180	0.000
29	512.190	0.000	514.345	519.3	512.340	58.20	513.200	218.7 *	512.753	131.9	512.060	0.000
30	512.950	0.000	515.310	847.8	512.250	51.94	513.025	176.1	512.700	118.3	512.010	0.000
31			515.790	1149	512.200	44.93			512.690	115.4		
Ten-Daily Mean												
I Ten-Daily	511.880	0.000	513.325	281.3	517.339	1947	514.623	739.7	512.802	132.3	512.802	131.7
II Ten-Daily	511.883	0.000	513.238	239.0	513.948	483.2	513.954	440.4	512.676	108.4	512.458	70.38
III Ten-Daily	512.021	0.000	513.815	450.8	512.486	89.22	513.676	383.2	513.152	209.7	512.211	9.550
Monthly												
Min.	511.590	0.000	512.470	63.23	512.200	44.93	512.200	36.63	512.400	56.68	512.010	0.000
Max.	512.950	0.000	516.400	1359	521.640	4478	516.935	1760	514.417	579.6	513.245	228.2
Mean	511.928	0	513.470	327.8	514.523	815.5	514.084	521.1	512.885	152.1	512.490	70.54

Annual Runoff in MCM = 5003 Annual Runoff in mm = 1895

Peak Observed Discharge = 1980 cumecs on 08/08/2019 Corres. Water Level :517.51 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :512.03 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Mirawadi (MIRAWADI)

Division : Upper Krishna Divn, Pune

Local River : Mula

Sub-Division : UBSD,Pune

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	512.040	0.000	509.420	0.000	514.380	0.000	514.420	0.000	Not observed Due to Lock-Down		514.400	0.000
2	512.060	0.000	509.415	0.000	514.460	0.000	514.470	0.000			514.390	0.000
3	512.150	0.000	509.400	0.000	514.530	0.000	514.430	0.000			514.350	0.000
4	512.220	0.000	509.400	0.000	514.490	0.000	514.470	0.000			514.400	0.000
5	512.340	0.000	509.405	0.000	514.410	0.000	514.420	0.000			514.360	0.000
6	512.460	0.000	509.395	0.000	514.370	0.000	514.400	0.000			514.390	0.000
7	512.760	0.000	509.410	0.000	514.410	0.000	514.420	0.000			514.420	0.000
8	513.190	0.000	509.405	0.000	514.300	0.000	514.450	0.000			514.370	0.000
9	513.350	0.000	509.400	0.000	514.390	0.000	514.480	0.000			514.320	0.000
10	513.750	0.000	509.390	0.000	514.480	0.000	514.440	0.000			514.360	0.000
11	514.380	0.000	509.390	0.000	514.430	0.000	514.420	0.000			514.410	0.000
12	514.400	0.000	509.390	0.000	514.490	0.000	514.440	0.000			514.450	0.000
13	514.380	0.000	509.400	0.000	514.410	0.000	514.420	0.000			514.470	0.000
14	514.380	0.000	509.390	0.000	514.350	0.000	514.400	0.000			514.400	0.000
15	514.370	0.000	509.385	0.000	514.400	0.000	514.420	0.000			514.350	0.000
16	514.330	0.000	509.385	0.000	514.480	0.000	514.420	0.000			514.310	0.000
17	514.370	0.000	509.380	0.000	514.490	0.000	514.400	0.000			514.450	0.000
18	514.460	0.000	509.380	0.000	514.450	0.000	514.390	0.000			514.590	0.000
19	514.390	0.000	509.380	0.000	514.410	0.000	514.400	0.000			514.520	0.000
20	514.320	0.000	509.380	0.000	514.390	0.000	514.380	0.000			514.520	0.000
21	514.380	0.000	509.385	0.000	514.350	0.000	514.410	0.000	514.350	0.000	514.490	0.000
22	514.370	0.000	509.390	0.000	514.390	0.000	514.420	0.000	514.320	0.000	514.450	0.000
23	514.390	0.000	509.385	0.000	514.350	0.000	514.430	0.000	514.360	0.000	514.390	0.000
24	514.310	0.000	509.380	0.000	514.490	0.000	Not observed Due to Lock-Down		514.400	0.000	514.330	0.000
25	514.510	0.000	509.380	0.000	514.460	0.000			514.440	0.000	514.360	0.000
26	514.420	0.000	509.375	0.000	514.470	0.000			514.420	0.000	514.310	0.000
27	514.380	0.000	509.380	0.000	514.410	0.000			514.400	0.000	514.340	0.000
28	514.440	0.000	509.435	0.000	514.460	0.000			514.360	0.000	514.250	0.000
29	514.400	0.000	509.450	0.000	514.430	0.000			514.380	0.000	514.130	0.000
30	514.490	0.000	509.435	0.000					514.450	0.000	514.070	0.000
31	514.410	0.000	509.430	0.000							513.990	0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	512.632	0.000	509.404	0.000	514.422	0.000	514.440	0.000			514.376	0.000
II Ten-Daily	514.378	0.000	509.386	0.000	514.430	0.000	514.409	0.000			514.447	0.000
III Ten-Daily	514.409	0.000	509.402	0.000	514.423	0.000	514.420	0.000	514.388	0.000	514.283	0.000
<u>Monthly</u>												
Min.	512.040	0.000	509.375	0.000	514.300	0.000	514.380	0.000	514.320	0.000	513.990	0.000
Max.	514.510	0.000	509.450	0.000	514.530	0.000	514.480	0.000	514.450	0.000	514.590	0.000
Mean	513.826	0	509.398	0	514.425	0	514.424	0	514.388	0	514.366	0

Peak Computed Discharge = 4478 cumecs on 06/08/2019

Corres. Water Level :521.64 m

Lowest Computed Discharge = 36.63 cumecs on 01/09/2019

Corres. Water Level :512.2 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

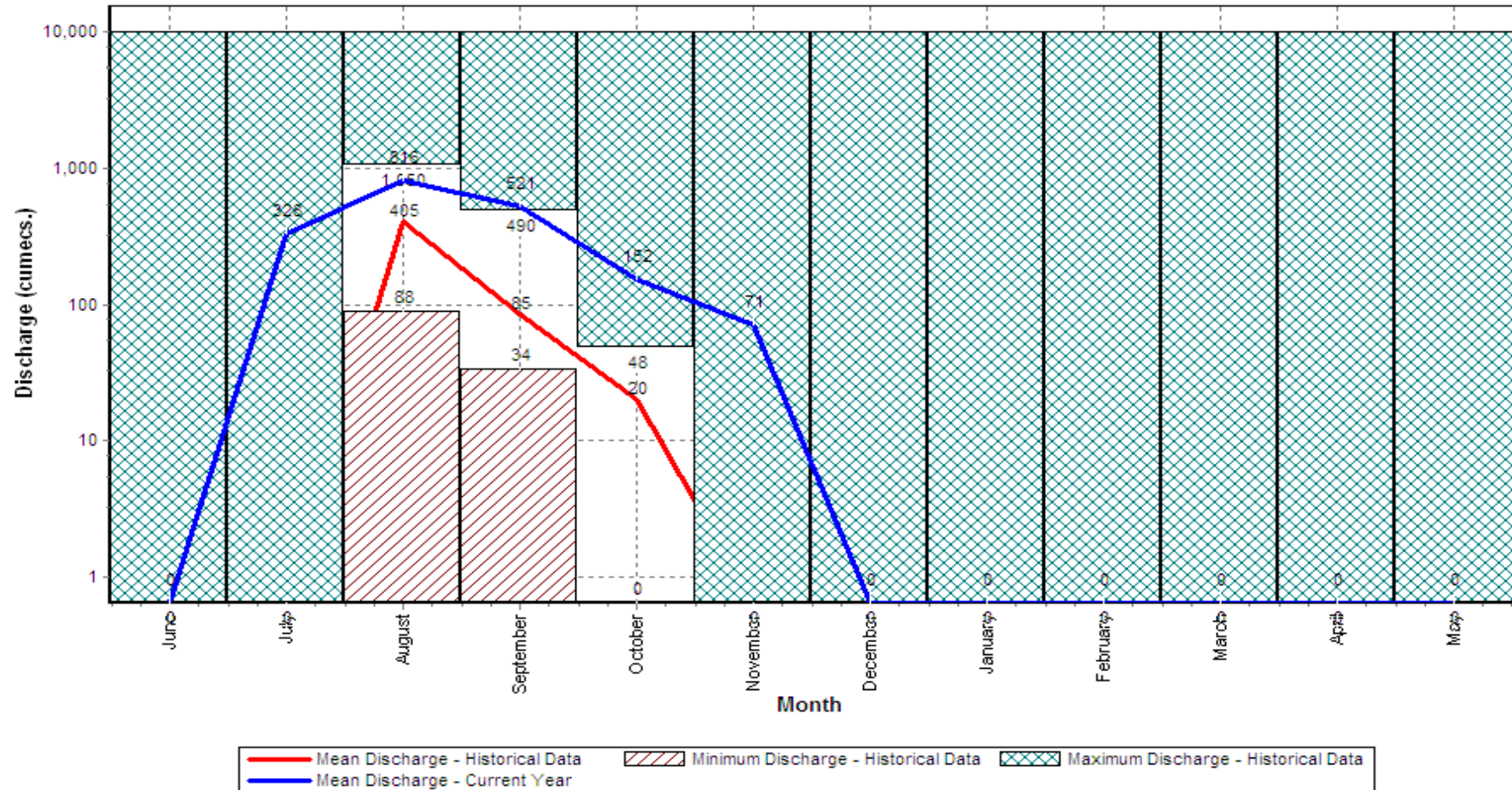
Station Name : Mirawadi (MIRAWADI)

Data considered : 2019-2020

Division : Upper Krishna Divn, Pune

Local River : Mula

Sub-Division : UBSD, Pune



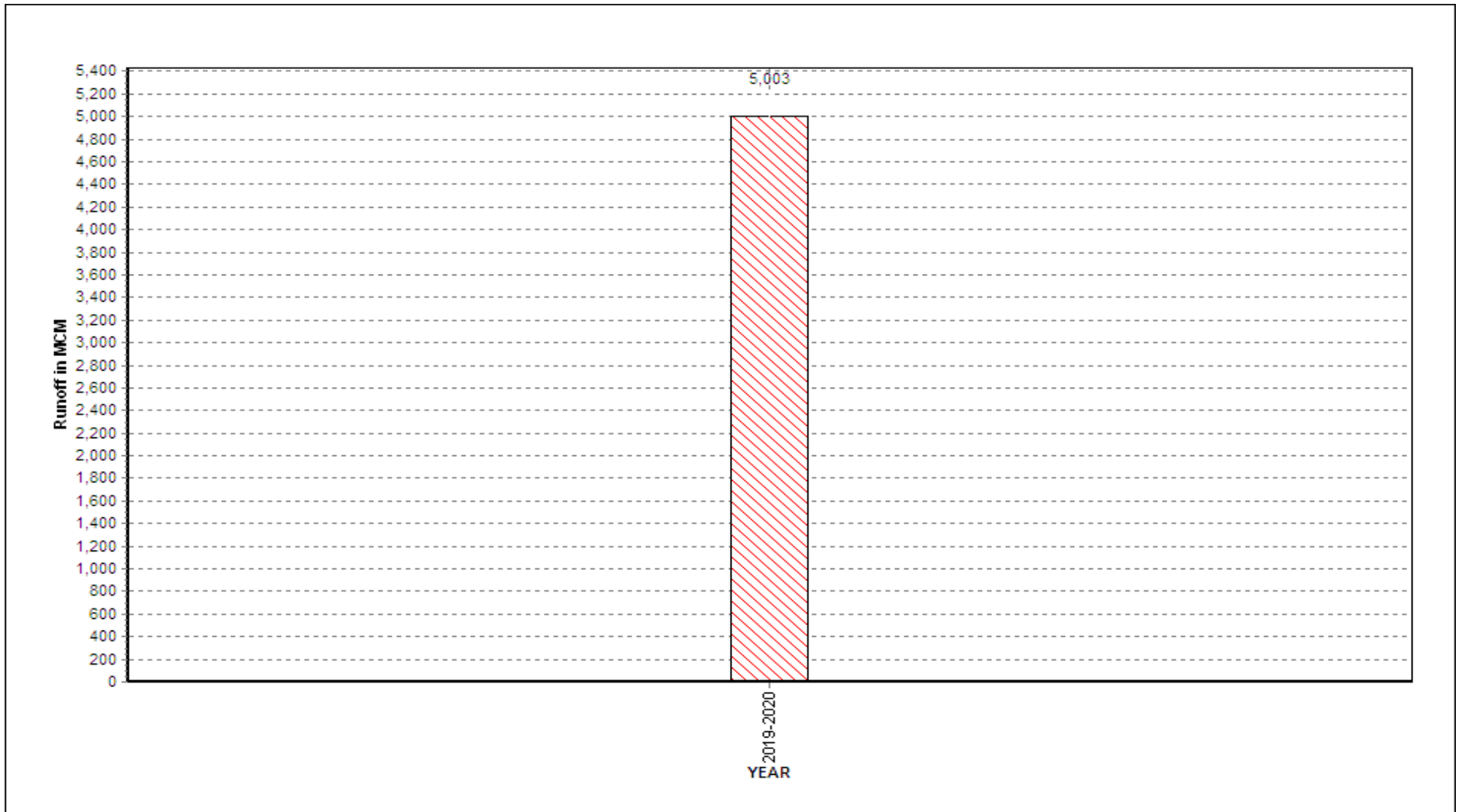
Annual Runoff Values for the period: 2019 - 2020

Station Name : Mirawadi (MIRAWADI)

Local River : Mula

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



Note: Missing values have not been considered while arriving at Annual Runoff

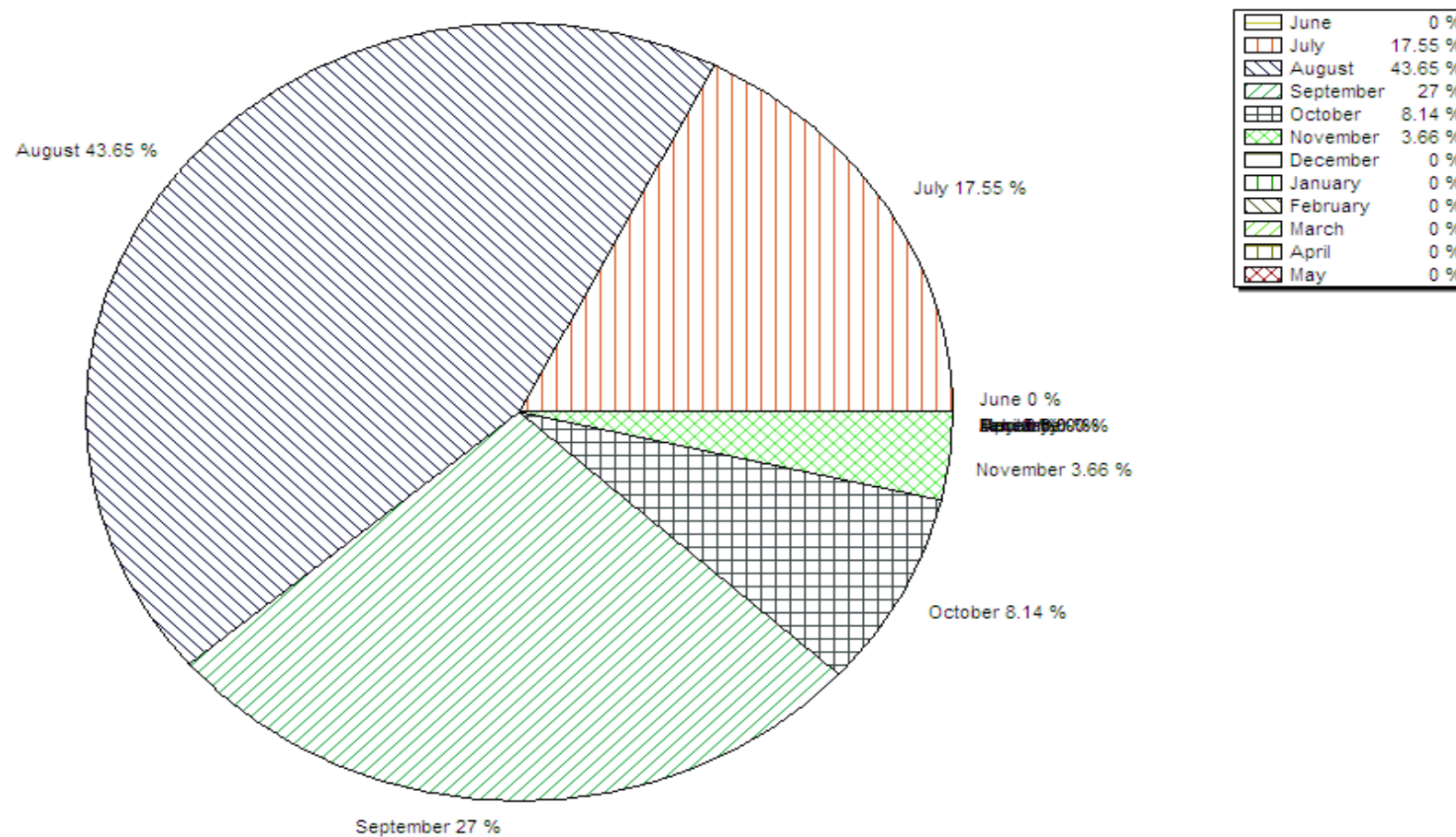
Monthly Runoff for the Year : 2019-2020

Station Name : Mirawadi (MIRAWADI)

Local River : Mula

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



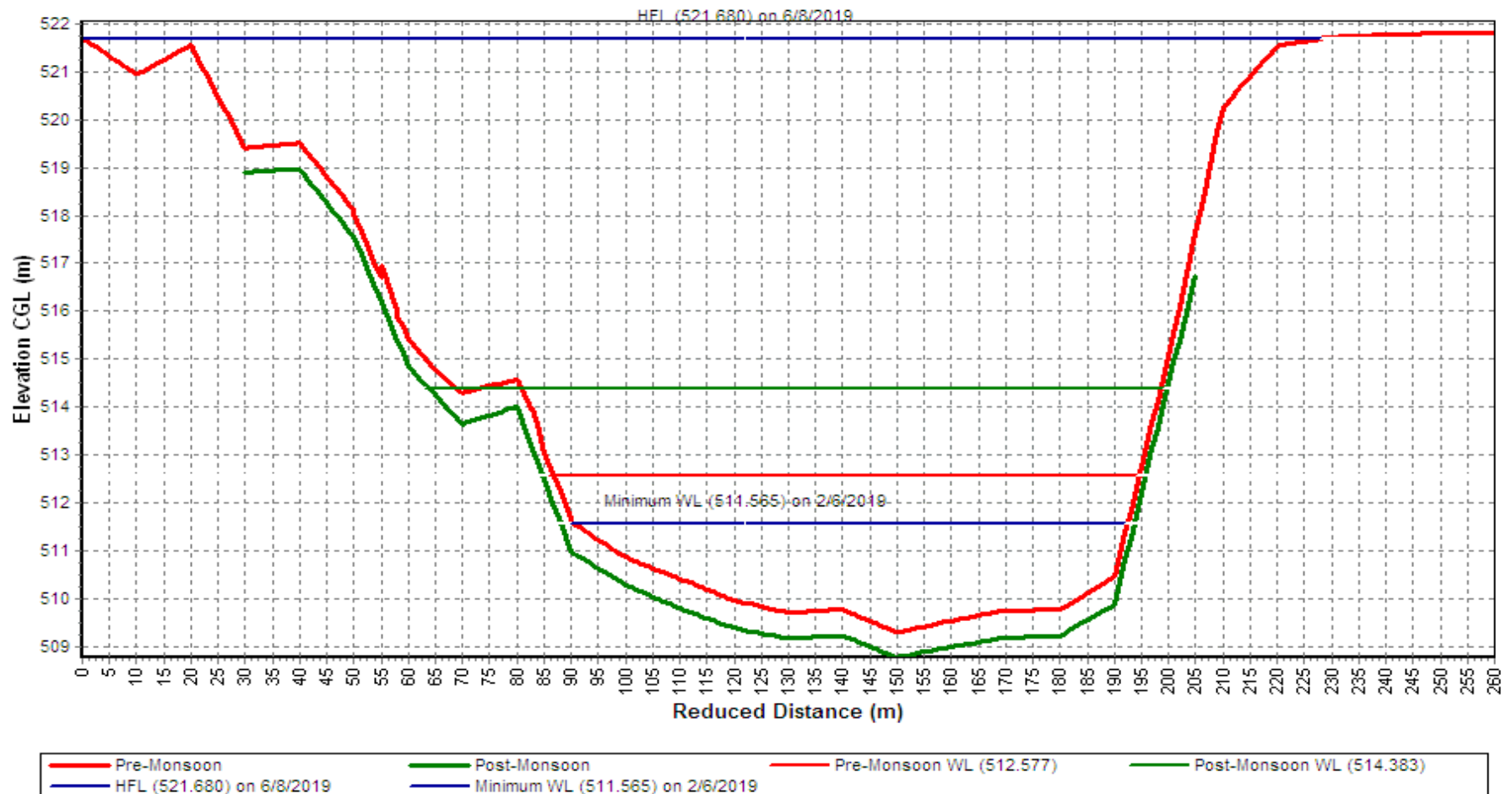
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Mirawadi (MIRAWADI)

Local River : Mula

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



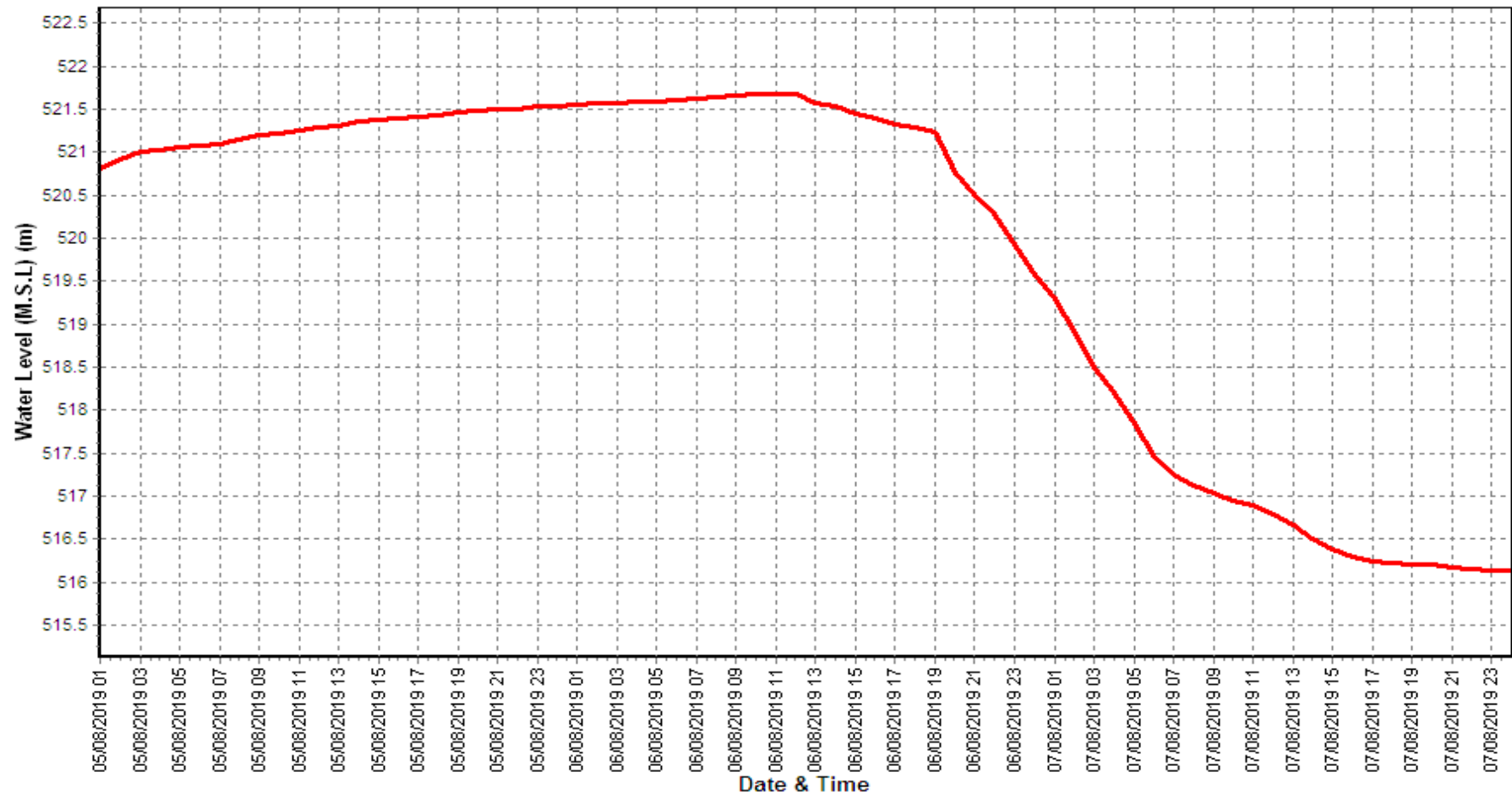
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Mirawadi (MIRAWADI)

Local River : Mula

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



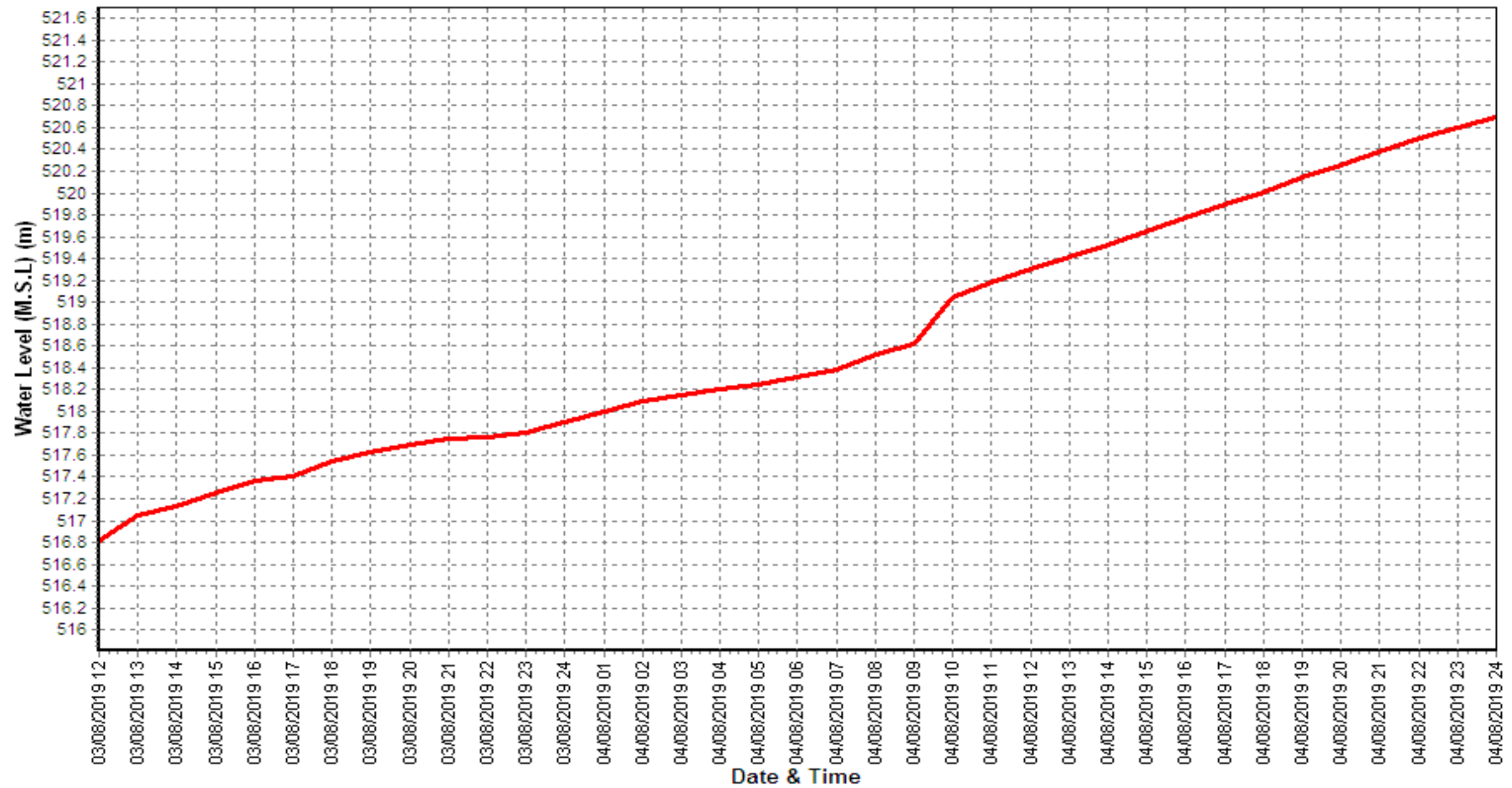
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Mirawadi (MIRAWADI)

Local River : Mula

Division : Upper Krishna Divn, Pune

Sub-Division :UBSD, Pune



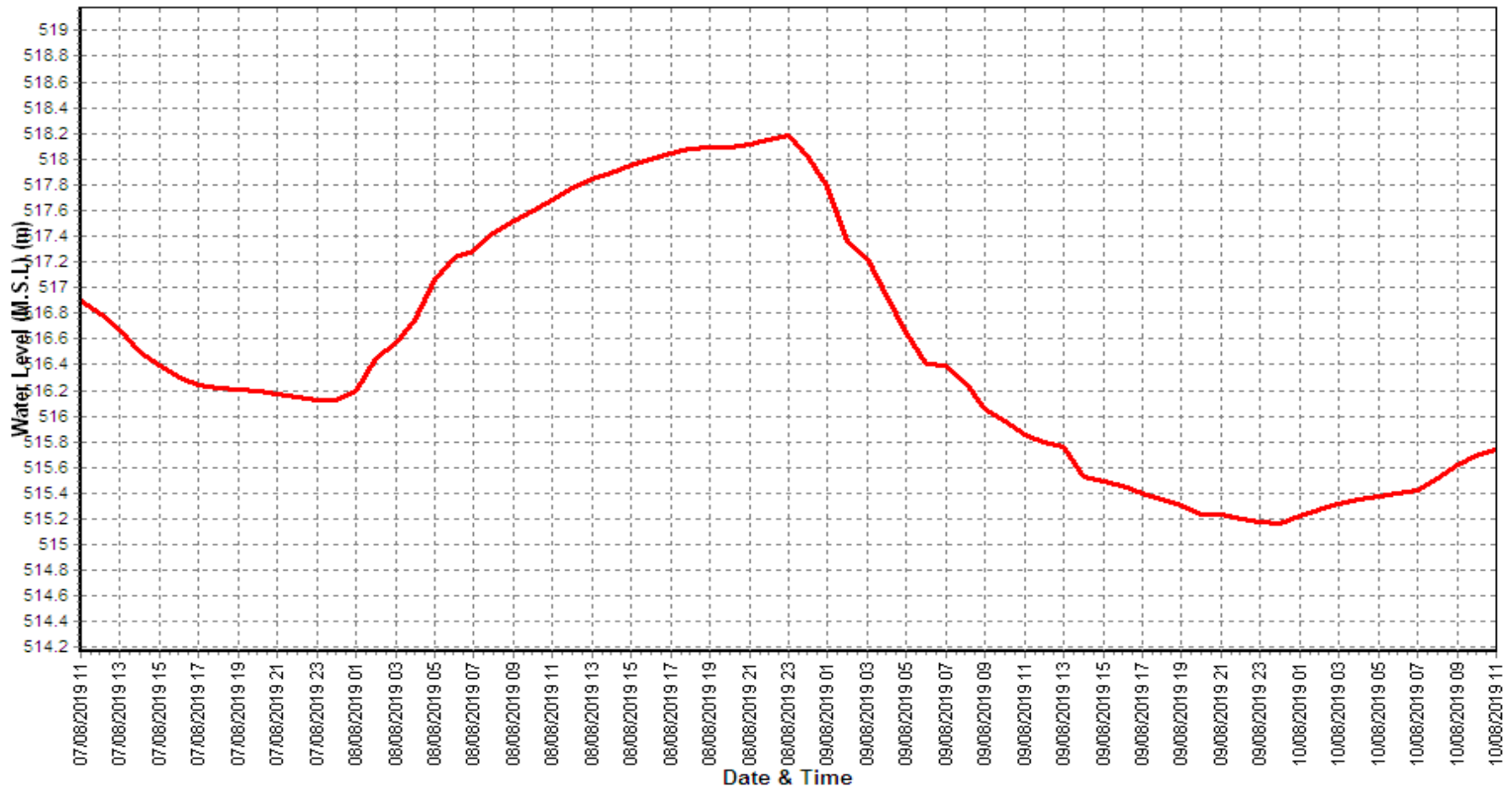
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Mirawadi (MIRAWADI)

Local River : Mula

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Paragaon	Code	: AKP00V9
State	: Maharashtra	District	Pune
Basin	: Krishna	Independent River	: Krishna
Tributary	: Bhima	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Bhima
Division	: Upper Krishna Divn, Pune	Sub-Division	: UBSD, Pune
Drainage Area	: 6251 Sq. Km.	Bank	:
Latitude	: 18°33'30"	Longitude	: 74°22'30"
Zero of Gauge (m)	: 85 (m.s.l) 85 (m.s.l)	01/06/2015 11/12/1986	
	Opening Date	Closing Date	
Gauge	: 28/11/2014	HFL During 2019-20	: 97.220 m
		Corres. Discharge	: 3847 (Estimated)
Discharge	: 02/09/2015	Date & Time of	: 06/08/2019
		occurrence	: 11:00 Hrs
Sediment	:		
Water Quality	:		

HFL Recorded so far in m : 97.220 dt 06-08-2019

Corresponding Discharge (cumecs) : 3847 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2016-2017	3267	93.570	06/08/2016	0.000	89.250	04/01/2017
2017-2018	1821	92.200	23/07/2017	0.000	89.220	25/01/2018
2018-2019	3400	92.920	17/07/2018	0.000	87.870	14/04/2019

Annual Runoff of Bhima at Paragaon

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2015-2016	376	54	430	13	2	15
2	2016-2017	2815	0	2815	99	0	99
3	2017-2018	3427	0	3427	121	0	121
4	2018-2019	2610	0	2610	92	0	92
5	2019-2020	6181	0	6181	218		218
Average		3082	14	3093	109	0	109
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Paragaon (AKP00V9)

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : UBSD, Pune

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	85.000	0.000	88.060	210.1	90.255	885.9	87.150	48.84 *	87.990	192.1	88.020	0.000
2	85.000	0.000	87.740	162.4	90.375	959.7	87.330	83.90	87.820	162.7	88.030	0.000
3	85.000	0.000	89.090	501.8	91.445	1463	88.480	324.3	87.655	135.5	87.940	0.000
4	85.000	0.000	88.070	247.3	93.880	2292 *	88.440	330.6	87.580	119.2	87.880	0.000
5	85.000	0.000	87.560	114.9	96.280	3280	93.170	2003	87.760	161.2	88.130	253.2
6	85.000	0.000	87.250	82.94	97.080	3650	90.200	930.7	88.060	235.9 *	88.050	226.8
7	85.000	0.000	88.260	285.3 *	94.095	2509	90.200	931.2	87.940	189.4	87.770	164.1
8	85.000	0.000	89.895	800.3	91.880	1562	90.820	1079 *	87.860	171.1	87.880	180.0
9	85.000	0.000	89.640	691.5	93.370	2062	91.080	1242	87.810	164.9	87.710	149.2
10	85.000	0.000	89.165	526.8	90.900	1080	89.970	822.2	87.915	181.1	87.600	132.5 *
11	85.000	0.000	88.760	402.8	91.590	1361 *	90.170	906.2	88.190	245.4	87.520	107.1
12	85.000	0.000	90.710	1145	91.750	1488	89.470	643.3	88.220	269.5	87.460	103.1
13	85.120	0.000	89.090	499.2	89.740	711.4	88.920	439.5	88.050	233.5 *	87.410	96.50
14	85.900	0.000	88.230	277.7 *	89.160	500.9	90.020	852.2	87.840	170.4	87.280	70.96
15	86.220	0.000	87.980	202.5	88.870	431.7	91.120	1187 *	87.710	139.9	87.080	42.24
16	86.120	0.000	88.000	212.2	88.600	381.9	90.120	900.5	87.600	124.1	87.070	40.31
17	86.190	0.000	87.720	152.6	89.040	475.0	89.410	626.1	87.570	120.9	87.100	40.99 *
18	86.240	0.000	87.640	138.5	88.780	424.0 *	88.900	449.4	87.440	96.68	87.040	37.10
19	85.990	0.000	87.580	128.6	88.430	325.7	88.970	485.1	87.280	76.04	86.960	28.99
20	85.800	0.000	87.450	97.78	88.050	255.0	89.100	518.1	87.380	88.97 *	86.890	13.84
21	85.000	0.000	87.750	164.5 *	87.870	174.1	88.930	478.9	88.290	300.4	86.870	12.78
22	85.000	0.000	87.670	138.5	87.910	182.7	88.440	331.7 *	88.470	332.8	86.850	9.381
23	85.000	0.000	87.480	100.0	87.950	200.9	88.190	248.5	89.980	819.2	86.870	0.000
24	85.000	0.000	87.380	91.70	88.400	314.8	87.960	202.2	89.130	522.1	86.850	0.000
25	85.000	0.000	87.280	78.95	87.940	207.5 *	89.075	502.5	89.240	558.9	86.860	0.000
26	85.000	0.000	87.030	51.52	87.740	148.5	90.930	1142	88.730	406.8	86.850	0.000
27	85.490	0.000	88.180	272.5	87.590	128.0	90.180	926.6	88.430	329.1 *	86.810	0.000
28	86.130	0.000	93.490	2125 *	87.500	100.9	89.230	555.0	88.240	270.1	86.770	0.000
29	86.260	0.000	91.300	1409	87.300	74.13	88.630	382.6 *	87.890	180.0	86.730	0.000
30	87.210	0.000	91.545	1552	87.250	65.64	88.220	274.5	87.880	183.7	86.710	0.000
31			92.820	1988	87.190	68.08			87.920	191.0		
Ten-Daily Mean												
I Ten-Daily	85.000	0.000	88.473	362.3	92.956	1974	89.684	779.5	87.839	171.3	87.901	110.6
II Ten-Daily	85.758	0.000	88.316	325.7	89.401	635.5	89.620	700.7	87.728	156.5	87.181	58.11
III Ten-Daily	85.509	0.000	89.266	724.6	87.695	151.4	88.978	504.4	88.564	372.2	86.817	2.216
Monthly												
Min.	85.000	0.000	87.030	51.52	87.190	65.64	87.150	48.84	87.280	76.04	86.710	0.000
Max.	87.210	0.000	93.490	2125	97.080	3650	93.170	2003	89.980	819.2	88.130	253.2
Mean	85.422	0	88.704	479.1	89.942	895.6	89.427	661.5	88.060	237.8	87.300	56.97

Annual Runoff in MCM = 6181 Annual Runoff in mm = 989

Peak Observed Discharge = 3650 cumecs on 06/08/2019 Corres. Water Level :97.08 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :85 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : Paragaon (AKP00V9)

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : UBSD, Pune

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	86.790	0.000	89.480	0.000	89.400	0.000	89.460	0.000	89.220	0.000	89.450	0.000
2	86.900	0.000	89.450	0.000	89.400	0.000	89.600	0.000	89.320	0.000	89.400	0.000
3	86.920	0.000	89.470	0.000	89.400	0.000	89.570	0.000	89.400	0.000	89.400	0.000
4	86.890	0.000	89.470	0.000	89.500	0.000	89.550	0.000	89.450	0.000	89.360	0.000
5	86.920	0.000	89.450	0.000	89.520	0.000	89.530	0.000	89.500	0.000	89.350	0.000
6	86.900	0.000	89.450	0.000	89.560	0.000	89.500	0.000	89.500	0.000	89.320	0.000
7	86.850	0.000	89.480	0.000	89.600	0.000	89.500	0.000	89.540	0.000	89.300	0.000
8	86.800	0.000	89.480	0.000	89.600	0.000	89.450	0.000	89.500	0.000	89.300	0.000
9	86.750	0.000	89.500	0.000	89.580	0.000	89.420	0.000	89.500	0.000	89.260	0.000
10	86.720	0.000	89.500	0.000	89.550	0.000	89.400	0.000	89.450	0.000	89.250	0.000
11	86.690	0.000	89.440	0.000	89.510	0.000	89.400	0.000	89.430	0.000	89.200	0.000
12	86.660	0.000	89.400	0.000	89.500	0.000	89.400	0.000	89.410	0.000	89.150	0.000
13	86.800	0.000	89.400	0.000	89.500	0.000	89.540	0.000	89.400	0.000	89.090	0.000
14	87.240	0.000	89.440	0.000	89.500	0.000	89.540	0.000	89.400	0.000	89.030	0.000
15	87.450	0.000	89.480	0.000	89.580	0.000	89.530	0.000	89.380	0.000	89.010	0.000
16	88.120	0.000	89.480	0.000	89.600	0.000	89.520	0.000	89.350	0.000	88.980	0.000
17	88.800	0.000	89.500	0.000	89.600	0.000	89.520	0.000	89.330	0.000	88.900	0.000
18	88.920	0.000	89.500	0.000	89.580	0.000	89.500	0.000	89.300	0.000	88.670	0.000
19	88.750	0.000	89.520	0.000	89.550	0.000	89.500	0.000	89.350	0.000	88.980	0.000
20	88.750	0.000	89.550	0.000	89.550	0.000	89.500	0.000	89.400	0.000	88.670	0.000
21	88.950	0.000	89.550	0.000	89.600	0.000	89.480	0.000	89.450	0.000	88.920	0.000
22	88.990	0.000	89.530	0.000	89.600	0.000	89.450	0.000	89.500	0.000	89.060	0.000
23	89.520	0.000	89.550	0.000	89.620	0.000	89.400	0.000	89.530	0.000	89.150	0.000
24	89.600	0.000	89.560	0.000	89.620	0.000	89.400	0.000	89.550	0.000	89.200	0.000
25	89.640	0.000	89.640	0.000	89.640	0.000	89.350	0.000	89.550	0.000	89.240	0.000
26	89.500	0.000	89.690	0.000	89.660	0.000	89.350	0.000	89.590	0.000	89.000	0.000
27	89.470	0.000	89.650	0.000	89.660	0.000	89.330	0.000	89.550	0.000	88.820	0.000
28	89.450	0.000	89.620	0.000	89.650	0.000	89.330	0.000	89.530	0.000	88.580	0.000
29	89.400	0.000	89.610	0.000	89.620	0.000	89.310	0.000	89.510	0.000	88.640	0.000
30	89.450	0.000	89.470	0.000			89.280	0.000	89.500	0.000	88.660	0.000
31	89.500	0.000	89.450	0.000			89.250	0.000			88.690	0.000
Ten-Daily Mean												
I Ten-Daily	86.844	0.000	89.473	0.000	89.511	0.000	89.498	0.000	89.438	0.000	89.339	0.000
II Ten-Daily	87.818	0.000	89.471	0.000	89.547	0.000	89.495	0.000	89.375	0.000	88.968	0.000
III Ten-Daily	89.406	0.000	89.575	0.000	89.630	0.000	89.357	0.000	89.526	0.000	88.905	0.000
Monthly												
Min.	86.660	0.000	89.400	0.000	89.400	0.000	89.250	0.000	89.220	0.000	88.580	0.000
Max.	89.640	0.000	89.690	0.000	89.660	0.000	89.600	0.000	89.590	0.000	89.450	0.000
Mean	88.067	0	89.508	0	89.560	0	89.447	0	89.446	0	89.065	0

Peak Computed Discharge = 2292 cumecs on 04/08/2019

Corres. Water Level :93.88 m

Lowest Computed Discharge = 40.99 cumecs on 17/11/2019

Corres. Water Level :87.1 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

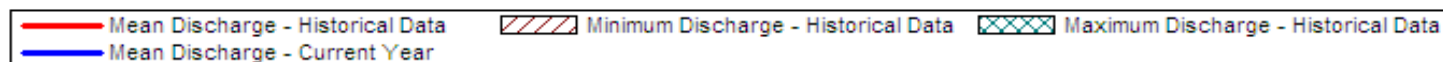
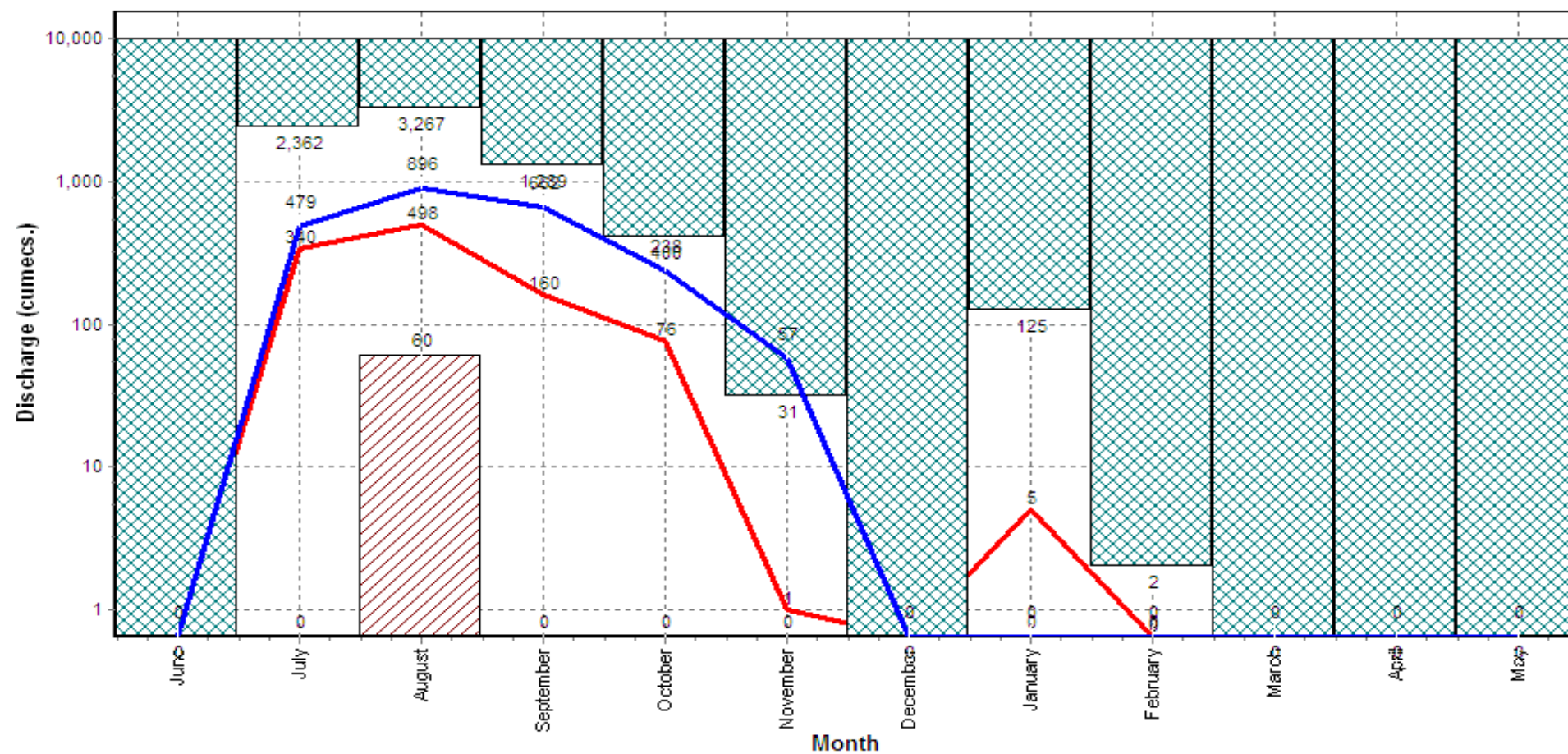
Station Name : Paragaon (AKP00V9)

Data considered : 2016-2020

Division : Upper Krishna Divn, Pune

Local River : Bhima

Sub-Division : UBSD, Pune



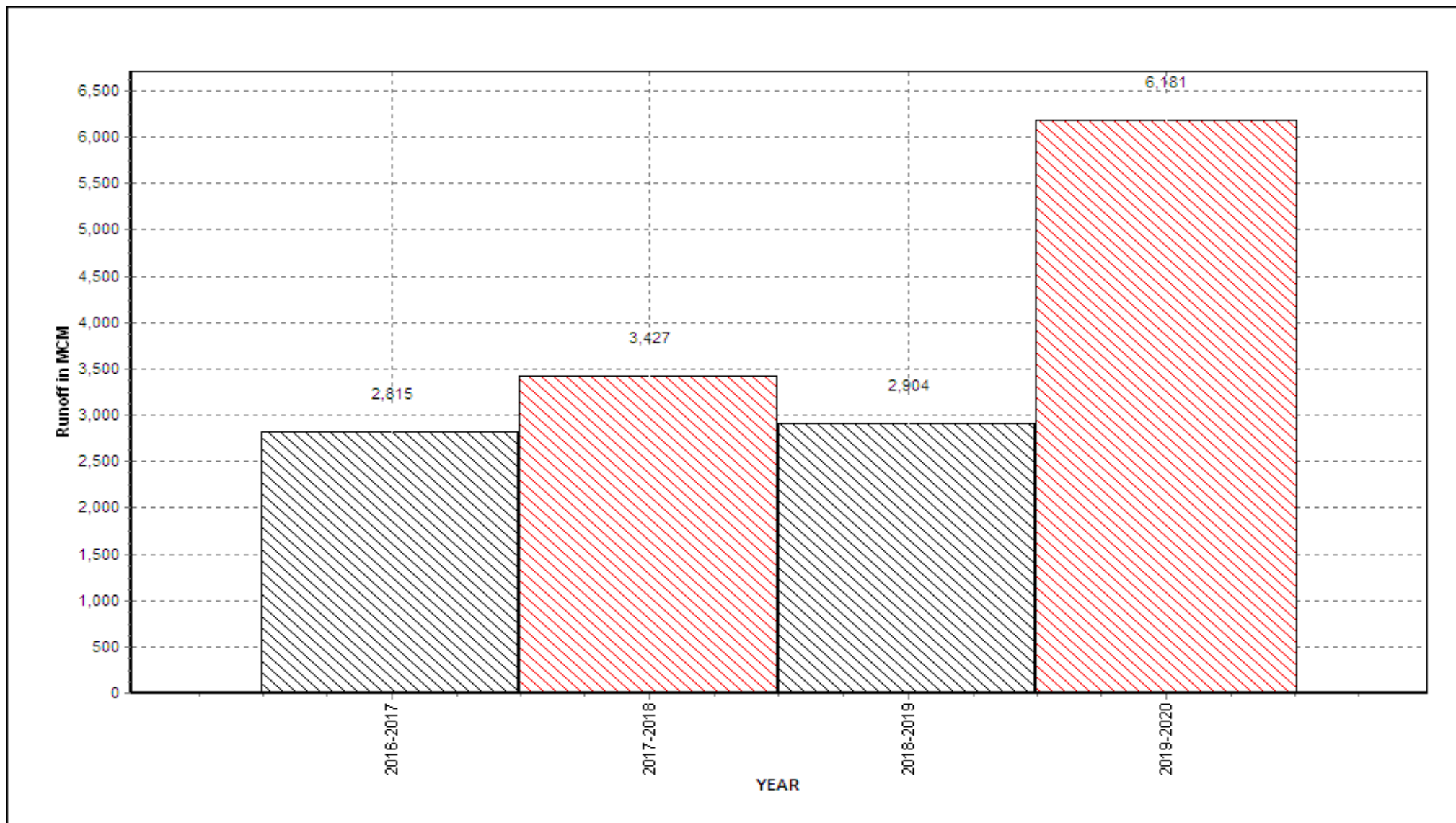
Annual Runoff Values for the period: 2016 - 2020

Station Name : Paragaon (AKP00V9)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



Note: Missing values have not been considered while arriving at Annual Runoff

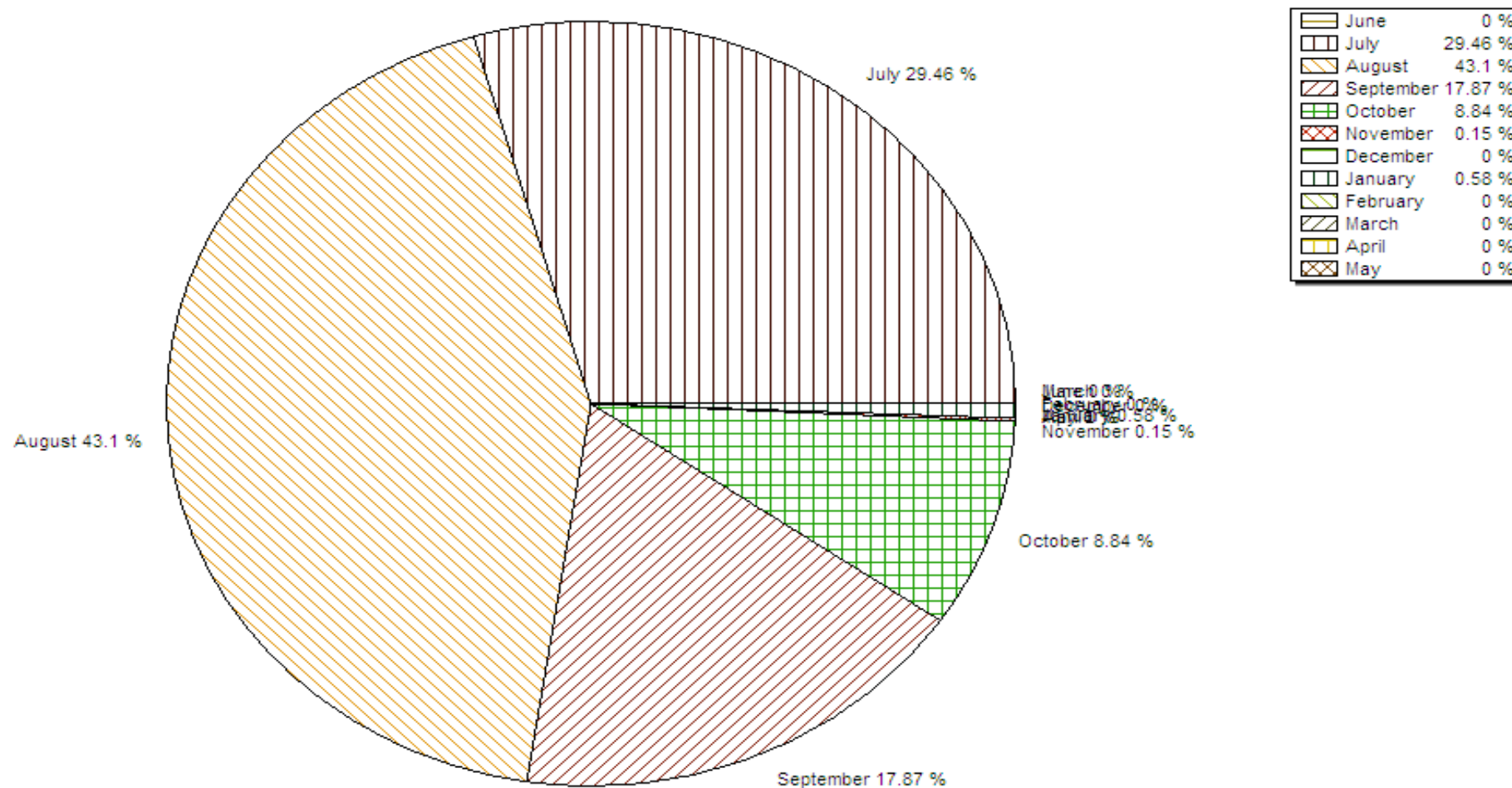
Monthly Average Runoff based on period : 2016-2019

Station Name : Paragaon (AKP00V9)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



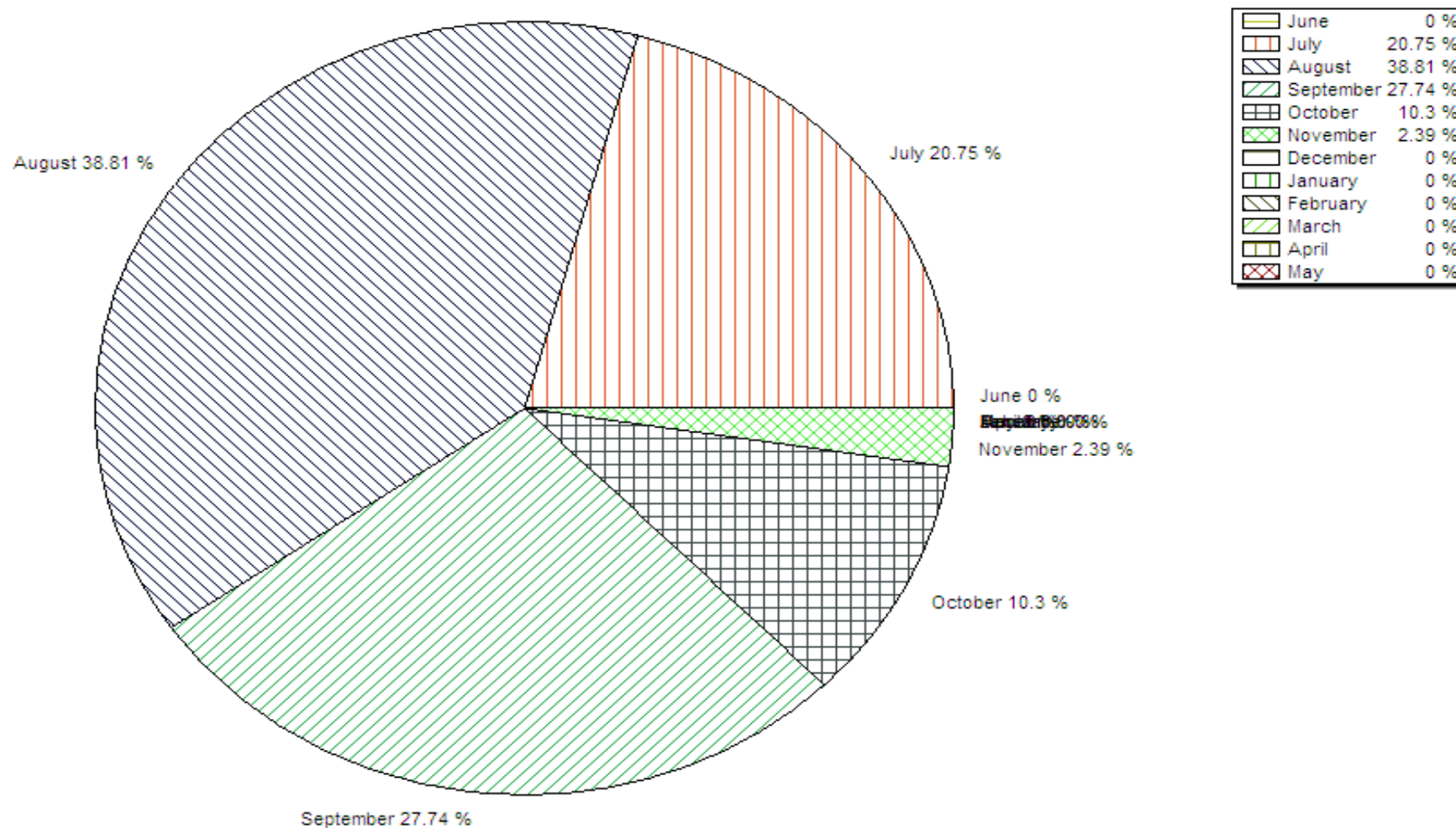
Monthly Runoff for the Year : 2019-2020

Station Name : Paragaon (AKP00V9)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



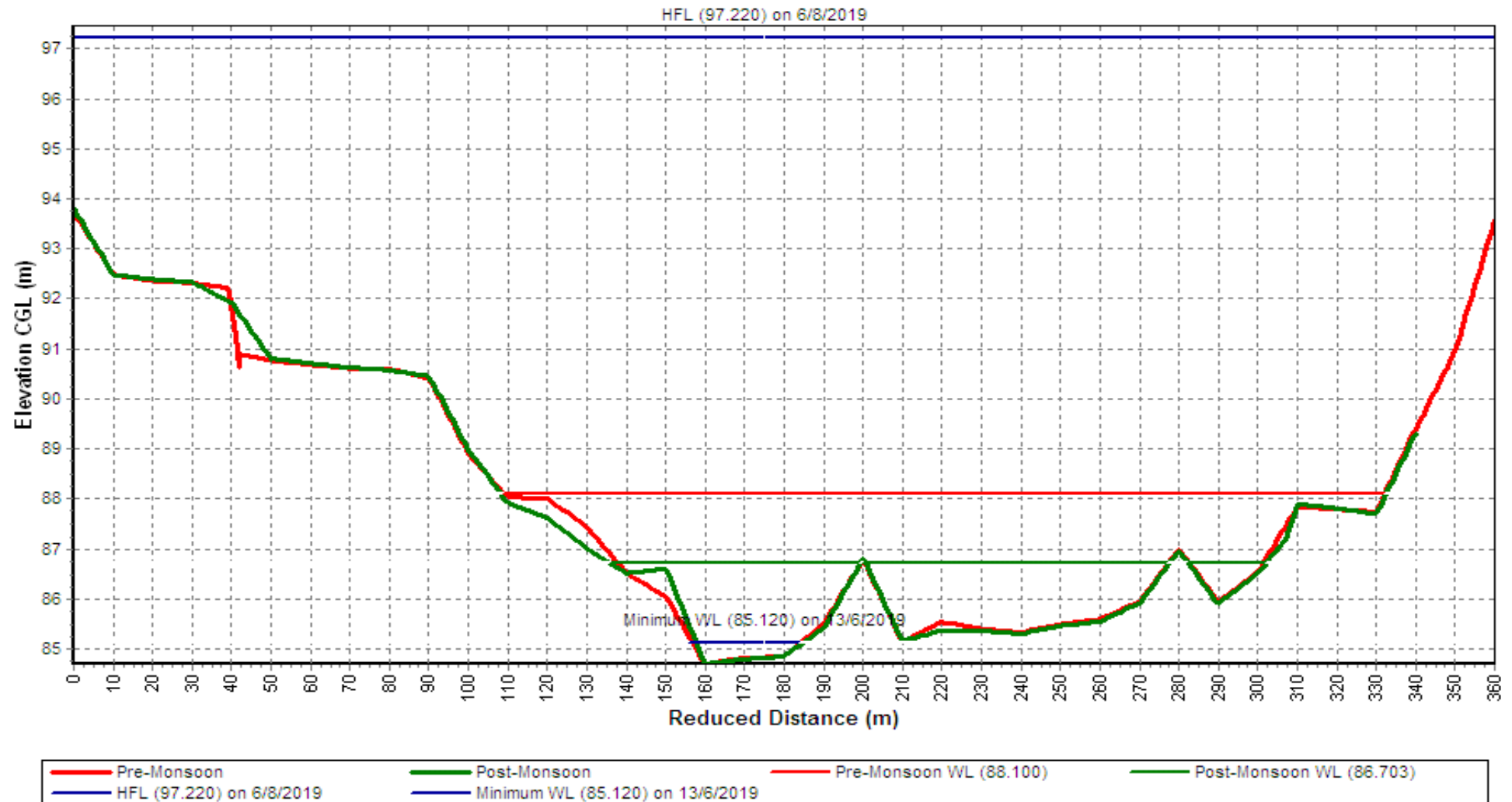
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Paragaon (AKP00V9)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



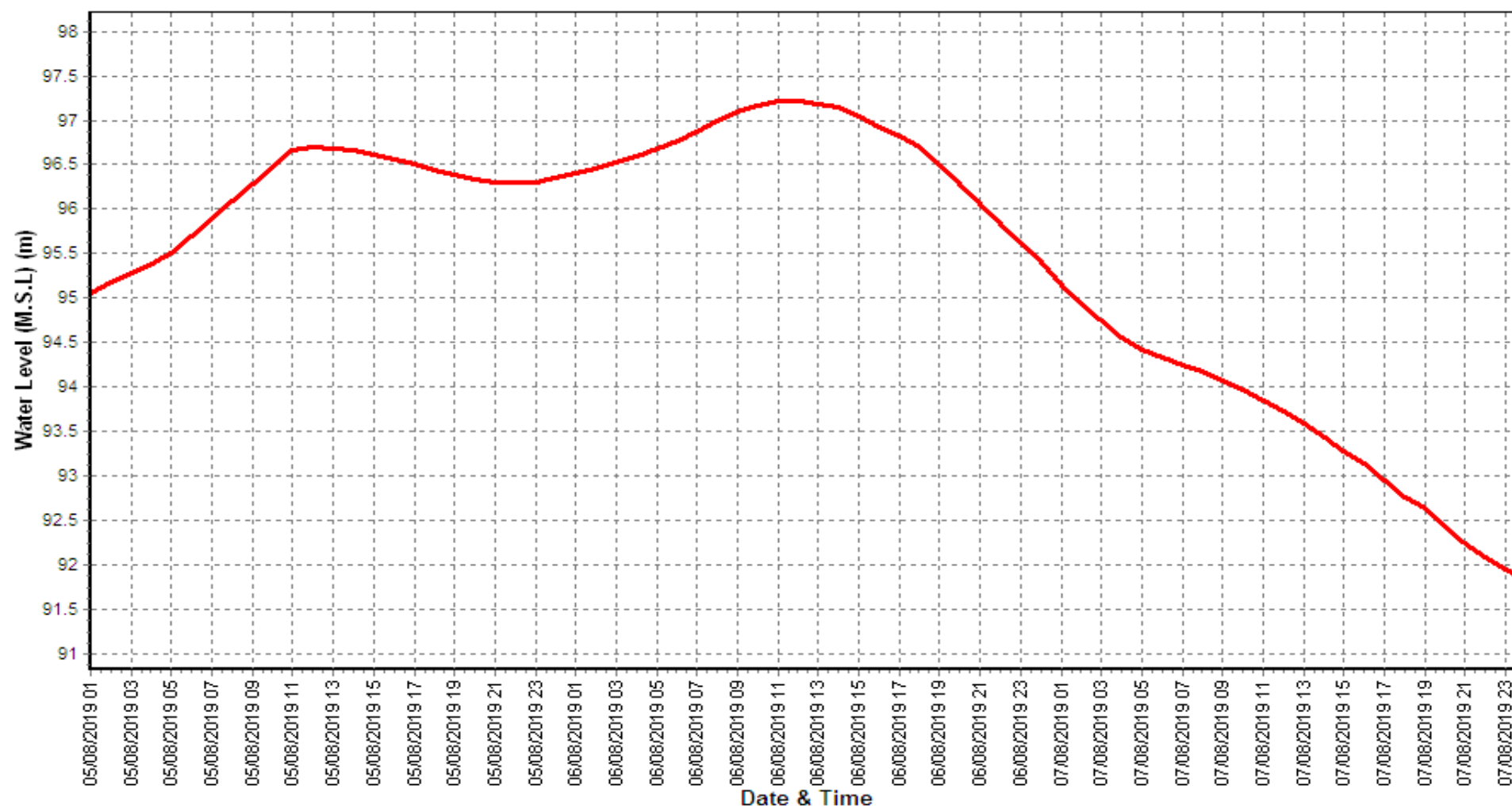
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Paragaon (AKP00V9)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



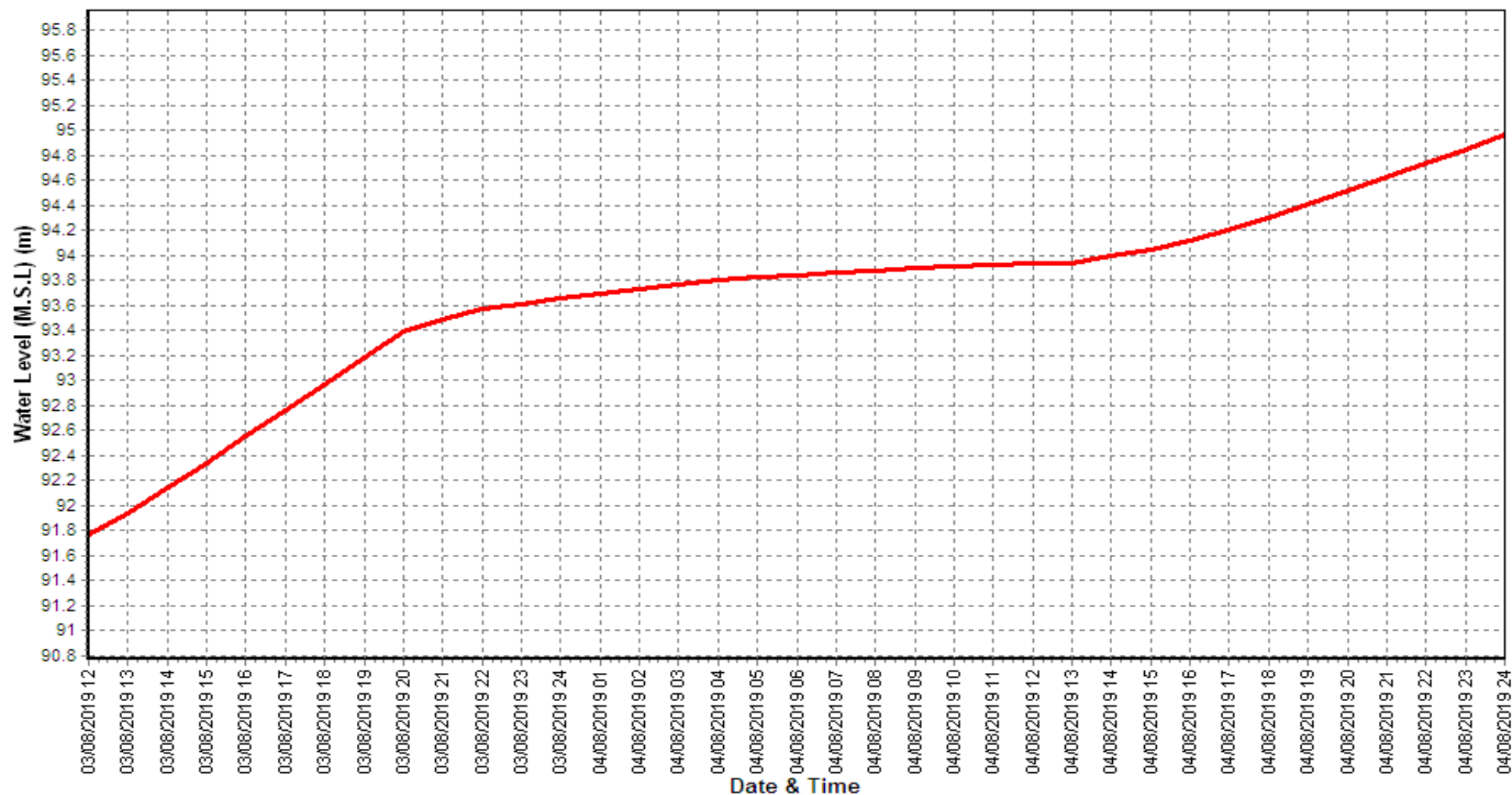
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Paragaon (AKP00V9)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



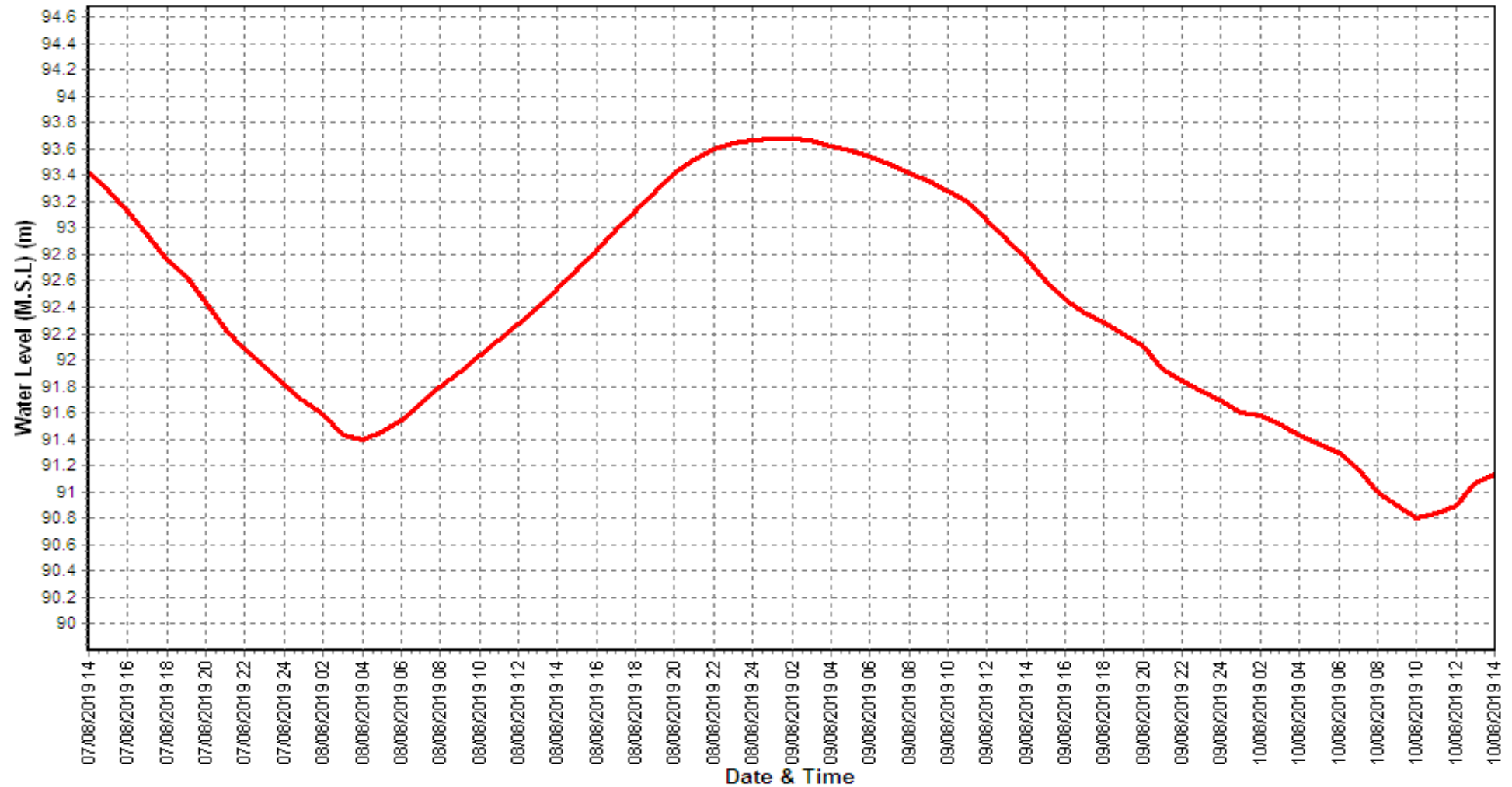
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Paragaon (AKP00V9)

Local River : Bhima

Division : Upper Krishna Divn, Pune

Sub-Division : UBSD, Pune



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Suddakallu	Code	: SUDDAKALLU
State	: Andhra Pradesh	District	Mahbubnagar
Basin	: Krishna	Independent River	: Krishna
Tributary	: Dindi	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Dindi
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Middle Krishna SD 2 , Kurnool
Drainage Area	: 2340 Sq. Km.	Bank	:
Latitude	: 16°34'22"	Longitude	: 78°25'24"
Zero of Gauge (m)	: 95.5 (m.s.l) 427.5 (m.s.l) 427.7 (m.s.l)	01/06/2016	- 31/05/2018
		01/06/2018	31/05/2019
		01/06/2019	
	Opening Date	Closing Date	
Gauge	: 20/11/2014	HFL During 2019-20	: 428.925 m
		Corres. Discharge	: 15 (Estimated)
Discharge	: 05/10/2017	Date & Time of	: 26/09/2019
		occurrence	: 04:00 Hrs
Sediment	:		
Water Quality	:		

HFL Recorded so far in m : 98.670 dt 10-10-2017 (Zero of guage change w.e.f 01/06/2019)

Corresponding Discharge (cumecs) : 45.45 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2016-2017	0.000		04/10/2016	0.000		25/01/2017
2017-2018	38.17	98.400	15/10/2017	0.000		23/01/2018
2018-2019	0.000		29/04/2019	0.000		22/05/2019

Annual Runoff of Dindi at Suddakallu

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2017-2018	33	0	33	1	0	1
2	2018-2019	0	0	0	0	0	0
3	2019-2020	12	0	12	0	0	0
Average		17	0	17	1	0	1
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Suddakallu (SUDDAKALLU)

Division : Lower Krishna Divn., Hyderabad

Local River : Dindi

Sub-Division : Middle Krishna SD 2 , Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000		0.000		0.000		0.000	428.260	0.000	428.520	0.000
2		0.000		0.000		0.000		0.000	428.240	0.000	428.500	0.000
3		0.000		0.000		0.000		0.000	428.440	3.227	428.485	0.000 *
4		0.000		0.000		0.000		0.000	428.450	3.709	428.500	0.000
5		0.000		0.000		0.000		0.000	428.440	3.630	428.490	0.000
6		0.000		0.000		0.000		0.000	428.385	1.968 *	428.490	0.000
7		0.000		0.000		0.000		0.000	428.310	0.560	428.500	0.000
8		0.000		0.000		0.000		0.000	428.400	2.276 *	428.500	0.000
9		0.000		0.000		0.000		0.000	428.470	3.905	428.495	0.000
10		0.000		0.000		0.000		0.000	428.490	4.143	428.500	0.000 *
11		0.000		0.000		0.000		0.000	428.580	5.463	428.500	0.000
12		0.000		0.000		0.000		0.000	428.540	4.825	428.500	0.000 *
13		0.000		0.000		0.000		0.000	428.500	4.333 *	428.490	0.000
14		0.000		0.000		0.000		0.000	428.430	2.356	428.485	0.000
15		0.000		0.000		0.000		0.000	428.385	1.363	428.470	0.000
16		0.000		0.000		0.000		0.000	428.410	2.106	428.460	0.000
17		0.000		0.000		0.000		0.000	428.340	0.764	428.460	0.000 *
18		0.000		0.000		0.000		0.000	428.380	1.280	428.455	0.000
19		0.000		0.000		0.000		0.000	428.510	4.360	428.450	0.000
20		0.000		0.000		0.000		0.000	428.505	4.436 *	428.435	0.000
21		0.000		0.000		0.000		0.000	428.520	4.520	428.430	0.000
22		0.000		0.000		0.000		0.000	428.500	4.210 #	428.470	0.000
23		0.000		0.000		0.000		0.000	428.510	4.362	428.470	0.000 *
24		0.000		0.000		0.000	428.745	9.372 *	428.500	4.125 #	428.460	0.000 *
25		0.000		0.000		0.000	428.895	12.46 *	428.500	4.013 #	428.440	0.000
26		0.000		0.000		0.000	428.580	5.463	428.490	3.985	428.440	0.000
27		0.000		0.000		0.000	428.450	3.709 #	428.480	3.926 *	428.430	0.000
28		0.000		0.000		0.000	428.400	1.678	428.680	8.549	428.430	0.000
29		0.000		0.000		0.000	428.360	1.454 *	428.620	7.018	428.430	0.000
30		0.000		0.000		0.000	428.370	1.481	428.530	4.636	428.430	0.000
31				0.000		0.000			428.500	4.250 #		
Ten-Daily Mean												
I Ten-Daily		0.000		0.000		0.000		0.000	428.388	2.342	428.498	0.000
II Ten-Daily		0.000		0.000		0.000		0.000	428.458	3.129	428.471	0.000
III Ten-Daily		0.000		0.000		0.000	428.543	3.561	428.530	4.872	428.443	0.000
Monthly												
Min.		0.000		0.000		0.000	428.360	0.000	428.240	0.000	428.430	0.000
Max.		0.000		0.000		0.000	428.895	12.46	428.680	8.549	428.520	0.000
Mean		0		0		0	428.543	1.187	428.461	3.493	428.470	0

Annual Runoff in MCM = 13 Annual Runoff in mm = 5

Peak Observed Discharge = 8.549 cumecs on 28/10/2019 Corres. Water Level :428.68 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Suddakallu (SUDDAKALLU)

Division : Lower Krishna Divn., Hyderabad

Local River : Dindi

Sub-Division : Middle Krishna SD 2 , Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	428.420	0.000		0.000		0.000		0.000		0.000		0.000
2	428.410	0.000		0.000		0.000		0.000		0.000		0.000
3	428.405	0.000		0.000		0.000		0.000		0.000		0.000
4		0.000		0.000		0.000		0.000		0.000		0.000
5		0.000		0.000		0.000		0.000		0.000		0.000
6		0.000		0.000		0.000		0.000		0.000		0.000
7		0.000		0.000		0.000		0.000		0.000		0.000
8		0.000		0.000		0.000		0.000		0.000		0.000
9		0.000	428.490	0.678		0.000		0.000		0.000		0.000
10		0.000	428.470	0.370		0.000		0.000		0.000		0.000
11		0.000	428.450	0.296		0.000		0.000		0.000		0.000
12		0.000	428.440	0.000 *		0.000		0.000		0.000		0.000
13		0.000	428.420	0.000		0.000		0.000		0.000		0.000
14		0.000	428.415	0.000		0.000		0.000		0.000		0.000
15		0.000	428.410	0.000		0.000		0.000		0.000		0.000
16		0.000	428.405	0.000		0.000		0.000		0.000		0.000
17		0.000	428.400	0.000		0.000		0.000		0.000		0.000
18		0.000	428.400	0.000		0.000		0.000		0.000		0.000
19	428.470	0.000		0.000		0.000		0.000		0.000		0.000
20	428.470	0.000		0.000		0.000		0.000		0.000		0.000
21	428.450	0.000		0.000		0.000		0.000		0.000		0.000
22	428.420	0.000		0.000		0.000		0.000		0.000		0.000
23	428.410	0.000		0.000		0.000		0.000		0.000		0.000
24		0.000		0.000		0.000		0.000		0.000		0.000
25		0.000		0.000		0.000		0.000		0.000		0.000
26		0.000		0.000		0.000		0.000		0.000		0.000
27		0.000		0.000		0.000		0.000		0.000		0.000
28		0.000		0.000		0.000		0.000		0.000		0.000
29		0.000		0.000		0.000		0.000		0.000		0.000
30		0.000		0.000				0.000		0.000		0.000
31		0.000		0.000				0.000				0.000
Ten-Daily Mean												
I Ten-Daily	428.412	0.000	428.480	0.105		0.000		0.000		0.000		0.000
II Ten-Daily	428.470	0.000	428.417	0.030		0.000		0.000		0.000		0.000
III Ten-Daily	428.427	0.000		0.000		0.000		0.000		0.000		0.000
Monthly												
Min.	428.405	0.000	428.400	0.000		0.000		0.000		0.000		0.000
Max.	428.470	0.000	428.490	0.678		0.000		0.000		0.000		0.000
Mean	428.432	0	428.430	0.043		0		0		0		0

Peak Computed Discharge = 12.46 cumecs on 25/09/2019

Corres. Water Level :428.895 m

Lowest Computed Discharge = 0.000 cumecs on 03/11/2019

Corres. Water Level :428.485 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

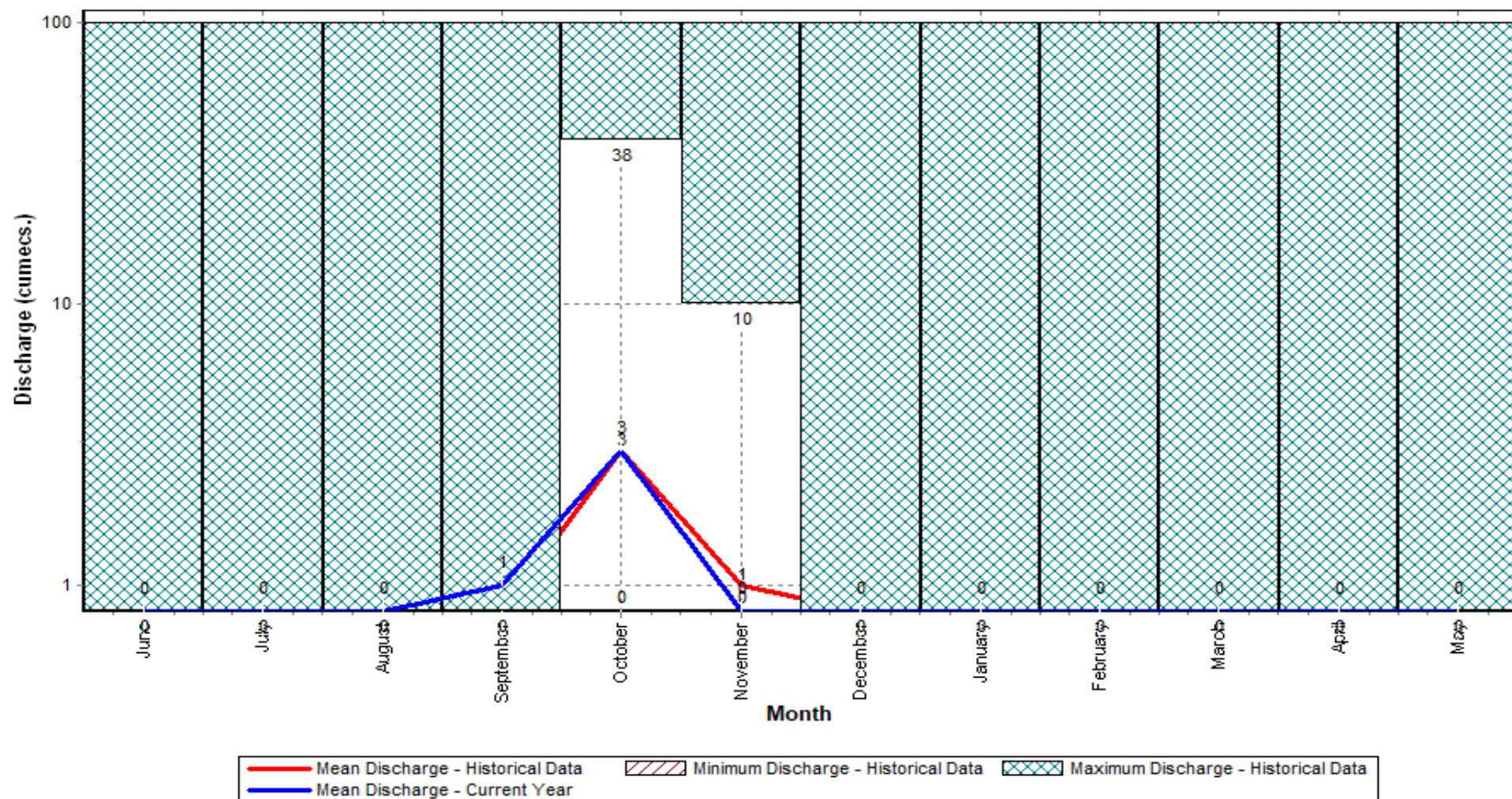
Station Name : Suddakallu (SUDDAKALLU)

Data considered : 2016-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Dindi

Sub-Division : Middle Krishna SD 2 , Kurnool



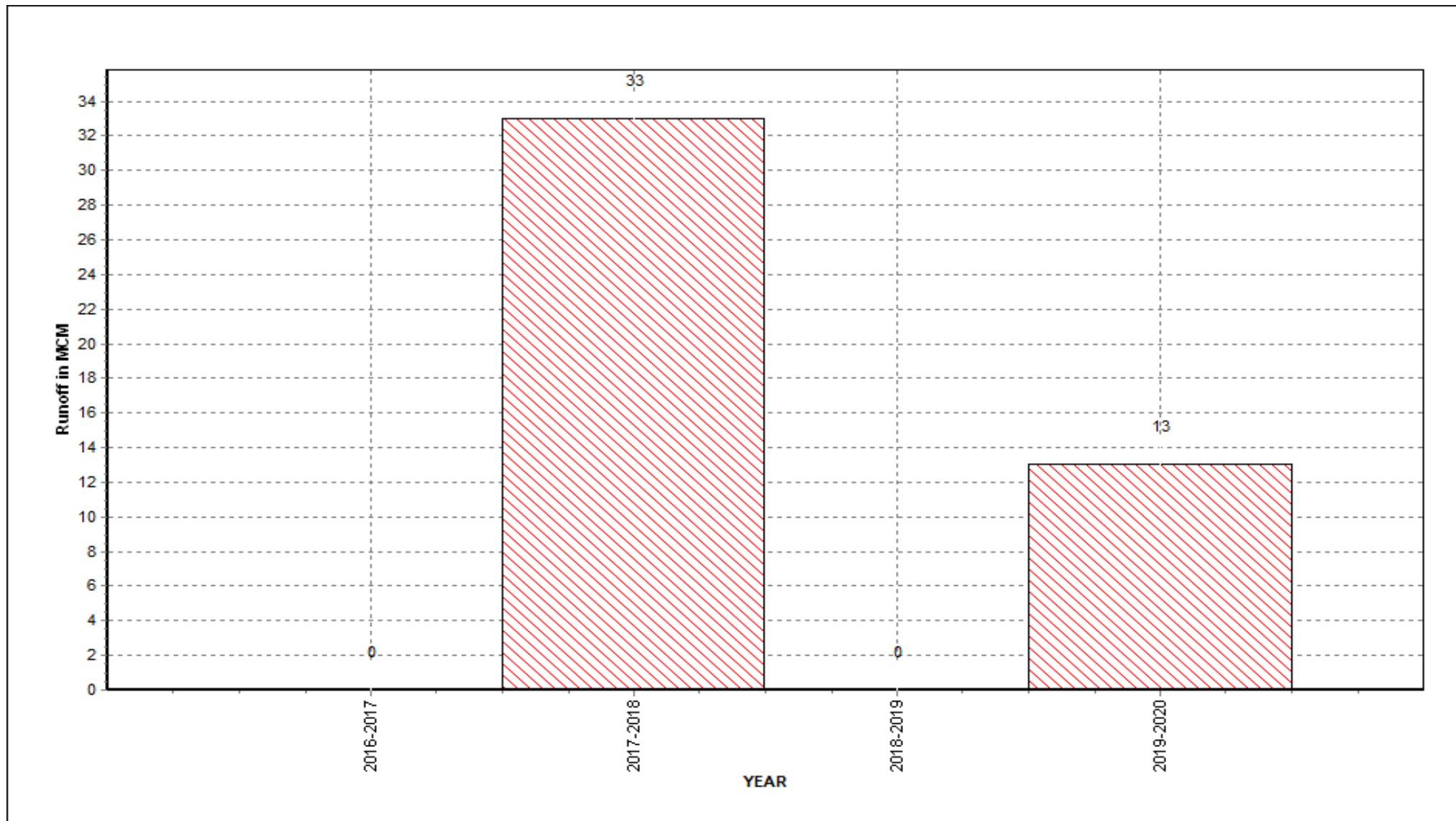
Annual Runoff Values for the period: 2016 - 2020

Station Name : Suddakallu (SUDDAKALLU)

