CHEHALIS CITY COUNCIL AGENDA

CITY HALL
350 N MARKET BLVD | CHEHALIS, WA 98532

Anthony E. Ketchum, Sr., District 3
Mayor

Jerry Lord, District 1
Daryl J. Lund, District 2, Mayor Pro Tem
Kate McDougall, Position at Large No. 1
Dr. Isaac S. Pope, District 4
Robert J. Spahr, Position at Large No. 3
Vacant, Position at Large No. 2

Regular Meeting of Monday, January 24, 2022
5:00 pm

1. Call to Order. (Mayor)

2. Pledge of Allegiance. (Mayor)

3. Approval of Agenda. (Mayor)

PRESENTATIONS

4. Water Banking – Lindsey Pollock, Lewis County Commissioner

5. Chehalis River Basin Flood Authority Update – Edna Fund

6. Economic Alliance Update – Richard Debolt, Executive Director

CITIZENS BUSINESS (PUBLIC COMMENT)

Individuals wishing to provide public comments in general and on agenda items should submit comments by 4:00 pm on the day of the meeting. All comments received will be acknowledged by the Mayor under Citizens Business of this meeting agenda. Please use the following form to submit comments – https://www.ci.chehalis.wa.us/contact. If you do not have computer access or would prefer to submit a comment verbally, please contact City Clerk Kiley Franz at 360-345-1042 or at kfranz@ci.chehalis.wa.us. Public comments will be limited to five (5) minutes.

7. Lewis County Gospel Mission Representative Tricia Ziese

ITEM	ADMINISTRATION RECOMMENDATION	PAGE
CONSENT CALENDAR		
8. Minutes of the Regular City Council Meeting of January 10, 2022. (City Clerk)	APPROVE	1
9. 2021 Vouchers and Transfers – Accounts Payable in the Amount of $436,527.89 Dated January 14, 2022. (City Manager, Finance Director)	APPROVE	5
10. 2022 Vouchers and Transfers – Accounts Payable in the Amount of $664,693.93 Dated January 14, 2022. (City Manager, Finance Director)	APPROVE	7

ITEM	ADMINISTRATION RECOMMENDATION	PAGE
OLD BUSINESS		
11. Review of Council Committee and Board Appointments. (City Council)	DIRECTION REQUESTED	8

ITEM	ADMINISTRATION RECOMMENDATION	PAGE
NEW BUSINESS		
12. Parking Lot B Lease Agreement with JoAnn Kuehner, Sole Trustee of the Kuehner Trust. (City Manager, Facilities Manager)	APPROVE	12
13. Chehalis Flood Storage Master Plan Status Update and Request for Policy Direction. (City Manager)	DIRECTION REQUESTED	22

ITEM	ADMINISTRATION RECOMMENDATION	PAGE
ADMINISTRATION AND CITY COUNCIL REPORTS		
14. Administration Reports.	INFORMATION ONLY	- - -
a. City Manager Update. (City Manager)		
15. Councilor Reports/Committee Updates. (City Council)	INFORMATION ONLY	- - -

EXECUTIVE SESSION

16. Pursuant to RCW:

a. 42.30.110(1)(i) – Litigation/Potential Litigation
b. 42.30.110(1)(c) – Sale/Lease of Real Estate

THE CITY COUNCIL MAY ADD AND TAKE ACTION ON OTHER ITEMS NOT LISTED ON THIS AGENDA.
NEXT REGULAR CITY COUNCIL MEETING IS MONDAY, FEBRUARY 14, 2022.

Chehalis City Council

Meeting Minutes
January 10, 2022

The Chehalis City Council met in regular session on Monday, January 10, 2022. City Clerk Kiley Franz called the meeting to order at 5:00 pm with the following members present: Tony Ketchum, Jerry Lord, Kate McDougall, Dr. Isaac Pope, and Bob Spahr. Councilor Lund participated via Zoom. Staff present included: Jill Anderson, City Manager; Tammy Baraconi, Planning and Building Manager; Lance Bunker, Street Superintendent; Kiley Franz, City Clerk; Cassie Frazier, City Manager's Administrative Assistant; Tedd Hendershot, Fire Chief; Andrew Hunziker, Facilities Manager; Randy Kaut, Police Chief; Dale McBeth, Municipal Court Judge; Devlan Pool, Wastewater Superintendent; Brandon Rakes, Airport Operations Coordinator; Chun Saul, Finance Director; Glenn Schaffer, HR/Risk Manager; and Lilly Wall, Recreation Manager.

1. **Approval of Agenda.** Kiley Franz explained that the following revisions were necessary:

- Item 7: Lewis County Commissioner Lindsey Pollock would not be presenting; her presentation had been moved to January 24, 2022
- Item 12: On-Call Agreement with Gibbs and Olson for Engineering Review Services – Section J3: Revise 10% to 12% to be consistent with the schedule of fees attached to the contract in Exhibit A
- Item 14: Parking Lot B Lease Agreement with JoAnn Kuehner was removed from the agenda
- Item 15: Correction to Resolution No. 1-2022, not 1-2021
- Item 16: Addition of Resolution No. 2-2022, Declaring an Emergency Relating to the January 2022 Flooding in the City of Chehalis
- Item 18: Remove Executive Session for Litigation/Potential Litigation and Sale/Lease of Real Estate

A motion to approve the agenda as amended was made by Councilor Ketchum. The motion was seconded by Councilor Spahr and carried unanimously.

2. **Swearing in of Re-elected and Newly Elected Council Members.** Kate McDougall and Bob Spahr were sworn into their positions on the City Council, Council Position At-Large No. 1 and Council Position At-Large No. 3 respectively, by Municipal Court Judge Dale McBeth.

3. **Selection of Mayor and Mayor Pro Tem.** City Clerk Kiley Franz called for nominations for mayor. Councilor Lord nominated Councilor Spahr; the nomination was seconded by Councilor Pope. Councilor Lund nominated Councilor Ketchum; the nomination was seconded by Councilor McDougall.

There being no further nominations, Ms. Franz declared the nominations closed and asked for a show of hands for those in favor of Councilor Spahr for mayor. Councilor Spahr received three votes; the nomination failed to pass. Ms. Franz asked for a show of hands for those in favor of Councilor Ketchum for Mayor. Councilor Ketchum received three votes; the nomination failed to pass.

City Attorney, Sam Satterfield, explained that per state statute, a mayor must be selected at this meeting. He encouraged discussion among Councilors regarding the two nominees. Councilors briefly discussed nominations.

City Clerk Kiley Franz called for nominations for mayor. Councilor Lord nominated Councilor Spahr; the nomination was seconded by Councilor Pope. Councilor Lund nominated Councilor Ketchum; the nomination was seconded by Councilor McDougall.

There being no further nominations, Ms. Franz declared the nominations closed and asked for a show of hands for those in favor of Councilor Spahr for mayor. Councilor Spahr received three votes; the nomination failed to pass. Ms. Franz asked for a show of hands for those in favor of Councilor Ketchum for Mayor. Councilor Ketchum received three votes; the nomination failed to pass.

Councilor Spahr expressed his gratitude for the nomination but did not want to stall the process. City Clerk Kiley Franz called for nominations for mayor. Councilor Lund nominated Councilor Ketchum; the nomination was seconded by Councilor McDougall.

There being no further nominations, Ms. Franz declared the nominations closed and asked for a show of hands for those in favor of Councilor Ketchum for mayor. Councilor Ketchum received the majority vote from Councilors Lund, McDougall, Spahr, and himself.

Mayor Ketchum called for nominations for the position of Mayor Pro-tem.

Councilor Lord nominated Councilor Spahr; the nomination was seconded by Councilor McDougall. Mayor Ketchum nominated Councilor Lund; the nomination was seconded by Councilor Lund. Mayor Ketchum made a motion to close the nominations; the motion was seconded by Councilor Pope and carried unanimously.

There being no further nominations, Mayor Ketchum declared the nominations closed and asked for a show of hands for those in favor of Councilor Spahr for mayor pro tem. Councilor Spahr received the majority vote from Councilors Pope, McDougall, Lord, and himself.

4. **Preliminary Review of Council Committee and Board Appointments.** Mayor Ketchum asked that members of the Council review the list of Council boards and committees to be discussed at the meeting on January 24, 2022.

5. **Consent Calendar.** Councilor Spahr moved to approve the consent calendar comprised of the following:

a. Minutes of the regular City Council meeting of December 13, 2021; and

b. 2021 Vouchers and Transfers – December 15, 2021 Claim Vouchers No. 133175-1333300 and Electronic Funds Transfer Check Nos. 1709 -1744 and 32 in the amount of $576,382.38; and

c. 2021 Vouchers and Transfers – December 30, 2021 Claim Vouchers No. 133301-133390; and Electronic Funds Transfer Check No. 1745-1773 and 33-34 in the amount of $339,299.36; and

d. Vouchers and Transfers – December 30, 2021, Payroll Vouchers No. 41876-41904; Direct Deposit Payroll Vouchers No. 14270-14373; and Electronic Federal Tax and DRS Pension/Deferred Comp Payments No. 372-376 in the amount of $863,521.79; and

e. On-Call Agreement with Gibbs and Olson for engineering review services (as amended)

The motion was seconded by Councilor Lord and carried unanimously.

6. **Vacant City Council Seat**. City Manager Anderson explained that no applications had been received by the deadline of Thursday, January 6, 2022. One application was received via email on Saturday, January 8, 2022 from former Councilor Terry Harris. City Manager Anderson explained that the City Council had a deadline to make the ~~for~~ appointment of ~~was~~ February 21, 2022. If the appointment is not made by the deadline, the ~~, then the~~ process ~~was~~ would be ~~-~~turned over to the Lewis County Commissioners.

Councilor Lund expressed his desire to open the process to applications again; Councilor McDougall agreed. A motion to open the process for applications was made by Councilor Lord. Councilor Lund seconded the motion and it carried unanimously.

Mayor Ketchum requested a special meeting on Monday, February 7, 2022 for applicant interviews. Applications will be accepted until 5:00 pm on Wednesday, February 2, 2022.

7. **Resolution No. 1-2022, First and Final reading – Update to Chehalis Personnel Policies Manual**. City Manager Anderson informed the Council that the current rules and regulations had been adopted in 1999, with a few revisions in subsequent years. A complete review of the document was completed and Glenn Schaffer, HR/Risk Manager, explained that the document was planned to be reviewed annually.

Mr. Schaffer informed the Council that some of the changes covered reasonable accommodation of disabilities and religious beliefs, anti-discrimination, harassment, retaliation, workplace violence, immigration law, sick leave laws, domestic

violence sick leave laws, paid family medical leave laws, vehicle use policies, workplace safety policies, and whistleblower retaliation. He asked for any questions; there were none.

A motion to adopt Resolution No. 1-2022 on first and final reading was made by Councilor Spahr. The motion was seconded by Councilor Lord and carried unanimously. Mayor Ketchum confirmed with City Attorney Sam Satterfield that this resolution did not require two readings; Mr. Satterfield confirmed that it did not.

8. **Administration Reports**.

a. **City Manager Update**. City Manager Anderson explained that snow melt and significant rainfall contributed to flooding throughout the City of Chehalis.

   a. **Resolution No. 2-2022, First and Final Reading – Declaring an Emergency Relating to the January 2022 Flooding in the City of Chehalis.** City Manager Anderson explained that the resolution would help qualify the county for FEMA assistance as well as Chehalis residence impacted by the flood. Ms. Anderson provided a presentation documenting some of the flooding throughout the city. Ms. Anderson explained that there was a termination date with this emergency declaration of March 31, 2022.

   Councilor Lord asked about mobile homes that were parked at the new fire station site. Ms. Anderson explained that in an effort to assist local businesses, emergency authorization had been given to Imperial Homes to relocate their inventory temporarily on the site to avoid flood damage. Imperial Homes had lost most of their inventory in the 2007 flood. The mobile homes would be moved soon.

   For their work during the flooding, City Manager Anderson thanked the Chief Hendershot and the entire fire department, Chief Kaut and the entire police department, Trent Lougheed and the entire public works department, Lance Bunker and the entire streets department, and Devlan Pool and the entire wastewater treatment plant staff.

   Councilor McDougall informed the Council and members of the public that United Way was providing assistance to those affected by the flooding. She noted that interested parties could sign up online.

   A motion to adopt Resolution No. 2-2022 on first and final reading was made by Councilor Spahr. The motion was seconded by Councilor Lord and carried unanimously.

11. **Councilor Reports/Committee Updates**.

a. **Councilor Pope.** Councilor Pope explained that he had been asked to step down from the Chehalis Foundation Board and expressed his frustration with the committee. He encouraged other members of the City Council to approach the Chehalis Foundation to inquire about being on the board.

b. **Councilor Lund.** Councilor Lund thanked Kiley Franz, Chief Hendershot, and the public works crew that cleared his street so that an ambulance could make it to his residence. He informed the Council that he was feeling much better.

c. **Councilor McDougall.** Councilor McDougall expressed her excitement and thanked the Council for their support during her first meeting.

d. **Mayor Ketchum.** Mayor Ketchum informed the Council that all of his meetings were postponed due to the holidays.

There being no further business, the meeting was adjourned at 5:56 pm.

_____
Anthony Ketchum, Sr., Mayor

_____
Kiley Franz, City Clerk

Approved:

Initials: _____

CHEHALIS CITY COUNCIL MEETING
AGENDA REPORT

TO: The Honorable Mayor and City Council

FROM: Jill Anderson, City Manager

BY: Chun Saul, Finance Director
Clare Roberts, Accounting Tech II

MEETING OF: January 24, 2022

SUBJECT: 2021 Vouchers and Transfers – Accounts Payable in the Amount of $436,527.89

ISSUE

City Council approval is requested for 2021 Vouchers and Transfers dated January 14, 2022.

DISCUSSION

The January 14, 2022 claim vouchers have been reviewed by a committee of two councilors prior to the release of payments. The administration is requesting City Council approval for Claims Vouchers including Electronic Funds Transfer Checks No. 1774 - 1803 and 35 - 37 and Voucher Checks No. 133391 - 133464 in the amount of $436,527.89 dated January 14, 2022, which included the transfer of:

- $ 49,483.10 from the General Fund
- $ 1,921.39 from the Dedicated Street Fund – 4% Sales Tax Fund
- $ 7.81 from the Arterial Street Fund
- $ 26,000.46 from the Tourism Fund
- $ 181.00 from the LEOFF 1 OPEB Reserve Fund
- $ 108,719.43 from the Public Facilities Reserve Fund
- $ 46,241.37 from the Wastewater Fund
- $ 27,865.32 from the Water Fund
- $ 2,775.29 from the Storm & Surface Water Utility Fund
- $ 165,512.50 from the Airport Fund
- $ 4,028.66 from the Custodial Court Fund
- $ 3,791.56 from the Custodial Other Agency Fund

RECOMMENDATION

It is recommended that the City Council approve the January 14, 2022 Claims Vouchers including Electronic Funds Transfer Checks No. 1774 - 1803 and 35 - 37 and Voucher Checks No. 133391 - 133464 in the amount of $436,527.89.

SUGGESTED MOTION

I move that the City Council approve the January 14, 2022 Claims Vouchers including Electronic Funds Transfer Checks No. 1774 - 1803 and 35 - 37 and Voucher Checks No. 133391 - 133464 in the amount of $436,527.89.

CHEHALIS CITY COUNCIL MEETING
AGENDA REPORT

TO: The Honorable Mayor and City Council

FROM: Jill Anderson, City Manager

BY: Chun Saul, Finance Director
Clare Roberts, Accounting Tech II

MEETING OF: January 24, 2022

SUBJECT: 2022 Vouchers and Transfers – Accounts Payable in the Amount of $664,693.93

ISSUE

City Council approval is requested for 2022 Vouchers and Transfers dated January 14, 2022.