Local River : Dindi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



Note: Missing values have not been considered while arriving at Annual Runoff

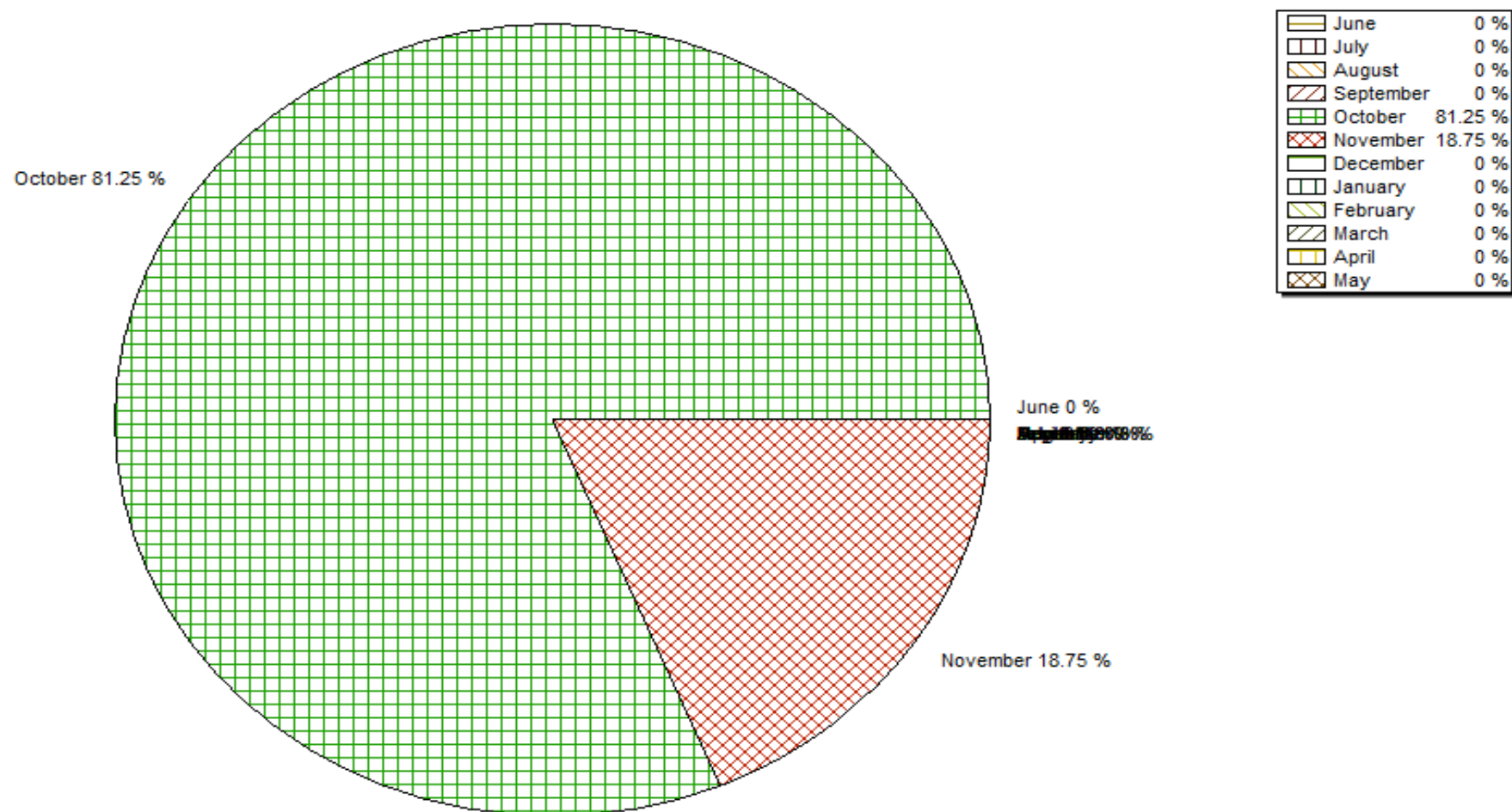
Monthly Average Runoff based on period : 2016-2019

Station Name : Suddakallu (SUDDAKALLU)

Local River : Dindi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



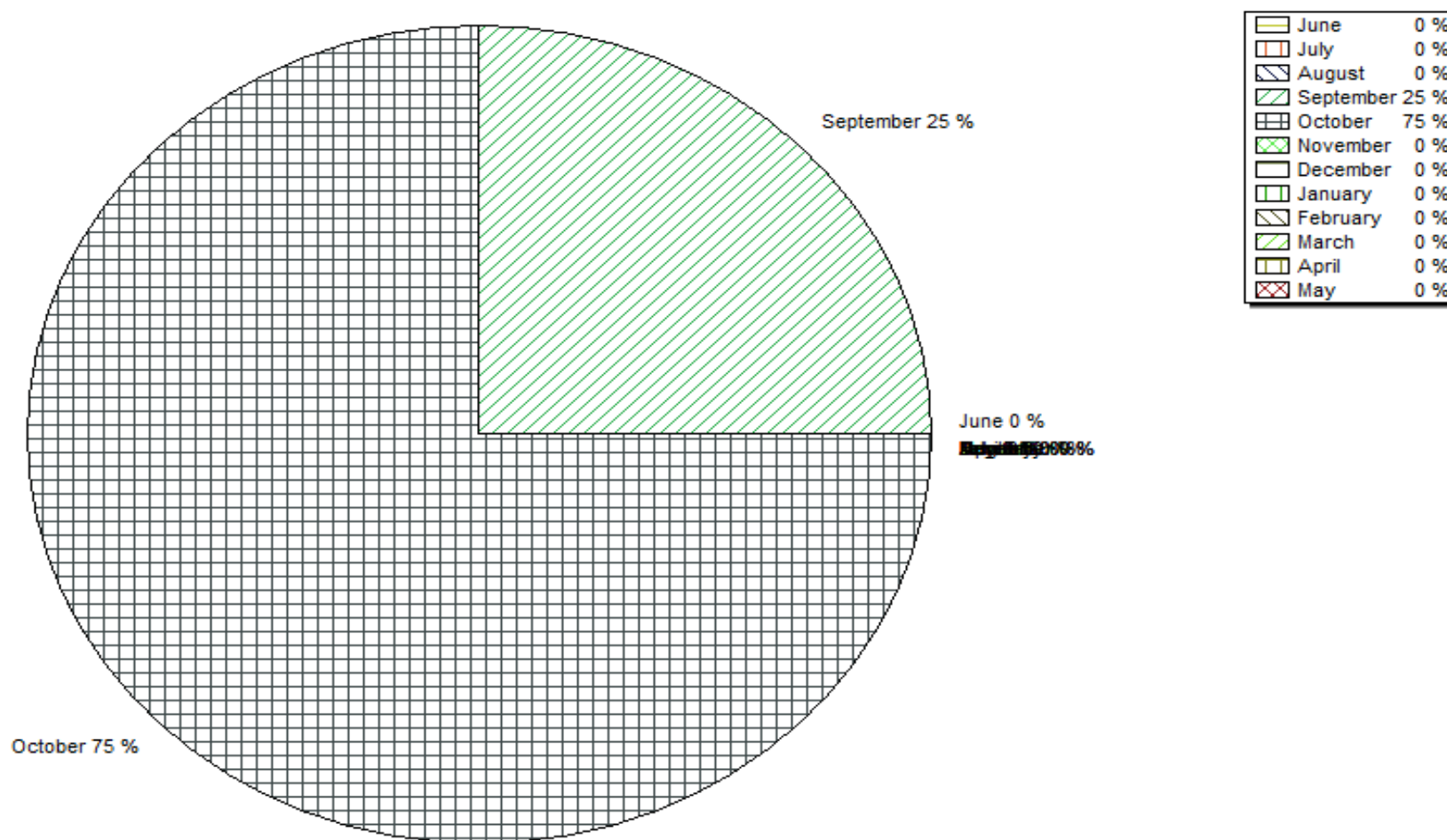
Monthly Runoff for the Year : 2019-2020

Station Name : Suddakallu (SUDDAKALLU)

Local River : Dindi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool

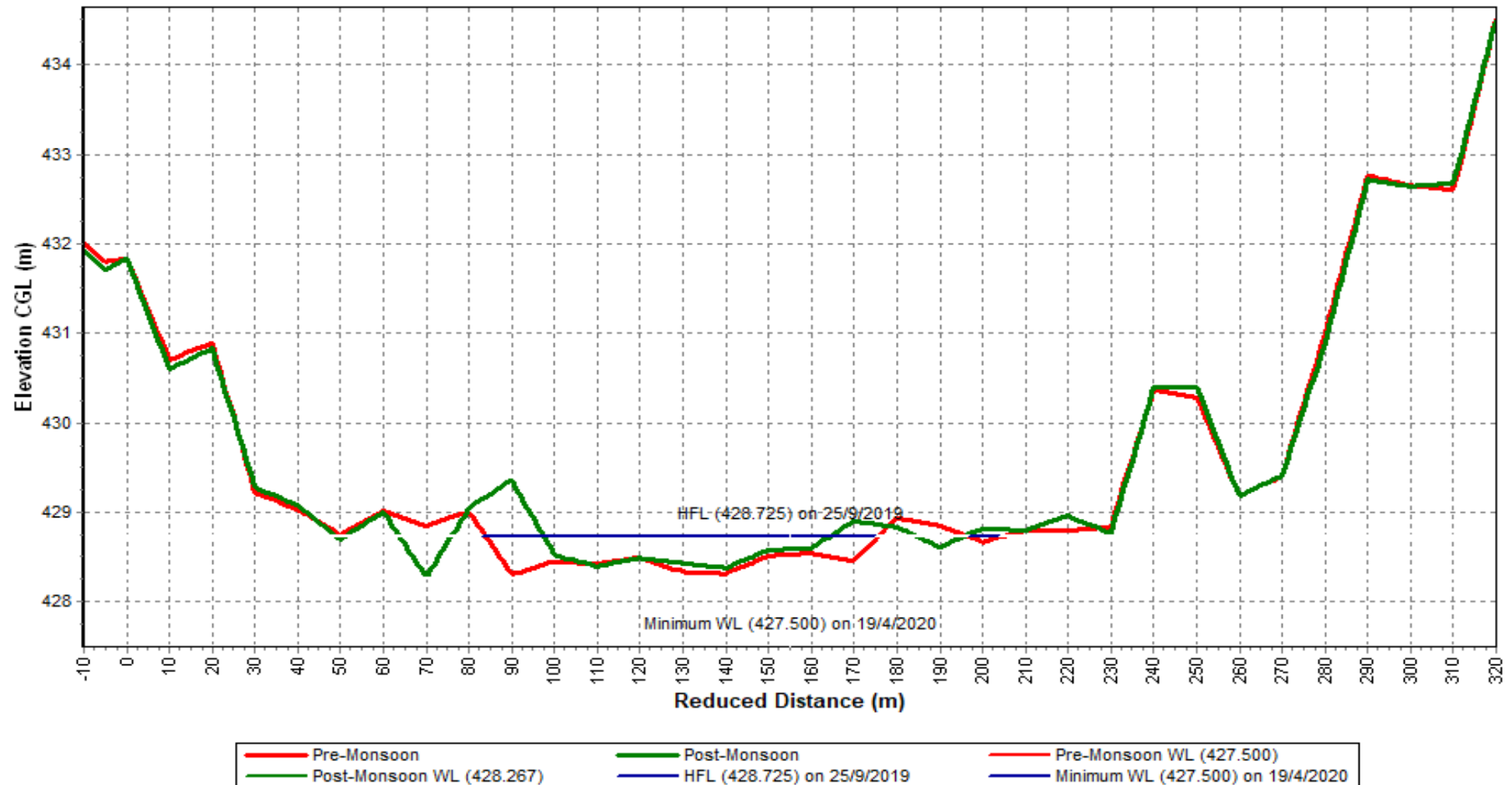


Station Name : Suddakallu (SUDDAKALLU)

Local River : Dindi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



Cross Section Difference Due to High Velocity of Flow Scouring action

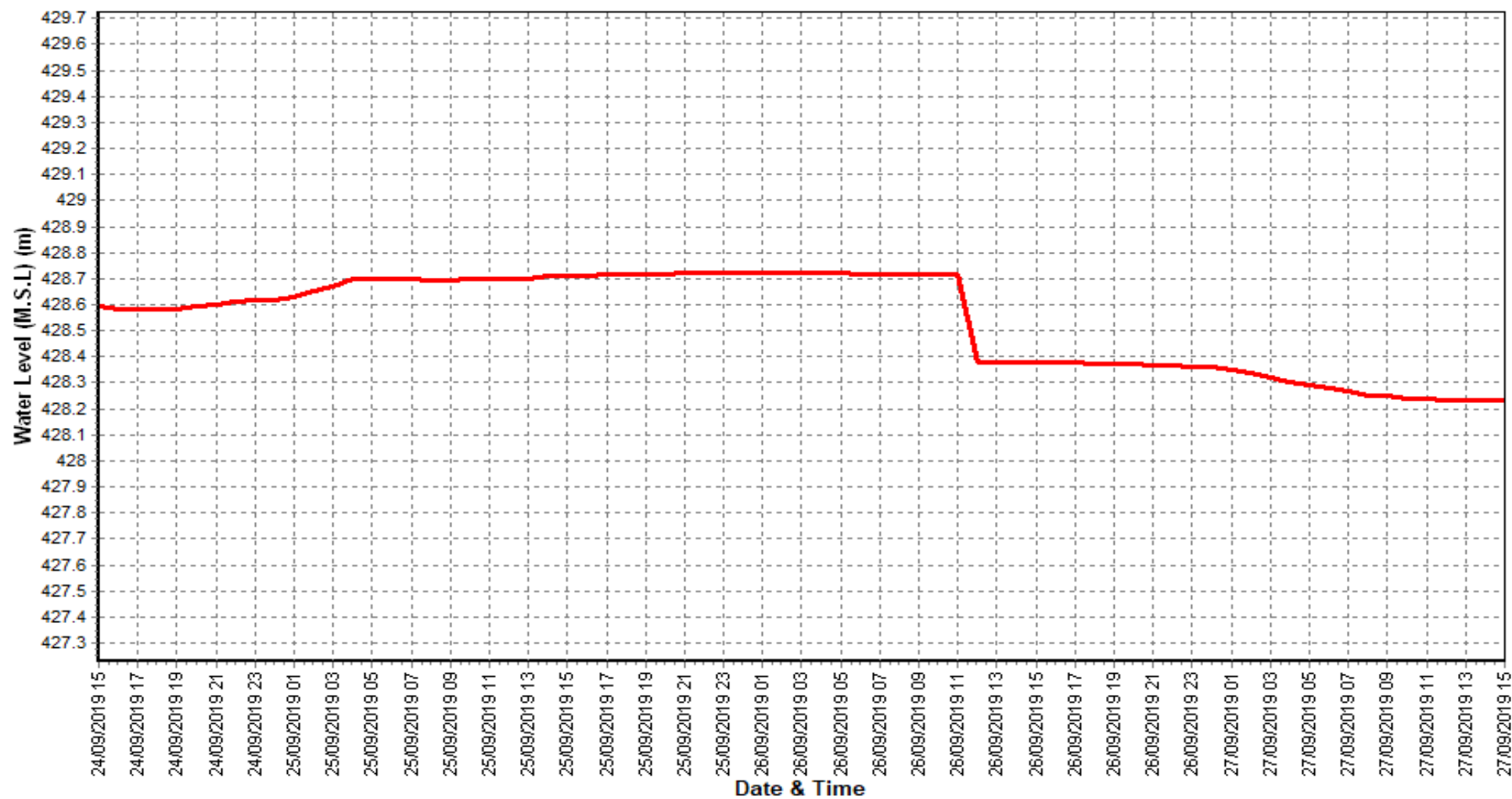
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Suddakallu (SUDDAKALLU)

Local River : Dindi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



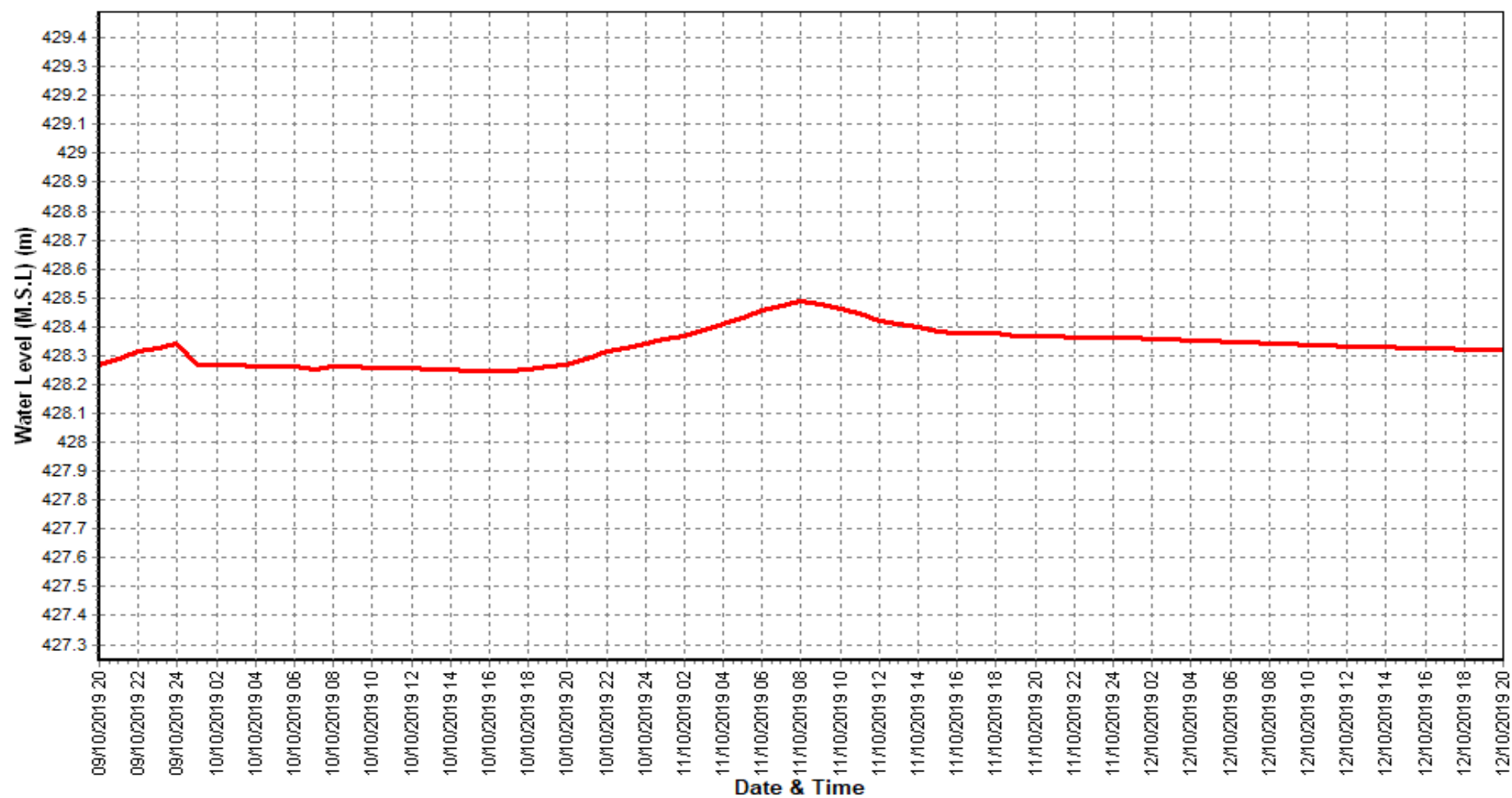
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Suddakallu (SUDDAKALLU)

Local River : Dindi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 . Kurnool



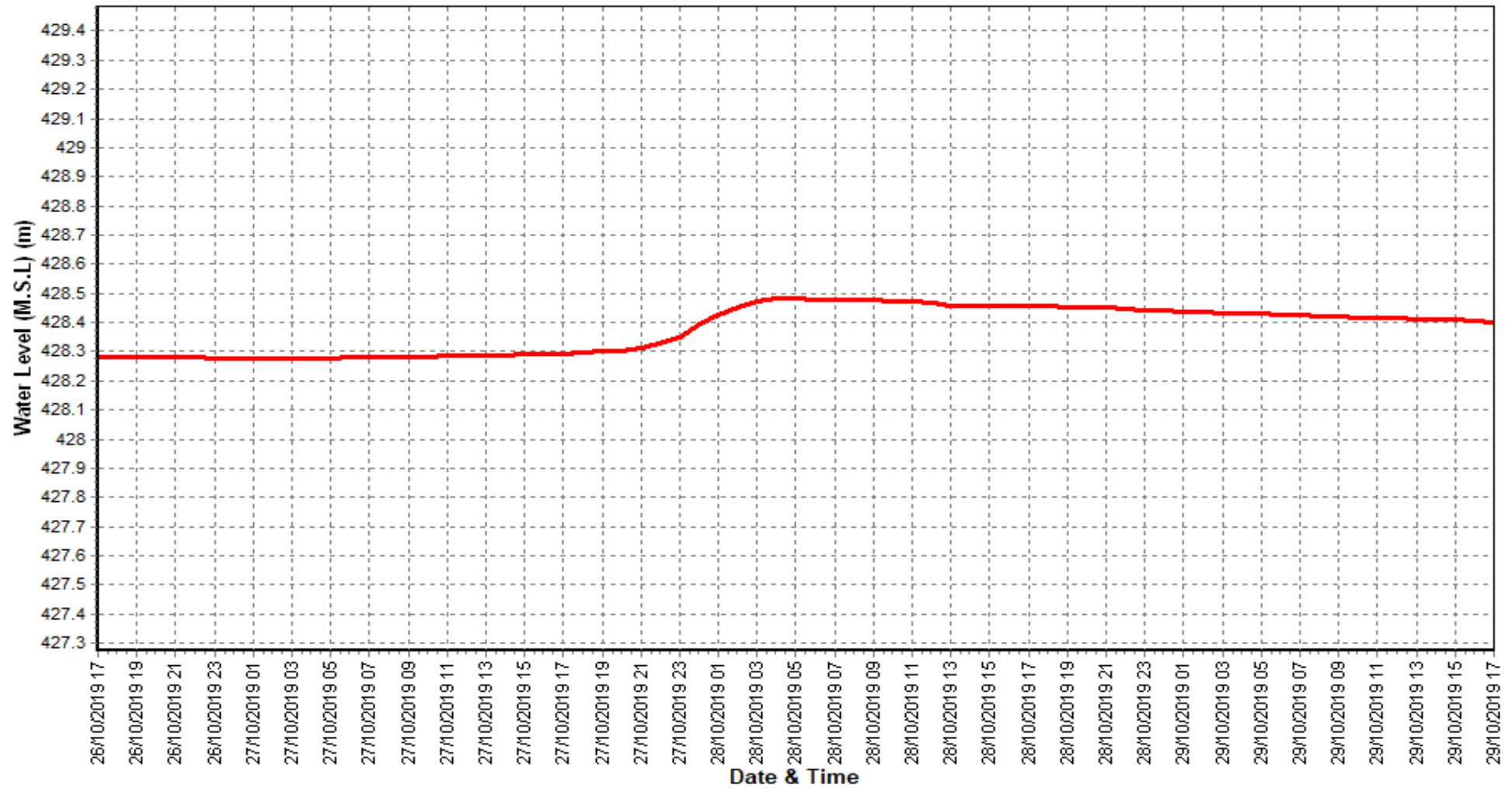
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Suddakallu (SUDDAKALLU)

Local River : Dindi

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



HISTORY SHEET

		Water Year : 2019-2020	
Site	: Huvinhedigi	Code	: AK000N2
State	: Karnataka	District	: Raichur
Basin	: Krishna	Independent River	: Krishna
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Krishna
Division	: Lower Krishna Divn., Hyderabad	Sub-Division	: Middle Krishna SD 2 , Kurnool
Drainage Area	: 55150 Sq. Km.	Bank	: Right
Latitude	: 16°29'25"	Longitude	: 76°55'23"
Zero of Gauge (m)	: 339.008 (m.s.l)	01/02/1976	- 31/05/1981
	: 342.24 (m.s.l)	01/06/1981	
	: 342.24 (m.s.l)	01/01/1999	- 31/12/2005
	Opening Date	Closing Date	
Gauge	: 01/02/1976	HFL During 2019-20	: 358.550 m
		Corres. Discharge	: 17722 (Estimated)
Discharge	: 01/02/1976	Date & Time of	: 15/10/2019
		occurrence	: 10:00 Hrs
Sediment	: 01/06/1976		
Water Quality	: 01/02/1976		

HFL Recorded so far in m : 358.550 dt 15-10-2019

Corresponding Discharge (cumecs) : 17722 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1976-1977	8742	350.758	07/08/1976	4.600	342.151	21/04/1977
1977-1978	6312	349.493	31/07/1977	6.200	342.248	06/04/1978
1978-1979	6174	349.833	21/08/1978	0.776	341.968	13/05/1979
1979-1980	8830	351.353	15/08/1979	1.500	341.993	04/06/1979
1980-1981	7912	350.651	09/07/1980	0.100	342.343	05/05/1981
1981-1982	7245	352.949	13/07/1981	6.500	345.670	01/06/1981
1982-1983	6505	352.700	19/08/1982	1.210	345.500	08/05/1983
1983-1984	9510	353.860	02/07/1983	5.900	345.620	14/06/1983
1984-1985	6601	352.940	23/07/1984	13.40	345.790	29/05/1985
1985-1986	5487	352.570	06/08/1985	8.500	345.800	10/05/1986
1986-1987	5225	352.670	16/08/1986	5.500	345.745	02/05/1987
1987-1988	4741	351.975	11/07/1987	5.000	345.740	15/06/1987
1988-1989	8935	353.790	09/08/1988	7.236	345.740	29/05/1989
1989-1990	7764	353.865	30/07/1989	8.064	345.760	01/06/1989
1990-1991	7752	353.460	23/08/1990	9.147	345.870	12/05/1991
1991-1992	8748	354.040	03/08/1991	7.884	346.030	24/05/1992

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1992-1993	4415	352.055	18/08/1992	0.855	345.770	16/05/1993
1993-1994	5411	352.660	20/10/1993	13.65	345.988	03/06/1993
1994-1995	10126	355.120	21/07/1994	3.003	345.750	11/05/1995
1995-1996	3911	351.385	25/07/1995	1.847	345.660	11/05/1996
1996-1997	5342	352.870	08/10/1996	6.111	345.760	31/05/1997
1997-1998	8910	354.290	12/08/1997	3.343	345.650	24/05/1998
1998-1999	5464	352.810	15/10/1998	8.130	345.800	09/05/1999
1999-2000	7267	353.785	28/07/1999	4.176	345.760	21/05/2000
2000-2001	4831	352.400	17/07/2000	2.091	345.680	27/05/2001
2001-2002	4254	351.970	09/10/2001	1.130	345.650	15/07/2001
2002-2003	3916	351.770	16/08/2002	2.087	345.700	09/07/2002
2003-2004	1369	348.440	02/08/2003	7.423	345.890	04/06/2003
2004-2005	5307	353.195	09/08/2004	5.675	345.910	23/07/2004
2005-2006	10459	356.350	08/08/2005	9.191	345.980	04/05/2006
2006-2007	9193	355.260	17/08/2006	5.940	345.670	10/05/2007
2007-2008	7772	353.950	10/08/2007	6.255	345.630	18/05/2008
2008-2009	8300	354.290	20/08/2008	3.201	345.550	20/07/2008
2009-2010	13909	357.840	02/10/2009	3.073	345.560	05/06/2009
2010-2011	8097	354.240	31/07/2010	10.38	345.610	15/05/2011
2011-2012	8470	354.770	08/09/2011	0.460	345.210	04/04/2012
2012-2013	4313	351.340	06/09/2012	0.276	345.320	19/03/2013
2013-2014	6962	353.360	28/07/2013	1.669	345.250	07/07/2013
2014-2015	4783	351.710	05/08/2014	0.924	345.300	27/07/2014
2015-2016	714.8	348.060	12/09/2015	0.000	345.230	24/03/2016
2016-2017	7054	353.230	11/08/2016	0.000	345.310	16/05/2017
2017-2018	4237	351.320	16/10/2017	0.000	345.310	11/06/2017
2018-2019	5556	352.510	24/07/2018	0.000	345.350	04/01/2019

Annual Runoff of Krishna at Huvinhedigi							
Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1975-1976		209	209	0	7	7
2	1976-1977	21720	462	22181	767	16	784
3	1977-1978	18932	907	19839	669	32	701
4	1978-1979	21395	392	21787	756	14	770
5	1979-1980	20765	737	21502	734	26	760
6	1980-1981	23442	362	23804	828	13	841
7	1981-1982	23055	595	23650	815	21	836
8	1982-1983	16675	724	17399	589	26	615
9	1983-1984	22211	694	22905	785	25	809
10	1984-1985	14325	397	14722	506	14	520
11	1985-1986	11097	275	11372	392	10	402
12	1986-1987	10227	216	10444	361	8	369
13	1987-1988	9185	355	9540	325	13	337
14	1988-1989	20319	386	20705	718	14	732
15	1989-1990	13439	554	13993	475	20	494
16	1990-1991	18675	503	19178	660	18	678
17	1991-1992	23993	412	24405	848	15	862
18	1992-1993	12676	685	13361	448	24	472
19	1993-1994	18579	1594	20173	657	56	713
20	1994-1995	31454	626	32080	1111	22	1134
21	1995-1996	9493	363	9855	335	13	348
22	1996-1997	13597	570	14166	480	20	501
23	1997-1998	21439	626	22065	758	22	780
24	1998-1999	15964	636	16600	564	22	587
25	1999-2000	16569	562	17131	585	20	605
26	2000-2001	7368	689	8056	260	24	285
27	2001-2002	7243	720	7963	256	25	281
28	2002-2003	3833	859	4692	135	30	166
29	2003-2004	2439	1093	3532	86	39	125
30	2004-2005	9321	958	10279	329	34	363
31	2005-2006	25654	923	26578	907	33	939
32	2006-2007	25856	939	26794	914	33	947
33	2007-2008	20848	846	21694	737	30	767
34	2008-2009	10759	806	11564	380	28	409
35	2009-2010	11348	1158	12505	401	41	442
36	2010-2011	9657	869	10526	341	31	372
37	2011-2012	13622	511	14134	481	18	499
38	2012-2013	4728	423	5151	167	15	182
39	2013-2014	11674	496	12171	413	18	430
40	2014-2015	10483	396	10880	370	14	384
41	2015-2016	982	177	1158	35	6	41
42	2016-2017	7948	195	8143	281	7	288
43	2017-2018	5907	118	6025	209	4	213
44	2018-2019	11032	167	11199	390	6	396
45	2019-2020	33820	348	34169	1195	12	1207
Average		15085	590	15339	521	21	542
75% Dependable flow (MCM)				10067.000			
90 % Dependable flow (MCM)				4968.000			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Huvinhedigi (AK000N2)

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Middle Krishna SD 2 , Kurnool

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	345.120	0.000	345.650	13.28	352.780	6223	347.070	297.5 *	347.365	406.7	347.950	799.2
2	345.110	0.000	345.510	8.499	353.010	6572	346.690	151.2 *	347.680	653.2 *	348.310	1161
3	345.110	0.000	345.450	5.548	353.380	7145	346.600	148.9	347.620	647.5	347.940	818.1 *
4	345.110	0.000	345.410	4.159	353.650	7535	349.710	2312	347.240	371.9	347.710	556.7
5	345.100	0.000	345.340	2.287	354.460	8902	351.295	4293	347.660	670.7	348.000	859.4
6	345.090	0.000	345.290	1.420	354.440	8865	352.650	5844	347.870	772.2 *	347.670	517.7
7	345.090	0.000	345.250	0.037 *	354.990	9593	351.495	4425	348.930	1722	347.490	472.9
8	345.740	16.91	345.200	1.192	355.040	9686	352.390	5475	350.500	3123	348.270	1121
9	345.540	9.828	345.150	0.227	354.890	9414	353.740	7669	347.560	462.7	349.000	1886
10	345.500	8.735	345.050	0.201	356.090	12978	353.080	6681	348.320	1241	348.020	871.8 *
11	345.440	6.110	345.110	0.208	358.460	17507 *	349.660	2098	348.840	1612	347.300	373.8
12	345.390	4.596	344.970	0.000	358.190	16866 *	351.655	4794	349.680	2317	347.050	289.1
13	345.430	4.641	344.940	0.000	358.240	16984 *	352.700	5914	350.010	2734	346.910	250.4
14	345.390	3.562	344.820	0.000	358.440	17459 *	351.830	4787	348.190	1079	346.545	117.3
15	345.360	2.698	346.180	59.43	358.070	16585 *	347.980	800.2 *	348.280	1180	346.350	91.55
16	345.320	2.135 *	345.660	14.87	357.590	15479 *	346.990	208.5	348.320	1253	346.350	93.27
17	345.290	1.482	345.470	7.619	356.730	13578 *	349.830	2417	347.630	621.4	346.330	65.67 *
18	345.260	1.102	345.340	2.194	354.530	8913	349.700	2242	347.410	446.7	346.290	54.92
19	345.260	1.136	345.560	10.46	352.490	5613	348.240	1083	347.370	410.4	346.210	31.95
20	345.250	1.088	345.840	22.84	350.810	3388	348.680	1523	348.510	1230 *	346.280	79.93
21	345.250	1.095	345.600	11.93 *	347.485	501.6 #	348.940	1618	348.310	1216	346.250	64.15
22	345.310	1.953	346.040	27.31	346.890	223.1 #	348.140	908.9 *	353.010	6568	346.280	80.43
23	345.440	6.331 *	345.670	14.68	346.795	107.1	348.150	1035	354.360	8580	346.280	76.77
24	345.470	7.835	345.620	11.78	346.930	238.9 #	347.340	361.4	355.260	10415	346.240	34.30 *
25	345.450	5.790	345.500	7.209	346.870	215.4 *	348.040	925.6	352.460	5572	346.220	60.26
26	345.570	10.76	345.365	3.021	346.595	121.2 #	350.480	3207	350.290	3012	346.170	47.58
27	345.620	12.26	345.290	1.949	346.420	73.43 #	352.340	5403	348.830	1490 *	346.090	39.37
28	346.015	26.44 #	345.260	0.037 *	346.330	52.83 #	349.870	2531	349.500	2072	346.010	31.03
29	345.780	18.18	349.250	2233	346.235	40.16	347.835	835.8	349.730	2327	346.040	33.64
30	345.960	24.51 *	350.960	3562	346.370	67.55	348.610	1370	347.360	388.8	346.000	28.63
31			352.730	6180	347.170	292.3			347.980	867.7		
Ten-Daily Mean												
I Ten-Daily	345.251	3.547	345.330	3.685	354.273	8691	350.472	3730	348.075	1007	348.036	906.4
II Ten-Daily	345.339	2.855	345.389	11.76	356.355	13237	349.727	2587	348.424	1288	346.562	144.8
III Ten-Daily	345.586	11.52	347.026	1096	346.735	175.8	348.975	1820	350.645	3864	346.158	49.62
Monthly												
Min.	345.090	0.000	344.820	0.000	346.235	40.16	346.600	148.9	347.240	371.9	346.000	28.63
Max.	346.015	26.44	352.730	6180	358.460	17507	353.740	7669	355.260	10415	349.000	1886
Mean	345.392	5.973	345.951	393.8	352.270	7136	349.724	2712	349.099	2112	346.919	366.9

Annual Runoff in MCM = 34169 Annual Runoff in mm = 620

Peak Observed Discharge = 12978 cumecs on 10/08/2019 Corres. Water Level :356.09 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :345.12 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Huvinhedigi (AK000N2)

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Middle Krishna SD 2 , Kurnool

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	345.920	19.80 *	346.150	54.50	345.940	19.46	345.510	1.910 *	Not observed due to Lock-Down		345.610	4.213
2	345.870	13.07	346.150	52.94	345.850	10.82 *	345.520	1.944			345.600	4.075
3	345.870	12.80	346.180	57.33	345.850	9.331	345.770	8.533			345.620	4.226 *
4	346.000	27.56	346.190	56.00	345.850	9.534	345.910	17.93			345.610	4.115
5	346.000	26.73	346.190	59.93 *	345.840	9.107	345.940	22.27			345.610	4.135
6	345.950	23.67	346.200	58.82	345.770	6.570	346.000	36.40			345.590	3.982
7	346.030	31.88	346.160	53.57	345.700	5.014	346.130	46.98			345.570	3.245 *
8	346.090	41.51 *	346.080	43.28	345.660	4.493	346.120	49.51 *			345.570	2.545
9	346.120	51.55	345.940	23.16	345.690	5.970 *	346.210	67.98 #			345.570	3.264
10	346.110	48.07	345.920	18.57	345.790	7.110	346.220	71.94 *			345.570	3.550 *
11	346.120	49.36	345.900	16.58	345.950	19.70	346.230	75.12			345.800	10.00
12	346.120	51.77	345.830	9.130 *	346.020	32.61	346.230	73.47			345.900	16.12
13	346.110	48.84	345.830	11.52	346.060	38.98	346.200	56.71			345.780	9.884
14	346.120	49.98	345.790	7.174	346.180	54.53	345.970	32.17			345.690	5.957
15	346.090	41.51 *	345.810	7.568 *	346.180	54.05 #	345.880	13.61 *			345.630	4.836
16	346.100	47.71	345.790	7.556	346.190	55.98 *	345.800	9.056			345.580	3.760
17	346.040	38.79	345.780	6.896	346.220	65.49	345.720	6.065			345.570	3.250 *
18	345.970	26.24	345.780	6.461	346.190	59.55	345.680	4.492			345.540	2.934
19	345.900	17.78	345.920	17.80 *	346.190	58.41	345.640	3.962			345.530	2.384
20	345.835	9.087	346.190	58.59	346.190	55.21	345.610	3.294	345.720	5.820	345.520	2.142
21	345.790	7.971	346.200	65.86	346.090	44.17	345.600	3.194	345.710	5.374	345.520	1.962
22	345.720	5.182 *	346.200	64.18	346.100	45.35	345.580	2.985 *	345.680	4.637	345.570	3.213
23	345.690	4.985	346.200	65.02	345.960	22.51 *	345.570	2.785	345.660	4.238	345.570	3.049
24	345.660	4.633	346.200	64.77	345.840	11.84	345.570	2.701	345.640	4.011	345.540	3.010 *
25	345.640	4.186 *	346.200	66.35	345.750	7.242	345.620	4.125 *	345.620	3.504	345.520	2.152 *
26	345.640	4.196	346.200	61.95 *	345.750	6.848	Not observed due to Lock-Down		345.580	2.328 *	345.510	2.061
27	345.700	5.289	346.200	65.26	345.700	4.878			345.600	3.156	345.500	1.992
28	345.770	6.869	346.210	66.52	345.610	3.792			345.630	3.735	345.490	1.883
29	345.860	11.72 *	346.200	62.00	345.550	2.857			345.620	3.484	345.480	1.763
30	345.910	18.36	346.190	59.72					345.610	3.328	345.470	1.659
31	346.030	36.97	346.180	56.62							345.480	1.702 *
<u>Ten-Daily Mean</u>												
I Ten-Daily	345.996	29.66	346.116	47.81	345.794	8.742	345.933	32.54	345.875	20.39	345.592	3.735
II Ten-Daily	346.040	38.11	345.862	14.93	346.137	49.45	345.896	27.80	345.688	5.692	345.654	6.127
III Ten-Daily	345.765	10.03	346.198	63.48	345.817	16.61	345.765	14.47	345.635	3.779	345.514	2.222
<u>Monthly</u>												
Min.	345.640	4.186	345.780	6.461	345.550	2.857	345.510	1.910	345.580	2.328	345.470	1.659
Max.	346.120	51.77	346.210	66.52	346.220	65.49	346.230	75.12	346.070	41.51	345.900	16.12
Mean	345.928	25.42	346.063	42.76	345.919	25.22	345.862	24.6	345.733	9.955	345.584	3.97

Peak Computed Discharge = 17507 cumecs on 11/08/2019

Corres. Water Level :358.46 m

Lowest Computed Discharge = 0.037 cumecs on 07/07/2019

Corres. Water Level :345.25 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

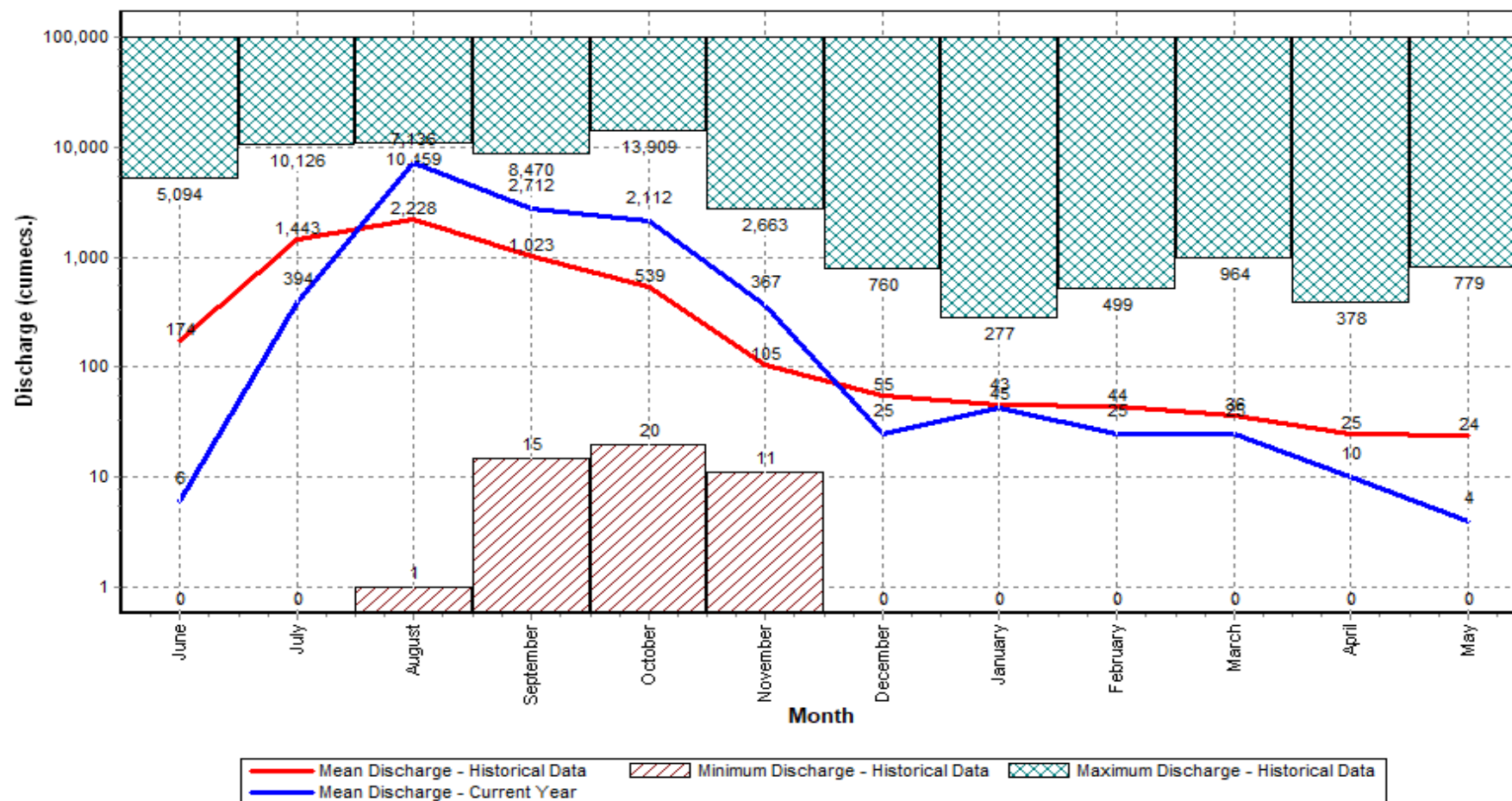
Station Name : Huvinhedigi (AK000N2)

Data considered : 1976-2020

Division : Lower Krishna Divn., Hyderabad

Local River : Krishna

Sub-Division : Middle Krishna SD 2 , Kurnool



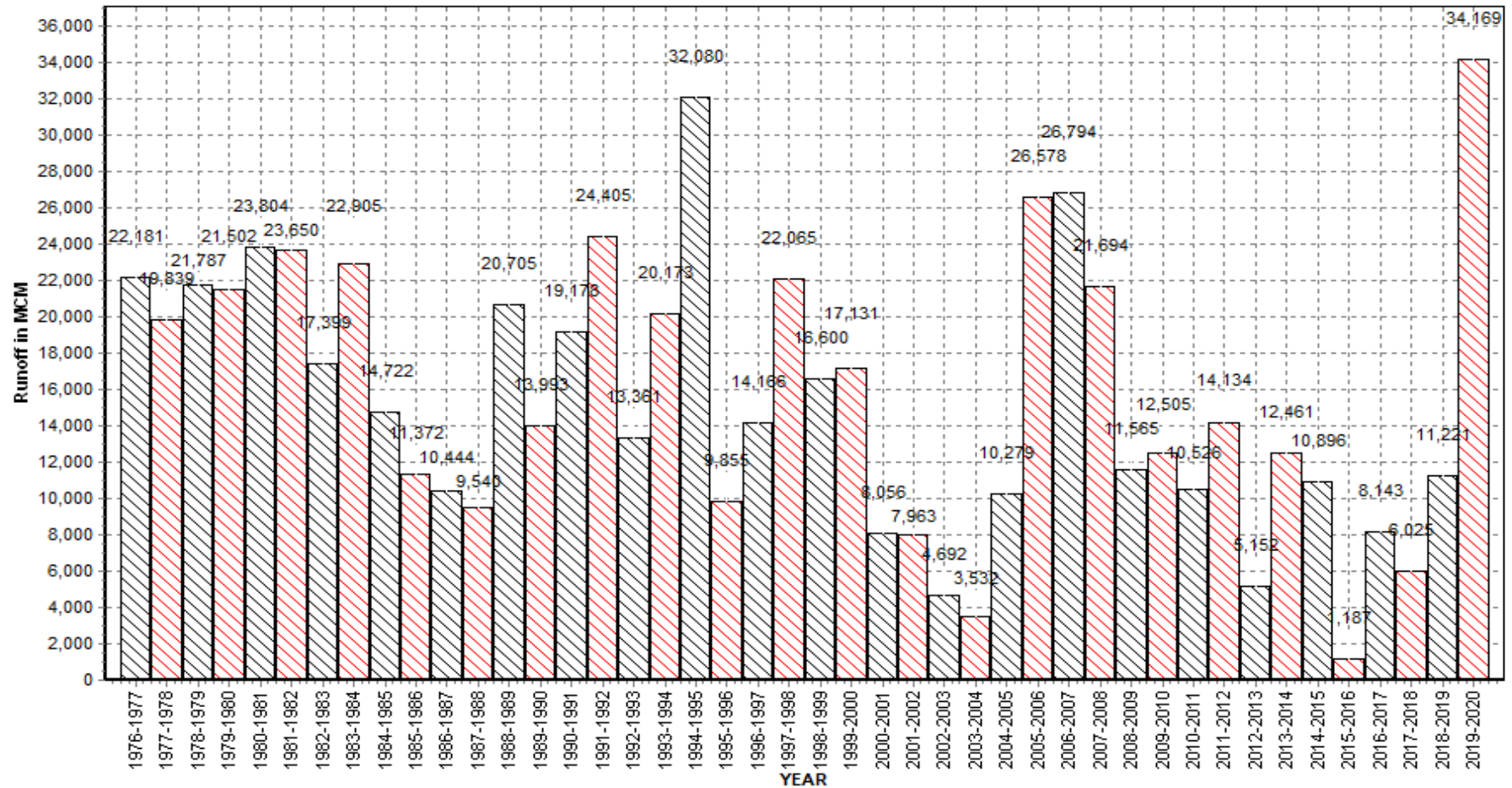
Annual Runoff Values for the period: 1976 - 2020

Station Name : Huvinhedigi (AK000N2)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



Note: Missing values have not been considered while arriving at Annual Runoff

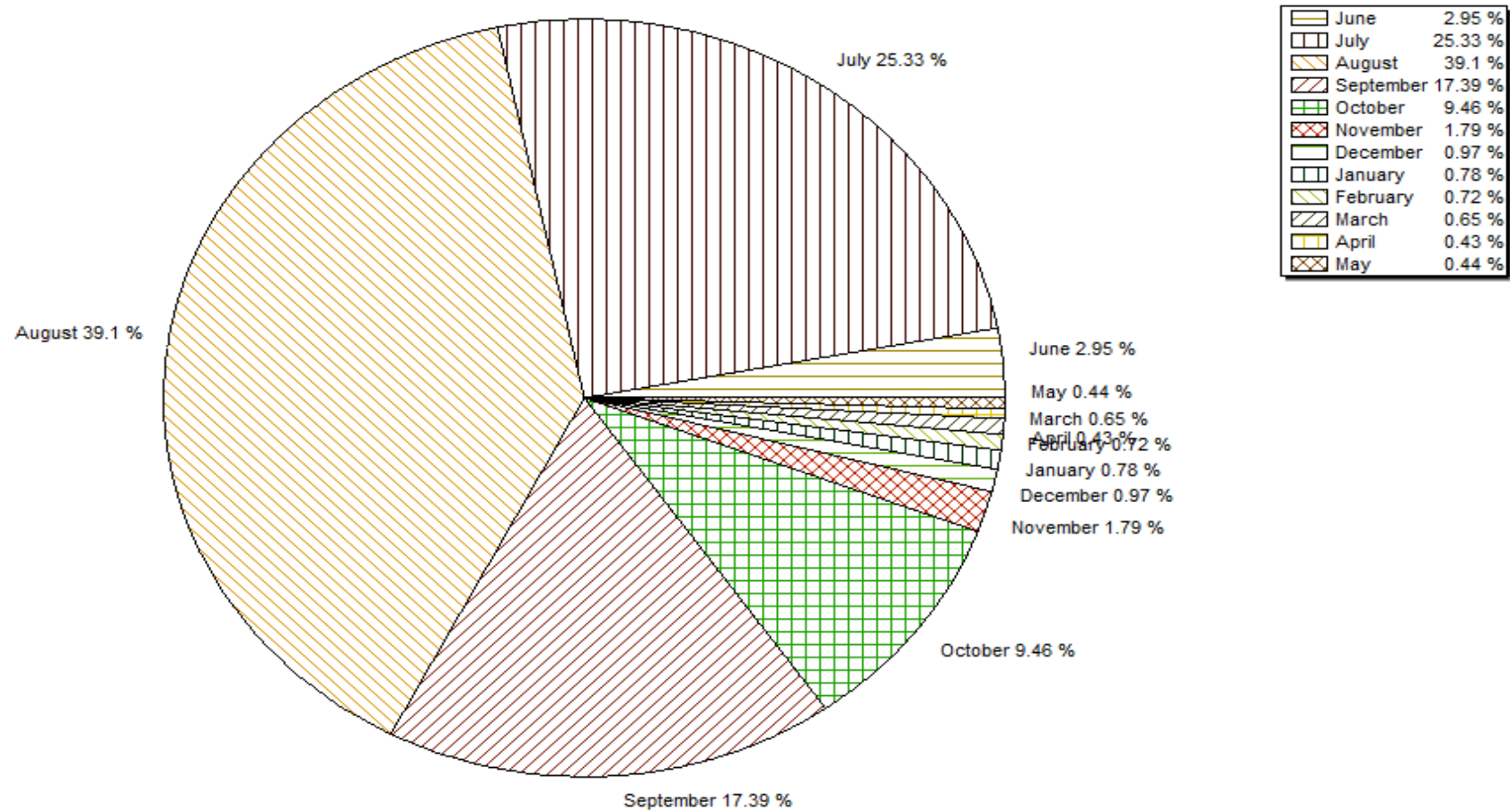
Monthly Average Runoff based on period : 1976-2019

Station Name : Huvinhedigi (AK000N2)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



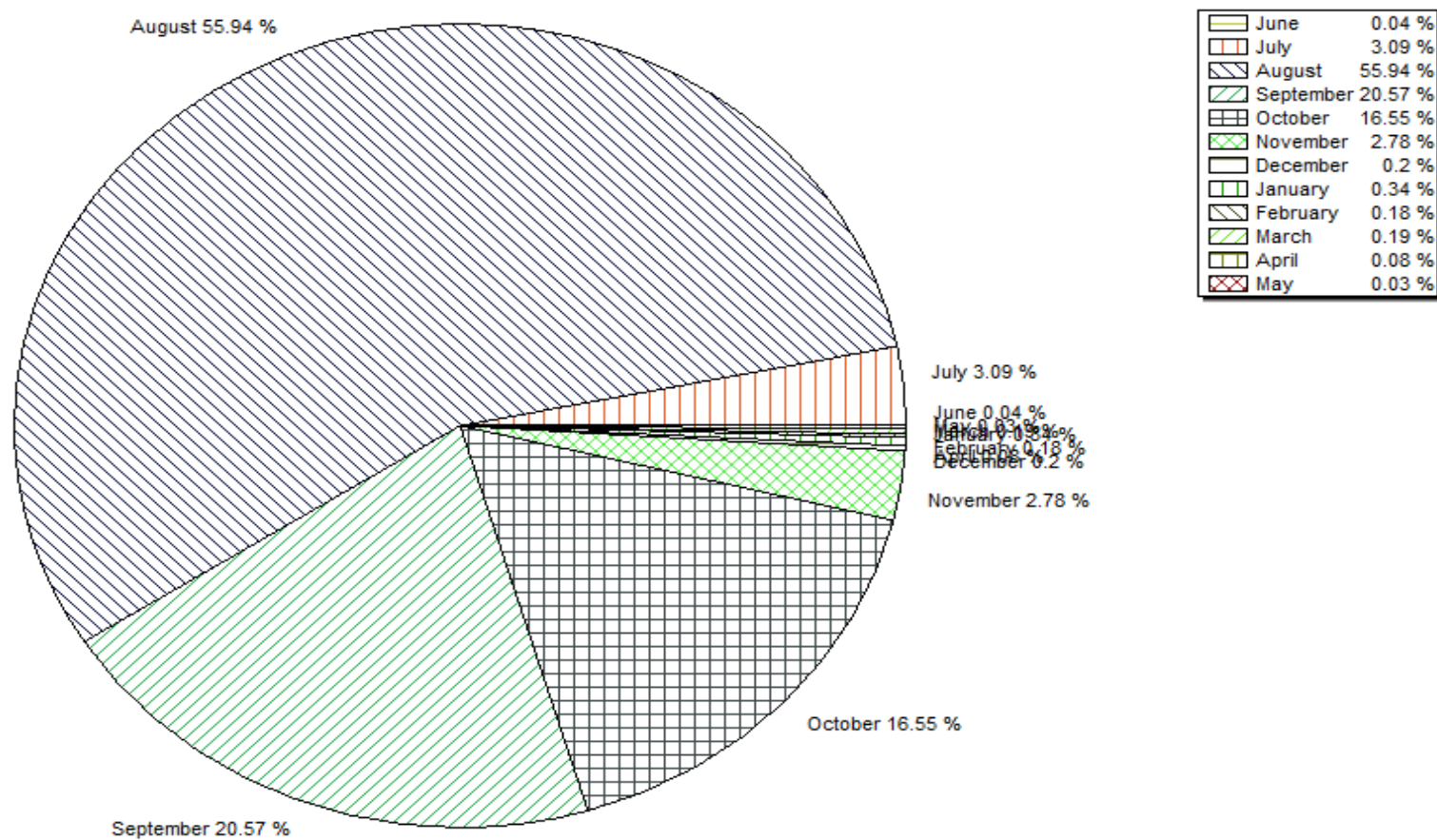
Monthly Runoff for the Year : 2019-2020

Station Name : Huvinhedigi (AK000N2)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



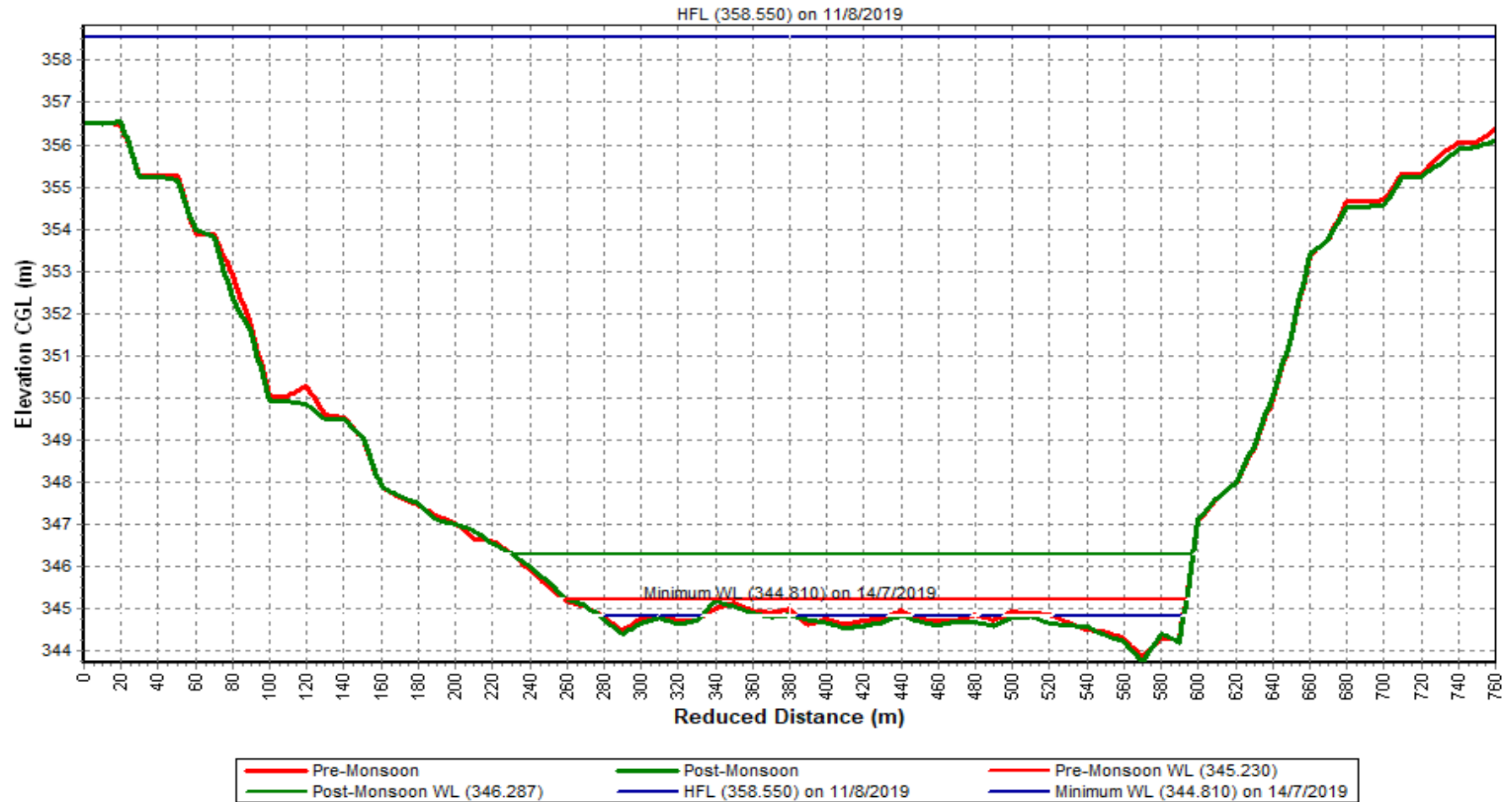
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Huvinhedigi (AK000N2)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



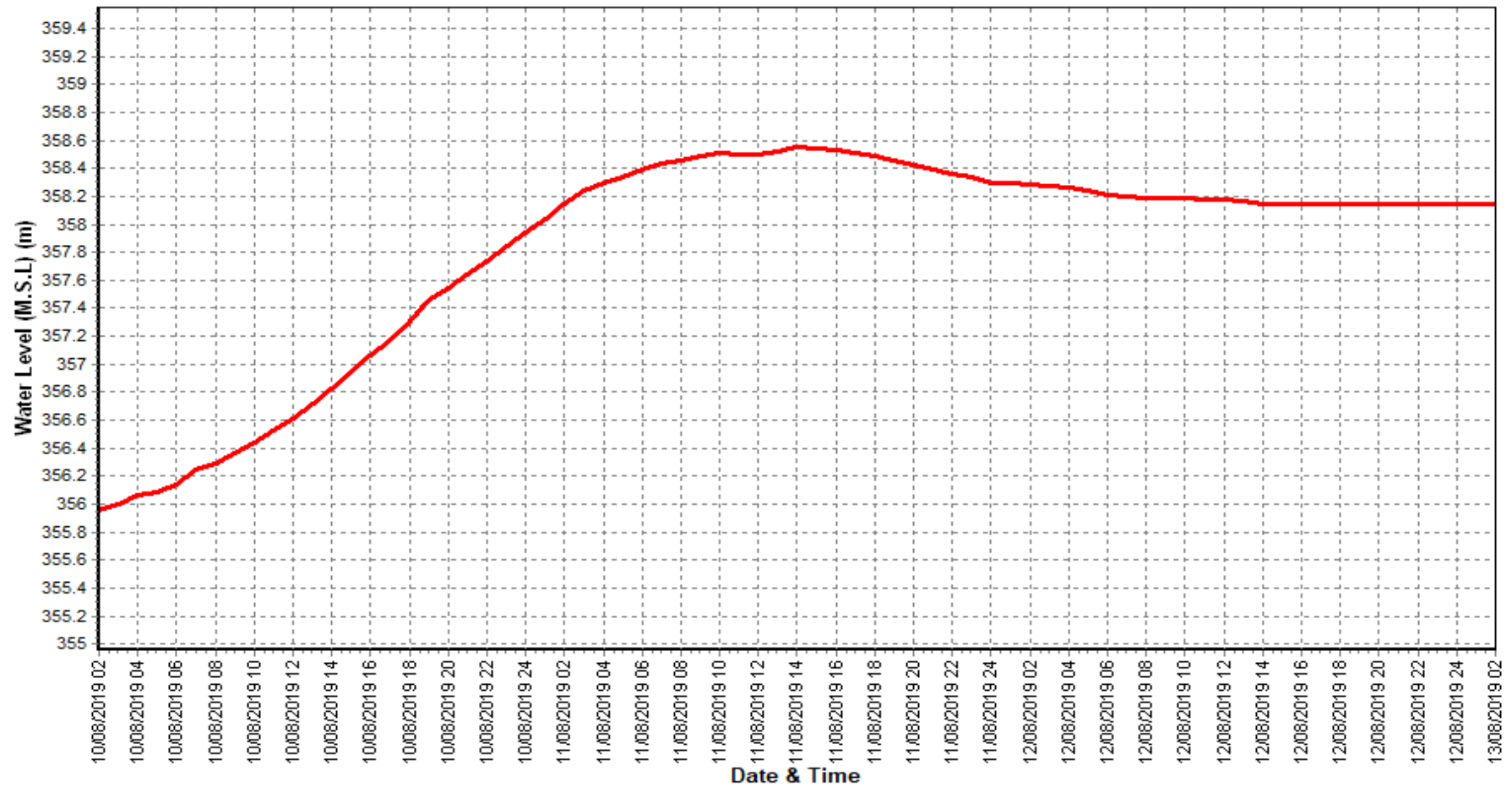
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Huvinhedigi (AK000N2)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



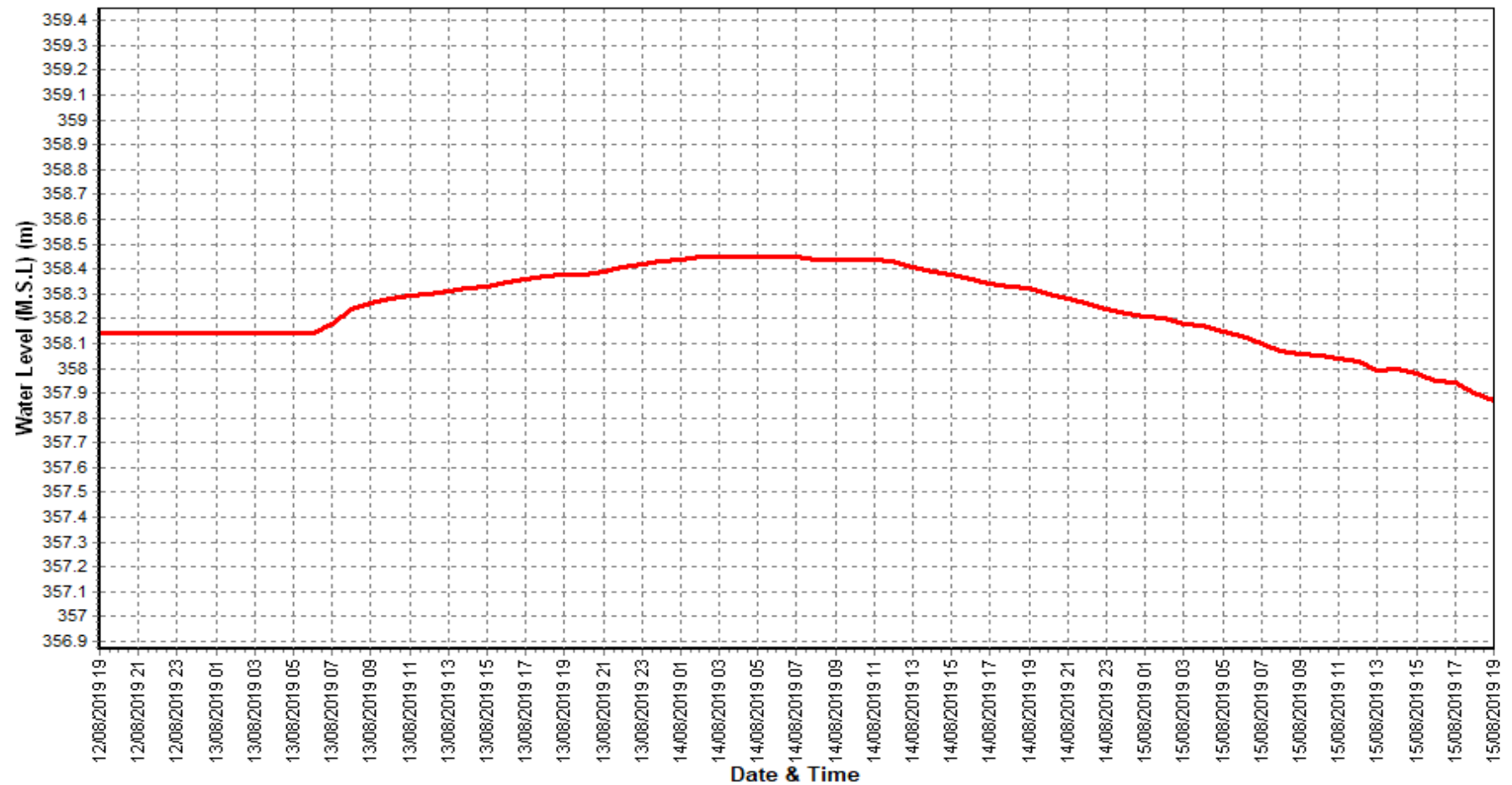
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Huvinhedigi (AK000N2)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



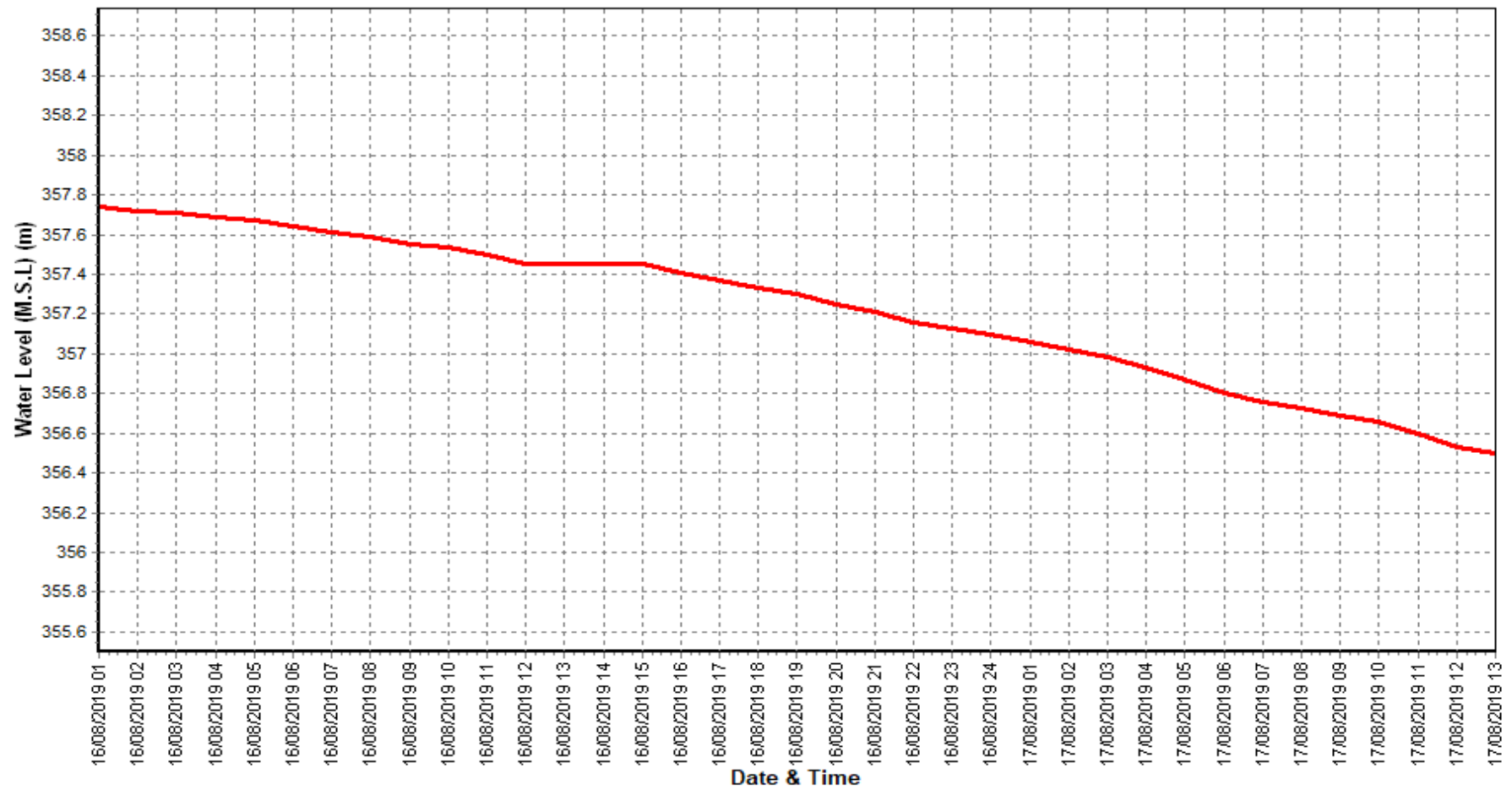
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Huvinhedigi (AK000N2)

Local River : Krishna

Division : Lower Krishna Divn., Hyderabad

Sub-Division : Middle Krishna SD 2 , Kurnool



HISTORY SHEET

Water Year : 2019-2020

Site : Talikot (Seasonal)

Code : AKQ00E2

State : Karnataka

District : Bijapur

Basin : Krishna

Independent River : Krishna

Tributary : Don

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Don

Division : Cauvery Divn, Bangalore

Sub-Division : Middle Krishna SD 1, Bagalkot

Drainage Area : 2486 Sq. Km.

Bank : Left

Latitude : 16°29'01"

Longitude : 76°17'03"

Zero of Gauge (m) : 48 (m.s.l)
496 (m.s.l)21/03/1990 - 31/05/2010
01/06/2010

Opening Date

Closing Date

Gauge : 07/06/1990

Discharge : 21/09/1995

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1996-1997	375.7	54.995	12/09/1996	0.000	50.095	31/03/1997
1997-1998	182.0	52.940	28/10/1997	0.000	50.150	30/04/1998
1998-1999	486.0	55.055	14/10/1998	0.000	50.365	18/07/1998
1999-2000	141.0	52.380	12/06/1999	0.000	50.130	23/03/2000
2000-2001	457.4	54.695	30/09/2000	0.000	50.130	01/03/2001
2001-2002	631.9	55.020	09/10/2001	0.000	50.050	25/01/2002
2002-2003	446.9	53.710	13/10/2002	0.000	50.130	25/01/2003
2003-2004	158.8	52.650	03/10/2003	0.000	50.185	22/01/2004
2004-2005	143.9	52.315	05/10/2004	0.000		10/01/2005
2005-2006	190.7	53.140	08/09/2005	0.000	50.295	22/01/2006
2006-2007	234.7	53.180	20/06/2006	0.000	50.300	28/08/2006
2007-2008	748.5	55.290	24/06/2007	0.000	50.310	17/08/2007
2008-2009	337.8	53.820	26/08/2008	0.000	50.180	23/07/2008
2009-2010	1278	56.520	01/10/2009	0.390	50.260	07/06/2009
2010-2011	432.0	501.215	26/08/2010	0.000	497.720	10/06/2010
2011-2012	78.36	498.800	21/08/2011	0.000	497.070	26/06/2011
2012-2013	98.94	499.000	07/10/2012	0.000	496.990	05/07/2012
2013-2014	115.7	499.585	20/09/2013	0.000	497.230	21/07/2013
2014-2015	234.1	500.600	28/08/2014	0.000	497.360	31/07/2014
2015-2016	182.5	501.200	11/09/2015	0.000	497.370	27/06/2015
2016-2017	60.00	499.030	31/07/2016	0.000		03/10/2016

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2017-2018	104.3	499.950	12/10/2017	0.000		05/08/2017
2018-2019	52.30	499.375	18/09/2018	0.000	497.320	19/08/2018

Annual Runoff of Don at Talikot (Seasonal)

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1995-1996	72	0	72	3	0	3
2	1996-1997	335	2	337	12	0	12
3	1997-1998	119	11	130	4	0	5
4	1998-1999	655	40	695	23	1	25
5	1999-2000	141	2	143	5	0	5
6	2000-2001	321	5	326	11	0	12
7	2001-2002	415	0	415	15	0	15
8	2002-2003	169	0	169	6	0	6
9	2003-2004	33	3	36	1	0	1
10	2004-2005	118	10	129	4	0	5
11	2005-2006	101	19	120	4	1	4
12	2006-2007	173		173	6	0	6
13	2007-2008	264		264	9	0	9
14	2008-2009	172		172	6	0	6
15	2009-2010	704		704	25	0	25
16	2010-2011	163		163	6	0	6
17	2011-2012	41		41	1	0	1
18	2012-2013	53		53	2	0	2
19	2013-2014	115		115	4	0	4
20	2014-2015	170		170	6	0	6
21	2015-2016	167		167	6	0	6
22	2016-2017	12		12	0	0	0
23	2017-2018	123		123	4	0	4
24	2018-2019	10		10	0	0	0
25	2019-2020	414		414	15	0	15
Average		202	8	206	7	0	7
75% Dependable flow (MCM)				94			
90 % Dependable flow (MCM)				26			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Talikot (Seasonal) (AKQ00E2)

Division : Cauvery Divn, Bang

Local River : Don

Sub-Division : Middle Krishna SD 1, Bagalkot

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1		0.000	497.410	0.012 *	497.450	0.072 *	496.000	0.000	498.380	34.05 *	497.990	10.62 *
2		0.000	497.500	0.242 *	497.530	0.404 *	496.000	0.000	497.960	9.432 *	497.870	6.345 *
3		0.000	497.410	0.012 *	497.430	0.035 *	496.000	0.000	497.730	2.884 *	497.690	2.172 *
4		0.000	497.330	0.000	497.390	0.002 *	496.000	0.000	499.560	215.0 *	497.570	0.696 *
5	498.120	15.45 *	497.340	0.000	497.350	0.000	496.000	0.000	500.240	408.9 *	498.090	15.18 *
6	497.680	3.767 *	497.330	0.000	497.460	0.097 *	497.430	0.035 *	498.320	29.43 *	498.070	14.20 *
7	497.430	0.913 *	497.460	0.097 *	497.510	0.291 *	497.470	0.126 *	498.940	94.39 *	497.720	2.695 *
8	497.550	1.993 #	497.450	0.072 *	497.460	0.097 *	497.450	0.072 *	498.970	101.9 *	497.580	0.784 *
9	497.860	7.408 *	497.410	0.012 *	497.400	0.005 *	497.390	0.002 *	498.900	91.59 *	497.510	0.291 *
10	497.840	7.770	497.360	0.000	497.360	0.000	497.330	0.000	498.240	23.86 *	497.440	0.051 *
11	497.680	3.251	497.330	0.000	497.360	0.000	497.530	0.404 *	498.540	48.35 *	497.380	0.000
12	497.550	1.993 *	497.300	0.000	497.360	0.000	497.570	0.696 *	498.420	37.36 *	497.360	0.000
13	497.440	0.985 *		0.000	497.340	0.000	497.560	0.614 *	497.950	9.054 *	497.350	0.000
14	497.390	0.659 *		0.000	497.320	0.000	497.560	0.614 *	498.430	38.21 *	497.340	0.000
15	497.350	0.441		0.000	497.310	0.000	497.610	1.083 *	498.630	57.69 *	497.330	0.000
16	497.310	0.291 *		0.000	496.000	0.000	497.630	1.315 *	497.880	6.918	497.330	0.000
17	497.280	0.196 *	497.330	0.000	496.000	0.000	497.640	1.365	497.770	3.715 *	497.330	0.000
18	497.240	0.103 *		0.000	496.000	0.000	498.000	12.89	497.880	6.826	497.320	0.000
19	497.110	0.000	497.420	0.021 *	496.000	0.000	498.540	48.35 *	497.640	1.518	497.320	0.000
20	497.100	0.000	497.450	0.072 *	496.000	0.000	497.730	2.884 *	501.860	1184 *	497.320	0.000
21	497.100	0.000	498.640	58.78 *	496.000	0.000	497.410	0.012	498.740	70.41 *	497.470	0.126 *
22	496.000	0.000	498.070	14.20 *	496.000	0.000	497.360	0.000	498.440	39.08 *	497.460	0.097 *
23	497.310	0.291 *	497.790	4.177 *	498.210	21.94 *	497.350	0.000	501.280	852.5 *	497.440	0.051 *
24	497.350	0.480	497.530	0.404 *	497.520	0.320	497.820	4.929 *	499.760	264.6 *	497.430	0.035 *
25	499.670	154.5 *	497.440	0.051 *	497.440	0.051 *	497.680	2.011 *	498.560	50.34 *	497.430	0.035 *
26	499.210	94.54 *	497.390	0.002 *	497.510	0.280	499.470	194.6 *	497.940	8.685 *	497.430	0.035 *
27	499.250	99.06 *	497.540	0.468 *	497.390	0.002 *	499.450	190.2 *	497.620	1.196 *	497.430	0.035 *
28	497.720	4.452 #	497.460	0.097 *	497.340	0.000	498.450	39.95 *	497.510	0.291 *	497.430	0.035 *
29	497.550	0.615	497.380	0.000	497.320	0.000	498.430	38.21 *	497.550	0.538 *	497.430	0.035 *
30	497.450	0.072 *	497.320	0.000		0.000	497.960	7.426	497.520	0.345 *	497.430	0.035 *
31				0.000		0.000			497.500	0.242 *		
Ten-Daily Mean												
I Ten-Daily	497.747	3.730	497.400	0.045	497.434	0.100	496.707	0.024	498.724	101.1	497.753	5.303
II Ten-Daily	497.345	0.792	497.366	0.009	496.669	0.000	497.737	7.021	498.500	139.4	497.338	0.000
III Ten-Daily	497.861	35.40	497.656	7.107	497.192	2.054	498.138	47.73	498.402	117.1	497.438	0.052
Monthly												
Min.	496.000	0.000	497.300	0.000	496.000	0.000	496.000	0.000	497.500	0.242	497.320	0.000
Max.	499.670	154.5	498.640	58.78	498.210	21.94	499.470	194.6	501.860	1184	498.090	15.18
Mean	497.636	13.31	497.496	2.539	497.095	0.761	497.527	18.26	498.537	119.1	497.510	1.785

Annual Runoff in MCM = 414 Annual Runoff in mm = 167

Peak Observed Discharge = 12.89 cumecs on 18/09/2019 Corres. Water Level :498 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l.) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Talikot (Seasonal) (AKQ00E2)

Division : Cauvery Divn, Bang

Local River : Don

Sub-Division : Middle Krishna SD 1, Bagalkot

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	497.430	0.000	497.430	0.000		0.000	497.400	0.000		0.000	497.470	0.000
2	497.430	0.000	497.430	0.000		0.000	497.410	0.000		0.000	497.460	0.000
3	497.440	0.000	497.430	0.000	497.410	0.000	497.410	0.000		0.000	497.530	0.000
4	497.470	0.000	497.430	0.000	497.410	0.000	497.410	0.000		0.000	497.500	0.000
5	497.480	0.000	497.430	0.000	497.410	0.000	497.410	0.000		0.000	497.480	0.000
6	497.480	0.000	497.430	0.000	497.410	0.000	497.410	0.000		0.000	497.470	0.000
7	497.470	0.000	497.430	0.000	497.410	0.000	497.410	0.000		0.000	497.460	0.000
8	497.470	0.000	497.430	0.000	497.410	0.000	497.410	0.000		0.000	497.460	0.000
9	497.460	0.000	497.430	0.000	497.410	0.000	497.410	0.000		0.000	497.460	0.000
10	497.460	0.000	497.430	0.000	497.400	0.000	497.410	0.000		0.000	497.460	0.000
11	497.460	0.000	497.430	0.000	497.400	0.000	497.400	0.000		0.000	497.460	0.000
12	497.450	0.000	497.430	0.000	497.400	0.000	497.400	0.000		0.000	497.460	0.000
13	497.450	0.000	497.430	0.000	497.400	0.000	497.400	0.000		0.000	497.510	0.000
14	497.440	0.000	497.430	0.000	497.400	0.000	497.400	0.000		0.000	497.640	0.000
15	497.440	0.000	497.430	0.000	497.400	0.000	497.400	0.000		0.000	497.580	0.000
16	497.440	0.000	497.430	0.000	497.400	0.000	497.400	0.000		0.000	497.540	0.000
17	497.440	0.000	497.430	0.000	497.400	0.000		0.000		0.000	497.520	0.000
18	497.440	0.000	497.430	0.000	497.400	0.000		0.000		0.000	497.510	0.000
19	497.440	0.000	497.430	0.000	497.400	0.000		0.000		0.000	497.500	0.000
20	497.440	0.000	497.430	0.000	497.400	0.000		0.000		0.000	497.490	0.000
21	497.440	0.000	497.430	0.000	497.400	0.000		0.000		0.000	497.490	0.000
22	497.440	0.000	497.430	0.000	497.400	0.000		0.000		0.000	497.490	0.000
23	497.440	0.000	497.420	0.000	497.400	0.000		0.000		0.000	497.490	0.000
24	497.440	0.000	497.420	0.000	497.400	0.000		0.000		0.000	497.480	0.000
25	497.440	0.000	497.420	0.000	497.400	0.000		0.000		0.000	497.480	0.000
26	497.440	0.000	497.420	0.000	497.400	0.000		0.000		0.000		0.000
27	497.440	0.000	497.420	0.000	497.400	0.000		0.000		0.000		0.000
28	497.440	0.000	497.420	0.000	497.400	0.000		0.000	497.510	0.000		0.000
29	497.440	0.000	497.420	0.000	497.400	0.000		0.000	497.490	0.000		0.000
30	497.440	0.000	497.420	0.000				0.000	497.480	0.000		0.000
31	497.430	0.000	497.420	0.000				0.000				0.000
Ten-Daily Mean												
I Ten-Daily	497.459	0.000	497.430	0.000	497.409	0.000	497.409	0.000		0.000	497.475	0.000
II Ten-Daily	497.444	0.000	497.430	0.000	497.400	0.000	497.400	0.000		0.000	497.521	0.000
III Ten-Daily	497.439	0.000	497.422	0.000	497.400	0.000		0.000	497.493	0.000	497.486	0.000
Monthly												
Min.	497.430	0.000	497.420	0.000	497.400	0.000	497.400	0.000	497.480	0.000	497.460	0.000
Max.	497.480	0.000	497.430	0.000	497.410	0.000	497.410	0.000	497.510	0.000	497.640	0.000
Mean	497.447	0	497.427	0	497.403	0	497.406	0	497.493	0	497.496	0

Peak Computed Discharge = 1184 cumecs on 20/10/2019

Corres. Water Level :501.86 m

Lowest Computed Discharge = 0.002 cumecs on 26/07/2019

Corres. Water Level :497.39 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

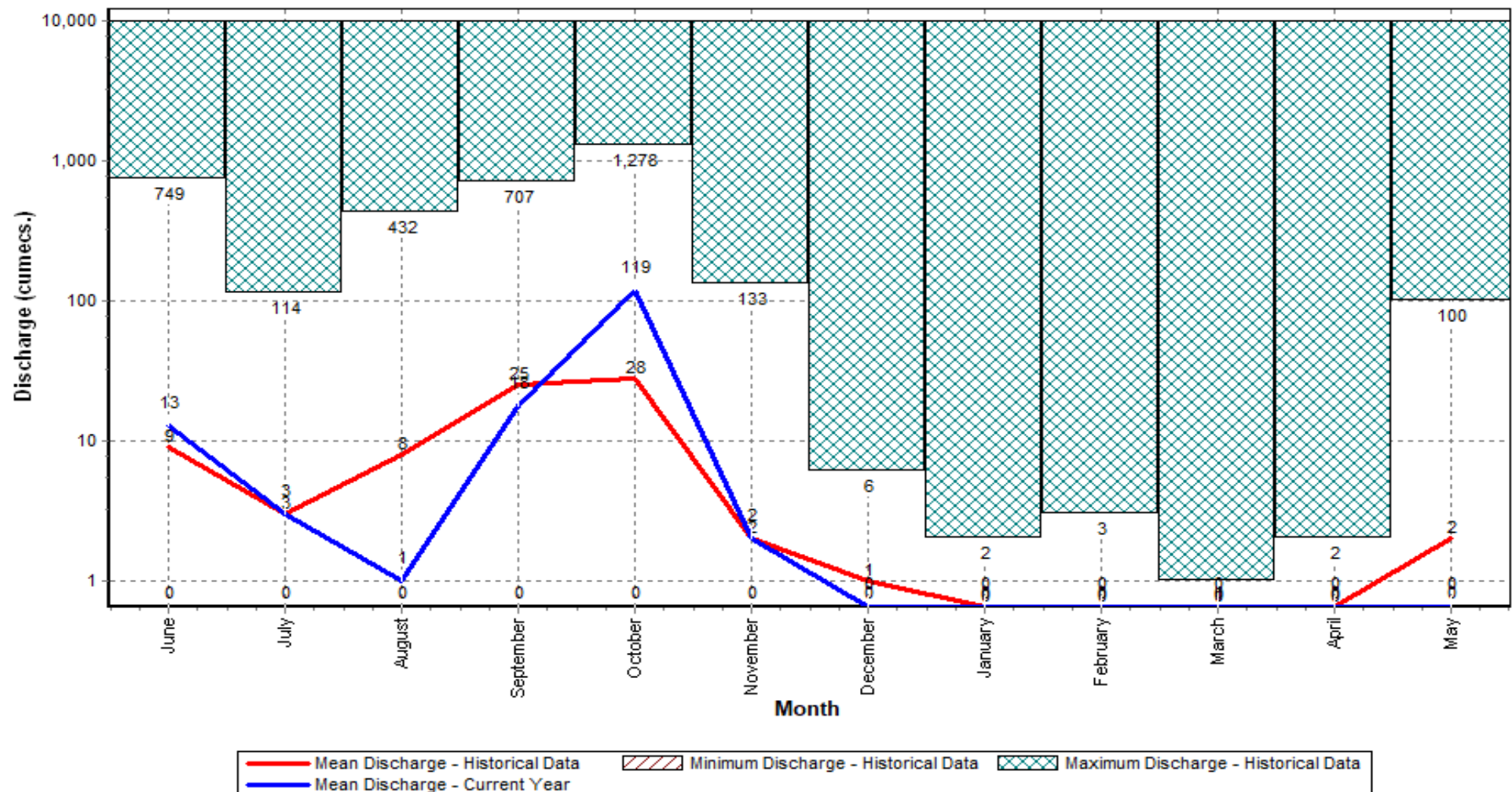
Station Name : Talikot (Seasonal) (AKQ00E2)

Data considered : 1996-2020

Division : Cauvery Divn, Bang

Local River : Don

Sub-Division : Middle Krishna SD 1, Bagalkot



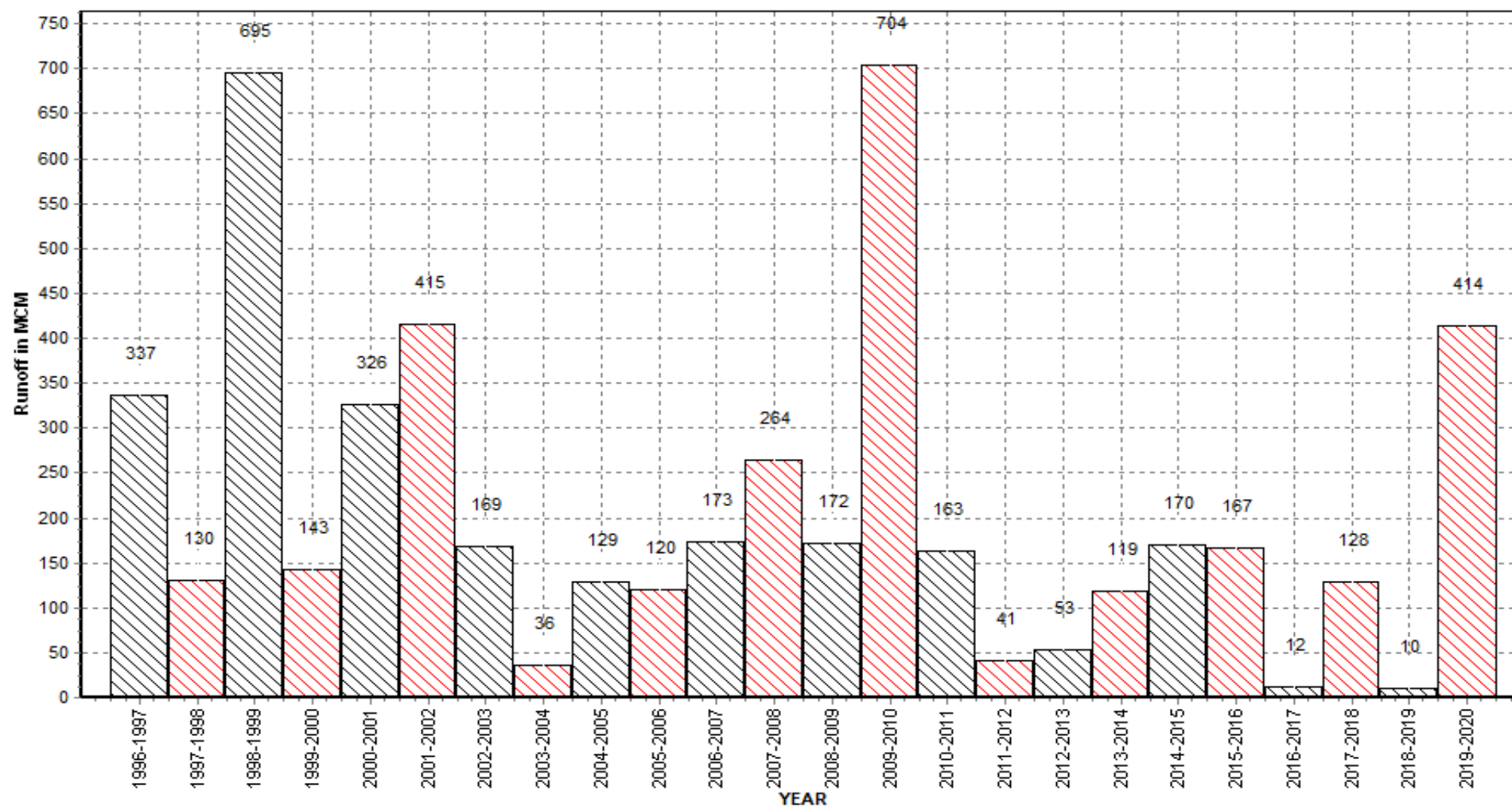
Annual Runoff Values for the period: 1996 - 2020

Station Name : Talikot (Seasonal) (AKQ00E2)

Local River : Don

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



Note: Missing values have not been considered while arriving at Annual Runoff

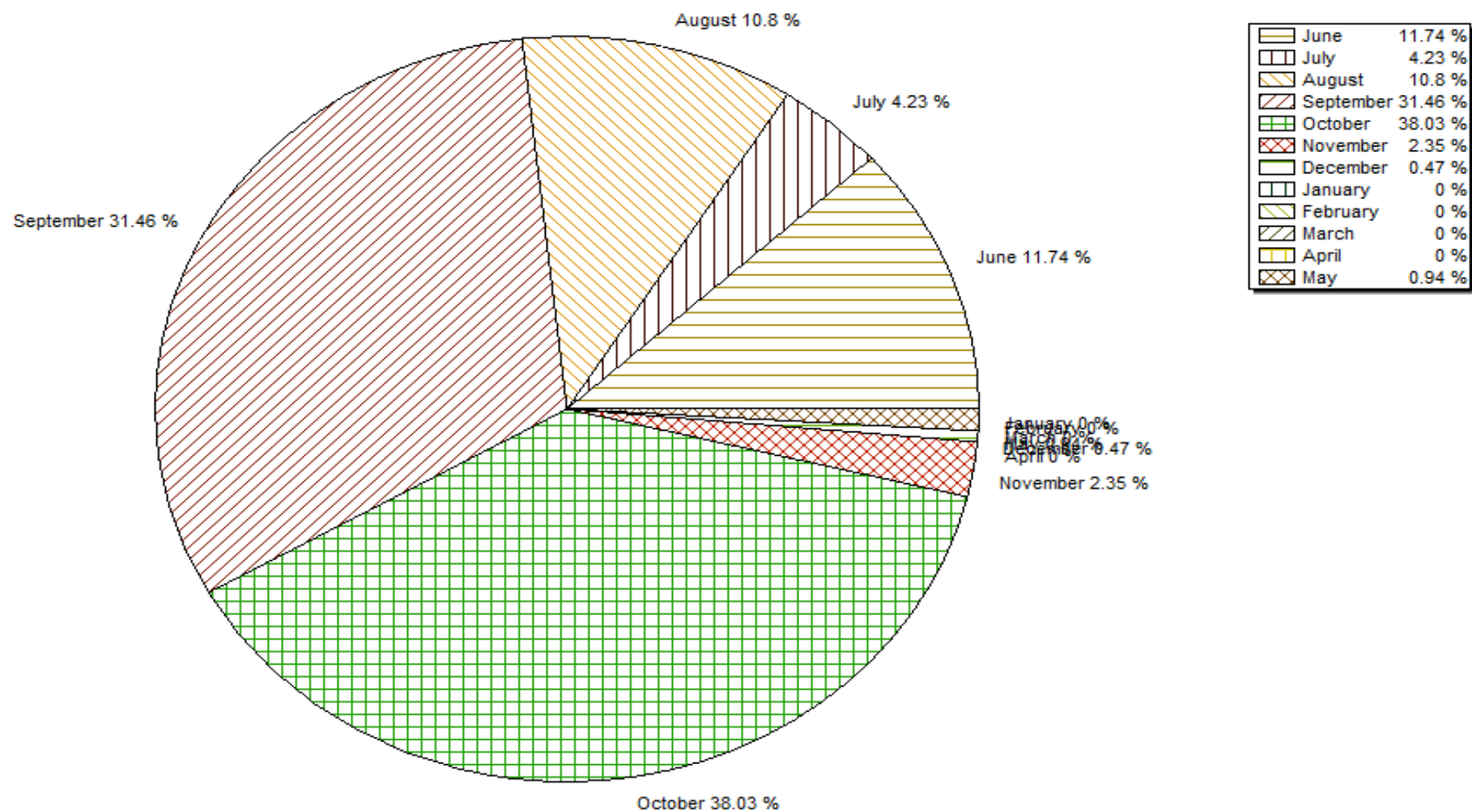
Monthly Average Runoff based on period : 1996-2019

Station Name : Talikot (Seasonal) (AKQ00E2)

Local River : Don

Division : Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



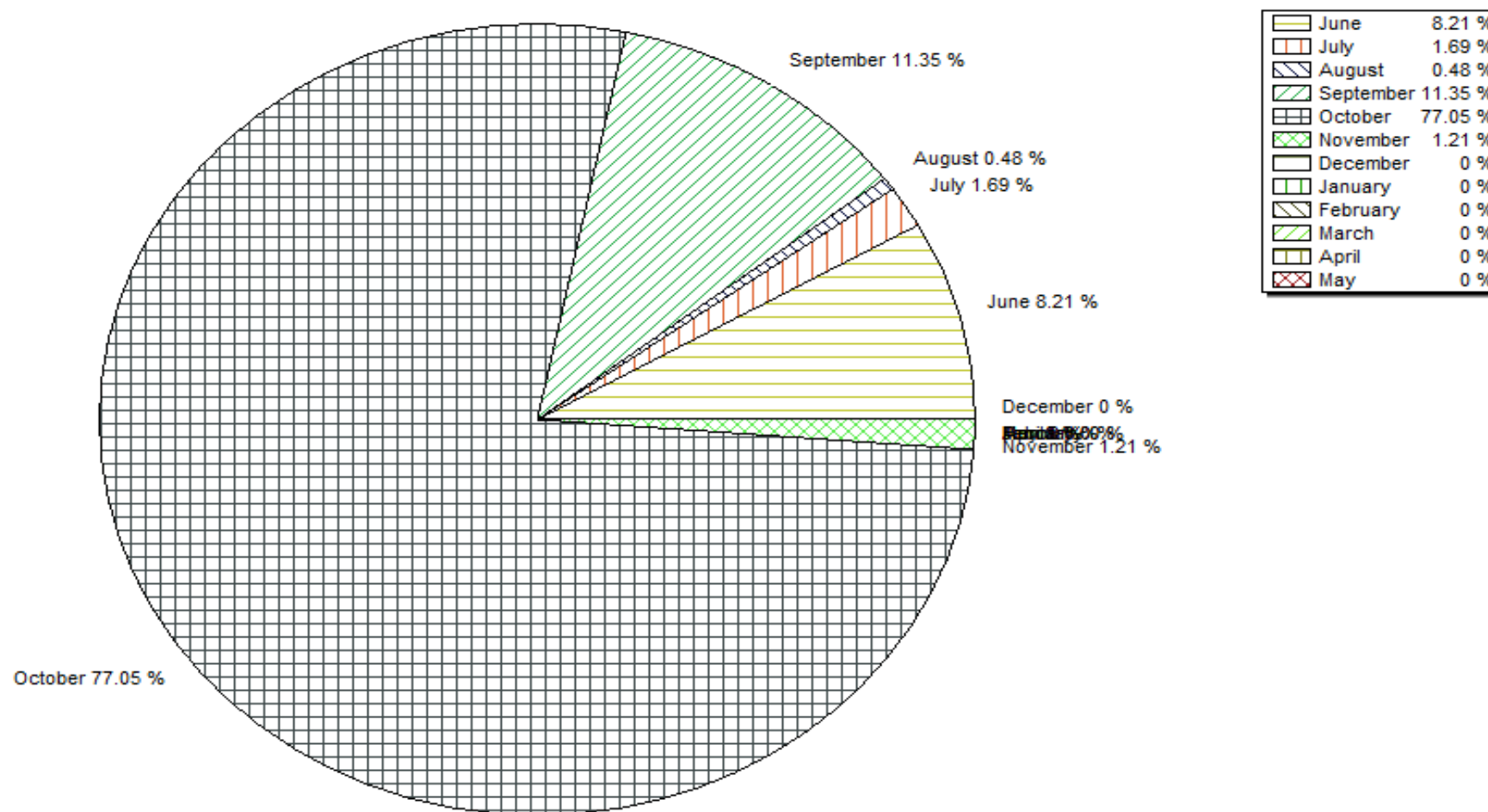
Monthly Runoff for the Year : 2019-2020

Station Name : Talikot (Seasonal) (AKQ00E2)

Local River : Don

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



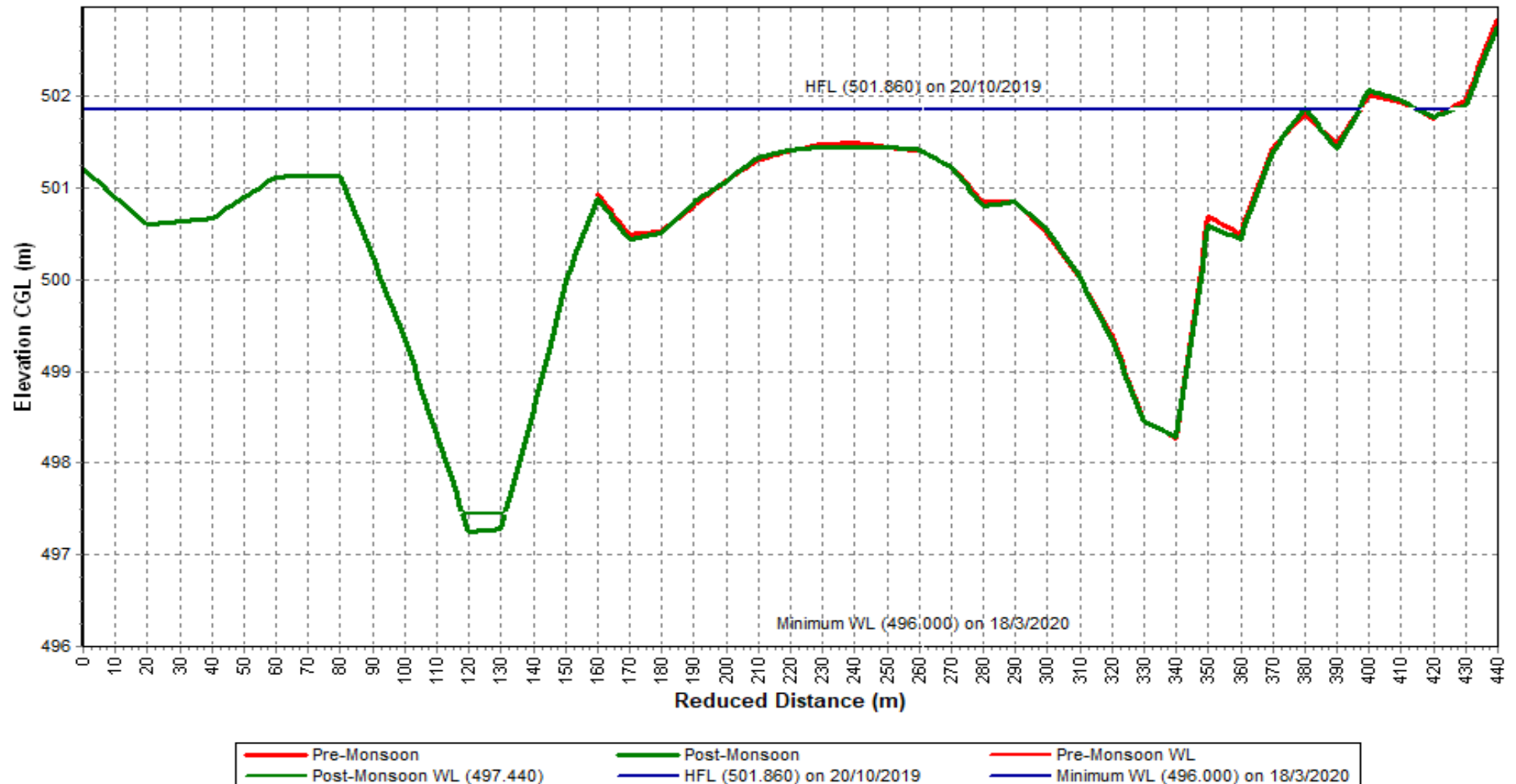
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Talikot (Seasonal) (AKQ00E2)

Local River : Don

Division : Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



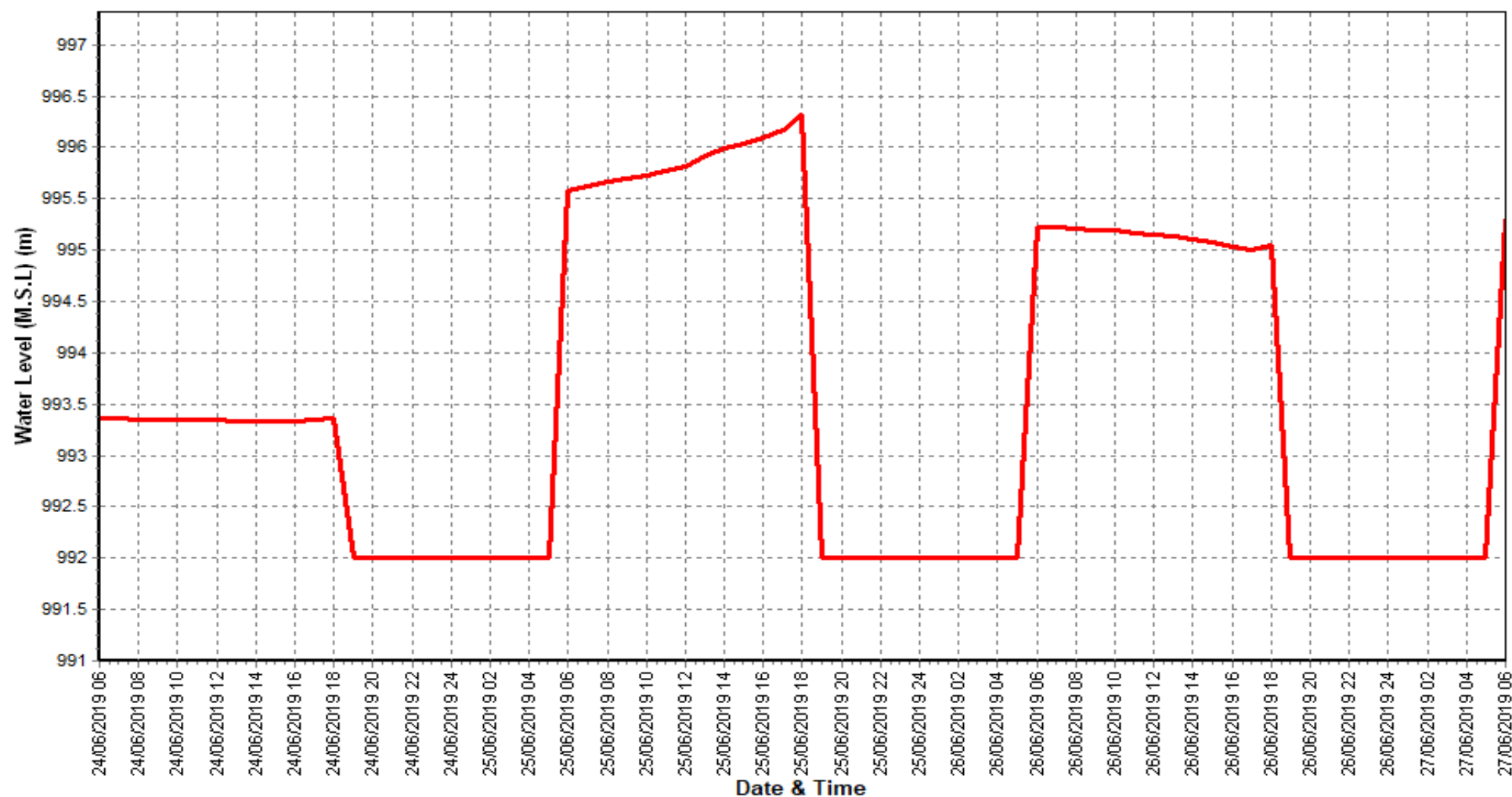
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Talikot (Seasonal) (AKQ00E2)

Local River : Don

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



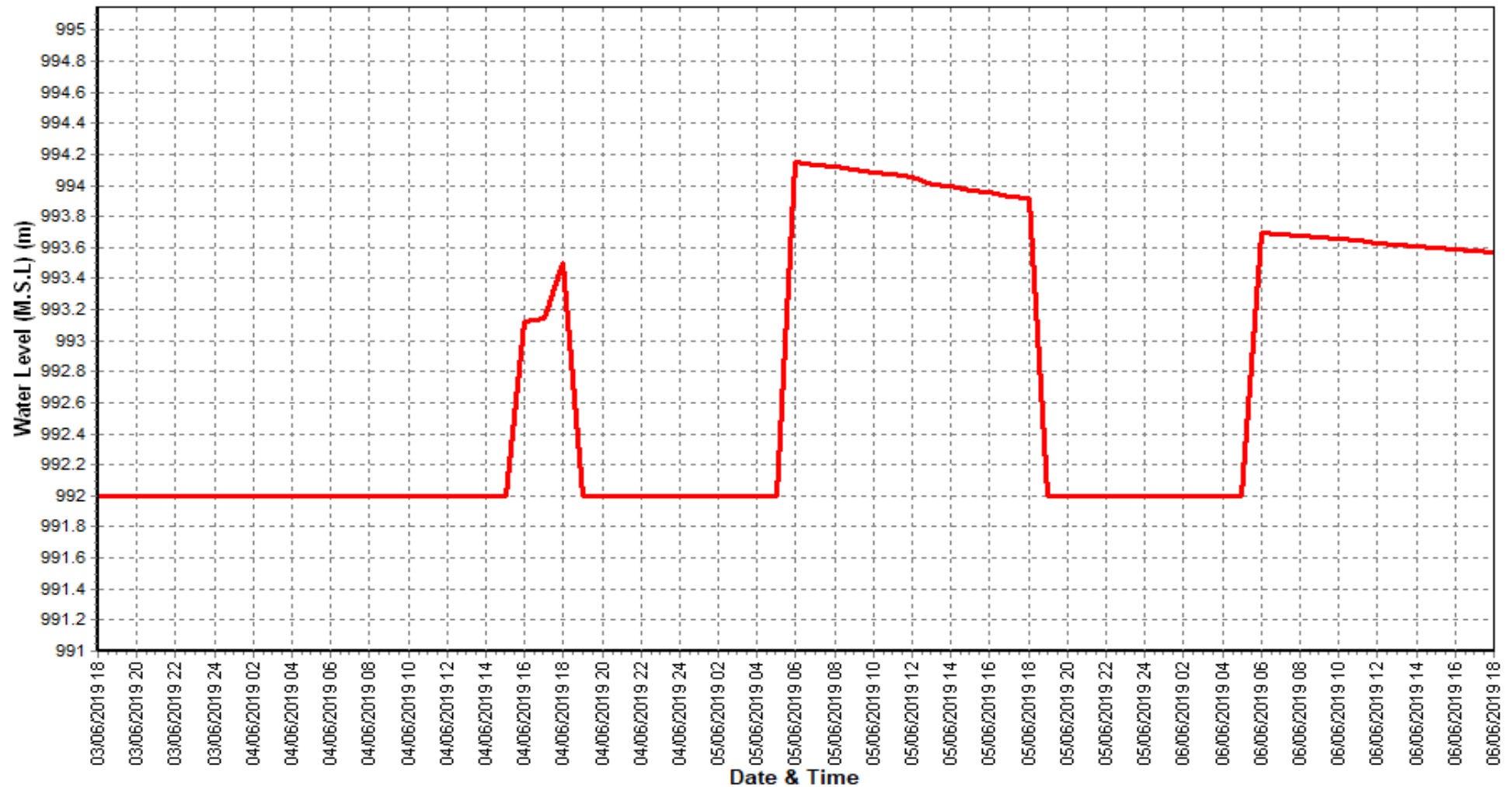
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Talikot (Seasonal) (AKQ00E2)

Local River : Don

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



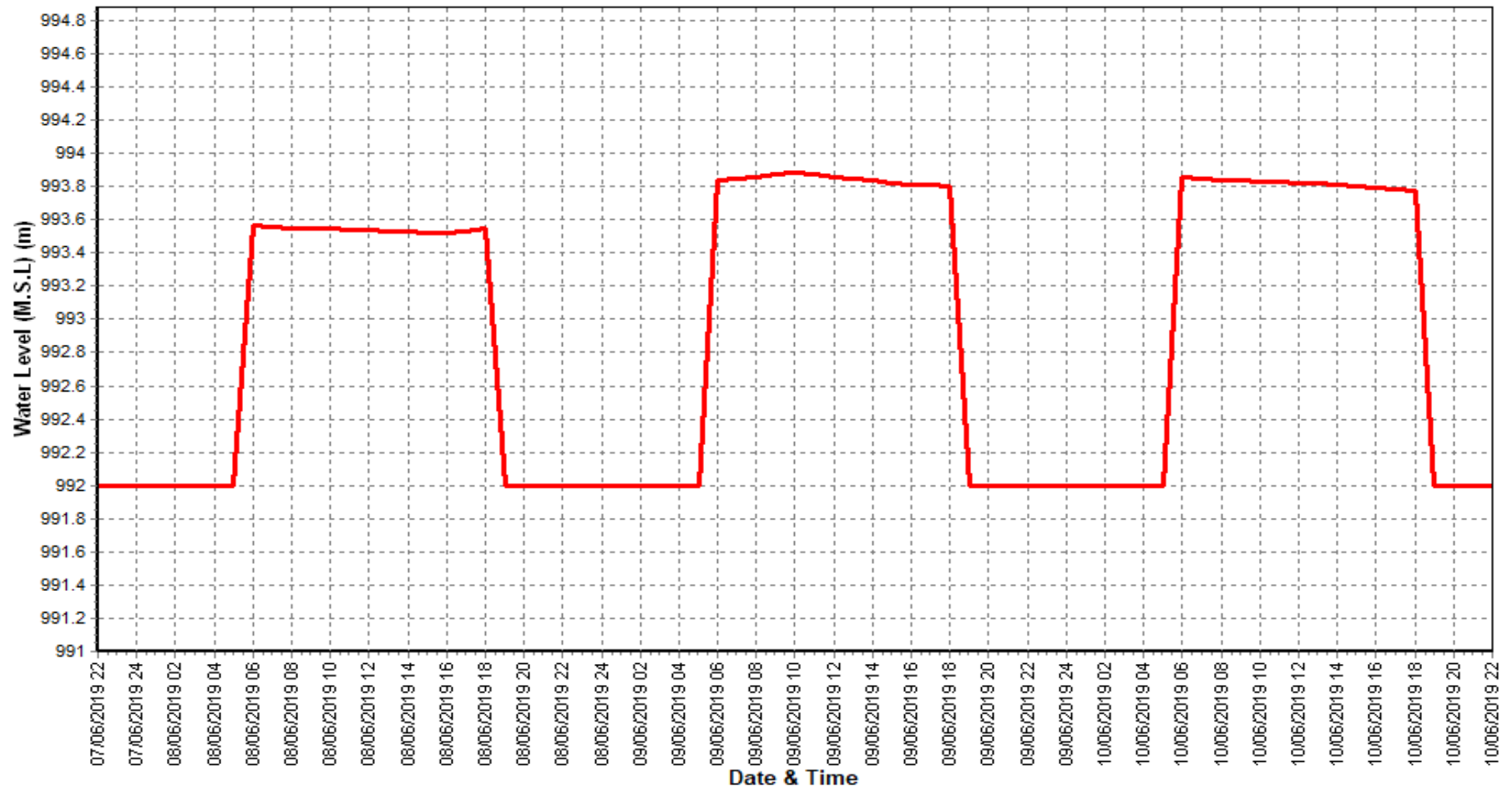
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Talikot (Seasonal) (AKQ00E2)

Local River : Don

Division : Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



HISTORY SHEET

Water Year : 2019-2020

Site : Chalachguda (Seasonal)

Code : AKS00H1

State : Karnataka

District : Bijapur

Basin : Krishna

Independent River : Krishna

Tributary : Malaprabha

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Malaprabha

Division : Cauvery Divn, Bangalore

Sub-Division : Middle Krishna SD 1, Bagalkot

Drainage Area : 9373 Sq. Km.

Bank : Left

Latitude : 15°52'43"

Longitude : 75°43'16"

Zero of Gauge (m) : 522.5 (m.s.l)
522 (m.s.l)01/06/1982 - 31/05/2010
01/06/2010

Opening Date

Closing Date

Gauge : 01/06/1982

Discharge : 01/06/1982

Sediment : 01/06/1982

Water Quality : 01/06/1982

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1982-1983	987.2	530.410	06/11/1982	2.300	523.820	15/04/1983
1983-1984	577.3	528.150	18/08/1983	1.400	523.765	02/06/1983
1984-1985	600.0	528.310	24/10/1984	1.700	523.800	27/06/1984
1985-1986	356.5	527.500	31/05/1986	0.000		07/03/1986
1986-1987	685.7	529.375	24/09/1986	0.000		14/03/1987
1987-1988	812.9	529.900	07/08/1987	0.000		08/03/1988
1988-1989	878.2	529.380	18/09/1988	0.000	523.740	27/07/1988
1989-1990	1298	531.155	20/09/1989	0.000		11/02/1990
1990-1991	145.5	526.250	23/05/1991	0.000		10/05/1991
1991-1992	1472	531.637	29/06/1991	0.000	523.670	27/04/1992
1992-1993	1814	535.600	18/11/1992	0.000	523.820	10/05/1993
1993-1994	1625	533.289	19/10/1993	0.000		13/05/1994
1994-1995	499.6	528.400	03/09/1994	0.000	523.610	01/07/1994
1995-1996	572.8	528.865	26/09/1995	0.000		13/05/1996
1996-1997	1240	530.700	03/10/1996	0.000	523.600	26/07/1996
1997-1998	1360	530.800	23/09/1997	0.000		23/07/1997
1998-1999	1173	530.590	16/10/1998	0.000		17/04/1999
1999-2000	582.0	529.100	15/10/1999	0.000		01/04/2000
2000-2001	571.2	529.000	19/09/2000	0.000	523.530	24/03/2001
2001-2002	530.3	528.900	24/09/2001	0.000	523.590	27/02/2002
2002-2003	413.4	528.150	03/08/2002	0.000		06/04/2003

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2003-2004	747.0	529.780	08/10/2003	0.000	523.630	11/12/2003
2004-2005	934.5	530.345	13/07/2004	0.000	523.585	31/01/2005
2005-2006	553.8	529.010	26/09/2005	0.000	523.660	27/03/2006
2006-2007	452.8	528.475	15/08/2006	0.000	523.500	20/07/2006
2007-2008	2181	534.300	20/09/2007	0.000	523.650	21/06/2007
2008-2009	356.7	527.900	06/09/2008	0.000	523.540	01/08/2008
2009-2010	2752	536.610	02/10/2009	0.000	523.620	09/08/2009
2010-2011	1023	531.000	09/11/2010	0.000	523.605	08/07/2010
2011-2012	232.9	527.260	11/09/2011	0.000	523.610	04/08/2011
2012-2013	88.68	525.720	28/09/2012	0.000		02/11/2012
2013-2014	254.9	528.210	03/09/2013	0.000	523.640	09/08/2013
2014-2015	189.8	527.870	07/06/2014	0.000	523.580	24/07/2014
2015-2016	167.5	527.520	18/09/2015	0.000	524.840	24/08/2015
2016-2017	77.52	527.950	20/06/2016	0.000	523.120	30/10/2016
2017-2018	753.4	529.130	16/10/2017	0.000		02/08/2017
2018-2019	271.8	528.570	04/06/2018	0.000	525.320	08/10/2018

Annual Runoff of Malaprabha at Chalachguda

Sl. No.	Year	Annual Runoff (MCM)		Annual Runoff (TMC)	
		Monsoon	Annual	Monsoon	Annual
1	1982-1983	1496	24	53	1
2	1983-1984	1262	917	45	32
3	1984-1985	713	1676	25	59
4	1985-1986	333	1129	12	40
5	1986-1987	730	1535	26	54
6	1987-1988	676	2335	24	83
7	1988-1989	885	2755	31	97
8	1989-1990	663	397	23	14
9	1990-1991	304	180	11	6
10	1991-1992	1598	831	56	29
11	1992-1993	1056	735	37	26
12	1993-1994	1005	2722	36	96
13	1994-1995	1313	2832	46	100
14	1995-1996	868	428	31	15
15	1996-1997	1293	4357	46	154
16	1997-1998	986	366	35	13
17	1998-1999	1067	1390	38	49
18	1999-2000	893	1987	32	70
19	2000-2001	1006	1429	36	50
20	2001-2002	490	4796	17	169
21	2002-2003	365	805	13	28
22	2003-2004	305	1290	11	46
23	2004-2005	645	1748	23	62
24	2005-2006	1022	1213	36	43
25	2006-2007	784	4440	53	157
26	2007-2008	1596	4772	56	169
27	2008-2009	352	3583	12	127
28	2009-2010	1347	2046	48	72
29	2010-2011	533	937	19	33
30	2011-2012	392	975	14	34
31	2012-2013	64	2470	2	87
32	2013-2014	287	1981	10	70
33	2014-2015	305	3033	11	107
34	2015-2016	266	988	9	35
35	2016-2017	55	3011	2	106
36	2017-2018	696	1597	25	56
37	2018-2019	150	2945	5	104
38	2019-2020	2275	2480	80	88
Average		791	1925	29	68
75% Dependable flow (MCM)			347		
90 % Dependable flow (MCM)			254		

Stage-Discharge Data for the period 2019 - 2020

Station Name : Chalachguda (Seasonal) (AKS00H1)

Division : Cauvery Divn, Bangalore

Local River : Malaprabha

Sub-Division : Middle Krishna SD 1, Bagalkot

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	524.920	0.000		0.000	524.950	0.000	524.100	13.89 *	525.100	47.21 *	525.600	73.04 *
2	524.920	0.000	523.150	0.000	525.000	0.000	524.150	15.03 *	525.100	47.21 *	525.600	73.04 *
3	524.830	0.000	523.250	0.000	525.000	0.000	524.400	21.50 *	524.980	36.91	525.720	80.23 *
4	525.400	0.000	523.200	0.000	524.870	0.000	524.500	24.47 *	524.890	38.26 *	525.950	93.77
5	525.070	0.000	523.200	0.000	523.950	0.000	524.600	28.67	525.800	85.25 *	525.980	97.18 *
6	525.050	0.000	523.180	0.000	524.325	21.49	524.550	26.04 *	526.700	154.3 *	526.090	104.9 *
7	525.300	0.000	523.180	0.000	525.250	54.27 *	525.500	67.35 *	528.100	311.8 *	527.020	184.7 *
8	525.590	0.000	523.150	0.000	526.800	175.5	527.820	275.1 *	528.350	346.8 *	529.400	529.9
9	525.140	0.000	523.100	0.000	535.770	2522 *	530.450	730.7 *	526.680	152.5 *	526.450	132.7 *
10	525.100	0.000	523.070	0.000	536.200	2724 *	531.040	869.2 *	529.000	448.1 *	525.640	75.40 *
11	525.090	0.000	523.050	0.000	533.100	1466 *	528.200	325.5 *	529.300	500.1 *	525.400	61.92 *
12	525.090	0.000	523.050	0.000	533.600	1639 *	526.610	146.3 *	527.180	201.1 *	525.350	59.31 *
13	525.040	0.000	523.020	0.000	532.160	1171 *	526.000	98.56 *	526.380	127.0 *	525.190	51.38 *
14	524.910	0.000		0.000	530.200	676.0 *	525.960	95.81 *	526.170	110.8 *	524.950	40.71 *
15	524.840	0.000	524.600	0.000	526.250	116.8 *	525.900	91.77 *	526.130	107.8 *	524.710	31.45 *
16	524.790	0.000	524.210	0.000	525.500	67.35 *	525.900	91.77 *	525.335	55.54	524.520	25.09 *
17	524.700	0.000	525.000	0.000	525.040	44.54 *	525.900	91.77 *	525.250	54.27 *	524.500	24.47 *
18	524.630	0.000	524.990	0.000	524.600	27.67 *	526.090	104.9 *	525.250	54.27 *	524.500	24.47 *
19	524.610	0.000	525.030	0.000	524.680	30.39 *	528.300	339.6 *	525.400	61.92 *	524.500	24.47 *
20	524.550	0.000	525.550	0.000	524.800	34.76 *	525.800	85.25 *	525.500	67.35 *	524.500	24.47 *
21	524.300	0.000	525.120	0.000	524.490	24.16 *	525.730	80.85 *	526.500	136.9 *	524.500	24.47 *
22	524.250	0.000	525.000	0.000	524.200	18.86	525.700	79.01 *	530.800	811.2 *	524.490	24.16 *
23	524.110	0.000	524.920	0.000	524.035	10.39	525.650	75.99 *	534.000	1785 *	524.480	23.86 *
24	526.260	0.000	524.850	0.000	524.300	18.75 *	528.150	318.6 *	532.000	1125 *	524.500	24.47 *
25	525.570	0.000	524.750	0.000	524.420	22.08 *	526.800	163.5 *	528.560	377.9 *	524.520	25.09 *
26	524.520	0.000	524.750	0.000	524.530	25.41 *	525.900	91.77 *	528.000	298.4 *	524.520	25.09 *
27	524.080	0.000	524.680	0.000	524.530	25.41 *	525.900	91.77 *	527.000	182.7 *	524.520	20.53
28	523.810	0.000	524.600	0.000	524.530	25.41 *	525.800	85.25 *	529.730	580.4 *	524.510	24.78 *
29	523.430	0.000	524.480	0.000	524.143	16.29	525.460	65.15 *	527.000	182.7 *	524.500	24.47 *
30	523.290	0.000	524.300	0.000	524.100	14.64	525.160	49.96 *	525.800	85.25 *	524.500	24.47 *
31			524.200	0.000	524.100	14.68			525.600	73.04 *		
Ten-Daily Mean												
I Ten-Daily	525.132	0.000	523.164	0.000	527.211	549.7	526.111	207.2	526.470	166.8	526.345	144.5
II Ten-Daily	524.825	0.000	524.278	0.000	527.993	527.4	526.466	147.1	526.190	134.0	524.812	36.77
III Ten-Daily	524.362	0.000	524.695	0.000	524.307	19.64	526.025	110.2	528.635	512.6	524.504	24.14
Monthly												
Min.	523.290	0.000	523.020	0.000	523.950	0.000	524.100	13.89	524.890	36.91	524.480	20.53
Max.	526.260	0.000	525.550	0.000	536.200	2724	531.040	869.2	534.000	1785	529.400	529.9
Mean	524.773	0	524.091	0	526.433	354.4	526.201	154.8	527.148	278.9	525.220	68.47

Annual Runoff in MCM = 2480 Annual Runoff in mm = 265

Peak Observed Discharge = 529.9 cumecs on 08/11/2019 Corres. Water Level :529.4 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :524.92 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Chalachguda (Seasonal) (AKS00H1)

Division : Cauvery Divn, Bangalore

Local River : Malaprabha

Sub-Division : Middle Krishna SD 1, Bagalkot

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	524.550	13.79 *	524.640	18.31 #	525.100	47.75 *	524.680	20.46 *	523.200		523.500	0.000
2	524.750	24.43 *	524.630	17.79 *	525.080	46.27 *	524.670	19.92	523.180		523.500	0.000
3	524.830	29.27 *	524.650	18.84 *	525.080	39.08	524.570	13.72	523.180		523.520	0.000
4	524.950	37.08 *	524.660	19.37 *	525.050	44.09 *	524.570	13.47	523.180		523.600	0.000
5	524.800	27.42 *	524.660	19.37 *	525.060	44.81 *	525.520	82.39 #	523.180		523.600	0.000
6	524.750	24.43 *	524.660	19.37 *	524.680	22.26	525.490	79.69 #	525.480		523.620	0.000
7	524.700	21.57 *	524.680	20.46 *	524.670	19.92 #	525.460	0.000	526.070		523.650	0.000
8	524.700	21.57 *	524.740	23.85 *	524.680	22.11	525.500	0.000	526.100		525.500	0.000
9	524.680	20.46 *	524.830	29.27 *	524.700	21.57 *	525.520	0.000	526.050		525.100	0.000
10	524.660	19.37 *	524.900	33.75 *	524.680	21.84	525.520	0.000	526.000		525.000	0.000
11	524.640	18.31 *	524.860	31.16 *	524.660	19.37 #	525.540	0.000	525.300		524.900	0.000
12	524.630	17.79 *	524.750	24.43 *	524.680	20.46 #	525.520	0.000	525.200		524.900	0.000
13	524.610	16.75 *	524.680	20.46 *	524.620	17.27 #	525.520	0.000	525.100		524.850	0.000
14	524.700	21.57 *	524.680	20.46 *	524.710	25.96	525.520	0.000	525.000		524.750	0.000
15	524.710	22.13 *	524.670	19.92 *	524.660	19.37 #	525.520	0.000	524.850		525.950	0.000
16	524.700	21.57 *	524.650	18.84 *	524.750	24.43 *	524.900	0.000	524.750		526.550	0.000
17	524.680	20.46 *	524.680	20.46 *	524.760	27.55	524.360	0.000	524.300		525.350	0.000
18	524.660	19.37 *	524.680	20.46 *	524.700	25.17	523.800	0.000	524.100		525.050	0.000
19	524.680	20.46 *	524.670	19.92 *	524.725	26.19	523.650	0.000	523.950		525.200	0.000
20	524.700	21.57 *	524.680	20.46 *	524.730	26.20	523.650	0.000	523.850		525.200	0.000
21	524.710	22.13 *	524.690	21.01 *	524.730	25.46	523.550	0.000	523.800		525.100	0.000
22	524.700	21.57 *	524.700	21.57 *	524.520	12.86	523.500	0.000	523.800		525.000	0.000
23	524.680	20.46 *	524.740	23.85 *	524.700	21.57 *	523.500	0.000	523.800		524.950	0.000
24	524.670	19.92 *	524.660	19.37 *	524.670	19.92 #	523.400	0.000	523.800		525.100	0.000
25	524.620	17.27 *	524.710	22.13 *	524.675	15.48	523.300	0.000	523.600		525.100	0.000
26	524.520	12.39 *	524.780	26.21 *	524.685	16.16	523.300	0.000	523.580		525.050	0.000
27	524.520	12.39 *	524.740	23.85 *	524.660	19.37 #	523.250	0.000	523.560		525.250	0.000
28	524.650	18.84 *	524.730	23.27 *	524.670	19.92 #	523.200	0.000	523.560		525.280	0.000
29	524.720	22.70 *	525.200	55.38 *	524.635	15.30	523.200	0.000	523.540		525.300	0.000
30	524.730	23.27 *	525.080	46.27 *			523.200	0.000	523.540		525.300	0.000
31	524.680	20.46 *	525.100	47.75 *			523.200	0.000			525.100	0.000
Ten-Daily Mean												
I Ten-Daily	524.737	23.94	524.705	22.04	524.878	32.97	525.150	22.97	524.562		524.059	0.000
II Ten-Daily	524.671	20.00	524.700	21.66	524.700	23.20	524.798	0.000	524.640		525.270	0.000
III Ten-Daily	524.655	19.22	524.830	30.06	524.661	18.45	523.327	0.000	523.658		525.139	0.000
Monthly												
Min.	524.520	12.39	524.630	17.79	524.520	12.86	523.200	0.000	523.180		523.500	0.000
Max.	524.950	37.08	525.200	55.38	525.100	47.75	525.540	82.39	526.100		526.550	0.000
Mean	524.686	20.99	524.748	24.76	524.749	25.09	524.390	7.408	524.287		524.833	0

Peak Computed Discharge = 2724 cumecs on 10/08/2019

Corres. Water Level :536.2 m

Lowest Computed Discharge = 12.39 cumecs on 26/12/2019

Corres. Water Level :524.52 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

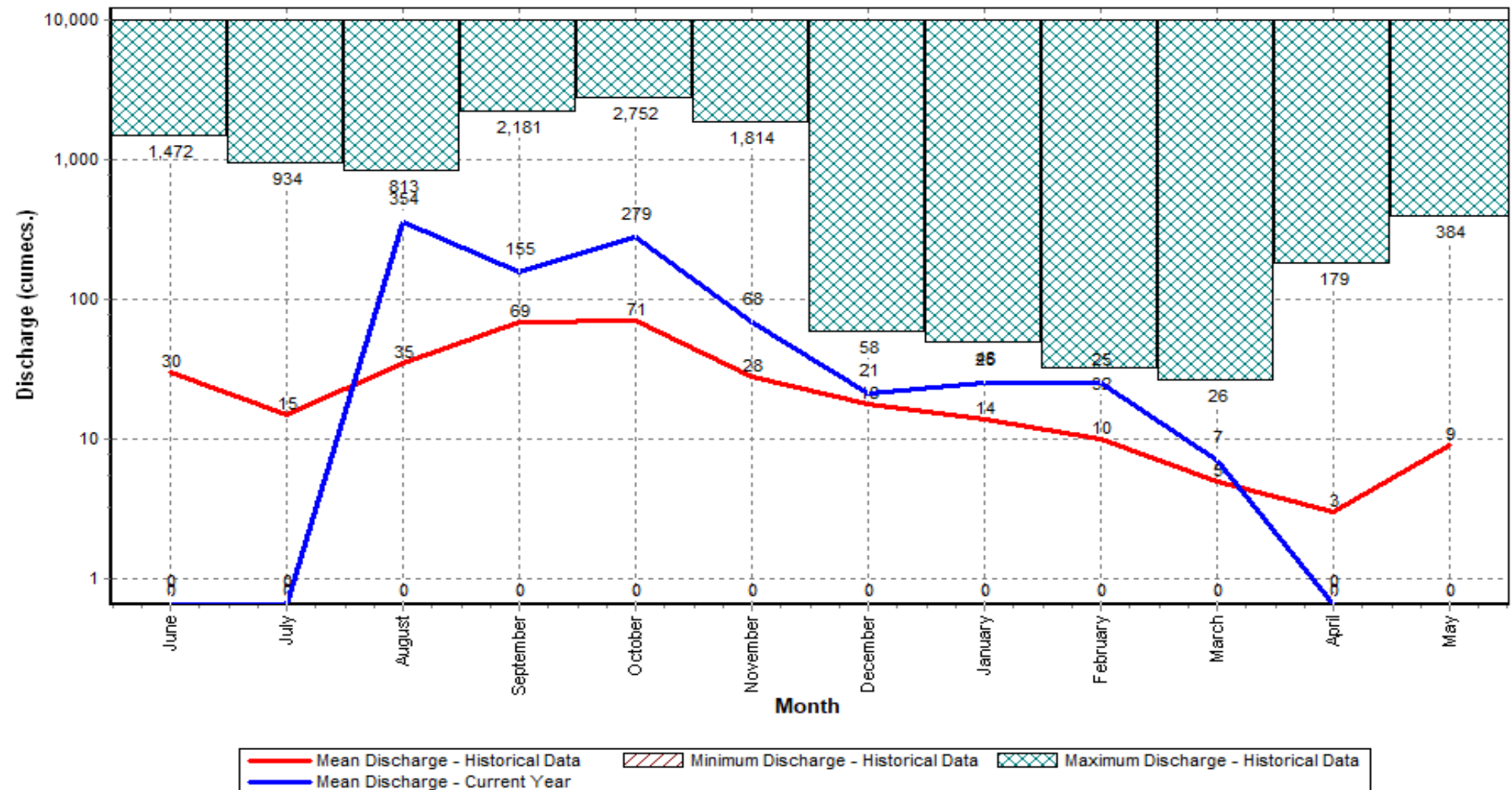
Station Name : Chalachguda (Seasonal) (AKS00H1)

Data considered : 1982-2020

Division : Cauvery Divn

Local River : Malaprabha

Sub-Division : Middle Krishna SD 1, Bagalkot



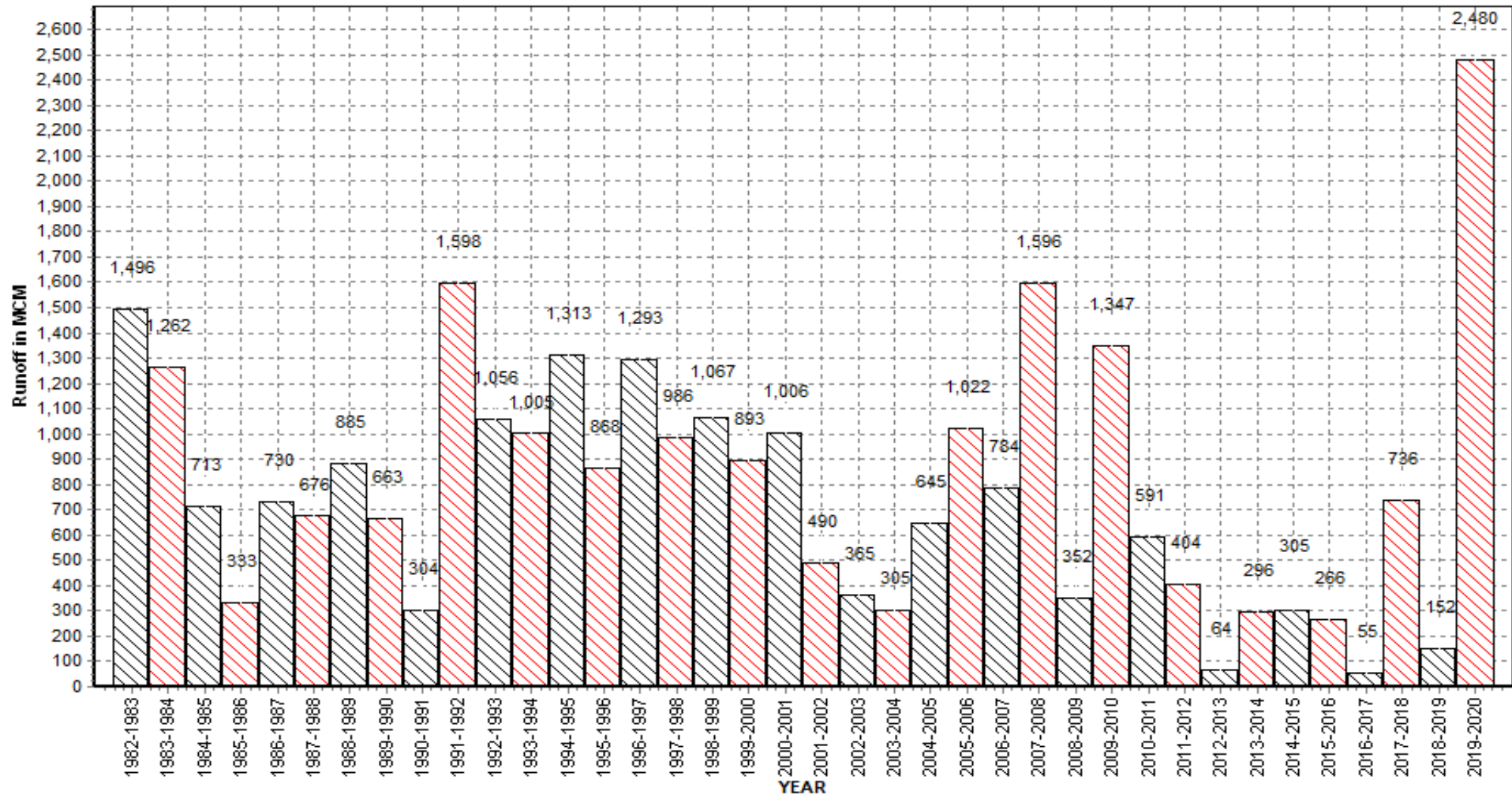
Annual Runoff Values for the period: 1982 - 2020

Station Name : Cholachguda (Seasonal) (AKS00H1)

Local River : Malaprabha

Division :Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



Note: Missing values have not been considered while arriving at Annual Runoff

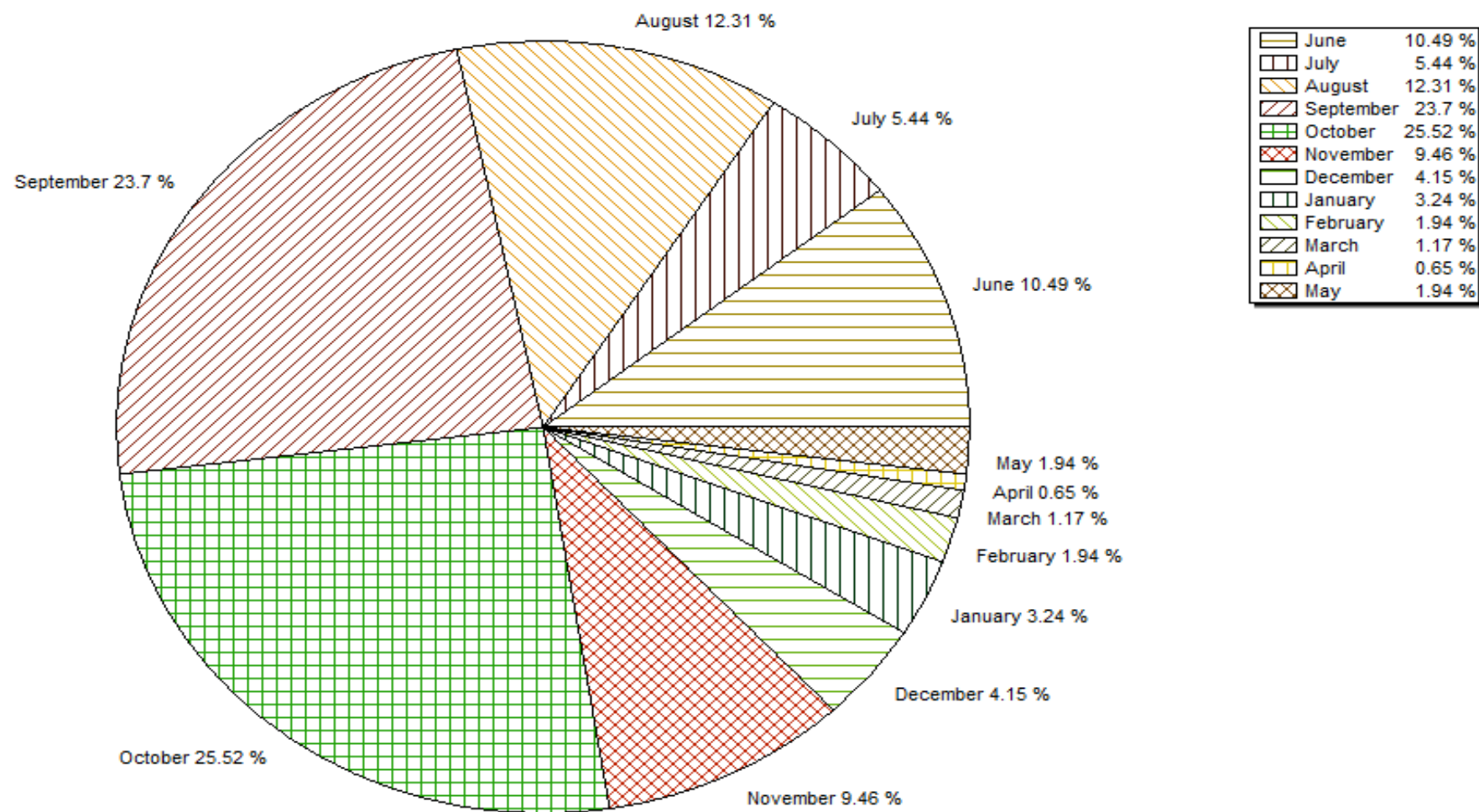
Monthly Average Runoff based on period : 1982-2019

Station Name : Chalachguda (Seasonal) (AKS00H1)

Local River : Malaprabha

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



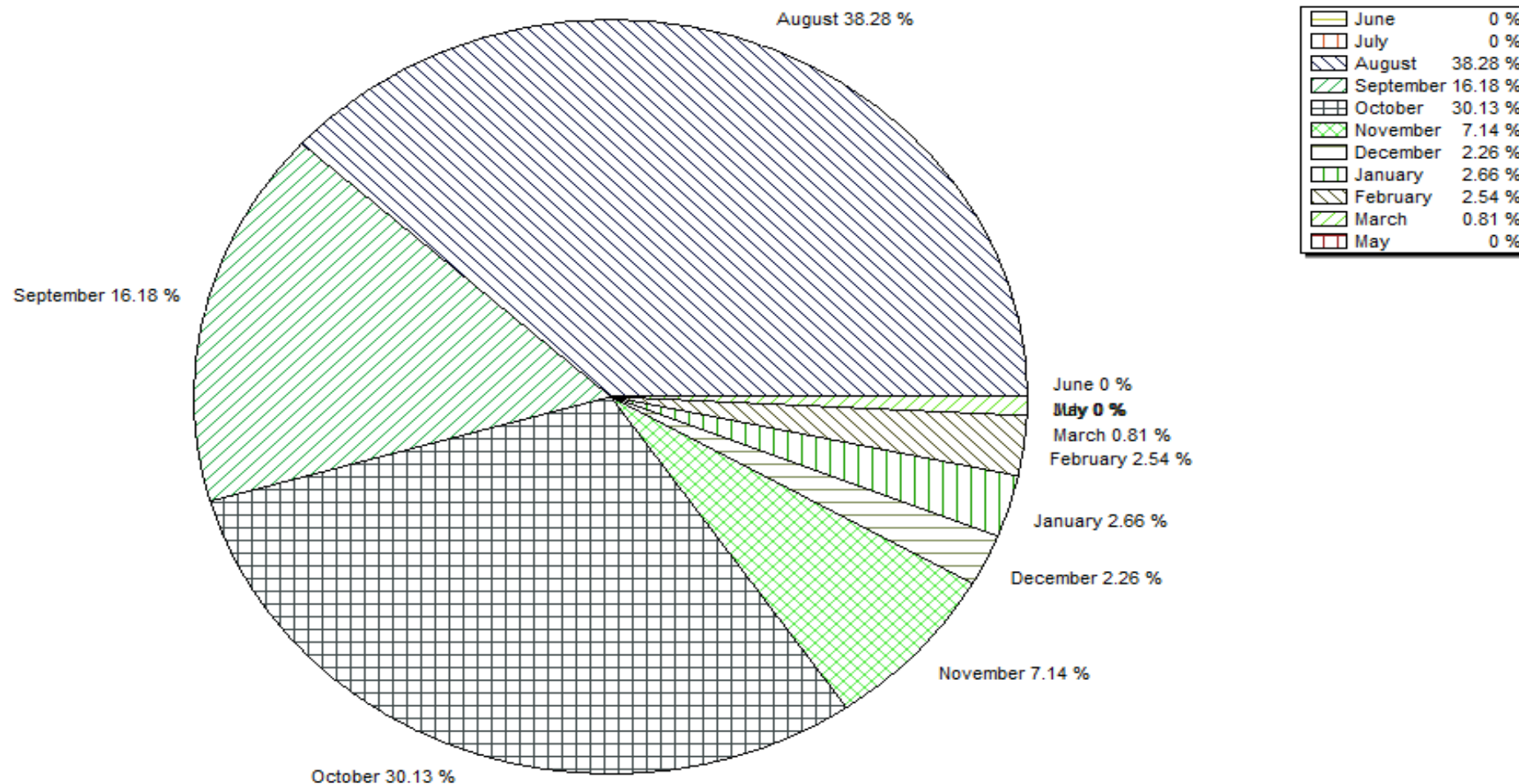
Monthly Runoff for the Year : 2019-2020

Station Name : Chalachguda (Seasonal) (AKS00H1)

Local River : Malaprabha

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



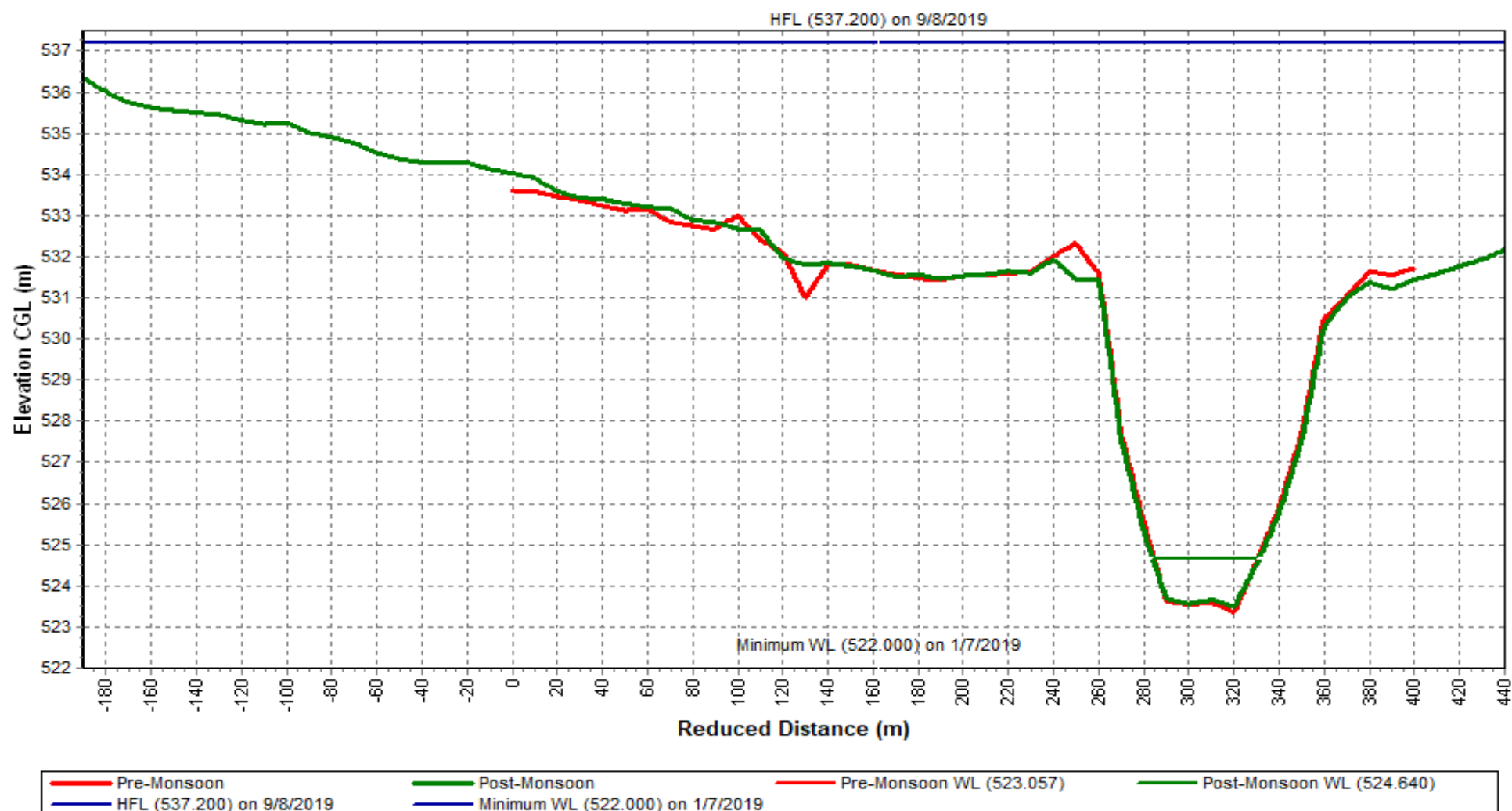
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Chalachguda (Seasonal) (AKS00H1)

Local River : Malaprabha

Division :Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



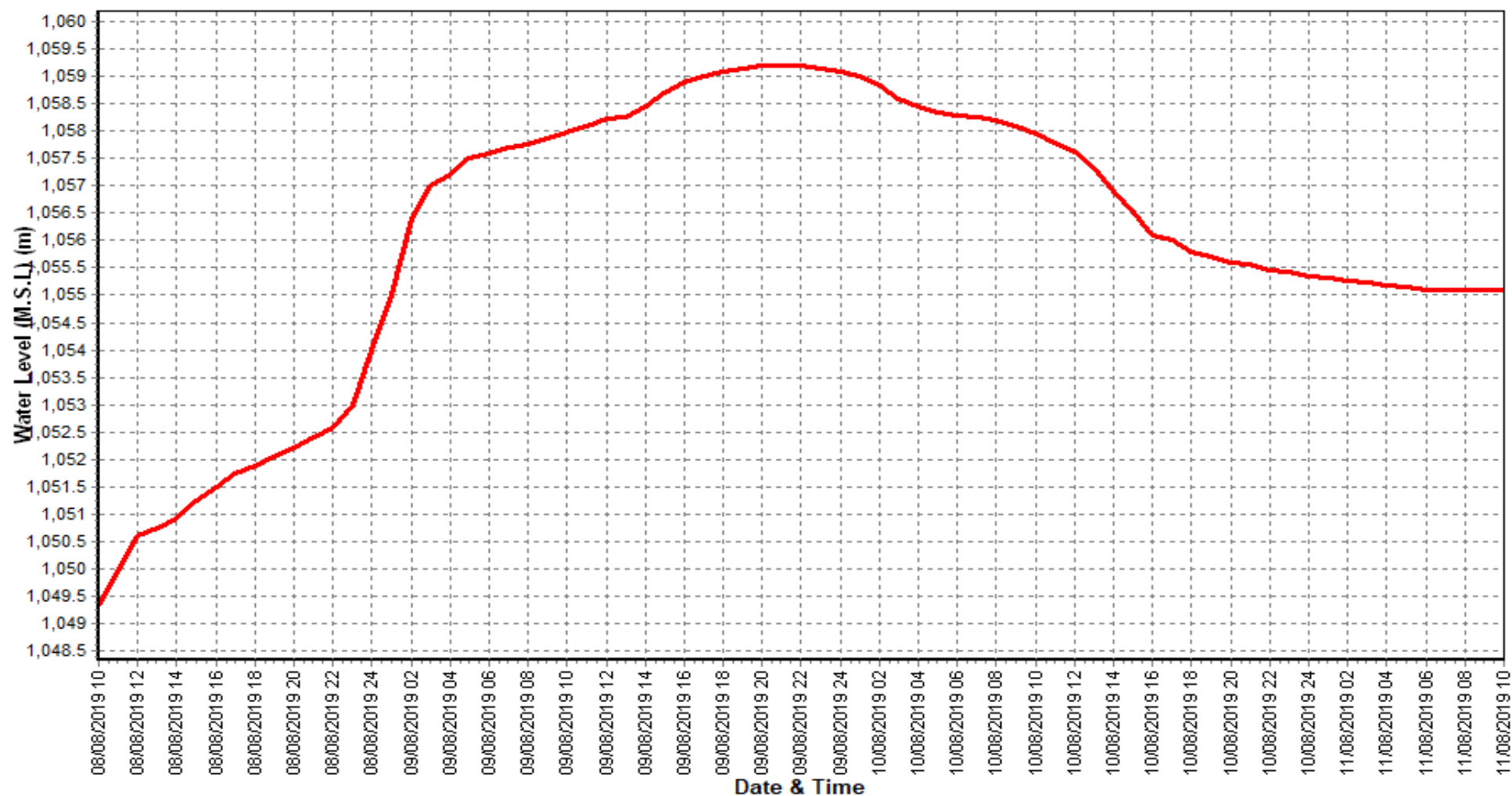
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Chalachguda (Seasonal) (AKS00H1)

Local River : Malaprabha

Division : Cauvery Divn

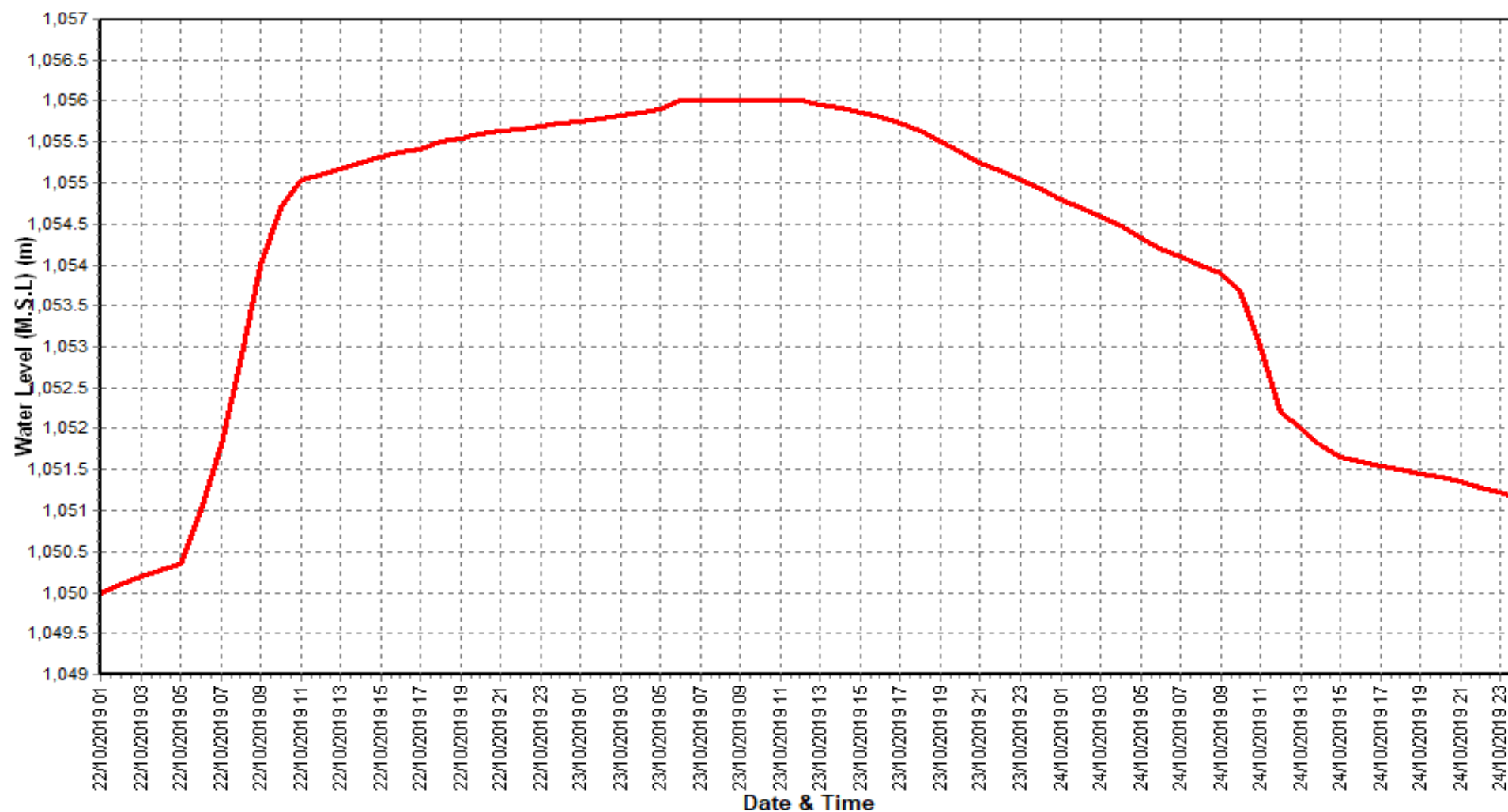
Sub-Division : Middle Krishna SD 1, Bagalkot



Station Name : Cholachguda (Seasonal) (AKS00H1)

Sub-Division : Middle Krishna SD 1, Bagalkot

Local River : Malaprabha



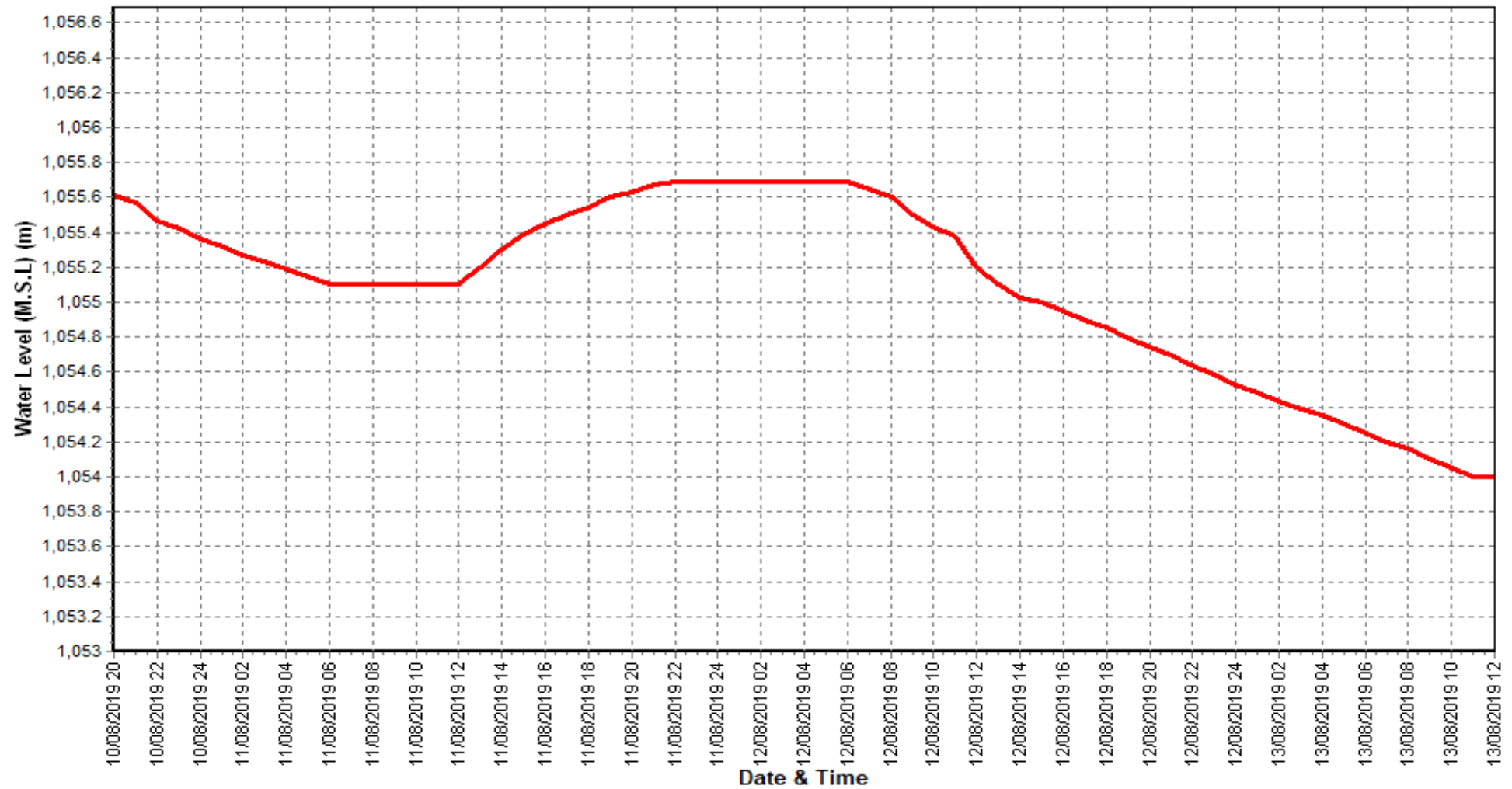
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Cholachguda (Seasonal) (AKS00H1)

Local River : Malaprabha

Division: Cauvery

Sub-Division : Middle Krishna SD 1, Bagalkot



HISTORY SHEET

Water Year : 2019-2020

Site : Mudhol

Code : MUDHOL

State : Karnataka

District : Bagalkot

Basin : Krishna

Independent River : Krishna

Tributary : Ghataprabha

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Ghataprabha

Division : Cauvery Divn,Bangalore

Sub-Division : Middle Krishna SD 1, Bagalkot

Drainage Area : 6734 Sq. Km.

Bank : Right

Latitude : 16°19'00"

Longitude : 75°12'00"

Zero of Gauge (m) : 530 (m.s.l)
530 (m.s.l)13/07/1998 - 31/05/2007
15/09/2015

Opening Date

Closing Date

Gauge : 13/07/2000

Discharge : 25/07/2000

Sediment : 08/09/2003

31/05/2006

Water Quality : 01/11/2000

31/05/2006

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2001-2002	414.1	526.650	07/10/2001	0.000	522.980	03/03/2002
2002-2003	418.8	526.750	15/08/2002	0.000	523.810	05/02/2003
2003-2004	213.9	525.053	24/06/2003	0.000	522.045	23/01/2004
2004-2005	643.4	528.410	08/08/2004	0.000	524.790	25/01/2005
2005-2006	2100	532.340	06/08/2005	0.000	524.030	24/02/2006
2006-2007	1418	531.395	14/08/2006	0.000	525.100	20/02/2007
2015-2016	533.5	533.470	23/09/2015	0.000		02/04/2016
2016-2017	275.9	535.830	01/06/2016	0.000		25/01/2017
2017-2018	275.5	535.365	23/07/2017	0.000	531.850	10/08/2017
2018-2019	509.2	538.100	20/08/2018	0.000	533.580	26/01/2019

Annual Runoff of Ghataprabha at Mudhol

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2000-2001	751	69	820	27	2	29
2	2001-2002	705	44	749	25	2	26
3	2002-2003	532	44	576	19	2	20
4	2003-2004	334	28	363	12	1	13
5	2004-2005	1048	0	1048	37	0	37
6	2005-2006	4082	52	4134	144	2	146
7	2006-2007	3299	38	3336	117	1	118
8	2007-2008	Hydrological observation not done due to site closed w.e.f 01/06/2007 and reopened w.e.f 01/06/2015					
9	2008-2009						
10	2009-2010						
11	2010-2011						
12	2011-2012						
13	2012-2013						
14	2013-2014						
15	2014-2015						
16	2015-2016	49	0	49	2	0	2
17	2016-2017	342	0	342	12	0	12
18	2017-2018	387		387	14	0	14
19	2018-2019	1072	14	1086	38	1	38
20	2019-2020	3406	77	3484	120	3	123
Average		1334	33	1365	47	1	48
75% Dependable flow (MCM)				369			
90 % Dependable flow (MCM)				137			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Mudhol (MUDHOL)

Division :Cauvery Divn, Bang

Local River : Ghataprabha

Sub-Division : Middle Krishna SD 1, Bagalkot

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	533.310	0.000		0.000	535.960	344.7	532.080	39.45 *	532.965	81.28	534.370	197.1 *
2	534.030	0.000	532.435	94.89	536.420	369.2	532.230	49.33	532.535	61.00	534.110	171.4 *
3	533.600	0.000	532.073	64.31	536.420	376.2	532.540	74.21	532.700	61.58	533.960	157.5 *
4	533.210	0.000	531.470	42.04	536.580	380.7 *	533.595	122.1	533.430	113.9	533.540	122.3 *
5	532.770	0.000	531.695	51.88	537.305	418.8	533.905	152.5	532.930	70.05	533.270	102.9
6	532.460	0.000	532.470	99.96	538.070	567.2	536.135	366.1	532.700	66.80	534.180	188.0
7	532.280	0.000	533.180	136.6 *	539.090	684.1 *	537.400	454.1	534.615	209.5	534.970	240.3
8	532.030	0.000	533.515	173.4	543.430	1370 *	538.260	575.7 *	535.005	240.0	534.005	152.7
9	531.770	0.000	534.405	239.7	544.660	1600 *	539.020	674.7 *	533.665	131.9	533.170	91.17
10	531.540	0.000	534.535	236.6	544.410	1552 *	539.430	730.7 *	533.425	114.4	532.570	60.27 *
11	531.360	0.000	534.320	214.3	544.060	1486 *	539.430	730.7 *	535.815	330.5	532.870	75.55
12	531.120	0.000	534.645	256.5	543.230	1335 *	538.810	661.0	534.835	222.7	532.645	62.70
13	530.780	0.000	535.010	280.7	542.400	1190 *	536.125	250.8	534.620	197.1 *	532.255	48.20
14	530.350	0.000	534.020	209.0 *	541.310	1011 *	534.990	207.9	534.345	206.4	532.025	39.51
15		0.000	532.504	94.39	540.310	857.1 *	534.970	226.2 *	533.645	134.2	531.900	31.68 *
16		0.000	532.170	69.42	539.350	719.6 *	534.085	144.0	533.375	119.7	532.340	49.23 *
17		0.000	532.070	60.26	538.205	571.8	533.405	104.2	533.140	97.22	532.150	41.09 *
18		0.000	531.940	59.13	538.050	549.5 *	533.750	132.4	533.275	108.1	531.970	34.17 *
19		0.000	531.505	29.44	535.270	194.9	533.540	126.8	533.585	137.9	531.890	31.34 *
20		0.000	530.955	15.51	533.965	140.6	533.265	101.6	533.990	160.2 *	532.340	49.23 *
21		0.000	530.820	10.56 *	534.220	151.7	532.720	73.02	537.970	866.1	532.410	52.44 *
22		0.000	530.770	9.295	534.200	153.6	532.540	60.42 *	539.250	1196	532.230	44.41 *
23		0.000	530.760	7.982	533.865	137.8	532.620	63.19	539.720	1524	531.560	26.86
24		0.000	530.740	6.015	533.300	102.5	533.185	91.62	539.420	1259	531.350	15.87 *
25		0.000	530.760	8.112	533.040	87.24 *	533.570	110.5	538.430	911.2 #	531.270	15.05
26		0.000	530.950	16.22	532.355	51.50	532.910	76.11	536.225	368.6	531.205	12.82
27		0.000	530.950	16.22	532.300	48.06	533.300	99.41	536.640	519.2 *	531.110	9.584
28		0.000	532.520	89.28 *	532.370	50.63	533.125	86.37	537.370	663.4 #	531.110	9.578
29		0.000	532.875	99.67	532.240	49.33	532.750	71.19 *	535.715	310.4	531.155	12.32
30		0.000	532.930	114.6	532.030	34.43	532.630	63.32	534.365	187.3	532.085	40.80
31			534.820	265.0	532.050	34.72			534.160	161.0		
Ten-Daily Mean												
I Ten-Daily	532.700	0.000	532.864	113.9	539.235	766.3	535.460	323.9	533.397	115.0	533.814	148.4
II Ten-Daily	530.902	0.000	532.914	128.9	539.615	805.5	535.237	268.6	534.063	171.4	532.239	46.27
III Ten-Daily		0.000	531.718	58.45	532.906	81.96	532.935	79.51	537.206	724.1	531.548	23.97
Monthly												
Min.	530.350	0.000	530.740	0.000	532.030	34.43	532.080	39.45	532.535	61.00	531.110	9.578
Max.	534.030	0.000	535.010	280.7	544.660	1600	539.430	730.7	539.720	1524	534.970	240.3
Mean	532.186	0	532.460	99.06	537.112	536.1	534.544	224	534.963	349.4	532.534	72.87

Annual Runoff in MCM = 3484 Annual Runoff in mm = 517

Peak Observed Discharge = 1524 cumecs on 23/10/2019 Corres. Water Level :539.72 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :533.31 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Mudhol (MUDHOL)

Division :Cauvery Divn, Bang

Local River : Ghataprabha

Sub-Division : Middle Krishna SD 1, Bagalkot

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	531.550	18.89 *	530.610	0.000	533.280	0.000	530.000	0.000	0.000	0.000	530.000	0.000
2	531.330	19.74	530.640	0.000	533.210	0.000	530.000	0.000	0.000	0.000	530.000	0.000
3	531.135	12.10	530.580	0.000	533.240	0.000	530.000	0.000	0.000	0.000	530.000	0.000
4	531.165	11.81	530.470	0.000	533.410	0.000	534.890	0.000	0.000	0.000	530.000	0.000
5	531.300	16.91	530.450	0.000	534.270	0.000	535.600	0.000	0.000	0.000	530.000	0.000
6	531.360	15.40	530.430	0.000	534.150	0.000	535.580	0.000	0.000	0.000	535.580	118.6 *
7	531.400	21.81	530.420	0.000	534.090	0.000	535.550	0.000	0.000	0.000	535.490	115.3 *
8	531.410	17.05 *	530.220	0.000	534.050	0.000	535.220	0.000	0.000	0.000	535.090	101.4 *
9	531.495	23.06	530.030	0.000	533.740	0.000	535.070	0.000	0.000	0.000	535.010	0.000
10	531.600	17.87		0.000	533.610	0.000	535.050	0.000	0.000	0.000	534.690	0.000
11	531.640	19.78		0.000	533.300	0.000	535.040	0.000	0.000	0.000	534.400	0.000
12	531.620	19.17		0.000	533.090	0.000	534.930	0.000	0.000	0.000	534.190	0.000
13	531.625	18.97		0.000	532.970	0.000	534.690	0.000	0.000	0.000	533.900	0.000
14	531.650	20.15		0.000	532.830	0.000	534.480	0.000	0.000	0.000	533.700	0.000
15	531.640	20.13 *		0.000	532.590	0.000	534.440	0.000	0.000	0.000	533.480	0.000
16	531.660	20.62		0.000	532.390	0.000	534.400	0.000	0.000	0.000	533.330	0.000
17	531.600	18.00		0.000	532.200	0.000	534.290	0.000	0.000	0.000	533.150	0.000
18	531.640	20.19		0.000	532.040	0.000	534.170	0.000	0.000	0.000	533.070	0.000
19	531.650	20.38	530.750	0.000	531.790	0.000	534.130	0.000	0.000	0.000	535.220	0.000
20	531.590	17.57	531.820	0.000	531.520	0.000	533.900	0.000	0.000	0.000	535.160	0.000
21	531.620	19.02	532.080	0.000	531.410	0.000	533.680	0.000	0.000	0.000	534.600	0.000
22	531.610	19.71 *	532.220	0.000	531.110	0.000	533.420	0.000	0.000	0.000	535.080	0.000
23	531.600	19.58 *	532.250	0.000	530.720	0.000	533.190	0.000	0.000	0.000	534.990	0.000
24	532.090	26.96 *	532.250	0.000	530.260	0.000	532.930	0.000	0.000	0.000	534.980	0.000
25	531.510	18.36 *	532.260	0.000	530.000	0.000	532.500	0.000	0.000	0.000	534.740	0.000
26	531.550	18.89 *	532.250	0.000	530.000	0.000	532.100	0.000	0.000	0.000	534.540	0.000
27	531.250	15.07 *	532.220	0.000	530.000	0.000	532.600	0.000	0.000	0.000	534.330	0.000
28	531.200	14.48 *	532.530	0.000	530.000	0.000	531.050	0.000	0.000	0.000	534.120	0.000
29	531.060	12.89 *	533.300	0.000	530.000	0.000	530.550	0.000	0.000	0.000	534.010	0.000
30	530.990	12.14 *	533.370	0.000			530.220	0.000	0.000	0.000	533.650	0.000
31	530.830	10.50 *	533.430	0.000			530.000	0.000			533.420	0.000
Ten-Daily Mean												
I Ten-Daily	531.375	17.46	530.428	0.000	533.705	0.000	533.696	0.000	0.000	0.000	532.586	33.53
II Ten-Daily	531.631	19.49	531.285	0.000	532.472	0.000	534.447	0.000	0.000	0.000	533.960	0.000
III Ten-Daily	531.392	17.05	532.560	0.000	530.389	0.000	532.022	0.000	0.000	0.000	534.405	0.000
Monthly												
Min.	530.830	10.50	530.030	0.000	530.000	0.000	530.000	0.000	0.000	0.000	530.000	0.000
Max.	532.090	26.96	533.430	0.000	534.270	0.000	535.600	0.000	0.000	0.000	535.580	118.6
Mean	531.464	17.97	531.572	0	532.251	0	533.344	0	0	0	533.675	10.82

Peak Computed Discharge = 1600 cumecs on 09/08/2019

Corres. Water Level :544.66 m

Lowest Computed Discharge = 10.50 cumecs on 31/12/2019

Corres. Water Level :530.83 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

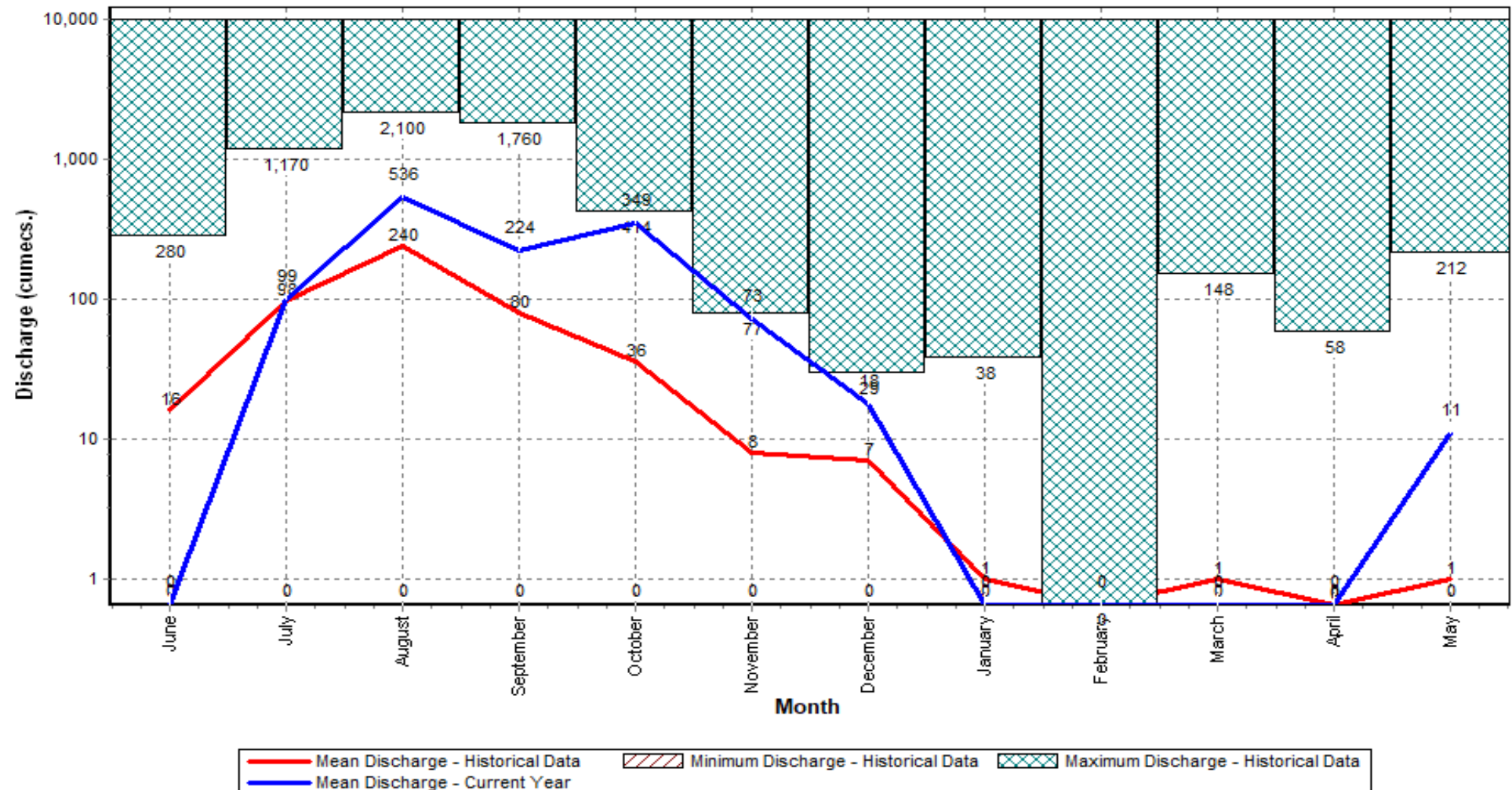
Station Name : Mudhol (MUDHOL)

Data considered : 2001-2020

Division : Cauvery Divn,Bang

Local River : Ghataprabha

Sub-Division : Middle Krishna SD 1, Bagalkot



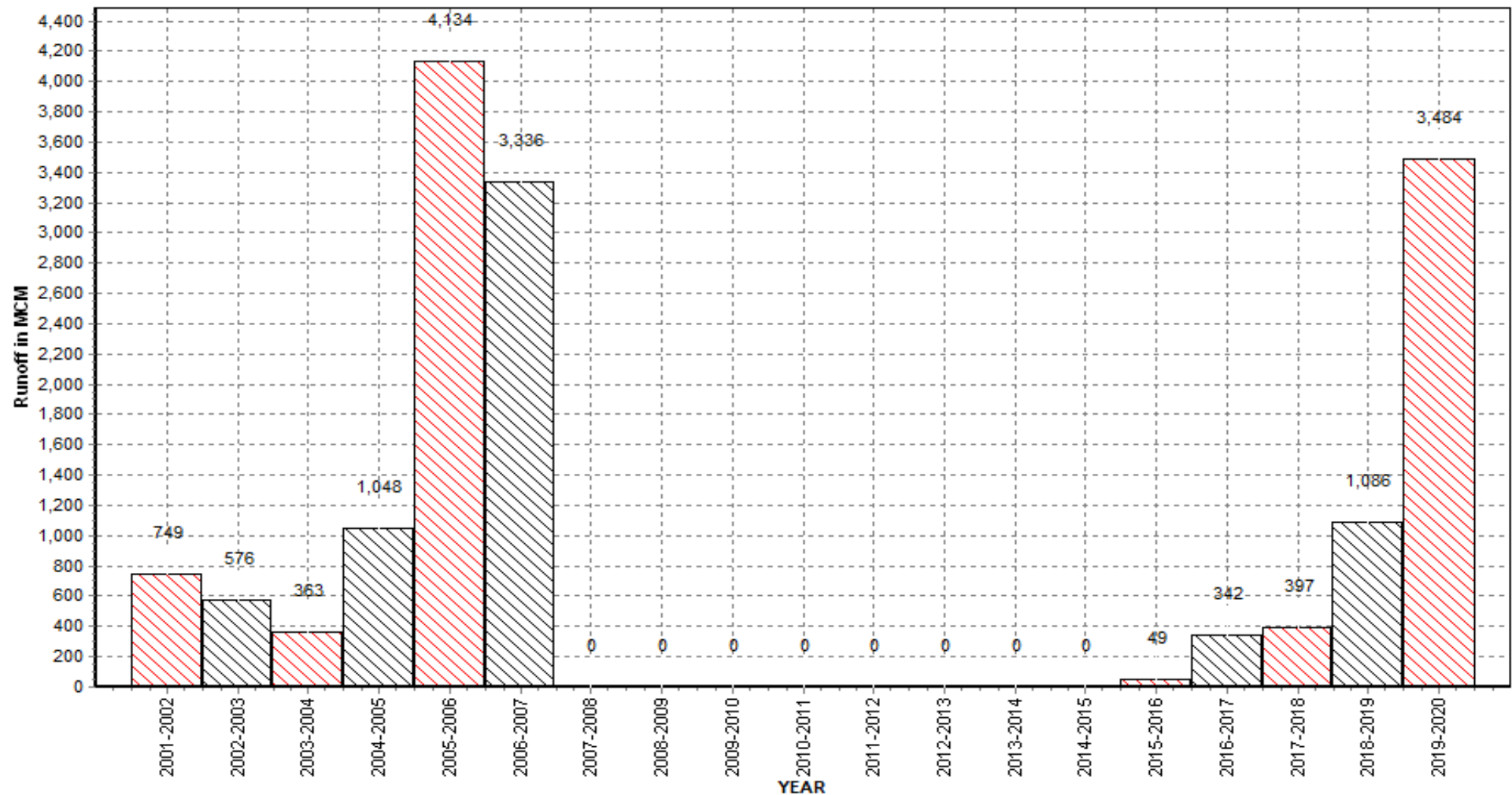
Annual Runoff Values for the period: 2001 - 2020

Station Name : Mudhol (MUDHOL)

Local River : Ghataprabha

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



Note: Missing values have not been considered while arriving at Annual Runoff

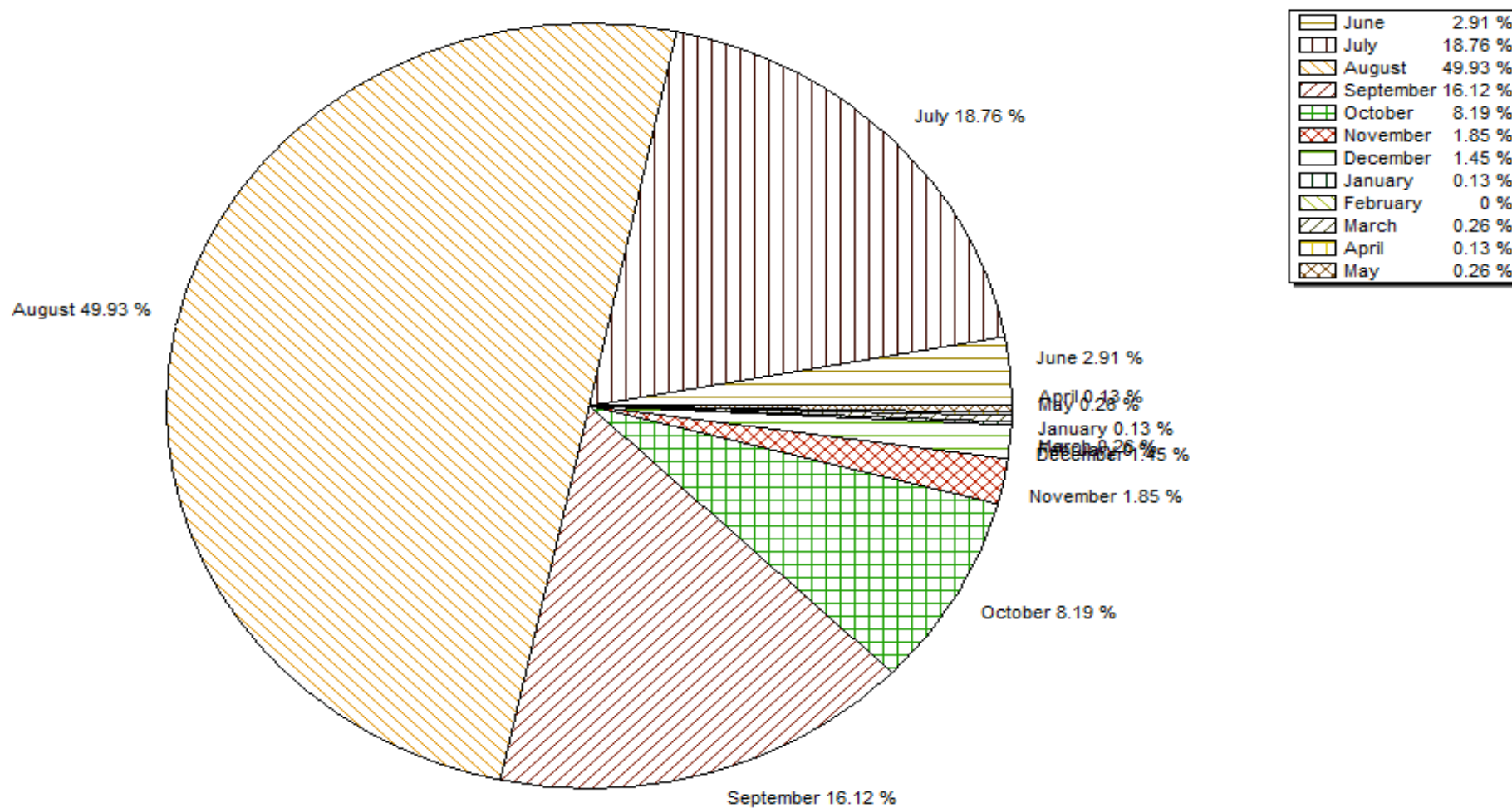
Monthly Average Runoff based on period : 2001-2019

Station Name : Mudhol (MUDHOL)