DISCUSSION

The January 14, 2022 claim vouchers have been reviewed by a committee of two councilors prior to the release of payments. The administration is requesting City Council approval for Claims Vouchers including Electronic Funds Transfer Checks No. 1804 - 1808 and Voucher Checks No. 133465 - 133494 in the amount of $664,693.93 dated January 14, 2022, which included the transfer of:

- $ 662,608.84 from the General Fund
- $ 9.77 from the Street Fund
- $ 1,428.51 from the Wastewater Fund
- $ 518.08 from the Water Fund
- $ 128.73 from the Storm & Surface Water Utility Fund

RECOMMENDATION

It is recommended that the City Council approve the January 14, 2022 Claims Vouchers including Electronic Funds Transfer Checks No. 1804 - 1808 and Voucher Checks No. 133465 - 133494 in the amount of $664,693.93 dated January 14, 2022.

SUGGESTED MOTION

I move that the City Council approve the January 14, 2022 Claims Vouchers including Electronic Funds Transfer Checks No. 1804 - 1808 and Voucher Checks No. 133465 - 133494 in the amount of $664,693.93 dated January 14, 2022.

CHEHALIS CITY COUNCIL MEETING
AGENDA REPORT

TO: The Honorable Mayor and City Council

FROM: Kiley Franz, City Clerk

MEETING OF: January 24, 2022

SUBJECT: Preliminary Review of City Council Committee and Board Assignments

---

INTRODUCTION

The City Council reviews its committee and board assignments in the January following a City Council election, which occurs every two years. The election of City Council seats occurred in November 2021, so the review and assignments are scheduled to occur this month.

A full list of City Council committees, boards, and current assignments was distributed at the January 10, 2022 City Council meeting and is also attached for review. While the assignments are typically made at the second meeting in January, the City Council may want to postpone making the assignments until February in anticipation that the vacant City Council seat will be filled after the applicant interviews, which are scheduled for February 7, 2022.

In most cases this will not impact City business; however, there are two exceptions: The Budget Committee and the Voucher Committee. Those two Committees have vacancies, and it would be helpful to have the third member appointed at this time. The current members of the Budget Committee are: Mayor Pro-Tem Spahr and Councilor Lord. The current members of the Voucher Committee are Mayor Pro-Tem Spahr and Councilor Pope.

As the City Council reviews the list, it is recommended that the creation of a Capital Improvement Planning Committee be considered to address the City's current and future capital improvement requirements.

FISCAL IMPACT

There is no fiscal impact.

RECOMMENDATION

It is suggested that the City Council review the attached list of committees and boards to make the necessary assignments.

SUGGESTED MOTION

There is no suggested motion.

Council Committee/Board Assignments

Approved 2/10/2020
Updated 9/14/2020
Updated 2/8/2021
Updated 2/22/2021
Updated 3/8/2021
Updated 10/11/2021

Board/Committee	Council	Staff	Meeting Info
911 Dispatch Committee	Dawes Pope Lund	City Mgr Police Chief Fire Chief	TBD
Beautification Committee	Pope Spahr Lund	Planning & Building Mgr Police Chief	TBD
~~CARES COVID-19 Community Program~~	~~Lund~~ ~~Pope~~ ~~Bannan/Harris~~	~~City Mgr~~	~~Temporary Committee, No Longer Needed~~
Centralia-Chehalis Transportation Cooperative	Ketchum Spahr Bannan/Harris	City Mgr Public Works Dir	Does not currently meet
Chehalis Basin Flood Authority		Public Works Dir	3rd Thurs of each month 9:00 AM
Chehalis Community Renaissance Team	Ketchum Lord Pope	City Mgr City Mgr's Admin Asst	2nd Fri of each month 8:30 AM City Hall
~~Chehalis Foundation~~	~~Pope~~		~~3rd Tues of each month~~ ~~11:30 AM~~ ~~City Hall~~
Chehalis-Napavine-LCSD No. 4 Sewer Operations	Pope Spahr		As needed
Chehalis Parks Subcommittee	Lord Lund Pope	City Mgr Recreation Mgr	As needed

Board/Committee	Council	Staff	Meeting Info
Chehalis River Basin Partnership	City Rep: Terry Harris	Wastwater Supt Water Supt	4th Fri of each month 9:30 AM Lucky Eagle Casino, Rochester
Council Budget Committee	Dawes Lord Spahr	 City Mgr Finance Dir	Quarterly
Council Growth Management Committee	Pope (Chair) Dawes Ketchum		As needed
Council Parking Committee	Lord Lund Spahr		As needed
Council Voucher Committee	Dawes Pope Spahr		Twice per month to review and sign vouchers Finance Department
Fire Consolidation Subcommittee	Dawes Lund Spahr	City Mgr Fire Chief	Not Currrently Meeting
Lewis County Historical Museum Board	Ketchum		3rd Tues of each month 5:00 PM Historical Museum
Lewis County LEOFF Disability Board	TBD		3rd Fri of each month 3:00 PM Lewis County Commissioner' Office
Lewis County Planned Growth (GMA) Committee	Spahr	City Mgr Planning & Building Mgr	Annually
Lewis County Public Transportation Benefit Area Authority (Twin Transit)	Ketchum Dawes - alt.		3rd Tues of each month 8:00 AM TransAlta Commons (Centralia College)

Board/Committee	Council	Staff	Meeting Info
Lewis County Solid Waste Advisory Committee	Lord		1st Wed of each month 1:30 PM Lewis County Public Services
Lewis County Solid Waste Disposal District Executive Committee	Lord		Once per year to approve budget
Lewis County Transportation Strategy Council	Bannan/Harris Ketchum - alt.	City Mgr	3rd Mon of each month 2:00 PM Lewis County Public Services
Economic Alliance of Lewis County Board	Spahr		2nd Thurs of Jan, Mar, May, Jul, Sept, Nov 7:00 AM Holiday Inn Express
Lodging Tax Advisory Committee	Lord	City Mgr's Admin Asst	Annually or as needed City Hall
Pt. 09 Committee	Mayor		2nd Fri of Mar, Jun, Sept, Nov 8:30 AM Lewis EDC
Sister City Committee	Ketchum	City Mgr's Admin Asst	Currently suspended
SWW Economic Development Commission	Spahr	City Mgr	Twice per year in Jan, Jun
SWW Regional Transportation Planning Organization Board	Bannan/Harris		2nd Wed of Feb, May, Sept, Dec Various member locations

CHEHALIS CITY COUNCIL MEETING
AGENDA REPORT

TO: The Honorable Mayor and City Council

FROM: Jill Anderson, City Manager

BY: Lilly Wall, Recreation Manager
Andrew Hunziker, Parks and Facility Manager

DATE: January 24, 2022

SUBJECT: Parking Lot B Lease Agreement with JoAnn Kuehner, sole Trustee of The Kuehner Trust.

ISSUE

The City of Chehalis owns Parking Lot B located on NW Boistfort St. adjacent the San Juan Arms Apt Building. JoAnn Kuehner, sole Trustee of The Kuehner Trust approached the City regarding purchase or leasing the property. A proposed lease agreement has been prepared for consideration by the City Council.

INTRODUCTION

City staff has been working with JoAnn Kuehner to address concerns about the condition of Parking Lot B that borders her apartment building. It is a 24-hour free parking lot that has become a safety concern. There have been abandoned cars, drugs use, theft, and people staying overnight in their vehicles, using it as a living space. It is also in need of repair and maintenance. She would like to have the option of entering into a lease agreement for the sole use of the parking lot for her tenants. In turn she will pay a rental use fee, make improvements to the parking lot, be responsible for daily maintenance and all necessary repairs during the length of the lease.

TERMS OF THE PROPOSAL

For convenience, this section summarizes the fundamental terms of the Lease.

- Lessee: JoAnn Kuehner, sole Trustee of The Kuehner Trust.
- Lease Term: The initial term of this Lease will be for a five (5) year period, the Lease will be automatically renewed for one (1) additional five-year term, unless terminated earlier.
- The current monthly rental rate for city parking spaces, that are not free parking, is $20 per month.
- The proposed monthly rental rate in this agreement is $10 per space, per month. Reduced by 50% to compensate for the lessee's obligation to make initial improvements to the parking lot and for the on-going maintenance and repair work for the duration of the lease. Annual lease hold tax will be the responsibility of the lessee.
- The monthly rental rate will be reviewed at the end of the first five (5) year term and adjusted based on the rental rate for city parking spaces at that time.

- The proposed annual rent is $1,658.98, which includes the lease hold tax fee of $338.98.
- Initial Improvements: Lessee will clean and restripe all the parking stalls in Lot B, fix the broken fence and provide signage as deemed appropriate in Lessee's sole discretion, all at Lessee's sole cost.
- Annual Maintenance: Lessee will be responsible to keep the premises in a neat and safe condition, this includes daily maintenance and any repairs as needed, at Lessee's sole cost.
- Lot B will be used as parking for the San Juan Arms Apartment tenants.

FISCAL IMPACT

The city will receive revenue of $1,658.98 in rental/leasehold tax fees as the proposed parking spaces are currently 24-hour free parking spaces. The parking lot is in much need of maintenance and repair work and the lessee will be responsible for those initial improvements and for the on-going upkeep for the duration of the lease. This will create a savings in staff time and facility repair and maintenance cost for the duration of the lease.

RECOMMENDATION

It is recommended that the City Council approve the Lease Agreement between the City of Chehalis and JoAnn Kuehner, sole Trustee of The Kuehner Trust, and authorize the City Manager to execute said agreement.

SUGGESTED MOTION

I move that the City Council approve the Lease Agreement between the City of Chehalis and JoAnn Kuehner, sole Trustee of The Kuehner Trust, and authorize the City Manager to execute said agreement.

LEASE AGREEMENT – PARKING LOT B
City of Chehalis
and
JoAnn Kuehner, sole Trustee of
The Kuehner Trust

THIS LEASE AGREEMENT - PARKING LOT B (the "Lease") is entered into and effective as of the ___ day of January, 2022 (herein the "Effective Date"), by and between the City of Chehalis, a municipal corporation (the Lessor, hereinafter referred to as "City"), and JoAnn Kuehner as sole Trustee of the Kuehner Trust, a trust (the "Lessee"). City and Lessee are sometimes referred to herein collectively as the "parties".

I. Recitals

WHEREAS the City is a municipal corporation duly formed and existing under the laws of the State of Washington, with City Hall located at 350 N. Market Blvd., Chehalis Washington 98532;

WHEREAS the Lessee is a family trust duly formed and existing under the laws of the State of Washington, with principal place of business located at 75 NE Cascade Avenue, Apartment Z, Chehalis, Washington 98532; and

WHEREAS the City owns, operates and maintains property, more particularly described below, which are adequate and available for parking of vehicles. City and Lessee desire to enter this Lease, whereby City will make available to Lessee the described parking lot for parking of vehicles for the tenants of the San Juan Apartments.

II. Agreement

NOW THEREFORE in consideration of the mutual covenants, conditions and benefits in this Lease, the City and the Lessee agree as follows.

1. **The Premises.** The City hereby leases to the Lessee, and the Lessee hereby leases from the City, a 53 feet X 65 feet portion of Lewis County Tax Parcel No. 004597-001-000 defined as Parking Lot B, identified by a green boarder around the perimeter of the area illustrated on Exhibit "A" of the following parcel situated in the City of Chehalis, Lewis County, Washington (called the "Premises"), and as further shown on the map attached hereto as Exhibit "A," which Exhibit "A" is hereby incorporated herein by this reference:

   A. Lewis County Tax Parcel No. 004597-001-000:

      Lots 17, 18, 19 and 20, Block 6, Chehalis Land and Timber Company's Addition to the city of Chehalis, Lewis County, Washington, EXCEPTING THEREFROM the following described property, to -wit: The Northeasterly 54 feet of Lot 17 and the Southeasterly 9 feet of the Northeasterly 54 feet of Lot 17 and the Southeasterly 9 feet of the

Northeasterly 54 feet of Lot 18 of Block 6, Chehalis Land and Timber Company's Addition to the City of Chehalis, Lewis County, Washington.

Grantors also reserve unto themselves an easement for ingress and egress to a building located on said premises, which easement is situated on the Southwesterly 58 feet of Lot 17 and the Southeasterly 9 feet of the Southwesterly 58 feet of Lot 18, Block 6, Chehalis Land and Timber Company's Addition.

The Easement herein reserved unto the Grantors is a nonexclusive easement and the Grantee is reserved the right to use said premises described by this easement for ingress and egress to other properties of the Grantee and with the further right to so occupy, pave, landscape and maintain said area so long as the same does not interfere with the easement reserved unto the Grantors herein.

2. Term. The term of this Lease will commence upon the date that is written above. The initial term of this Lease will be for a five (5) year period ending on the second (5th) anniversary date of the Effective Date, subject to administration on a month-to-month basis until termination as set forth below. On the 5th anniversary date of the Effective Date, established rental fees will be compared to the current rate at that time. If rental fees have increased, this lease will be adjusted to reflect the current rate with the same terms of the original agreement.

Unless earlier terminated in accordance with the terms hereof, this Lease shall be automatically renewed for one (1) additional five-year term; provided that, the final term shall in any event end no later than December 31, 2031. Either party shall have the right to terminate this Lease in its entirety upon sixty (60) days prior written notice in accordance with and pursuant to Section 17 below. Either party may elect nonrenewal of this Lease, or modification of this Lease by delivering written notice of nonrenewal to the other party at least sixty (60) days prior to the date of the expiration of the then term of this Lease.

3. Use. Lessee shall use the Premises as parking lot for the tenants of the San Juan Apartments and for no other use or purpose. Lessee shall not allow its employees or any other persons to use the Premises for any use or purpose other without the prior written consent of the City, which consent may be withheld in the City's sole and absolute discretion. Lessee shall have the sole right and authority to regulate and control use of such parking lot for the tenants of the San Juan Apartments during the term of this Lease, and may post appropriate signage governing allowable purposes and parking times. Lessee shall not permit anything to be done in or about the Premises that will in any way conflict with any law, statute, ordinance or governmental rule or regulation now in force or which may hereafter be enacted or promulgated. Provided that, notwithstanding the foregoing, Lessee may permit its tenants and its guests the non-exclusive use of Parking Lot B.

4. Rent. The annual value of the leased lot is $2,640.00 based upon current rates charged in City-owned and permitted parking lots. There are eleven parking slots on the Premises. Lessee will pay rent no less frequently than quarterly in the amount of One Hundred Ten dollars and 00/100 ($110.00) per month, which equals $10.00 for each parking slot. Though this is a reduced cost for

the value of the premises, the City agrees and acknowledges that performance of Lessee's improvements, maintenance and repair obligations, as well as other mutual benefits, as set forth herein and below, constitute good and sufficient consideration supporting this Lease. Lessee will pay additional leasehold tax as identified in Section 9: Property Taxes.

5. Lessee Improvements. Lessee will restripe all of the parking slots comprising Parking Lot B, repair and maintain the existing fence, and will provide signage as deemed appropriate in Lessee's sole discretion, all at Lessee's sole cost.

6. Security Deposit. None

7. Utilities. Not applicable.

8. Maintenance and Repair; Upkeep of Premises; Hazardous Substances. Lessee is solely responsible for all maintenance and repair of the Premises, including but specifically not limited to snow removal. Lessee shall keep the Premises in a neat and safe condition. The Lessee shall maintain the Premises in compliance with all laws, ordinances, or regulations governing the Premises and the Lessee's use of the Premises. The City shall have no obligation to make any repairs or improvements to the Premises from and after the Effective Date and during the term of this Lease. Lessee's duties to repair and maintain the Premises shall not include any duty or responsibility to replace pavement on the Premises, or to repair damage to such pavement caused by ordinary wear and tear.