Local River : Ghataprabha

Division : Cauvery Divn Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



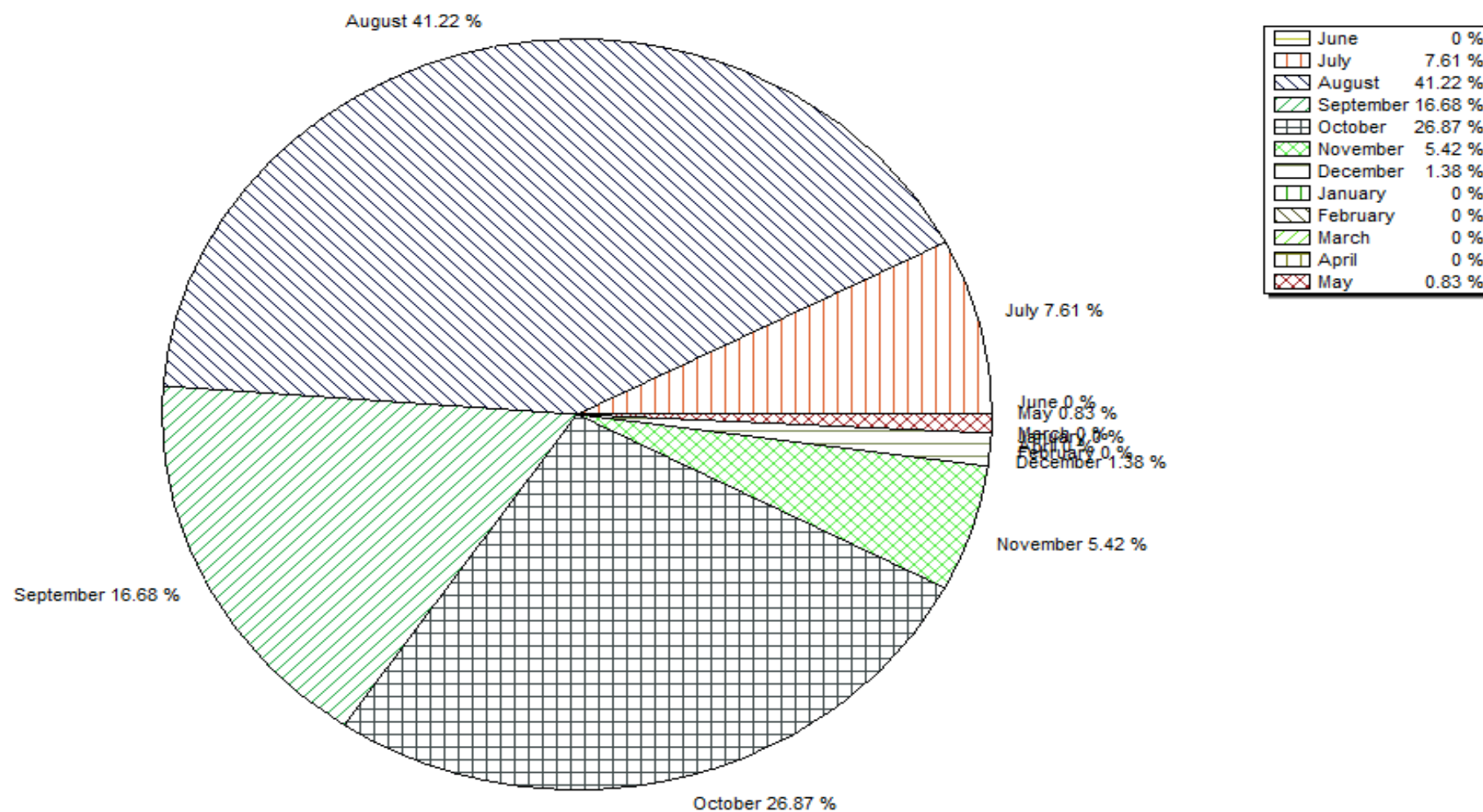
Monthly Runoff for the Year : 2019-2020

Station Name : Mudhol (MUDHOL)

Local River : Ghataprabha

Division :Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



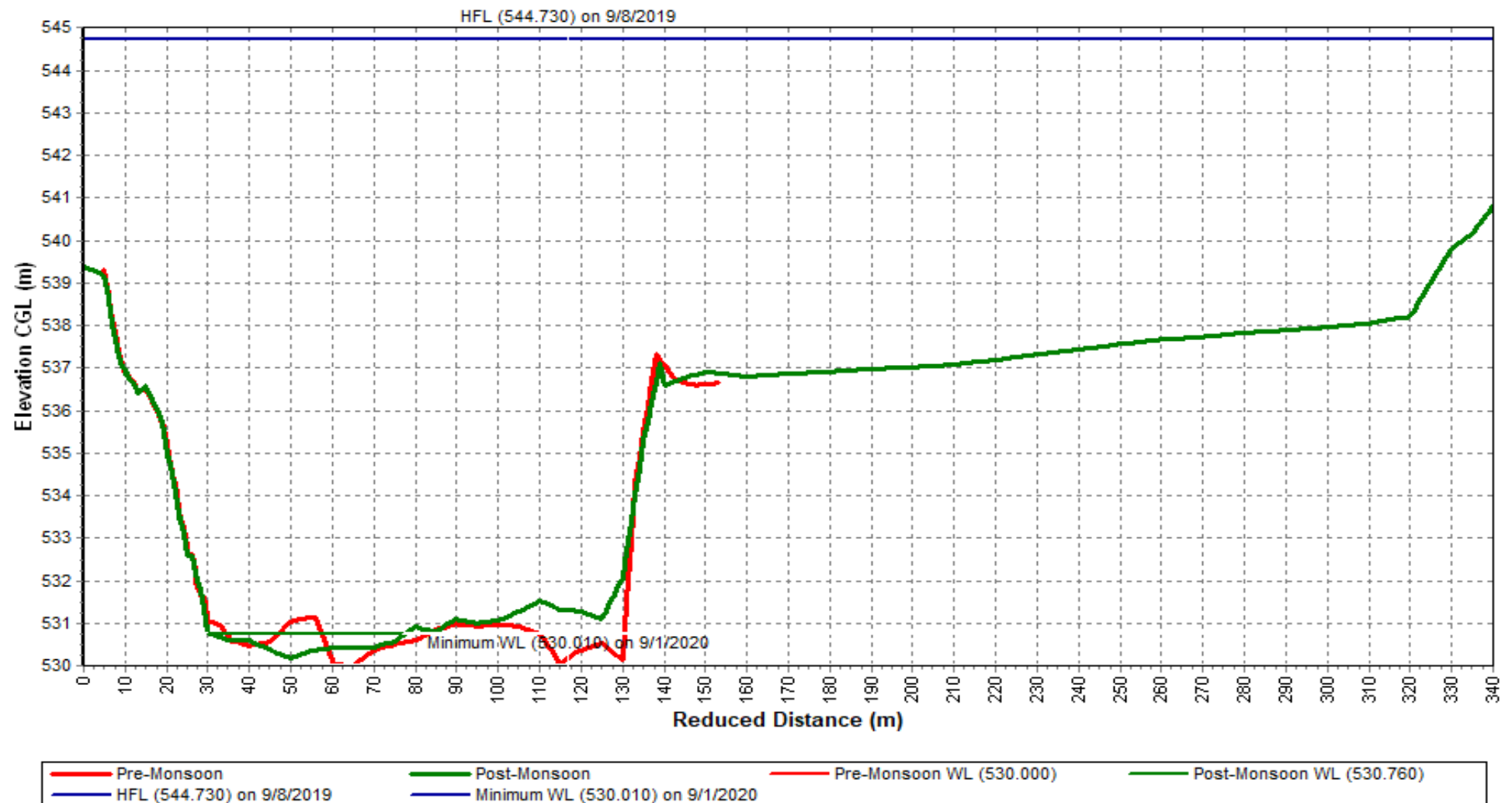
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Mudhol (MUDHOL)

Local River : Ghataprabha

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



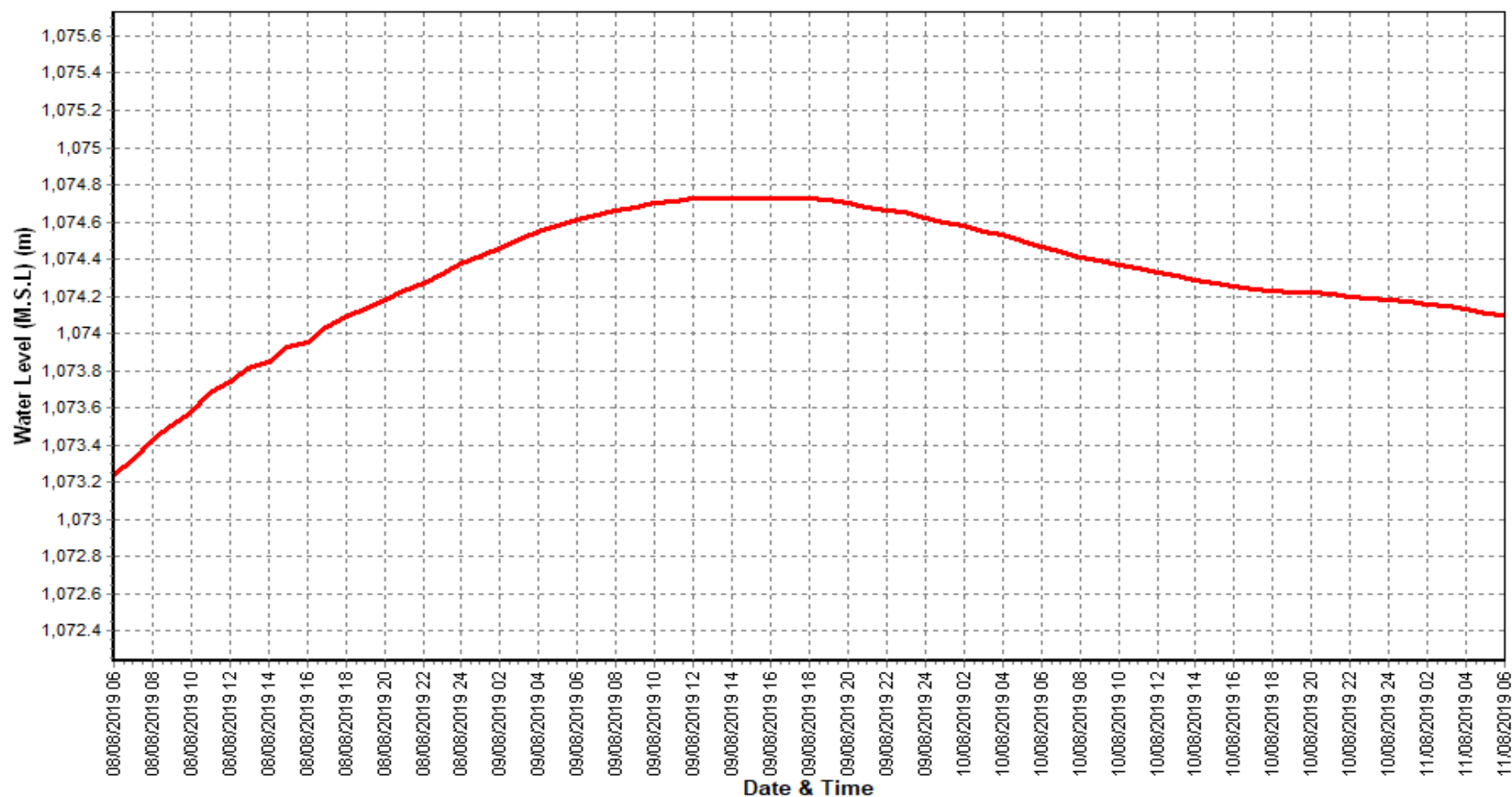
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Mudhol (MUDHOL)

Local River : Ghataprabha

Division : Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



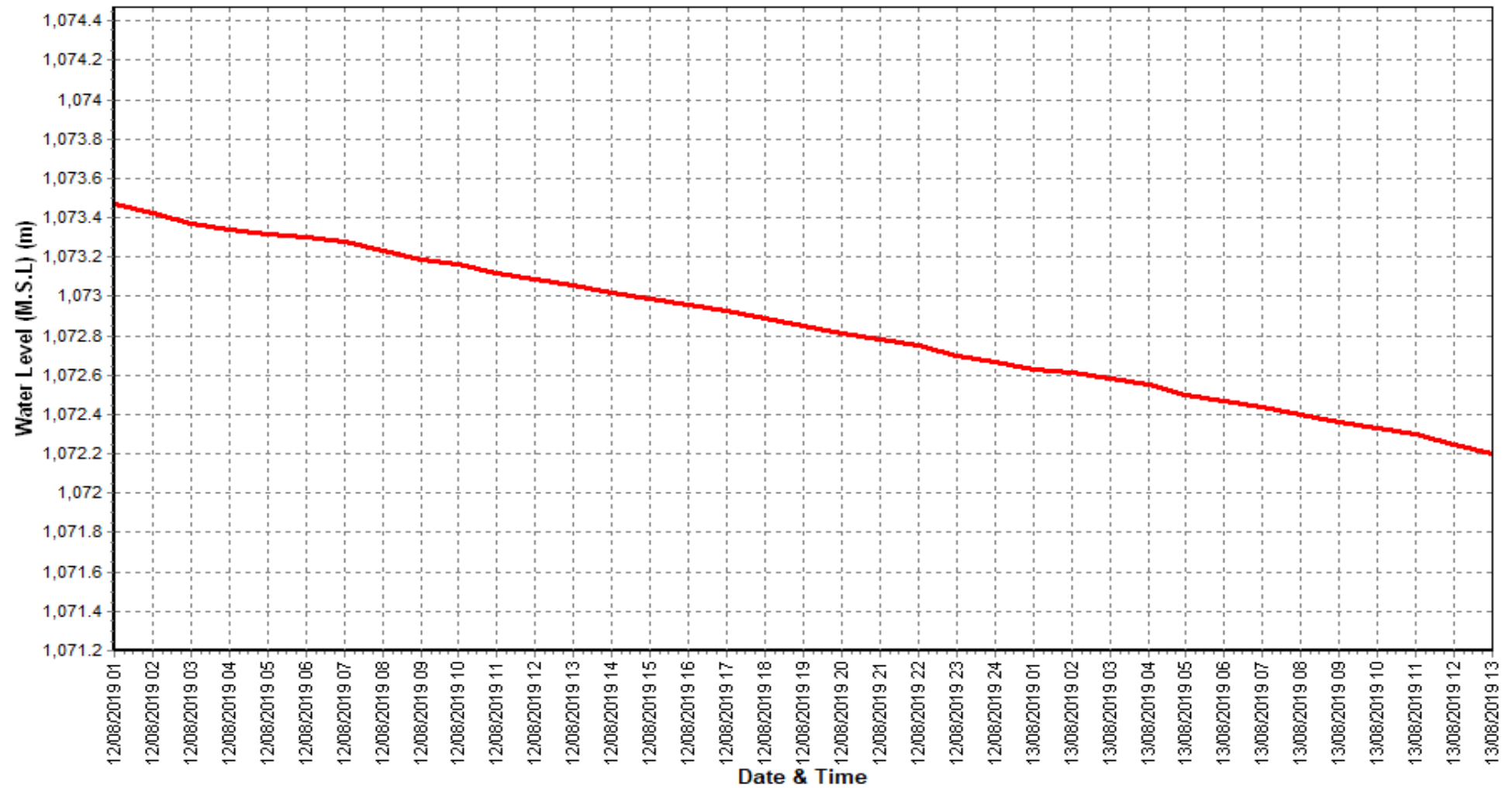
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Mudhol (MUDHOL)

Local River : Ghataprabha

Division : Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



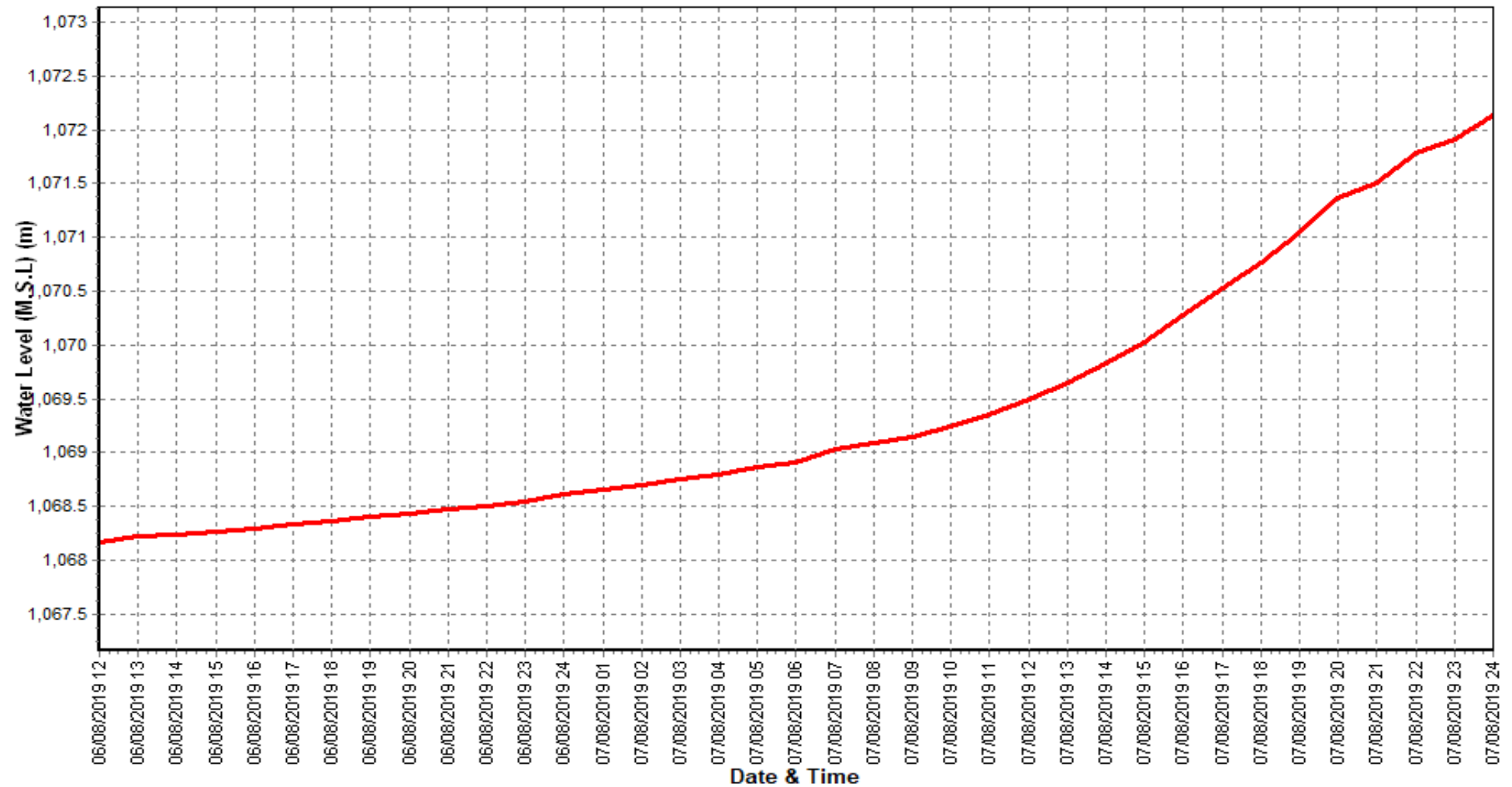
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Mudhol (MUDHOL)

Local River : Ghataprabha

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



HISTORY SHEET

Water Year : 2019-2020

Site : Gokak Falls (Seasonal)

Code : AKT00P9

State : Karnataka

District : Belgaum

Basin : Krishna

Independent River : Krishna

Tributary : Ghataprabha

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Ghataprabha

Division : Cauvery Divn, Bangalore

Sub-Division : Middle Krishna SD 1, Bagalkot

Drainage Area : 2770 Sq. Km.

Bank : Right

Latitude : 16°11'24"

Longitude : 74°47'29"

Zero of Gauge (m) : 536.004 (m.s.l)
536 (m.s.l)20/03/1971 - 31/08/2003
01/09/2003

Opening Date

Closing Date

Gauge : 21/03/1971

Discharge : 14/07/1971

Sediment : 27/12/2014

Water Quality : 01/09/2014

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1972-1973	2271	544.389	08/07/1972	0.000	538.559	14/02/1973
1973-1974	1922	543.884	09/07/1973	0.000	538.570	26/01/1974
1974-1975	2150	544.254	07/07/1974	0.000	538.469	30/03/1975
1975-1976	3106	545.474	11/07/1975	0.000	538.604	24/04/1976
1976-1977	1702	543.879	02/08/1976	0.000	538.414	22/04/1977
1977-1978	1195	543.244	27/07/1977	0.000	538.604	13/06/1977
1978-1979	1915	544.194	18/08/1978	0.200	538.554	13/03/1979
1979-1980	3147	545.364	10/08/1979	0.300	538.794	05/06/1979
1980-1981	1725	544.249	07/08/1980	1.100	538.784	25/05/1981
1981-1982	1109	542.933	04/08/1981	3.000	538.734	12/06/1981
1982-1983	1669	543.969	15/08/1982	5.800	539.024	13/05/1983
1983-1984	2766	546.099	29/06/1983	5.400	539.024	17/04/1984
1984-1985	708.9	542.394	03/07/1984	2.300	538.894	02/05/1985
1985-1986	716.2	542.234	03/08/1985	1.300	538.779	17/06/1985
1986-1987	439.8	541.574	12/08/1986	5.600	539.004	12/10/1986
1987-1988	269.8	540.904	09/07/1987	1.244	538.724	16/03/1988
1988-1989	2064	544.809	06/08/1988	0.000	539.079	22/02/1989
1989-1990	1455	543.979	26/07/1989	0.000	539.084	24/03/1990
1990-1991	1073	543.279	19/08/1990	0.000	539.054	13/03/1991
1991-1992	1351	543.833	16/08/1991	0.000	539.094	05/02/1992
1992-1993	871.4	542.954	23/08/1992	0.000	539.034	24/01/1993

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1993-1994	1444	544.160	14/08/1993	0.000	539.094	31/01/1994
1994-1995	4000	552.004	08/07/1994	0.000	539.054	12/02/1995
1995-1996	395.2	541.304	21/07/1995	0.000	539.104	10/01/1996
1996-1997	728.4	542.304	21/10/1996	0.000	539.084	10/03/1997
1997-1998	3375	546.154	08/08/1997	0.000	539.044	27/03/1998
1998-1999	404.0	541.549	03/07/1998	0.000	539.154	09/03/1999
1999-2000	1323	544.864	23/07/1999	0.000	539.144	12/02/2000
2000-2001	483.4	541.942	15/07/2000	0.000	539.004	12/03/2001
2001-2002	332.7	541.221	11/07/2001	0.000	539.074	02/02/2002
2002-2003	475.3	541.474	13/08/2002	0.000	538.924	30/01/2003
2003-2004	210.4	540.504	23/06/2003	0.000	538.610	26/01/2004
2004-2005	558.7	542.602	05/08/2004	0.000	538.950	25/01/2005
2005-2006	3245	546.400	23/09/2005	0.000	538.910	25/01/2006
2006-2007	1703	545.250	13/08/2006	6.340	538.610	20/06/2006
2007-2008	1991	545.820	08/08/2007	0.000	538.590	18/06/2007
2008-2009	1013	544.030	13/08/2008	0.000	538.820	12/06/2008
2009-2010	677.4	542.930	04/10/2009	0.000	539.045	30/06/2009
2010-2011	498.5	542.605	30/07/2010	0.000	539.410	15/06/2010
2011-2012	1123	544.650	04/09/2011	0.000	539.835	08/06/2011
2012-2013	328.6	541.620	05/08/2012	0.000	539.820	28/06/2012
2013-2014	621.3	542.660	04/08/2013	0.000	539.800	07/05/2014
2014-2015	451.6	542.130	01/08/2014	0.000	539.880	01/06/2014
2015-2016	342.6	541.180	25/06/2015	0.000	539.830	22/06/2015
2016-2017	515.0	542.370	14/07/2016	0.000	539.680	11/06/2016
2017-2018	414.8	541.960	23/07/2017	0.000	538.800	16/11/2017
2018-2019	854.4	543.920	19/08/2018	0.000	539.750	09/06/2018

Annual Runoff of Ghataprabha at Gokak Falls (Seasonal)

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1971-1972	1502	1	1503	53	0.035	53
2	1972-1973	1905	1	1906	67	0.031	67
3	1973-1974	2799	0	2799	99	0.000	99
4	1974-1975	2818	11	2829	100	0.391	100
5	1975-1976	3427	31	3458	121	1.085	122
6	1976-1977	2150	24	2174	76	0.859	77
7	1977-1978	2079	102	2181	73	3.609	77
8	1978-1979	2639	57	2696	93	2.014	95
9	1979-1980	2170	107	2277	77	3.781	80
10	1980-1981	3228	84	3312	114	2.959	117
11	1981-1982	2323	119	2441	82	4.194	86
12	1982-1983	1988	129	2117	70	4.551	75
13	1983-1984	3410	143	3553	121	5.036	126
14	1984-1985	1256	141	1398	44	4.995	49
15	1985-1986	873	145	1017	31	5.115	36
16	1986-1987	747	147	894	26	5.197	32
17	1987-1988	365	133	498	13	4.706	18
18	1988-1989	2142	129	2271	76	4.546	80
19	1989-1990	1178	52	1230	42	1.847	43
20	1990-1991	1410	112	1522	50	3.960	54
21	1991-1992	2103	16	2119	74	0.551	75
22	1992-1993	1290	0	1290	46	0.000	46
23	1993-1994	1703	11	1714	60	0.381	61
24	1994-1995	4280	20	4300	151	0.707	152
25	1995-1996	581	19	600	21	0.681	21
26	1996-1997	780	54	834	28	1.913	29
27	1997-1998	3042	79	3121	107	2.790	110
28	1998-1999	857	70	927	30	2.483	33
29	1999-2000	1948	85	2033	69	3.014	72
30	2000-2001	847	63	910	30	2.227	32
31	2001-2002	517	3	520	18	0.102	18
32	2002-2003	569	0	569	20	0.000	20
33	2003-2004	354	0	354	13	0.000	13
34	2004-2005	770	0	770	27	0.000	27
35	2005-2006	3999	0	3999	141	0.000	141
36	2006-2007	3087		3087	109	0.000	109
37	2007-2008	2239		2239	79	0.000	79
38	2008-2009	1428		1428	50	0.000	50
39	2009-2010	1233		1233	44	0.000	44
40	2010-2011	1389		1389	49	0.000	49
41	2011-2012	2376		2376	84	0.000	84
42	2012-2013	851		851	30	0.000	30
43	2013-2014	1746	0	1746	62	0.000	62
44	2014-2015	894		894	32	0.000	32
45	2015-2016	726		726	26	0.000	26
46	2016-2017	840		840	30	0.000	30
47	2017-2018	463		463	16	0.000	16
48	2018-2019	1306		1306	46	0.000	46
49	2018-2019	9104	576	9680	322	20	342
50	2019-2020	4044		4044	143	0	143
Average		1915	72	1969	68	2	60
75% Dependable flow (MCM)				894			
90 % Dependable flow (MCM)				569			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Gokak Falls (Seasonal) (AKT00P9)

Division : Cauvery Divn,Bangalore

Local River : Ghataprabha

Sub-Division : Middle Krishna SD 1, Bagalkot

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	539.700	0.000	539.810	0.000	541.945	442.4	538.920	27.55 *	538.810	23.15 *	539.320	0.000
2	539.640	0.000	540.755	169.9	541.990	460.5	539.130	37.25 *	538.790	22.40 *	539.250	0.000
3	539.590	0.000	540.205	116.2	542.200	430.1 *	539.920	90.70 *	538.770	21.67 *	539.200	0.000
4	539.520	0.000	540.095	98.98	542.880	594.5 *	539.890	88.15 *	538.660	19.99	540.040	0.000
5	539.430	0.000	540.445	118.7	543.800	869.4 *	541.590	309.0 *	538.670	18.21 *	539.980	0.000
6	539.370	0.000	541.010	215.3 *	547.300	2544 *	543.160	671.5 *	538.710	19.55 *	539.650	0.000
7	539.520	0.000	541.280	256.4 *	549.040	3794 *	543.370	733.1 *	540.750	179.7 *	540.250	0.000
8	539.630	0.000	541.680	325.4 *	549.060	3811 *	543.940	916.8 *	540.000	0.000	540.080	0.000
9	539.720	0.000	541.860	359.7 *	549.120	3859 *	544.350	1064 *	539.350	0.000	539.660	0.000
10	539.830	0.000	541.740	336.6 *	549.020	3778 *	543.280	706.3 *	539.670	0.000	539.240	0.000
11	539.770	0.000	541.775	303.0	550.320	4912 *	542.560	513.2 *	540.000	0.000	539.540	0.000
12	539.820	0.000	542.050	398.1 *	548.600	3450 *	541.100	228.5 *	540.310	0.000	539.410	0.000
13	539.740	0.000	541.640	318.0 *	545.700	1647 *	540.430	141.1 *	540.430	0.000	539.280	0.000
14	539.730	0.000	540.640	165.8 *	544.440	1099 *	540.600	160.9 *	540.100	0.000	539.200	0.000
15	539.700	0.000	540.310	128.0 *	542.350	463.7 *	540.760	181.0 *	539.700	0.000	539.120	0.000
16	539.680	0.000	540.420	140.0 *	541.400	276.1 *	540.420	140.0 *	539.770	0.000	539.360	0.000
17	539.690	0.000	540.350	132.3 *	543.400	742.2 *	540.150	111.8 *	539.730	0.000	539.220	0.000
18	539.680	0.000	540.300	127.0 *	540.980	211.0 *	540.380	135.6 *	539.860	0.000	539.060	0.000
19	539.590	0.000	539.440	54.90 *	540.500	149.1 *	540.150	111.8 *	539.800	0.000	539.410	0.000
20	539.520	0.000	539.300	46.42 *	540.450	143.3 *	539.350	49.35 *	539.780	0.000	539.700	0.000
21	539.420	0.000	539.250	43.60 *	541.030	218.2 *	538.980	30.15 *	541.980	0.000	539.630	0.000
22	539.280	0.000	539.260	44.16 *	540.850	192.9 *	539.260	44.16 *	542.000	0.000	538.980	0.000
23	539.220	0.000	539.140	37.76 *	540.620	163.3 *	539.320	47.58 *	541.960	0.000	538.710	0.000
24	539.300	0.000	538.970	29.70 *	540.250	121.8 *	538.960	29.27 *	541.300	0.000	538.640	0.000
25	539.560	0.000	539.260	44.16 *	539.820	82.35 *	538.820	23.54 *	540.750	0.000	538.600	0.000
26	539.630	0.000	539.240	43.05 *	539.220	41.96 *	538.820	23.54 *	540.100	0.000	538.640	0.000
27	539.700	0.000	539.240	43.05 *	539.300	46.42 *	538.840	24.13 *	542.350	0.000	538.620	0.000
28	539.690	0.000	540.640	165.8 *	539.420	53.64 *	538.820	23.54 *	541.300	0.000	538.690	0.000
29	539.690	0.000	540.720	175.8 *	539.280	45.28 *	538.740	20.59 *	540.220	0.000	539.420	0.000
30	539.740	0.000	540.980	211.0 *	539.000	31.04 *	538.820	23.54 *	539.840	0.000	539.300	0.000
31			542.280	447.8 *	538.890	26.31 *			539.600	0.000		
Ten-Daily Mean												
I Ten-Daily	539.595	0.000	540.888	199.7	545.636	2058	541.755	464.4	539.218	30.47	539.667	0.000
II Ten-Daily	539.692	0.000	540.622	181.4	543.814	1309	540.590	177.3	539.948	0.000	539.330	0.000
III Ten-Daily	539.523	0.000	539.907	116.9	539.789	93.02	538.938	29.00	541.036	0.000	538.923	0.000
Monthly												
Min.	539.220	0.000	538.970	0.000	538.890	26.31	538.740	20.59	538.660	0.000	538.600	0.000
Max.	539.830	0.000	542.280	447.8	550.320	4912	544.350	1064	542.350	179.7	540.250	0.000
Mean	539.603	0	540.454	164.4	542.973	1119	540.428	223.6	540.099	9.828	539.307	0

Annual Runoff in MCM = 4044 Annual Runoff in mm = 1460

Peak Observed Discharge = 460.5 cumecs on 02/08/2019 Corres. Water Level :541.99 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :539.7 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : Gokak Falls (Seasonal) (AKT00P9)

Division : Cauvery Divn,Bangalore

Local River : Ghataprabha

Sub-Division : Middle Krishna SD 1, Bagalkot

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	538.880	0.000	538.650	0.000	538.860	0.000	538.870	0.000	538.700	0.000	538.800	0.000
2	538.740	0.000	538.660	0.000	538.860	0.000	538.870	0.000	538.660	0.000	538.770	0.000
3	538.730	0.000	538.680	0.000	538.880	0.000	539.660	0.000	538.750	0.000	538.840	0.000
4	538.700	0.000	538.670	0.000	538.910	0.000	539.710	0.000	539.000	0.000	538.820	0.000
5	538.720	0.000	538.680	0.000	538.780	0.000	538.670	0.000	539.130	0.000	538.780	0.000
6	538.750	0.000	538.700	0.000	538.730	0.000	538.630	0.000	539.070	0.000	538.750	0.000
7	538.690	0.000	538.860	0.000	538.720	0.000	538.850	0.000	539.000	0.000	538.840	0.000
8	538.690	0.000	538.840	0.000	538.700	0.000	539.390	0.000	538.940	0.000	539.000	0.000
9	538.680	0.000	538.660	0.000	538.700	0.000	539.150	0.000	538.870	0.000	539.150	0.000
10	538.680	0.000	538.670	0.000	538.690	0.000	538.930	0.000	538.800	0.000	539.300	0.000
11	538.670	0.000	538.790	0.000	538.700	0.000	538.830	0.000	538.950	0.000	539.430	0.000
12	538.670	0.000	538.700	0.000	538.700	0.000	539.030	0.000	538.990	0.000	539.270	0.000
13	538.670	0.000	538.700	0.000	538.680	0.000	538.870	0.000	538.960	0.000	539.860	0.000
14	538.660	0.000	538.740	0.000	538.640	0.000	538.900	0.000	538.920	0.000	538.870	0.000
15	538.650	0.000	538.680	0.000	538.750	0.000	538.900	0.000	538.870	0.000	539.010	0.000
16	538.660	0.000	538.690	0.000	538.710	0.000	538.840	0.000	538.840	0.000	538.900	0.000
17	538.660	0.000	538.760	0.000	538.680	0.000	538.820	0.000	538.810	0.000	538.910	0.000
18	538.660	0.000	538.780	0.000	539.040	0.000	538.780	0.000	538.800	0.000	538.890	0.000
19	538.680	0.000	538.790	0.000	539.020	0.000	538.960	0.000	538.770	0.000	538.890	0.000
20	538.670	0.000	538.680	0.000	539.020	0.000	539.150	0.000	538.730	0.000	538.880	0.000
21	538.670	0.000	538.750	0.000	539.050	0.000	539.100	0.000	538.990	0.000	538.900	0.000
22	539.070	0.000	538.750	0.000	538.710	0.000	538.960	0.000	538.970	0.000	538.890	0.000
23	539.490	0.000	538.740	0.000	538.660	0.000	538.950	0.000	538.940	0.000	538.900	0.000
24	538.800	0.000	539.060	0.000	538.760	0.000	538.950	0.000	538.910	0.000	538.840	0.000
25	538.680	0.000	538.810	0.000	538.620	0.000	538.920	0.000	538.900	0.000	538.890	0.000
26	538.680	0.000	538.750	0.000	538.610	0.000	539.100	0.000	538.870	0.000	538.870	0.000
27	538.750	0.000	538.740	0.000	538.800	0.000	538.900	0.000	538.810	0.000	538.850	0.000
28	538.740	0.000	538.750	0.000	538.880	0.000	538.890	0.000	538.780	0.000	538.810	0.000
29	538.900	0.000	538.760	0.000	538.910	0.000	538.750	0.000	538.830	0.000	538.780	0.000
30	538.880	0.000	538.730	0.000			538.770	0.000	538.820	0.000	538.780	0.000
31	538.680	0.000	538.730	0.000			538.750	0.000			538.810	0.000
Ten-Daily Mean												
I Ten-Daily	538.726	0.000	538.707	0.000	538.783	0.000	539.073	0.000	538.892	0.000	538.905	0.000
II Ten-Daily	538.665	0.000	538.731	0.000	538.794	0.000	538.908	0.000	538.864	0.000	539.091	0.000
III Ten-Daily	538.849	0.000	538.779	0.000	538.778	0.000	538.913	0.000	538.882	0.000	538.847	0.000
Monthly												
Min.	538.650	0.000	538.650	0.000	538.610	0.000	538.630	0.000	538.660	0.000	538.750	0.000
Max.	539.490	0.000	539.060	0.000	539.050	0.000	539.710	0.000	539.130	0.000	539.860	0.000
Mean	538.750	0	538.740	0	538.785	0	538.963	0	538.879	0	538.945	0

Peak Computed Discharge = 4912 cumecs on 11/08/2019

Corres. Water Level :550.32 m

Lowest Computed Discharge = 18.21 cumecs on 05/10/2019

Corres. Water Level :538.67 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

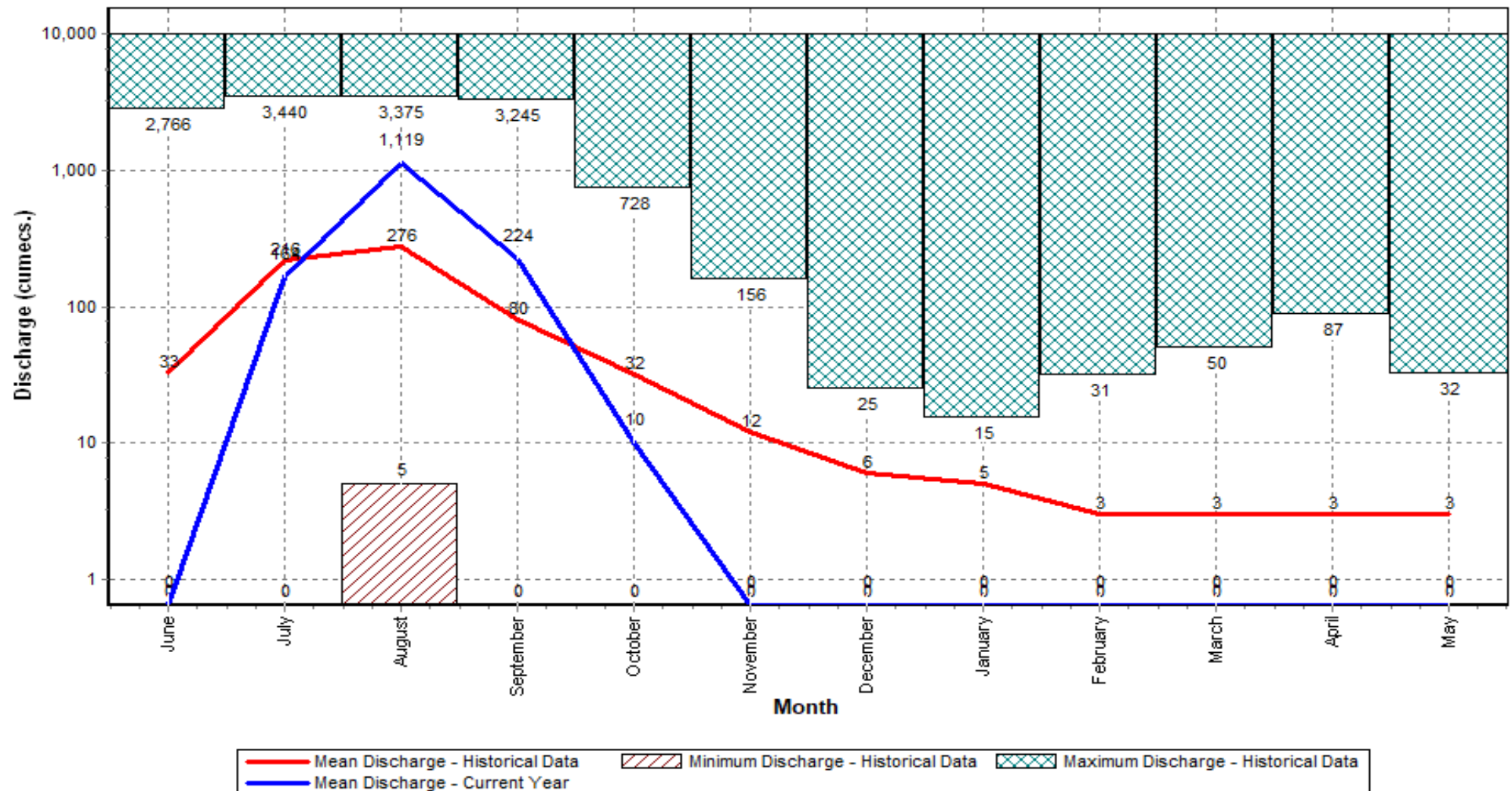
Station Name : Gokak Falls (Seasonal) (AKT00P9)

Data considered : 1972-2020

Division :Cauvery Divn

Local River : Ghataprabha

Sub-Division : Middle Krishna SD 1, Bagalkot



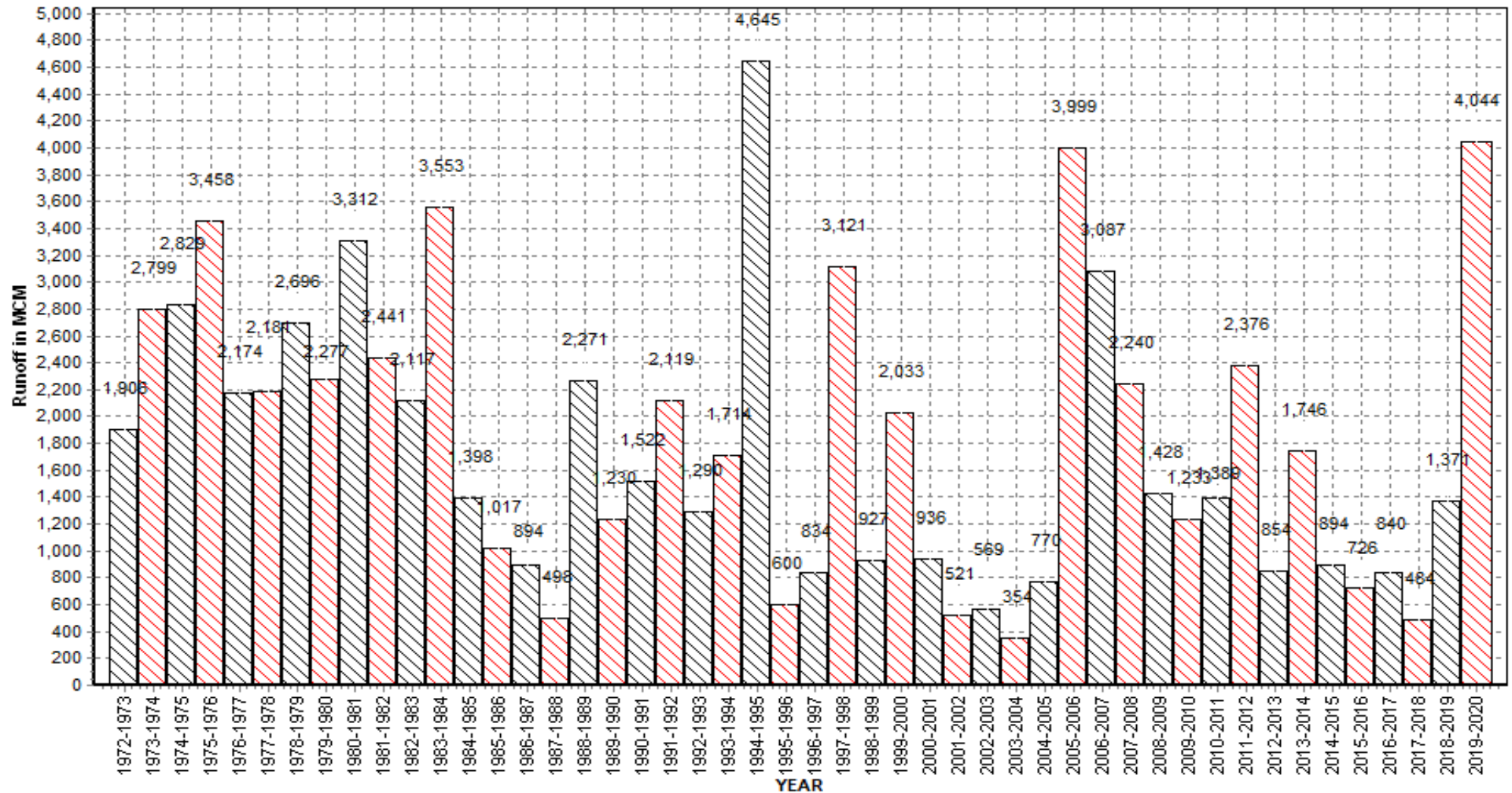
Annual Runoff Values for the period: 1972 - 2020

Station Name : Gokak Falls (Seasonal) (AKT00P9)

Local River : Ghataprabha

Division : Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



Note: Missing values have not been considered while arriving at Annual Runoff

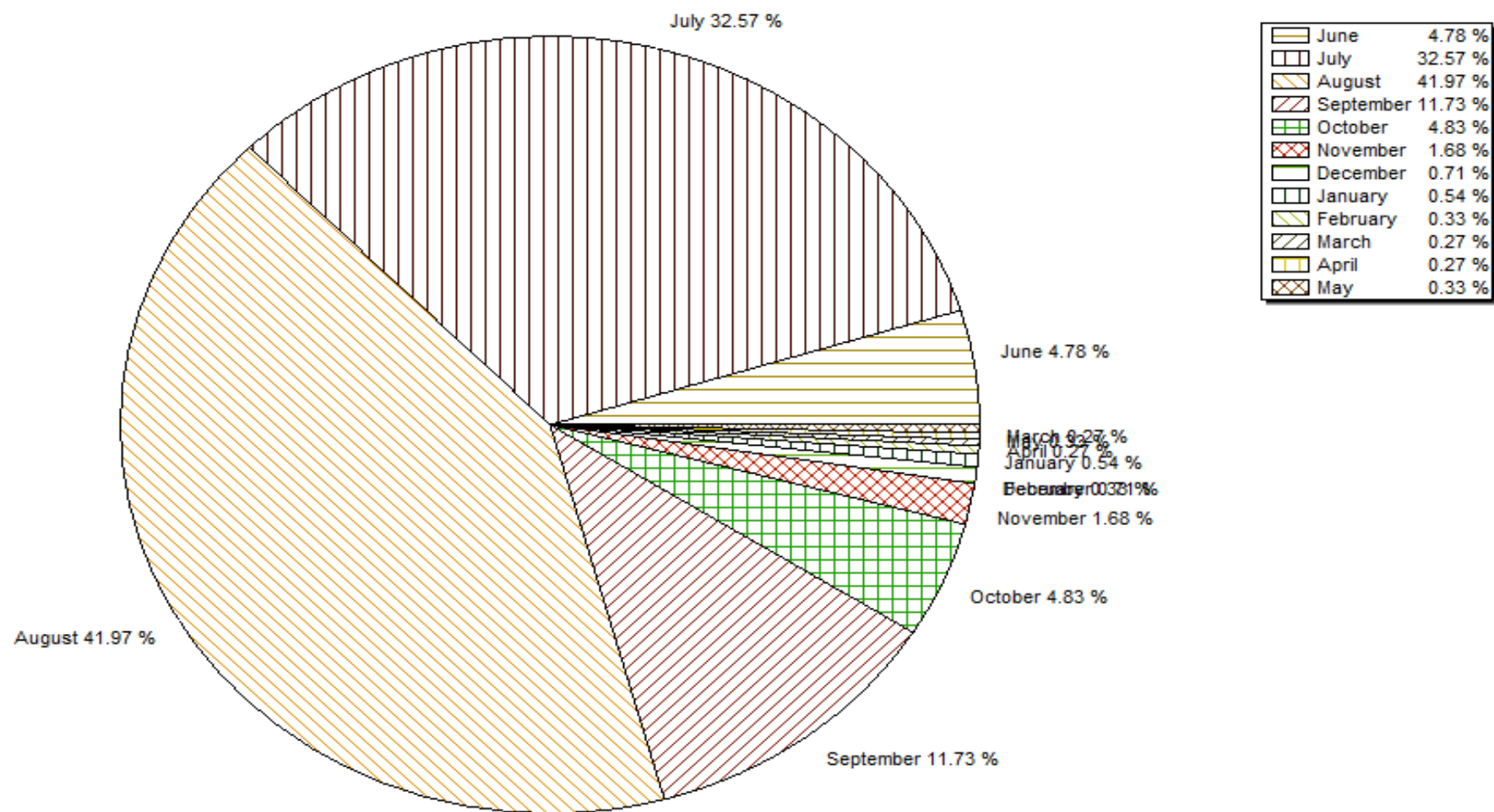
Monthly Average Runoff based on period : 1972-2019

Station Name : Gokak Falls (Seasonal) (AKT00P9)

Local River : Ghataprabha

Division : Cauvery Divn,Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



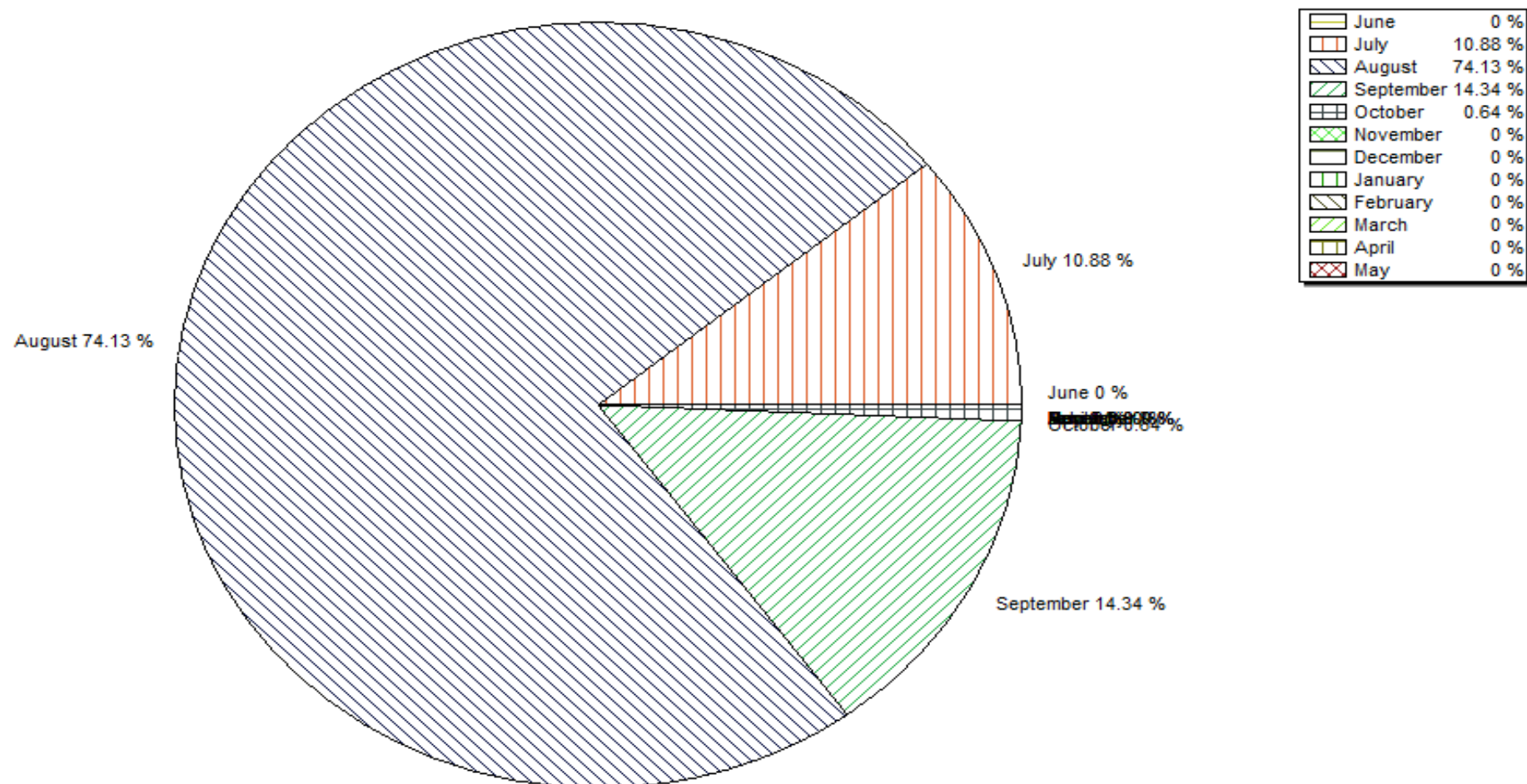
Monthly Runoff for the Year : 2019-2020

Station Name : Gokak Falls (Seasonal) (AKT00P9)

Local River : Ghataprabha

Division :Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



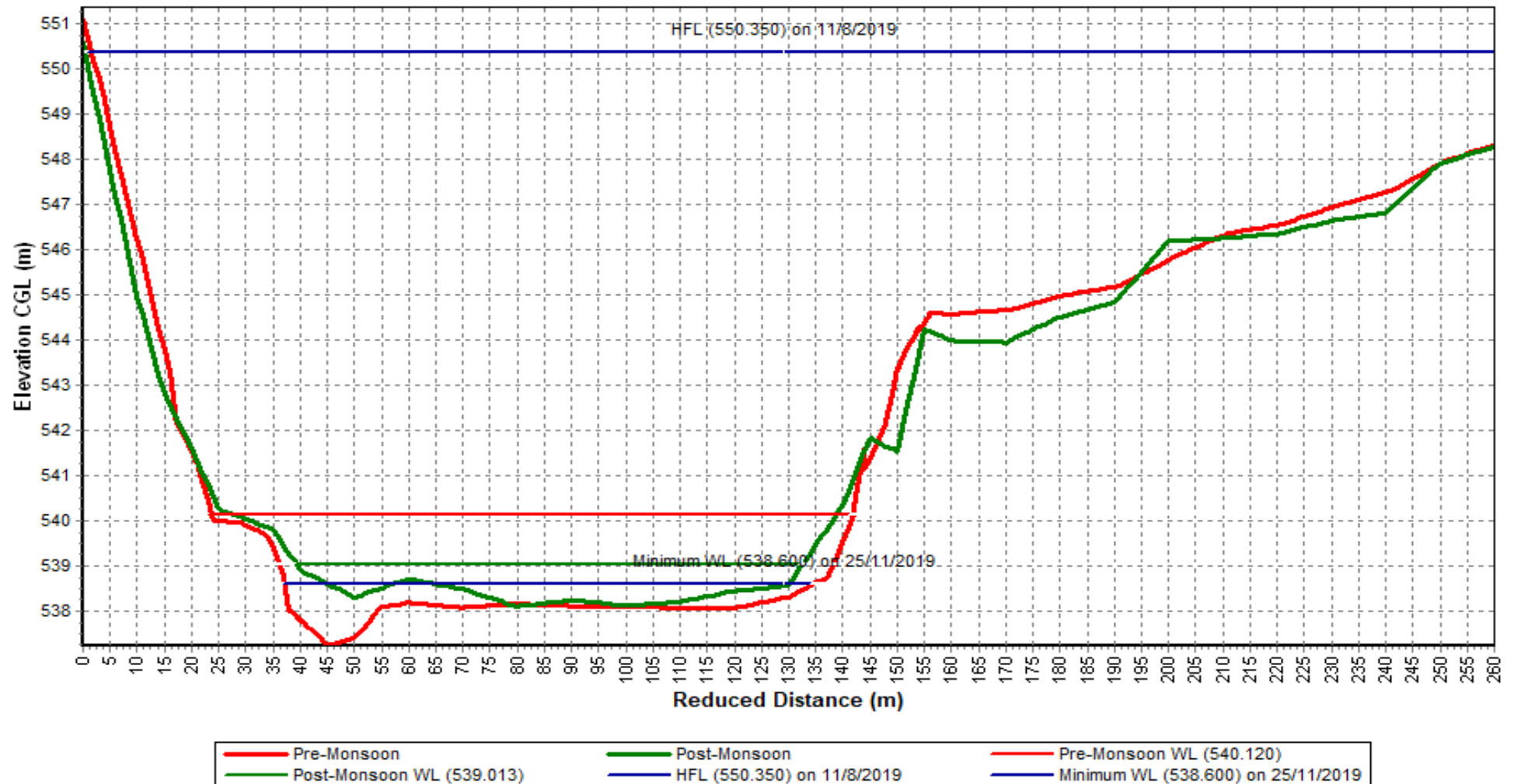
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Gokak Falls (Seasonal) (AKT00P9)

Local River : Ghataprabha

Division : Cauvery Divn, Bang

Sub-Division : Middle Krishna SD 1, Bagalkot



Cross section difference due to high flood.

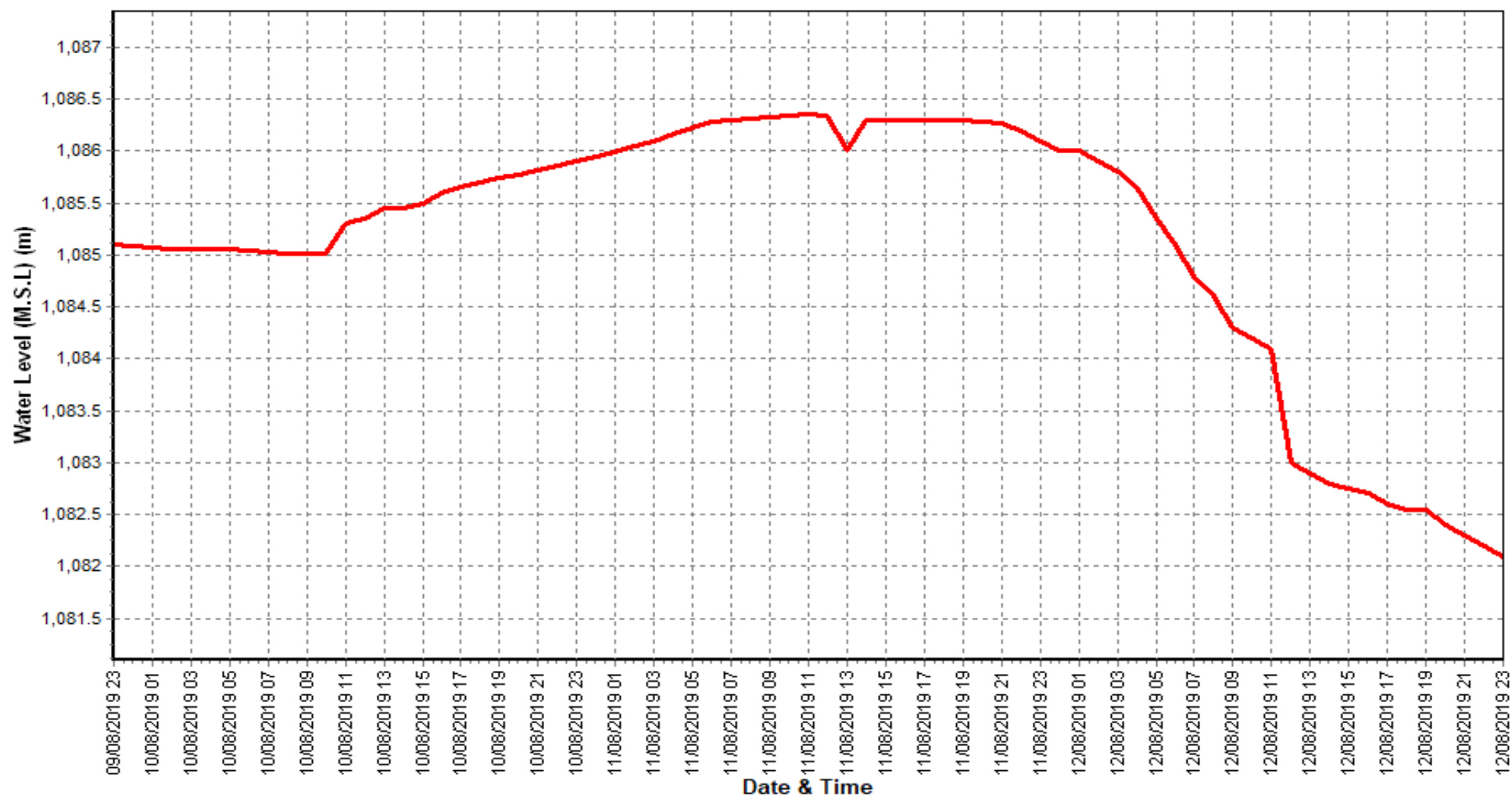
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Gokak Falls (Seasonal) (AKT00P9)

Local River : Ghataprabha

Division : Cauvery Divn,

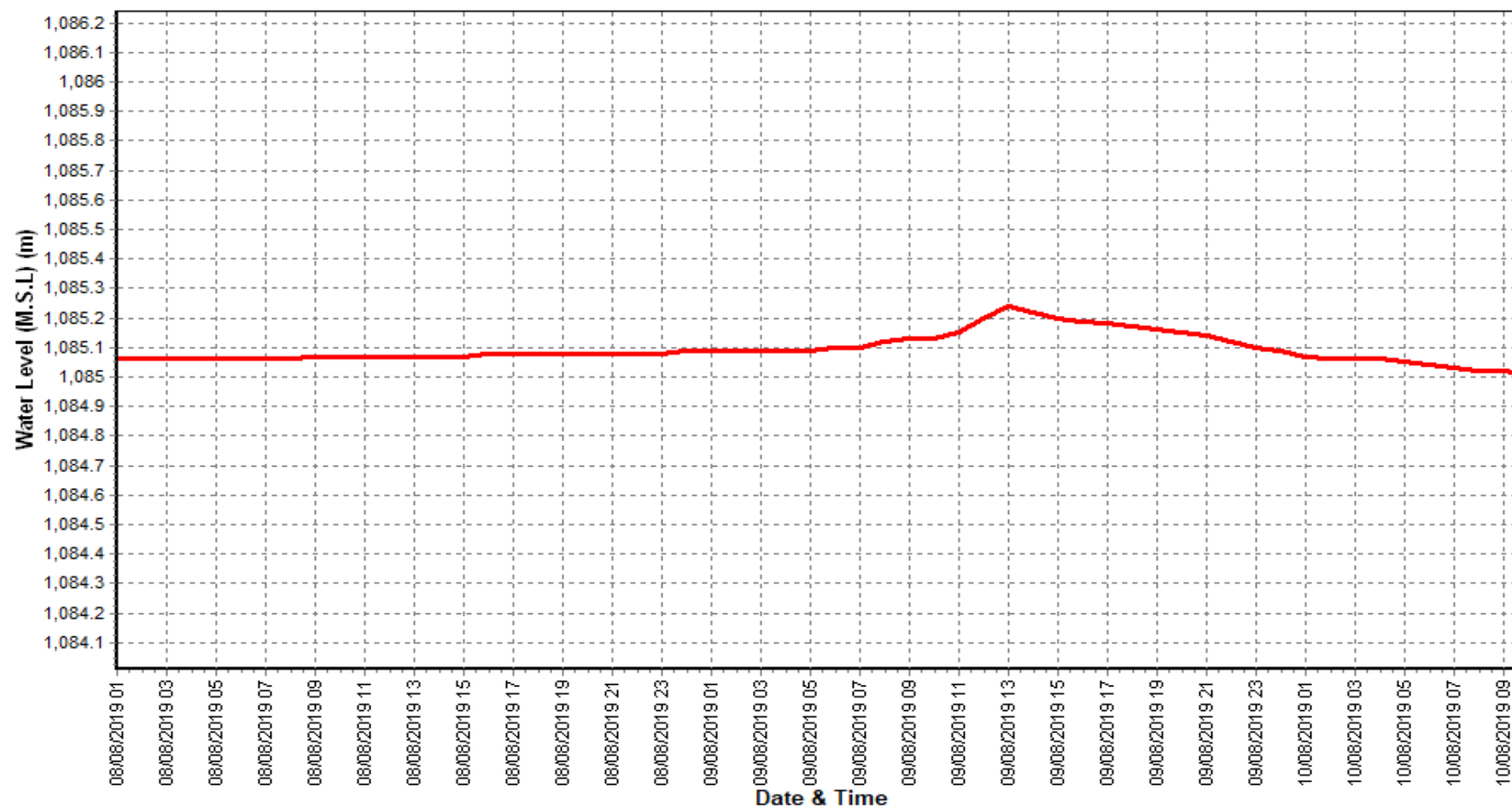
Sub-Division : Middle Krishna SD 1, Bagalkot



Station Name : Gokak Falls (Seasonal) (AKT00P9)

Sub-Division : Middle Krishna SD 1, Bagalkot

Local River : Ghataprabha



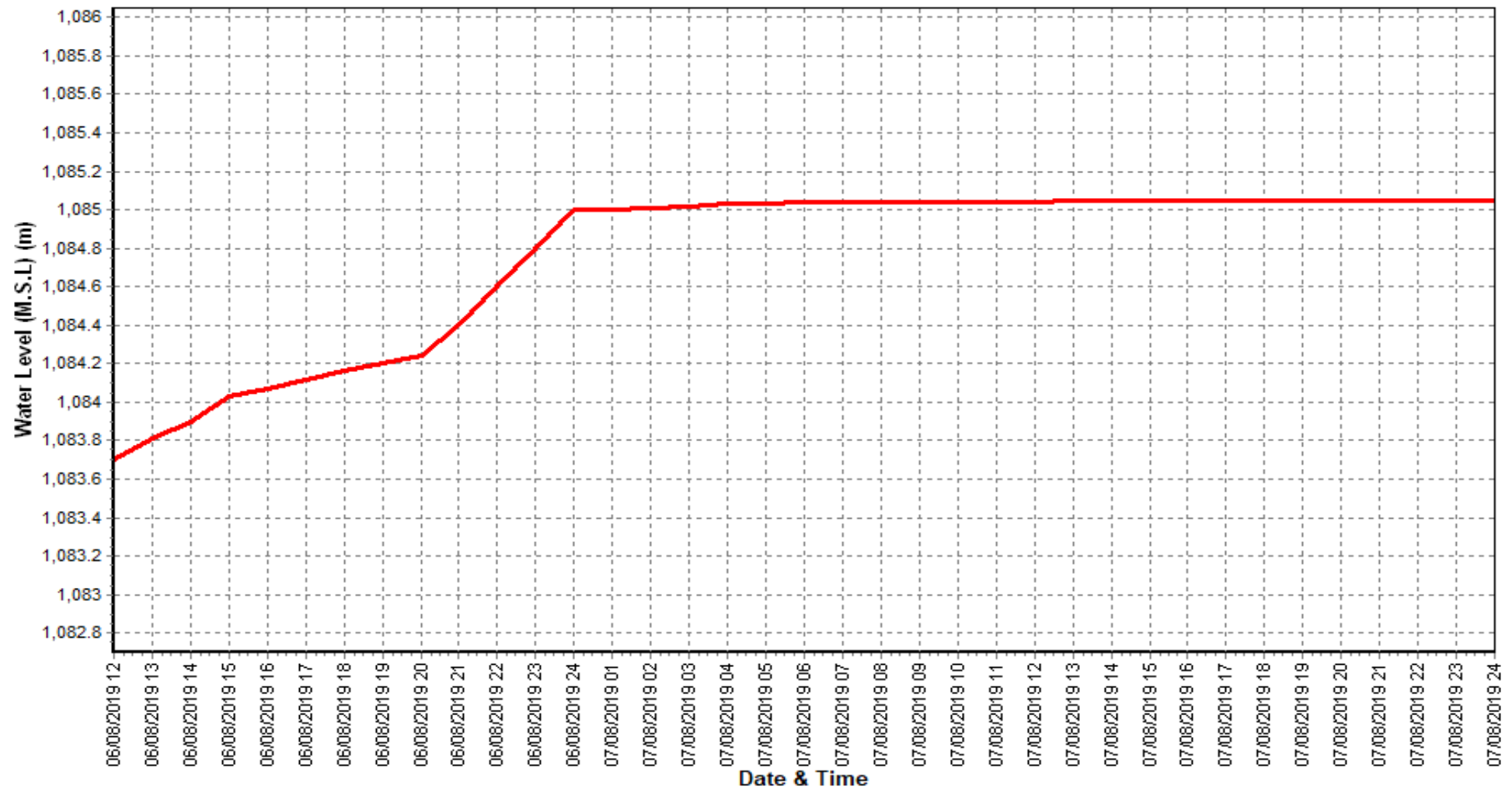
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Gokak Falls (Seasonal) (AKT00P9)

Local River : Ghataprabha

Division : Cauvery

Sub-Division : Middle Krishna SD 1, Bagalkot



HISTORY SHEET

Water Year : 2019-2020

Site : Sadalga (Seasonal)

Code : AKV00D3

State : Karnataka

District : Belgaum

Basin : Krishna

Independent River : Krishna

Tributary : Dudhganga

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Dudhganga

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj

Drainage Area : 2322 Sq. Km.

Bank : Right

Latitude : 16°33'44"

Longitude : 74°31'42"

Zero of Gauge (m) : 522.976 (m.s.l)
 526.16 (m.s.l)
 525.16 (m.s.l)
 525.16 (m.s.l)

01/01/1964 - 04/06/1964
 05/06/1964 - 25/04/1966
 26/04/1966
 24/06/1969 - 31/12/2010

Opening Date

Closing Date

Gauge : 05/06/1964

HFL During 2019-20 : 540.580 m

Corres. Discharge : 1675 (Estimated)

Discharge : 24/06/1969

Date & Time of occurrence : 10/08/2019
 : 12:00 Hrs

Sediment :

Water Quality :

HFL Recorded so far in m : 540.580 dt 10-08-2019

Corresponding Discharge (cumecs) : 1675 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1970-1971	1320	536.850	23/08/1970	0.000	527.230	25/01/1971
1971-1972	1190	535.888	26/06/1971	0.000	526.030	26/01/1972
1972-1973	1230	536.245	09/07/1972	0.000		23/01/1973
1973-1974	1397	536.760	10/07/1973	0.000	527.550	25/01/1974
1974-1975	1304	536.483	07/07/1974	0.000	526.700	25/01/1975
1975-1976	1759	537.550	11/07/1975	0.000	529.515	26/01/1976
1976-1977	1103	536.804	02/08/1976	0.000	527.985	24/01/1977
1977-1978	1129	536.597	09/07/1977	0.000	529.595	25/01/1978
1978-1979	1244	536.317	18/08/1978	0.000	528.125	25/01/1979
1979-1980	1429	537.285	12/08/1979	0.000	529.000	26/01/1980
1980-1981	1103	536.612	09/07/1980	0.000		25/01/1981
1981-1982	1457	536.833	09/07/1981	0.000	527.750	25/01/1982
1982-1983	1368	536.510	31/07/1982	0.000	526.660	25/01/1983
1983-1984	2457	538.950	29/06/1983	0.000		26/01/1984
1984-1985	1514	536.026	19/07/1984	0.000		25/01/1985

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1985-1986	1421	536.472	03/08/1985	0.000		25/01/1986
1986-1987	1048	536.425	11/08/1986	0.000		25/01/1987
1987-1988	872.6	535.430	09/07/1987	0.000		26/01/1988
1988-1989	1810	537.300	20/07/1988	0.000		25/01/1989
1989-1990	2100	538.055	26/07/1989	0.000	527.635	25/01/1990
1990-1991	1452	537.058	19/08/1990	0.000	529.425	09/03/1991
1991-1992	1379	537.707	30/07/1991	0.000	529.925	26/01/1992
1992-1993	773.1	535.365	20/08/1992	0.000	531.210	25/01/1993
1993-1994	1058	536.630	13/07/1993	0.000	531.500	25/01/1994
1994-1995	1900	538.150	18/07/1994	0.000	531.450	25/01/1995
1995-1996	710.9	534.900	04/09/1995	0.000	528.760	26/01/1996
1996-1997	1180	536.480	03/10/1996	0.000	530.470	25/01/1997
1997-1998	1350	537.640	09/08/1997	0.000	530.380	25/01/1998
1998-1999	673.9	534.980	10/07/1998	0.000	529.920	25/01/1999
1999-2000	1135	536.960	23/07/1999	0.000	529.010	26/01/2000
2000-2001	853.5	535.565	15/07/2000	0.000	530.980	25/01/2001
2001-2002	594.6	534.400	11/07/2001	0.000	528.450	25/01/2002
2002-2003	827.9	535.750	13/08/2002	0.000	529.940	25/01/2003
2003-2004	537.7	534.560	23/06/2003	0.000	530.490	26/01/2004
2004-2005	1287	536.450	07/08/2004	0.000	530.415	25/01/2005
2005-2006	2200	538.890	06/08/2005	0.000	530.285	25/01/2006
2006-2007	1978	538.410	13/08/2006	0.000	528.375	01/11/2006
2007-2008	891.2	536.685	02/07/2007	0.000	530.190	13/11/2007
2008-2009	1013	537.840	14/08/2008	0.000	528.260	07/11/2008
2009-2010	762.6	535.810	18/07/2009	0.000	529.795	25/11/2009
2010-2011	850.9	536.455	30/07/2010	0.000	528.750	26/11/2010
2011-2012	832.5	536.110	06/09/2011	0.000	527.680	04/11/2011
2012-2013	559.5	534.028	06/09/2012	0.000	528.250	12/11/2012
2013-2014	847.3	536.270	29/07/2013	0.000	528.385	02/11/2013
2014-2015	710.5	535.040	26/07/2014	0.000	527.580	12/11/2014
2015-2016	555.4	534.040	26/06/2015	0.000	528.600	25/11/2015
2016-2017	1761	536.920	14/07/2016	0.000	526.130	09/11/2016
2017-2018	716.4	535.235	22/07/2017	0.000	527.590	19/11/2017
2018-2019	876.6	536.120	19/07/2018	0.000	528.750	25/11/2018

Annual Runoff of Dudhganga at Sadalga (Seasonal)

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1969-1970	2697	0	2697	95	0	95
2	1970-1971	2854	0	2854	101	0	101
3	1971-1972	2293	0	2293	81	0	81
4	1972-1973	1549	8	1556	55	0	55
5	1973-1974	2913	0	2913	103	0	103
6	1974-1975	2586	0	2586	91	0	91
7	1975-1976	3648	0	3648	129	0	129
8	1976-1977	2493	0	2493	88	0	88
9	1977-1978	2557	0	2557	90	0	90
10	1978-1979	3354	0	3354	119	0	119
11	1979-1980	2887	0	2887	102	0	102
12	1980-1981	3475	0	3475	123	0	123
13	1981-1982	3220	0	3220	114	0	114
14	1982-1983	2719	0	2719	96	0	96
15	1983-1984	3900	0	3900	138	0	138
16	1984-1985	2710	0	2710	96	0	96
17	1985-1986	2592	0	2592	92	0	92
18	1986-1987	1987	0	1987	70	0	70
19	1987-1988	1416	0	1416	50	0	50
20	1988-1989	3156	0	3156	112	0	112
21	1989-1990	2250	0	2250	80	0	80
22	1990-1991	3089	0	3089	109	0	109
23	1991-1992	3258	0	3258	115	0	115
24	1992-1993	2147	0	2147	76	0	76
25	1993-1994	2948	0	2948	104	0	104
26	1994-1995	3954	0	3954	140	0	140
27	1995-1996	1648	0	1648	58	0	58
28	1996-1997	2259	0	2259	80	0	80
29	1997-1998	3438	0	3438	121	0	121
30	1998-1999	1868	0	1868	66	0	66
31	1999-2000	2449	0	2449	87	0	87
32	2000-2001	1380	0	1380	49	0	49
33	2001-2002	964	2	966	34	0	34
34	2002-2003	1573	0	1573	56	0	56
35	2003-2004	907	0	907	32	0	32
36	2004-2005	1860	0	1860	66	0	66
37	2005-2006	4918	0	4918	174	0	174

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
38	2006-2007	4924	Site downgraded as Seasonal Site from 2006-07	4924	174	Site downgraded as Seasonal Site from 2006-07	174
39	2007-2008	2673		2673	94		94
40	2008-2009	2216		2216	78		78
41	2009-2010	1736		1736	61		61
42	2010-2011	2167		2167	77		77
43	2011-2012	2864		2864	101		101
44	2012-2013	1727		1727	61		61
45	2013-2014	2504		2504	88		88
46	2014-2015	1956		1956	69		69
47	2015-2016	783		783	28		28
48	2016-2017	2353		2353	83		83
49	2017-2018	1900		1900	67		67
50	2018-2019	2636		2636	93		93
51	2019-2020	4399		4399	155		155
Average		2564		2564	91	0	91
75% Dependable flow (MCM)				1900			
90 % Dependable flow (MCM)				1444			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Sadalga (Seasonal) (AKV00D3)

Division : Upper Krishna Divn, Pune

Local River : Dudhganga

Sub-Division : UKSD,Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	527.990	0.000	532.810	400.5	535.980	853.3	530.140	90.63 *	530.185	103.1	530.070	82.26
2	528.800	0.000	533.110	448.3	536.350	912.0	530.405	120.8	529.865	65.33	530.000	73.06
3	528.740	0.000	531.995	285.3	536.510	944.8	530.615	145.4	529.750	59.31	529.910	70.75
4	528.920	0.000	531.415	238.3	536.760	985.6 *	531.370	208.6	529.675	56.45	529.960	72.19
5	528.400	0.000	531.825	274.0	537.140	1068	532.700	380.0	529.600	47.19	529.900	62.46
6	528.240	0.000	532.880	404.1	537.720	1166	533.980	544.1	529.760	58.51 *	529.760	54.33
7	528.340	0.000	533.350	463.5 *	538.980	1374 *	535.010	691.5	530.230	107.9	529.920	63.19
8	528.350	0.000	533.780	524.1	539.830	1532 *	535.650	804.6 *	529.955	75.41	529.640	45.03
9	527.980	0.000	534.050	551.6	540.280	1617 *	536.300	906.6	529.785	66.44	529.500	30.17
10	527.840	0.000	534.340	579.7	540.560	1671 *	536.590	953.5	530.180	98.39	529.410	32.60
11	527.670	0.000	534.510	601.1	540.500	1659 *	536.500	936.1	531.065	186.5	529.340	25.67
12	527.530	0.000	535.000	692.8	540.150	1592 *	535.740	806.6	530.080	83.91	529.210	19.79
13	527.420	0.000	535.210	765.9	539.610	1491 *	534.090	554.9	529.860	66.61 *	529.130	14.94
14	527.360	0.000	534.590	641.3 *	539.040	1385 *	532.405	326.4	529.745	51.59	529.110	13.95
15	527.990	0.000	532.890	405.2	538.280	1248 *	532.140	305.9 *	529.690	50.32	529.010	10.81
16	528.390	0.000	532.385	314.0	537.370	1101	532.140	270.7	529.580	46.37	528.970	6.689
17	528.540	0.000	531.955	278.1	536.310	904.3	531.980	245.4	529.555	34.81	528.790	0.000
18	528.420	0.000	531.145	189.3	534.790	671.4 *	531.780	229.8	529.445	31.70	528.880	0.000
19	528.190	0.000	530.505	133.1	532.590	366.7	531.385	202.6	530.120	95.51	528.610	0.000
20	528.010	0.000	530.270	103.8	531.055	194.9	530.915	174.1	532.060	296.1 *	528.420	0.000
21	528.150	0.000	530.140	90.63 *	530.550	143.2	530.315	125.4	534.670	637.5	528.410	0.000
22	528.470	0.000	530.000	75.27	530.380	119.0	530.170	93.31 *	534.000	550.8	528.190	0.000
23	528.460	0.000	530.100	84.81	530.305	117.6	530.030	82.64	533.720	505.2	528.110	0.000
24	528.510	0.000	530.280	105.1	530.310	118.4	529.940	67.50	532.510	349.5	528.060	0.000
25	528.540	0.000	530.375	108.1	530.380	112.7 *	530.545	165.2	531.460	228.1	528.050	0.000
26	528.180	0.000	530.520	142.3	530.290	102.7	531.805	238.8	531.915	257.3	528.120	0.000
27	528.080	0.000	531.430	244.2	530.235	100.9	530.860	156.9	531.940	281.6 *	528.160	0.000
28	528.030	0.000	532.410	339.5 *	530.135	97.95	530.295	113.2	531.275	211.5	528.110	0.000
29	528.470	0.000	532.920	408.8	530.020	74.42	530.180	94.21 *	530.730	153.5	528.250	0.000
30	530.440	0.000	533.810	531.2	529.690	64.50	529.930	70.09	530.350	114.1	528.610	0.000
31			535.270	781.3	529.990	69.59			530.165	92.17		
Ten-Daily Mean												
I Ten-Daily	528.360	0.000	532.955	416.9	538.011	1212	533.276	484.6	529.899	73.80	529.807	58.60
II Ten-Daily	527.952	0.000	532.846	412.5	536.969	1061	532.908	405.2	530.120	94.35	528.947	9.184
III Ten-Daily	528.533	0.000	531.569	264.6	530.208	101.9	530.407	120.7	532.067	307.4	528.207	0.000
Monthly												
Min.	527.360	0.000	530.000	75.27	529.690	64.50	529.930	67.50	529.445	31.70	528.050	0.000
Max.	530.440	0.000	535.270	781.3	540.560	1671	536.590	953.5	534.670	637.5	530.070	82.26
Mean	528.282	0	532.428	361.5	534.906	769.7	532.197	336.8	530.739	163.3	528.987	22.6

Annual Runoff in MCM = 4399 Annual Runoff in mm = 1894

Peak Observed Discharge = 1166 cumecs on 06/08/2019 Corres. Water Level :537.72 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :527.99 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

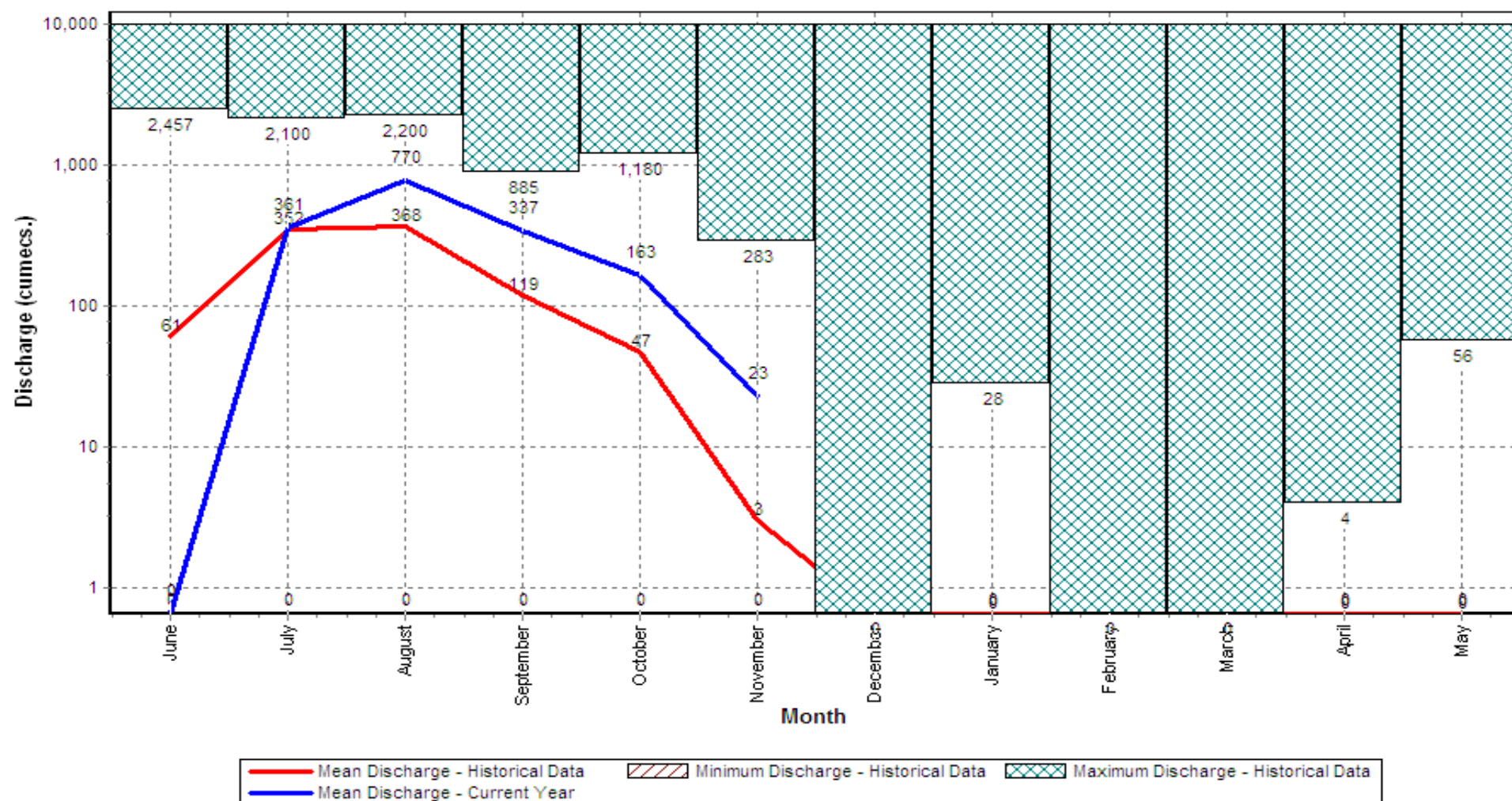
Station Name : Sadalga (Seasonal) (AKV00D3)

Data considered : 1970-2020

Division : Upper Krishna Divn, Pune

Local River : Dudhganga

Sub-Division : UKSD,Miraj



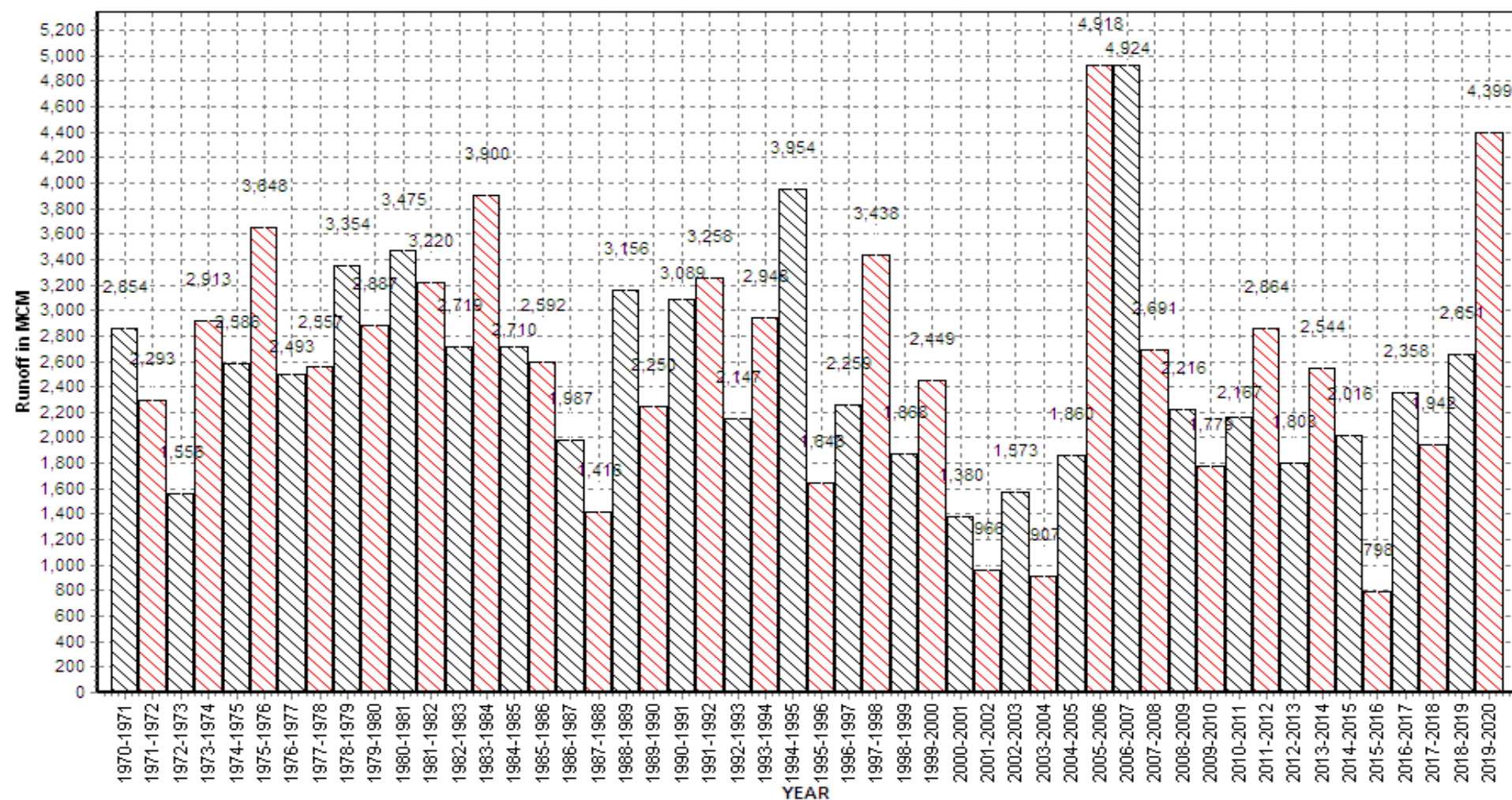
Annual Runoff Values for the period: 1970 - 2020

Station Name : Sadalga (Seasonal) (AKV00D3)

Local River : Dudhganga

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

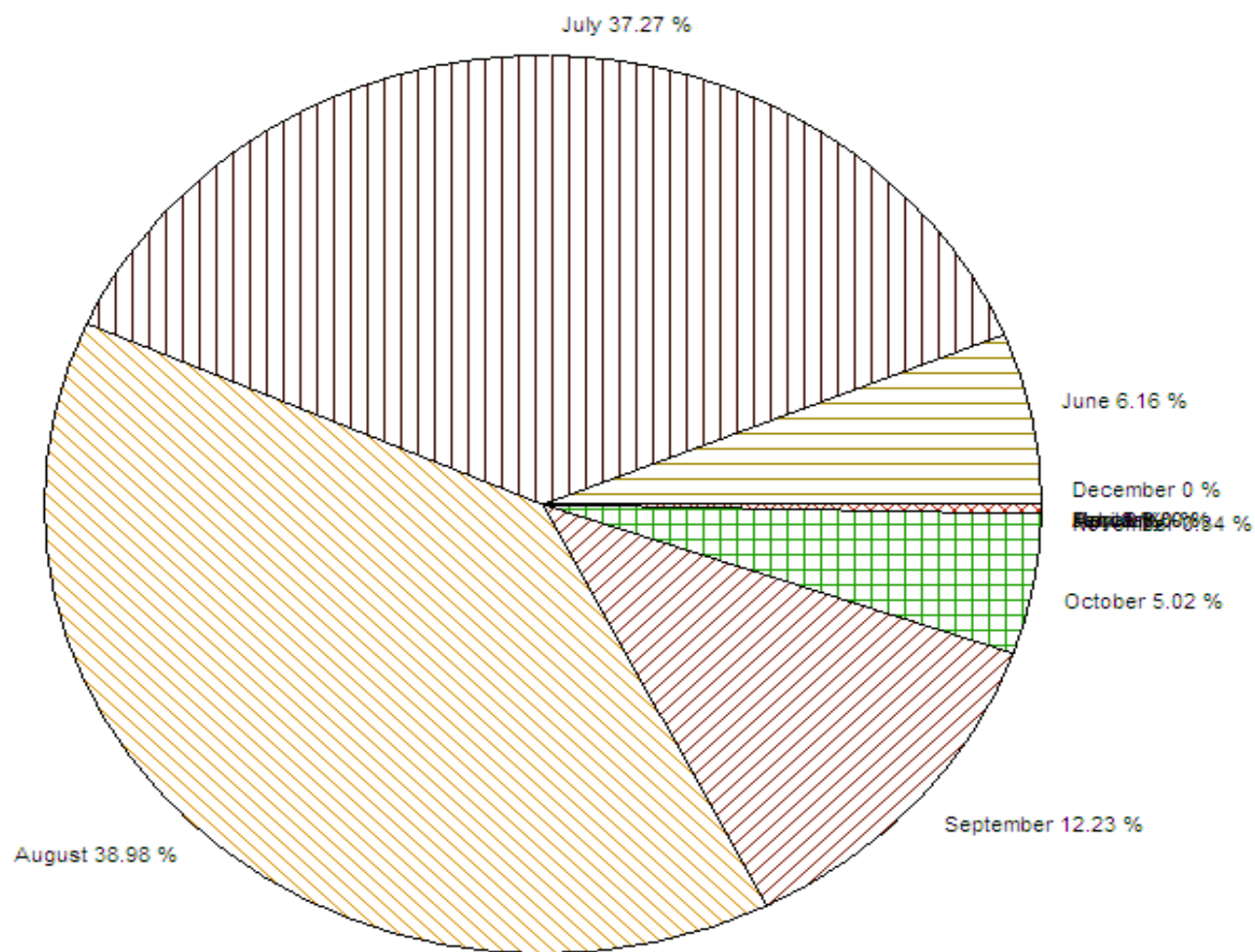
Monthly Average Runoff based on period : 1970-2019

Station Name : Sadalga (Seasonal) (AKV00D3)

Local River : Dudhganga

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



June	6.16 %
July	37.27 %
August	38.98 %
September	12.23 %
October	5.02 %
November	0.34 %
December	0 %
January	0 %
February	0 %
March	0 %
April	0 %
May	0 %

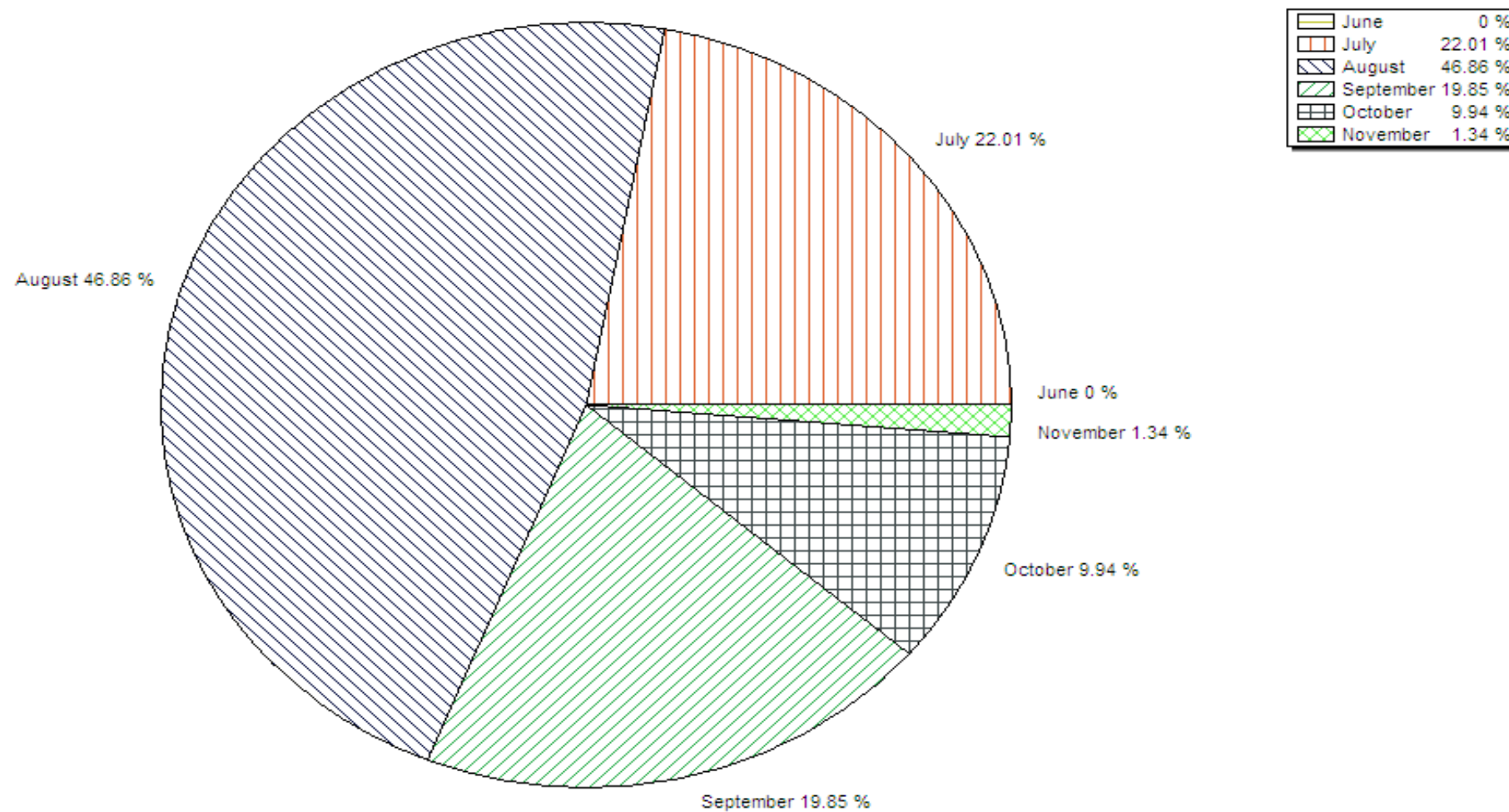
Monthly Runoff for the Year : 2019-2020

Station Name : Sadalga (Seasonal) (AKV00D3)

Local River : Dudhganga

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



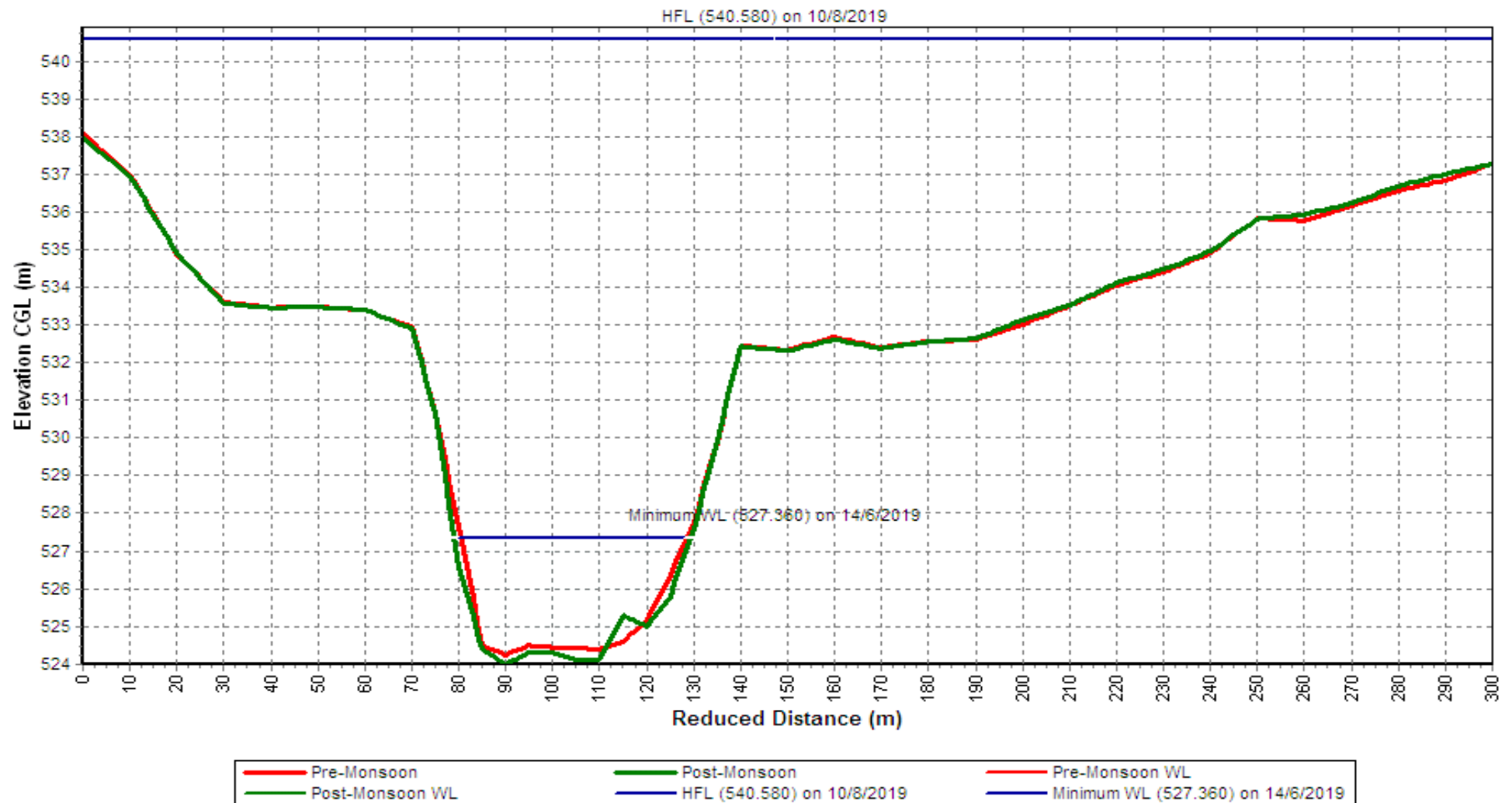
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Sadalga (Seasonal) (AKV00D3)

Local River : Dudhganga

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



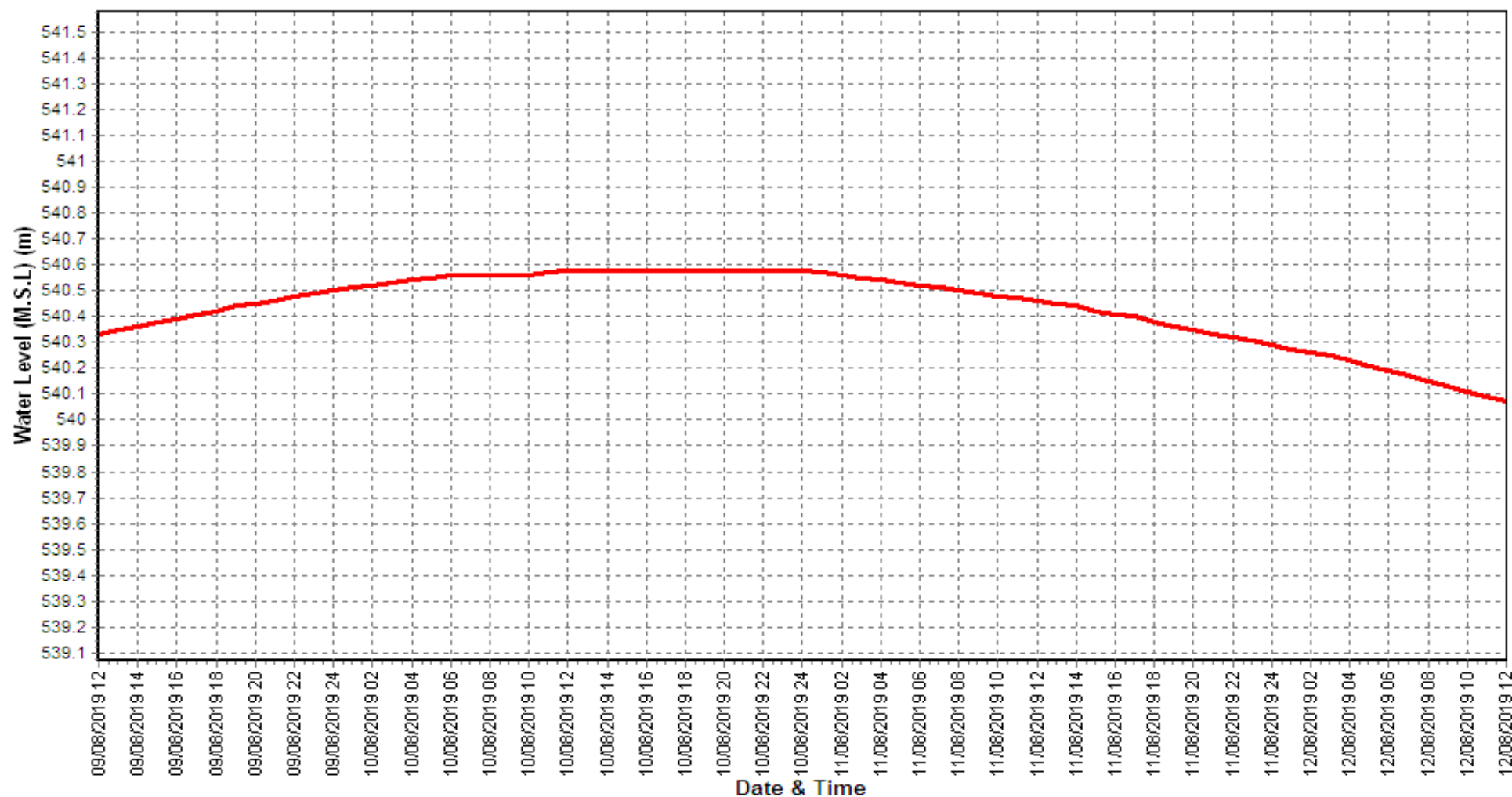
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Sadalga (Seasonal) (AKV00D3)

Local River : Dudhganga

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



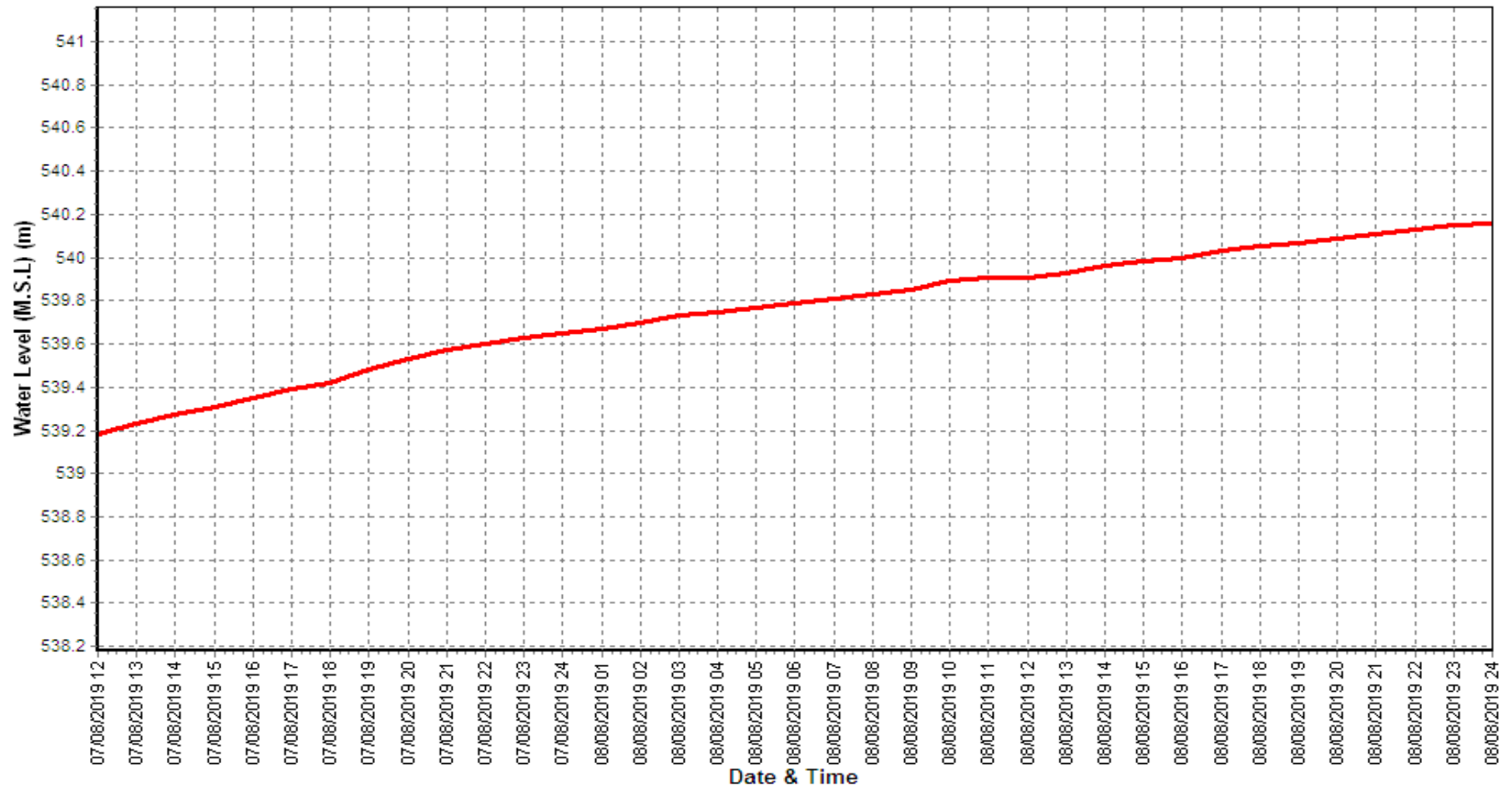
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Sadalga (Seasonal) (AKV00D3)

Local River : Dudhganga

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



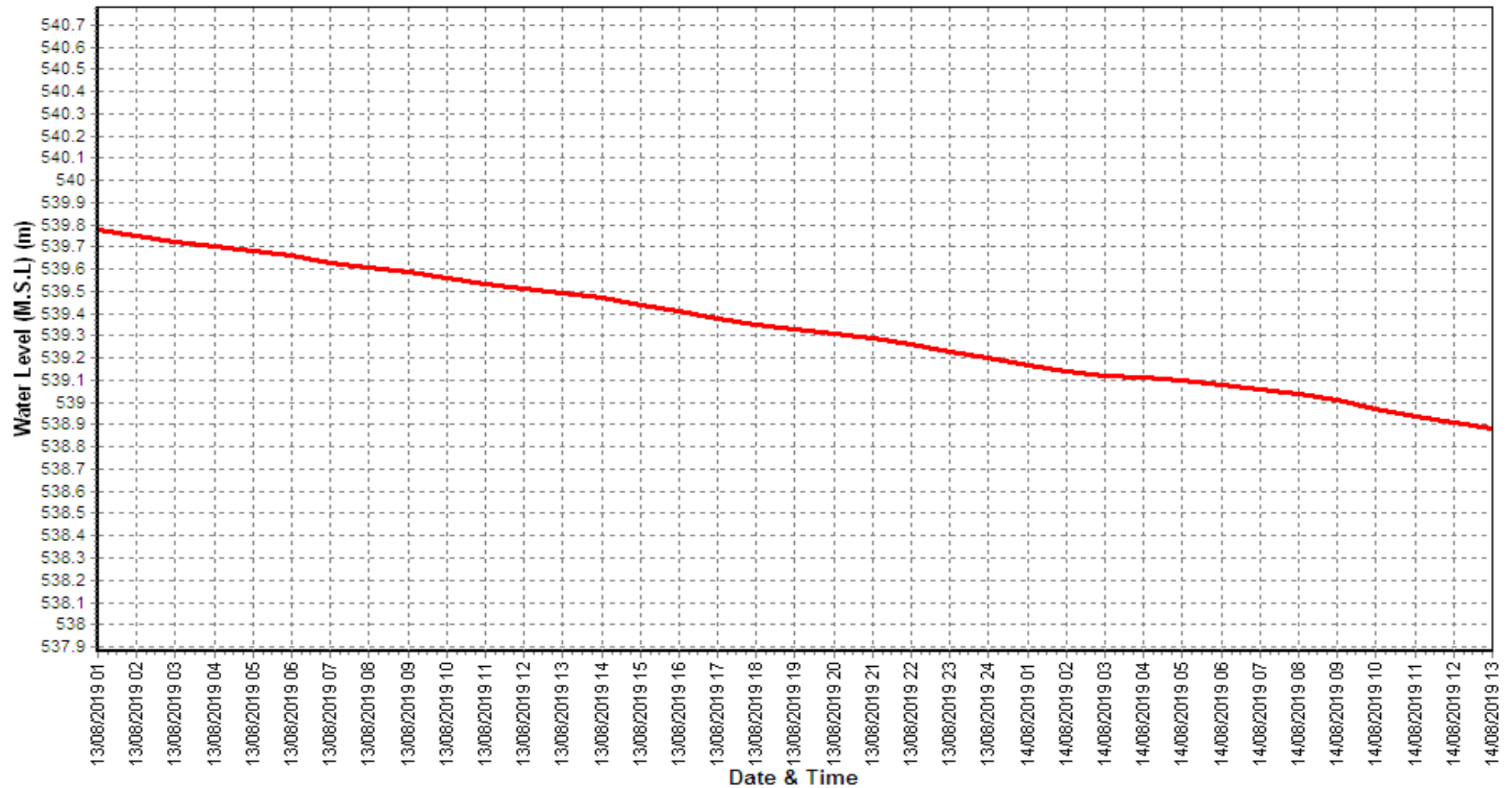
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Sadalga (Seasonal) (AKV00D3)

Local River : Dudhganga

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



HISTORY SHEET

Water Year : 2019-2020

Site : Terwad (Seasonal)

Code : AKW00A7

State : Maharashtra

District : Kolhapur

Basin : Krishna

Independent River : Krishna

Tributary : Panchganga

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Panchganga

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD,Miraj

Drainage Area : 2425 Sq. Km.

Bank : Right

Latitude : 16°40'31"

Longitude : 74°34'30"

Zero of Gauge (m) : 520 (m.s.l)
520 (m.s.l)01/01/1979
06/10/1979 - 31/12/2010

Opening Date

Closing Date

Gauge : 01/03/1979

Discharge : 22/08/1979

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1980-1981	1918	536.925	07/08/1980	0.000	524.800	25/01/1981
1981-1982	1790	536.500	11/07/1981	0.000	524.800	25/01/1982
1982-1983	1431	535.135	01/08/1982	0.000	523.875	12/01/1983
1983-1984	1545	536.875	18/08/1983	0.000	524.525	25/01/1984
1984-1985	1795	535.995	21/07/1984	0.000	524.725	15/11/1984
1985-1986	1570	535.910	04/08/1985	0.000	524.310	25/01/1986
1986-1987	2050	536.450	13/08/1986	0.000	523.410	25/01/1987
1987-1988	1392	534.725	10/07/1987	0.000	522.510	26/01/1988
1988-1989	2080	537.370	22/07/1988	0.000	523.725	04/02/1989
1989-1990	2205	538.545	27/07/1989	0.000	522.145	25/01/1990
1990-1991	2250	537.760	20/08/1990	0.000	525.680	25/01/1991
1991-1992	2553	538.230	31/07/1991	0.000	525.810	26/01/1992
1992-1993	1306	535.136	16/08/1992	0.000	523.810	25/01/1993
1993-1994	1447	535.748	14/07/1993	0.000	525.120	25/01/1994
1994-1995	2680	538.600	17/07/1994	0.000	526.020	25/01/1995
1995-1996	1170	534.740	22/07/1995	0.000	523.310	26/01/1996
1996-1997	1900	536.180	30/07/1996	0.000	523.440	25/01/1997
1997-1998	3590	538.395	10/08/1997	0.000	524.880	25/01/1998
1998-1999	1051	534.330	11/07/1998	0.000	524.340	25/01/1999
1999-2000	1540	536.700	24/07/1999	0.000	524.290	26/01/2000
2000-2001	890.0	534.780	16/07/2000	0.000	524.100	25/01/2001

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2001-2002	1150	534.360	11/07/2001	0.000	524.600	25/01/2002
2002-2003	1443	534.850	14/08/2002	0.000	524.400	25/01/2003
2003-2004	725.3	532.640	23/06/2003	0.000	524.600	26/01/2004
2004-2005	1832	536.500	08/08/2004	0.000	524.600	25/01/2005
2005-2006	3340	540.390	06/08/2005	0.000	524.080	25/01/2006
2006-2007	2797	539.215	13/08/2006	0.000	525.220	30/10/2006
2007-2008	1821	537.470	03/07/2007	0.000	525.050	12/11/2007
2008-2009	1952	537.390	15/08/2008	0.000	524.550	31/10/2008
2009-2010	1345	535.100	19/07/2009	0.000	526.420	22/11/2009
2010-2011	1464	535.860	30/07/2010	0.000	525.440	01/06/2010
2011-2012	1721	537.060	06/09/2011	0.000	524.420	20/11/2011
2012-2013	1011	533.420	02/08/2012	0.000	524.350	20/11/2012
2013-2014	1854	536.920	29/07/2013	0.000	525.060	03/11/2013
2014-2015	1534	535.020	25/07/2014	0.000	524.500	13/11/2014
2015-2016	1286	533.560	26/06/2015	0.000	525.880	10/06/2015
2016-2017	2267	536.950	15/07/2016	0.000	525.530	23/11/2016
2017-2018	1542	534.615	22/07/2017	0.000	525.210	24/06/2017
2018-2019	2072	536.430	20/07/2018	0.000	526.380	23/10/2018

Annual Runoff of Panchganga at Terwad

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1979-1980	529	0	529	19	0	19
2	1980-1981	5290	0	5290	187	0	187
3	1981-1982	4517	0	4517	160	0	160
4	1982-1983	3762	13	3774	133	0	133
5	1983-1984	4812	4	4817	170	0	170
6	1984-1985	4100	7	4108	145	0	145
7	1985-1986	3679	0	3679	130	0	130
8	1986-1987	3412	0	3412	121	0	121
9	1987-1988	2818	0	2818	100	0	100
10	1988-1989	5135	0	5135	181	0	181
11	1989-1990	3971	0	3971	140	0	140
12	1990-1991	5413	0	5413	191	0	191
13	1991-1992	5771	0	5771	204	0	204
14	1992-1993	3207	0	3207	113	0	113
15	1993-1994	4146	0	4146	147	0	147
16	1994-1995	7200	0	7200	254	0	254
17	1995-1996	2263	0	2263	80	0	80
18	1996-1997	3144	0	3144	111	0	111
19	1997-1998	5883	0	5883	208	0	208
20	1998-1999	2916	0	2916	103	0	103
21	1999-2000	3588	0	3588	127	0	127
22	2000-2001	2666	0	2666	94	0	94
23	2001-2002	3179	0	3179	112	0	112
24	2002-2003	3155	0	3155	111	0	111
25	2003-2004	2535	0	2535	90	0	90
26	2004-2005	4302	0	4302	152	0	152
27	2005-2006	8176	0	8176	289	0	289

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
28	2006-2007	8038	Site downgraded as Seasonal Site from 2006-07	8038	284	Site downgraded as Seasonal Site from 2006-07	284
29	2007-2008	5496		5496	194		194
30	2008-2009	4067		4067	144		144
31	2009-2010	3163		3163	112		112
32	2010-2011	3435		3435	121		121
33	2011-2012	4797		4797	170		170
34	2012-2013	3931		3931	139		139
35	2013-2014	5079		5079	179		179
36	2014-2015	4264		4264	151		151
37	2015-2016	1748		1748	62		62
38	2016-2017	4984		4984	176		176
39	2017-2018	4113		4113	145		145
40	2018-2019	5703		5703	202		202
41	2019-2020	9286		9286	328		328
Average		4333	1	4334	153	0	153
75% Dependable flow (MCM)				3171			
90 % Dependable flow (MCM)				2561			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Terwad (Seasonal) (AKW00A7)

Division : Upper Krishna Divn, Pune

Local River : Panchganga

Sub-Division : Upper Krishna SD, Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	525.100	0.000	531.350	545.4	536.350	1840	529.400	309.3 *	527.400	138.5	526.610	101.6
2	525.330	0.000	531.190	511.3	536.710	2030 *	529.600	337.0	527.020	108.8	526.510	84.83
3	524.930	0.000	531.130	529.2	537.140	2200 *	530.510	435.9 #	526.720	92.98	526.380	72.59 *
4	524.630	0.000	529.920	385.1	537.530	2361 *	530.970	472.0	526.590	76.34	526.260	74.24
5	524.240	0.000	530.175	395.5 #	538.160	2636 *	532.060	719.4	526.495	76.84	526.210	70.11
6	523.890	0.000	531.050	537.9	538.890	2978 *	533.570	1031	526.380	72.59 *	526.110	64.93
7	523.830	0.000	532.010	673.2 *	539.900	3492 *	534.520	1295	526.660	78.43	526.050	59.21
8	523.830	0.000	533.260	926.1	541.130	4187 *	535.060	1453 *	526.350	67.79	525.930	50.05
9	523.540	0.000	533.780	1001 #	541.930	4679 *	535.500	1616	526.240	65.36	525.850	48.17
10	523.000	0.000	533.870	1137	542.100	4788 *	535.960	1735	526.550	77.14	525.630	38.78 *
11	522.800	0.000	533.880	1140	541.930	4679 *	535.940	1724	528.090	171.2	525.390	24.90
12	522.770	0.000	534.120	1186	541.580	4459 *	535.220	1502	527.770	143.2	525.610	35.03
13	523.600	0.000	534.390	1281	541.060	4145 *	533.580	1029	527.130	116.5 *	525.560	31.95
14	524.880	0.000	534.090	1166 *	540.400	3765 *	531.280	489.9	526.470	73.04	525.440	27.16
15	525.830	0.000	532.940	841.1	539.460	3262 *	530.570	443.3 *	526.245	65.12	525.390	0.000
16	525.980	0.000	531.795	611.9	538.440	2764 *	530.975	473.0	526.090	57.48	525.190	0.000
17	525.320	0.000	531.375	593.8	536.250	1772	530.555	441.4 #	525.930	49.68	525.000	0.000
18	525.060	0.000	530.700	490.7	534.350	1239 *	530.460	407.5	525.820	52.16	524.980	0.000
19	525.010	0.000	529.840	378.9	531.900	554.9	529.630	316.8	526.150	66.61	525.170	0.000
20	524.850	0.000	529.045	273.3 #	529.200	290.6	529.310	264.5 #	526.990	107.5 *	525.560	0.000
21	524.780	0.000	528.080	186.3 *	528.410	218.9	529.190	270.7	532.115	638.3	526.240	0.000
22	525.670	33.25	527.655	153.1 #	528.020	196.1	528.470	219.5 *	533.450	999.4	526.420	0.000
23	525.260	19.76 *	527.350	137.3	527.750	179.5	527.570	150.9	532.780	782.2	526.180	0.000
24	525.220	16.70	527.880	170.3 #	527.820	192.7	527.230	128.6	531.370	516.7	525.940	0.000
25	525.215	16.66	528.600	231.2 #	528.400	213.4 *	528.000	179.8 #	529.430	279.6	525.900	0.000
26	525.110	14.36	529.420	344.0	528.090	201.0	532.120	742.6	528.655	218.6	526.030	0.000
27	525.015	11.98	531.110	525.6	527.660	164.1	531.170	520.2	528.610	232.1 *	526.010	0.000
28	525.060	12.47	533.250	947.4 *	527.360	124.7	529.250	293.9 #	528.100	189.2	526.100	0.000
29	526.700	107.8	533.740	1072 #	527.000	109.6	528.050	183.9 *	527.690	160.0	526.100	0.000
30	529.350	250.0 *	533.780	1060	526.890	109.6	527.390	138.5	527.220	127.2	526.120	0.000
31			535.470	1600	528.670	265.5			526.820	107.3		
Ten-Daily Mean												
I Ten-Daily	524.232	0.000	531.774	664.1	538.984	3119	532.715	940.3	526.640	85.47	526.154	66.45
II Ten-Daily	524.610	0.000	532.217	796.3	537.457	2693	531.752	709.1	526.668	90.26	525.329	11.90
III Ten-Daily	525.738	48.30	530.576	584.2	527.825	179.5	528.844	282.9	529.658	386.4	526.104	0.000
Monthly												
Min.	522.770	0.000	527.350	137.3	526.890	109.6	527.230	128.6	525.820	49.68	524.980	0.000
Max.	529.350	250.0	535.470	1600	542.100	4788	535.960	1735	533.450	999.4	526.610	101.6
Mean	524.860	16.1	531.492	678.4	534.532	1939	531.104	644.1	527.720	193.8	525.862	26.12

Annual Runoff in MCM = 9308 Annual Runoff in mm = 3838

Peak Observed Discharge = 1840 cumecs on 01/08/2019 Corres. Water Level :536.35 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :525.1 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l.) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

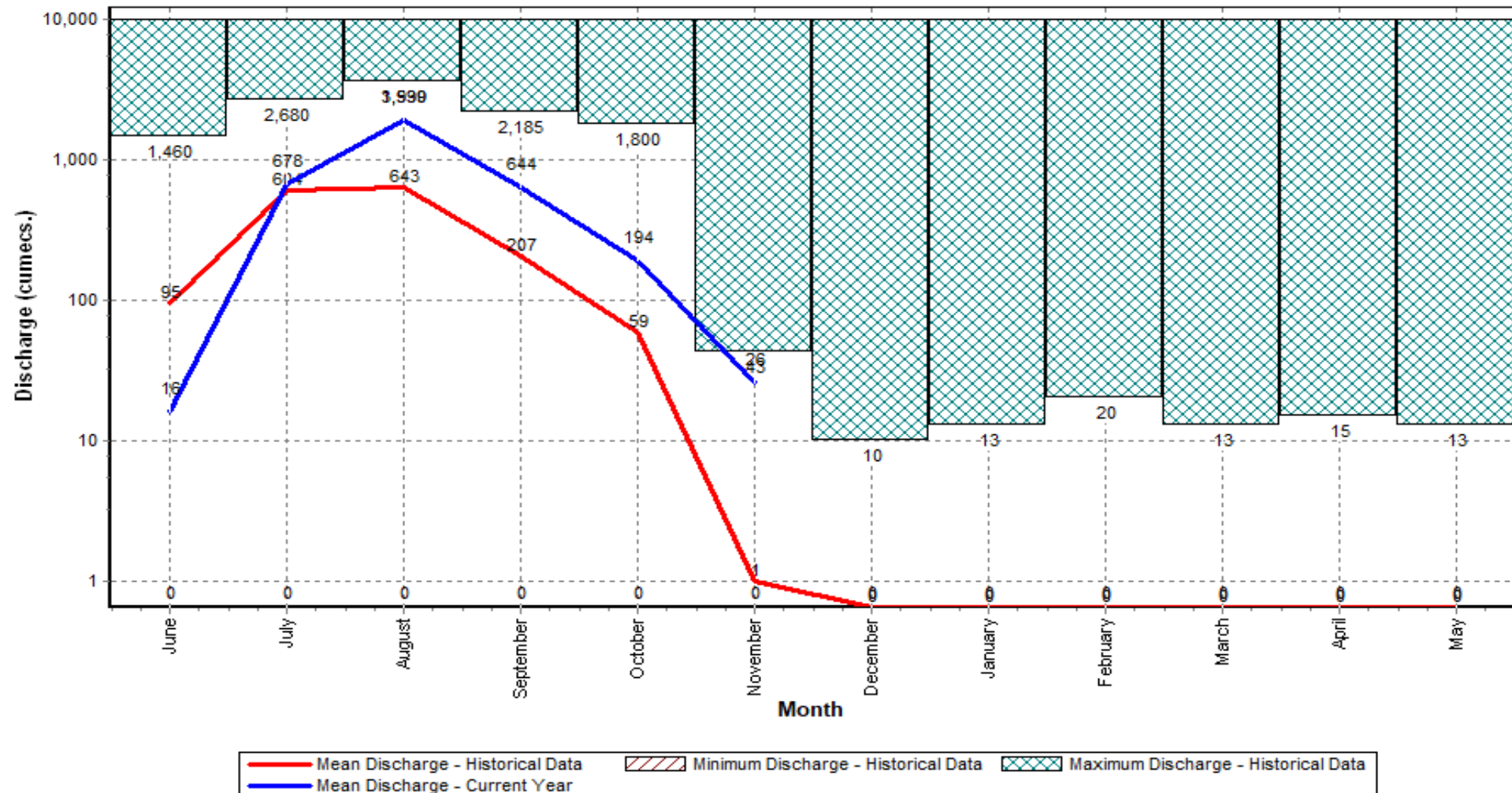
Station Name : Terwad (Seasonal) (AKW00A7)

Data considered : 1980-2020

Division : Upper Krishna Divn, Pune

Local River : Panchganga

Sub-Division : Upper Krishna SD,Miraj



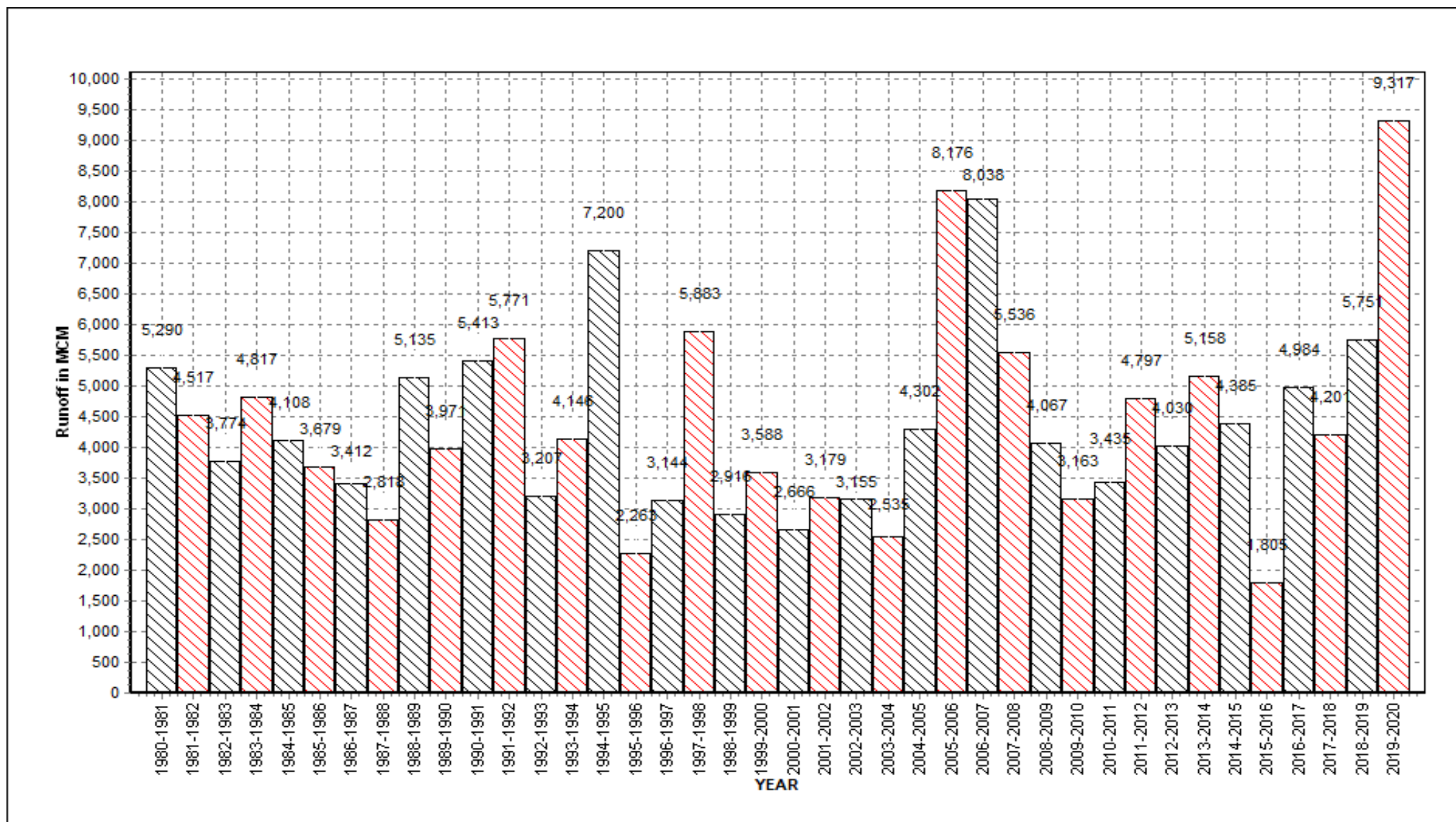
Annual Runoff Values for the period: 1980 - 2020

Station Name : Terwad (Seasonal) (AKW00A7)

Local River : Panchganga

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD,Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

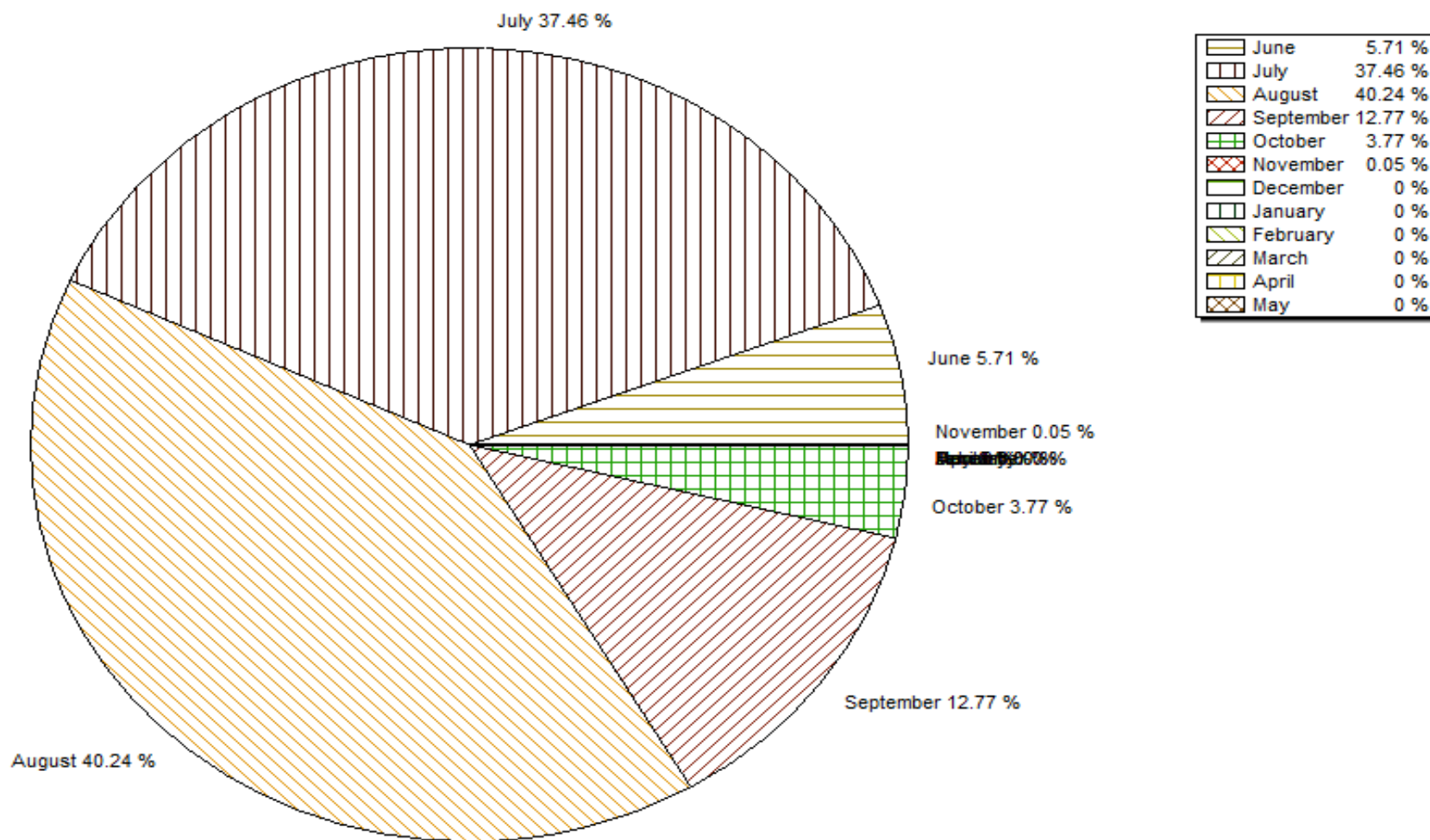
Monthly Average Runoff based on period : 1980-2019

Station Name : Terwad (Seasonal) (AKW00A7)

Local River : Panchganga

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD, Miraj



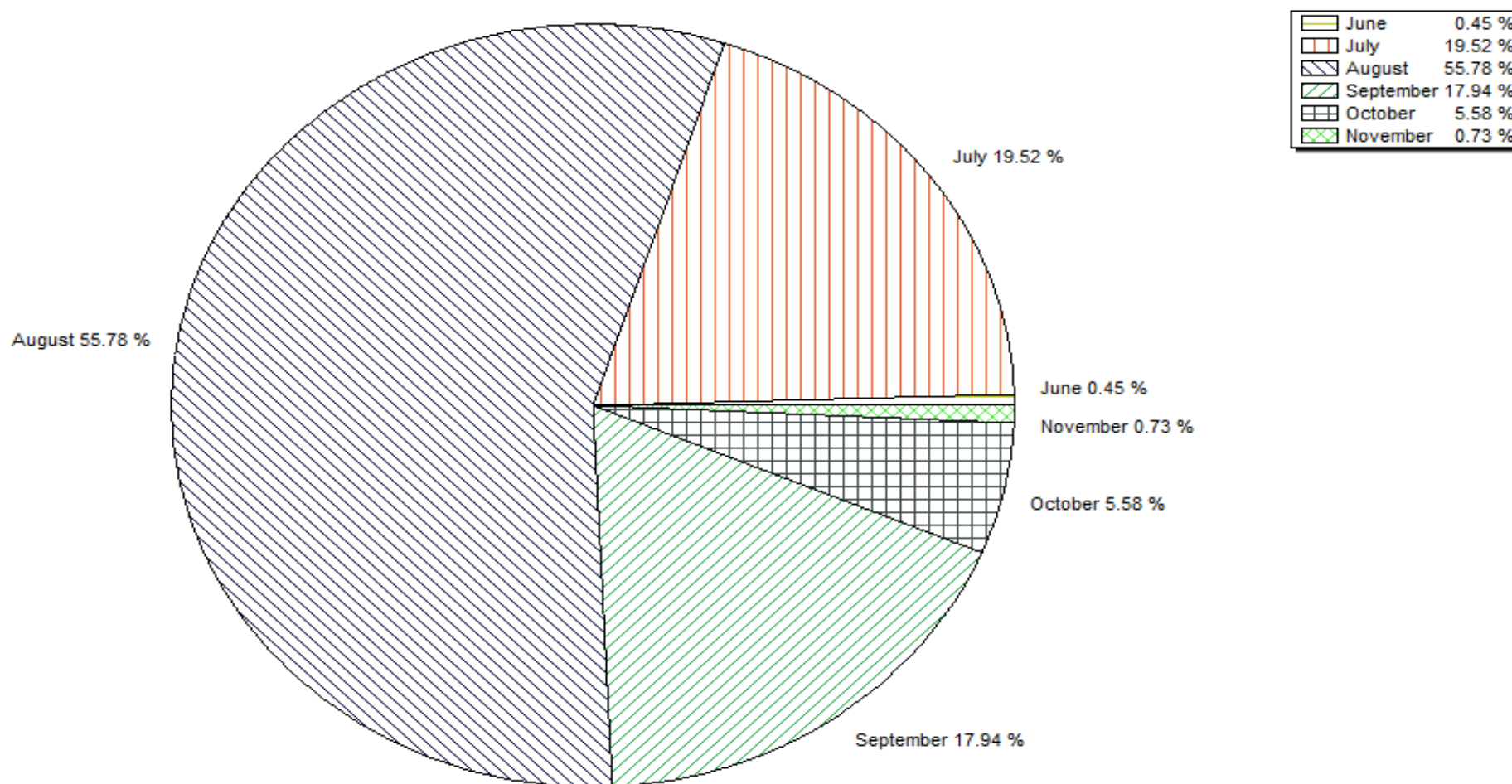
Monthly Runoff for the Year : 2019-2020

Station Name : Terwad (Seasonal) (AKW00A7)

Local River : Panchganga

Division : Upper Krishna Divn, Pune

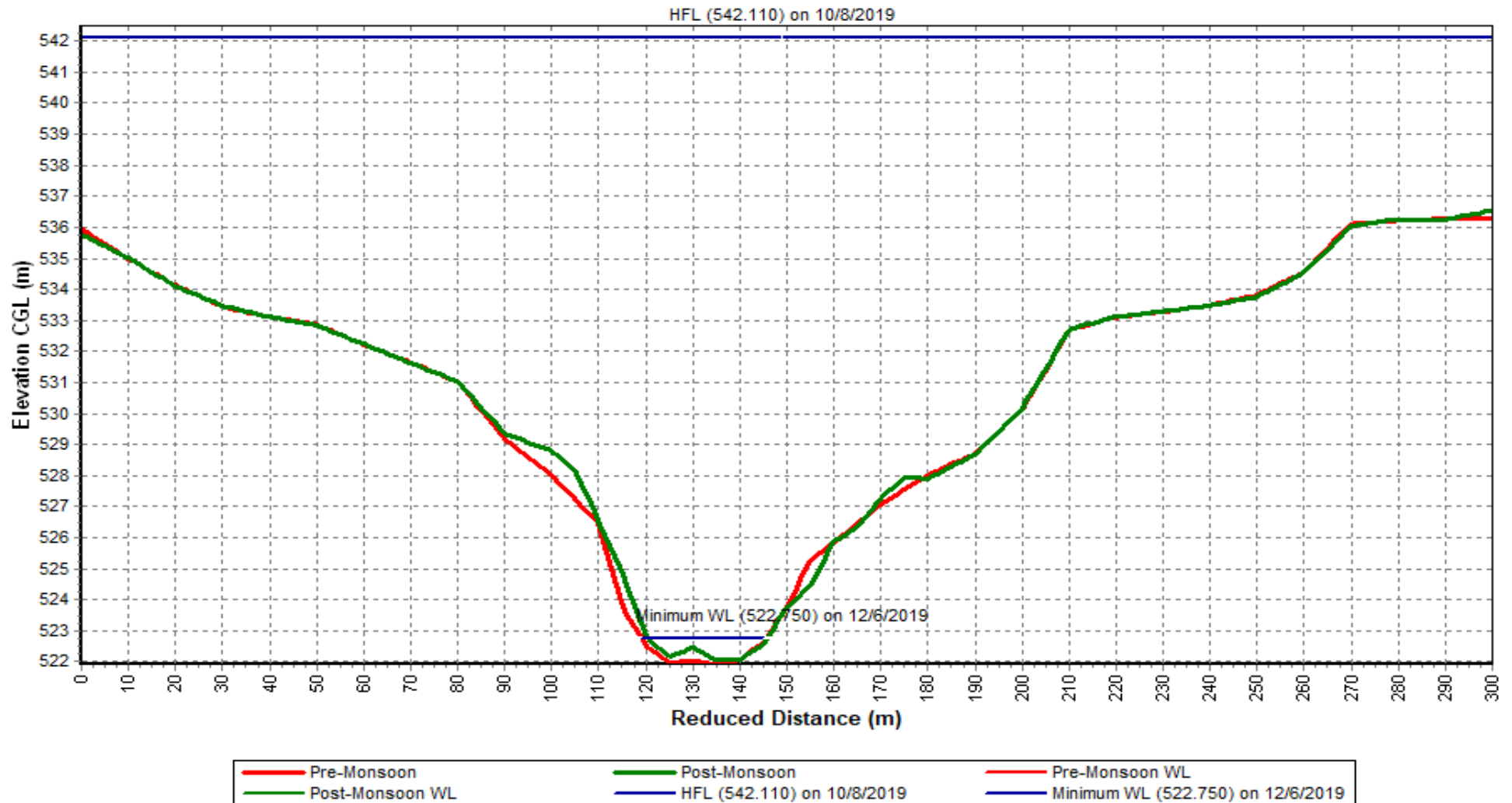
Sub-Division : Upper Krishna SD,Miraj



Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Terwad (Seasonal) (AKW00A7)
Local River : Panchganga

Division : Upper Krishna Divn, Pune
Sub-Division : Upper Krishna SD ,Miraj



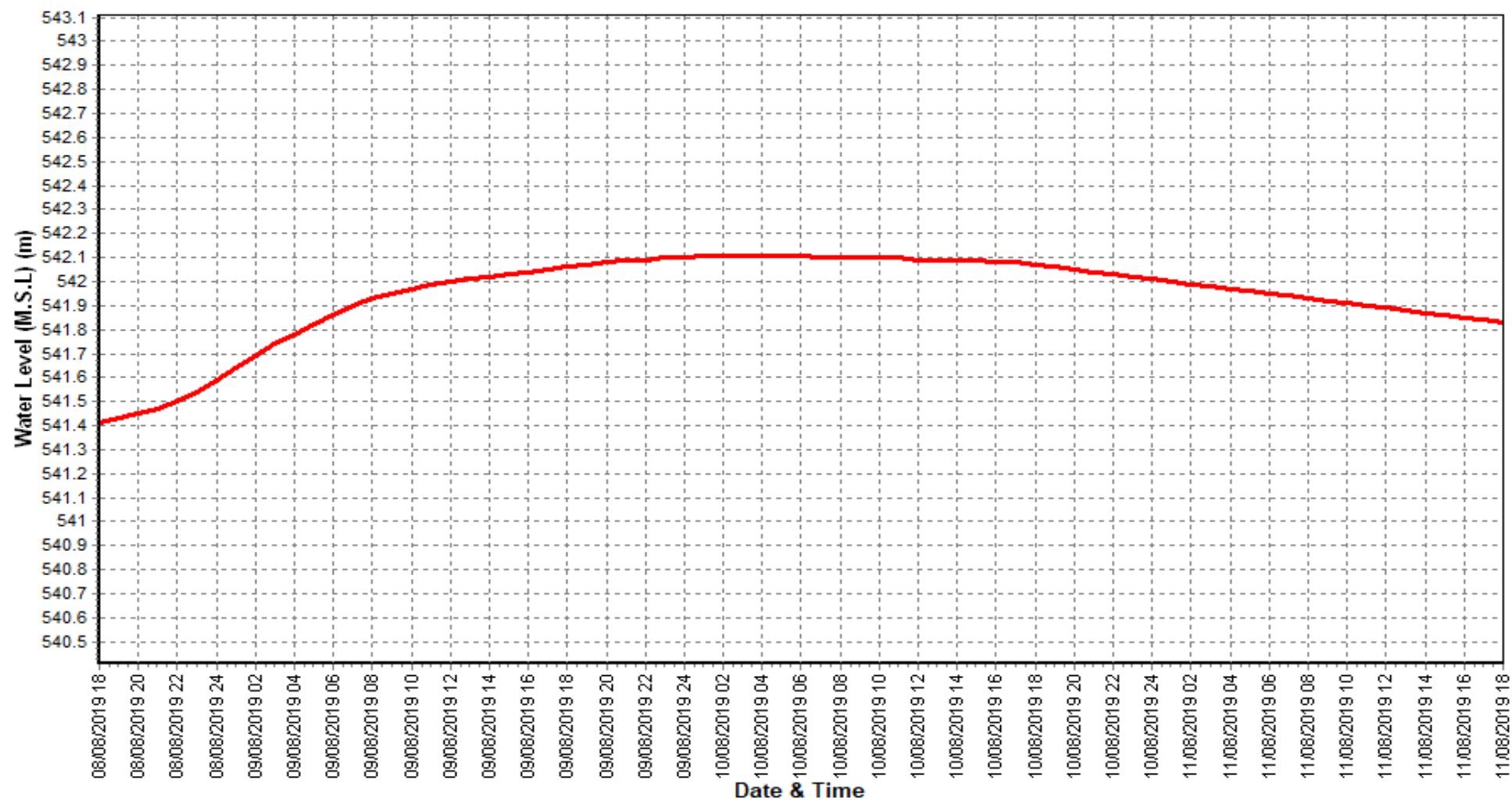
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Terwad (Seasonal) (AKW00A7)

Local River : Panchganga

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD,Miraj



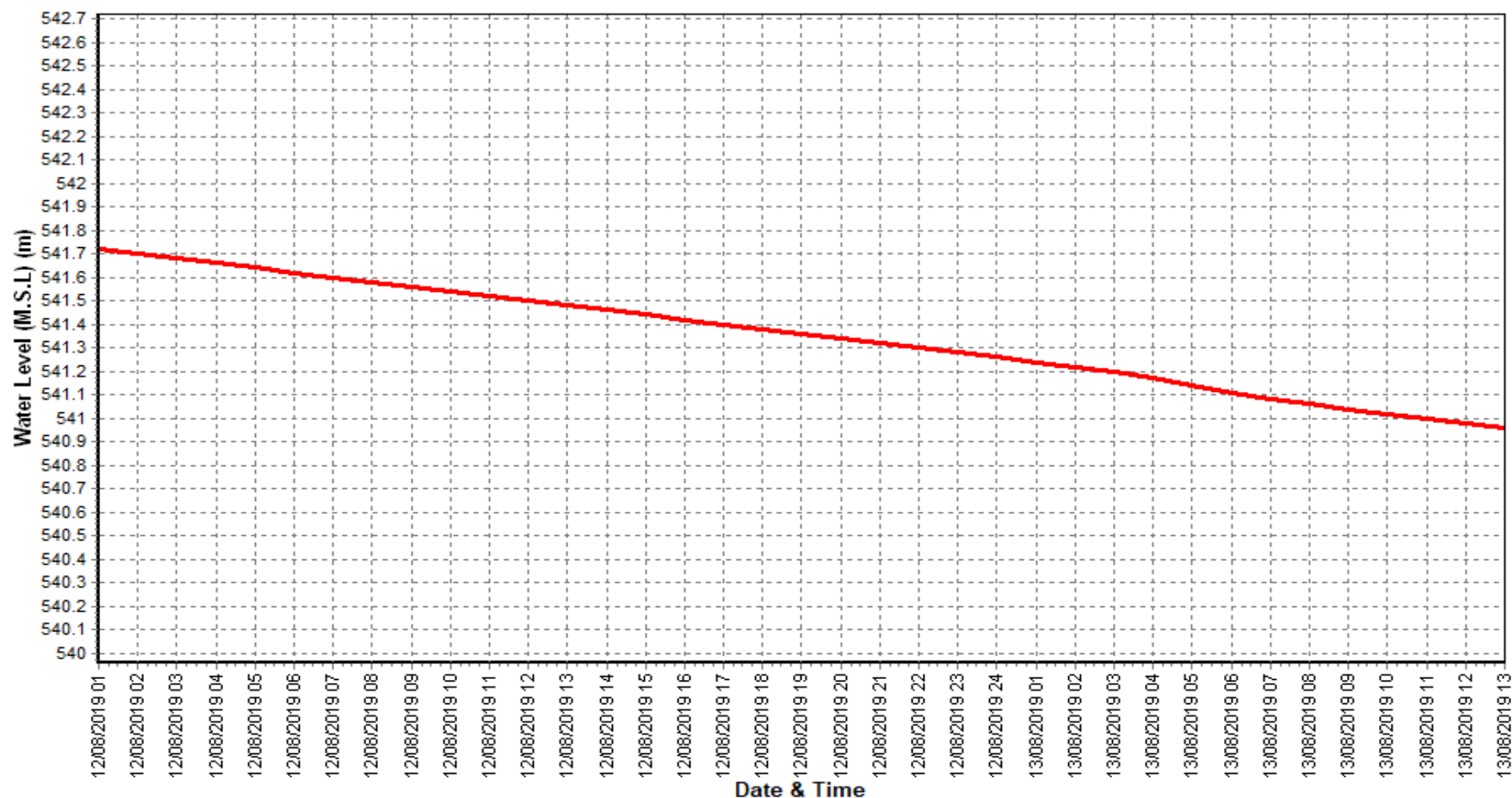
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Terwad (Seasonal) (AKW00A7)

Local River : Panchganga

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



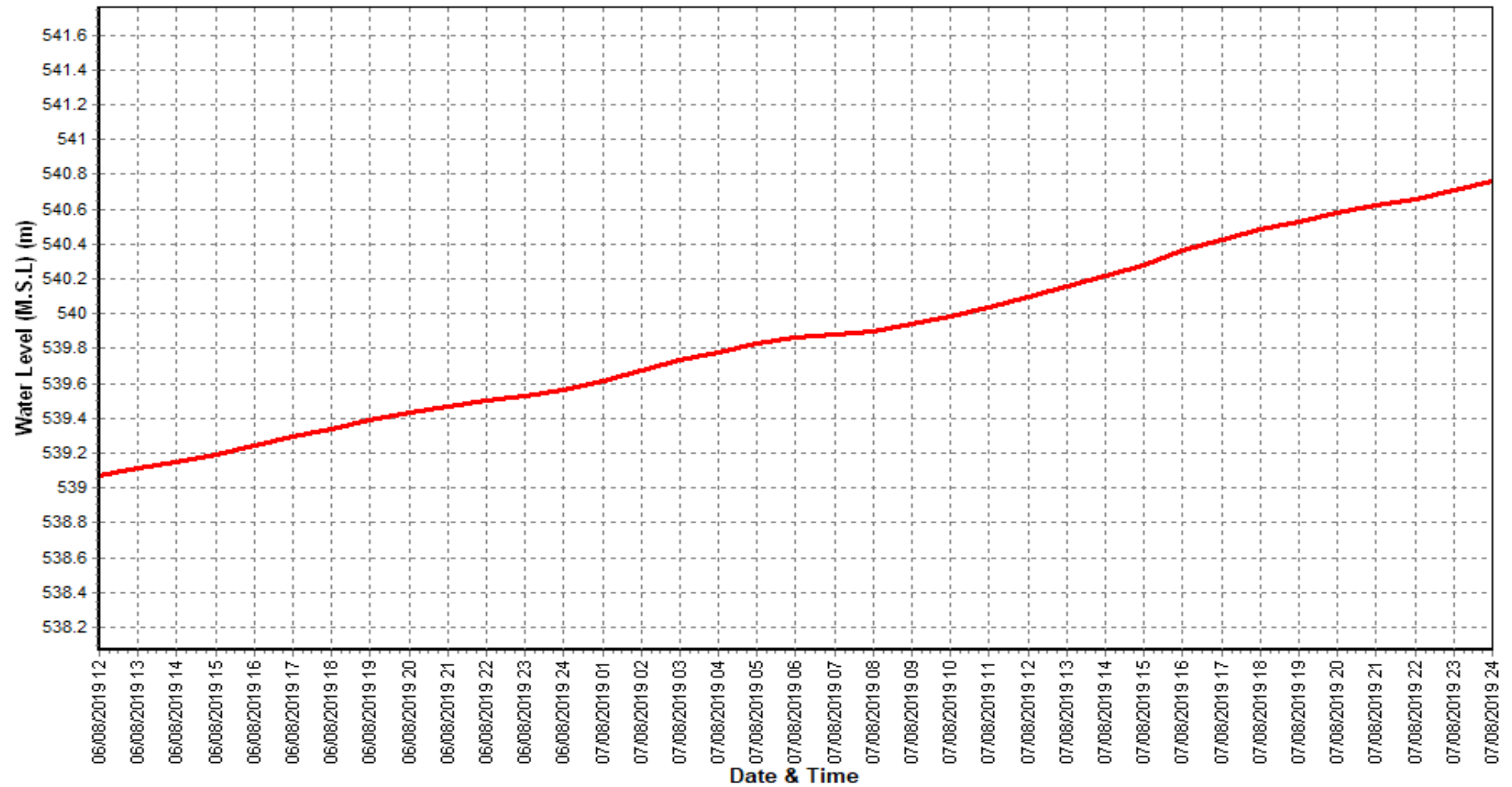
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Terwad (Seasonal) (AKW00A7)

Local River : Panchganga

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



HISTORY SHEET

Water Year : 2019-2020

Site : Kurundwad

Code : AK000V1

State : Maharashtra

District : Kolhapur

Basin : Krishna

Independent River : Krishna

Tributary : -

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj

Drainage Area : 15190 Sq. Km.

Bank : Right

Latitude : 16°41'01"

Longitude : 74°36'11"

Zero of Gauge (m) : 519.455 (m.s.l)

20/05/1972

Opening Date

Closing Date

Gauge : 21/05/1972

HFL During 2019-20 : 541.205 m

Corres. Discharge : 7741 (Estimated)

Discharge : 26/06/1972

Date & Time of

occurrence : 05:00 Hrs

Sediment : 06/08/2003

Water Quality : 01/07/2003

HFL Recorded so far in m : 541.205 dt 05-08-2005

Corresponding Discharge (cumecs) : 7741 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1972-1973	4239	535.390	09/07/1972	0.000	520.505	12/01/1973
1973-1974	5659	537.115	10/07/1973	0.000	521.745	06/02/1974
1974-1975	3436	534.220	07/07/1974	0.000	521.280	09/02/1975
1975-1976	5781	536.935	12/07/1975	0.000	521.505	11/02/1976
1976-1977	6854	537.090	04/08/1976	0.000	520.875	18/02/1977
1977-1978	4953	535.172	09/07/1977	0.000	520.515	15/03/1978
1978-1979	3584	534.200	19/08/1978	0.000	520.675	01/02/1979
1979-1980	6070	536.740	10/08/1979	0.000	522.240	16/02/1980
1980-1981	5175	535.951	08/07/1980	0.000	523.645	25/01/1981
1981-1982	5166	535.572	10/07/1981	0.000	522.775	25/01/1982
1982-1983	3438	533.616	15/08/1982	0.000	521.360	16/01/1983
1983-1984	5111	536.198	18/08/1983	0.000	522.135	26/01/1984
1984-1985	4427	535.270	21/07/1984	0.000	522.580	23/01/1985
1985-1986	4414	535.115	04/08/1985	0.000	524.445	25/01/1986
1986-1987	4587	535.495	14/08/1986	0.000	524.545	25/01/1987
1987-1988	3290	533.593	10/07/1987	0.000	522.525	26/01/1988
1988-1989	4870	536.415	05/08/1988	0.000	524.705	25/01/1989

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1989-1990	6000	537.500	27/07/1989	0.000	523.585	25/01/1990
1990-1991	5760	537.265	20/08/1990	0.000	525.785	25/01/1991
1991-1992	6322	537.363	31/07/1991	0.000	525.965	26/01/1992
1992-1993	3919	534.455	16/08/1992	0.000	525.215	25/01/1993
1993-1994	4051	534.775	05/08/1993	0.000	525.655	25/01/1994
1994-1995	5730	538.065	18/07/1994	0.000	525.185	25/01/1995
1995-1996	2796	533.025	21/07/1995	0.000	524.705	26/01/1996
1996-1997	5000	535.590	06/10/1996	0.000	523.715	25/01/1997
1997-1998	6800	537.255	28/08/1997	0.000	524.935	25/01/1998
1998-1999	3000	533.165	10/07/1998	0.000	524.545	25/01/1999
1999-2000	3725	535.685	24/07/1999	0.000	522.955	26/01/2000
2000-2001	2853	532.990	15/07/2000	0.000	524.005	25/01/2001
2001-2002	2594	532.315	11/07/2001	0.000	523.360	25/01/2002
2002-2003	3014	533.128	14/08/2002	0.000	522.970	25/01/2003
2003-2004	2275	530.805	29/07/2003	0.000	524.905	26/01/2004
2004-2005	4650	535.665	15/08/2004	0.000	523.685	25/01/2005
2005-2006	10092	539.750	06/08/2005	0.000	523.005	25/01/2006
2006-2007	8819	538.720	13/08/2006	0.000	524.515	25/01/2007
2007-2008	5673	536.765	03/07/2007	0.000	523.085	25/01/2008
2008-2009	5743	536.395	16/08/2008	0.000	523.785	25/01/2009
2009-2010	3782	533.165	19/07/2009	0.000	524.615	25/01/2010
2010-2011	3847	534.395	30/07/2010	0.000	524.525	25/01/2011
2011-2012	4534	536.425	06/09/2011	0.000	522.475	23/02/2012
2012-2013	2681	531.110	07/09/2012	0.000	523.320	20/04/2013
2013-2014	5466	535.965	29/07/2013	0.000	524.305	24/11/2013
2014-2015	4197	533.870	02/08/2014	0.000	524.705	11/01/2015
2015-2016	2522	530.790	26/06/2015	0.000	523.225	18/07/2015
2016-2017	5411	535.105	13/07/2016	0.000	523.175	09/04/2017
2017-2018	3277	532.205	23/07/2017	0.000	524.075	22/05/2018
2018-2019	4254	534.635	20/07/2018	0.000	522.835	24/01/2019

Annual Runoff of Krishna at Kurundwad

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1972-1973	5615	19	5634	198	1	199
2	1973-1974	12587	117	12704	445	4	449
3	1974-1975	9587	30	9616	339	1	340
4	1975-1976	15788	70	15858	558	2	560
5	1976-1977	15622	49	15671	552	2	554
6	1977-1978	13005	244	13248	460	9	468
7	1978-1979	14256	9	14264	504	0	504
8	1979-1980	12693	72	12765	449	3	451
9	1980-1981	14371	0	14371	508	0	508
10	1981-1982	12709	0	12709	449	0	449
11	1982-1983	9301	23	9324	329	1	329
12	1983-1984	11962	0	11962	423	0	423
13	1984-1985	8994	1	8996	318	0	318
14	1985-1986	8372	0	8372	296	0	296
15	1986-1987	7682	0	7682	271	0	271
16	1987-1988	5253	0	5253	186	0	186
17	1988-1989	11698	0	11698	413	0	413
18	1989-1990	7825	0	7825	277	0	277
19	1990-1991	14474	0	14474	511	0	511
20	1991-1992	15352	0	15352	542	0	542
21	1992-1993	8965	0	8965	317	0	317
22	1993-1994	12531	0	12531	443	0	443
23	1994-1995	18785	0	18785	664	0	664
24	1995-1996	5919	0	5919	209	0	209
25	1996-1997	8605	0	8605	304	0	304
26	1997-1998	15382	0	15382	544	0	544
27	1998-1999	8273	0	8273	292	0	292
28	1999-2000	10622	0	10622	375	0	375
29	2000-2001	5348	0	5348	189	0	189
30	2001-2002	6034	0	6034	213	0	213
31	2002-2003	5886	0	5886	208	0	208
32	2003-2004	4706	0	4706	166	0	166
33	2004-2005	10797	0	10797	382	0	382
34	2005-2006	23671	0	23671	836	0	836
35	2006-2007	24683	0	24683	872	0	872
36	2007-2008	16759	0	16759	592	0	592
37	2008-2009	11813	0	11813	417	0	417
38	2009-2010	8346	0	8346	295	0	295
39	2010-2011	9826	0	9826	347	0	347
40	2011-2012	11582	0	11582	409	0	409
41	2012-2013	8574	0	8574	303	0	303
42	2013-2014	12350	0	12350	436	0	436
43	2014-2015	10147	0	10147	359	0	359
44	2015-2016	3440	0	3440	122	0	122
45	2016-2017	10937	0	10937	386	0	386
46	2017-2018	8640	0	8640	305	0	305
47	2018-2019	11876	0	11876	420	0	420
48	2019-2020	21699	0	21699	767	0	767
Average		11320	13	11333	400	0	400
75% Dependable flow (MCM)				8309			
90 % Dependable flow (MCM)				5348			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Kurundwad (AK000V1)

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	521.275	0.000	525.635	845.7	535.085	4079	526.275	849.8 *	525.525	651.3	525.595	700.2
2	521.175	0.000	525.910	818.4	535.415	4301	526.735	857.8	525.255	603.9	525.655	726.4
3	521.045	0.000	526.090	864.3	535.885	4456	528.005	1421	524.765	448.9	525.465	636.8 *
4	520.945	0.000	525.280	640.0	536.295	4949 *	527.805	1353	524.835	447.8	525.305	607.5
5	521.045	0.000	525.285	680.7	537.075	5846	528.870	1667	524.875	486.3	525.465	659.9
6	521.115	0.000	525.865	813.7	537.995	5865 *	532.265	3042	524.855	491.5 *	525.435	654.6
7	522.305	0.000	527.125	1096 *	539.155	6521 *	533.425	3481	525.355	556.5	525.675	742.3
8	522.555	0.000	530.195	2114	540.305	7197 *	533.825	3721 *	524.930	482.3	525.305	608.1
9	523.265	0.000	530.870	2406	540.955	7589 *	534.570	3906	524.565	360.2	525.135	569.4
10	523.595	0.000	530.820	2458	541.205	7742 *	534.995	4093	525.225	606.0	524.915	505.2 *
11	523.485	0.000	530.815	2432	541.045	7644 *	534.785	3997	526.255	873.7	524.895	0.000
12	523.255	0.000	531.185	2490	540.615	7383 *	533.735	3626	526.185	813.9	524.935	0.000
13	523.215	0.000	531.565	2582	540.025	7030 *	531.395	2737	525.885	744.4 *	524.885	0.000
14	523.165	0.000	530.615	2324 *	539.245	6573 *	528.875	1686	524.695	499.5	524.745	0.000
15	523.525	0.000	528.735	1588	538.155	5954 *	528.425	1515 *	524.760	386.0	524.595	0.000
16	523.465	0.000	527.760	1362	536.845	5660	528.865	1684	524.655	447.5	524.835	0.000
17	523.275	0.000	527.535	1311	535.535	4296	527.880	1379	524.655	337.2	524.785	0.000
18	523.145	0.000	526.435	950.2	533.315	3484 *	527.325	1135	524.150	240.9	524.565	0.000
19	522.945	0.000	525.595	776.1	529.785	2093	527.005	893.4	524.465	303.2	524.685	0.000
20	522.875	0.000	524.695	550.6	526.995	1091	527.355	1122	524.805	480.2 *	524.745	0.000
21	522.515	0.000	524.185	348.3 *	525.955	792.0	526.910	932.4	531.055	2528	524.745	0.000
22	522.535	0.000	525.005	581.9	525.655	683.4	526.525	919.9 *	532.855	3253	524.665	0.000
23	522.455	0.000	524.965	522.1	525.655	683.4	525.465	567.5	532.115	2995	524.585	0.000
24	522.305	0.000	524.725	530.4	525.415	635.7	525.035	467.2	530.475	2314	524.625	0.000
25	522.295	0.000	524.555	478.7	525.585	666.9 *	526.075	682.2	528.455	1459	524.765	0.000
26	522.475	0.000	525.040	609.3	525.655	683.4	531.045	2520	527.355	1005	524.665	0.000
27	522.515	0.000	525.815	850.7	525.465	652.3	530.025	2160	527.165	1108 *	524.385	0.000
28	522.475	0.000	530.705	2360 *	525.475	652.1	528.010	1453	525.685	680.6	523.925	0.000
29	522.955	0.000	531.395	2594	525.055	594.5	526.725	977.4 *	525.475	653.8	523.375	0.000
30	523.885	0.000	532.135	2914	524.835	500.2	525.655	603.9	525.505	655.3	523.105	0.000
31			534.255	3954	525.505	693.7			525.025	537.1		
Ten-Daily Mean												
I Ten-Daily	521.832	0.000	527.307	1274	537.937	5854	530.677	2439	525.018	513.5	525.395	641.0
II Ten-Daily	523.235	0.000	528.494	1637	536.156	5121	529.565	1978	525.051	512.7	524.767	0.000
III Ten-Daily	522.641	0.000	527.525	1431	525.478	658.0	527.147	1128	528.288	1563	524.284	0.000
Monthly												
Min.	520.945	0.000	524.185	348.3	524.835	500.2	525.035	467.2	524.150	240.9	523.105	0.000
Max.	523.885	0.000	534.255	3954	541.205	7742	534.995	4093	532.855	3253	525.675	742.3
Mean	522.569	0	527.767	1447	532.941	3774	529.130	1848	526.189	885.5	524.815	213.7

Annual Runoff in MCM = 21699 Annual Runoff in mm = 1428

Peak Observed Discharge = 5846 cumecs on 05/08/2019 Corres. Water Level :537.075 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :521.275 m

Stage-Discharge Data for the period 2019 - 2020

Station Name : Kurundwad (AK000V1)

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	523.045	0.000	525.055	0.000	524.365	0.000	524.455	0.000	Not observed Due to Lock-Down		524.685	0.000
2	523.155	0.000	525.165	0.000	524.385	0.000	524.485	0.000			524.845	0.000
3	523.255	0.000	525.275	0.000	524.415	0.000	524.485	0.000			525.105	0.000
4	522.505	0.000	525.355	0.000	524.505	0.000	524.475	0.000			525.225	0.000
5	523.545	0.000	525.375	0.000	524.515	0.000	524.475	0.000			525.305	0.000
6	523.645	0.000	525.265	0.000	524.545	0.000	524.455	0.000			525.475	0.000
7	523.905	0.000	525.185	0.000	524.575	0.000	524.495	0.000			525.495	0.000
8	524.005	0.000	525.075	0.000	524.575	0.000	524.515	0.000			525.435	0.000
9	524.125	0.000	524.965	0.000	524.565	0.000	524.455	0.000			525.365	0.000
10	524.265	0.000	524.935	0.000	524.565	0.000	524.435	0.000			525.345	0.000
11	524.375	0.000	524.945	0.000	524.555	0.000	524.375	0.000			525.315	0.000
12	524.515	0.000	524.935	0.000	524.575	0.000	524.325	0.000			525.345	0.000
13	524.605	0.000	524.965	0.000	524.565	0.000	524.285	0.000			525.305	0.000
14	524.805	0.000	524.975	0.000	524.565	0.000	524.225	0.000			525.485	0.000
15	524.775	0.000	525.025	0.000	524.575	0.000	524.205	0.000			525.465	0.000
16	524.835	0.000	524.995	0.000	524.555	0.000	524.135	0.000			525.665	0.000
17	524.905	0.000	525.105	0.000	524.555	0.000	524.085	0.000			525.815	0.000
18	524.965	0.000	525.165	0.000	524.565	0.000	524.025	0.000			526.225	0.000
19	525.035	0.000	525.185	0.000	524.555	0.000	523.955	0.000			525.835	0.000
20	525.085	0.000	525.205	0.000	524.555	0.000	523.885	0.000	524.025	0.000	525.815	0.000
21	525.125	0.000	525.175	0.000	524.565	0.000	523.825	0.000	524.845	0.000	525.845	0.000
22	525.165	0.000	524.905	0.000	524.555	0.000	523.775	0.000	525.315	0.000	525.675	0.000
23	525.175	0.000	524.685	0.000	524.565	0.000	523.765	0.000	525.415	0.000	525.555	0.000
24	525.195	0.000	524.615	0.000	524.555	0.000	523.705	0.000	525.335	0.000	525.575	0.000
25	525.225	0.000	524.505	0.000	524.535	0.000	523.625	0.000	525.195	0.000	525.475	0.000
26	525.265	0.000	524.455	0.000	524.525	0.000	Not observed Due to Lock-Down		524.975	0.000	525.485	0.000
27	525.295	0.000	524.445	0.000	524.515	0.000			524.955	0.000	525.455	0.000
28	525.105	0.000	524.415	0.000	524.505	0.000			524.935	0.000	525.585	0.000
29	525.075	0.000	524.385	0.000	524.495	0.000			524.855	0.000	525.515	0.000
30	525.045	0.000	524.355	0.000					524.785	0.000	525.405	0.000
31	525.015	0.000	524.375	0.000							525.315	0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	523.545	0.000	525.165	0.000	524.501	0.000	524.473	0.000			525.228	0.000
II Ten-Daily	524.790	0.000	525.050	0.000	524.562	0.000	524.150	0.000	524.025	0.000	525.627	0.000
III Ten-Daily	525.153	0.000	524.574	0.000	524.535	0.000	523.739	0.000	525.061	0.000	525.535	0.000
<u>Monthly</u>												
Min.	522.505	0.000	524.355	0.000	524.365	0.000	523.625	0.000	524.025	0.000	524.685	0.000
Max.	525.295	0.000	525.375	0.000	524.575	0.000	524.515	0.000	525.415	0.000	526.225	0.000
Mean	524.517	0	524.918	0	524.533	0	524.197	0	524.967	0	525.466	0

Peak Computed Discharge = 7742 cumecs on 10/08/2019

Corres. Water Level :541.205 m

Lowest Computed Discharge = 348.3 cumecs on 21/07/2019

Corres. Water Level :524.185 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

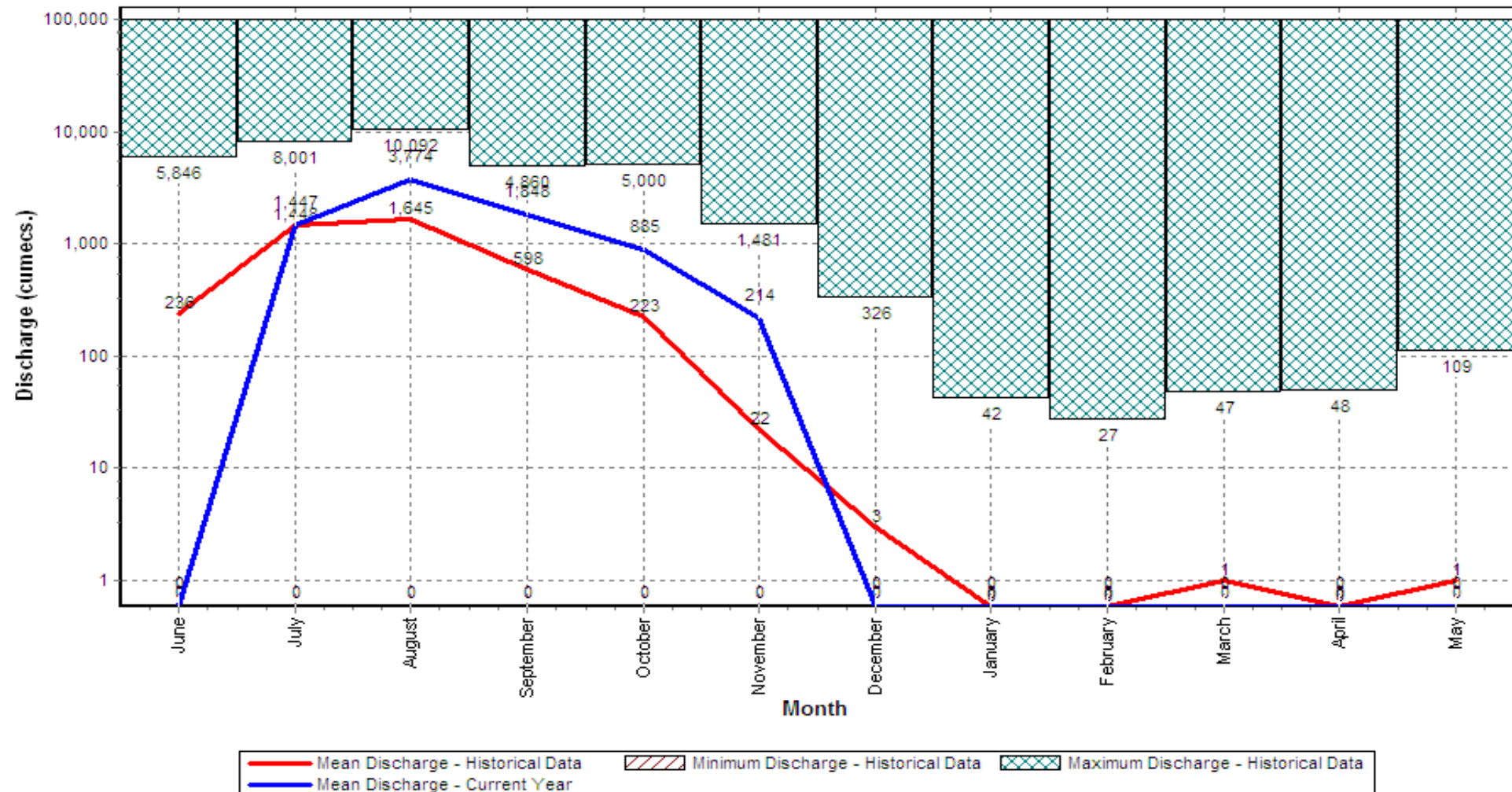
Station Name : Kurundwad (AK000V1)

Data considered : 1972-2020

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj



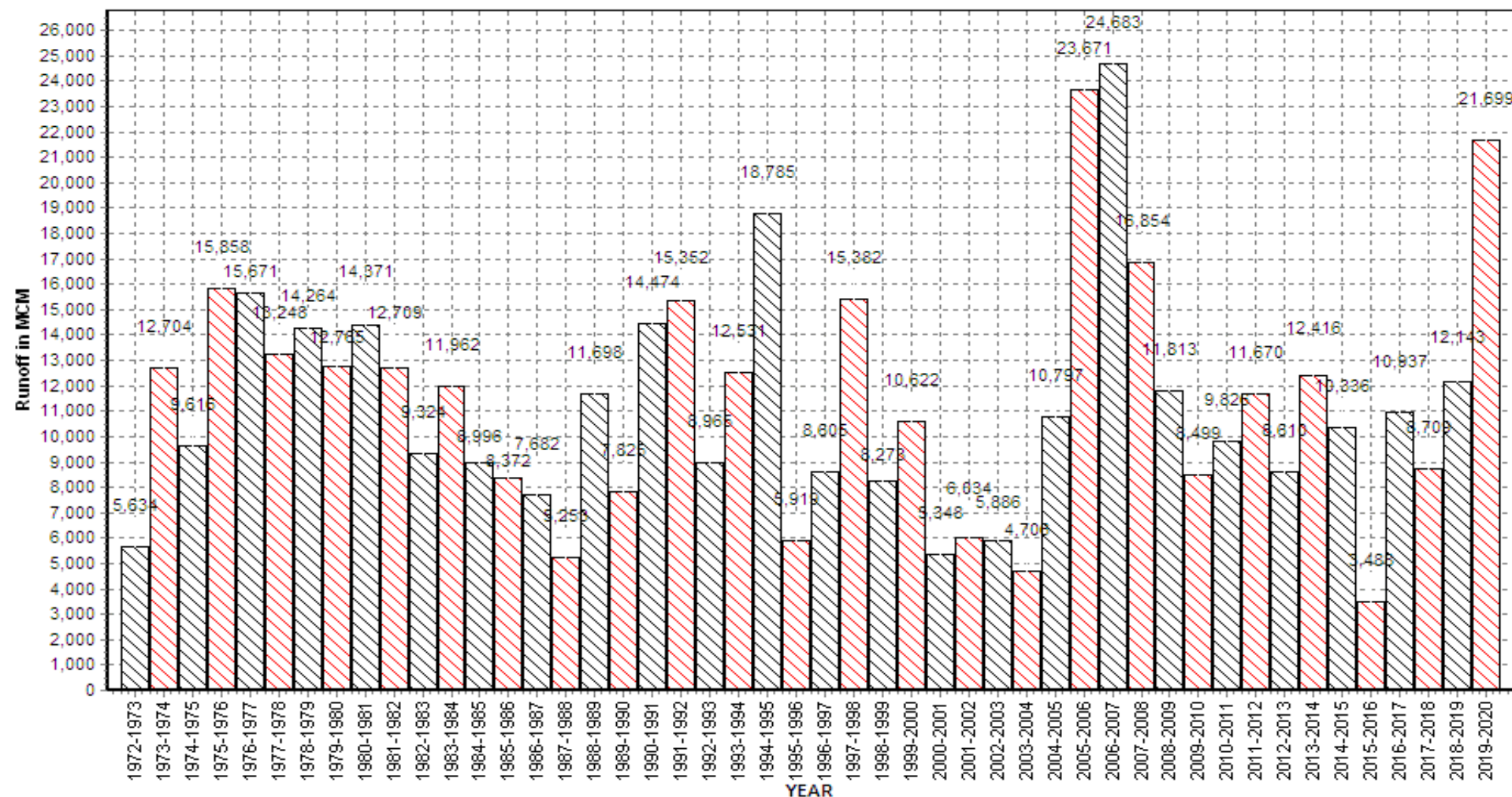
Annual Runoff Values for the period: 1972 - 2020

Station Name : Kurundwad (AK000V1)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

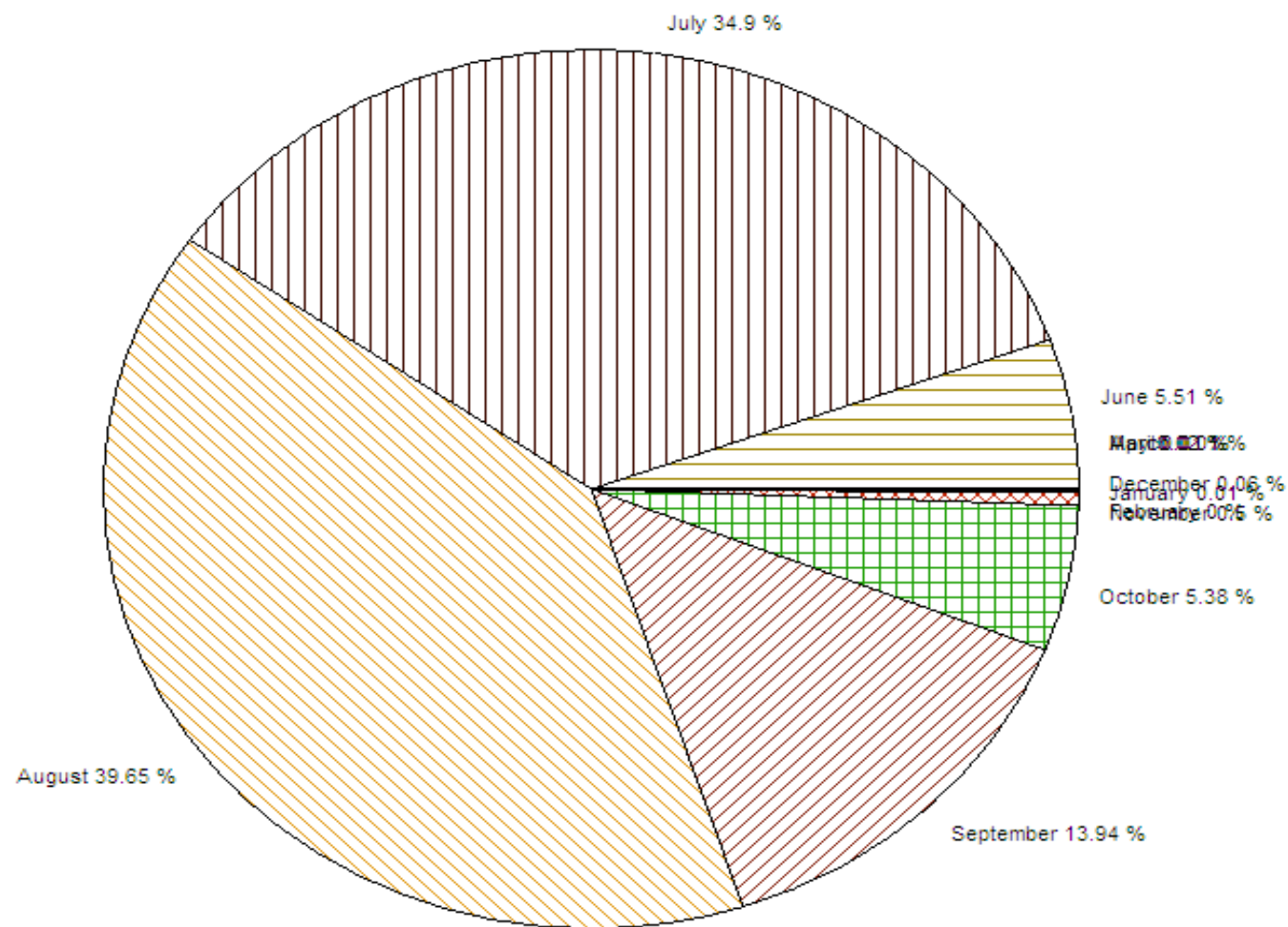
Monthly Average Runoff based on period : 1972-2019

Station Name : Kurundwad (AK000V1)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



June	5.51 %
July	34.9 %
August	39.65 %
September	13.94 %
October	5.38 %
November	0.5 %
December	0.06 %
January	0.01 %
February	0 %
March	0.01 %
April	0.01 %
May	0.02 %