Lessee shall not keep on or around the Premises, for the use, disposal, treatment, transportation, generation, storage or sale, any substances designated as or containing components designated as hazardous, dangerous, toxic or harmful, and/or which are subject to regulation as hazardous substances by any federal, state or local law, regulation, statue or ordinance (collectively referred to as "Hazardous Substances"). Without limiting the foregoing Lessee shall with respect to any such Hazardous Substance comply promptly, timely, and completely with all governmental regulations regarding Hazardous Substances. In the event Lessee shall be found to have violated any of the above covenants, any and all costs incurred by City as a result of Lessee's non-compliance, including City's attorney's fees and costs, shall be additional rent and shall be due and payable to City immediately upon demand by City. Without limiting the foregoing, Lessee shall be fully and completely liable to City for and shall indemnify, defend and hold City harmless from and with respect to any and all cleanup costs and any and all other charges, fees, penalties (civil and criminal) imposed by any governmental authority with respect to the use, disposal, treatment, transportation, generation and/or sale of Hazardous Substances, in or about the Premises.

9. Property Taxes. Lessee shall be responsible for paying a leasehold tax of 12.84% of the total contract value amount of $2,640.00, which is $338.98 per year. This amount should be remitted to the City no later than January 1st each year. Lessee is receiving a 50% reduction in the contract payments in exchange for repair and maintenance of the premises.

10. Condition. Lessee has had the opportunity to inspect the Premises prior to signing this Lease and accepts the Premises in their "AS IS" condition without any representation from the City as to its condition or suitability for Lessee's intended use.

11. Alterations. Except as set forth above in Paragraph 5 of this Lease, Lessee shall not make any alterations, additions, or improvements to the Premises without first obtaining the written consent of the City, which consent may be withheld in the City's sole discretion.

12. Liability; Indemnification; Release. Lessee shall defend, indemnify, and hold harmless the City, its officers, officials, employees and volunteers from and against any and all claims, suits, actions, or liabilities for injury or death of any person, or for loss or damage to property, which arises out of Lessee's use of Premises, or from the conduct of Lessee's business, or from any activity, work or thing done, permitted, or suffered by Lessee in or about the Premises, except only such injury or damage as shall have been occasioned by the sole negligence of the City . It is further specifically and expressly understood that the indemnification provided herein constitutes the Lessee's waiver of immunity under Industrial Insurance, Title 51 RCW, solely for the purposes of this indemnification. This waiver has been mutually negotiated and agreed to by the Lessee and City. The provisions of this section shall survive the expiration or termination of this Lease.

13. Insurance.

A. Insurance Term. The Lessee shall procure and maintain for the duration of the Lease, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the Lessee's operation and use of the leased Premises.

B. No Limitation. The Lessee's maintenance of insurance as required by the Lease shall not be construed to limit the liability of the Lessee to the coverage provided by such insurance, or otherwise limit the City's recourse to any remedy available at law or in equity.

C. Minimum Scope of Insurance. The Lessee shall obtain insurance of the types and coverage described below:

1. Commercial General Liability insurance shall be at least as broad as Insurance Services Office (ISO) occurrence form CG 00 01 and shall cover premises and contractual liability. The City shall be named as additional an insured on Lessee's Commercial General Liability insurance policy using ISO Additional Insured-Managers or Lessors of Premises Form CG 20 11 or a substitute endorsement providing at least as broad coverage.

D. Minimum Amounts of Insurance. The Lessee shall maintain the following insurance limits:

1. Commercial General Liability insurance shall be written with limits no less than $2,000,000 each occurrence, $2,000,000 general aggregate. Any combination of Commercial General Liability and umbrella/excess liability insurance may satisfy the required liability insurance limits.

E. Other Insurance Provisions. The Lessee's Commercial General Liability insurance policy or policies are to contain, or be endorsed to contain that they shall be primary insurance as respect the City. Any insurance, self-insurance, or self-insured pool coverage

maintained by the City shall be excess of the Lessee's insurance and shall not contribute with it.

F. Acceptability of Insurers. Insurance is to be placed with insurers with a current A.M. Best rating of not less than A: VII.

G. Verification of Coverage. The Lessee shall furnish the City with original certificates and a copy of the amendatory endorsements, including but not necessarily limited to the additional insured endorsement, evidencing the insurance requirements of the Lessee.

H. Notice of Cancellation. The Lessee shall provide the City with written notice of any policy cancellation within two business days of their receipt of such notice.

I. Failure to Maintain Insurance. Failure on the part of the Lessee to maintain the insurance as required shall constitute a material breach of lease, upon which the City may, after giving five business days notice to the Lessee to correct the breach, terminate the Lease or, at its discretion, procure or renew such insurance and pay any and all premiums in connection therewith, with any sums so expended to be repaid to the City on demand.

J. City Full Availability of Lessee Limits. If the Lessee maintains higher insurance limits than the minimums shown above, the City shall be insured for the full available limits of Commercial General and Excess or Umbrella liability maintained by the Lessee, irrespective of whether such limits maintained by the Lessee are greater than those required by this Lease or whether any certificate of insurance furnished to the City evidences limits of liability lower than those maintained by the Lessee.

14. Assignment; Sublease. Lessee shall not assign this Lease and Lessee shall not sublease the Premises in whole or in part.

15. City's Right of Access. The City, or the City's employees or agents, shall have the right to enter the Premises in a reasonable manner upon reasonable advance notice to Lessee to inspect the Premises or to conduct surveys, testing, or studies in connection with any engineering, design, financing, or permitting activities related to potential development of the Premises; provided, however, that no notice will be required in emergency circumstances where it is impractical to provide Lessee with advance notice. The City shall use reasonable efforts to minimize any disruption of Lessee's activities.

16. Default. Each of the following shall constitute an Event of Default:

A. The Lessee fails to maintain at all times the insurance required by this Lease.

B. Either party fails to comply with any agreement or requirement in this Lease, other than the obligations listed in subsection (a), for a period of thirty (30) days after notice from the City.

If an Event of Default has occurred and continues, the non-defaulting party may terminate this Lease and pursue any other remedies available under Washington state law. In any litigation, the substantially prevailing party shall be entitled to collect from the other party, in addition to any damages, all reasonable costs, fees, and expenses, including reasonable attorneys' fees, incurred by the prevailing party in pursuing its remedies.

17. Termination. Either party may terminate this Lease in whole or in part by delivering at least sixty (60) days' advance written Notice of Termination to the other party. For avoidance of doubt, the Lessee or City may terminate this Lease in its entirety or only in part by terminating the lease with respect to Parking Lot B as defined and described in Section 1 above. On the expiration of the Term, or any earlier termination of this Lease, the Lessee shall: (a) immediately vacate the Premises (or the portion thereof terminated); (b) repair all damage to the Premises (or the portion thereof terminated) caused by the Lessee's removal of its equipment and property from the Premises; and (c) restore the terminated Premises to the general condition that existed at the commencement of the Term, reasonable wear and tear excepted. The Lessee's indemnity obligation shall survive the termination or expiration of this Lease.

18. Entire Agreement, Applicable Law, Venue. This Lease contains the entire agreement of the parties with respect to the leasing of the Premises and no representations or agreements not included in this Lease shall be enforceable unless in writing and signed by the party to be charged. This Lease shall be governed by and interpreted in accordance with the laws of the State of Washington. Venue for any action arising out of the performance, breach or enforcement of this Lease shall lie in Lewis County, Washington.

IN WITNESS WHEREOF, the City and the Lessee have caused this Lease to be executed by their duly authorized agents as of on the date first written above.

LESSEE:
JOANN KUEHNER, SOLE TRUSTEE OF THE KUEHNER TRUST

By:_____
JoAnn Kuehner, sole Trustee

CITY:
CITY OF CHEHALIS

By:_____
Jill Anderson, City Manager

ATTEST:

By:_____
Kiley Franz, City Clerk

ATTESTATION

STATE OF WASHINGTON)
) ss.
Lewis County)

At Chehalis, Washington, this ____ day of _____, 2022, personally appeared JOANN KUEHNER, duly authorized and sole Trustee of the KUEHNER TRUST, and acknowledged this instrument, by said Trustee sealed and subscribed, to be said Trustee's free act and deed and the free act and deed of the CITY named above.

_____
NOTARY PUBLIC in and for the State of Washington, residing at:_____
My Commission Expires:_____

STATE OF WASHINGTON)
) ss.
Lewis County)

At Chehalis, Washington, this ____ day of _____, 2022, personally appeared JILL ANDERSON, City Manager of the City of Chehalis, CITY named above, and acknowledged this instrument, by said officer sealed and subscribed, to be said officer's free act and deed and the free act and deed on behalf of the CITY named above.

_____
NOTARY PUBLIC in and for the State of Washington, residing at:_____
My Commission Expires:_____

Exhibit A

CHEHALIS CITY COUNCIL MEETING
AGENDA REPORT

TO: The Honorable Mayor and City Council

FROM: Jill Anderson, City Manager

MEETING OF: January 24, 2022

SUBJECT: Chehalis Flood Storage Master Plan Update and Request for Policy Direction

---

INTRODUCTION

This report presents an update of the Chehalis Flood Storage project for review by the City Council. The current scope of work includes four preliminary designs (Model runs A-D) for a flood storage facility along the Chehalis River near the Chehalis wastewater treatment plant. Skillings Inc. (Skillings) and Watershed Science and Engineering Inc. (WSE) have worked collaboratively to produce a concept design that will reduce flooding along the Chehalis River. This report presents the preliminary findings to be shared for review with the regulatory agencies to clarify the overall objective of the project and choice of preferred design concept alternative.

Representatives from Skillings and the Chehalis River Basin Flood Authority (Flood Authority) will be at the meeting to make a presentation of the report; review the pros and cons of the options available to the City Council; and address any questions and provide information needed to make the policy decision needed to select a preferred project design and complete the Master Plan for the Chehalis Flood Storage Master Plan.

BACKGROUND

In 2016, the City applied for a grant from the Flood Authority for removal of the old Wastewater Treatment Plant on Shoreline Drive. In order to prove the project has a "measurable benefit" to the river system, the City hired Watershed Science and Engineering (Flood Authority provided $12,500 for this effort) to run a hydraulic model, which indicated that 130,000 cubic yards of material needed to be removed from the site to provide the required benefit.

In order to remove the required volume of soil, the project had to be expanded slightly so the City looked at expanding the project to adjacent property. After studying photos of the area, it became evident that the general area is on an old river oxbow that could be restored to provide even more substantial benefit to the system. Further property research showed that the City already owns a substantial amount of property in the area.

Since this area has a history of severe flooding (most properties are within the Chehalis River Floodway), it was determined that conversion of properties within this basin could provide substantial flood reduction benefits, and provide a location for achievable "compensatory excavation" for future development within the City as directed by the City's Zero-Rise Ordinance.

To study this further, the Flood Authority provided the City with funding ($25,000) for Phase I of the Flood Storage Master Plan to demonstrate the feasibility of this project. Phase I indicated that there is a potential to remove 2,600,000 cubic yards of material from this area upon full implementation of the plan.

In June 2019, the Flood Authority then authorized completion of the Flood Storage Basin Master Plan (Phase II) providing the City with $316,675 to fund the project. When approved in 2019, the grant was set to expire at the end of 2021; however, on December 16, 2021, the grant was extended to June 30, 2023 by the WA Recreation and Conservation Office, the source of the grant funds that were awarded through the Flood Authority.

DISCUSSION

Project Background

Skillings submitted a conceptual design to the City in December 2019 for a flood storage facility along the Chehalis River. Hydraulic modelling results showed that this design would reduce upstream and downstream flooding during the 100-year flood event. Hydraulic modelling results also showed that this design concept would slightly increase downstream flooding during the 2-year flood event. Ultimately, WSE recommended refinement of the design concept to reduce downstream flooding during the 2-year flood event.

Skillings developed four additional flood storge basin configurations and modelled flood reduction benefits to the Chehalis River. Each configuration differed based on when and how flood waters engaged the storage basin. It was determined that Model run "D" showed the most benefit for the 2-year event but resulted in slight increases to the 100-year event.

Preliminary Findings

To summarize, preliminary findings of the alternative design process are the following:

1. Model D is the best option to reduce flooding during the 2-year flood event.
2. The 2019 design is the best option to reduce flooding during the 100-year flood event.

Conclusion

Hydraulic modelling has demonstrated that we can achieve flood reduction during smaller and more frequent flood events, or larger and less frequent flood events. Model D demonstrates that impacts resulting from smaller and more frequent flood events can be reduced. The 2019 design demonstrates that impacts resulting from larger and less frequent flood events can also be reduced.

We have an option to go in either direction for the preferred design: reduce flooding experienced for more frequent flood events; while creating a negative impact during the 100-year event; or reduce flooding during the less frequent 100-year event while creating a negative impact during the more frequent events.

The City Council will be asked to provide policy direction regarding whether it would like the next phase of the study to proceed with design of a project to:

1) Reduce flooding from the less frequent 100-year flood events, which would increase the negative impact of the smaller more frequent flood events; ***or***

2) Reduce flooding during the smaller more frequent (2-year) flood events, which would increase the negative impact of the 100-year flood events.

Representatives from the Flood Authority and Skillings will be at the meeting to present the options; review the pros and cons of each option; and answer any questions that the City Council may need answered to make a policy decision to guide the design of the project and completion of the Master Plan.

FISCAL IMPACT

None at this time. The Master Plan is funded 100% with grand funds authorized by the Flood Authority and funded by the WA Recreation and Conservation Office (RCO).

RECOMMENDATION

It is recommended that the City Council provide direction regarding its preferred design concept, which is needed to complete the Master Plan.

SUGGESTED MOTION

There is no suggested motion.

City of Chehalis Flood Storage Master Plan

Phase 2 - Preliminary Feasibility Report

June 2019

Chehalis, WA

Prepared by:

Skillings Connolly, Inc.

WATERSHED SCIENCE & ENGINEERING

SKILLINGS CONNOLLY

5016 Lacey Blvd SE, Lacey, WA 98503
(360) 491-3399 / www.skillings.com

TABLE OF CONTENTS

LIST OF FIGURES

Executive Summary

The Chehalis River has flooded 18 times in the last 20 years. Major floods occurred in 1990, 1996, 2007 and 2009. The State Legislature established a Framework for the Chehalis Basin Strategy in 2016. The purpose of the Chehalis Basin Strategy (CBS) is to reduce damages from catastrophic floods and restore degraded aquatic species habitat in the Chehalis River Basin within western Washington State. The State Legislature has appropriated funding for the Chehalis basin projects that implement the Chehalis Basin Strategy.

The City of Chehalis received funding from the Chehalis Basin Strategy program. The City intends to use the funding to construct a flood storage basin adjacent to the Chehalis River that will reduce the flood impacts near the City of Chehalis. This document is a preliminary Feasibility report to design a flood storage basin that will reduce flood damage and restore aquatic species habitat.

This feasibility report proposes a flood storage basin on a 150-acre site. A hydraulic model analysis of the preliminary design showed that the project has the potential to reduce flooding in areas both upstream and downstream of the project site during the 100-year flood. However, the hydraulic model of the proposed storage basin showed an increase in flood levels downstream of the project during smaller flood events, such as the 2-year flood. The primary emphasis of this Feasibility report was to provide a proof of concept to determine if a project on the 150 site had the potential to achieve the goals of the Chehalis Basin Strategy. The results described in this report indicate that with further refinement and modification of the project design a flood storage basin can be constructed that will comply with the CBS.

This feasibility report also included environmental screening to identify the permits that must be reviewed once the conceptual design of the project is determined. Possible environmental permits that could be triggered by the project design are listed and explained in this report. Some permits listed may not be required for the project. At this time, it is undetermined. Some permits are known to be required regardless of the final details of the project design.

Future phases of the project will include project level environmental review, restoration of aquatic species habitat and engagement of state agencies, tribes, and other parties.

Purpose of Project

A Scope of Work was provided to the City in June of 2018 for the development of a preliminary Flood Storage Master Plan to evaluate the potential flood storage volume of a 150-acre site adjacent to the east bank of the Chehalis River. The project site is between the Chehalis River and I-5, south of Airport Road and north of Highway 6 (See Figure 1). The Phase 1 preliminary work summarized herein was completed with early partial funding obtained by the City. The purpose of this early phase of work is to provide a proof of concept, showing the benefits of the flood storage, provide preliminary estimates of earthwork quantities as well as to look for fatal flaws, if any.

The purpose of the Flood Storage Master Plan is the City's desire to increase the available flood storage which would reduce the flood elevation in the Chehalis River and reduce the flood impacts. The project will also provide additional aquatic species and wildlife habitat, and will enhance recreational use of the site. The project will include removing the existing buildings and utilities within the project limits. Watershed Science & Engineering (WSE) used a RiverFlow 2D hydraulic model to simulate the proposed project design. The simulation will be used to evaluate potential flood benefits and hydraulic impacts during flood events of varying frequencies.

Project Description

Section 1 – Flood Storage Design Alternatives and Volume Calculations

Several proposed storage basin alternatives, described below, were analyzed to compare preliminary earthwork and storage volumes that could potentially be provided. One proposed basin surface alternative was selected. WSE ran a hydraulic model for the 100 year and 2-year flood event for the selected alternative. The purpose of the hydraulic analysis was to determine if the proposed storage would reduce flooding upstream and downstream of the project. Alternative C described below was selected because it was thought that this alternative would show the greatest impact on the reduction of the water surface elevation in the Chehalis River. If this alternative did not show a significant flood benefit impact then other design alternatives with a more constricted inlet or higher inlet elevation would certainly not show an impact either. The detailed results of the model run for Alternative C are described by WSE in Section 3 of this report.

Alternative A: Construction of a berm set at elevation approximately 1.5 feet above the highest 100-year flood elevation on the site was considered. This alternative would have a designed inlet and outlet to control the flow into and out of the proposed basin. The inlet and outlet would be designed to allow the passage of fish.

Alternative B: includes a berm that is set at elevation 179 feet (approximately 1.5 feet above the highest 2-year flood elevation on the site), has a bottom elevation of 160 ft NAVD 88), with 3:1 side slope.

Alternative Selected for Hydraulic Model Analysis

Alternative C: The proposed basin flowline from the inlet to the outlet was set at 167.0 and 162.0 respectively, to allow the flow to enter the basin at flows equal to or greater than the 6-month event water surface elevation. Exhibit II in Section 4 shows the proposed flowline through the basin. The river right bank is proposed to be designed to allow the channel water to overtop the right bank at flows greater than the 6-month flood event. The basin bottom is graded from the river right bank, and from the east edge of the basin towards the basin flowline. The basin flowline drains the basin at a mild slope of 0.0012 ft/ft from the basin inlet

to the outlet. This allows fish to enter the basin with channel backwater at high flows and drain out along the graded flowline at low flows. The design drawings for Alternative C are presented in Section 4.

The intent of Alternative C was to capture the flow volume entering the basin between the 6 month and 100-year flood events, perform a model run, and determine if the results showed a significant benefit by reducing the flooding area. See Section 4, Exhibit II which shows the water surface elevation for the 6-month, 2-year and 100-year events at the upstream and downstream points in the channel along the project. These elevations can be compared to the proposed Alternative C basin inlet and outlet elevation, 167.0 and 162.0 respectively to see the reason the elevations were selected.

The model results are shown in Table 1, Page 4, Section 3 - Hydraulic Analysis of Alternatives. The results from the 100-year event simulation show reductions in peak water surface elevations both upstream and downstream from the project (0.9 feet decrease upstream of project, and a decrease of less than 0.1 feet downstream of the project).

The results from the 2-year event simulation show reductions in peak water surface elevations upstream from the project but show increases in the range of 0.03 – 0.2 feet downstream from the project.

Further basin design and modeling of alternatives

The goal of the project is to show a **decrease** in the Chehalis River water surface elevation, upstream and/or downstream of the constructed project. The prediction of a downstream water surface rise will require additional modeling will be required in Phase 2 to find a balanced design that does not cause an increase in water surface elevation at any flood event. See page 10, Section 3 - Hydraulic Analysis of Alternatives, regarding recommendations for refinement of the basin design.

Once a balanced design has been developed in Phase 2 of the Flood Storage Master Plan, rough order of magnitude cost estimates will be prepared that include:

- Purchase of properties
- Permits
- Habitat restoration features
- Park features
- Abandonment of existing utilities
- Demolition of buildings and roads
- Excavation
- Construction of the basin Inlet and Outlet structures

Next Steps and Conclusion

In the next phase of the development of the Master Plan, additional hydrologic modeling will be completed. WSE will complete the modeling to determine the flood benefit impacts for the proposed basin design. Skillings Connolly will analyze the basin design, and will collaborate with WSE to select the alternative that will be modeled. This could be an iterative process. The potential flood mitigation benefits created by each alternative will be reviewed.

The next phase of the Master Planning process will also include preliminary park design and preliminary habitat restoration design.

A preliminary environmental screening was completed as part of this report, but additional environmental investigation will be needed when the design is refined and confirmed by the model simulation. In the future phases of the project, additional work will be completed to further identify environmental permits that will be needed for the project. This will include preliminary consultation meetings with the US Army Corp of Engineers, WA Department of Fish and Wildlife and others, to review the proposed project.

Section 3 -Hydraulic Analysis of Alternatives

June 2019

Memorandum

To: Colleen Haerr, PE, Skillings Connolly

From: Chris Frei, PE; Tim Tschetter, EIT

Date: June 20, 2019

Re: DRAFT - Chehalis WWTP Flood Storage Preliminary Hydraulic Analysis

---

INTRODUCTION

Watershed Science and Engineering (WSE) updated an existing RiverFlow2D hydraulic model of the Chehalis River to evaluate hydraulic impacts and potential flood benefits of a project to increase flood storage at the City of Chehalis (City) Wastewater Treatment Plant (WWTP) property in Chehalis, WA. The WWTP property covers approximately 150 acres along the east bank of the Chehalis River between the Chehalis Airport and Highway 6 (see Figure 1). The proposed project would remove existing buildings and excavate approximately 1.8 million cubic yards of material to increase available on-site flood storage. This memo documents WSE's hydraulic investigation to support evaluation of project feasibility and alternative refinement including data sources, model development, and results.

WSE's analysis indicates that the proposed project design will reduce flood levels both upstream and downstream from the project site during the 100-year flood but will increase peak downstream flood levels during some smaller events including the 2-year flood. Downstream impacts are the result of increased conveyance through the project reach due to flow shortcutting a meander bend at the downstream end of the site. To support the refinement of an alternative design, we recommend additional modeling and analysis to evaluate the effect of potential project modifications at a range of discharges to reduce conveyance impacts and maximize the effectiveness of additional flood storage on the site.

HYDRAULIC MODEL DEVELOPMENT

To evaluate the proposed project, WSE updated an existing unsteady two-dimensional (2D) RiverFlow2D hydraulic model of the Chehalis River developed for the Chehalis River Basin Flood Authority (WSE, 2019). The model covers approximately 75 miles of the mainstem Chehalis River floodplain from Pe Ell to Porter, and several major tributaries including the Newaukum River and Dillenbaugh Creek which flow into the Chehalis River near the project site. Details of the model development can be found in WSE (2019).

WSE updated the existing conditions model terrain (Figure 2) to represent proposed grading at the project site (Figure 3) based on a grading plan and AutoCAD Civil3D surface provided by Skillings Connolly. Proposed elevations along the right bank were set to approximate the water surface elevation during a six-month recurrence interval flood event. The maximum depth of the proposed excavation is approximately 14 feet below the existing ground surface. The model was run to simulate 2-year and 100-year flood events for existing conditions (no project) and with project grading, a total of four model runs. Model results were compared to assess hydraulic impacts of the proposed project.