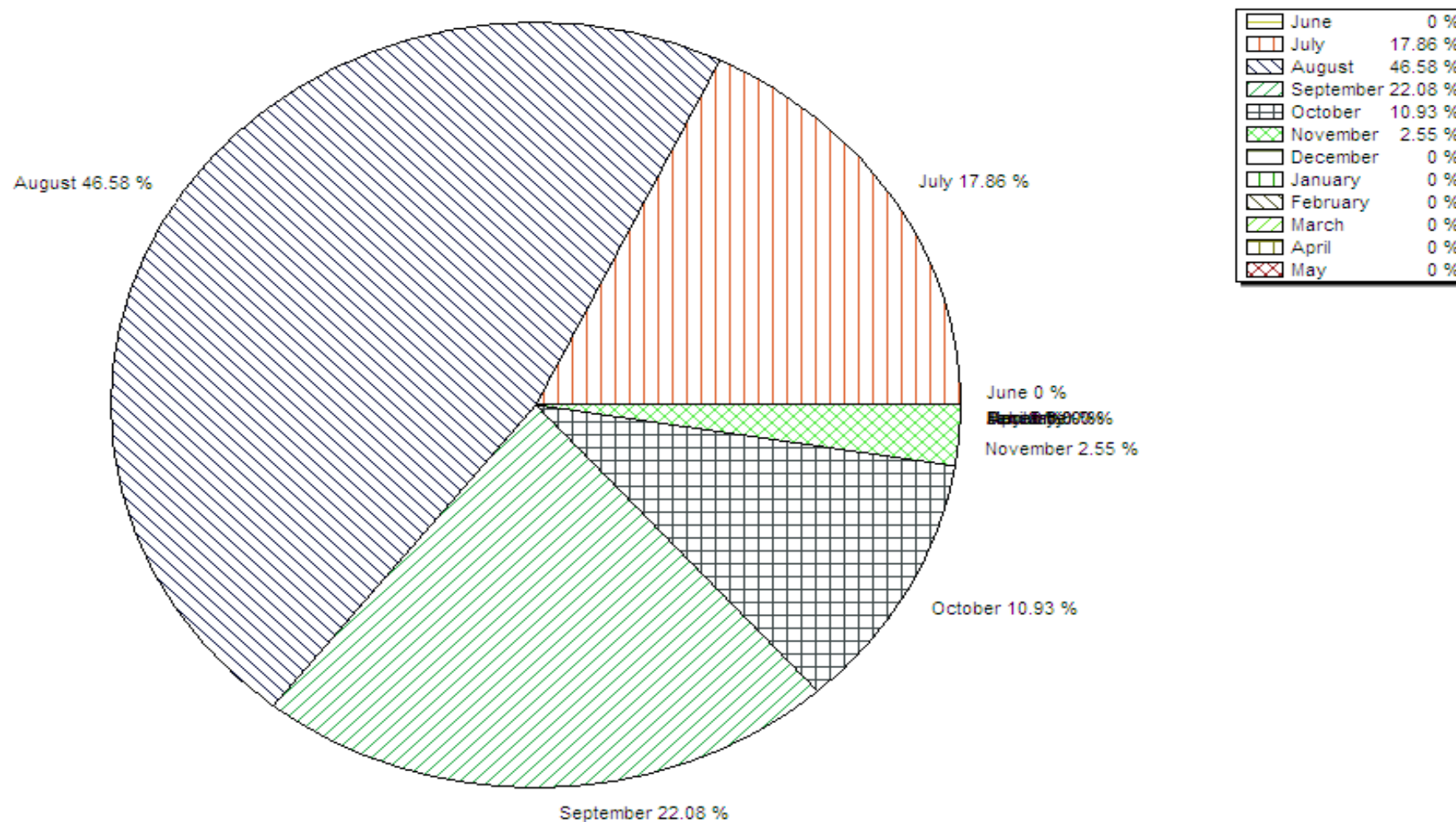
Monthly Runoff for the Year : 2019-2020

Station Name : Kurundwad (AK000V1)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



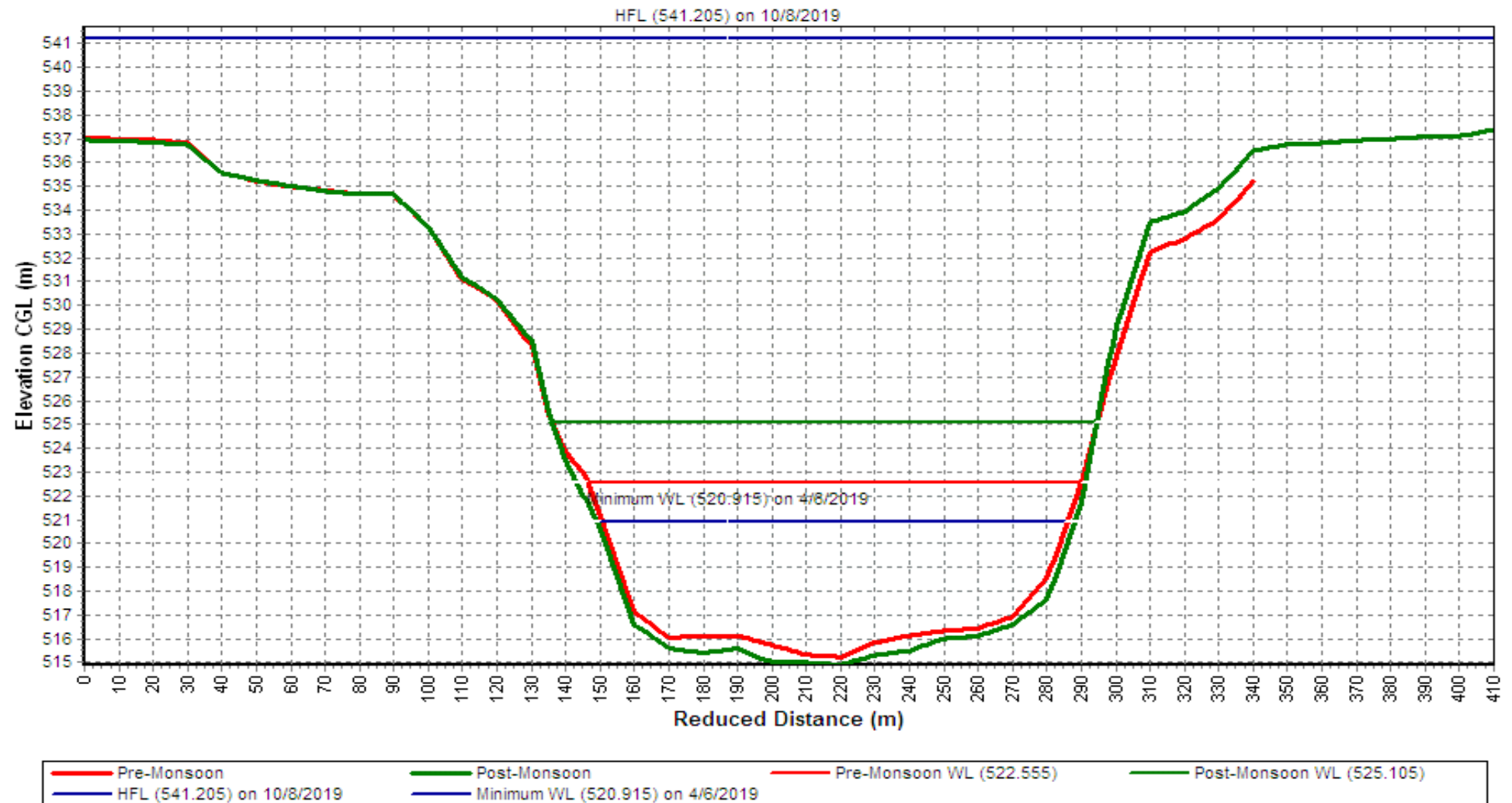
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Kurundwad (AK000V1)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj



Cross Section Difference Due to High Flood

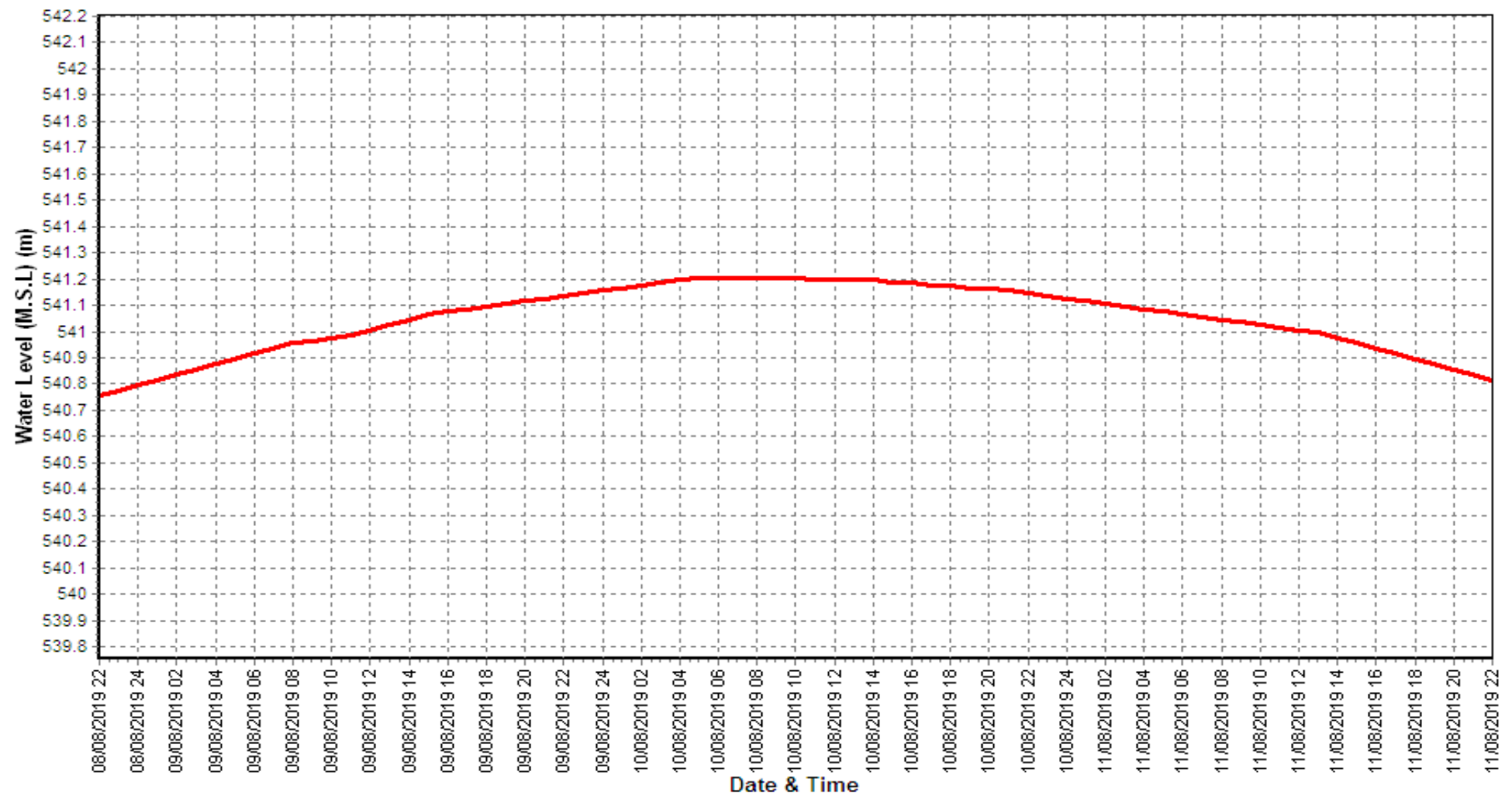
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Kurundwad (AK000V1)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



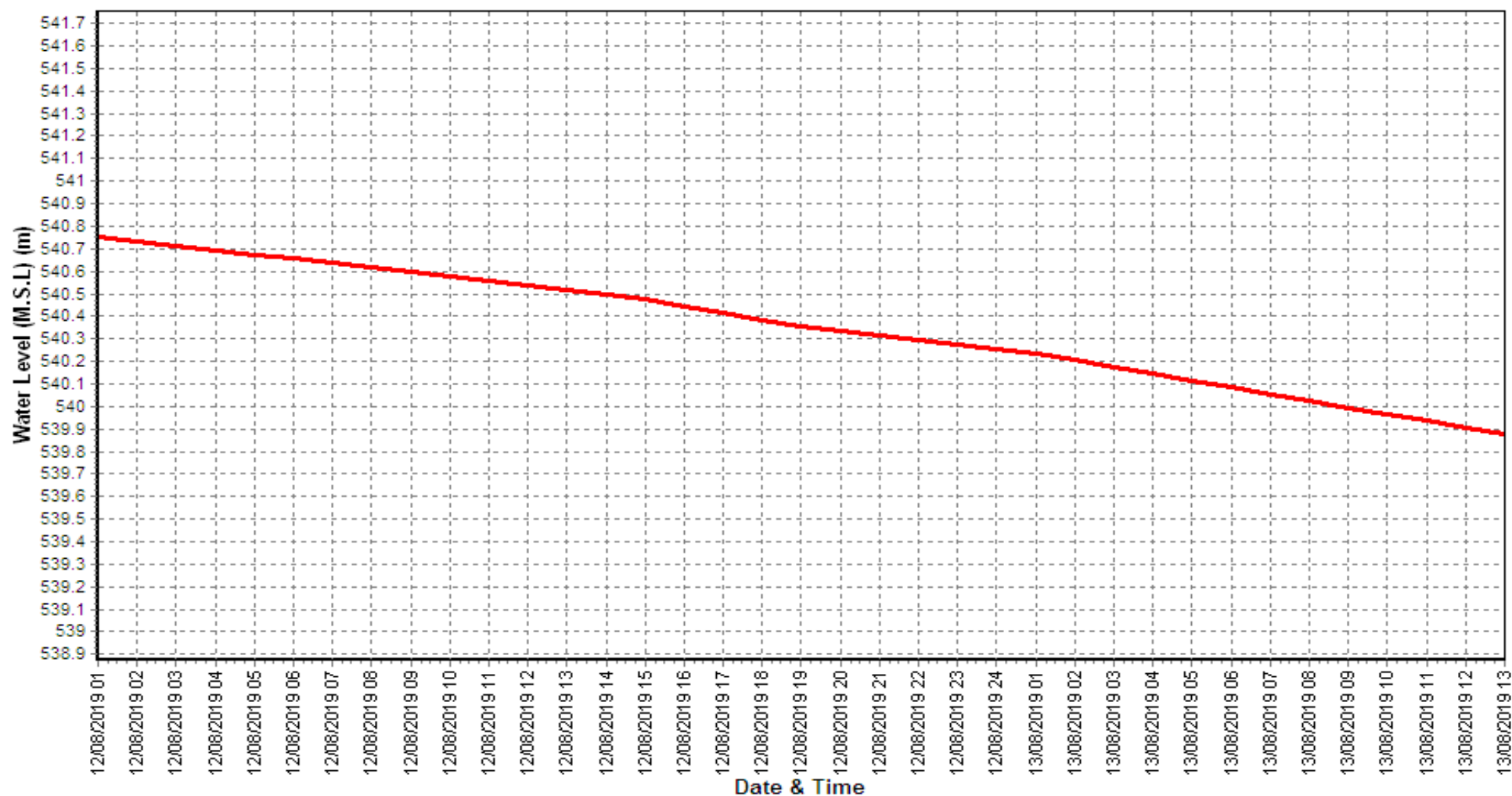
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Kurundwad (AK000V1)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



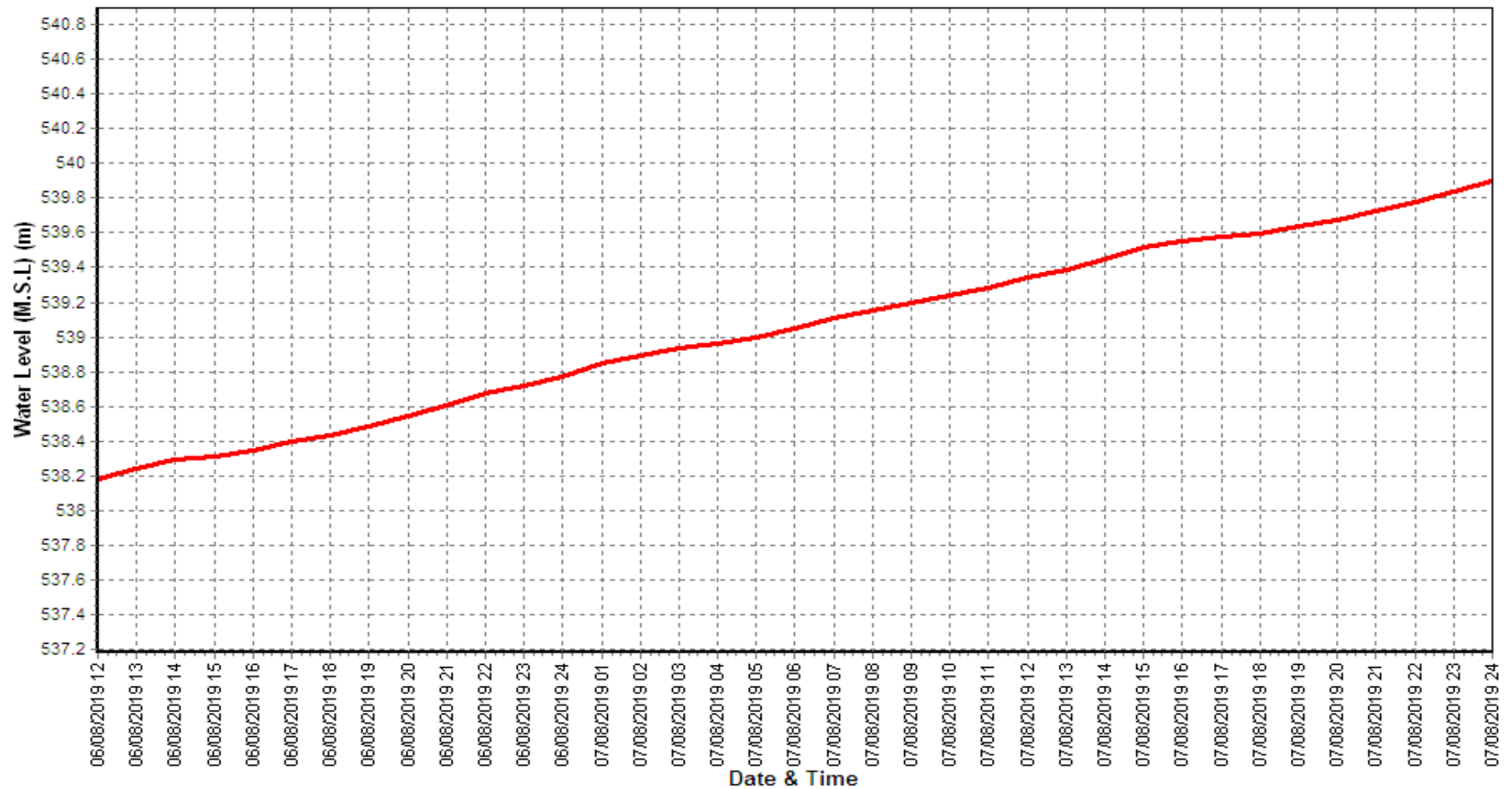
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Kurundwad (AK000V1)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



HISTORY SHEET

Water Year : 2019-2020

Site : Arjunwad (Seasonal)

Code : AK000V4

State : Maharashtra

District : Kolhapur

Basin : Krishna

Independent River : Krishna

Tributary : -

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj

Drainage Area : 12660 Sq. Km.

Bank : Right

Latitude : 16°46'51"

Longitude : 74°37'59"

Zero of Gauge (m) : 523 (m.s.l)
523.225 (m.s.l)01/02/1969 - 31/12/1973
01/01/1974

Opening Date

Closing Date

Gauge : 12/01/1969

HFL During 2019-20 : 544.275 m

Discharge : 12/01/1969

Corres. Discharge : 5647 (Estimated)

Sediment : 26/12/2014

Date & Time of
occurrence : 09/08/2019
: 02:00 Hrs

Water Quality : 01/09/2014

HFL Recorded so far in m : 544.275 dt 09-08-2019

Corresponding Discharge (cumecs) : 5647*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1969-1970	3850	540.395	02/08/1969	0.000	525.245	04/03/1970
1970-1971	5079	538.000	22/08/1970	0.000	525.070	02/02/1971
1971-1972	2936	536.843	01/09/1971	0.000	525.610	14/01/1972
1972-1973	3989	537.760	09/07/1972	0.000	525.620	25/01/1973
1973-1974	4950	539.870	10/07/1973	0.000	527.205	25/01/1974
1974-1975	2469	536.403	07/07/1974	0.000	526.675	25/01/1975
1975-1976	5270	540.460	12/07/1975	0.000	527.575	26/01/1976
1976-1977	4890	541.070	08/06/1976	0.000	527.325	25/01/1977
1977-1978	3460	537.817	08/07/1977	0.000	527.595	12/11/1977
1978-1979	2579	536.321	03/09/1978	0.000	527.135	25/01/1979
1979-1980	4904	539.767	09/08/1979	0.000	525.175	09/02/1980
1980-1981	3800	539.895	05/07/1980	0.000	527.265	25/01/1981
1981-1982	3362	538.195	10/07/1981	0.000	527.945	25/01/1982
1982-1983	2241	536.213	16/08/1982	0.000	526.835	25/01/1983
1983-1984	3345	538.615	18/08/1983	0.000	527.125	26/01/1984
1984-1985	3284	538.045	20/07/1984	0.000	526.465	25/01/1985
1985-1986	3085	537.449	04/08/1985	0.000	527.545	25/01/1986

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1986-1987	2868	537.640	14/08/1986	0.000	526.910	25/01/1987
1987-1988	2351	536.205	09/07/1987	0.000	525.205	26/01/1988
1988-1989	4997	539.895	04/08/1988	0.000	528.025	25/01/1989
1989-1990	4954	539.735	26/07/1989	0.000	527.945	25/01/1990
1990-1991	6500	540.795	20/08/1990	0.000	527.975	25/01/1991
1991-1992	5938	540.416	30/07/1991	0.000	527.755	26/01/1992
1992-1993	2928	537.316	15/08/1992	0.000	527.325	25/01/1993
1993-1994	2843	537.060	05/08/1993	0.000	527.585	18/01/1994
1994-1995	6300	541.175	17/07/1994	0.000	527.265	25/01/1995
1995-1996	2550	535.670	21/07/1995	0.000	526.225	26/01/1996
1996-1997	3560	539.125	05/10/1996	0.000	524.635	25/01/1997
1997-1998	4780	540.995	27/08/1997	0.000	527.525	25/01/1998
1998-1999	2411	535.618	10/07/1998	0.000	526.375	25/01/1999
1999-2000	3193	537.773	28/07/1999	0.000	526.535	26/01/2000
2000-2001	1747	534.482	14/07/2000	0.000	526.785	25/01/2001
2001-2002	1764	533.590	10/07/2001	0.000	527.085	25/01/2002
2002-2003	1514	533.705	15/08/2002	0.000	526.515	25/01/2003
2003-2004	1333	532.785	29/07/2003	0.000	527.275	25/01/2004
2004-2005	4211	539.455	14/08/2004	0.000	526.925	25/01/2005
2005-2006	9381	543.680	05/08/2005	0.000	526.520	25/01/2006
2006-2007	7505	542.125	12/08/2006	0.000	527.490	17/11/2006
2007-2008	3943	539.885	03/07/2007	0.000	526.125	12/11/2007
2008-2009	3357	538.345	15/08/2008	0.000	526.075	08/11/2008
2009-2010	2048	533.925	25/07/2009	0.000	529.320	22/11/2009
2010-2011	2587	536.275	29/07/2010	0.000	529.465	10/11/2010
2011-2012	4097	539.935	06/09/2011	0.000	527.815	09/11/2011
2012-2013	1614	533.130	07/09/2012	0.000	527.190	27/11/2012
2013-2014	3741	538.655	28/07/2013	0.000	527.055	03/11/2013
2014-2015	2606	536.255	02/08/2014	0.000	526.065	12/06/2014
2015-2016	1460	532.365	26/06/2015	0.000	527.295	18/06/2015
2016-2017	4322	537.785	09/08/2016	0.000	527.205	17/11/2016
2017-2018	1824	533.535	22/07/2017	0.000	525.235	11/06/2017
2018-2019	3067	536.335	19/07/2018	0.000	527.375	10/06/2018

Annual Runoff of Krishna at Arjunwad (Seasonal)

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1968-1969		2	2		0	0
2	1969-1970	8907	73	8980	315	3	317
3	1970-1971	10066	70	10136	356	2	358
4	1971-1972	7485	25	7511	265	1	265
5	1972-1973	3914	0	3914	138	0	138
6	1973-1974	8534	0	8534	302	0	302
7	1974-1975	6505	0	6505	230	0	230
8	1975-1976	10790	0	10790	381	0	381
9	1976-1977	10597	0	10597	374	0	374
10	1977-1978	7323	0	7323	259	0	259
11	1978-1979	8838	0	8838	312	0	312
12	1979-1980	8718	47	8765	308	2	310
13	1980-1981	8904	0	8904	315	0	315
14	1981-1982	7654	0	7654	270	0	270
15	1982-1983	5266	0	5266	186	0	186
16	1983-1984	7659	0	7659	271	0	271
17	1984-1985	5964	0	5964	211	0	211
18	1985-1986	4619	0	4619	163	0	163
19	1986-1987	4884	0	4884	173	0	173
20	1987-1988	2703	0	2703	96	0	96
21	1988-1989	7889	0	7889	279	0	279
22	1989-1990	5140	0	5140	182	0	182
23	1990-1991	10048	0	10048	355	0	355
24	1991-1992	11529	0	11529	407	0	407
25	1992-1993	5620	0	5620	199	0	199
26	1993-1994	8295	182	8477	293	6	300
27	1994-1995	15463	0	15463	546	0	546
28	1995-1996	4350	0	4350	154	0	154
29	1996-1997	6273	0	6273	222	0	222
30	1997-1998	10449	0	10449	369	0	369
31	1998-1999	5152	0	5152	182	0	182
32	1999-2000	8115	0	8115	287	0	287
33	2000-2001	2874	0	2874	102	0	102
34	2001-2002	3398	0	3398	120	0	120
35	2002-2003	2946	0	2946	104	0	104
36	2003-2004	2697	0	2697	95	0	95
37	2004-2005	7776	0	7776	275	0	275
38	2005-2006	18332	0	18332	648	0	648
39	2006-2007	17640	Site downgraded as Seasonal Site from 2006-07	17640	623	Site downgraded as Seasonal Site from 2006-07	623
40	2007-2008	9962		9962	352		352
41	2008-2009	5794		5794	205		205
42	2009-2010	4811		4811	170		170
43	2010-2011	5410		5410	191		191
44	2011-2012	7328		7328	259		259
45	2012-2013	4099		4099	145		145
46	2013-2014	7809		7809	276		276
47	2014-2015	5974		5974	211		211
48	2015-2016	1438		1438	51		51
49	2016-2017	7208		7208	255		255
50	2017-2018	3929		3929	139		139
51	2018-2019	7179		7179	254		254
52	2019-2020	14064		14064	497		497
Average		7418	10	7283	262	0	257
75% Dependable flow (MCM)				4829			
90 % Dependable flow (MCM)				2895			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Arjunwad (Seasonal) (AK000V4)

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD ,Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	525.895	0.000	528.745	267.3	538.145	3032	529.445	427.4 *	529.915	478.1	529.625	450.9
2	525.925	0.000	528.440	236.6	537.845	2968	530.065	520.8	529.665	418.2	529.565	444.6
3	525.945	0.000	529.100	365.2	538.525	3283	531.195	782.6	529.305	424.6	529.375	412.3
4	525.915	0.000	528.705	228.8	539.125	3488 *	530.490	598.3	529.295	418.5	529.275	422.0
5	525.975	0.000	528.750	306.7	540.195	3909	531.625	843.8	529.460	437.2	529.325	433.1
6	526.535	0.000	529.055	384.9	541.525	4458 *	535.525	2293	529.515	442.7 *	529.465	431.8
7	526.455	0.000	530.035	560.4 *	542.545	4890 *	536.225	2470	529.905	520.9	529.465	431.8
8	527.005	0.000	532.020	1193	543.525	5315 *	536.165	2390 *	529.425	399.5	529.275	391.1
9	527.945	0.000	532.685	1342	544.175	5603 *	536.845	2668	529.075	354.1	529.055	345.3
10	527.625	0.000	532.325	1226	544.185	5607 *	537.465	2840	529.945	519.4	528.825	299.3
11	526.815	0.000	532.395	1250	543.445	5280 *	536.675	2635	530.335	634.2	528.685	330.0
12	526.125	0.000	532.745	1335	542.955	5067 *	535.105	2121	531.390	910.4	528.575	251.4
13	525.975	0.000	532.705	1369	542.345	4804 *	532.605	1226	530.165	591.0 *	528.475	278.8
14	526.625	0.000	531.575	950.2 *	541.755	4554 *	530.905	749.1	529.655	443.8	528.345	209.5
15	526.975	0.000	530.165	565.7	539.835	3768 *	531.225	856.7 *	529.195	353.3	528.255	232.8
16	527.105	0.000	530.325	576.2	538.205	3107	531.735	944.8	529.400	404.8	528.225	200.4
17	526.925	0.000	530.075	526.2	536.425	2478	530.750	715.5	528.895	269.5	528.065	161.6
18	526.675	0.000	529.515	442.5	534.585	1854 *	530.100	539.5	528.335	186.4	527.695	103.9
19	527.205	0.000	529.220	393.4	531.505	1053	529.845	478.1	528.880	277.3	527.865	99.04
20	526.755	0.000	528.765	311.6	529.955	502.6	530.375	578.1	529.315	399.5 *	527.905	115.9
21	526.245	0.000	528.555	247.7 *	529.575	442.0	529.860	494.6	534.725	1887	527.625	0.000
22	525.895	0.000	528.225	226.5	529.395	420.8	530.245	610.1 *	535.975	2286	527.725	0.000
23	525.605	0.000	528.205	204.1	529.300	400.9	529.300	430.4	534.465	1868	527.735	0.000
24	525.715	0.000	528.215	209.9	529.165	380.2	529.425	458.3	532.805	1370	527.635	0.000
25	526.275	0.000	528.295	218.2	529.275	391.1 *	529.175	407.0	531.425	982.1	527.585	0.000
26	528.145	0.000	528.685	286.4	529.145	369.3	534.285	1805	530.775	771.3	527.505	0.000
27	527.735	0.000	529.235	422.3	528.955	313.7	532.625	1242	530.635	705.4 *	527.345	0.000
28	527.825	0.000	533.475	1502 *	528.795	294.0	531.155	743.5	530.325	637.6	527.075	0.000
29	527.555	0.000	533.075	1480	528.645	250.9	530.485	668.3 *	530.035	518.8	527.415	0.000
30	528.525	0.000	533.890	1681	528.605	232.9	529.915	500.0	530.055	519.1	527.705	0.000
31			536.985	2650	528.825	325.4			529.765	469.5		
Ten-Daily Mean												
I Ten-Daily	526.522	0.000	529.986	611.1	540.979	4255	533.505	1583	529.550	441.3	529.325	406.2
II Ten-Daily	526.718	0.000	530.748	772.1	538.101	3247	531.932	1084	529.557	447.0	528.209	198.3
III Ten-Daily	526.952	0.000	530.622	829.7	529.062	347.4	530.647	735.9	531.908	1092	527.535	0.000
Monthly												
Min.	525.605	0.000	528.205	204.1	528.605	232.9	529.175	407.0	528.335	186.4	527.075	0.000
Max.	528.525	0.000	536.985	2650	544.185	5607	537.465	2840	535.975	2286	529.625	450.9
Mean	526.731	0	530.458	740.6	535.822	2543	532.028	1135	530.389	674.1	528.356	201.5

Annual Runoff in MCM = 14064 Annual Runoff in mm = 1111

Peak Observed Discharge = 3909 cumecs on 05/08/2019 Corres. Water Level :540.195 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :525.895 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

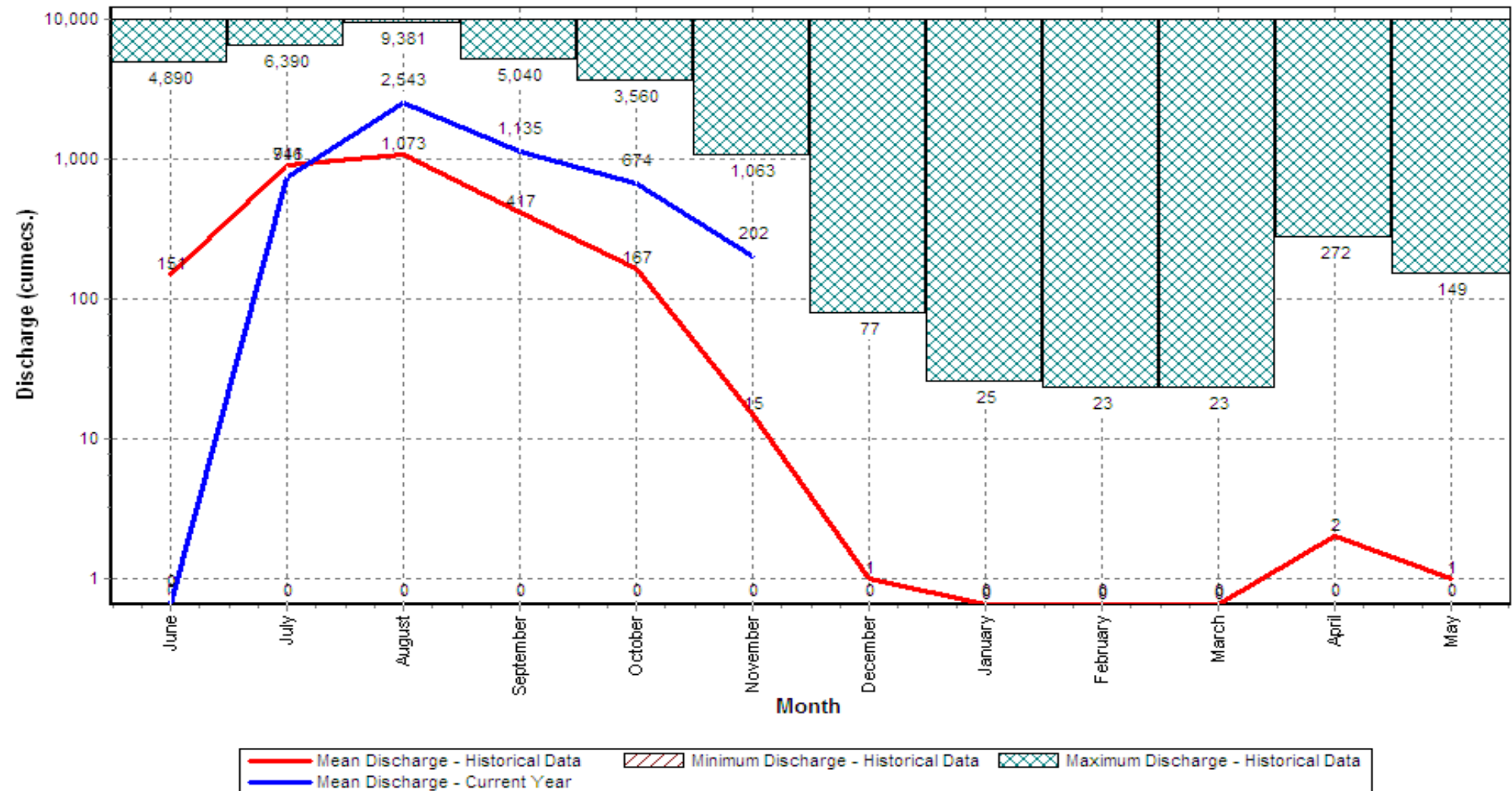
Station Name : Arjunwad (Seasonal) (AK000V4)

Data considered : 1969-2020

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj



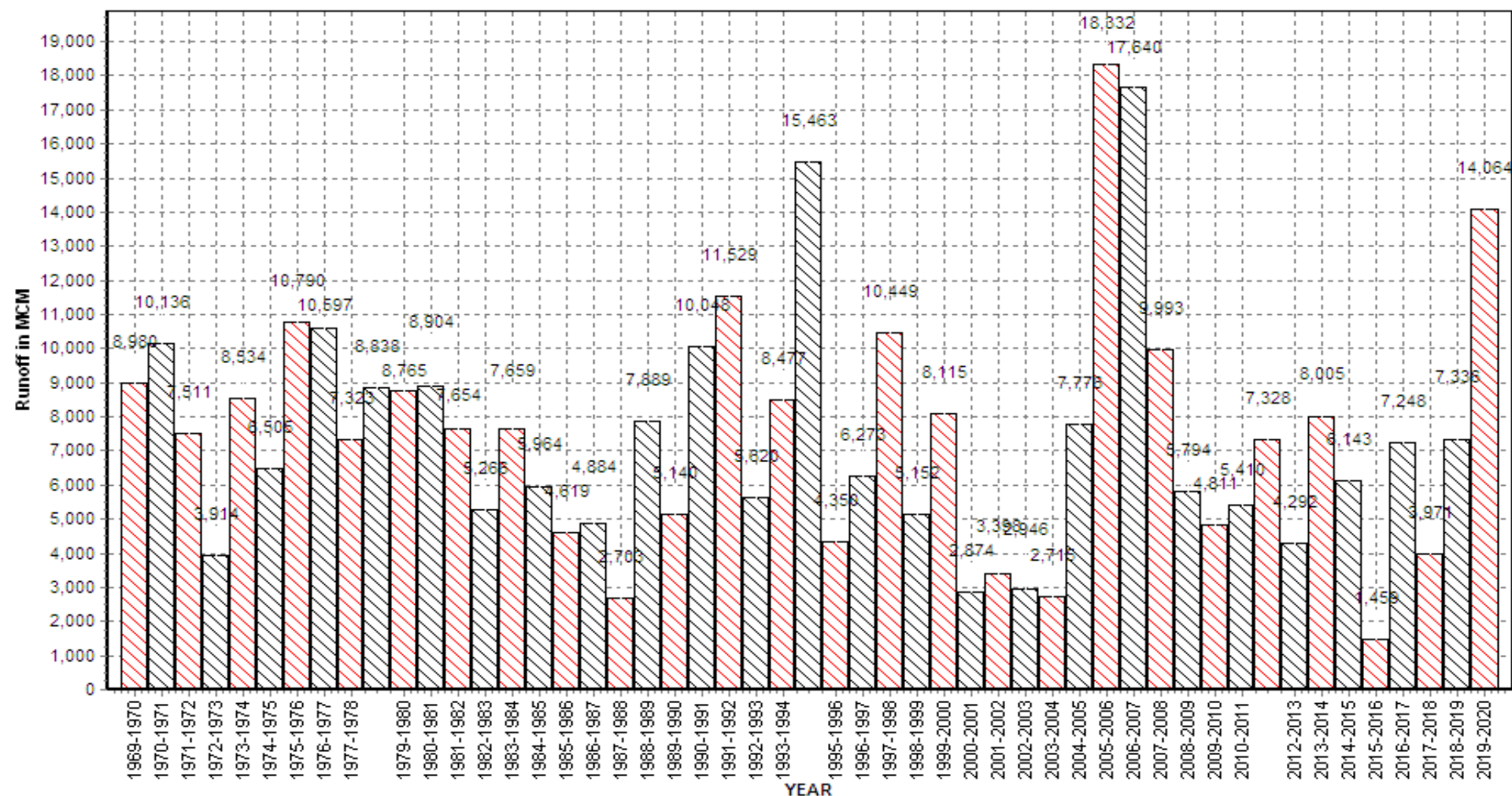
Annual Runoff Values for the period: 1969 - 2020

Station Name : Arjunwad (Seasonal) (AK000V4)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

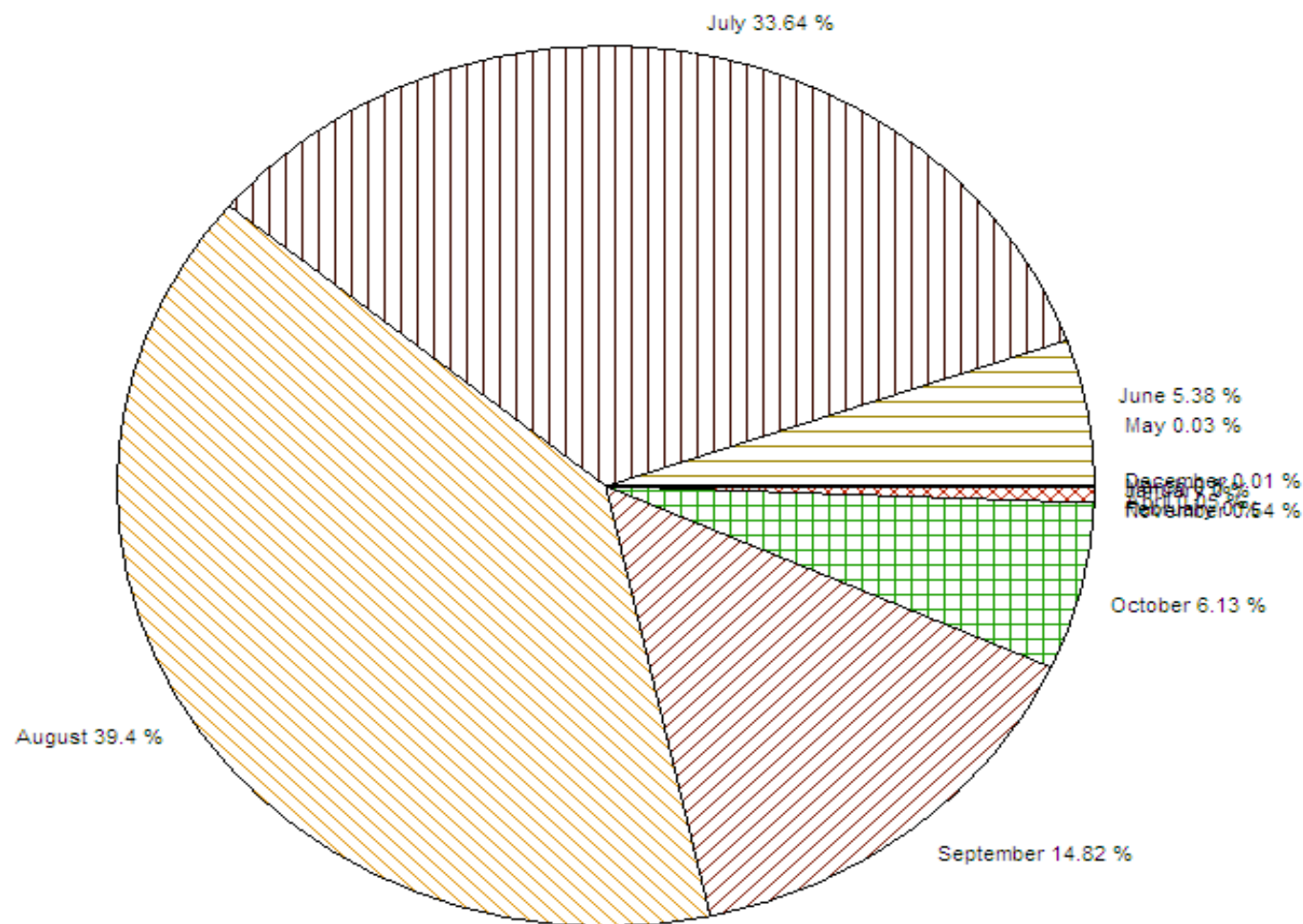
Monthly Average Runoff based on period : 1969-2019

Station Name : Arjunwad (Seasonal) (AK000V4)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



June	5.38 %
July	33.64 %
August	39.4 %
September	14.82 %
October	6.13 %
November	0.54 %
December	0.01 %
January	0 %
February	0 %
March	0 %
April	0.05 %
May	0.03 %

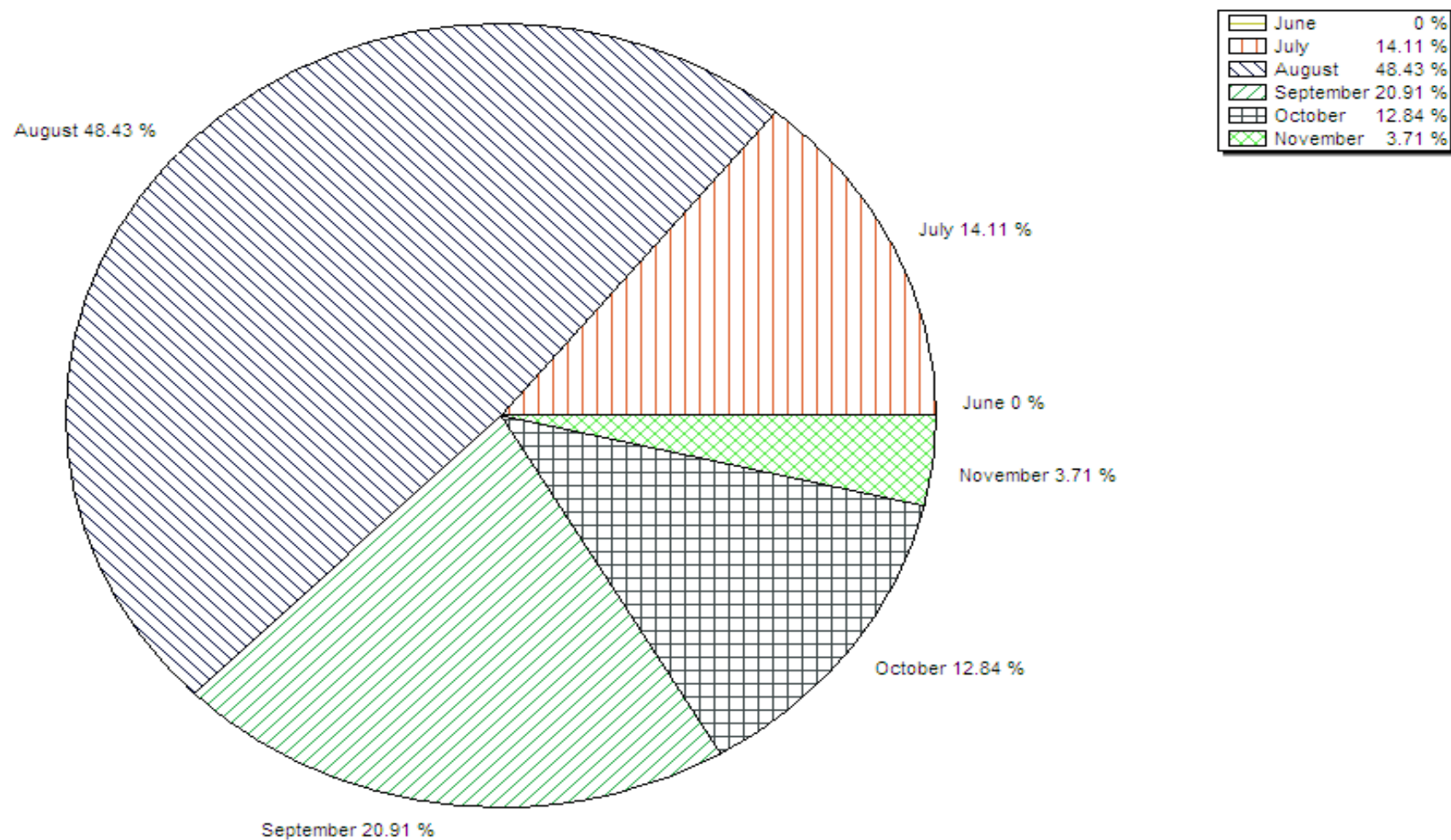
Monthly Runoff for the Year : 2019-2020

Station Name : Arjunwad (Seasonal) (AK000V4)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj



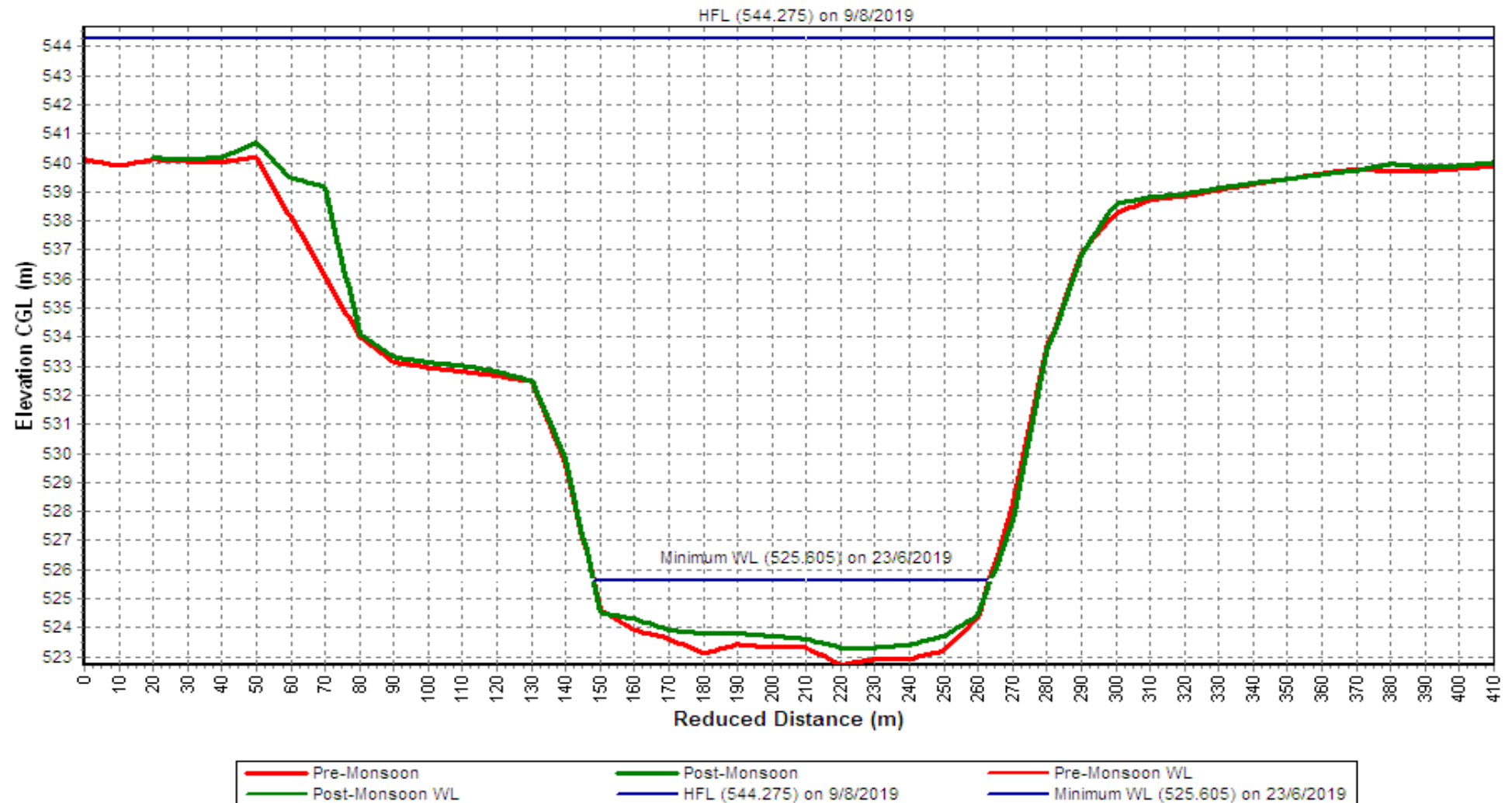
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Arjunwad (Seasonal) (AK000V4)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



Cross Section Difference Due to High Flood

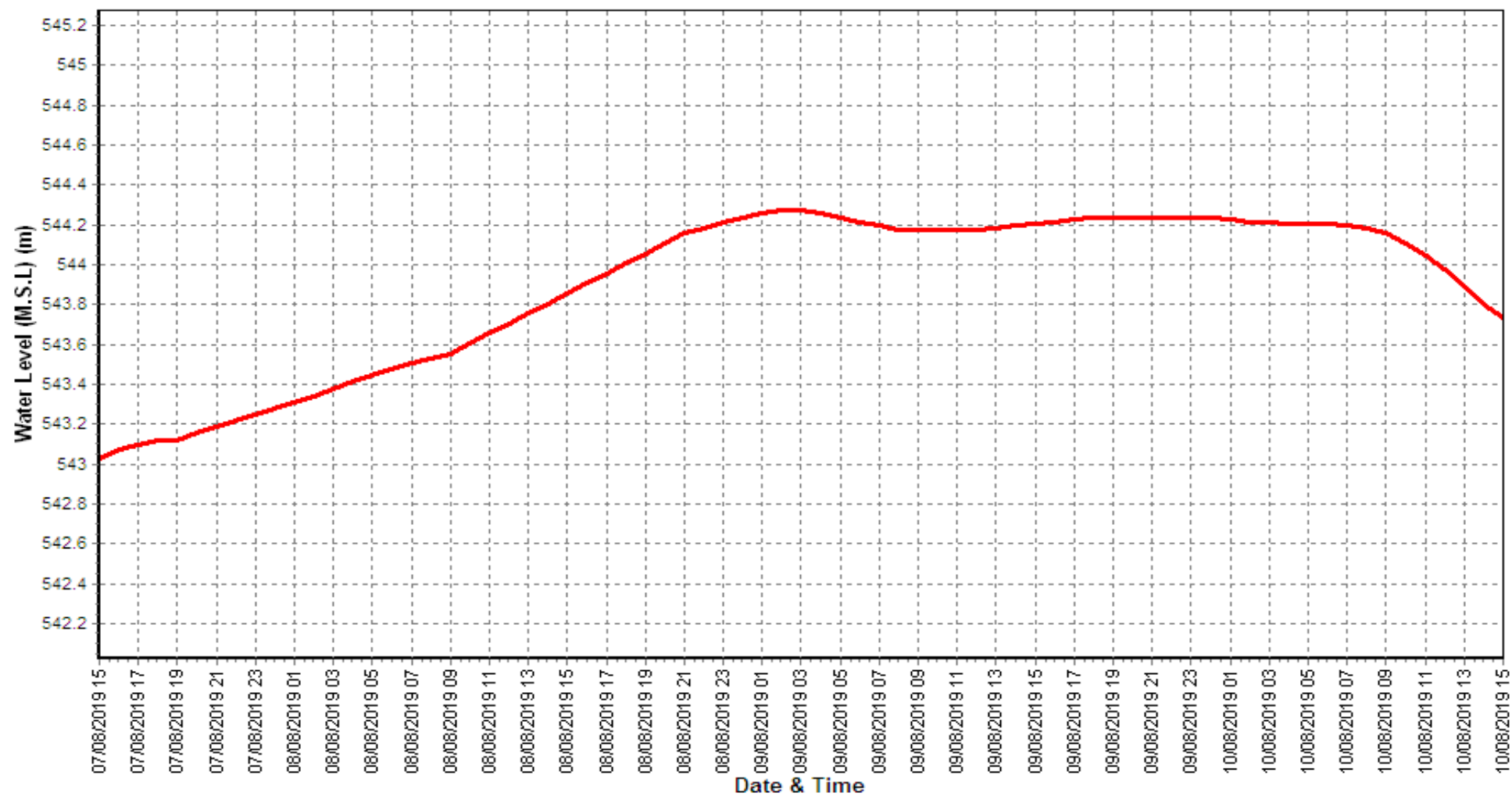
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Arjunwad (Seasonal) (AK000V4)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



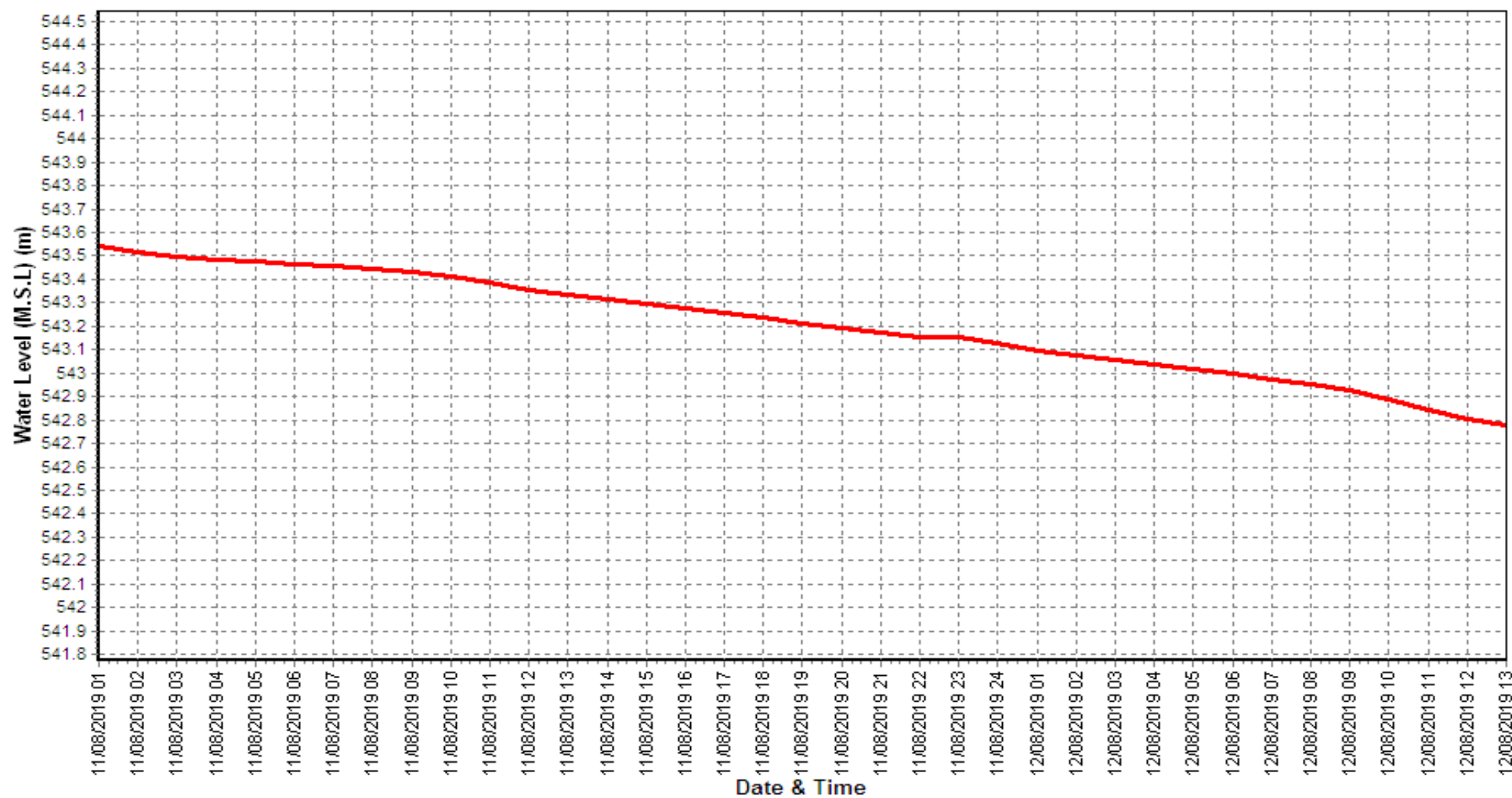
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Arjunwad (Seasonal) (AK000V4)

Local River : Krishna

Division :Upper Krishna Divn, Pune

Sub-Division:UKSD,Miraj



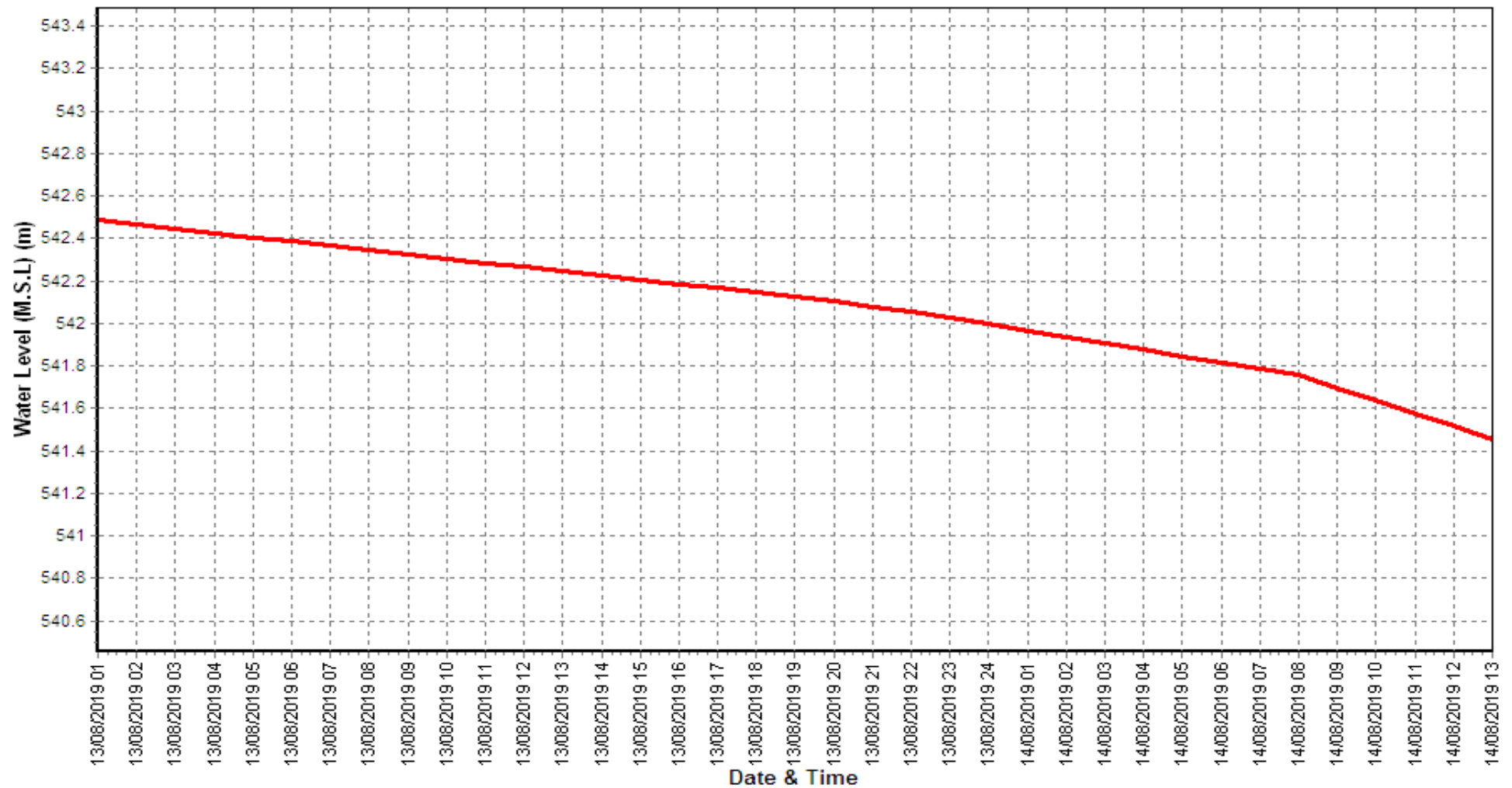
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Arjunwad (Seasonal) (AK000V4)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



HISTORY SHEET

		Water Year : 2019-2020	
Site	: Samdoli (Seasonal)	Code	: AKX00A7
State	: Maharashtra	District	: Sangli
Basin	: Krishna	Independent River	: Krishna
Tributary	: Varna	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Varna
Division	: Upper Krishna Divn, Pune	Sub-Division	: Upper Krishna SD 2, Miraj
Drainage Area	: 1948 Sq. Km.	Bank	: Left
Latitude	: 16°51'18"	Longitude	: 74°29'50"
Zero of Gauge (m)	: 529.594 (m.s.l) 528.594 (m.s.l)	01/09/1963 21/04/1966	- 20/04/1966
	Opening Date	Closing Date	
Gauge	: 23/08/1963	HFL During 2019-20	: 546.994 m
Discharge	: 01/12/1964	Corres. Discharge	: 2317 (Estimated)
Sediment	: 26/12/2014	Date & Time of occurrence	: 09/08/2019 : 07:00 Hrs
Water Quality	: 01/09/2014		

HFL Recorded so far in m : 546.994 dt 09-08-2019

Corresponding Discharge (cumecs) : 2317 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	17.90	530.649	11/05/1966	0.000	529.529	11/03/1966
1966-1967	36.20	531.134	05/12/1966	0.000	529.509	05/04/1967
1967-1968	2000	544.224	29/07/1967	0.000	529.499	13/02/1968
1968-1969	1068	539.704	03/08/1968	0.000	529.334	31/01/1969
1969-1970	1650	543.294	02/08/1969	0.000	529.524	25/01/1970
1970-1971	1555	541.294	22/08/1970	0.000	529.524	25/01/1971
1971-1972	1220	540.334	26/06/1971	0.000		26/01/1972
1972-1973	1219	540.974	09/07/1972	0.000		25/01/1973
1973-1974	2250	543.279	09/07/1973	0.000	531.754	25/01/1974
1974-1975	1528	540.264	07/07/1974	0.000	530.124	25/01/1975
1975-1976	2050	543.414	12/07/1975	0.000	529.734	02/02/1976
1976-1977	2007	543.322	03/08/1976	0.000	529.794	25/01/1977
1977-1978	1548	541.003	09/07/1977	0.000	533.529	25/01/1978
1978-1979	1418	539.592	14/08/1978	0.000	531.894	25/01/1979
1979-1980	1436	542.219	08/08/1979	0.000	533.429	26/01/1980
1980-1981	1747	542.485	04/07/1980	0.000	529.704	25/01/1981
1981-1982	1741	541.014	09/07/1981	0.000	532.254	25/01/1982

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1982-1983	1472	540.077	31/07/1982	0.000	531.114	25/01/1983
1983-1984	1682	540.527	30/06/1983	0.000	530.414	26/01/1984
1984-1985	1715	541.232	20/07/1984	0.000		25/01/1985
1985-1986	1530	540.689	03/08/1985	0.000	531.704	25/01/1986
1986-1987	1347	540.091	10/08/1986	0.000	532.274	25/01/1987
1987-1988	1080	539.199	09/07/1987	0.000		26/01/1988
1988-1989	2025	542.854	04/08/1988	0.000	530.264	25/01/1989
1989-1990	2412	543.424	27/07/1989	0.000	533.724	25/01/1990
1990-1991	1675	543.514	20/08/1990	0.000	534.444	25/01/1991
1991-1992	2081	543.418	30/07/1991	0.000	532.004	26/01/1992
1992-1993	1178	540.031	16/08/1992	0.000	533.494	25/01/1993
1993-1994	1463	540.953	05/08/1993	0.000	533.174	25/01/1994
1994-1995	2235	543.654	17/07/1994	0.000	534.194	25/01/1995
1995-1996	869.0	538.019	04/09/1995	0.000	532.719	26/01/1996
1996-1997	1610	541.614	05/10/1996	0.000	531.064	25/01/1997
1997-1998	1710	543.564	27/08/1997	0.000	533.534	25/01/1998
1998-1999	897.5	538.712	10/07/1998	0.000	532.544	25/01/1999
1999-2000	1199	540.169	24/07/1999	0.000	532.714	26/01/2000
2000-2001	1001	538.294	14/07/2000	0.000	531.824	25/01/2001
2001-2002	637.2	537.339	10/07/2001	0.000	532.954	25/01/2002
2002-2003	694.6	536.819	14/08/2002	0.000	532.484	25/01/2003
2003-2004	772.1	536.829	23/06/2003	0.000		26/01/2004
2004-2005	1341	541.831	14/08/2004	0.000	532.584	25/01/2005
2005-2006	3064	546.324	05/08/2005	0.000	533.144	25/01/2006
2006-2007	2010	544.274	12/08/2006	0.000	532.454	14/11/2006
2007-2008	1569	542.394	03/07/2007	0.000	532.554	10/11/2007
2008-2009	1403	541.634	14/08/2008	0.000	532.214	10/11/2008
2009-2010	1141	538.844	17/07/2009	0.000	532.354	26/11/2009
2010-2011	1145	538.844	27/07/2010	0.000	532.794	13/11/2010
2011-2012	1592	542.414	06/09/2011	0.000	532.434	27/10/2011
2012-2013	688.9	537.190	06/09/2012	0.000	531.850	17/11/2012
2013-2014	1483	541.744	27/07/2013	0.000	530.594	07/06/2013
2014-2015	1115	540.094	25/07/2014	0.000	532.864	18/11/2014
2015-2016	669.2	536.684	26/06/2015	0.000	532.564	09/06/2015
2016-2017	1660	541.944	13/07/2016	0.000	531.404	16/06/2016
2017-2018	962.7	537.934	22/07/2017	0.000	531.314	21/11/2017
2018-2019	1351	539.994	21/07/2018	0.000	532.294	16/11/2018

Annual Runoff of Varna at Samdoli (Seasonal)							
Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1964-1965		5	5		0	0
2	1965-1966		16	16		1	1
3	1966-1967	32	40	72	1	1	3
4	1967-1968	4119	5	4124	146	0	146
5	1968-1969	2030	0	2030	72	0	72
6	1969-1970	3342	0	3342	118	0	118
7	1970-1971	4006	0	4006	142	0	142
8	1971-1972	3178	0	3178	112	0	112
9	1972-1973	1645	0	1645	58	0	58
10	1973-1974	3493	0	3493	123	0	123
11	1974-1975	3154	0	3154	111	0	111
12	1975-1976	4326	1	4328	153	0	153
13	1976-1977	4310	0	4310	152	0	152
14	1977-1978	3333	0	3333	118	0	118
15	1978-1979	4285	0	4285	151	0	151
16	1979-1980	2951	0	2951	104	0	104
17	1980-1981	3711	0	3711	131	0	131
18	1981-1982	3364	0	3364	119	0	119
19	1982-1983	3045	0	3045	108	0	108
20	1983-1984	3781	0	3781	134	0	134
21	1984-1985	2884	0	2884	102	0	102
22	1985-1986	2692	0	2692	95	0	95
23	1986-1987	2130	0	2130	75	0	75
24	1987-1988	1693	0	1693	60	0	60
25	1988-1989	3198	0	3198	113	0	113
26	1989-1990	2685	0	2685	95	0	95
27	1990-1991	3586	0	3586	127	0	127
28	1991-1992	4612	0	4612	163	0	163
29	1992-1993	2490	0	2490	88	0	88
30	1993-1994	3345	0	3345	118	0	118
31	1994-1995	4735	0	4735	167	0	167
32	1995-1996	1502	0	1502	53	0	53
33	1996-1997	2410	0	2410	85	0	85
34	1997-1998	3497	0	3497	124	0	124
35	1998-1999	1791	0	1791	63	0	63
36	1999-2000	2844	0	2844	100	0	100
37	2000-2001	1399	0	1399	49	0	49
38	2001-2002	1520	0	1520	54	0	54
39	2002-2003	1361	0	1361	48	0	48
40	2003-2004	1436	0	1436	51	0	51
41	2004-2005	2708	0	2708	96	0	96
42	2005-2006	5839	0	5839	206	0	206
43	2006-2007	5650	Site downgraded as Seasonal Site from 2006-07	5650	200	Site downgraded as Seasonal Site from 2006-07	200
44	2007-2008	3839		3839	136		136
45	2008-2009	2343		2343	83		83
46	2009-2010	1949		1949	69		69
47	2010-2011	2114		2114	75		75
48	2011-2012	3190		3190	113		113
49	2012-2013	2105		2105	74		74
50	2013-2014	3129		3129	111		111
51	2014-2015	2713		2713	96		96
52	2015-2016	948		948	34		34
53	2016-2017	2744		2744	97		97
54	2017-2018	1975		1975	70		70
55	2018-2019	3277		3278	116		116
56	2019-2020	5728		5728	202		202
Average		2966	2	2861	103	0	101
75% Dependable flow (MCM)				1989			
90 % Dependable flow (MCM)				1387			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Samdoli (Seasonal) (AKX00A7)

Local River : Varna

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	532.154	0.000	532.824	160.0	541.404	1371	532.724	152.0 *	532.684	155.7	532.094	80.56
2	532.264	0.000	532.814	172.9	541.524	1437	533.419	192.3	532.159	104.2	532.064	77.32
3	532.214	0.000	533.404	193.7	541.734	1450 *	534.694	427.8	532.024	80.82	531.994	69.84
4	532.284	0.000	532.594	139.5	542.324	1544 *	534.834	443.1	531.974	50.98	531.994	69.84
5	532.324	0.000	532.764	164.3	543.364	1713 *	535.414	499.1	532.094	89.39	531.874	56.56
6	532.264	0.000	533.764	311.6	544.274	1862 *	539.074	1037	531.994	69.84 *	531.884	58.30
7	532.174	0.000	535.124	460.4 *	545.604	2083 *	540.014	1175	531.734	49.15	531.874	57.27
8	532.314	0.000	536.714	669.4	546.594	2249 *	539.704	1131 *	531.864	50.08	531.864	56.24
9	532.414	0.000	538.694	960.7	546.994	2317 *	540.144	1214	531.744	49.24	531.744	44.06
10	532.274	0.000	536.829	693.4	546.734	2273 *	540.334	1241	532.494	131.5	531.694	0.000
11	532.144	0.000	538.214	861.4	546.054	2158 *	540.064	1189	533.244	200.7	531.644	0.000
12	531.904	0.000	538.314	880.0	545.324	2036 *	538.534	946.9	532.644	144.0	531.694	0.000
13	531.864	0.000	536.414	603.7	544.394	1882 *	534.514	412.9	532.334	107.0 *	531.614	0.000
14	531.964	0.000	534.064	318.9 *	543.254	1695 *	533.944	342.2	532.024	82.66	531.544	0.000
15	531.794	0.000	533.534	249.1	540.994	1332 *	535.344	490.6 *	531.944	65.33	531.594	0.000
16	531.614	0.000	534.424	391.5	539.414	1120	535.114	476.4	531.854	58.09	531.594	0.000
17	531.514	0.000	533.414	174.2	538.724	974.1	533.944	342.5	531.794	57.37	531.494	0.000
18	531.414	0.000	532.874	158.5	535.594	525.3 *	533.994	363.9	531.774	54.94	531.474	0.000
19	531.634	0.000	532.559	128.5	534.584	403.4	533.474	229.2	531.884	59.18	531.444	0.000
20	531.534	0.000	532.324	94.68	532.884	171.0	533.194	201.5	532.054	76.25 *	531.344	0.000
21	531.444	0.000	532.224	94.78 *	532.669	148.5	533.164	191.2	537.094	774.4	531.294	0.000
22	531.444	0.000	532.184	72.50	532.544	128.7	532.744	154.3 *	538.304	917.2	531.244	0.000
23	531.334	0.000	532.059	64.01	532.314	93.91	532.564	123.2	538.244	926.8	531.194	0.000
24	531.564	0.000	532.094	69.53	532.244	92.53	532.284	107.9	534.934	448.5	531.244	0.000
25	531.654	0.000	532.469	103.5	532.454	120.6 *	533.034	188.2	533.649	290.3	531.294	0.000
26	531.584	0.000	532.634	116.2	532.284	117.1	537.274	804.1	533.434	250.6	531.344	0.000
27	531.774	0.000	534.224	359.8	532.139	92.62	534.709	414.6	533.224	212.3 *	531.294	0.000
28	531.534	0.000	537.814	844.9 *	532.044	91.84	533.414	201.7	532.944	175.1	531.344	0.000
29	531.294	0.000	539.104	1039	531.974	69.91	532.854	167.4 *	532.494	139.3	531.294	0.000
30	532.114	0.000	539.404	1103	532.014	59.64	532.344	111.0	532.424	119.3	531.214	0.000
31			540.704	1286	532.404	101.2			532.184	110.7		
Ten-Daily Mean												
I Ten-Daily	532.268	0.000	534.552	392.6	544.055	1830	537.036	751.3	532.076	83.09	531.908	57.00
II Ten-Daily	531.738	0.000	534.613	386.0	540.122	1230	535.212	499.5	532.155	90.56	531.544	0.000
III Ten-Daily	531.574	0.000	534.992	468.5	532.280	101.5	533.438	246.4	534.448	396.8	531.276	0.000
Monthly												
Min.	531.294	0.000	532.059	64.01	531.974	59.64	532.284	107.9	531.734	49.15	531.194	0.000
Max.	532.414	0.000	540.704	1286	546.994	2317	540.334	1241	538.304	926.8	532.094	80.56
Mean	531.860	0	534.728	417.4	538.608	1023	535.229	499.1	532.943	196.8	531.576	19

Annual Runoff in MCM = 5728 Annual Runoff in mm = 2940

Peak Observed Discharge = 1437 cumecs on 02/08/2019 Corres. Water Level :541.524 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :532.154 m

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

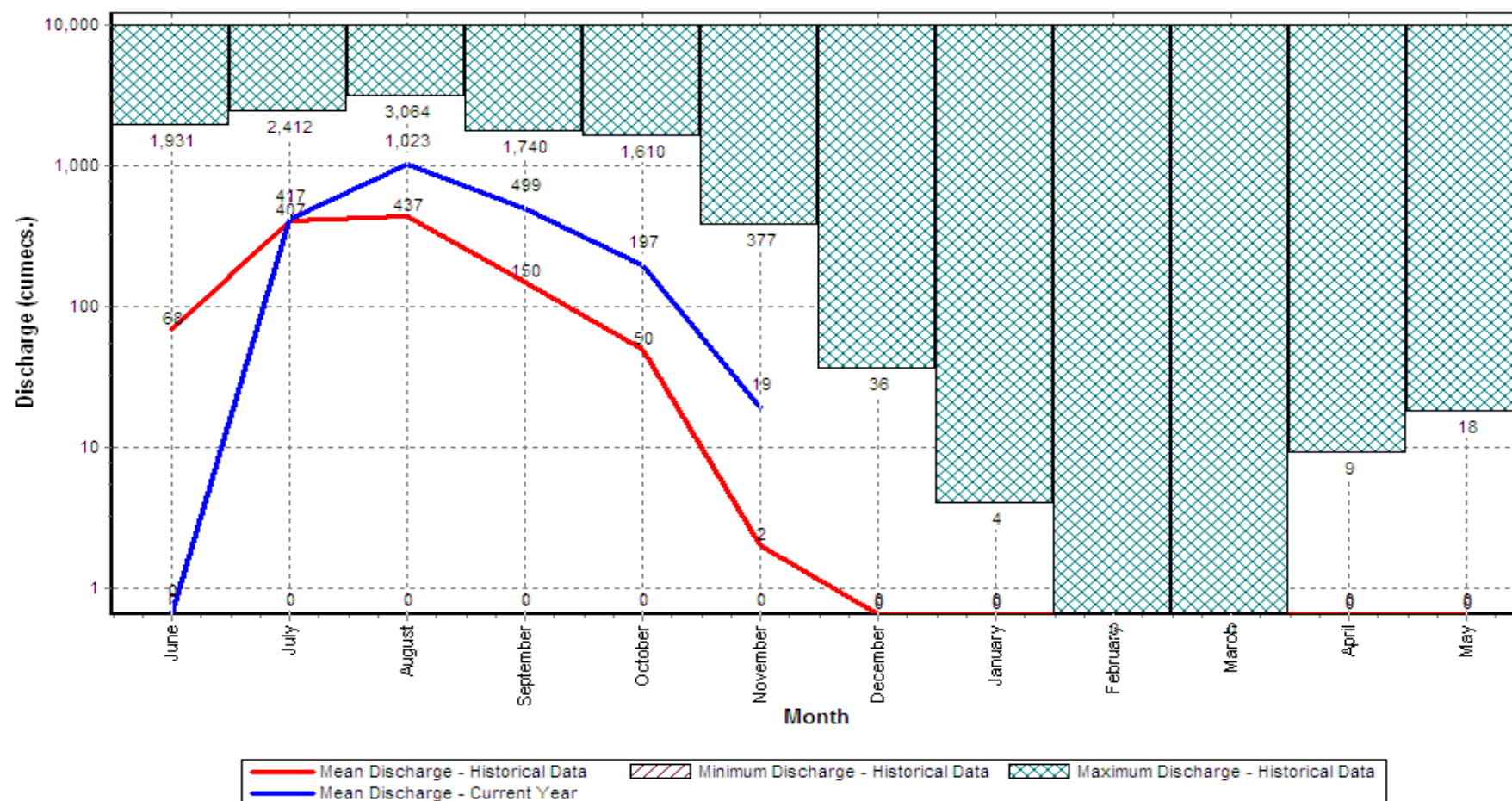
Station Name : Samdoli (Seasonal) (AKX00A7)

Data considered : 1965-2020

Division : Upper Krishna Divn, Pune

Local River : Varna

Sub-Division : Upper Krishna SD 2, Miraj



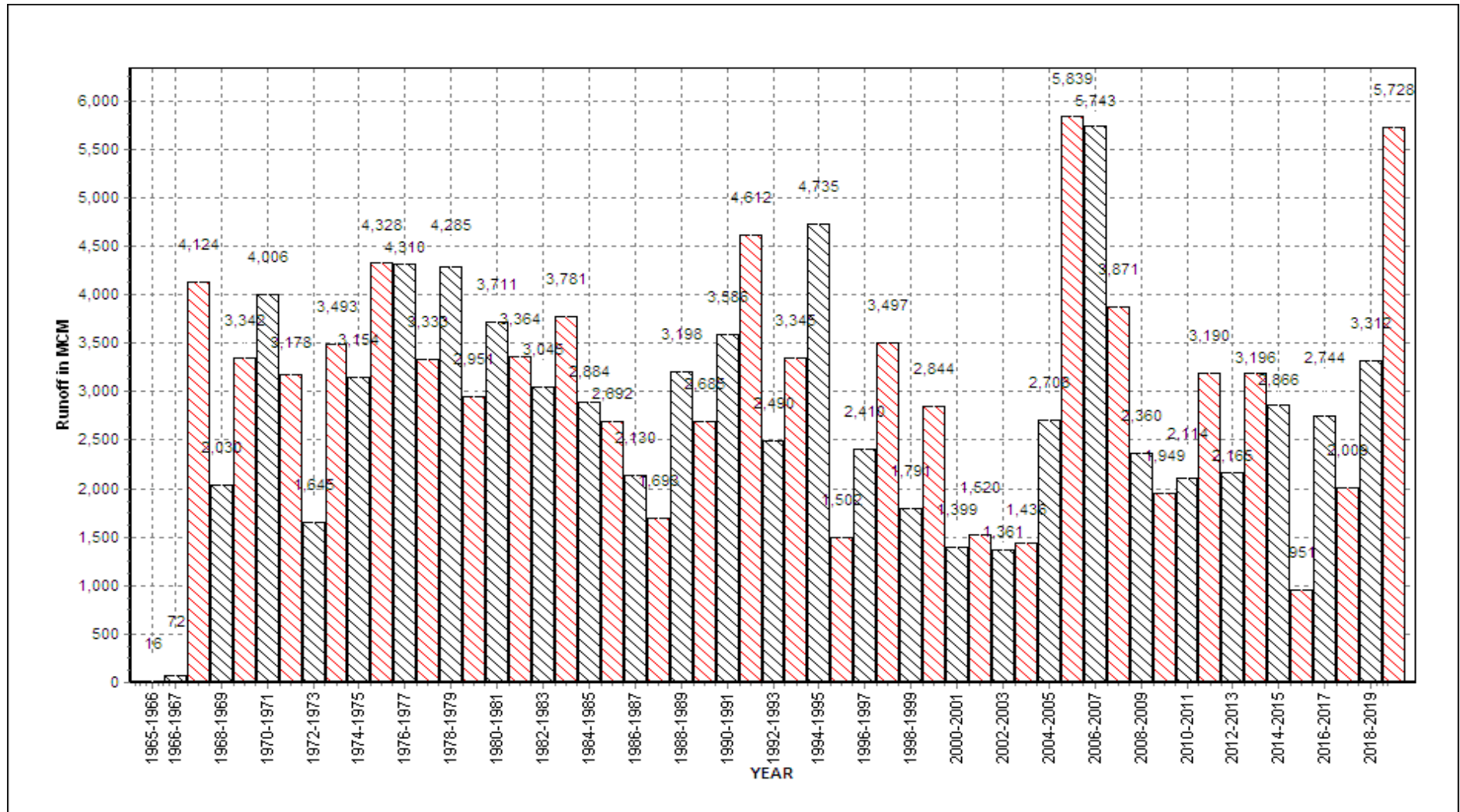
Annual Runoff Values for the period: 1965 - 2020

Station Name : Samdoli (Seasonal) (AKX00A7)

Local River : Varna

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

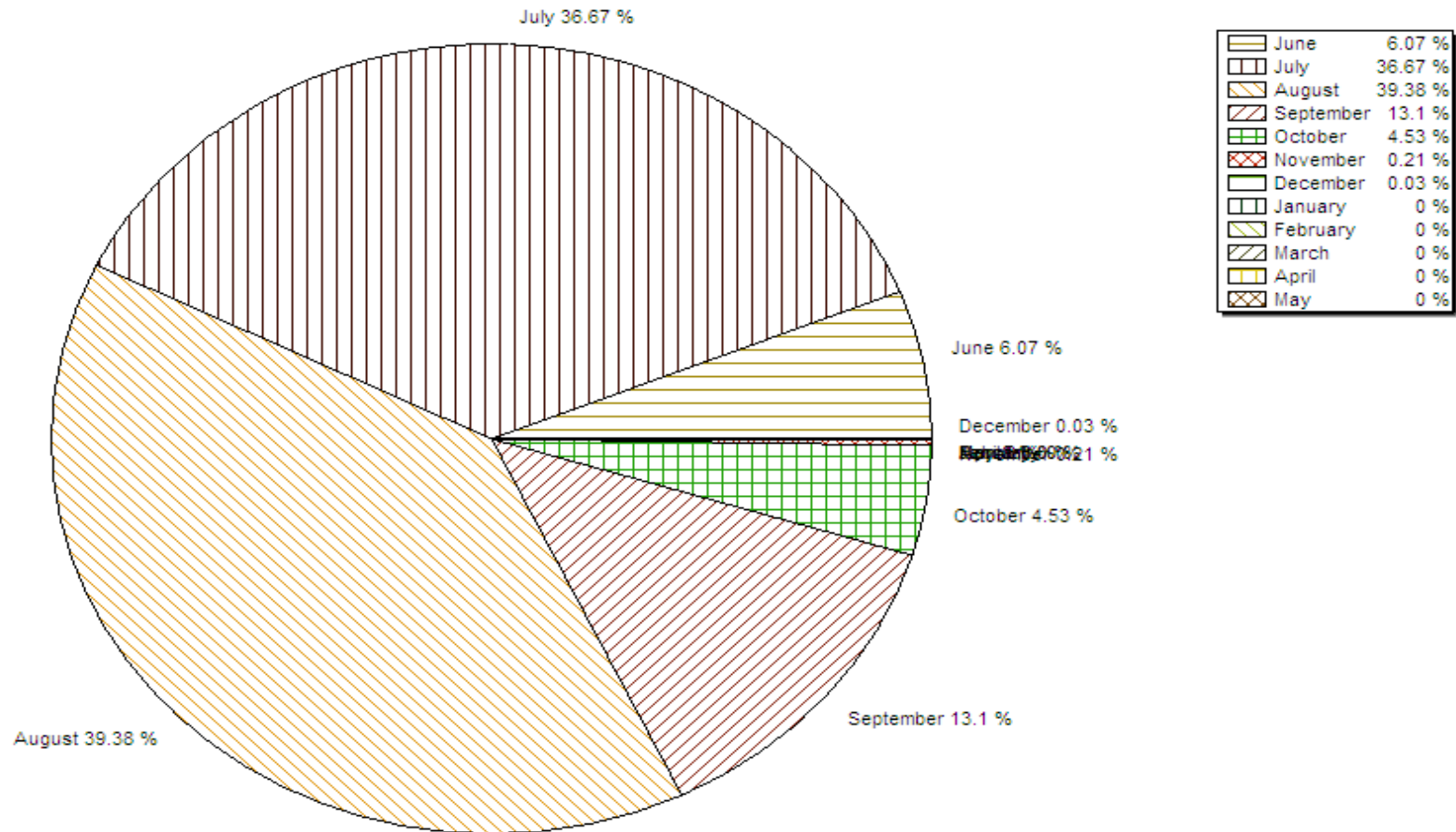
Monthly Average Runoff based on period : 1965-2019

Station Name : Samdoli (Seasonal) (AKX00A7)

Local River : Varna

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



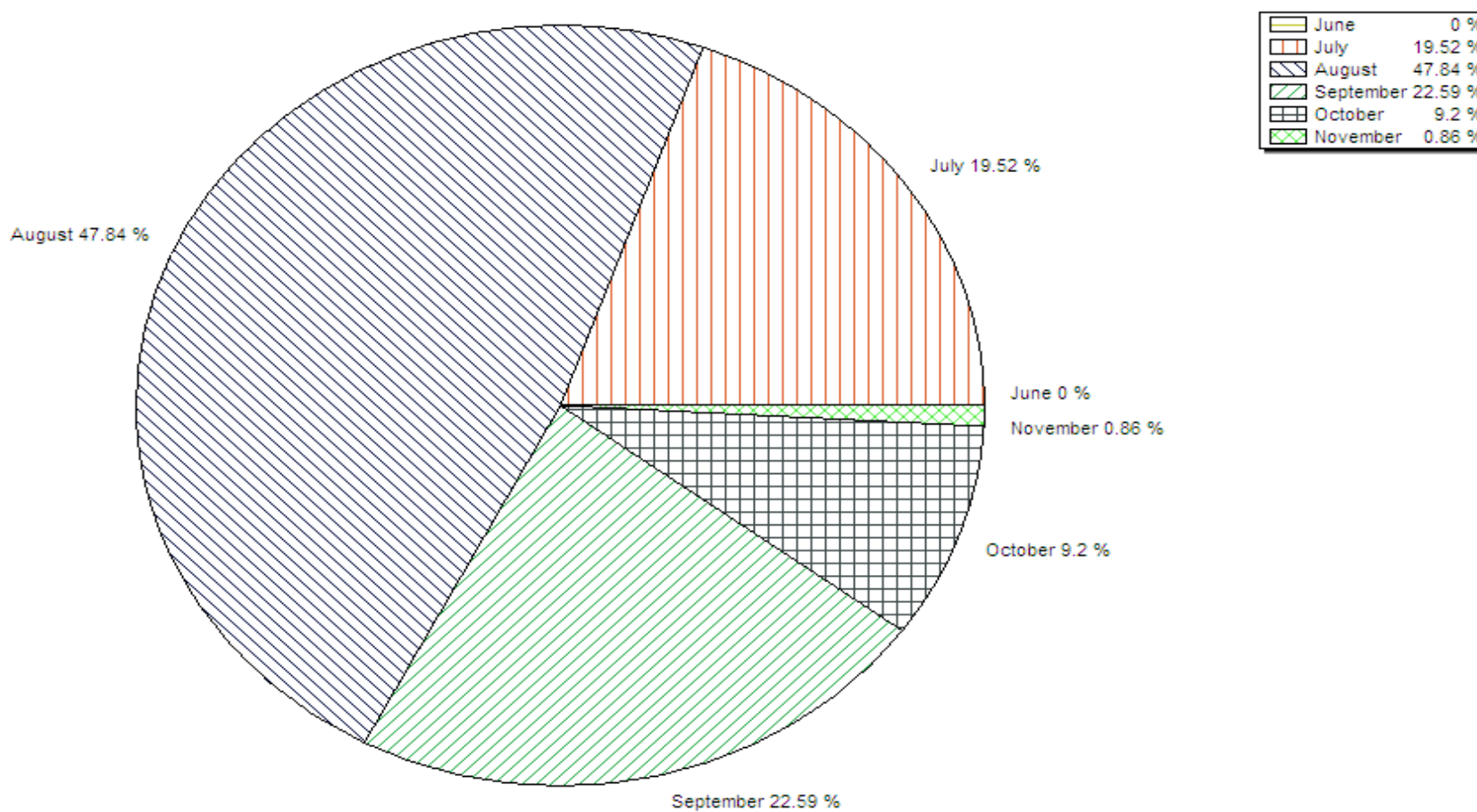
Monthly Runoff for the Year : 2019-2020

Station Name : Samdoli (Seasonal) (AKX00A7)

Local River : Varna

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



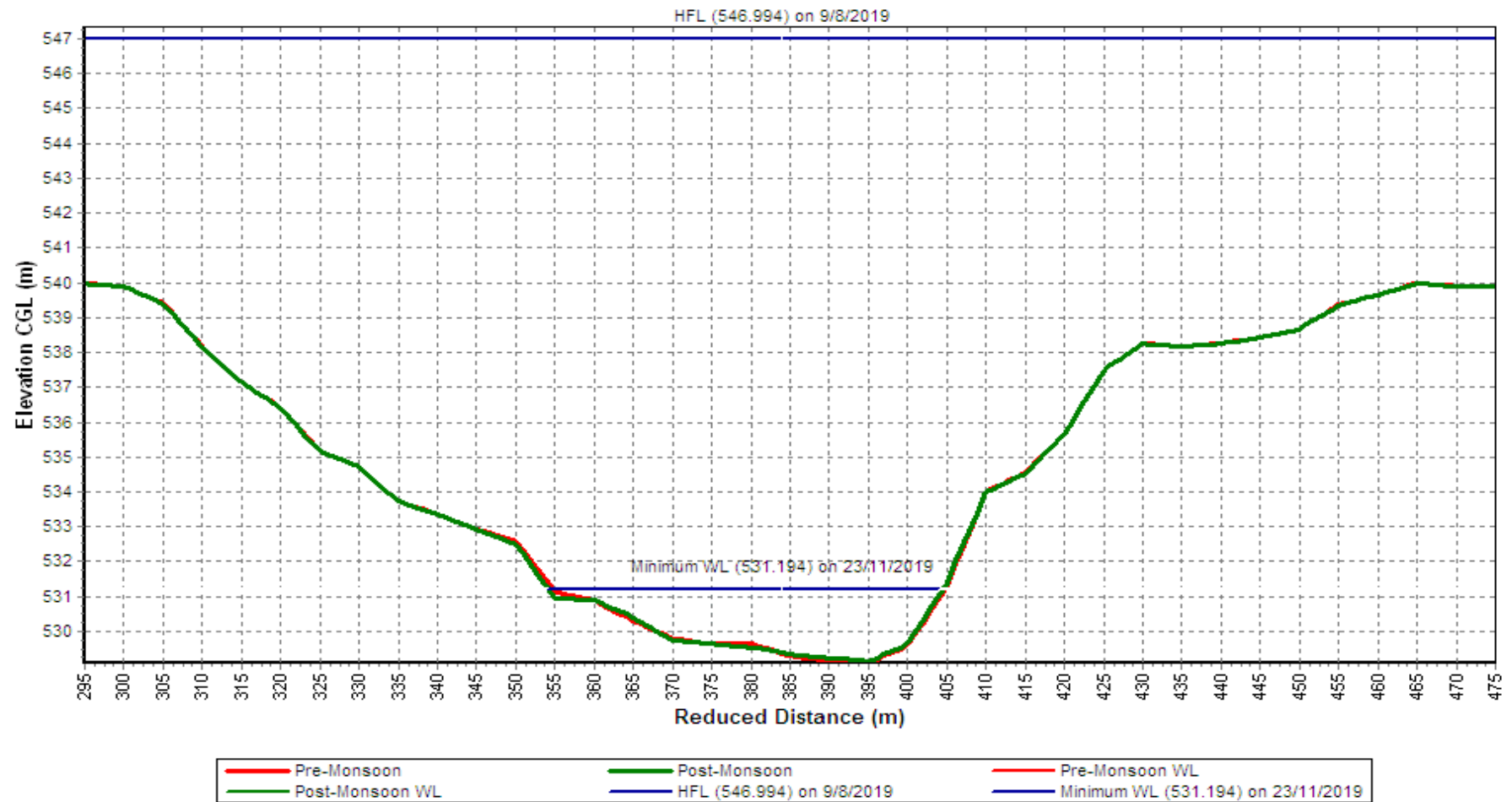
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Samdoli (Seasonal) (AKX00A7)

Local River : Varna

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



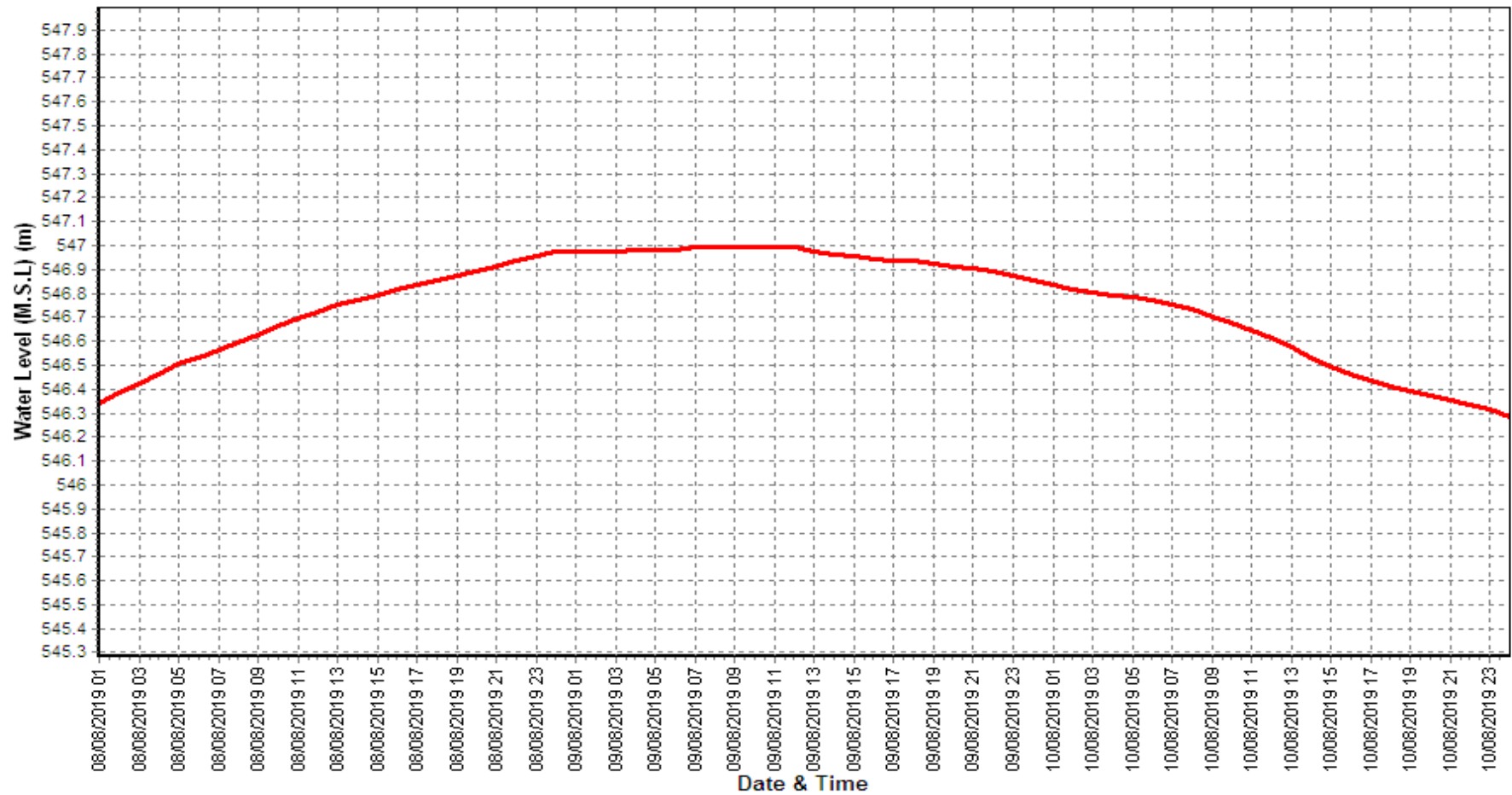
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Samdoli (Seasonal) (AKX00A7)

Local River : Varna

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



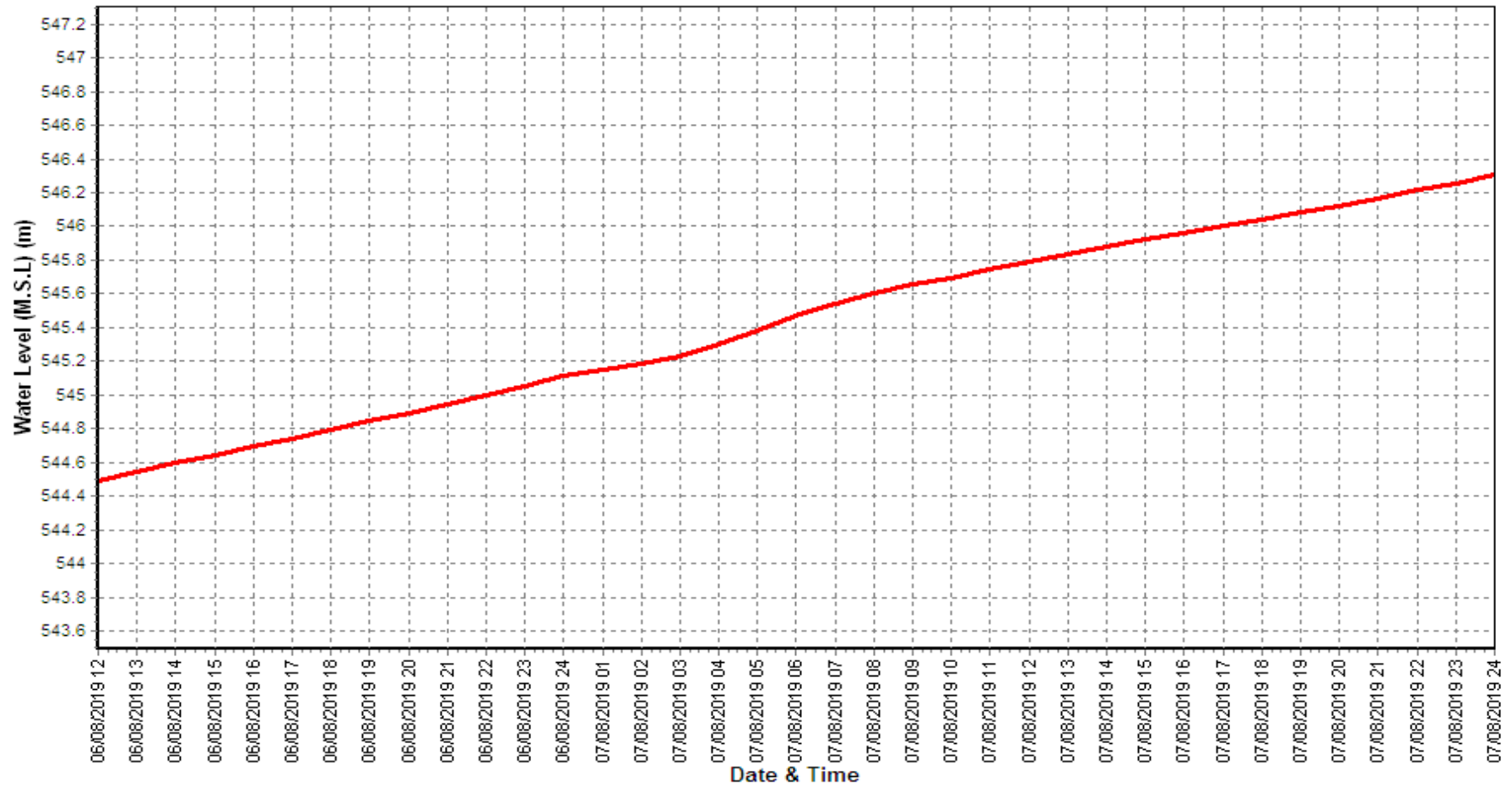
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Samdoli (Seasonal) (AKX00A7)

Local River : Varna

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



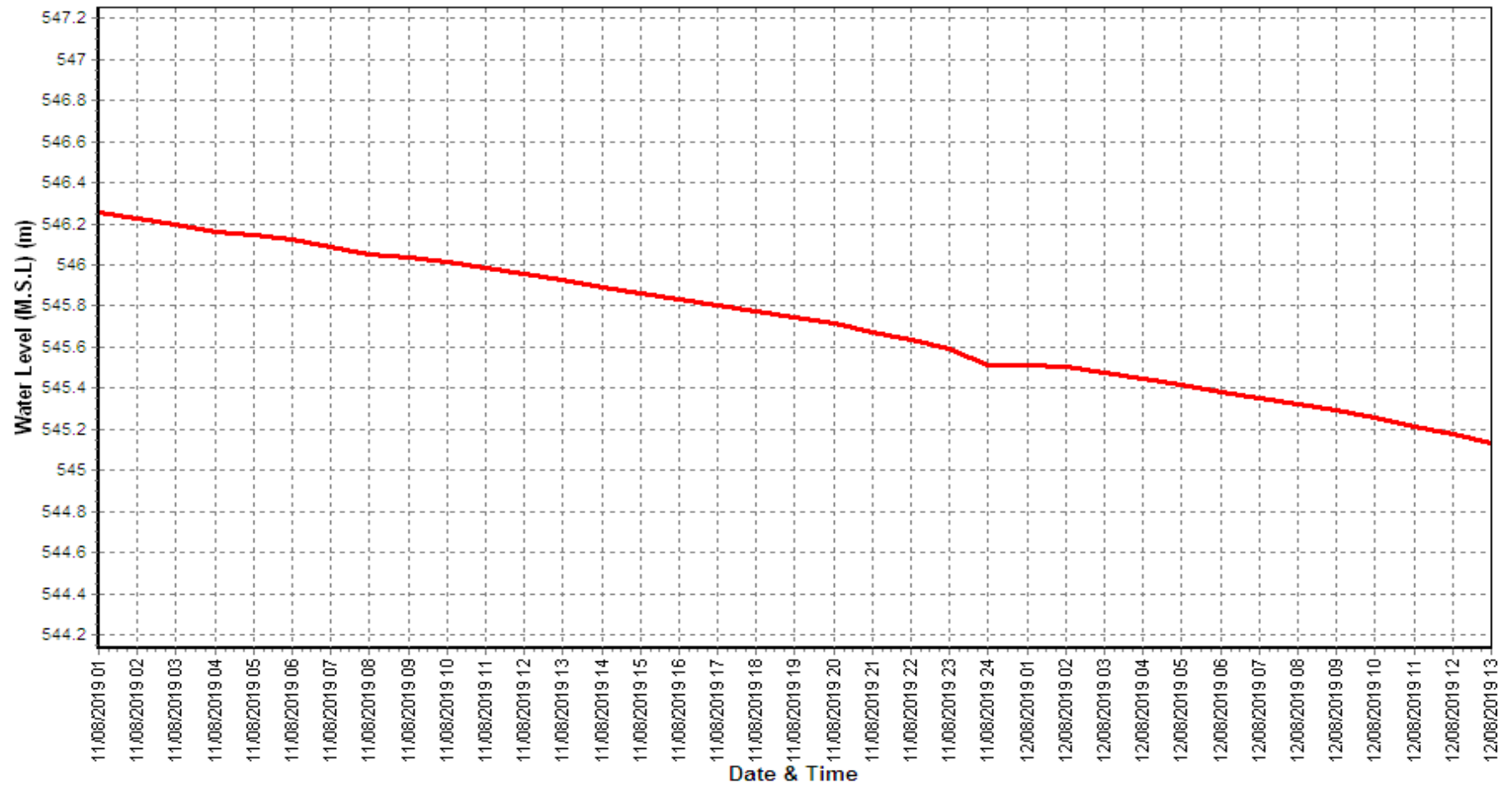
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Samdoli (Seasonal) (AKX00A7)

Local River : Varna

Division : Upper Krishna Divn, Pune

Sub-Division : Upper Krishna SD 2, Miraj



HISTORY SHEET

Water Year : 2019-2020

Site : Nandre

Code : NANDRE

State : Maharashtra

District : Sangli

Basin : Krishna

Independent River : Krishna

Tributary : Yerala

Sub Tributary :

Sub-Sub Tributary :

Local River : Yerala

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj

Drainage Area : 3035 Sq. Km.