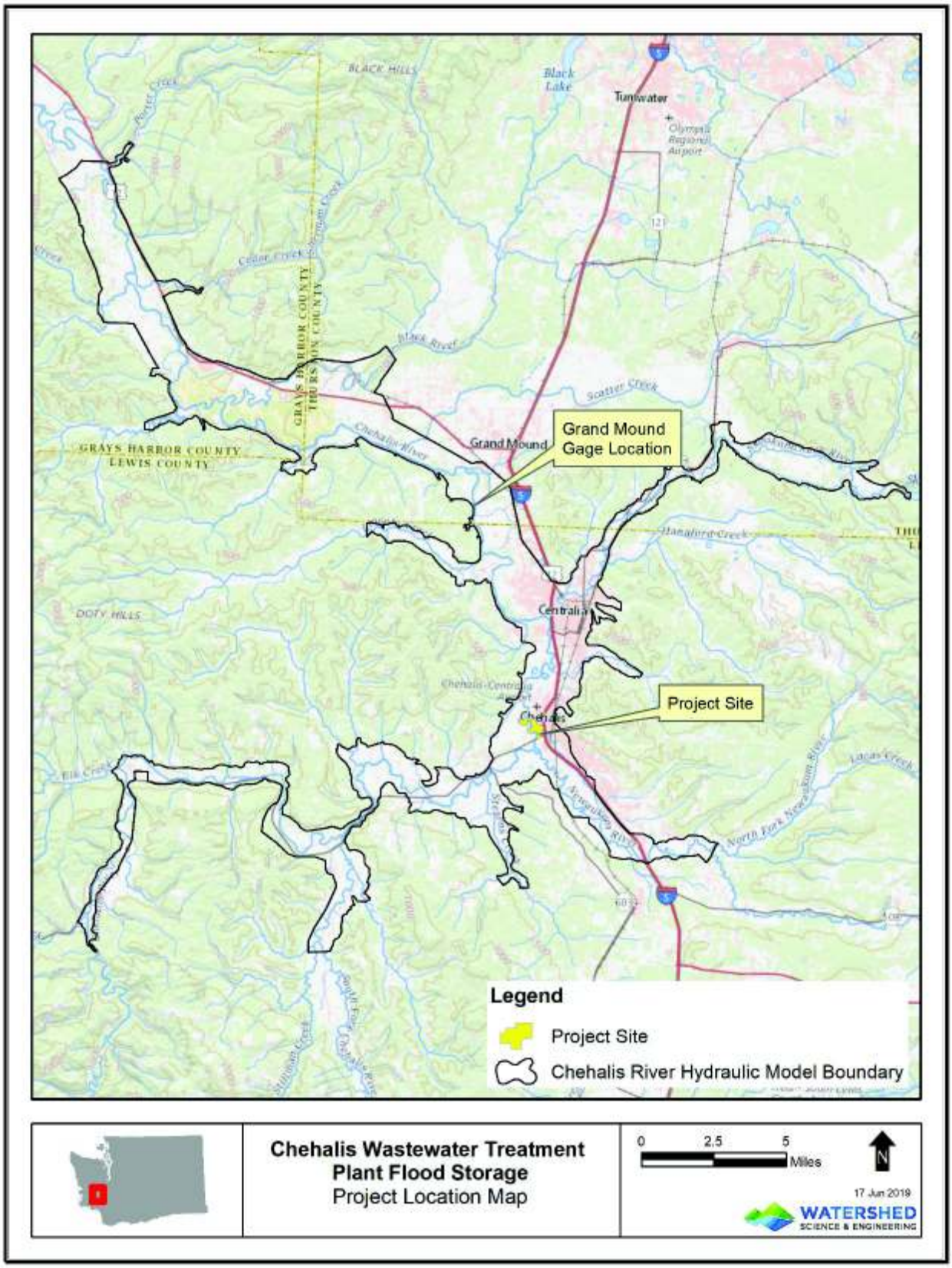


Figure 1. Project Location Map

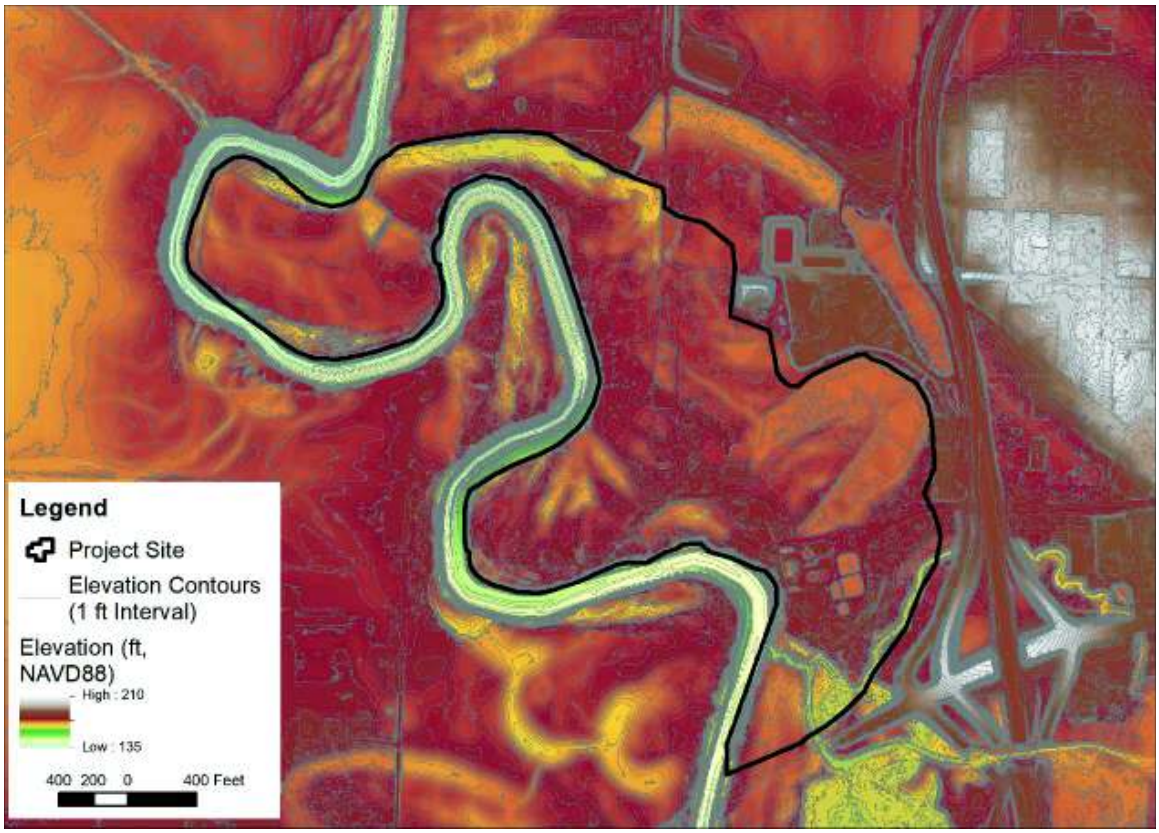


Figure 2. Existing Condition Ground Surface Terrain at the Project Site

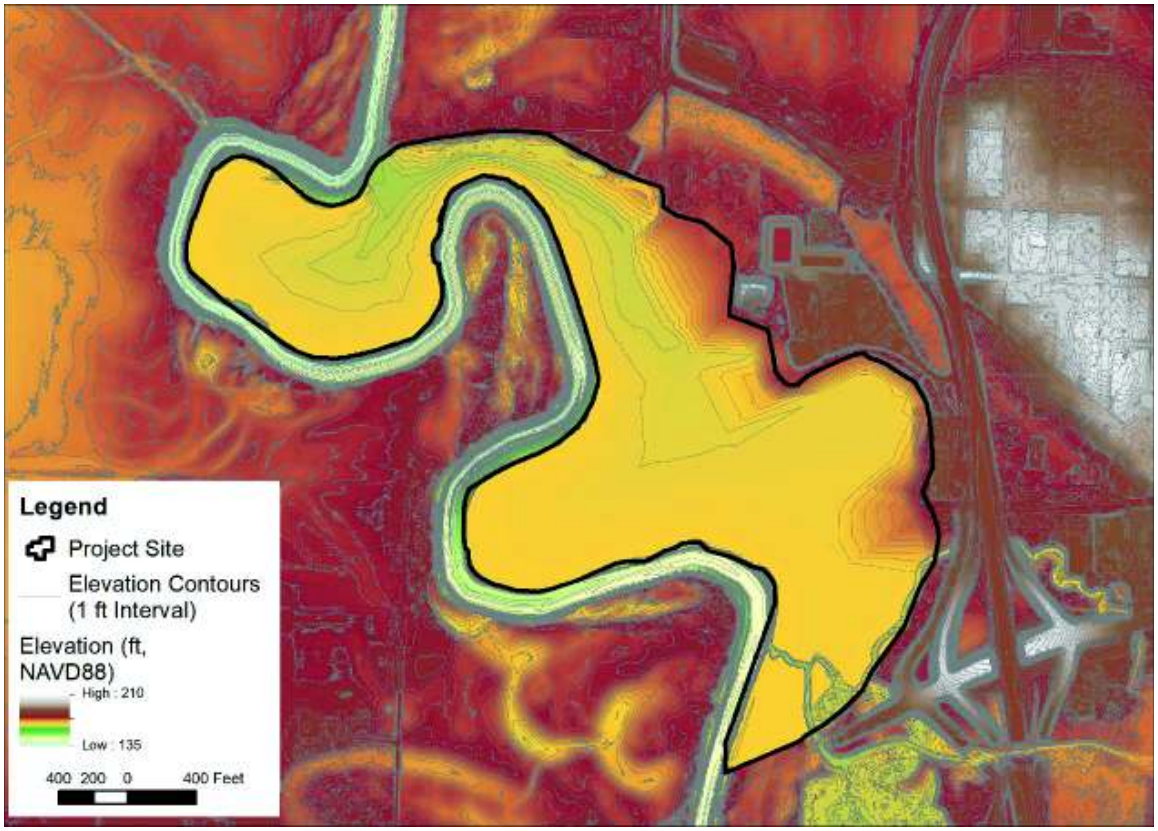


Figure 3. Proposed Ground Surface Terrain at the Project Site

HYDRAULIC MODEL RESULTS

Table 1 provides a summary of simulated flood benefits and impacts of the proposed project. Figure 4 and 5 show the change in peak water surface elevation relative to existing conditions for the 2-year event and 100-year event, respectively[1]. Results from the 2-year event simulations show reductions in peak water surface elevations upstream from the project but increases in peak discharge and water surface elevations downstream. Results from the 100-year event simulation show reductions in peak water surface elevations both upstream and downstream from the project.

Table 1. Summary of Project Flood Benefits/Impacts to Peak Water Surface Elevation

2-year Flood Event	• Peak water surface elevation *decrease* by maximum of 1.5 ft immediately upstream of project (near SR-6 Bridge) • *Rise* of 0.1 - 0.2 feet downstream to north end of Airport Levee • *Rise* of approximately 0.05 feet in Centralia • R*ise* of less than 0.03 feet to downstream end of model domain
100-year Flood Event	• Peak water surface elevation *decrease* by maximum of 0.9 ft immediately upstream of project (near SR-6 Bridge) • *Decrease* of less than 0.1 feet in Centralia • D*ecrease* of less than 0.05 feet to downstream end of model domain

[1] Basin scale figures showing change in 2-year and 100-year maximum water surface elevation results are also provided at the end of this report (Figures A-1 and A-2).

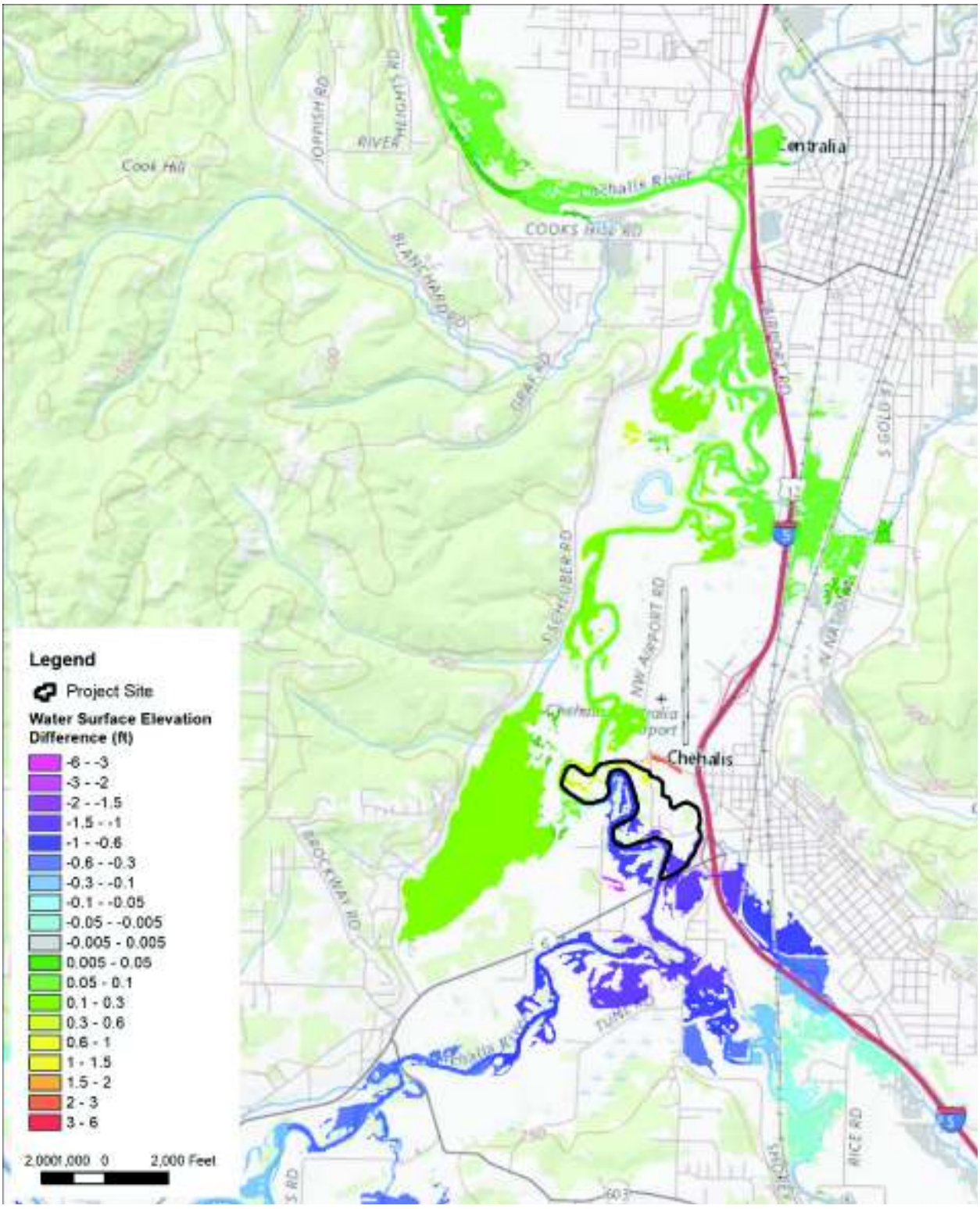


Figure 4. 2-year event change in peak water surface elevation (proposed minus existing) near project site.

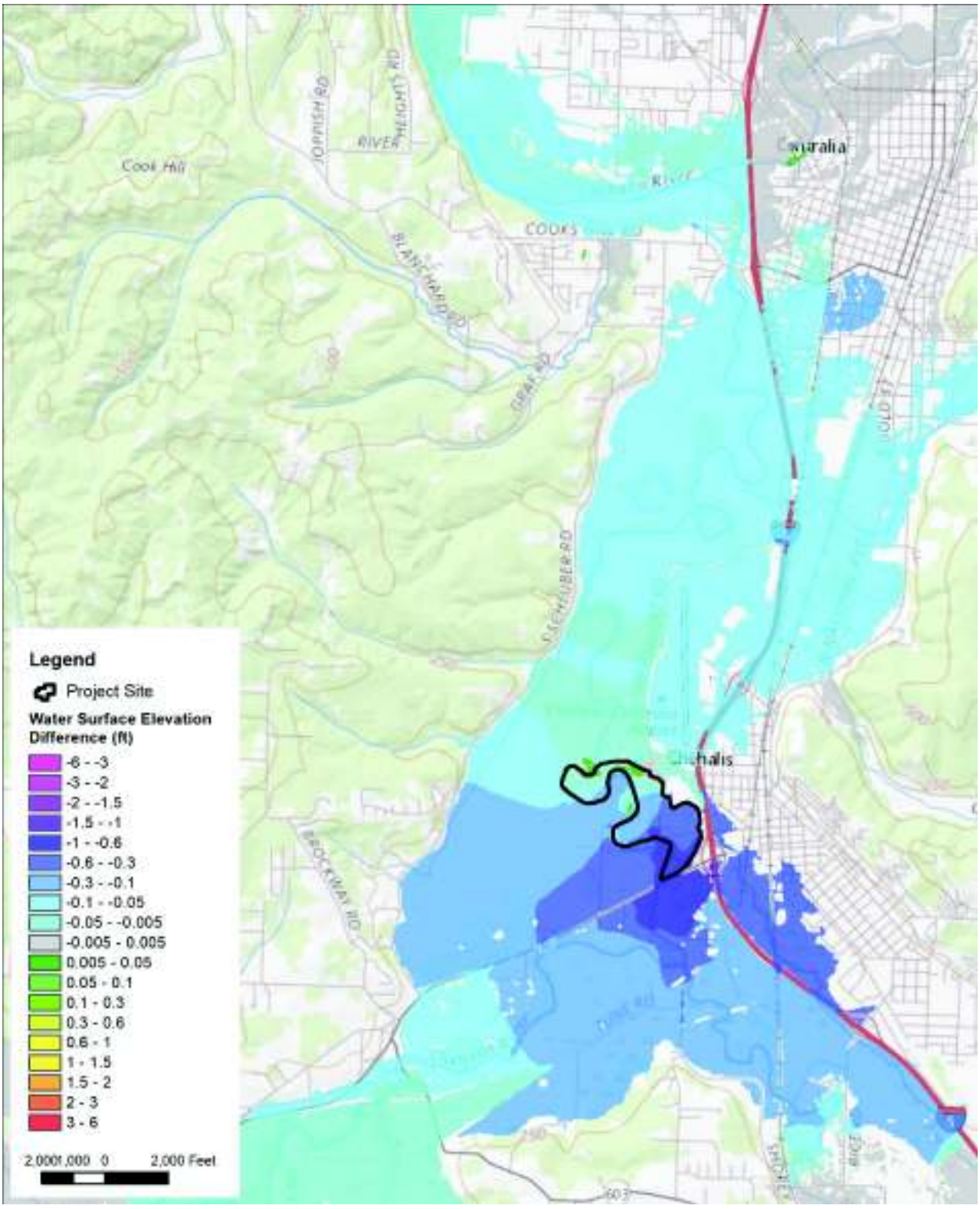


Figure 5. 100-year event change in peak water surface elevation (proposed minus existing) near project site.

DISCUSSION OF RESULTS

Hydraulic modeling shows that during the 2-year flood event the proposed flood storage project reduces peak water surface elevation upstream of the project site but increases peak water surface elevation downstream of the project site. During the 100-year flood event the proposed flood storage project reduces peak water surface elevation upstream and downstream of the project site. The project's benefits and impacts vary by discharge are the result of the following two factors:

1. **Increased floodplain storage at the project site** – The proposed excavation at the WWTP site creates additional floodplain storage. As flow is stored on the project site downstream flows are reduced. The relationship between flood storage and downstream discharge varies with flow rate, with the greatest reductions seen during larger floods when more of the floodplain storage created by the project is utilized.
2. **Increased flow conveyance through the project reach**– The proposed excavation increases flow conveyance through the site and allows flow to shortcut the meander bend at the downstream end of the project site (see Figure 6). This reduces head losses across the project site, which results in a decrease in upstream water surface elevations in both the 2- and 100-year events.

Flood benefits and impacts of the project vary with flow rate. The increased conveyance through the project reach at the peak of the 2-year event results in increased downstream discharges. The increased conveyance during the 100-year event is more than offset by the increased storage described above, resulting in reduced downstream discharges and water levels. At the peak of the 2-year event, the potential downstream benefits of additional storage are outweighed by increased flow conveyance, which results in an increase in downstream discharge and water levels.

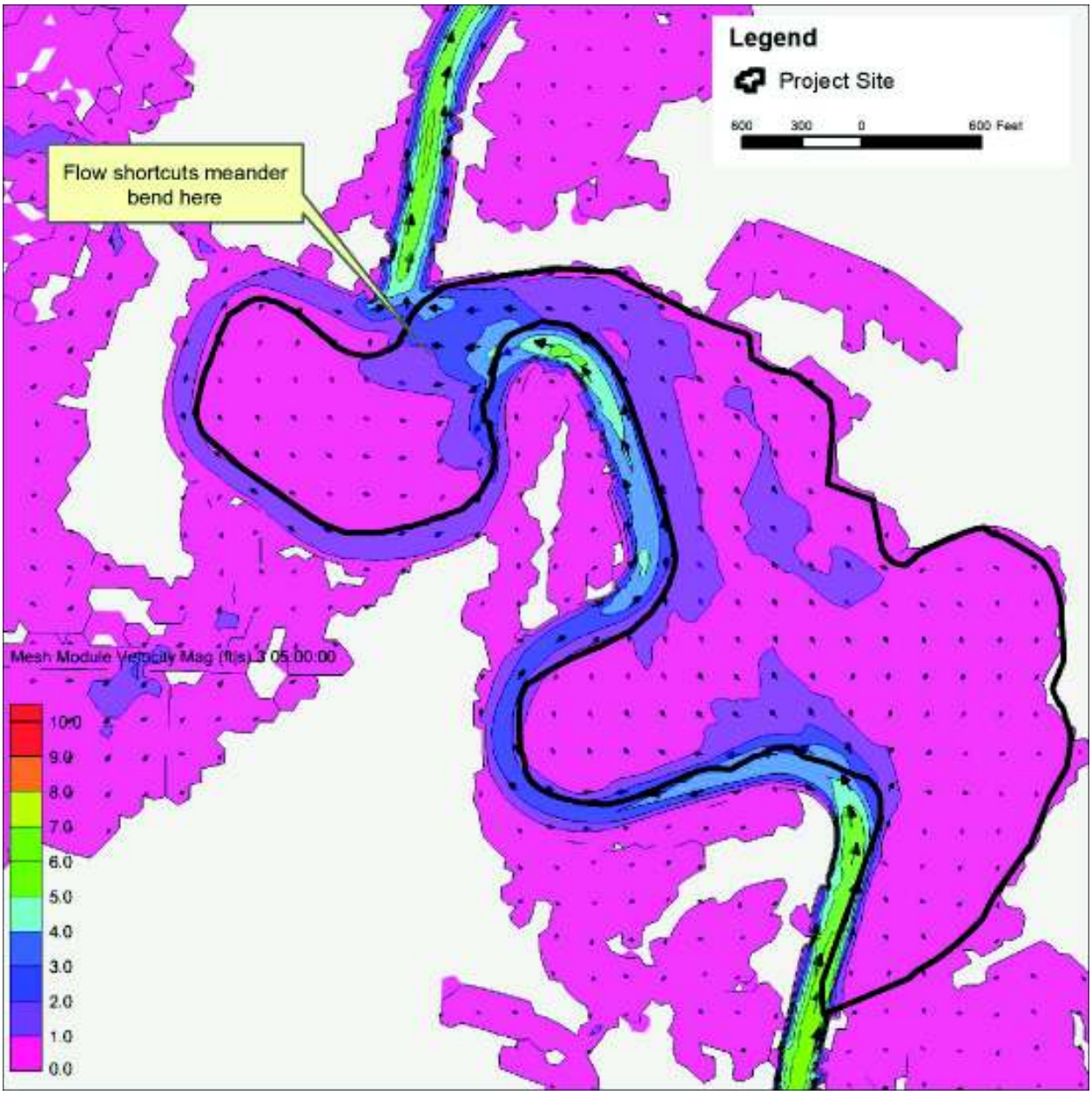


Figure 6. Proposed 2-year event modeled flow velocity (ft/s) with direction vectors

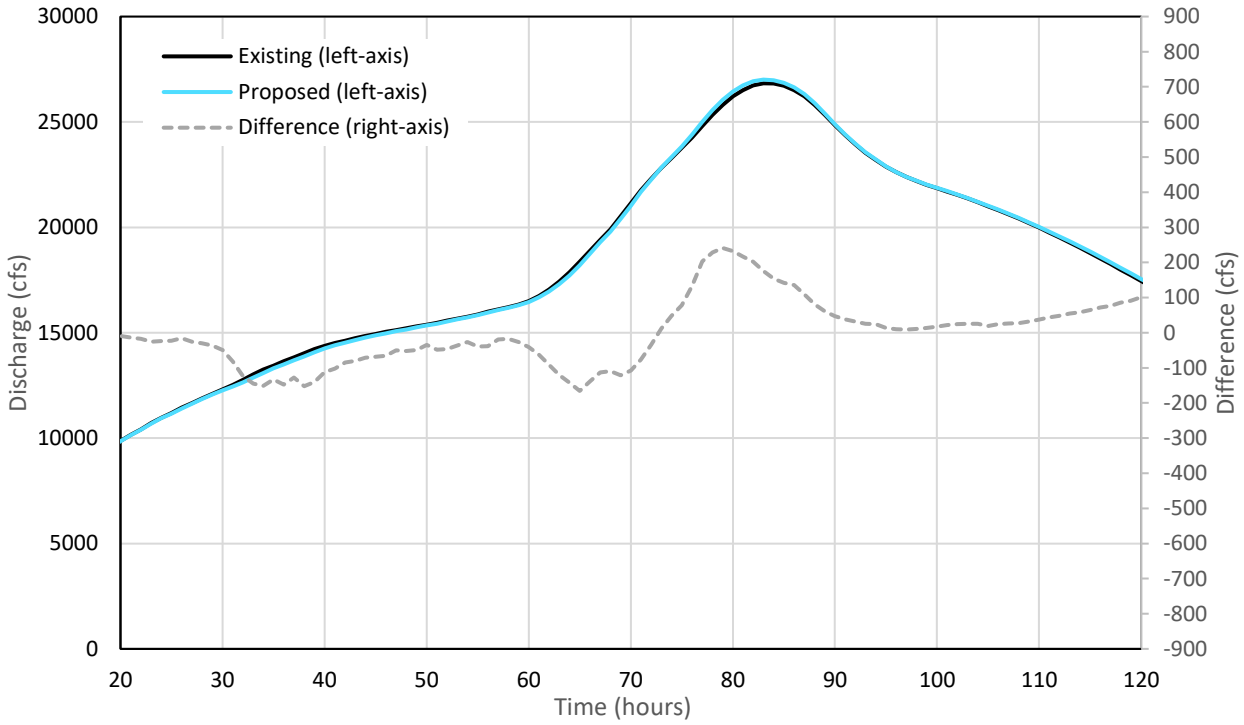


Figure 7. 2-year event modeled discharge hydrograph at Grand Mound Gage Location

Figure 7 shows existing and proposed condition discharge hydrographs for the simulated 2-year flood event at the Grand Mound gage location (approximately 14 miles downstream from the project site). The 2-year peak discharge is increased by 176 cubic feet per second (cfs) at Grand Mound under the proposed condition, which results in a corresponding increase of 0.02 feet in the water surface elevation at the gage location.

Figure 8 shows the simulated existing and proposed condition discharge hydrographs for the 100-year event at the Grand Mound gage. The 100-year peak discharge is reduced by 466 cfs under proposed conditions. Figure 8 also shows that the discharge at Grand Mound is higher under the proposed condition at flows between approximately 20,000 to 50,000 cfs. Above 50,000 cfs up to the 100-year flood peak, the proposed condition discharge is lower than the existing condition discharge due to project storage benefits outweighing the increased conveyance impacts. During different magnitude flood events than the 100-year event, the transition from negative to positive downstream impacts will occur at different discharges due to tributary inflow between the project site and the Grand Mound gage location. Additional modeling would be required to determine the benefits and impacts at any given flow between the 2-year and 100-year event.

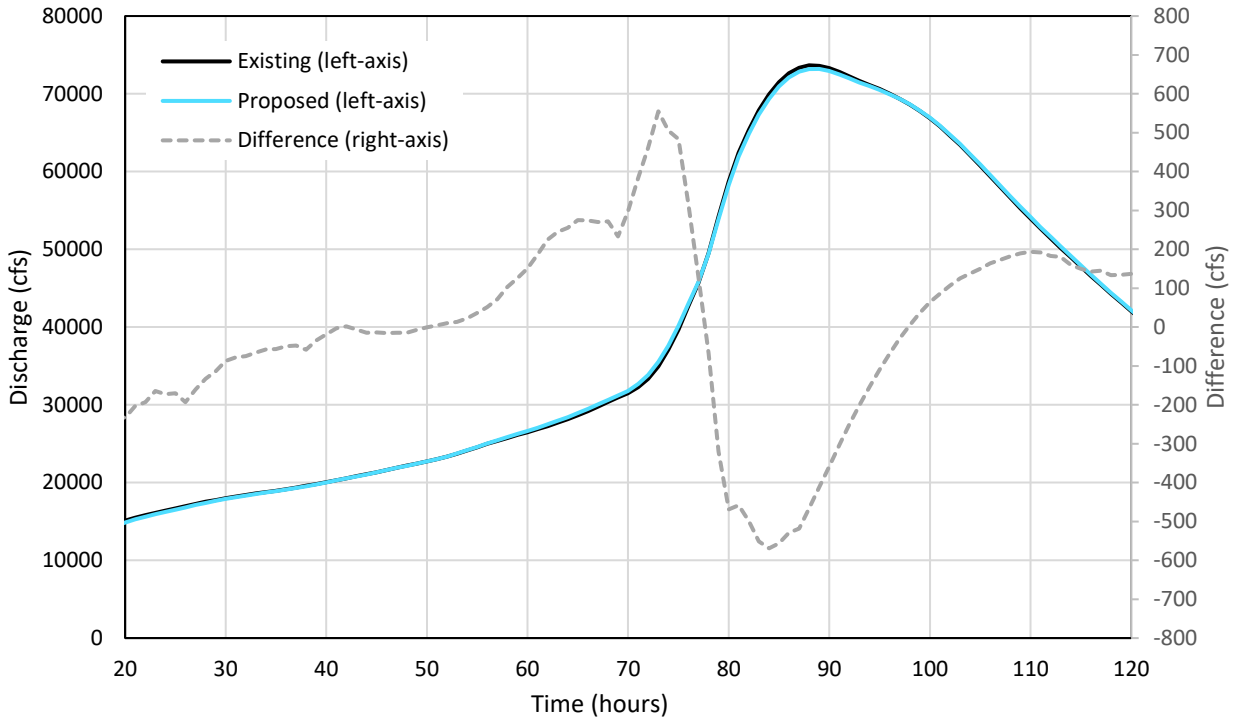


Figure 8. 100-year event modeled discharge hydrograph at Grand Mound Gage Location

RECOMMENDATIONS

WSE's analysis indicates that the proposed project has the potential to reduce flooding in areas both upstream and downstream of the project site during the 100-year flood but will increase flood levels downstream during smaller flood events, such as the 2-year flood. The primary reason for downstream water level increases is increased flood conveyance through the project site. The project design could be modified to reduce this conveyance impact, but the changes may reduce the flood benefits that were simulated for the current proposed design.

To support refinement of an alternative, WSE recommends additional model simulations to test the potential for modifications to reduce conveyance impacts and maximize the effectiveness of onsite flood storage. Modifications may include reducing the size and shape of the excavated area to limit shortcutting of the meander bend, or modifying the storage area to include features such as higher banks, berms, or inlet and outlet structures to limit conveyance increases and allow targeted use of floodplain storage to maximize flood benefits.

REFERENCES

WSE, 2019. Chehalis River Existing Conditions RiverFlow2D Model Development and Calibration. Memorandum prepared by Bob Elliot, Tim Tschetter, and Larry Karpack of WSE, to Bob Montgomery of Anchor QEA, February 28, 2019.

APPENDIX – ADDITIONAL FIGURES

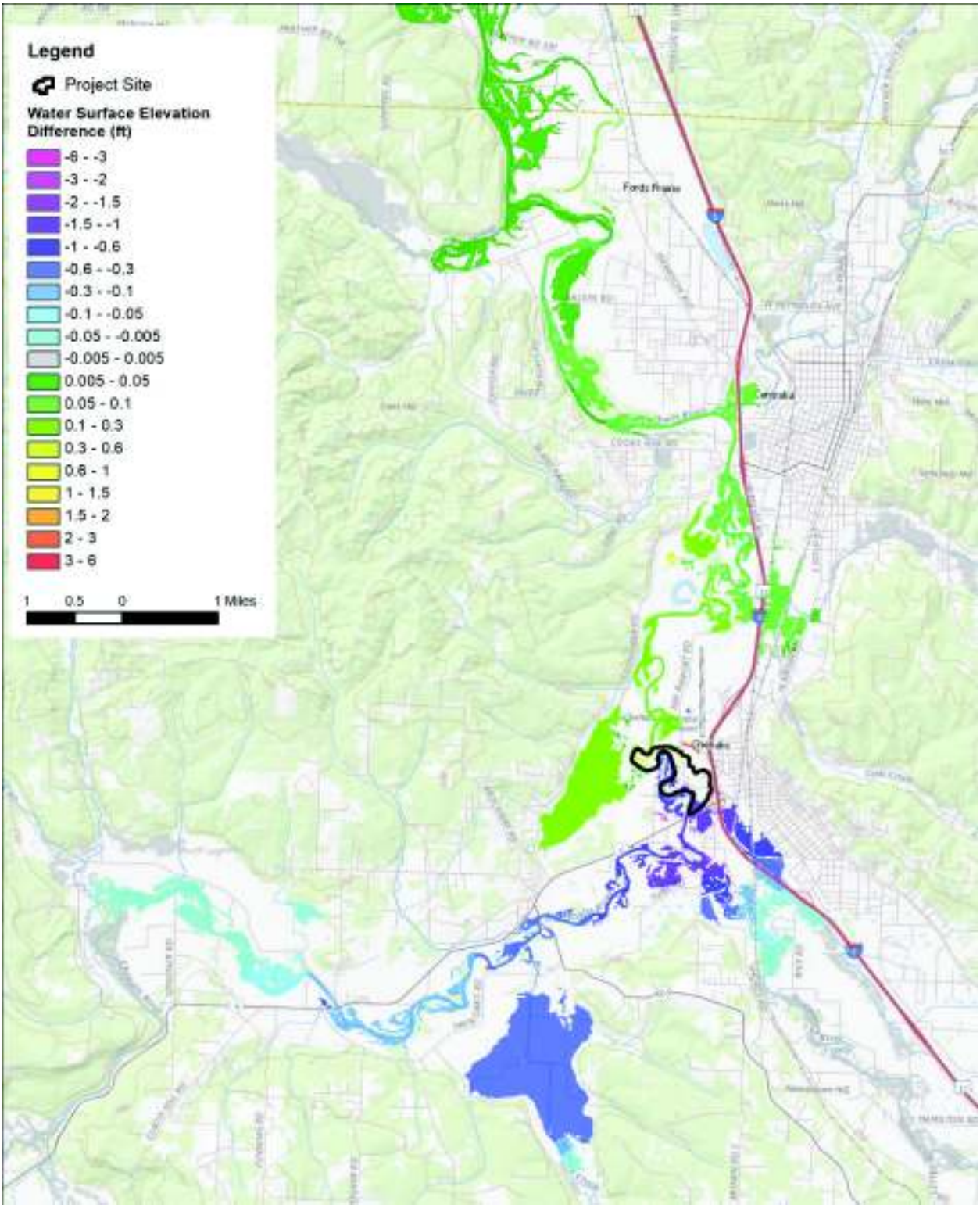


Figure A-1. 2-year Event Change in Peak Water Surface Elevation in feet (proposed minus existing)

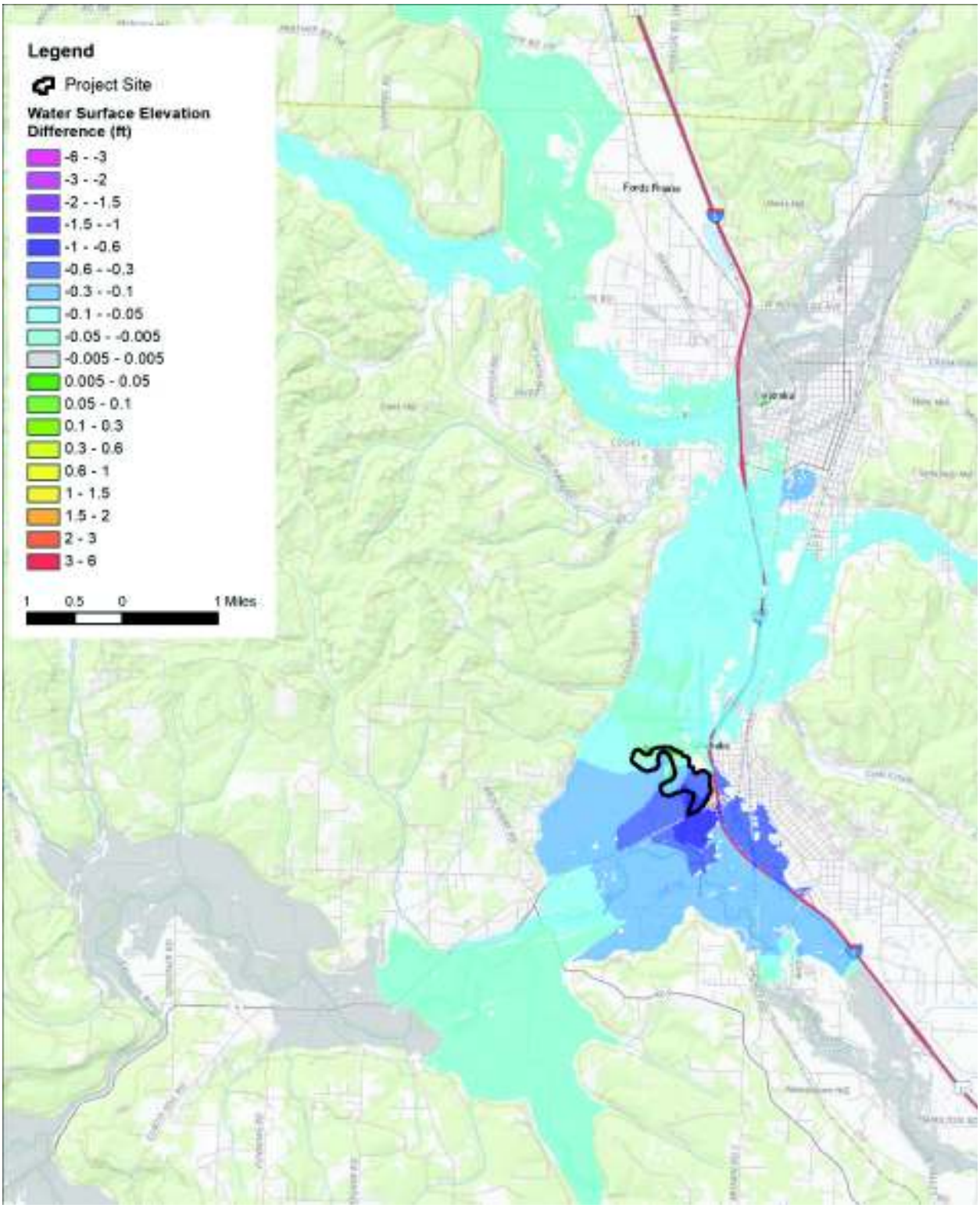


Figure A-2. 100-year Event Change in Peak Water Surface Elevation in feet (proposed minus existing)

November 12, 2020
SC Project No. 15070

Re: Chehalis Flood Storage
Preliminary Findings

Introduction

This report presents a status update of the Chehalis Flood Storage project for review by the City of Chehalis (City). The current scope of work includes four preliminary designs (Model runs A-D) for a flood storage facility along the Chehalis river near the Chehalis wastewater treatment plant. Skillings Inc. (Skillings) and Watershed Science and Engineering Inc. (WSE) have worked collaboratively to produce a concept design that will reduce flooding along the Chehalis River. This report presents our preliminary findings to be shared for review with the regulatory agencies to clarify the overall objective of the project and choice of preferred design concept alternative.