Bank : Right

Latitude : 16°56'58"

Longitude : 74°31'45"

Zero of Gauge (m) : 526.5 (m.s.l)

18/10/2016

Opening Date

Closing Date

Gauge : 19/06/2017

Discharge : 07/08/2018

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

	Maximum			Minimum		
Year	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Annual Runoff of Yerala at Nandre

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2018-2019	26	0	26	1	0	1
2	2019-2020	4491	15	4506	159	1	160
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Nandre (NANDRE)

Division : Upper Krishna Divn, Pune

Local River : Yerala

Sub-Division : UKSD,Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	527.360	0.000	527.380	0.000	534.230	775.4 *	527.810	4.456 *	529.570	64.54 *	529.680	71.31 *
2	527.350	0.000	527.380	0.000	534.450	833.8 *	528.050	7.652	529.390	54.33 *	529.590	65.74 *
3	527.360	0.000	527.380	0.000	534.940	973.1 *	527.950	6.974	529.300	49.60 *	529.400	54.87 *
4	527.330	0.000	527.390	0.000	535.620	1188 *	527.925	6.500	529.750	75.82 *	529.350	52.20 *
5	527.340	0.000	527.390	0.000	537.990	2143 *	527.860	5.494	529.520	61.60 *	529.610	66.96 *
6	527.340	0.000	527.400	0.000	540.580	3587 *	527.730	3.538 *	529.720	73.87 *	529.390	54.33 *
7	527.320	0.000	527.480	0.000	542.500	4951 *	527.910	5.784 *	529.810	79.82 *	529.220	45.62 *
8	527.350	0.000	527.670	0.000	543.410	5690 *	527.710	3.327 *	529.760	76.48 *	529.180	43.70 *
9	527.360	0.000	527.720	0.000	543.300	5597 *	528.100	8.892 *	529.520	61.60 *	529.100	40.01 *
10	527.380	0.000	527.880	0.000	542.590	5021 *	527.940	6.223 *	530.130	103.2 *	528.900	31.60 *
11	527.380	0.000	527.970	0.000	541.700	4351 *	528.190	10.53	531.600	260.0 *	528.860	30.06 *
12	527.380	0.000	527.860	5.478	540.640	3626 *	528.100	8.860	530.000	93.29 *	528.780	27.12 *
13	527.380	0.000	527.900	6.208	539.440	2898 *	528.070	8.034	529.860	83.25 *	528.680	23.68 *
14	527.380	0.000	527.580	2.142 *	538.150	2220 *	528.050	7.688	529.870	83.94 *	528.750	26.06 *
15	527.370	0.000	527.890	5.972	536.820	1630 *	527.500	1.561 *	529.570	64.54 *	528.690	24.01 *
16	527.370	0.000	527.860	5.489	534.440	831.1 *	527.865	5.605	529.400	54.87 *	528.680	23.68 *
17	527.360	0.000	527.810	4.168	531.400	233.6 *	527.820	4.601	529.260	47.59 *	528.680	23.68 *
18	527.330	0.000	527.800	3.951	529.380	53.79 *	527.840	4.475	529.150	42.29 *	528.500	18.18 *
19	527.330	0.000	527.860	5.382	529.090	39.56 *	527.840	5.023	529.150	42.29 *	528.450	16.80 *
20	527.350	0.000	527.800	4.000	528.935	34.44	529.400	54.87 *	529.250	47.09 *	528.410	15.75 *
21	527.370	0.000	527.750	3.755 *	528.770	26.13	528.800	27.84 *	531.680	271.0 *	528.360	14.48 *
22	527.350	0.000	527.830	4.082	528.735	24.57	528.640	22.38 *	533.500	599.2 *	528.330	13.59
23	527.350	0.000	527.820	4.614	528.565	19.32	528.565	18.86	532.100	333.4 *	528.290	13.02
24	527.360	0.000	527.830	4.093	528.500	17.60	528.620	20.50	531.120	199.5 *	528.210	11.06 *
25	527.360	0.000	527.800	4.114	528.440	16.54 *	529.980	91.82 *	530.530	137.7 *	528.245	12.71
26	527.360	0.000	527.830	4.096	528.420	16.11	529.310	50.12 *	530.130	103.2 *	528.160	11.10
27	527.380	0.000	527.820	4.412	528.220	11.60	529.330	51.15 *	530.130	103.2 *	528.020	7.448
28	527.380	0.000	527.950	6.373 *	528.130	9.231	529.490	59.87 *	529.900	86.05 *	528.050	7.687
29	527.370	0.000	528.105	8.915	527.990	7.153	528.980	34.82 *	529.990	92.55 *	528.150	10.55
30	527.380	0.000	528.400	15.52	527.960	6.918	528.690	24.01 *	529.840	81.86 *	528.180	10.70
31			527.630	2.561 *	527.880	5.903			529.670	70.68 *		
Ten-Daily Mean												
I Ten-Daily	527.349	0.000	527.507	0.000	538.961	3076	527.899	5.884	529.647	70.09	529.342	52.63
II Ten-Daily	527.363	0.000	527.833	4.279	535.000	1592	528.068	11.12	529.711	81.92	528.648	22.90
III Ten-Daily	527.366	0.000	527.888	5.686	528.328	14.64	529.041	40.14	530.781	188.9	528.200	11.23
Monthly												
Min.	527.320	0.000	527.380	0.000	527.880	5.903	527.500	1.561	529.150	42.29	528.020	7.448
Max.	527.380	0.000	528.400	15.52	543.410	5690	529.980	91.82	533.500	599.2	529.680	71.31
Mean	527.359	0	527.747	3.398	533.910	1511	528.336	19.05	530.070	116.1	528.730	28.92

Annual Runoff in MCM = 4506 Annual Runoff in mm = 1485

Peak Observed Discharge = 34.44 cumecs on 20/08/2019 Corres. Water Level :528.935 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :527.36 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Nandre (NANDRE)

Division : Upper Krishna Divn, Pune

Local River : Yerala

Sub-Division : UKSD,Miraj

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	528.030	7.541 *	527.470	0.335	527.550	0.000	527.450	0.000	Not observed Due to Lock-Down		Not observed due to Lock-Down	
2	527.950	6.636	527.800	4.212	527.750	0.000	527.450	0.000				
3	527.930	6.391	527.600	0.000	527.750	0.000	527.450	0.000				
4	527.950	6.766	527.400	0.000	527.600	0.000	527.450	0.000				
5	527.950	6.633	527.450	0.000	527.600	1.690	527.500	0.000				
6	527.950	6.446	527.400	0.000	527.600	1.643	527.500	0.000				
7	528.040	7.638	527.400	0.000	527.600	1.605	527.500	0.000				
8	528.060	7.946 *	527.400	0.000	527.600	1.821	527.500	0.000				
9	528.070	7.979	527.450	0.000	527.550	1.067 *	527.500	0.000				
10	528.050	7.613	527.450	0.000	527.550	1.085	527.500	0.000				
11	528.030	7.592	527.450	0.000	527.700	3.090 #	527.500	0.000				
12	528.070	7.971	527.450	0.000	527.600	1.648	527.500	0.000				
13	527.960	7.015	527.450	0.000	527.600	1.615	527.450	0.000				
14	527.900	6.111	527.400	0.000	527.600	1.621	527.450	0.000				
15	527.900	5.787 *	527.450	0.000	527.600	1.652	527.450	0.000				
16	527.800	4.460	527.430	0.000	527.600	1.741 *	527.400	0.000				
17	527.790	4.188	527.430	0.000	527.600	1.633	527.400	0.000				
18	527.700	3.058	527.410	0.000	527.550	1.375	527.400	0.000				
19	527.700	3.010	527.410	0.000	527.600	1.617	527.400	0.000				
20	527.650	2.179	527.410	0.000	527.600	1.686	527.400	0.000				
21	527.640	2.107	527.410	0.000	527.600	1.615	527.400	0.000				
22	527.620	2.011 *	527.400	0.000	527.600	1.655	527.400	0.000				
23	527.600	1.505	527.410	0.000	527.600	1.741 *	527.400	0.000				
24	527.550	1.007	527.410	0.000	527.600	1.644	Not observed Due to Lock-Down					
25	527.500	0.650	527.410	0.000	527.600	0.000						
26	527.500	0.645	527.450	0.000	527.600	0.000						
27	527.620	1.974	527.450	0.000	527.600	0.000						
28	527.600	1.524	527.550	0.000	527.550	0.000						
29	527.500	0.392 *	527.550	0.000	527.450	0.000						
30	527.470	0.369	527.550	0.000								
31	527.470	0.346	527.550	0.000								
Ten-Daily Mean												
I Ten-Daily	527.998	7.159	527.482	0.455	527.615	0.891	527.480	0.000			527.550	0.000
II Ten-Daily	527.850	5.137	527.429	0.000	527.605	1.768	527.435	0.000			527.431	0.000
III Ten-Daily	527.552	1.139	527.467	0.000	527.578	0.739	527.400	0.000			527.466	0.000
Monthly												
Min.	527.470	0.346	527.400	0.000	527.450	0.000	527.400	0.000			527.380	0.000
Max.	528.070	7.979	527.800	4.212	527.750	3.090	527.500	0.000			527.650	0.000
Mean	527.792	4.371	527.460	0.147	527.600	1.146	527.450	0			527.475	0

Peak Computed Discharge = 5690 cumecs on 08/08/2019

Corres. Water Level :543.41 m

Lowest Computed Discharge = 0.392 cumecs on 29/12/2019

Corres. Water Level :527.5 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

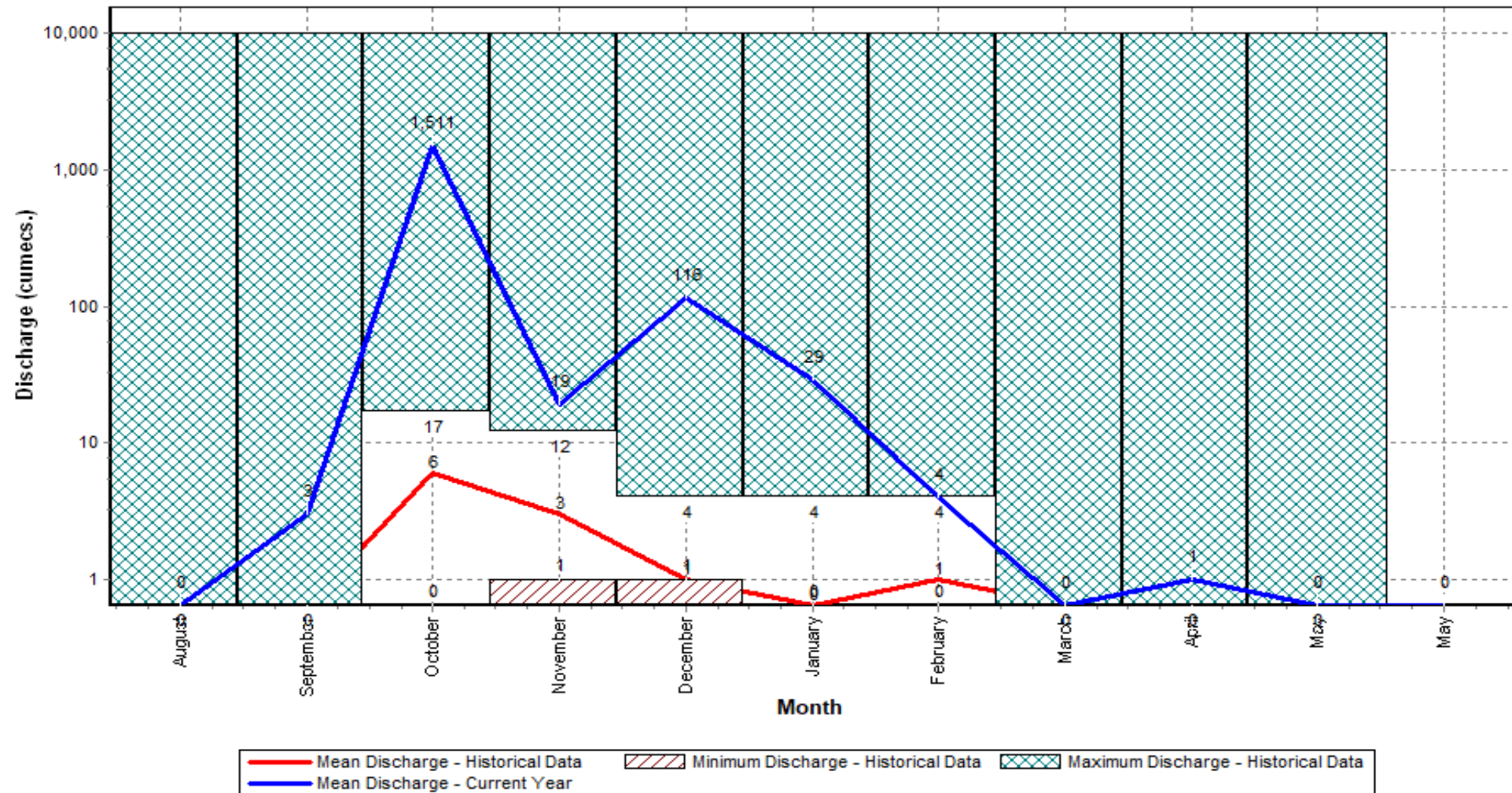
Station Name : Nandre (NANDRE)

Data considered : 2019-2020

Division : Upper Krishna Divn, Pune

Local River : Yerala

Sub-Division : UKSD,Miraj



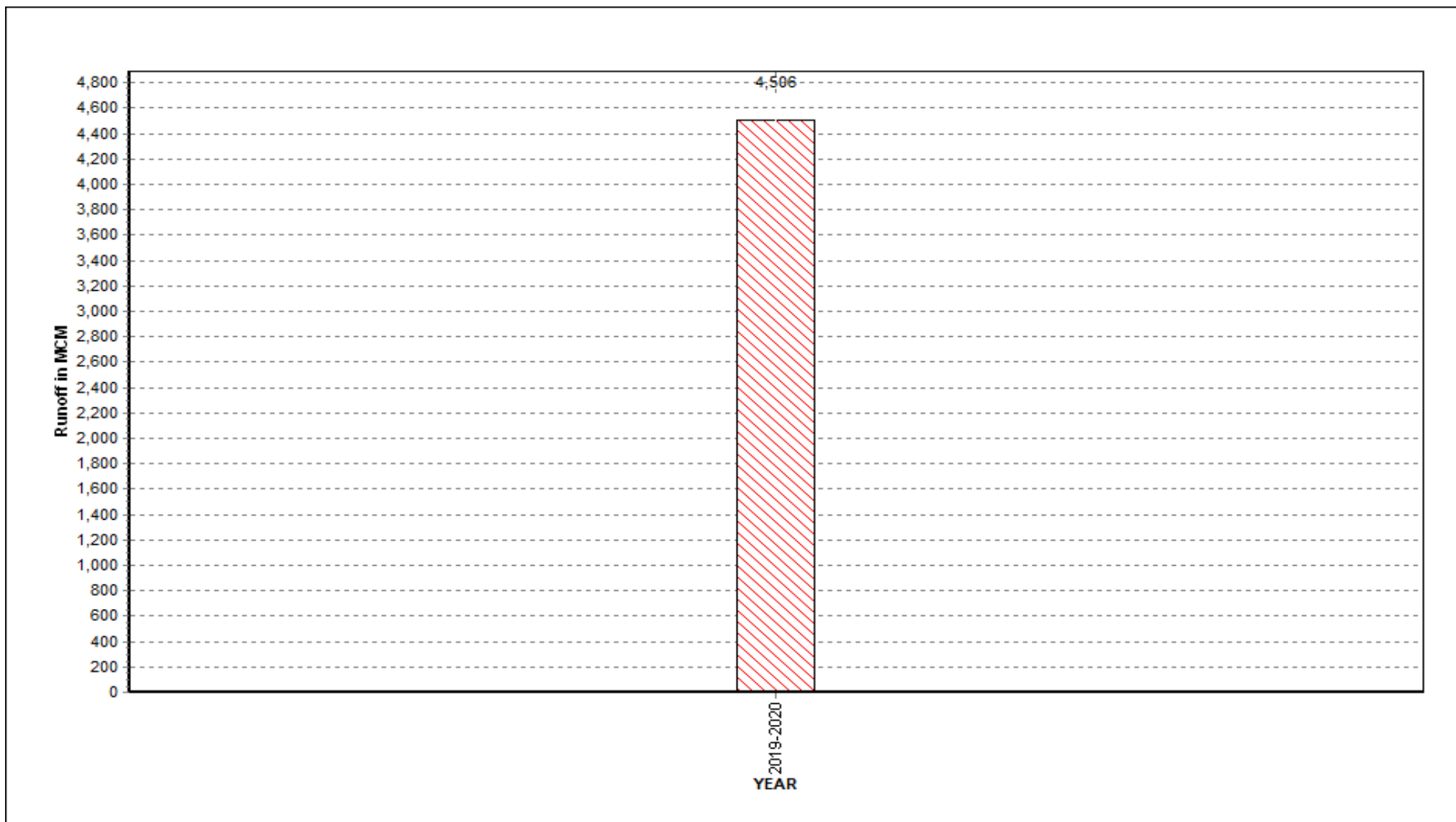
Annual Runoff Values for the period: 2019 - 2020

Station Name : Nandre (NANDRE)

Local River : Yerala

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

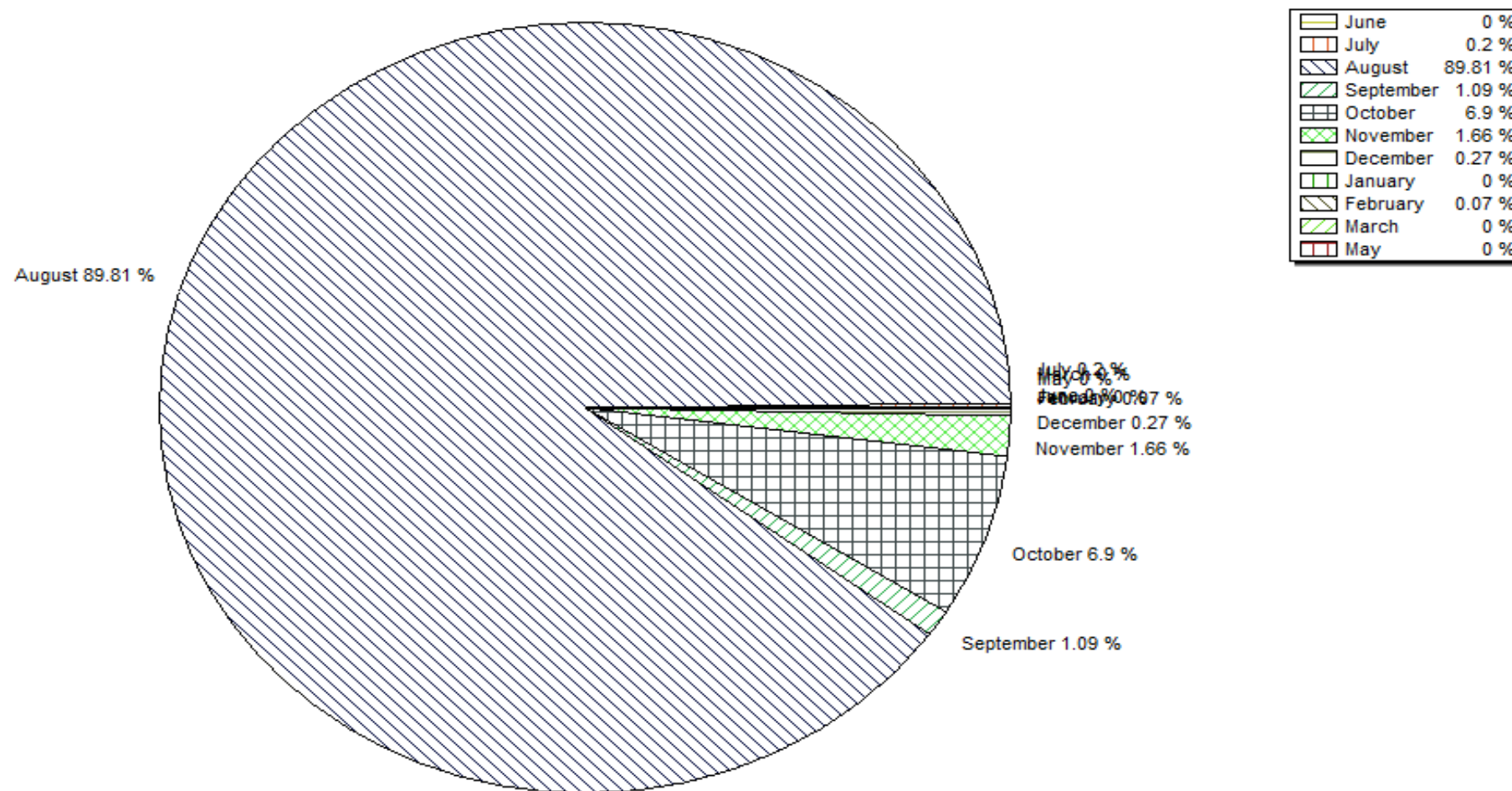
Monthly Runoff for the Year : 2019-2020

Station Name : Nandre (NANDRE)

Local River : Yerala

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



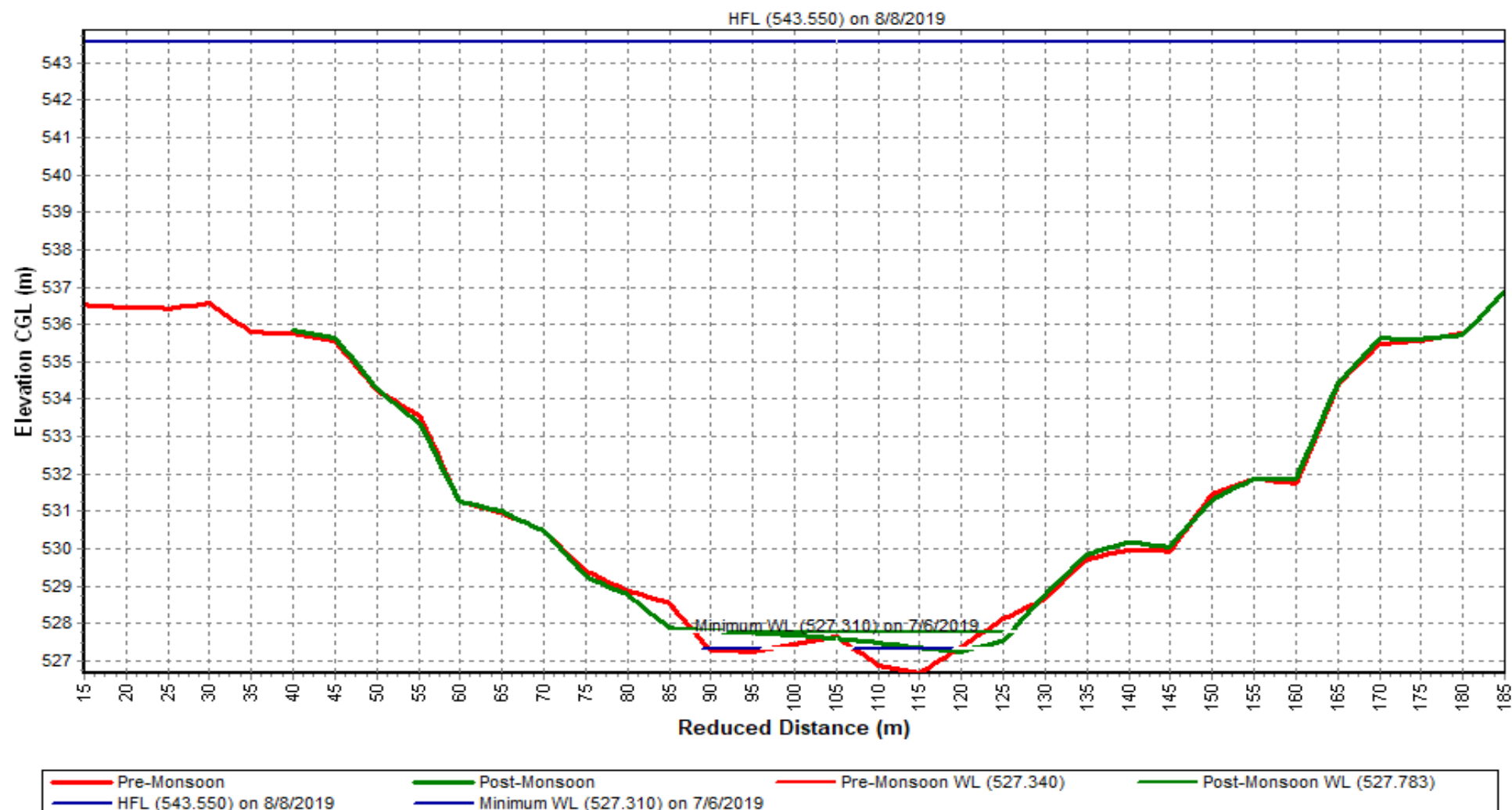
Monthly Runoff for the Year : 2019-2020

Station Name : Nandre (NANDRE)

Local River : Yerala

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



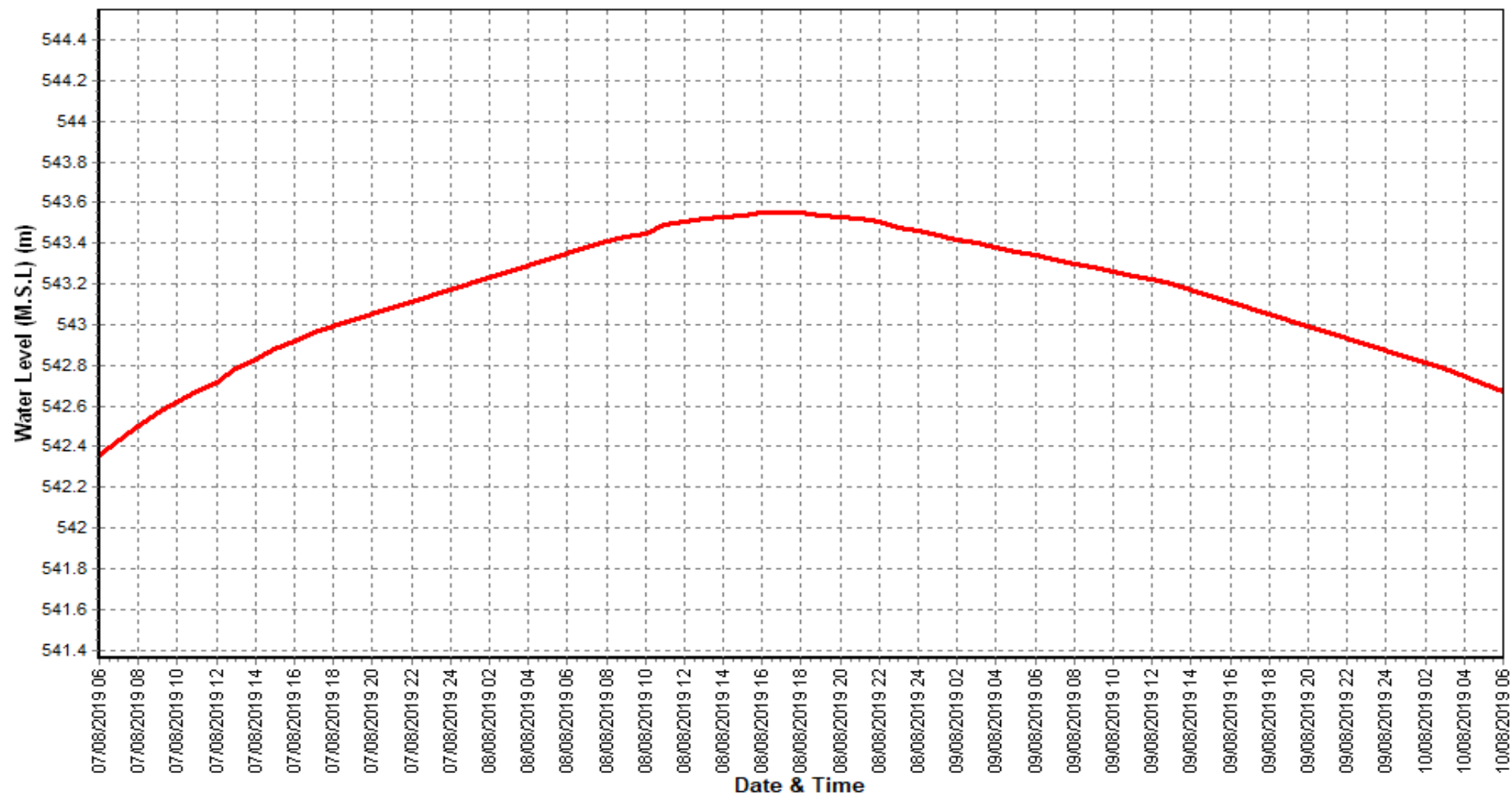
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Nandre (NANDRE)

Local River : Yerala

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



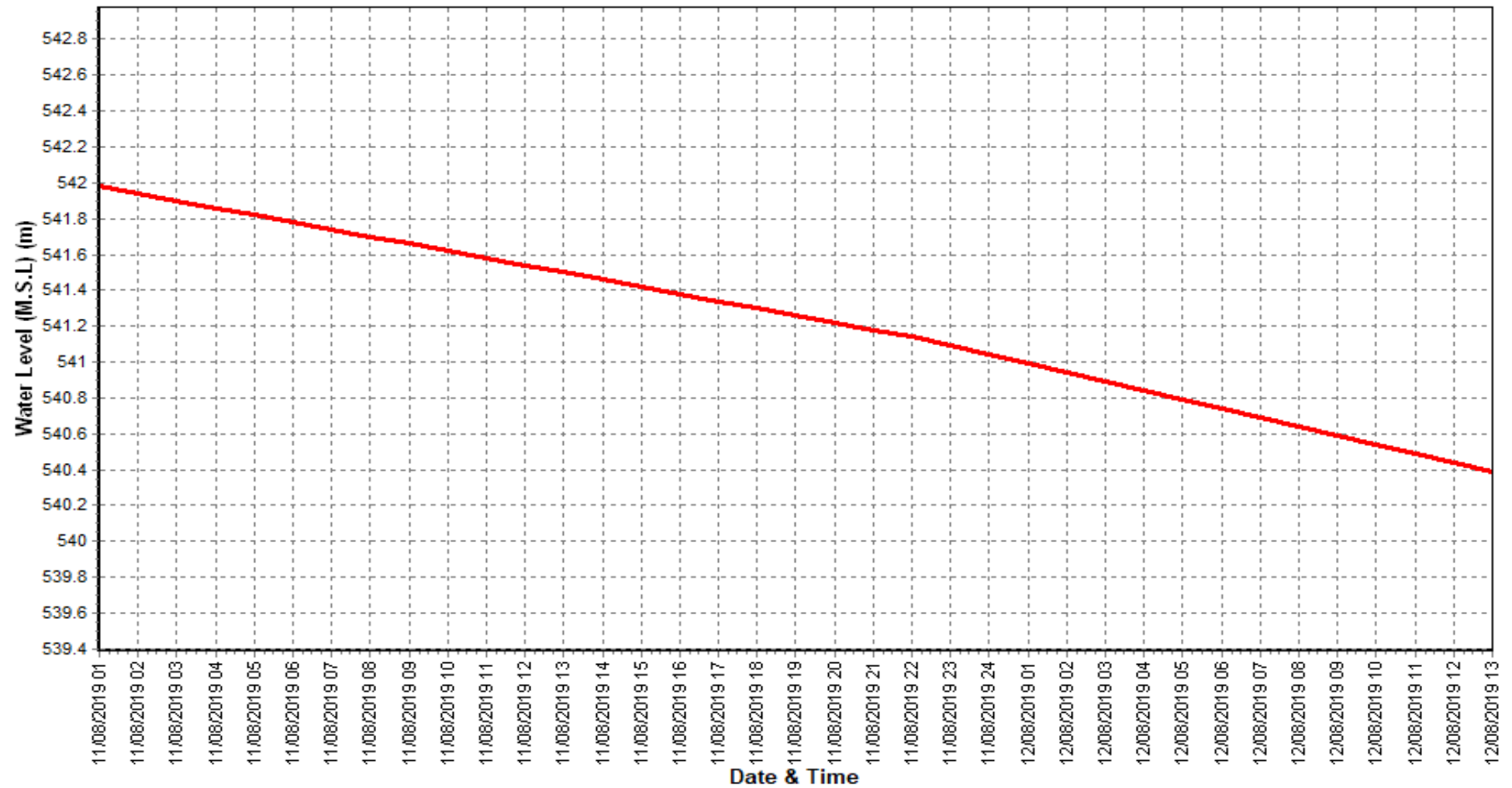
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Nandre (NANDRE)

Local River : Yerala

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj



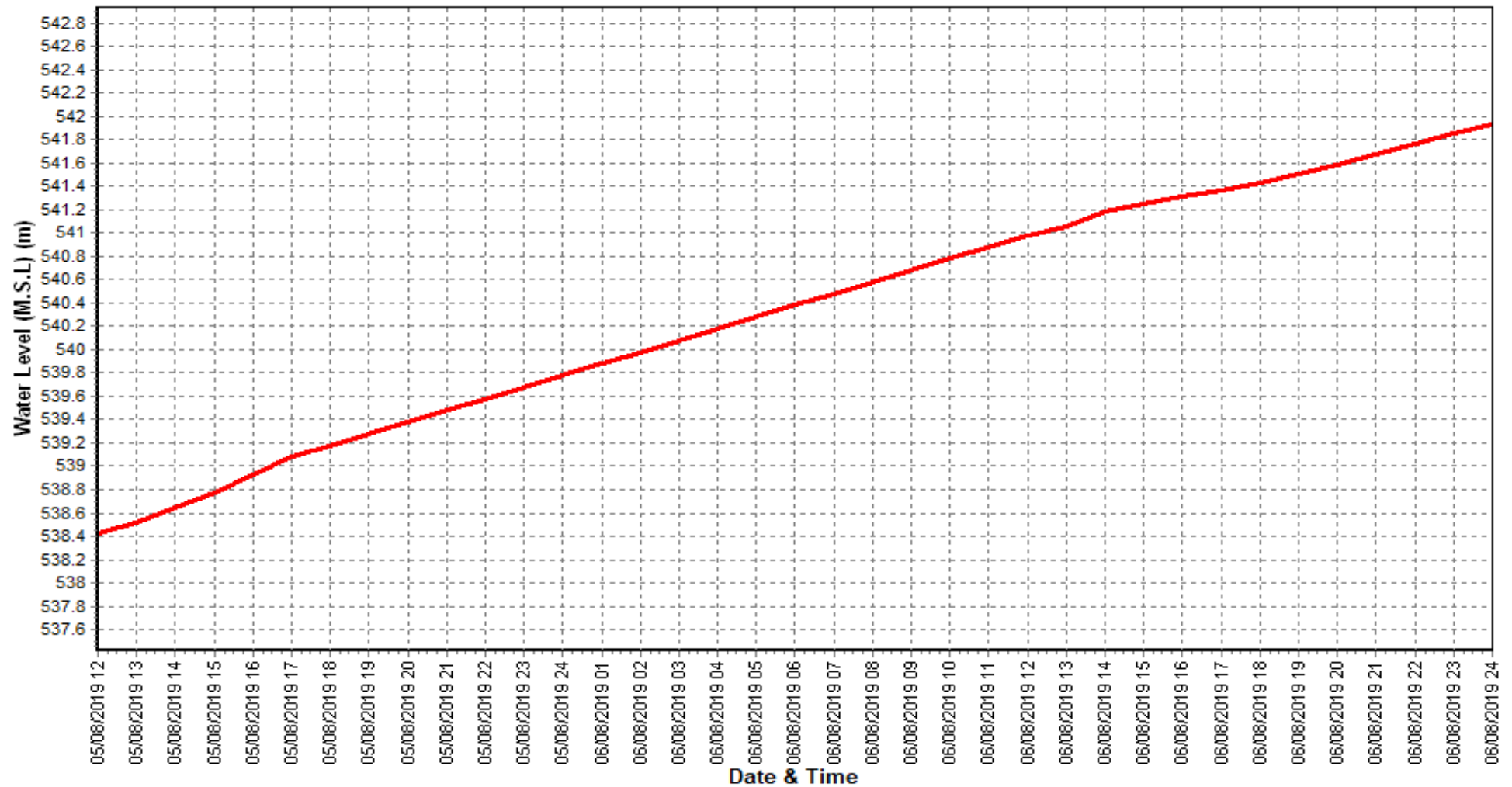
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Nandre (NANDRE)

Local River : Yerala

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



HISTORY SHEET

Water Year : 2019-2020

Site : Karad

Code : AK000X6

State : Maharashtra

District : Satara

Basin : Krishna

Independent River : Krishna

Tributary : -

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj

Drainage Area : 5462 Sq. Km.

Bank : Right

Latitude : 17°17'40"

Longitude : 74°11'25"

Zero of Gauge (m) : 549.962 (m.s.l)
549.915 (m.s.l)01/06/1965 - 31/05/2004
01/06/2004

Opening Date

Closing Date

Gauge : 25/12/1964

HFL During 2019-20 : 566.145 m
Corres. Discharge : 6309 (Estimated)
Date & Time of occurrence : 06/08/2019
: 19:00 Hrs

Discharge : 21/06/1965

Sediment : 22/06/1965

Water Quality : 01/09/1972

HFL Recorded so far in m : 567.162 dt 07-06-1976

Corresponding Discharge (cumecs) : 8938 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1965-1966	4760	561.837	21/07/1965	0.000	550.162	08/06/1965
1966-1967	2673	559.067	29/07/1966	0.010	550.232	06/05/1967
1967-1968	4482	562.997	28/07/1967	0.020	550.152	09/06/1967
1968-1969	1527	556.640	08/08/1968	0.010	550.092	30/05/1969
1969-1970	4267	561.672	01/08/1969	0.200	550.242	09/05/1970
1970-1971	2428	558.245	21/08/1970	0.100	550.352	20/04/1971
1971-1972	2156	558.002	31/08/1971	0.000	550.162	23/05/1972
1972-1973	2190	557.982	08/07/1972	0.000	549.987	12/03/1973
1973-1974	3051	560.362	08/07/1973	0.000	549.882	02/06/1973
1974-1975	3101	559.360	05/07/1974	0.000	550.157	24/03/1975
1975-1976	3231	560.117	10/07/1975	0.000	550.012	21/05/1976
1976-1977	4562	561.735	02/08/1976	0.000	550.127	15/04/1977
1977-1978	3422	559.898	07/07/1977	0.000	550.102	16/03/1978
1978-1979	2187	558.292	27/08/1978	0.200	550.052	30/01/1979
1979-1980	2435	559.402	07/08/1979	0.000	550.142	14/05/1980
1980-1981	2848	560.077	06/08/1980	0.000	550.187	08/05/1981
1981-1982	1942	558.142	10/07/1981	0.000	550.192	01/06/1981

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1982-1983	1261	556.727	14/08/1982	0.000	550.182	23/03/1983
1983-1984	1931	558.778	17/08/1983	0.000	550.127	19/12/1983
1984-1985	1797	558.250	19/07/1984	0.000	550.152	04/03/1985
1985-1986	1363	557.239	02/08/1985	0.000	550.202	27/03/1986
1986-1987	1801	558.287	30/06/1986	0.000	550.272	27/12/1986
1987-1988	1323	556.722	08/07/1987	0.000	550.132	23/02/1988
1988-1989	3205	562.912	03/08/1988	0.000	550.152	12/01/1989
1989-1990	2904	559.587	25/07/1989	0.000	550.072	19/01/1990
1990-1991	4361	562.212	18/08/1990	0.000	550.012	22/04/1991
1991-1992	3350	560.942	28/07/1991	0.000	550.192	14/11/1991
1992-1993	2127	559.757	14/08/1992	0.000	550.042	25/12/1992
1993-1994	1812	558.702	19/06/1993	0.692	550.032	01/06/1993
1994-1995	3915	562.127	15/07/1994	0.000	550.002	27/01/1995
1995-1996	1356	556.577	20/07/1995	0.000	550.037	09/07/1995
1996-1997	2944	559.997	04/10/1996	0.000	549.892	02/06/1996
1997-1998	5954	563.922	24/08/1997	0.000		12/03/1998
1998-1999	1541	557.627	09/07/1998	0.000	549.932	06/01/1999
1999-2000	2111	558.697	28/07/1999	0.000	549.842	18/04/2000
2000-2001	774.1	555.172	13/07/2000	0.000	549.912	12/12/2000
2001-2002	911.2	555.117	10/07/2001	0.000	549.912	08/02/2002
2002-2003	1121	555.432	13/08/2002	0.000	549.922	18/01/2003
2003-2004	936.5	554.912	28/07/2003	0.000	549.912	21/01/2004
2004-2005	4163	561.745	13/08/2004	0.000	549.795	19/04/2005
2005-2006	6312	564.815	03/08/2005	0.000	549.825	02/04/2006
2006-2007	6708	566.075	30/07/2006	0.000	549.865	01/03/2007
2007-2008	3868	561.425	02/07/2007	0.000	549.825	02/01/2008
2008-2009	2884	560.115	11/08/2008	4.620	549.815	01/03/2009
2009-2010	1258	555.755	15/07/2009	0.000	552.855	28/02/2010
2010-2011	1189	555.790	27/07/2010	0.000	553.515	29/01/2011
2011-2012	5074	563.375	04/09/2011	0.000	553.995	03/02/2012
2012-2013	993.4	555.520	26/07/2012	0.000	555.460	08/04/2013
2013-2014	2507	558.930	26/07/2013	0.000	554.315	25/04/2014
2014-2015	1700	556.805	24/07/2014	0.000	554.115	27/06/2014
2015-2016	1045	555.885	24/06/2015	0.000	553.745	13/11/2015
2016-2017	1262	556.770	06/08/2016	0.000	556.535	09/03/2017
2017-2018	1053	556.565	24/09/2017	0.000	556.855	24/04/2018
2018-2019	1089	556.320	23/08/2018	0.000	556.135	31/03/2019

Annual Runoff of Krishna at Karad

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966	6541	185	6726	231	7	238
2	1966-1967	3949	88	4037	140	3	143
3	1967-1968	5820	1020	6840	206	36	242
4	1968-1969	2917	82	2999	103	3	106
5	1969-1970	6861	148	7009	242	5	248
6	1970-1971	5173	153	5326	183	5	188
7	1971-1972	4152	204	4356	147	7	154
8	1972-1973	2287	192	2479	81	7	88
9	1973-1974	4786	279	5064	169	10	179
10	1974-1975	3155	182	3337	111	6	118
11	1975-1976	5088	225	5313	180	8	188
12	1976-1977	6765	257	7021	239	9	248
13	1977-1978	4372	306	4678	154	11	165
14	1978-1979	4914	285	5199	174	10	184
15	1979-1980	4528	272	4800	160	10	170
16	1980-1981	5161	331	5492	182	12	194
17	1981-1982	3499	376	3875	124	13	137
18	1982-1983	2401	396	2796	85	14	99
19	1983-1984	3188	415	3603	113	15	127
20	1984-1985	3112	504	3616	110	18	128
21	1985-1986	2264	613	2878	80	22	102
22	1986-1987	2843	625	3468	100	22	123
23	1987-1988	1678	516	2194	59	18	78
24	1988-1989	3566	566	4132	126	20	146
25	1989-1990	2344	580	2925	83	20	103
26	1990-1991	5707	873	6580	202	31	233
27	1991-1992	6220	732	6952	220	26	246
28	1992-1993	2703	534	3238	96	19	114
29	1993-1994	3925	1037	4962	139	37	175
30	1994-1995	9337	649	9986	330	23	353
31	1995-1996	2035	509	2544	72	18	90
32	1996-1997	3222	568	3790	114	20	134

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	6506	672	7178	230	24	254
34	1998-1999	3065	558	3622	108	20	128
35	1999-2000	4661	630	5291	165	22	187
36	2000-2001	1780	606	2386	63	21	84
37	2001-2002	1720	523	2243	61	18	79
38	2002-2003	2091	499	2590	74	18	92
39	2003-2004	1779	544	2323	63	19	82
40	2004-2005	4646	434	5080	164	15	179
41	2005-2006	10046	435	10481	355	15	370
42	2006-2007	10337	488	10824	365	17	382
43	2007-2008	6273	450	6723	222	16	238
44	2008-2009	3367	520	3887	119	18	137
45	2009-2010	3221	168	3389	114	6	120
46	2010-2011	2754	3	2757	97	0	97
47	2011-2012	3742	0	3742	132	0	132
48	2012-2013	1501	0	1501	53	0	53
49	2013-2014	3716	0	3716	131	0	131
50	2014-2015	2309	0	2309	82	0	82
51	2015-2016	970	35	1006	34	1	36
52	2016-2017	2305	0	2305	81	0	81
53	2017-2018	1358	0	1358	48	0	48
54	2018-2019	2449	0	2449	87	0	87
55	2019-2020	8458	0	8458	299	0	299
Average		4065	368	4433	144	13	157
75% Dependable flow (MCM)				2757			
90 % Dependable flow (MCM)				2281			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Karad (AK000X6)

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	556.435	0.000	551.220	58.29 #	555.990	1155	552.385	240.4 *	556.315	0.000	552.185	187.9
2	556.305	0.000	551.580	87.31	557.825	1762	553.245	507.4	556.585	0.000	551.905	143.9
3	556.235	0.000	553.180	384.5	556.915	1485	552.325	237.9	556.805	0.000	551.875	149.8 *
4	556.355	0.000	551.495	85.71	559.315	2579 *	552.675	351.0	556.975	0.000	551.835	135.8
5	556.405	0.000	551.460	90.32	563.895	4771	557.895	1885	557.055	0.000	551.915	147.6
6	556.715	0.000	552.665	303.9	565.465	5948	557.865	1827	557.145	0.000	552.315	204.6
7	556.335	0.000	554.065	635.3 *	565.765	6139	556.835	1543	555.695	0.000	552.255	199.1
8	556.365	0.000	554.680	725.8	565.215	5967	556.665	1480 *	556.665	0.000	552.135	177.2
9	556.265	0.000	553.750	552.9	561.265	3389	559.240	2303	557.215	0.000	551.825	131.6
10	556.345	0.000	553.235	465.3	560.480	2835	556.890	1550	556.765	0.000	551.765	132.3 *
11	556.495	0.000	553.240	469.3	558.465	2203 *	553.665	701.2	556.595	0.000	551.605	113.3
12	556.325	0.000	553.625	532.4	557.880	1780	553.115	525.4	557.745	0.000	551.515	99.69 *
13	556.395	0.000	552.755	293.1	555.610	1042	552.975	363.4 #	555.815	0.000	551.465	99.05
14	556.985	0.000	552.485	260.0 *	554.565	787.0	553.325	444.7 #	557.295	0.000	551.455	101.0
15	556.625	0.000	552.365	234.3	554.365	760.4	553.735	547.2 *	556.665	0.000	551.385	90.69
16	556.425	0.000	552.710	309.1	554.275	746.5	553.040	378.0 #	555.895	0.000	551.345	88.26
17	556.235	0.000	552.310	224.6	553.090	529.5	554.915	883.1 *	557.385	0.000	551.315	83.60 *
18	556.015	0.000	552.165	200.6	552.945	356.7 *	556.535	1432 *	556.895	0.000	551.435	99.91
19	555.865	0.000	551.935	172.8	552.710	334.0	557.215	1690 *	556.235	0.000	551.465	101.5
20	555.415	0.000	551.870	162.4	552.135	228.1	555.015	914.1 *	558.915	2400 *	551.195	55.44 #
21	555.495	0.000	551.815	140.2 *	551.955	146.6	555.365	1026 *	556.415	1460	551.065	41.46 #
22	555.985	0.000	551.710	102.8	551.905	143.4	555.815	1176 *	553.685	595.4	551.065	41.46 #
23	555.935	0.000	551.675	86.25	551.855	141.9	555.825	1180 *	553.640	572.4	551.015	36.48 #
24	554.935	0.000	551.685	81.13	551.905	151.1	556.765	1518 *	553.135	447.9	550.945	32.67 *
25	555.485	0.000	551.780	126.0	551.825	141.8 *	556.165	1315	552.845	347.7	550.945	29.91 #
26	555.915	0.000	551.720	113.6	551.750	128.4	553.840	732.0	552.765	241.4 #	550.935	29.01 #
27	555.495	0.000	554.365	709.7	551.675	121.5	553.175	525.5	552.675	298.6 *	550.995	34.56 #
28	555.095	0.000	553.835	573.4 *	551.630	114.7	552.725	309.1 #	552.390	241.4 #	551.095	44.55 #
29	554.085	0.000	553.450	505.7	551.570	87.14	553.635	521.5 *	552.475	236.5	550.975	32.67 #
30	552.005	0.000	556.750	1419	551.635	99.79	557.595	1841 *	552.305	221.1	550.935	29.01 #
31			556.750	1427	552.015	173.9			552.205	213.1		
Ten-Daily Mean												
I Ten-Daily	556.376	0.000	552.733	338.9	561.213	3603	555.602	1192	556.722	0.000	552.001	161.0
II Ten-Daily	556.278	0.000	552.546	285.8	554.604	876.8	554.354	787.9	556.944	240.0	551.418	93.24
III Ten-Daily	555.043	0.000	553.230	480.5	551.793	131.8	555.090	1014	553.140	443.2	550.997	35.18
Monthly												
Min.	552.005	0.000	551.220	58.29	551.570	87.14	552.325	237.9	552.205	0.000	550.935	29.01
Max.	556.985	0.000	556.750	1427	565.765	6139	559.240	2303	558.915	2400	552.315	204.6
Mean	555.899	0	552.849	372	555.738	1492	555.015	998.2	555.522	234.7	551.472	96.47

Annual Runoff in MCM = 8458 Annual Runoff in mm = 1549

Peak Observed Discharge = 6139 cumecs on 07/08/2019 Corres. Water Level :565.765 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :556.435 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Karad (AK000X6)

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	551.255	0.000	550.915	0.000	552.015	0.000	555.955	0.000	Not observed Due to Lock-Down		556.515	0.000
2	551.705	0.000	550.905	0.000	551.065	0.000	555.885	0.000			556.535	0.000
3	552.265	0.000	550.855	0.000	550.995	0.000	555.855	0.000			556.495	0.000
4	552.225	0.000	550.565	0.000	552.115	0.000	555.865	0.000			556.205	0.000
5	552.015	0.000	550.395	0.000	552.305	0.000	556.035	0.000			555.955	0.000
6	552.445	0.000	550.485	0.000	552.515	0.000	555.895	0.000			555.885	0.000
7	552.115	0.000	550.455	0.000	553.935	0.000	555.895	0.000			556.155	0.000
8	552.085	0.000	550.555	0.000	554.475	0.000	556.215	0.000			556.175	0.000
9	552.225	0.000	550.945	0.000	554.145	0.000	556.395	0.000			556.285	0.000
10	551.755	0.000	550.965	0.000	554.455	0.000	556.455	0.000			556.275	0.000
11	551.145	0.000	550.945	0.000	554.355	0.000	555.845	0.000			556.215	0.000
12	550.865	0.000	550.915	0.000	554.995	0.000	555.835	0.000			556.265	0.000
13	550.765	0.000	550.865	0.000	554.955	0.000	556.145	0.000			556.145	0.000
14	550.745	0.000	550.945	0.000	555.085	0.000	555.865	0.000			556.255	0.000
15	551.245	0.000	550.675	0.000	555.115	0.000	556.005	0.000			556.525	0.000
16	550.915	0.000	550.425	0.000	555.185	0.000	555.935	0.000			556.305	0.000
17	550.845	0.000	550.315	0.000	555.105	0.000	556.415	0.000			556.375	0.000
18	550.765	0.000	550.235	0.000	555.685	0.000	556.555	0.000			556.475	0.000
19	550.815	0.000	550.415	0.000	555.615	0.000	556.425	0.000			556.515	0.000
20	550.945	0.000	550.345	0.000	555.205	0.000	555.935	0.000	555.915	0.000	556.525	0.000
21	550.955	0.000	550.535	0.000	555.075	0.000	555.825	0.000	556.235	0.000	556.595	0.000
22	550.435	0.000	550.715	0.000	555.185	0.000	555.765	0.000	556.465	0.000	556.515	0.000
23	550.385	0.000	550.725	0.000	555.365	0.000	555.885	0.000	556.815	0.000	556.585	0.000
24	550.265	0.000	550.515	0.000	555.285	0.000	556.105	0.000	556.915	0.000	556.465	0.000
25	551.015	0.000	550.475	0.000	555.155	0.000	555.955	0.000	556.725	0.000	556.235	0.000
26	550.945	0.000	551.285	0.000	555.505	0.000	Not observed Due to Lock-Down		556.505	0.000	556.235	0.000
27	551.075	0.000	552.115	0.000	555.935	0.000			556.405	0.000	556.315	0.000
28	551.105	0.000	552.015	0.000	556.635	0.000			556.575	0.000	556.595	0.000
29	551.315	0.000	552.125	0.000	556.345	0.000			556.475	0.000	556.515	0.000
30	551.255	0.000	551.915	0.000					556.525	0.000	556.405	0.000
31	551.095	0.000	551.945	0.000							556.285	0.000
<u>Ten-Daily Mean</u>												
I Ten-Daily	552.009	0.000	550.704	0.000	552.802	0.000	556.045	0.000			556.248	0.000
II Ten-Daily	550.905	0.000	550.608	0.000	555.130	0.000	556.096	0.000	555.915	0.000	556.360	0.000
III Ten-Daily	550.895	0.000	551.306	0.000	555.609	0.000	555.907	0.000	556.564	0.000	556.431	0.000
<u>Monthly</u>												
Min.	550.265	0.000	550.235	0.000	550.995	0.000	555.765	0.000	555.915	0.000	555.885	0.000
Max.	552.445	0.000	552.125	0.000	556.635	0.000	556.555	0.000	556.915	0.000	556.595	0.000
Mean	551.258	0	550.887	0	554.476	0	556.038	0	556.505	0	556.349	0

Peak Computed Discharge = 2579 cumecs on 04/08/2019

Corres. Water Level :559.315 m

Lowest Computed Discharge = 32.67 cumecs on 24/11/2019

Corres. Water Level :550.945 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

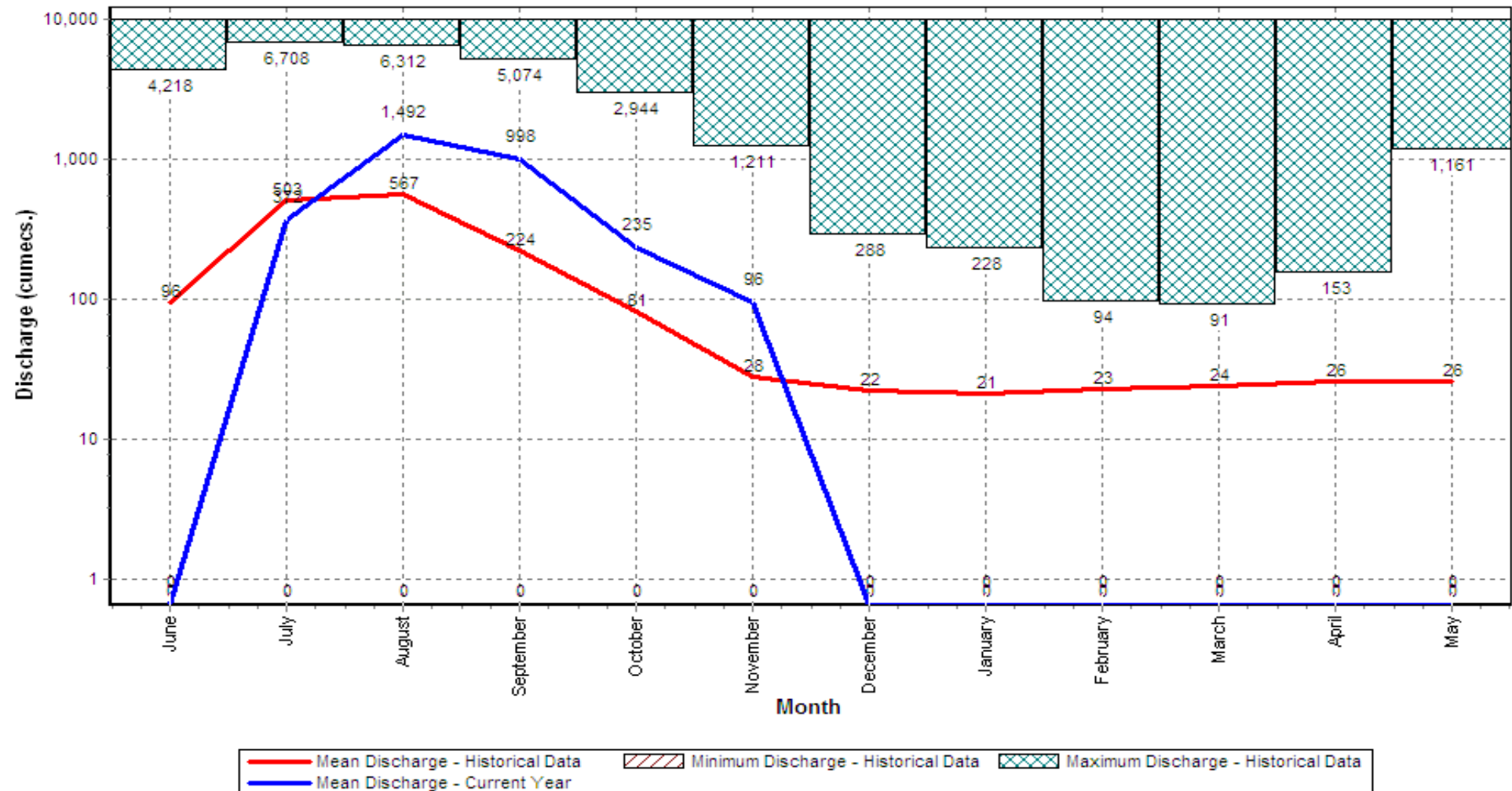
Station Name : Karad (AK000X6)

Data considered : 1965-2020

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj



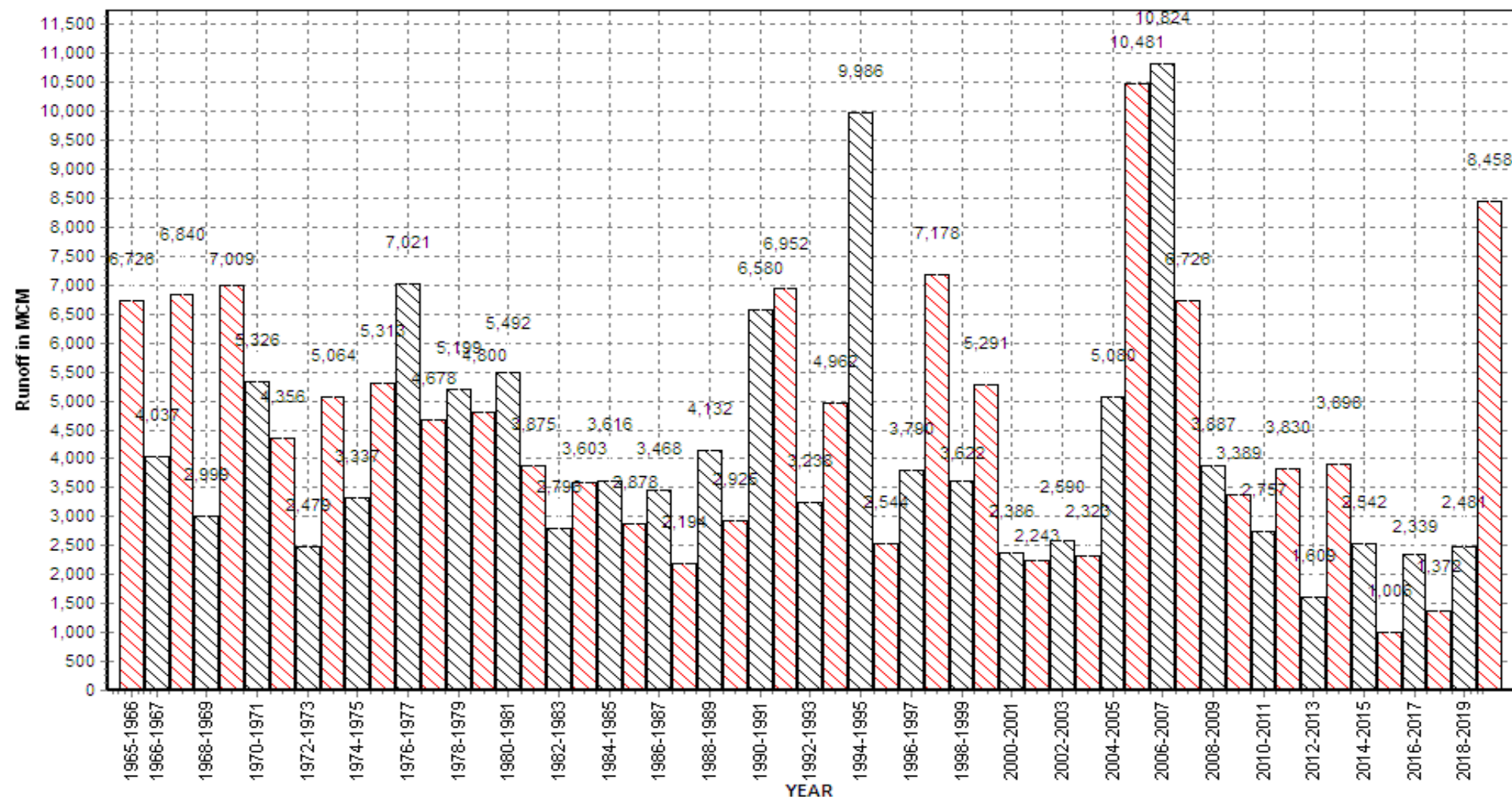
Annual Runoff Values for the period: 1965 - 2020

Station Name : Karad (AK000X6)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

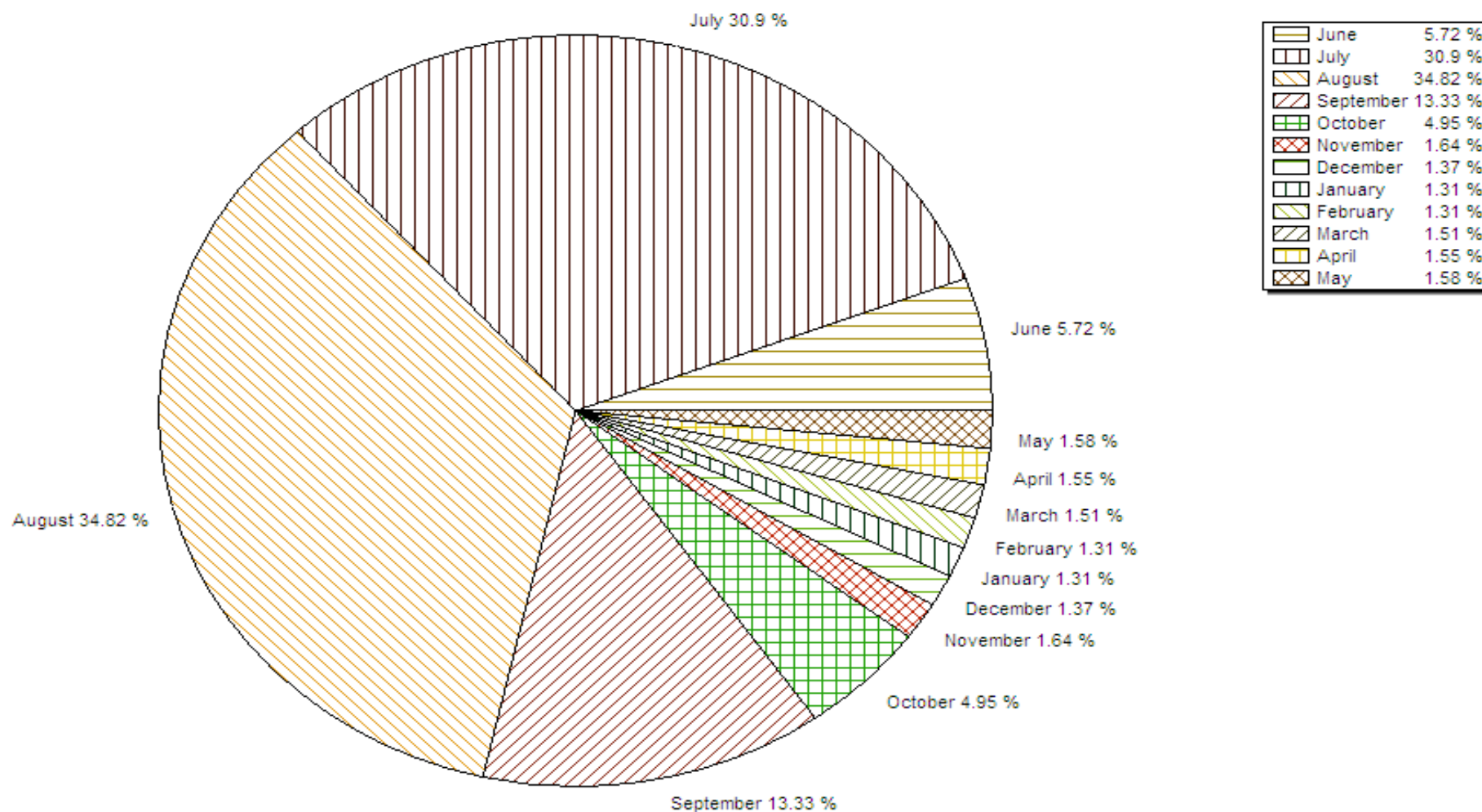
Monthly Average Runoff based on period : 1965-2019

Station Name : Karad (AK000X6)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



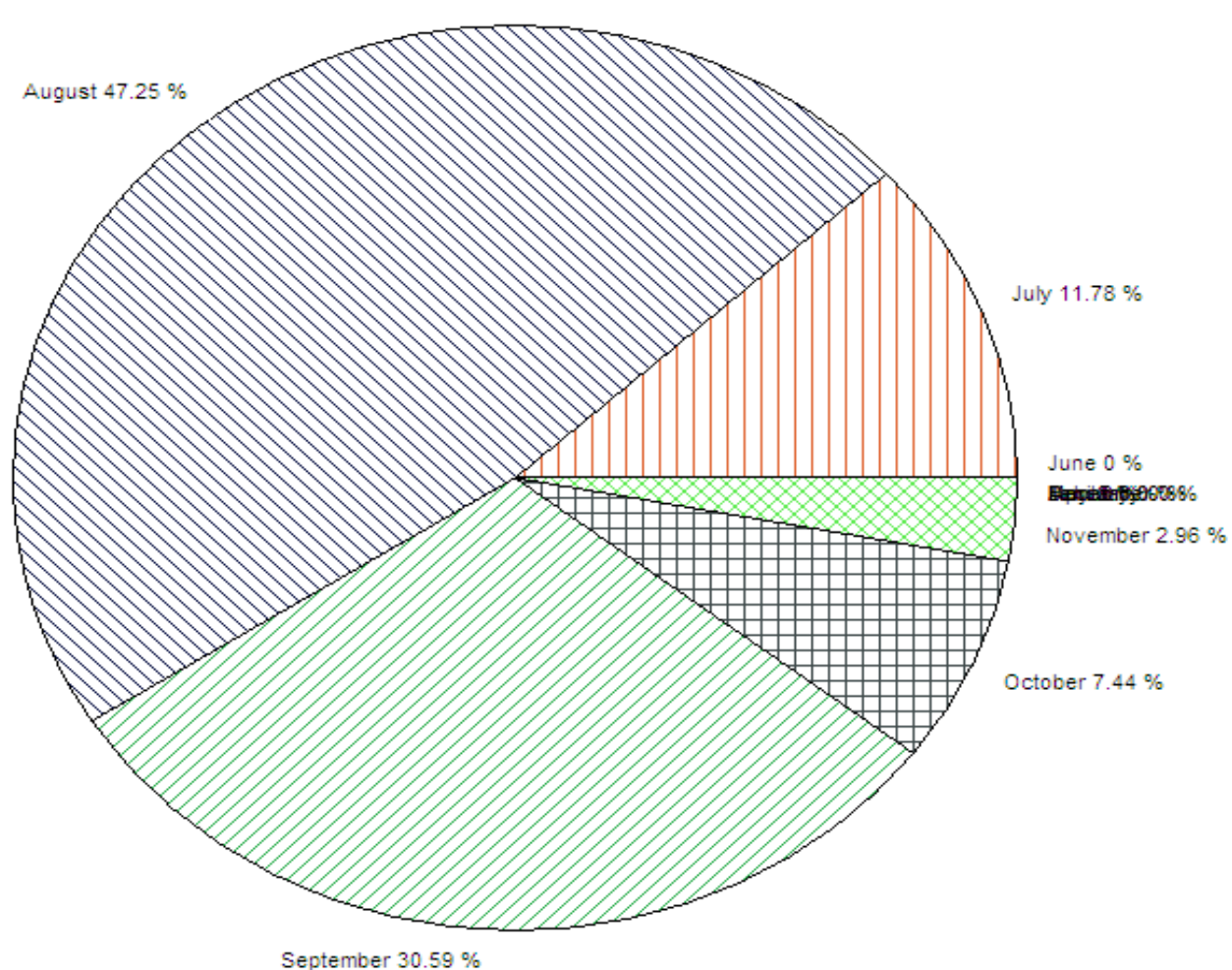
Monthly Runoff for the Year : 2019-2020

Station Name : Karad (AK000X6)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



June	0 %
July	11.78 %
August	47.25 %
September	30.59 %
October	7.44 %
November	2.96 %
December	0 %
January	0 %
February	0 %
March	0 %
April	0 %
May	0 %

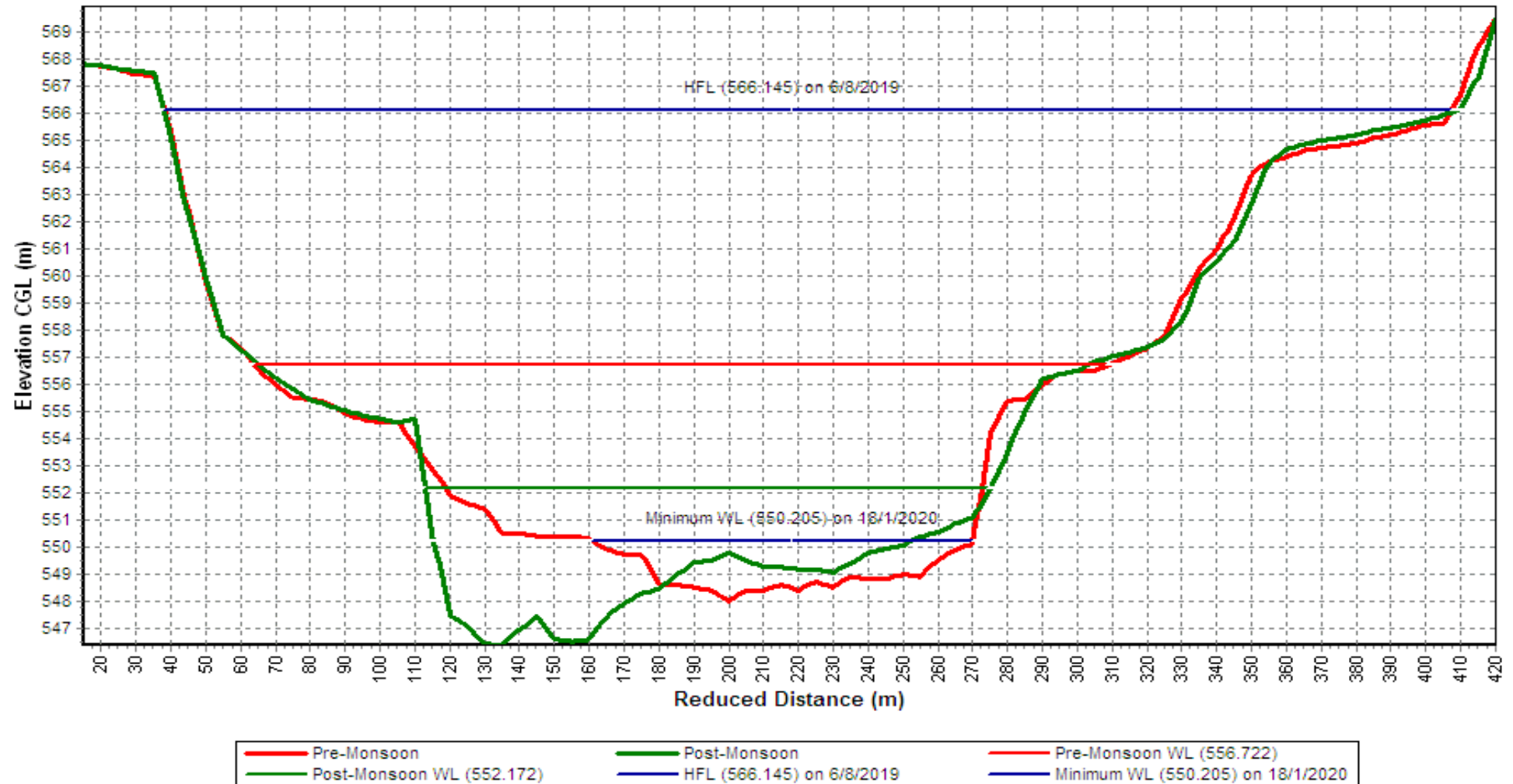
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Karad (AK000X6)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj



Cross Section Difference due to flood

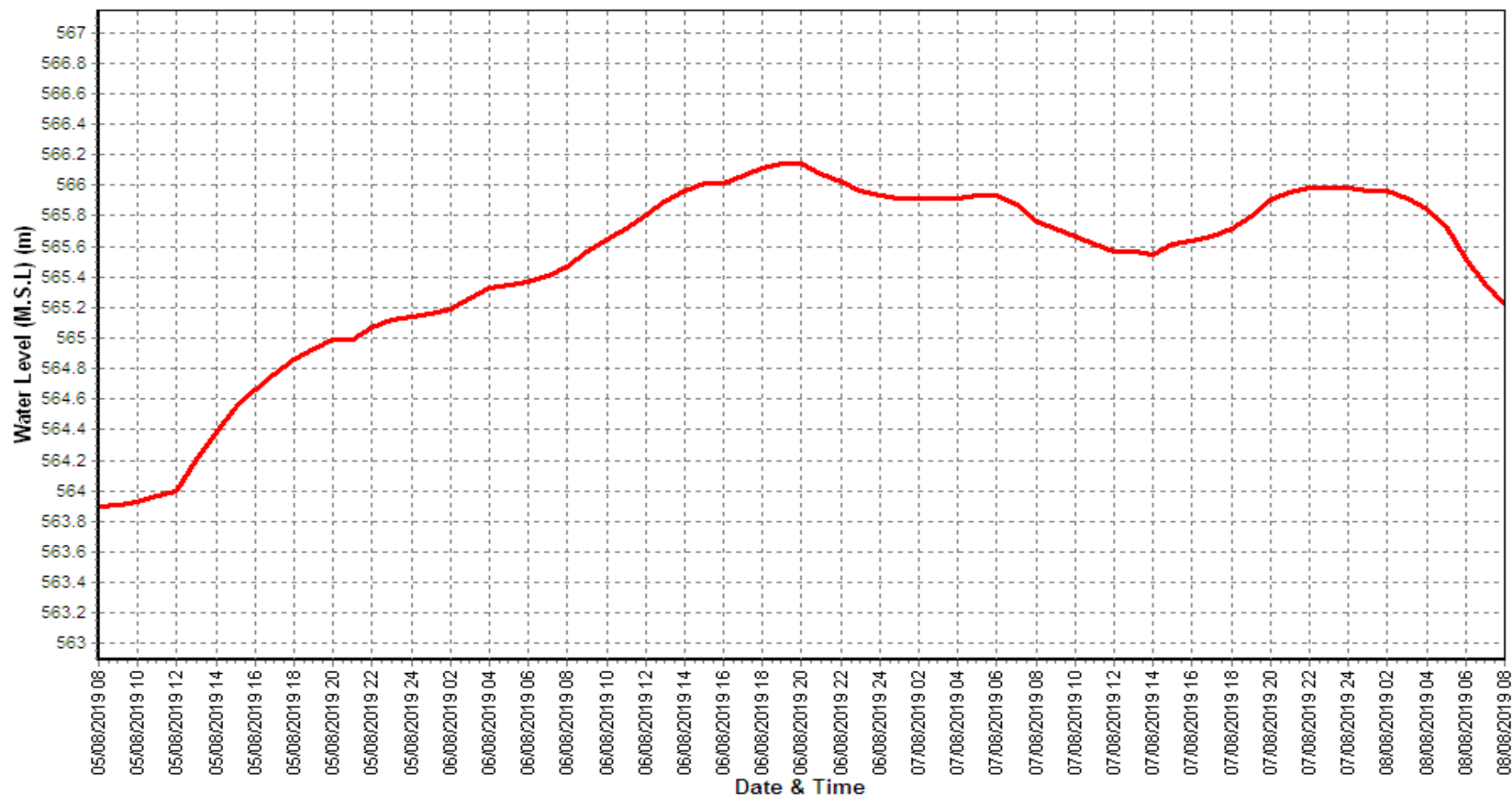
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Karad (AK000X6)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



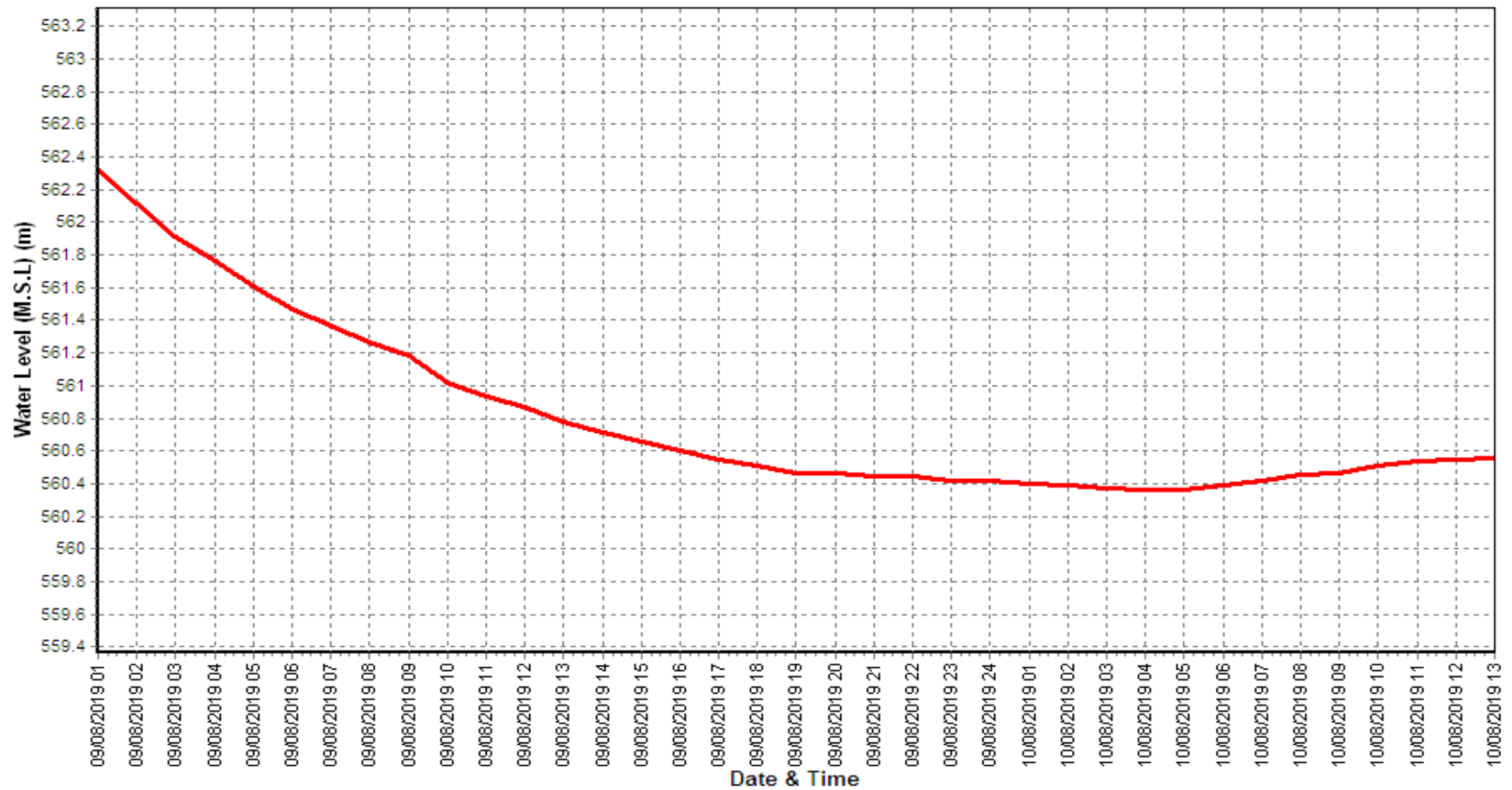
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Karad (AK000X6)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj



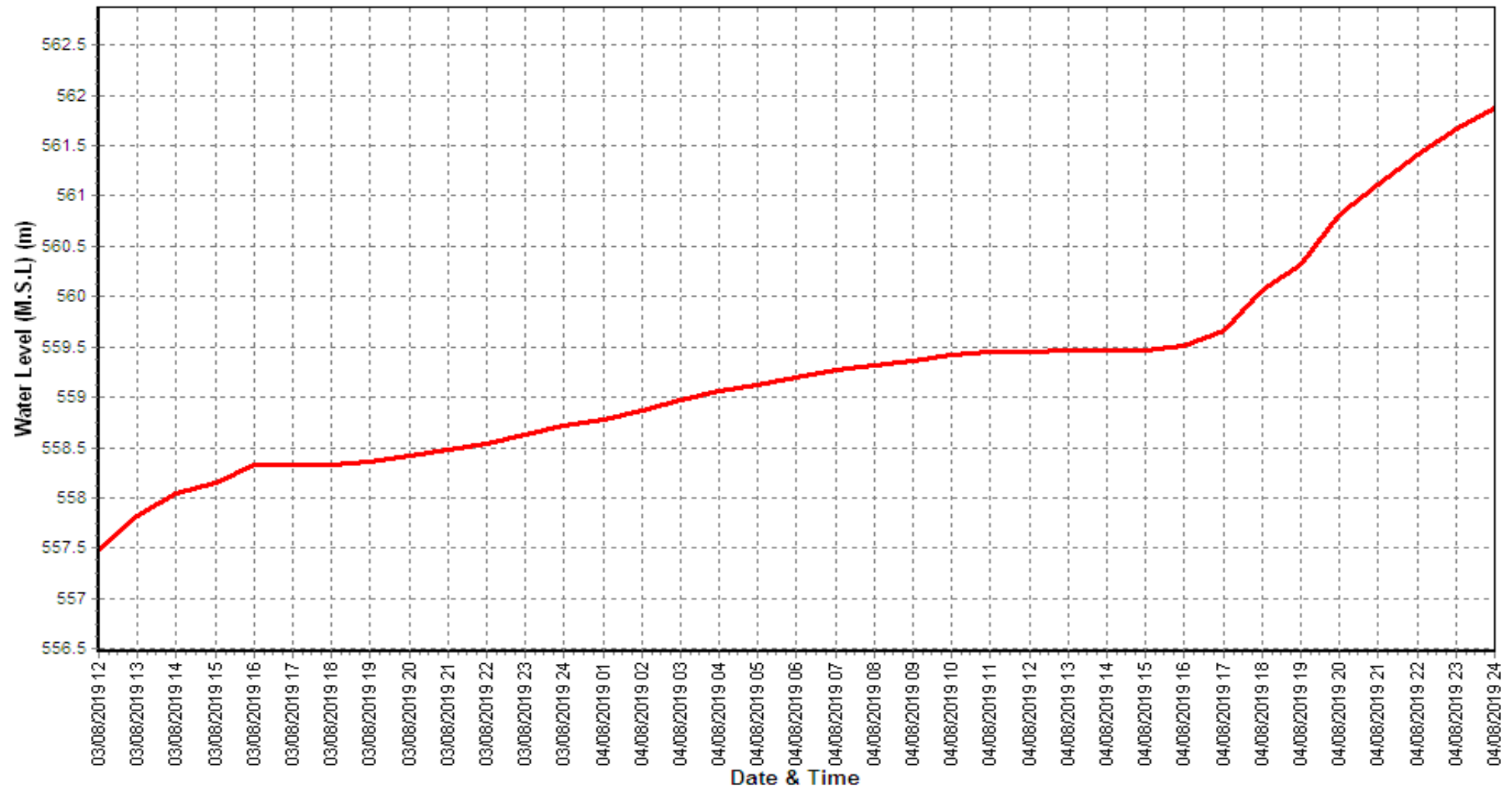
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Karad (AK000X6)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



HISTORY SHEET

Water Year : 2019-2020

Site : Warunji

Code : AKZ00A7

State : Maharashtra

District : Satara

Basin : Krishna

Independent River : Krishna

Tributary : Koyna

Sub Tributary : -

Sub-Sub Tributary : -

Local River : Koyna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj

Drainage Area : 1890 Sq. Km.