Project Background

Skillings submitted a conceptual design to the City in 2019 for a flood storage facility along the Chehalis River. Hydraulic modelling results showed that this design would reduce upstream and downstream flooding during the 100-year flood event. Hydraulic modelling results also showed that this design concept would slightly increase downstream flooding during the 2-year flood event. Ultimately, WSE recommended refinement of the design concept to reduce downstream flooding during the 2-year flood event (Attachment A). This report summarizes the design process and presents preliminary findings and conclusions.

Model A

Model A represents the first iteration in the conceptual design process to achieve reduction in flooding. The Model A conceptual design process focused on achieving a flood reduction during the 100-year flood event without increasing downstream water surface elevations during the 2-year flood event (Attachment B). Hydraulic modelling results show that Model A decreased water surface elevations upstream, and increased water surface elevations downstream of the project during the 2-year and 100-year flood events, respectively (Attachment C).

Model B

Model B represents the second iteration to achieve reduction in flooding. The Model B design concept maintained all of the features of Model A with slight geometric modifications (Attachment D). Hydraulic modelling results were comparatively better than Model A, but did not achieve downstream flood reduction during the 2-year and 100-year flood events (Attachment E).

Model C

Model C represents the third iteration to achieve reduction in flooding. The Model C design concept maintained all the features of Model A with slight geometric modifications (Attachment F). Hydraulic modelling results show that this design concept will reduce upstream and downstream flooding during the 2-year flood event. Hydraulic modelling results were comparatively better than Model B, but did not achieve downstream flood reduction during the 100-year flood event (Attachment G).

Model D

Model D represents the fourth iteration to achieve reduction in flooding. The Model D design concept maintained all of the key features of Model C with slight geometric modifications (Attachment H). Hydraulic modelling results show that this design concept will reduce upstream and downstream flooding during the 2-year flood event. Hydraulic modelling results were comparatively better than Model C, but did not achieve downstream flood reduction during the 100-year flood event (Attachment I).

Preliminary Findings

To summarize, preliminary findings of the alternative design process are the following:

1. Model D is the best option to reduce flooding during the 2-year flood event.
2. The 2019 design is the best option to reduce flooding during the 100-year flood event.

Conclusion

Hydraulic modelling has demonstrated that we can achieve flood reduction during smaller and more frequent flood events, or larger and less frequent flood events. Model D demonstrates that impacts resulting from smaller and more frequent flood events can be reduced. The 2019 design demonstrates that impacts resulting from larger and less frequent flood events can be reduced. We have an option to go in either direction for the preferred design: reduce flooding experienced for more frequent flood events while creating a negative impact during the 100-year event; or reduce flooding during the less frequent 100-year event while creating a negative impact during the more frequent events.

The following attachments are included herein for reference/review:

Attachment A: 2019 Abbreviated Feasibility Report (report provided separately)
Attachment B: Model A Design
Attachment C: Model A Results – Water Surface and Inundation Difference Plots
Attachment D: Model B Design
Attachment E: Model B Results – Water Surface Difference Plots
Attachment F: Model C Design
Attachment G: Model C Results – Water Surface Difference Plots
Attachment H: Model D Design
Attachment I: Model D Results – Water Surface Difference Plots

ATTACHMENT A

2019 Abbreviated Feasibility Report

(report provided separately)

ATTACHMENT B

Model A Design

	DATE	REVISIONS		
DESIGNED BY: A. GUERRERO, EIT	7/17/20	NO.	DATE	
ENTERED BY: A. GUERRERO, EIT	7/17/20			
CHECKED BY: T. SKILLINGS, P.E.	7/17/20			
PROJ. ENGR.: T. SKILLINGS, P.E.	7/17/20			
Plotted By: Anthony D. Guerrero, EIT on 7/23/20 1:26 AM				
Saved By: Aguerrero on 7/23/20 1:25 AM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model A\CAD\SHEETS\15070_PS_CV_MODELA_FINAL.dwg				

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STUDY

MODEL A PLAN VIEW

JOB NUMBER 15070 PHASE04A

SHEET 1 OF 1 SHEETS

150 75 0 150 300
SCALE IN FEET

BASIN 1 NOTES:

STATION EQUATION:

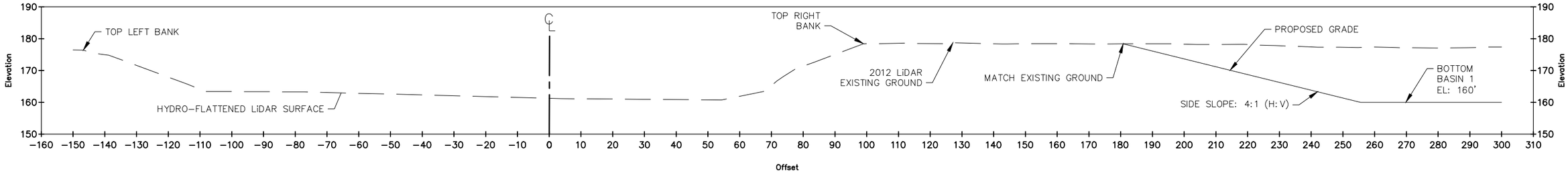
74.715 – STATION (FT)/5280 = RIVER MILE

DESIGN FEATURES:

BOTTOM ELEVATION: 160'
INTERIOR SIDE SLOPES: 4:1
TOP OF BASIN: MATCH EXISTING GRADE
VOLUME: 1,859,877.58 CU. YD.
INLET/OUTLET LOCATION: RM 73.626 (STA 57+50
INLET/OUTLET TOP WIDTH: 265'
INLET/OUTLET BOTTOM WIDTH: 90'

SECTION SCALE (FULL SIZE 22"x34")
1"=1' HOR/VER

CHEHALIS RIVER CENTERLINE 51+73



	DATE	REVISIONS		
DESIGNED BY: ANTHONY GUERRERO, EIT	7/22/20	NO.	DATE	
ENTERED BY: ANTHONY GUERRERO, EIT	7/22/20			
CHECKED BY:				
PROJ. ENGR.:				
Plotted By: Anthony D. Guerrero, EIT on 7/22/20 11:06 PM				
Saved By: Aguerrero on 7/22/20 11:05 PM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model A\CAD\SHEETS\15070_XS_Model A.dwg				

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

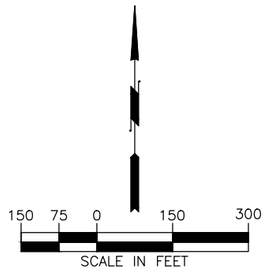
City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STUDY MODEL A

BASIN 1 CROSS SECTIONS

JOB NUMBER 15070 PHASE04A

SHEET 1 OF 1 SHEETS



BASIN 2 NOTES:

STATION EQUATION:

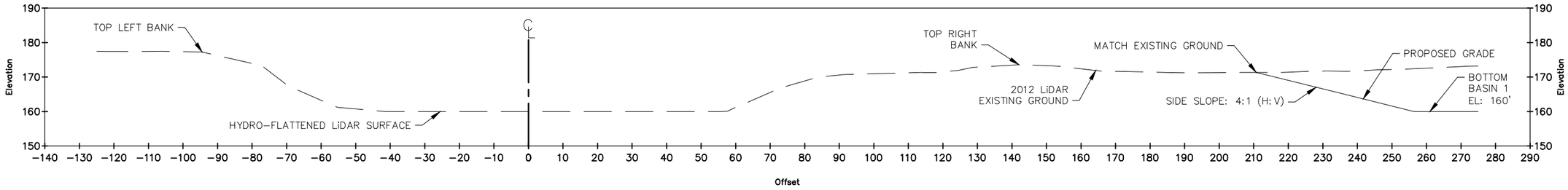
74.715 – STATION (FT)/5280 = RIVER MILE

DESIGN FEATURES:

BOTTOM ELEVATION: 160'
INTERIOR SIDE SLOPES: 4:1
TOP OF BASIN: MATCH EXISTING GRADE
VOLUME: 270,574.73 CU. YD.
INLET/OUTLET LOCATION: RM 72.715 (STA 105+60)
INLET/OUTLET TOP WIDTH: 280'
INLET/OUTLET BOTTOM WIDTH: 125'

SECTION SCALE (FULL SIZE 22"x34")
1"=1' HOR/VER

CHEHALIS RIVER CENTERLINE 93+39



	DATE	REVISIONS		
DESIGNED BY: ANTHONY GUERRERO, EIT	7/22/20	NO.	DATE	
ENTERED BY: ANTHONY GUERRERO, EIT	7/22/20			
CHECKED BY:				
PROJ. ENGR.:				
Plotted By: Anthony D. Guerrero, EIT on 7/22/20 11:06 PM				
Saved By: Aguerrero on 7/22/20 11:05 PM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model A\CAD\SHEETS\15070_XS_Model A.dwg				

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

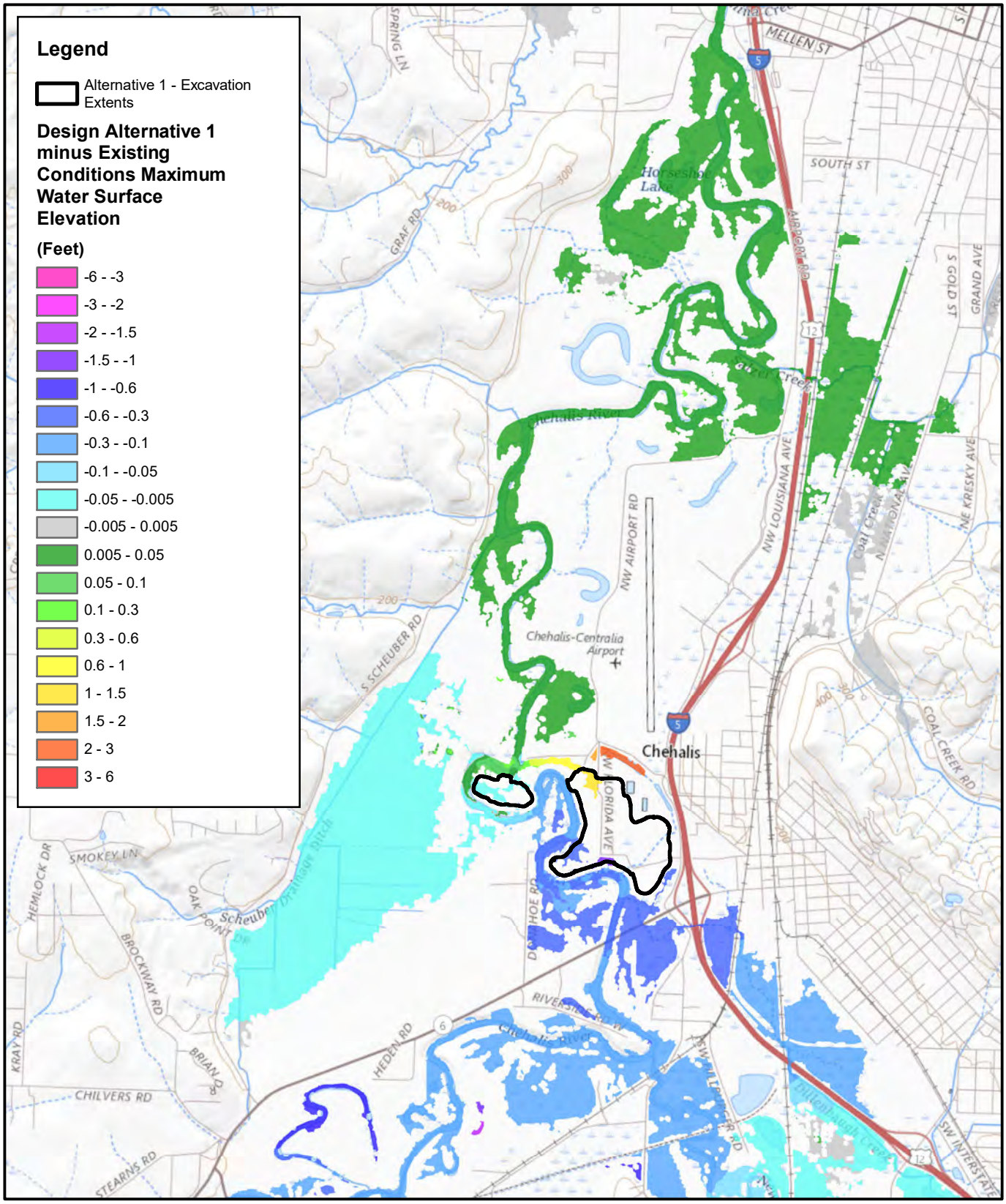
CHEHALIS RIVER FLOOD STUDY MODEL A

BASIN 2 CROSS SECTIONS

JOB NUMBER 15070 PHASE04A
SHEET 1 OF 1 SHEETS

ATTACHMENT C

Model A Results – Water Surface and Inundation Difference Plots



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 2-year Water Surface Elevation
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