Bank : Left

Latitude : 17°16'20"

Longitude : 74°09'54"

Zero of Gauge (m) : 549.962 (m.s.l)
550.937 (m.s.l)
549.437 (m.s.l)01/08/1963 - 31/03/1964
01/04/1964 - 31/12/1971
01/01/1972

Opening Date

Closing Date

Gauge : 20/08/1963

HFL During 2019-20 : 567.137 m
Corres. Discharge : 5797 (Estimated)

Discharge : 01/01/1966

Date & Time of occurrence : 06/08/2019
: 21:00 Hrs

Sediment : 01/06/1974

Water Quality : 01/06/1974

HFL Recorded so far in m : 568.047 dt 30/07/2006

Corresponding Discharge (cumecs) : 4973 *

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1967-1968	3830	563.617	28/07/1967	0.000	551.082	08/06/1967
1968-1969	757.4	557.117	07/08/1968	0.000	550.972	29/03/1969
1969-1970	1605	561.977	01/08/1969	0.100	550.862	23/05/1970
1970-1971	1492	558.977	21/08/1970	0.100	550.762	22/04/1971
1971-1972	1386	558.792	31/08/1971	0.000	550.747	21/04/1972
1972-1973	1523	558.687	08/07/1972	0.000	550.637	27/02/1973
1973-1974	1900	560.902	08/07/1973	0.000	550.752	05/04/1974
1974-1975	1583	559.897	05/07/1974	0.000	550.767	22/03/1975
1975-1976	1681	560.927	10/07/1975	0.000	550.712	18/05/1976
1976-1977	2780	563.480	07/06/1976	0.000	550.737	23/02/1977
1977-1978	1610	559.749	04/09/1977	0.000	550.797	10/05/1978
1978-1979	1576	559.436	02/09/1978	0.000	550.907	05/03/1979
1979-1980	1317	560.087	07/08/1979	0.000	550.870	13/03/1980
1980-1981	1868	561.004	06/08/1980	0.000	550.960	31/01/1981
1981-1982	1262	558.537	10/07/1981	0.000	550.867	23/06/1981
1982-1983	1156	558.512	29/07/1982	0.000	550.877	05/03/1983

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1983-1984	1493	559.782	17/08/1983	0.000	551.097	01/01/1984
1984-1985	1334	559.057	18/07/1984	0.000	550.947	30/12/1984
1985-1986	1054	558.322	02/08/1985	0.000	550.957	12/02/1986
1986-1987	1284	558.882	30/06/1986	0.000	551.057	26/01/1987
1987-1988	1073	557.987	08/07/1987	0.000	550.677	24/01/1988
1988-1989	2590	563.237	03/08/1988	0.000	550.907	28/01/1989
1989-1990	1600	560.307	25/07/1989	0.000	550.977	14/01/1990
1990-1991	2530	563.227	18/08/1990	0.000	551.097	06/04/1991
1991-1992	1800	561.419	28/07/1991	0.000	551.124	07/12/1991
1992-1993	1238	559.912	14/08/1992	0.000	550.807	28/03/1993
1993-1994	1023	558.942	19/06/1993	0.000	551.125	12/06/1993
1994-1995	2675	563.077	03/09/1994	0.000	551.197	09/05/1995
1995-1996	772.1	557.627	20/07/1995	0.000	551.007	11/07/1995
1996-1997	1566	561.507	04/10/1996	0.000	550.947	09/05/1997
1997-1998	3529	564.697	24/08/1997	0.000	550.897	09/01/1998
1998-1999	828.0	558.457	09/07/1998	0.000	550.807	01/04/1999
1999-2000	1397	559.922	28/07/1999	0.000	551.067	28/02/2000
2000-2001	676.7	556.317	13/07/2000	0.421	550.927	12/12/2000
2001-2002	623.3	556.107	10/07/2001	0.000	550.917	10/01/2002
2002-2003	830.3	556.917	07/09/2002	0.000	550.807	28/04/2003
2003-2004	626.7	556.022	28/07/2003	0.000	550.777	10/03/2004
2004-2005	2716	563.077	13/08/2004	0.000	550.822	20/03/2005
2005-2006	4641	565.732	02/08/2005	0.000	550.977	15/05/2006
2006-2007	4973	566.937	30/07/2006	1.480	550.857	06/01/2007
2007-2008	2243	562.137	02/07/2007	0.000	550.947	22/06/2007
2008-2009	1887	561.067	11/08/2008	0.000	551.077	26/03/2009
2009-2010	712.5	557.157	15/07/2009	0.000	551.727	16/02/2010
2010-2011	769.8	556.897	27/07/2010	0.000	553.657	08/02/2011
2011-2012	3125	564.337	04/09/2011	0.000	553.077	25/11/2011
2012-2013	723.6	556.440	06/09/2012	0.000	555.950	24/05/2013
2013-2014	1925	560.417	25/07/2013	0.000	552.637	14/05/2014
2014-2015	1047	558.037	24/07/2014	0.000	554.857	19/10/2014
2015-2016	235.7	553.682	25/07/2015	0.000	555.717	21/12/2015
2016-2017	1533	557.807	06/08/2016	0.000	554.847	28/11/2016
2017-2018	1196	557.257	29/08/2017	0.000	552.867	12/11/2017
2018-2019	1653	558.057	31/07/2018	0.000	553.087	23/06/2018

Annual Runoff of Koyna at Warunji

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	1965-1966		114	114		4	4
2	1966-1967		60	60		2	2
3	1967-1968	4020	854	4874	142	30	172
4	1968-1969	1409	74	1483	50	3	52
5	1969-1970	3251	107	3358	115	4	119
6	1970-1971	3313	132	3445	117	5	122
7	1971-1972	2623	182	2805	93	6	99
8	1972-1973	1266	187	1452	45	7	51
9	1973-1974	2440	244	2684	86	9	95
10	1974-1975	1694	213	1907	60	8	67
11	1975-1976	2633	239	2872	93	8	101
12	1976-1977	3864	206	4070	137	7	144
13	1977-1978	2391	192	2583	84	7	91
14	1978-1979	2873	144	3017	102	5	107
15	1979-1980	2215	23	2239	78	1	79
16	1980-1981	2967	190	3157	105	7	112
17	1981-1982	1974	184	2158	70	6	76
18	1982-1983	1501	251	1752	53	9	62
19	1983-1984	2119	295	2414	75	10	85
20	1984-1985	1918	392	2310	68	14	82
21	1985-1986	1488	598	2086	53	21	74
22	1986-1987	1757	566	2323	62	20	82
23	1987-1988	1105	424	1529	39	15	54
24	1988-1989	2490	504	2994	88	18	106
25	1989-1990	1523	536	2060	54	19	73
26	1990-1991	3746	815	4561	132	29	161
27	1991-1992	3811	747	4558	135	26	161
28	1992-1993	1864	522	2386	66	18	84
29	1993-1994	2650	765	3415	94	27	121
30	1994-1995	5248	546	5794	185	19	205
31	1995-1996	1288	451	1739	46	16	61
32	1996-1997	1775	524	2299	63	19	81

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
33	1997-1998	4200	535	4736	148	19	167
34	1998-1999	1862	528	2390	66	19	84
35	1999-2000	2981	519	3500	105	18	124
36	2000-2001	1219	475	1694	43	17	60
37	2001-2002	1160	502	1661	41	18	59
38	2002-2003	1515	506	2021	54	18	71
39	2003-2004	1330	505	1835	47	18	65
40	2004-2005	2838	441	3278	100	16	116
41	2005-2006	6110	383	6493	216	14	229
42	2006-2007	6086	346	6432	215	12	227
43	2007-2008	3947	332	4279	139	12	151
44	2008-2009	2359	314	2673	83	11	94
45	2009-2010	1998	39	2037	71	1	72
46	2010-2011	1958	37	1995	69	1	70
47	2011-2012	3042	0	3042	107	0	107
48	2012-2013	890	0	890	31	0	31
49	2013-2014	2639	0	2639	93	0	93
50	2014-2015	1651	0	1651	58	0	58
51	2015-2016	337	12	349	12	0	12
52	2016-2017	2322	0	2322	82	0	82
53	2017-2018	1697	0	1697	60	0	60
54	2018-2019	3077	0	3077	109	0	109
55	2019-2020	7229	0	7229	255	0	255
Average		2560	305	2771	90	11	98
75% Dependable flow (MCM)				1835			
90 % Dependable flow (MCM)				1471			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Warunji (AKZ00A7)

Division : Upper Krishna Divn, Pune

Local River : Koyna

Sub-Division : UKSD,Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	556.477	0.000	552.017	3.422 #	557.292	1383	553.537	237.5 *	556.697	0.000	552.807	139.7
2	556.387	0.000	552.827	113.1 #	558.802	1989	554.877	610.8	556.547	0.000	552.767	130.6
3	556.277	0.000	553.402	300.8	558.187	1709	553.477	217.3	556.827	0.000	552.677	114.3 *
4	556.387	0.000	552.767	102.6 #	560.297	2536 *	554.132	377.5	556.957	0.000	552.627	111.9
5	556.457	0.000	552.747	107.6	564.237	4305	558.967	2242	556.947	0.000	552.607	106.3
6	556.747	0.000	553.687	349.9	566.447	5284	558.737	2101	557.247	0.000	552.937	183.6
7	556.407	0.000	555.167	679.5 *	566.727	6003	557.627	1508	555.537	0.000	552.637	113.9
8	556.387	0.000	555.992	879.6	566.337	5174	558.197	1787 *	556.637	0.000	552.547	98.41
9	556.327	0.000	554.802	593.2	562.407	3231	558.927	2212	557.127	0.000	552.447	85.99
10	556.377	0.000	554.882	618.2	561.697	3019	557.762	1553	556.797	0.000	552.337	78.48 *
11	556.527	0.000	554.882	621.1	559.817	2337 *	554.897	545.4	556.707	0.000	552.267	76.04
12	556.457	0.000	555.507	784.3	559.372	2170	554.562	500.0	557.897	0.000	552.147	61.56 *
13	556.427	0.000	553.882	368.5	557.162	1280	554.227	377.0	556.007	0.000	552.067	65.94
14	556.947	0.000	553.507	249.6 *	556.352	995.9	554.732	492.0	557.037	0.000	552.047	56.50
15	556.687	0.000	553.357	279.3	556.387	947.6	555.137	596.9 *	556.837	0.000	552.037	64.65
16	556.497	0.000	553.957	350.4	556.287	907.1	553.957	325.9	556.007	0.000	552.027	56.21
17	556.347	0.000	553.347	245.9	554.287	437.1 #	554.997	0.000	557.217	0.000	552.017	51.23 *
18	556.107	0.000	553.177	179.7 #	553.657	283.4 *	556.547	0.000	556.887	0.000	552.407	93.39
19	555.837	0.000	552.912	139.5	553.457	238.6 #	557.237	0.000	556.387	0.000	552.387	90.79
20	555.437	0.000	552.752	103.7	553.017	148.2 #	554.727	0.000	559.337	0.000 *	552.037	57.47
21	555.297	0.000	552.657	84.10 *	552.812	86.81	555.307	0.000	557.812	1469	551.957	53.99
22	555.987	0.000	552.512	66.71	552.752	84.64	555.847	0.000	554.447	367.4	551.747	33.49
23	556.037	0.000	552.467	48.01	552.727	84.31	555.897	0.000	554.377	362.9	551.717	30.77
24	554.787	0.000	552.467	54.68 #	552.807	82.66	556.787	0.000	553.927	291.8	551.717	31.20 *
25	555.327	0.000	552.782	105.2 #	552.767	102.6 *	558.322	1788	553.597	209.4	551.697	29.35
26	555.897	0.000	552.722	94.92 #	552.682	78.84	554.937	577.5	553.472	197.1	551.527	18.64
27	555.457	0.000	556.947	1127	552.562	71.54	554.087	321.3	553.467	225.6 *	551.477	16.68
28	554.947	0.000	555.507	780.6 *	552.497	65.54	553.607	203.1	553.357	170.5	551.467	16.20
29	554.137	0.000	555.057	625.4	552.457	53.23 #	553.987	0.000	553.207	179.9	551.457	16.58
30	552.687	0.000	558.512	1982	552.512	61.33 #	557.617	0.000	552.997	156.6	551.447	15.51
31			558.327	1864	553.147	173.7 #			552.882	139.3		
Ten-Daily Mean												
I Ten-Daily	556.423	0.000	553.829	374.8	562.243	3463	556.624	1285	556.732	0.000	552.639	116.3
II Ten-Daily	556.327	0.000	553.728	332.2	555.980	974.5	555.102	283.7	557.032	0.000	552.144	67.38
III Ten-Daily	555.056	0.000	554.542	621.2	552.702	85.93	555.640	289.0	553.958	342.7	551.621	26.24
Monthly												
Min.	552.687	0.000	552.017	3.422	552.457	53.23	553.477	0.000	552.882	0.000	551.447	15.51
Max.	556.947	0.000	558.512	1982	566.727	6003	558.967	2242	559.337	1469	552.937	183.6
Mean	555.935	0	554.049	448.5	556.837	1462	555.789	619.1	555.845	121.6	552.135	69.98

Annual Runoff in MCM = 7229 Annual Runoff in mm = 3825

Peak Observed Discharge = 6003 cumecs on 07/08/2019 Corres. Water Level :566.727 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :556.477 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Warunji (AKZ00A7)

Division : Upper Krishna Divn, Pune

Local River : Koyna

Sub-Division : UKSD,Miraj

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	551.447	0.000	552.187	0.000	552.077	0.000	556.067	0.000	Not observed Due to Lock-Down		556.187	0.000
2	551.717	0.000	552.067	0.000	551.667	0.000	556.047	0.000			556.287	0.000
3	551.917	0.000	551.947	0.000	551.597	0.000	555.907	0.000			556.337	0.000
4	552.307	0.000	551.457	0.000	551.267	0.000	555.807	0.000			556.347	0.000
5	551.957	0.000	551.387	0.000	551.147	0.000	556.217	0.000			556.247	0.000
6	551.897	0.000	551.477	0.000	551.697	0.000	556.007	0.000			556.057	0.000
7	552.147	0.000	551.187	0.000	552.837	0.000	555.837	0.000			555.937	0.000
8	551.967	0.000	551.107	0.000	554.637	0.000	556.047	0.000			556.037	0.000
9	551.977	0.000	552.147	0.000	553.157	0.000	556.097	0.000			556.127	0.000
10	552.157	0.000	551.737	0.000	552.247	0.000	556.547	0.000			556.267	0.000
11	551.047	0.000	551.747	0.000	555.087	0.000	556.587	0.000			556.397	0.000
12	550.967	0.000	552.127	0.000	554.977	0.000	556.137	0.000			556.457	0.000
13	550.947	0.000	552.087	0.000	554.827	0.000	556.087	0.000			556.337	0.000
14	551.317	0.000	551.917	0.000	554.837	0.000	556.537	0.000			556.317	0.000
15	551.947	0.000	551.817	0.000	555.007	0.000	555.977	0.000			556.467	0.000
16	551.697	0.000	551.717	0.000	554.937	0.000	556.027	0.000			556.537	0.000
17	551.337	0.000	551.417	0.000	554.957	0.000	555.917	0.000			556.547	0.000
18	551.187	0.000	551.237	0.000	554.947	0.000	556.547	0.000			556.537	0.000
19	551.107	0.000	551.087	0.000	555.967	0.000	556.587	0.000			556.517	0.000
20	551.177	0.000	551.107	0.000	555.547	0.000	556.557	0.000	555.937	0.000	556.367	0.000
21	551.197	0.000	551.157	0.000	554.357	0.000	555.917	0.000	556.387	0.000	556.637	0.000
22	551.137	0.000	551.047	0.000	555.037	0.000	555.817	0.000	556.437	0.000	556.347	0.000
23	551.037	0.000	550.987	0.000	555.087	0.000	556.087	0.000	556.587	0.000	556.577	0.000
24	551.047	0.000	550.947	0.000	555.107	0.000	555.847	0.000	556.637	0.000	556.657	0.000
25	551.637	0.000	550.967	0.000	555.187	0.000	556.077	0.000	556.497	0.000	556.627	0.000
26	552.047	0.000	551.367	0.000	555.197	0.000	Not observed Due to Lock-Down		556.327	0.000	556.137	0.000
27	551.257	0.000	550.647	0.000	555.897	0.000			556.177	0.000	556.647	0.000
28	551.987	0.000	552.337	0.000	555.927	0.000			556.397	0.000	556.547	0.000
29	552.157	0.000	552.677	0.000	556.637	0.000			556.347	0.000	556.637	0.000
30	552.177	0.000	552.637	0.000					556.247	0.000	556.597	0.000
31	552.637	0.000	552.607	0.000							556.587	0.000
Ten-Daily Mean												
I Ten-Daily	551.949	0.000	551.670	0.000	552.233	0.000	556.058	0.000			556.183	0.000
II Ten-Daily	551.273	0.000	551.626	0.000	555.109	0.000	556.296	0.000	555.937	0.000	556.448	0.000
III Ten-Daily	551.665	0.000	551.580	0.000	555.381	0.000	555.949	0.000	556.404	0.000	556.545	0.000
Monthly												
Min.	550.947	0.000	550.647	0.000	551.147	0.000	555.807	0.000	555.937	0.000	555.937	0.000
Max.	552.637	0.000	552.677	0.000	556.637	0.000	556.587	0.000	556.637	0.000	556.657	0.000
Mean	551.630	0	551.624	0	554.202	0	556.131	0	556.362	0	556.397	0

Peak Computed Discharge = 2536 cumecs on 04/08/2019

Corres. Water Level :560.297 m

Lowest Computed Discharge = 0.000 cumecs on 20/10/2019

Corres. Water Level :559.337 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l.) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

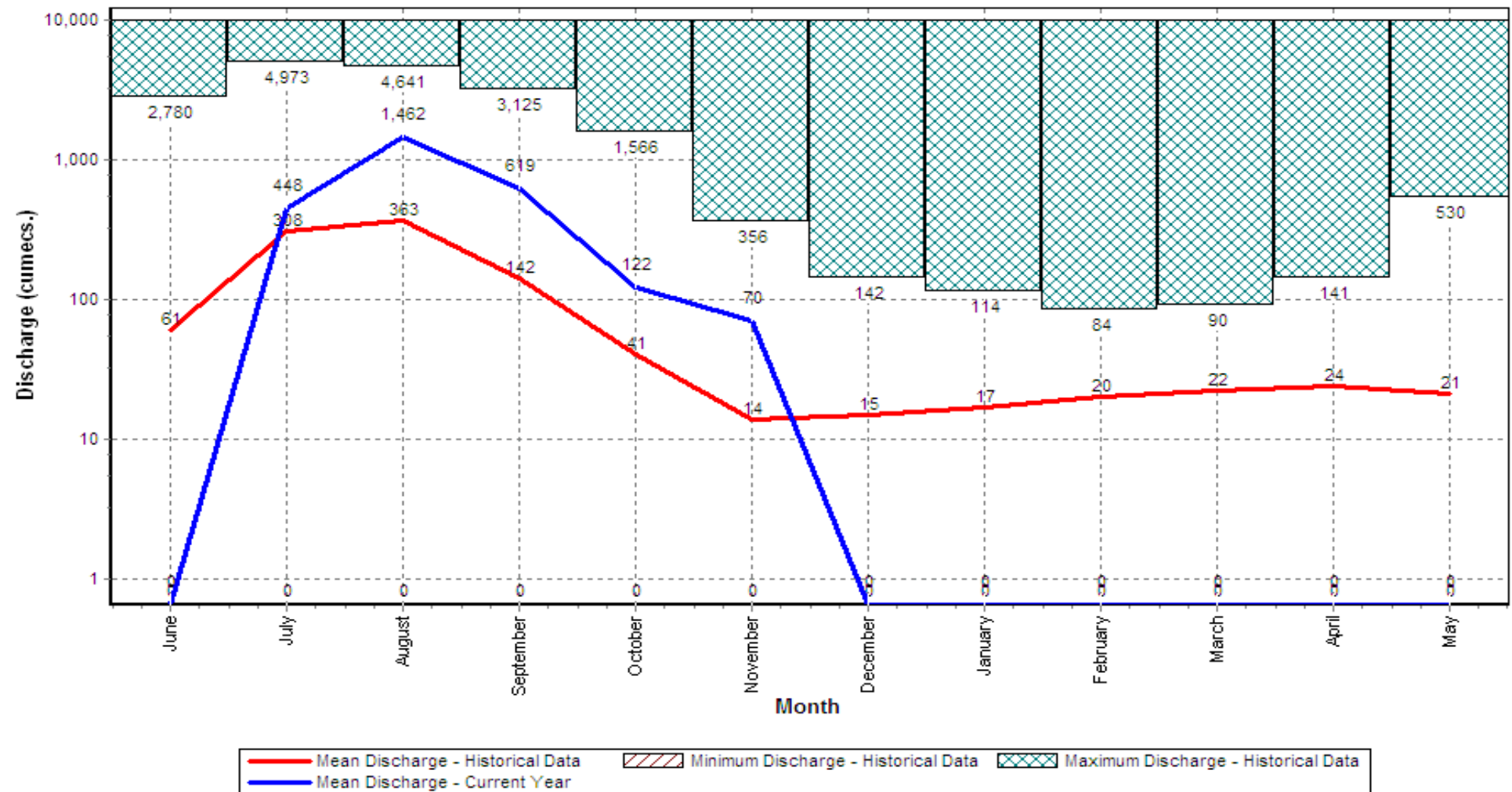
Station Name : Warunji (AKZ00A7)

Data considered : 1967-2020

Division : Upper Krishna Divn, Pune

Local River : Koyna

Sub-Division : UKSD,Miraj



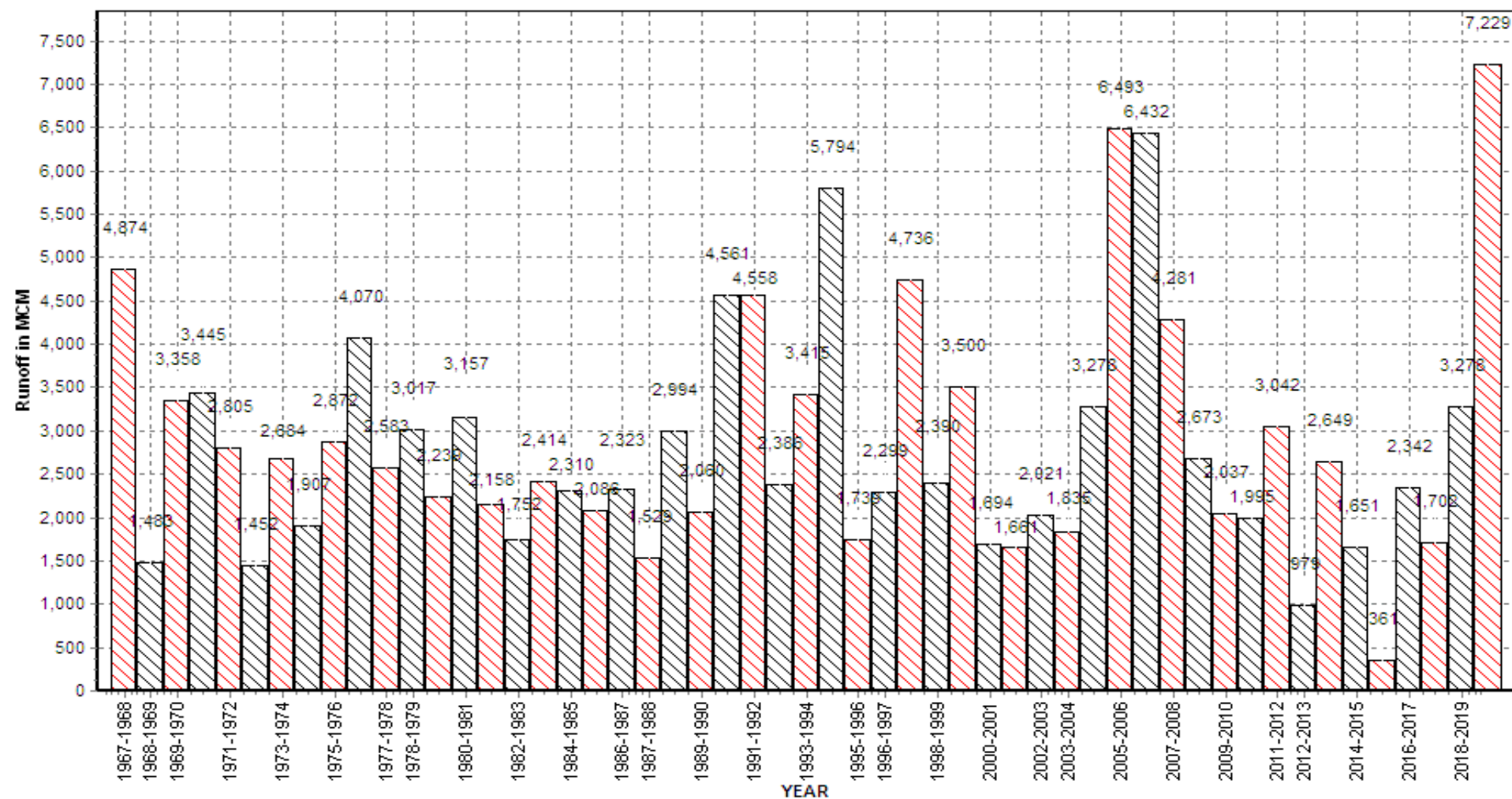
Annual Runoff Values for the period: 1967 - 2020

Station Name : Warunji (AKZ00A7)

Local River : Koyna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

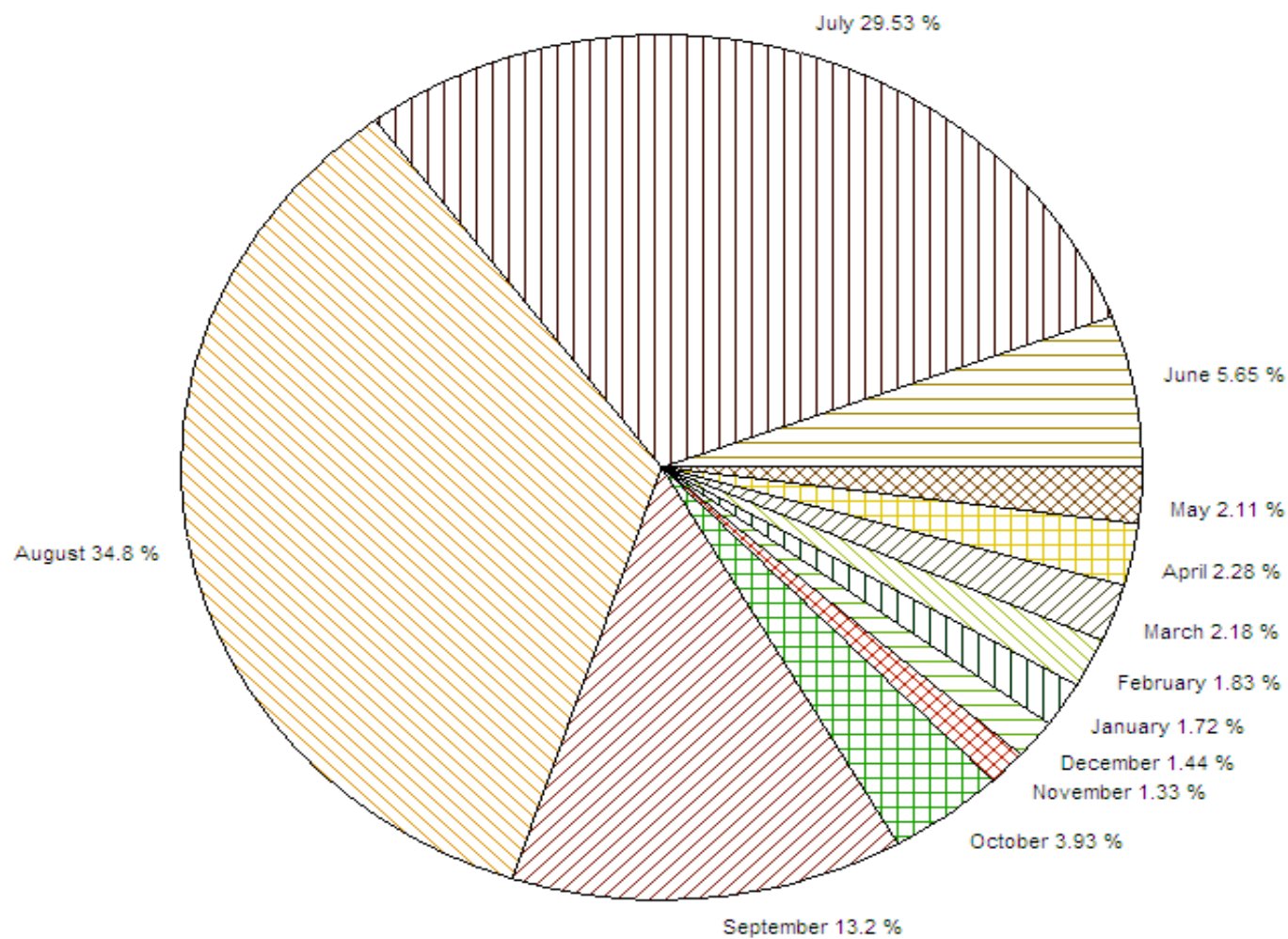
Monthly Average Runoff based on period : 1967-2019

Station Name : Warunji (AKZ00A7)

Local River : Koyna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



June	5.65 %
July	29.53 %
August	34.8 %
September	13.2 %
October	3.93 %
November	1.33 %
December	1.44 %
January	1.72 %
February	1.83 %
March	2.18 %
April	2.28 %
May	2.11 %

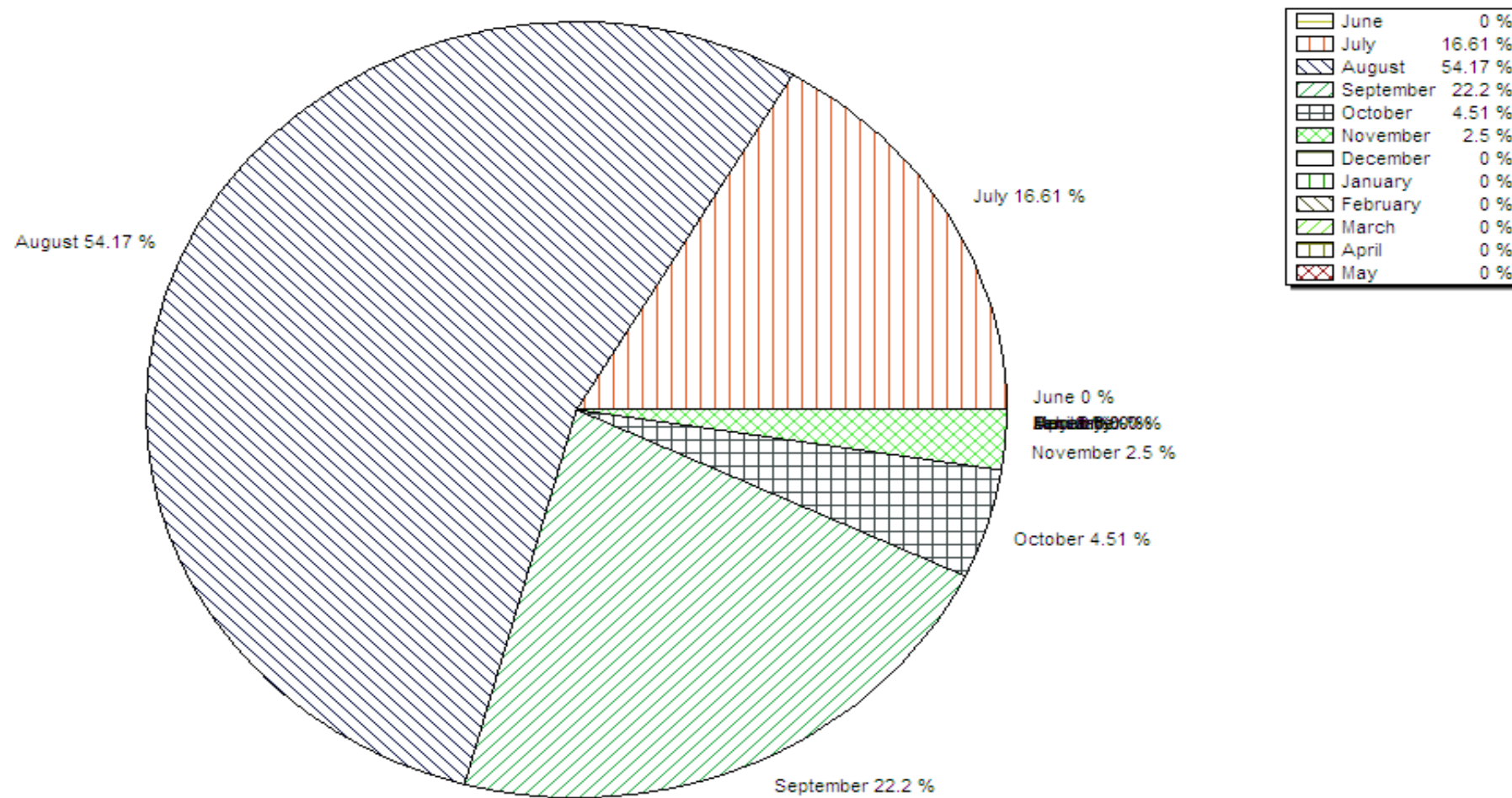
Monthly Runoff for the Year : 2019-2020

Station Name : Warunji (AKZ00A7)

Local River : Koyna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj



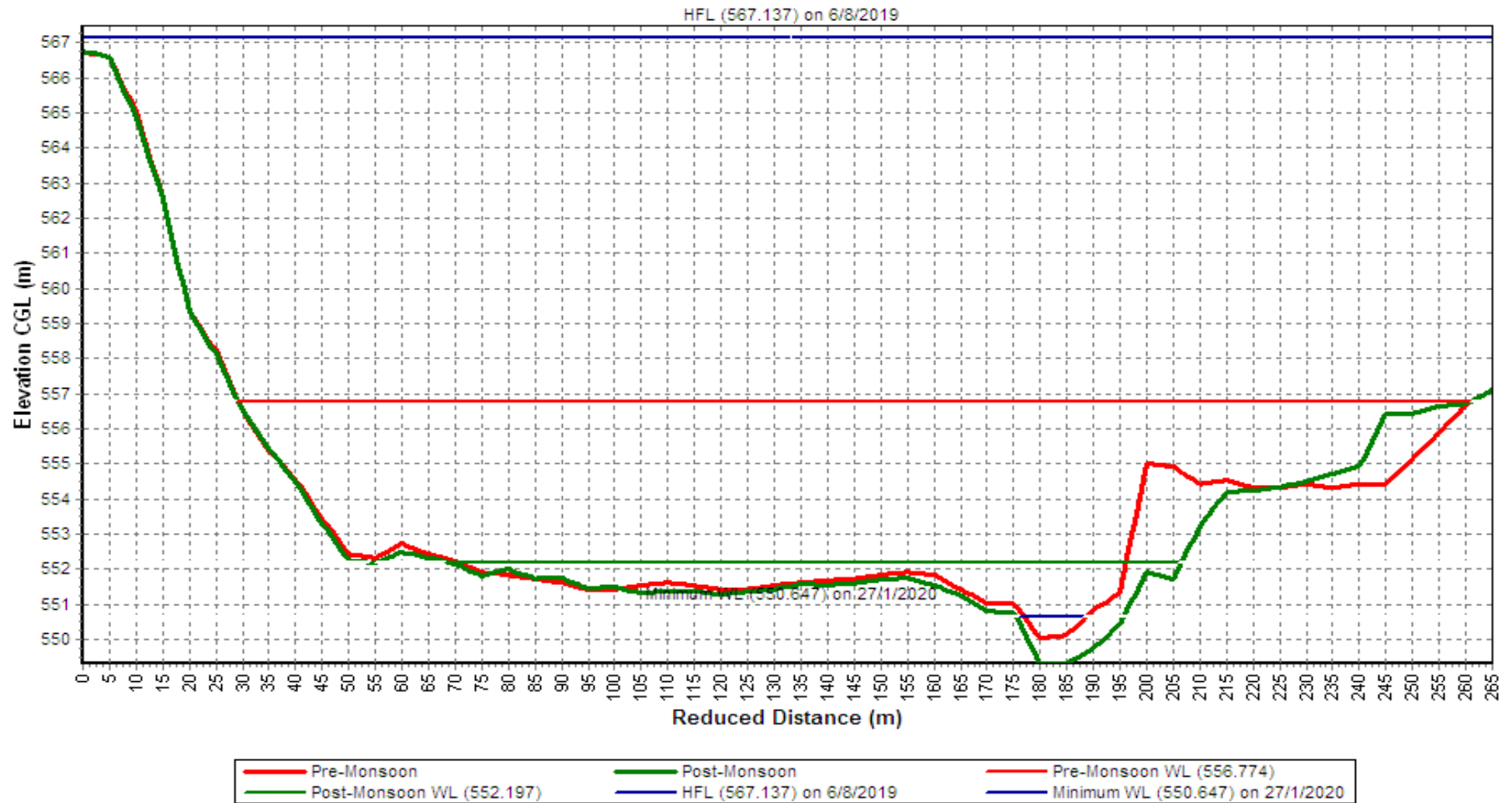
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Warunji (AKZ00A7)

Local River : Kovna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD.Miraj



Cross Section Difference Due to High Flood

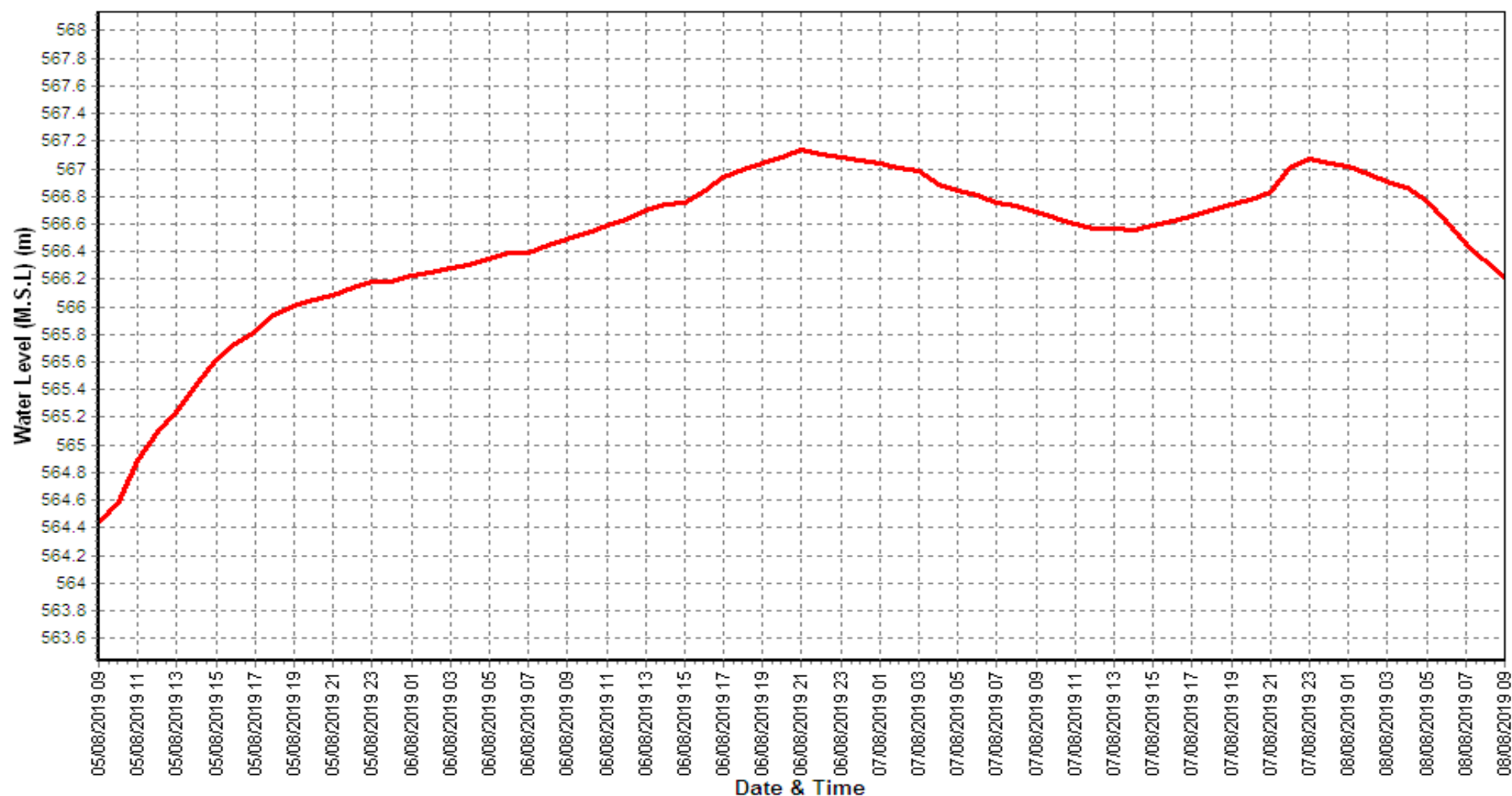
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Warunji (AKZ00A7)

Local River : Koyna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



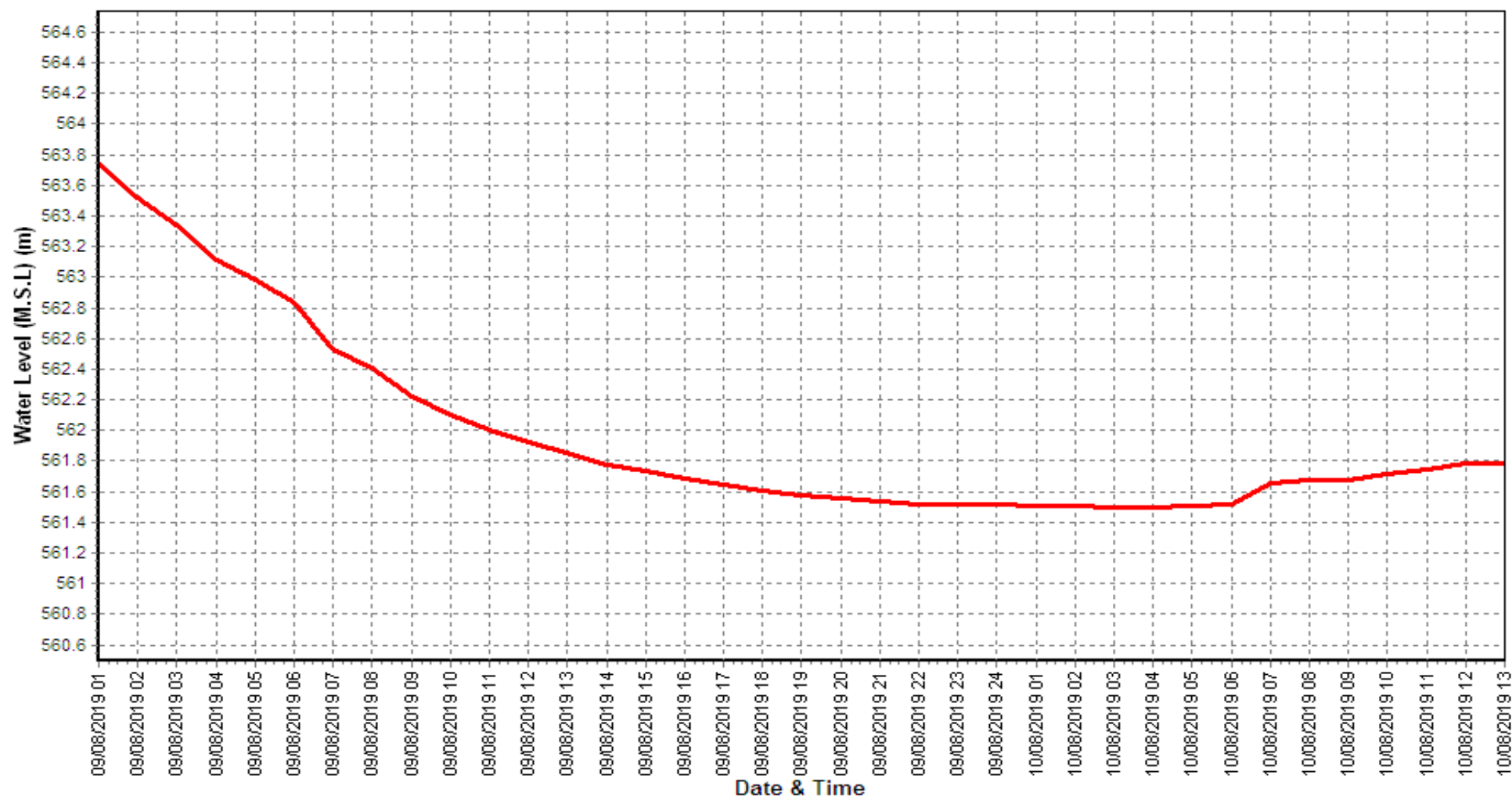
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Warunji (AKZ00A7)

Local River : Koyna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



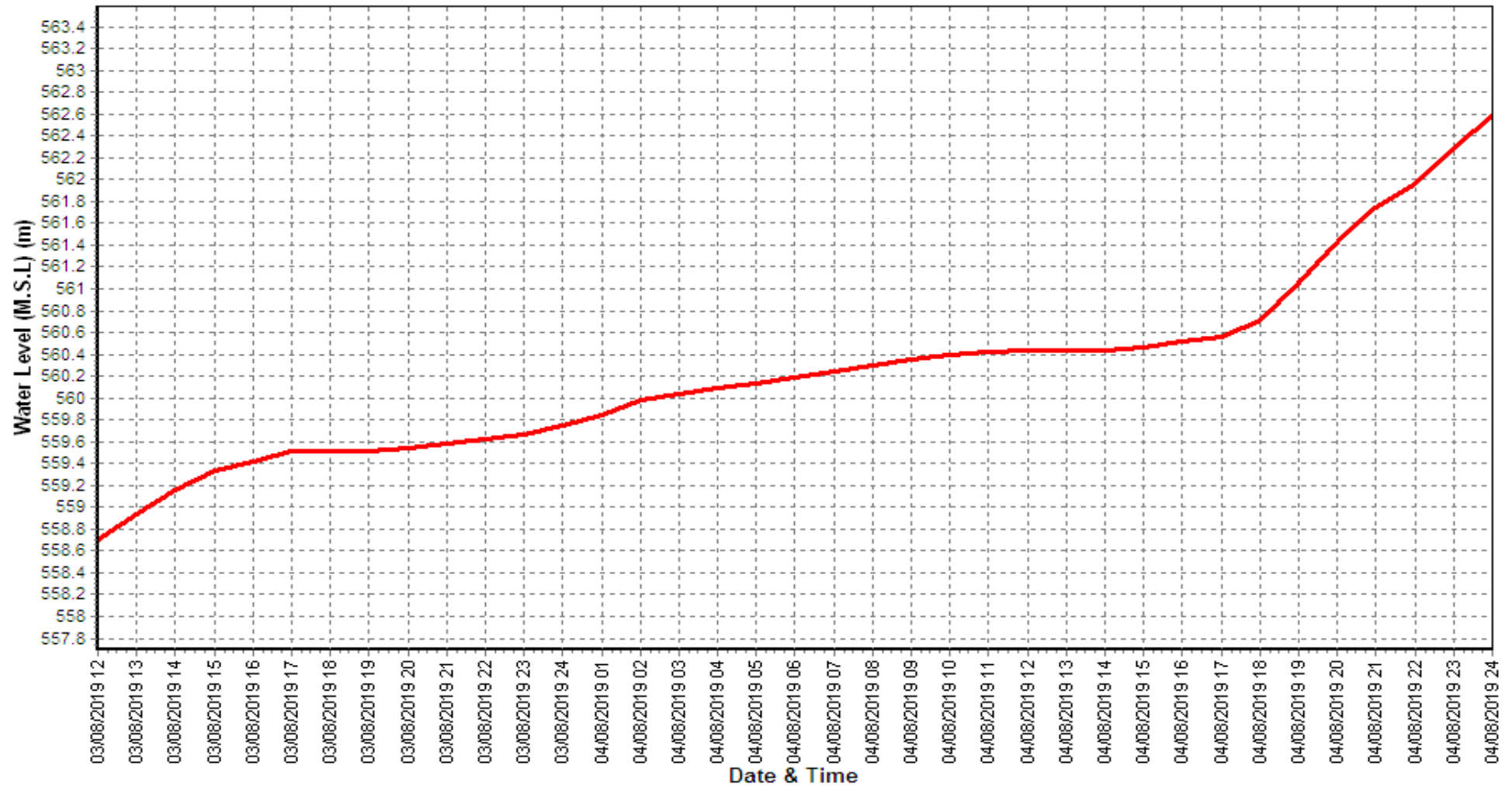
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Warunji (AKZ00A7)

Local River : Koyna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



HISTORY SHEET

		Water Year	: 2019-2020
Site	: Targaon	Code	: TARGAON
State	: Maharashtra	District	Satara
Basin	: Krishna	Independent River	: Krishna
Tributary	: -	Sub Tributary	: -
Sub-Sub Tributary	: -	Local River	: Krishna
Division	: Upper Krishna Divn, Pune	Sub-Division	: UKSD,Miraj
Drainage Area	: 2303 Sq. Km.	Bank	: Right
Latitude	: 17°31'00"	Longitude	: 74°09'00"
Zero of Gauge (m)	: 584 (m.s.l)	04/06/2018	
	584 (m.s.l)	01/04/2019	
	579 (m.s.l)	01/07/2018	- 31/03/2019
	Opening Date	Closing Date	
Gauge	: 01/08/2018	HFL During 2019-20	: 594.750 m
		Corres. Discharge	: 2875 (Estimated)
Discharge	: 07/08/2018	Date & Time of	: 07/08/2019
		occurrence	: 03:00 Hrs
Sediment	:		
Water Quality	:		

HFL Recorded so far in m : 594.750 dt 07-08-2019

Corresponding Discharge (cumecs) : 2875*

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date

Annual Runoff of Krishna at Targaon

Sl. No.	Year	Annual Runoff (MCM)			Annual Runoff (TMC)		
		Monsoon	Non Monsoon	Annual	Monsoon	Non Monsoon	Annual
1	2018-2019	393	0	393	14	0	14
2	2019-2020	2877	30	2907	102	1	103
75% Dependable flow (MCM)				Sufficient data not available			
90 % Dependable flow (MCM)				Sufficient data not available			

Stage-Discharge Data for the period 2019 - 2020

Station Name : Targaon (TARGAON)

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	587.050	0.000	587.350	15.46	589.595	446.5	587.510	36.13 *	587.890	91.49	587.855	86.91
2	587.110	0.000	587.350	14.86	591.150	870.9	587.510	48.96	587.790	77.98	587.780	76.71
3	587.490	0.000	587.390	17.46	591.120	859.7	587.500	48.17	587.735	71.41	587.730	75.95 *
4	587.500	0.000	587.360	15.43	591.910	1181 *	587.470	45.72	587.750	74.69	587.735	75.82
5	587.460	0.000	587.365	15.48	593.800	2157 *	588.215	126.9	588.575	186.4	588.715	211.8
6	587.760	0.000	587.380	17.12	592.870	1641 *	589.120	301.4	588.310	127.1 *	588.335	146.5
7	587.760	0.000	588.200	111.5 *	594.330	2483 *	589.050	243.8	588.200	111.8	588.050	111.7
8	587.650	0.000	588.395	125.5	593.000	1709 *	589.740	419.5 *	587.840	80.38	587.870	83.57
9	587.040	0.000	588.210	106.0	591.900	1177 *	590.000	490.6	588.040	118.3	587.775	74.57
10	587.270	0.000	588.100	95.06	591.530	1020 #	589.160	313.1	588.190	126.3	587.630	66.45 *
11	587.295	9.926	588.150	103.0	591.200	889.9 *	588.410	183.0	589.450	405.9	587.620	63.15
12	587.175	6.223	588.150	100.6	590.740	723.0	588.110	109.4	588.725	188.6	587.575	57.98
13	587.150	6.259	587.905	73.34	589.665	458.4	588.210	119.6	588.040	90.56 *	587.550	54.20
14	587.180	6.900	587.800	63.08 *	587.945	112.2	588.155	114.0	587.915	92.31	587.560	57.05
15	587.185	7.081	587.720	55.12	589.180	285.2 *	588.950	237.4 *	587.835	79.16	587.520	51.41
16	587.120	6.680 *	587.705	55.29	588.130	150.7	587.495	78.97	587.745	71.51	587.460	49.02
17	587.080	3.690	587.640	37.83	588.105	121.4	587.560	66.71	587.695	65.17	587.430	44.90 *
18	587.085	4.042	587.580	36.51	588.110	99.46 *	587.490	47.66	587.650	61.08	587.400	40.75
19	587.105	3.883	587.505	32.75	587.955	101.0	587.500	68.35	587.665	60.18	587.370	37.23
20	587.015	2.681	587.475	29.39	587.840	84.85	588.180	123.5	590.090	516.5 *	587.340	31.73
21	586.980	1.904	587.610	44.65 *	587.730	67.24	587.550	39.44	591.450	987.9 #	587.330	29.60
22	586.960	1.008	587.550	33.50	587.690	67.21	588.630	178.1 *	589.730	498.1	587.310	30.44
23	587.040	3.120 *	587.520	32.80	587.630	60.77	587.570	54.88	589.920	527.8	587.290	25.34
24	586.980	2.158	587.485	31.55	587.625	62.38	588.320	161.1	589.155	317.5	587.270	22.01 #
25	587.280	9.456	587.445	27.47	587.570	41.14 *	591.070	841.0 #	588.495	196.6	587.230	21.50
26	587.215	8.298	587.430	23.40	587.520	54.64	590.180	543.0 #	588.920	246.1	587.210	20.96
27	587.140	6.485	588.210	106.8	587.470	46.80	589.115	270.8	588.340	131.5 *	587.210	18.08
28	587.130	6.443	588.620	176.3 *	587.440	41.89	588.415	173.1	588.040	107.1	587.180	14.67
29	587.160	7.842	588.380	124.3	587.400	43.50	588.200	111.5 *	587.920	112.7	587.170	14.20
30	587.370	13.59 *	589.430	398.8	587.520	51.46	587.990	107.1	588.100	103.7	587.170	13.81
31			589.570	441.5	587.530	52.84			588.055	117.1		
Ten-Daily Mean												
I Ten-Daily	587.409	0.000	587.710	53.39	592.120	1355	588.528	207.4	588.032	106.6	587.948	101.0
II Ten-Daily	587.139	5.737	587.763	58.69	588.887	302.6	588.006	114.9	588.281	163.1	587.483	48.74
III Ten-Daily	587.126	6.030	588.114	131.0	587.557	53.63	588.704	248.0	588.920	304.2	587.237	21.06
Monthly												
Min.	586.960	0.000	587.350	14.86	587.400	41.14	587.470	36.13	587.650	60.18	587.170	13.81
Max.	587.760	13.59	589.570	441.5	594.330	2483	591.070	841.0	591.450	987.9	588.715	211.8
Mean	587.224	3.922	587.870	82.64	589.458	553.6	588.413	190.1	588.428	194.9	587.556	56.93

Annual Runoff in MCM = 2907 Annual Runoff in mm = 1262

Peak Observed Discharge = 1020 cumecs on 10/08/2019 Corres. Water Level :591.53 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2019 Corres. Water Level :587.05 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l.) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2019 - 2020

Station Name : Targaon (TARGAON)

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	587.160	14.32 *	584.600	0.000	584.530	0.000	584.100	0.000	Not observed Due to Lock-Down		584.100	0.000
2	587.140	10.47	584.450	0.000	584.540	0.000	583.900	0.000			584.100	0.000
3	587.150	14.22	584.000	0.000	584.540	0.000	583.900	0.000			584.170	0.000
4	587.200	16.67	583.980	0.000	584.550	0.000	583.850	0.000			584.100	0.000
5	587.200	16.63	584.580	0.000	584.530	0.000	583.750	0.000			584.070	0.000
6	587.200	16.22	584.560	0.000	584.510	0.000	583.700	0.000			584.050	0.000
7	587.200	15.81	584.550	0.000	584.530	0.000	583.700	0.000			584.100	0.000
8	587.200	17.20 *	584.560	0.000	584.520	0.000	583.690	0.000			584.030	0.000
9	587.200	17.18	584.520	0.000	584.510	0.000	583.700	0.000			584.020	0.000
10	587.210	17.83	584.530	0.000	584.520	0.000	583.750	0.000			583.940	0.000
11	587.220	19.31	584.490	0.000	584.510	0.000	583.800	0.000			583.850	0.000
12	587.200	16.03	583.870	0.000	584.510	0.000	583.640	0.000			583.900	0.000
13	587.200	17.07	583.490	0.000	584.530	0.000	583.620	0.000			583.980	0.000
14	587.220	18.17	583.740	0.000	584.530	0.000	583.620	0.000			584.020	0.000
15	587.220	18.17 *	584.250	0.000	584.520	0.000	583.610	0.000			584.080	0.000
16	587.210	17.18	584.530	0.000	584.520	0.000	583.700	0.000			584.210	0.000
17	587.210	17.04	584.500	0.000	584.480	0.000	583.700	0.000			584.440	0.000
18	587.220	17.00	584.520	0.000	584.460	0.000	583.770	0.000			584.540	0.000
19	587.210	14.76	584.520	0.000	584.450	0.000	584.010	0.000			584.510	0.000
20	587.250	16.86	584.500	0.000	584.420	0.000	584.200	0.000	584.500	0.000	584.500	0.000
21	587.280	16.37	584.490	0.000	584.440	0.000	584.270	0.000	584.500	0.000	584.500	0.000
22	587.340	0.000	584.500	0.000	584.430	0.000	584.320	0.000	584.490	0.000	584.480	0.000
23	587.750	0.000	584.520	0.000	584.420	0.000	584.200	0.000	584.450	0.000	584.480	0.000
24	587.580	0.000	584.500	0.000	584.410	0.000	584.200	0.000	584.450	0.000	584.470	0.000
25	588.590	0.000	584.480	0.000	584.310	0.000	Not observed Due to Lock-Down		584.470	0.000	584.490	0.000
26	584.580	0.000	584.500	0.000	584.210	0.000			584.470	0.000	584.510	0.000
27	584.590	0.000	584.480	0.000	584.200	0.000			584.440	0.000	584.320	0.000
28	584.590	0.000	584.520	0.000	584.100	0.000			584.400	0.000	584.280	0.000
29	584.590	0.000	584.530	0.000	584.100	0.000			584.350	0.000	584.210	0.000
30	584.590	0.000	584.540	0.000					584.180	0.000	584.100	0.000
31	584.590	0.000	584.530	0.000							583.950	0.000
Ten-Daily Mean												
I Ten-Daily	587.186	15.66	584.433	0.000	584.528	0.000	583.804	0.000			584.068	0.000
II Ten-Daily	587.216	17.16	584.241	0.000	584.493	0.000	583.767	0.000	584.500	0.000	584.203	0.000
III Ten-Daily	586.006	1.488	584.508	0.000	584.291	0.000	584.247	0.000	584.420	0.000	584.345	0.000
Monthly												
Min.	584.580	0.000	583.490	0.000	584.100	0.000	583.610	0.000	584.180	0.000	583.850	0.000
Max.	588.590	19.31	584.600	0.000	584.550	0.000	584.320	0.000	584.500	0.000	584.540	0.000
Mean	586.777	11.11	584.398	0	584.442	0	583.862	0	584.427	0	584.210	0

Peak Computed Discharge = 2483 cumecs on 07/08/2019

Corres. Water Level :594.33 m

Lowest Computed Discharge = 3.120 cumecs on 23/06/2019

Corres. Water Level :587.04 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

#:Discarded Discharge (values changed as per rating curve)

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2019-2020

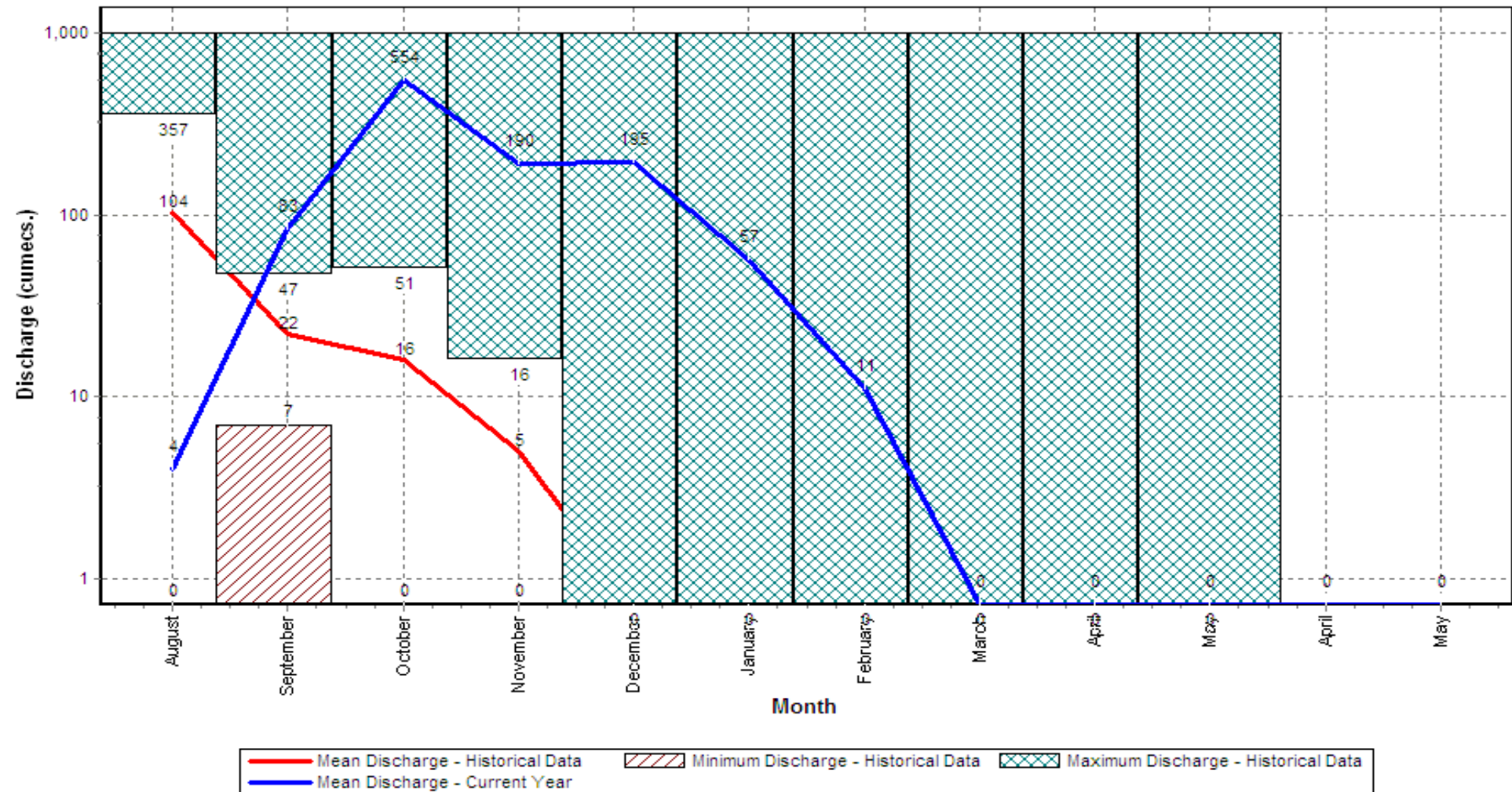
Station Name : Targaon (TARGAON)

Data considered : 2019-2020

Division : Upper Krishna Divn, Pune

Local River : Krishna

Sub-Division : UKSD,Miraj



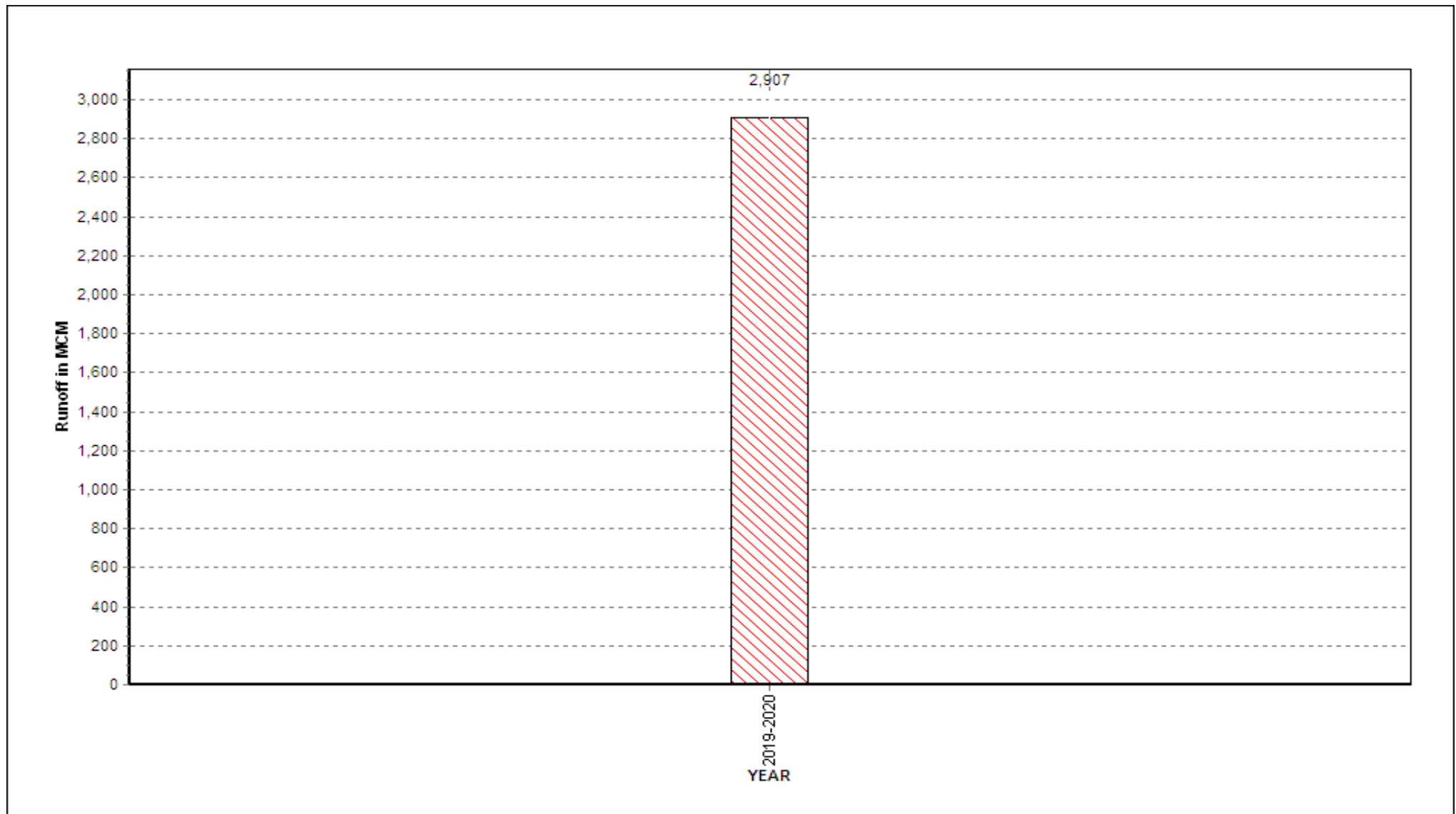
Annual Runoff Values for the period: 2019 - 2020

Station Name : Targaon (TARGAON)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj



Note: Missing values have not been considered while arriving at Annual Runoff

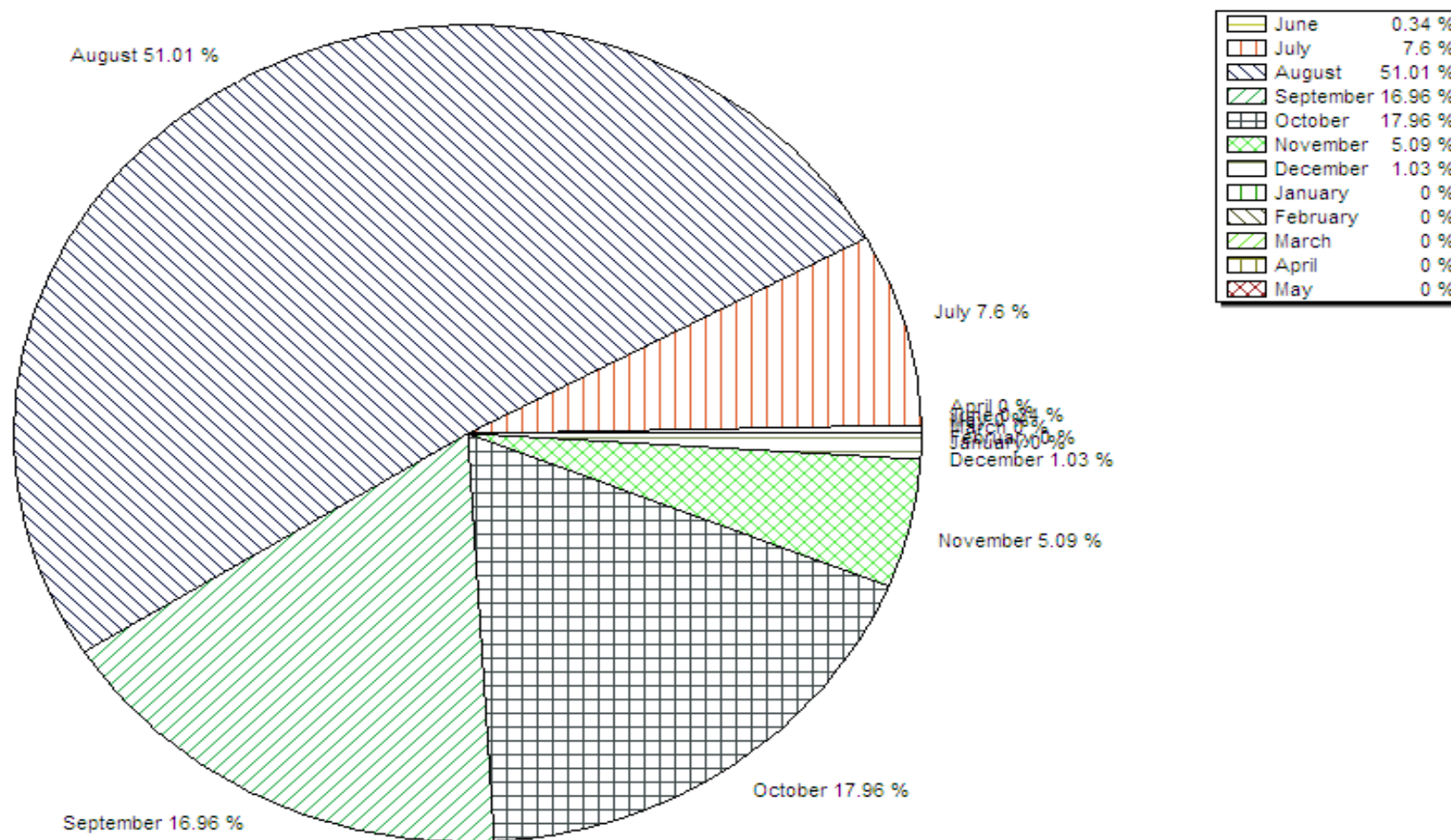
Monthly Runoff for the Year : 2019-2020

Station Name : Targaon (TARGAON)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



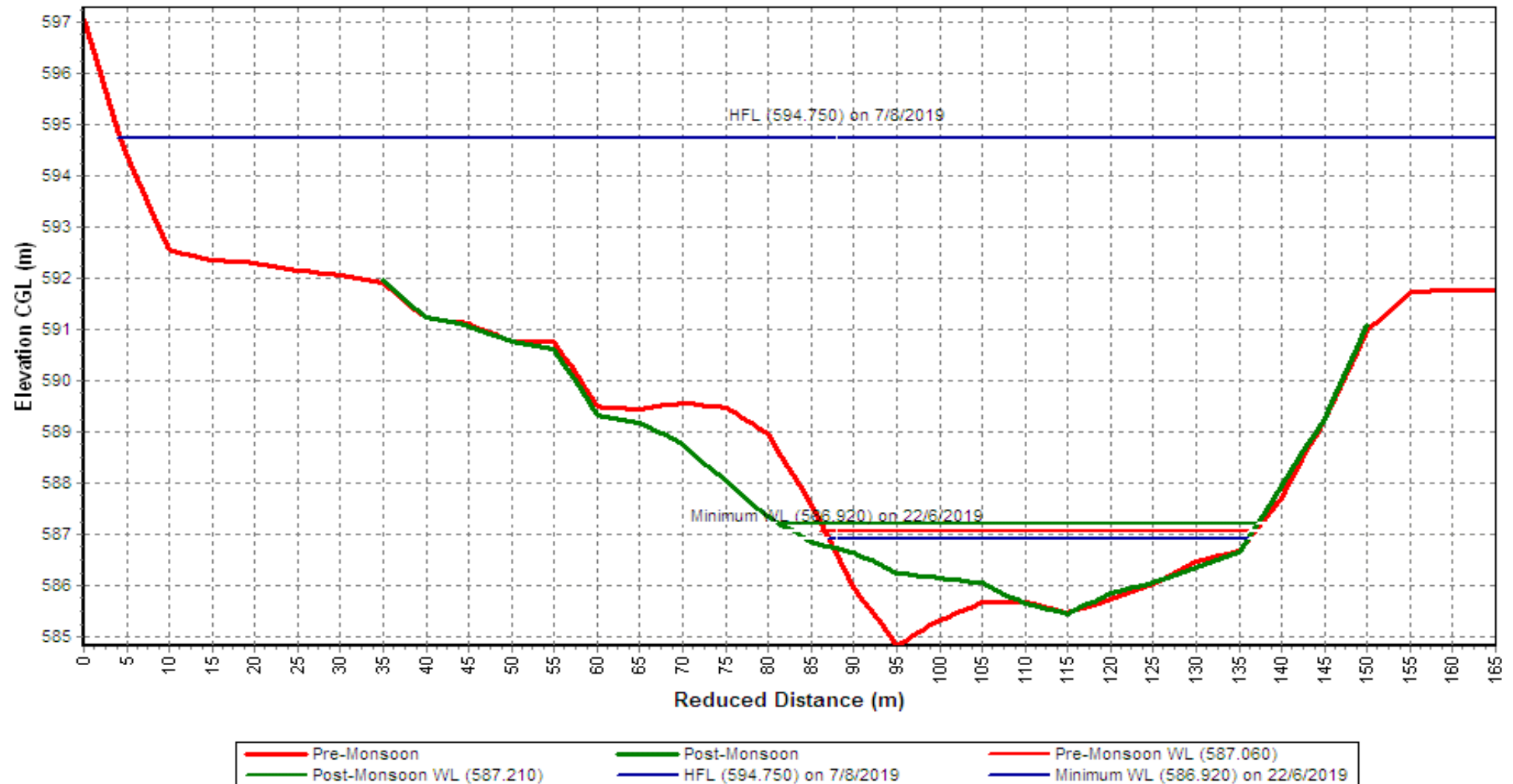
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2019-2020

Station Name : Targaon (TARGAON)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD, Miraj



Cross Section Difference Due to High Flood

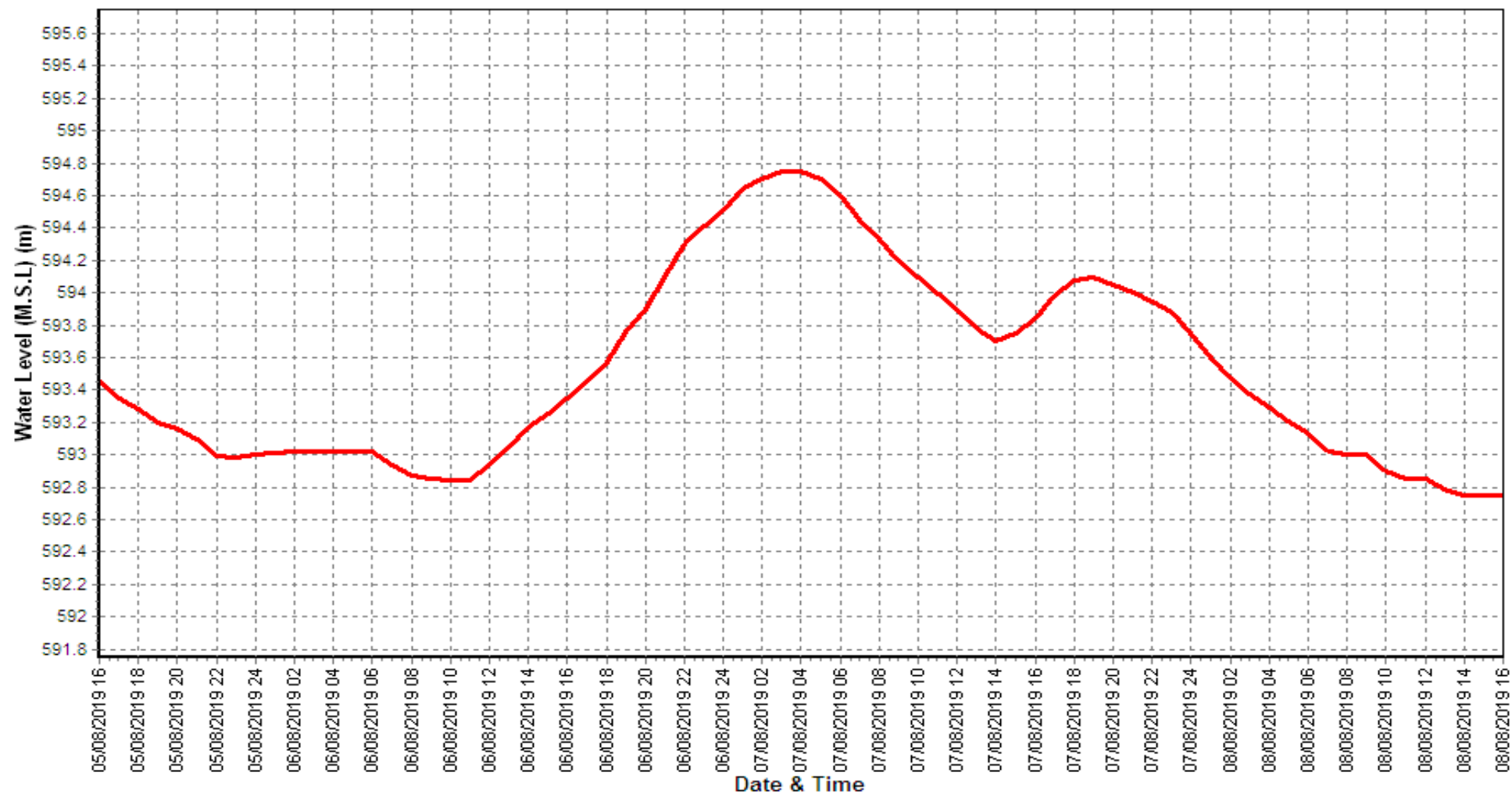
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2019-2020

Station Name : Targaon (TARGAON)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj



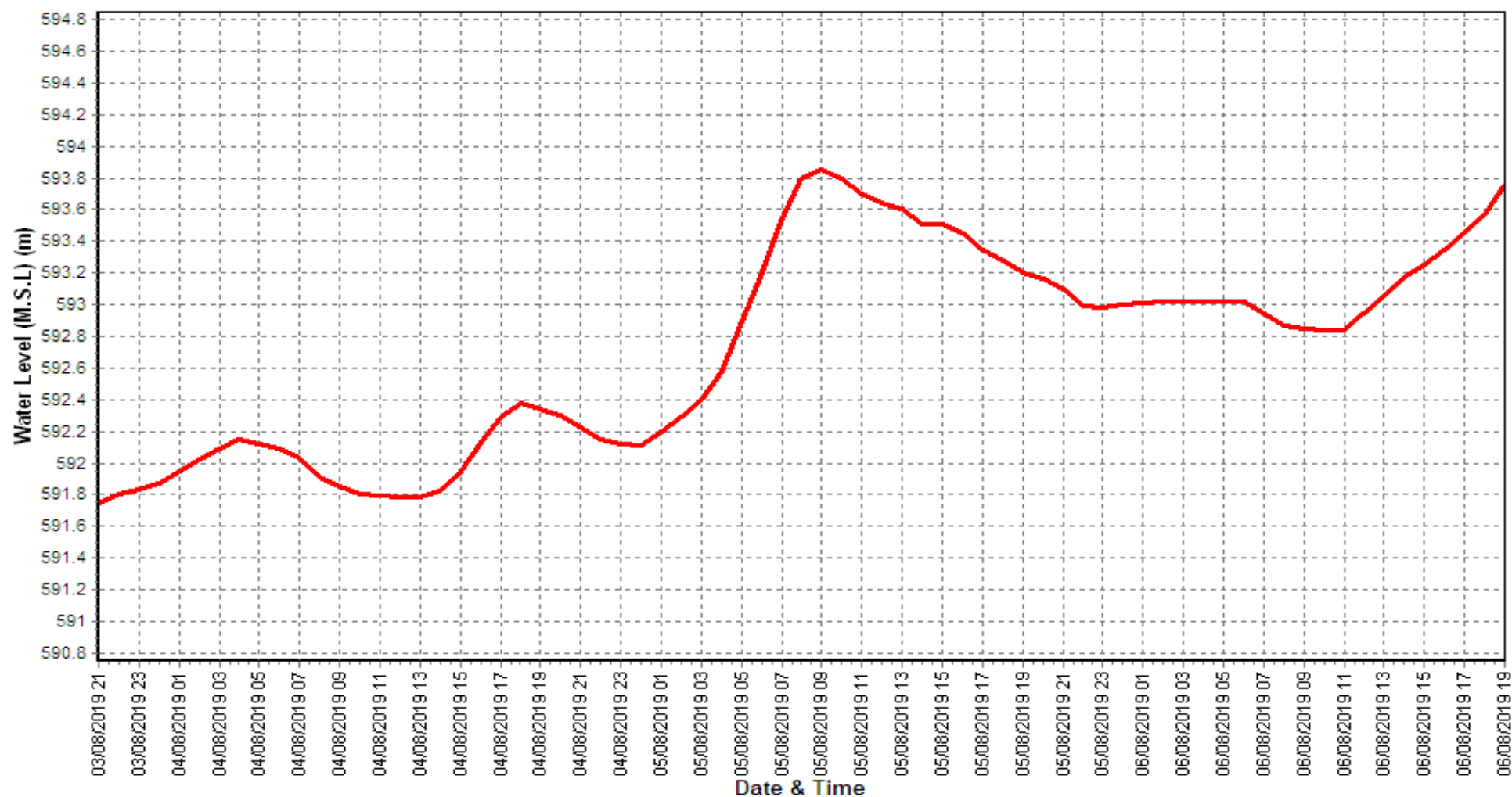
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2019-2020

Station Name : Targaon (TARGAON)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD,Miraj



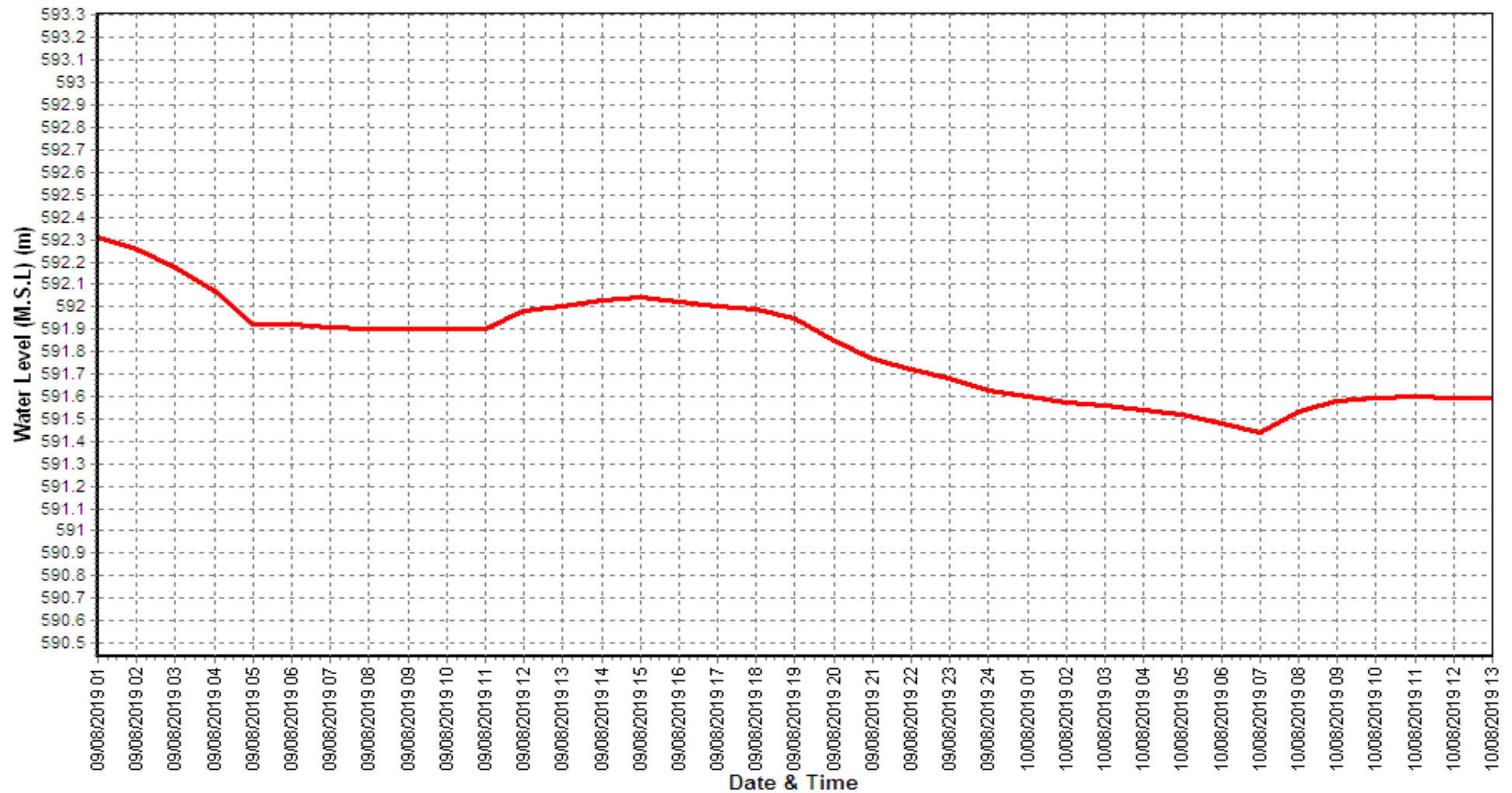
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2019-2020

Station Name : Targaon (TARGAON)

Local River : Krishna

Division : Upper Krishna Divn, Pune

Sub-Division : UKSD ,Miraj





कृष्णा एवं समन्वय परिमंडल / KRISHNA & CO-ORDINATION CIRCLE
हैदराबाद / HYDERABAD

मार्च -2021
March-2021