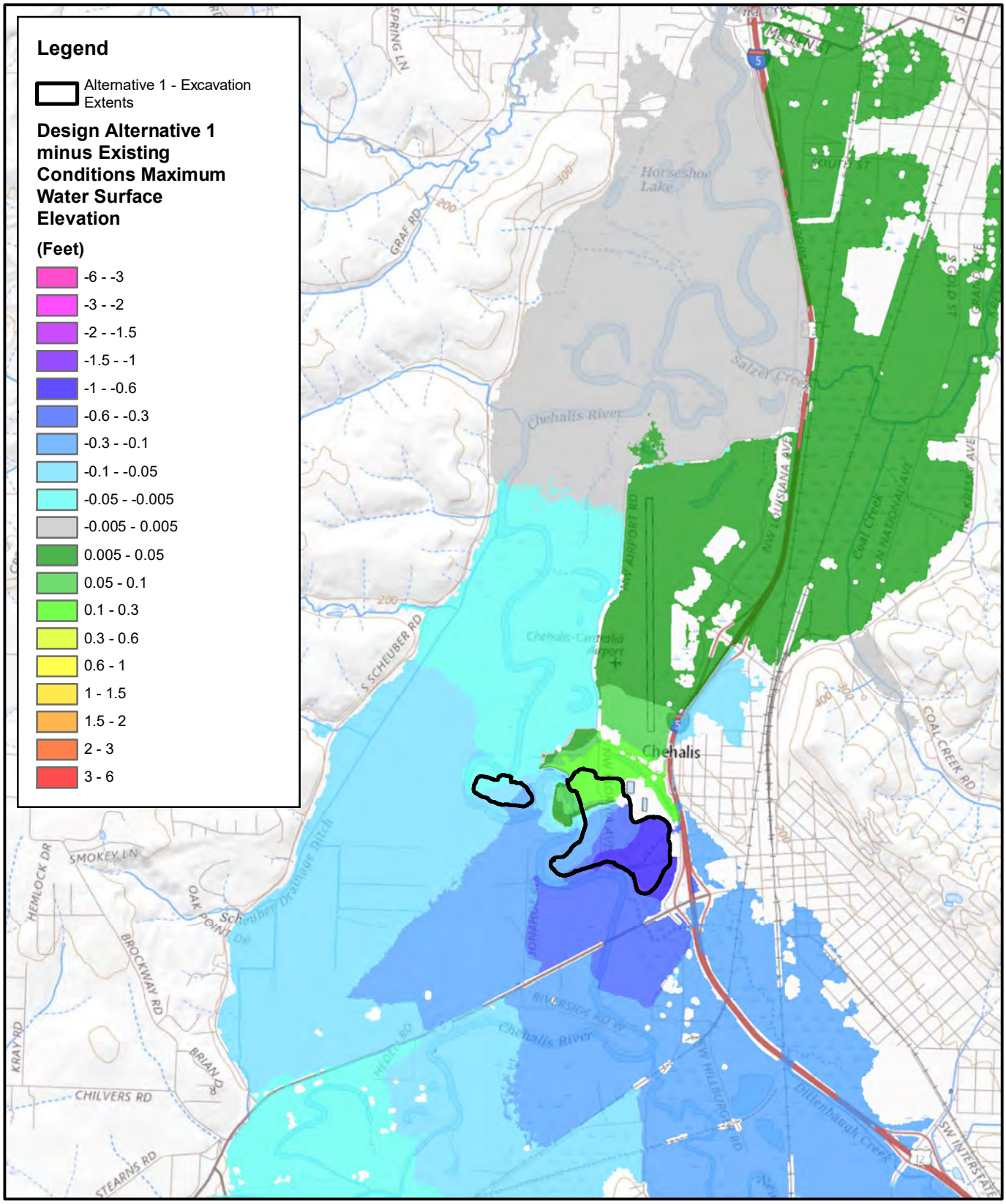
N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

06 Aug 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop1_2yrMaxWSEL_DiffPlot.mxd 8/6/2020 11:17:35 AM



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 100-year Water Surface Elevation
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

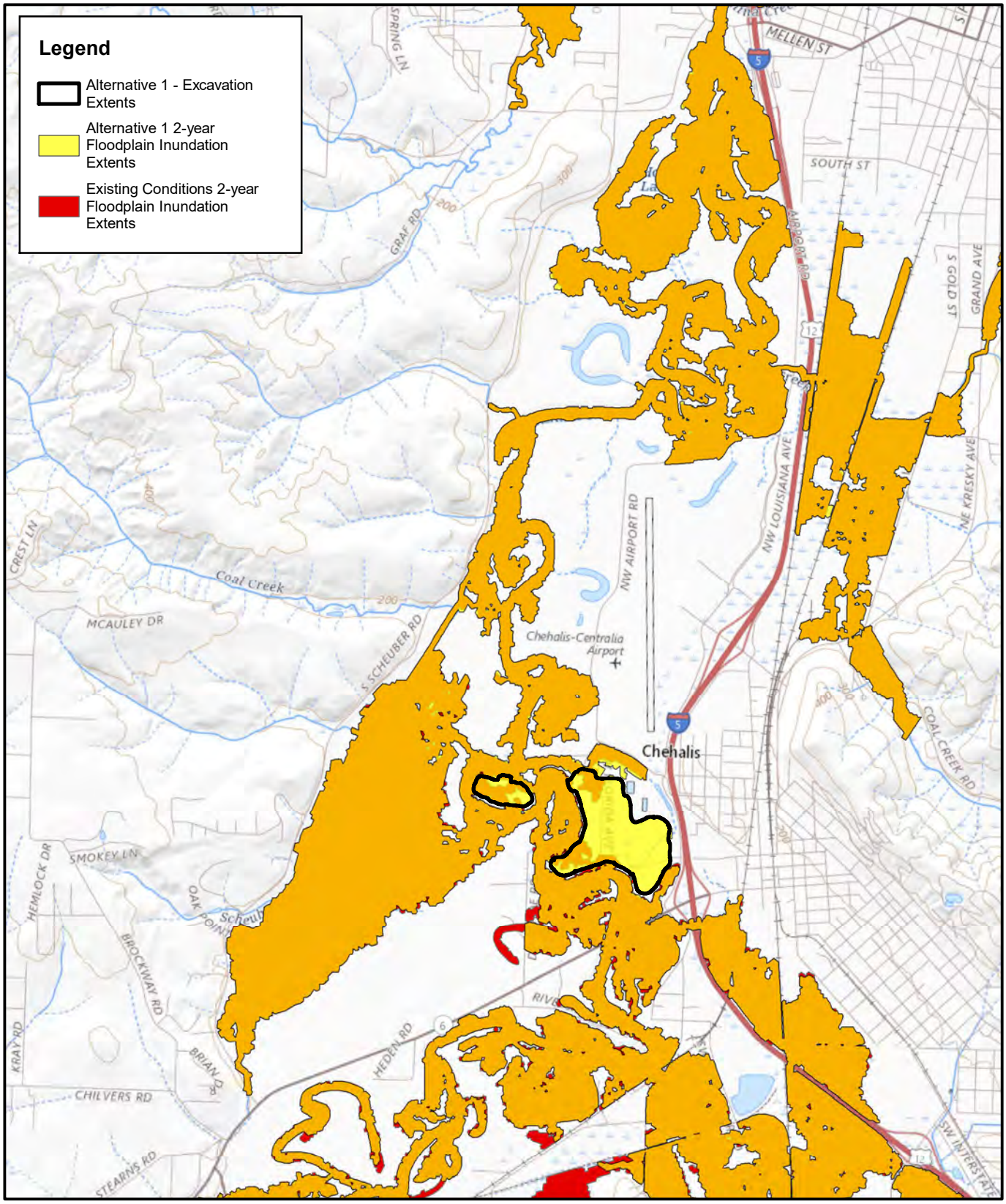
N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

06 Aug 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop1_100yrMaxWSEL_DiffPlot.mxd 8/6/2020 11:14:58 AM



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 2-year Inundation Extents
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

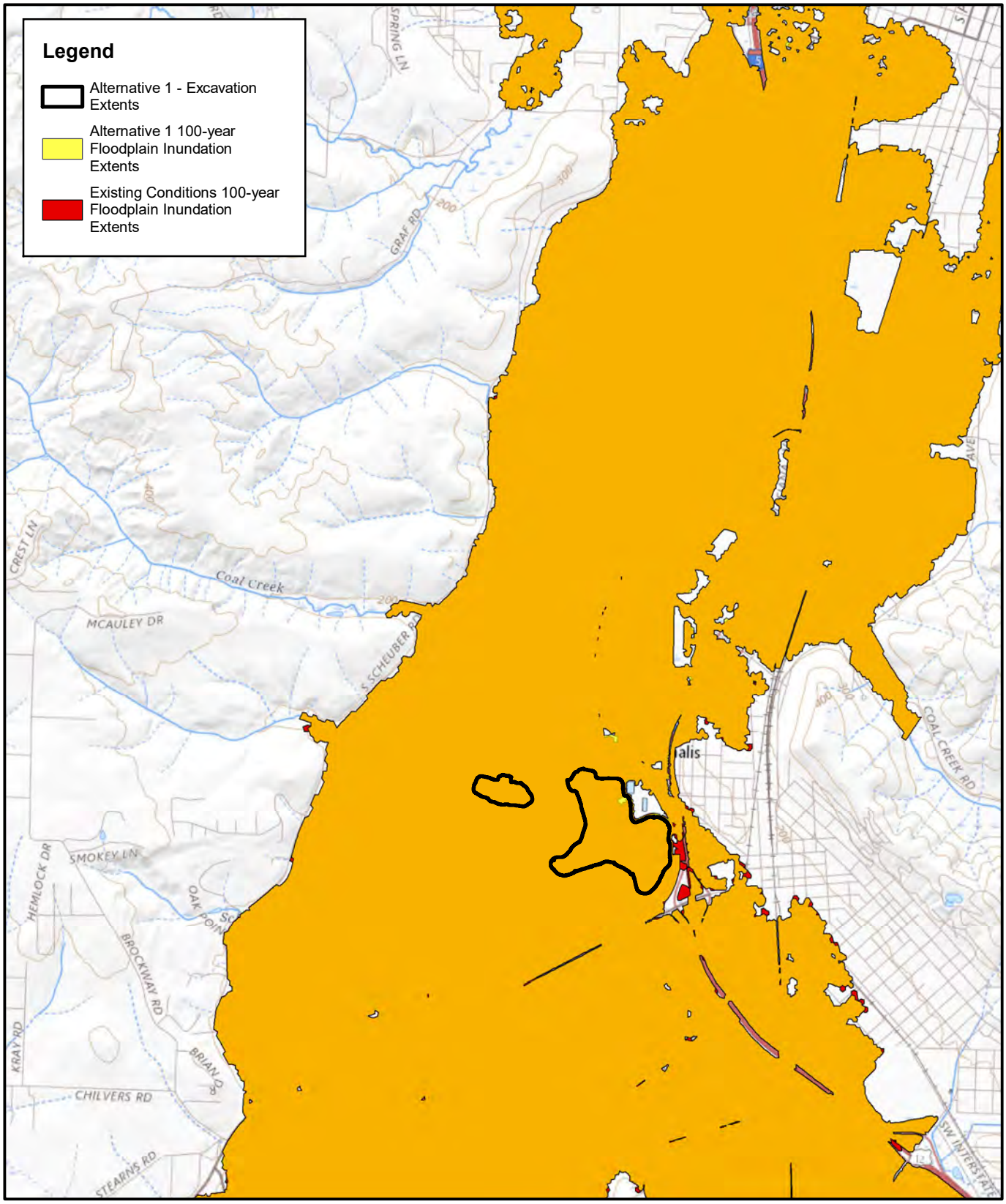
N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

10 Aug 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop1_2yrMaxInundation_DiffPlot.mxd 8/7/2020 2:59:33 PM



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 100-year Inundation Extents
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

10 Aug 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop1_100yrMaxInundation_DiffPlot.mxd 8/10/2020 2:24:17 PM

ATTACHMENT D

Model B Design

	DATE	REVISIONS		
DESIGNED BY: A. GUERRERO, EIT	8/27/20	NO.	DATE	
ENTERED BY: A. GUERRERO, EIT	8/27/20			
CHECKED BY: T. SKILLINGS, P.E.	8/27/20			
PROJ. ENGR.: T. SKILLINGS, P.E.	8/27/20			
Plotted By: Anthony D. Guerrero, EIT on 10/30/20 10:08 AM				
Saved By: Aguerrero on 9/8/20 10:58 AM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model B\CAD\SHEETS\MODEL B PLAN VIEW.dwg				

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STORAGE MODEL B

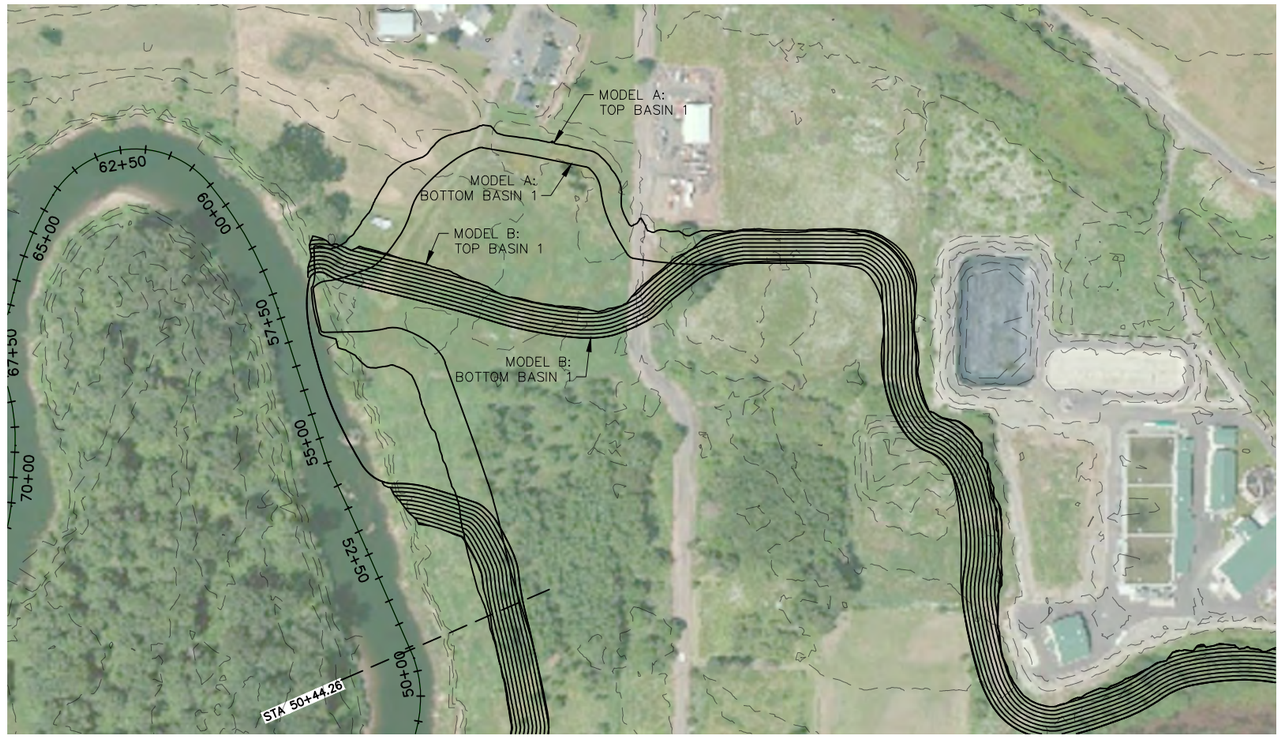
PLAN VIEW

JOB NUMBER 15070 PHASE04B

SHEET 1 OF 1 SHEETS

150 75 0 150 300
SCALE IN FEET

VERTICAL DATUM
NAVD 88



BASIN 1 NOTES:

STATION EQUATION:

74.715 – STATION (FT)/5280 = RIVER MILE

MODEL A DESIGN FEATURES:

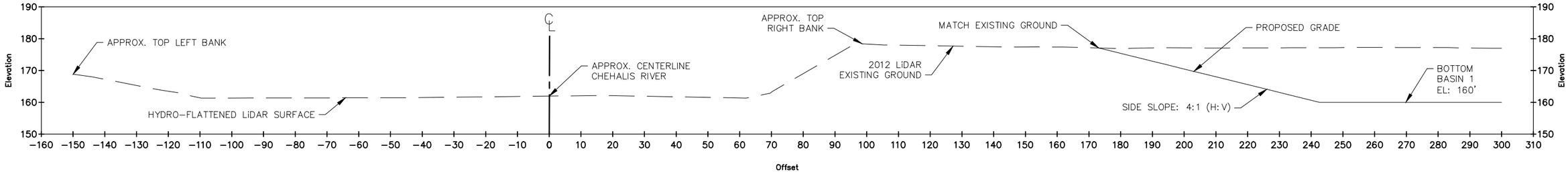
BOTTOM ELEVATION: 160'
INTERIOR SIDE SLOPES: 4:1
TOP OF BASIN: MATCH EXISTING GRADE
VOLUME: 1,859,877.58 CU. YD.
INLET/OUTLET LOCATION: RM 73.626 (STA 57+50)
INLET/OUTLET TOP WIDTH: 265'
INLET/OUTLET BOTTOM WIDTH: 90'

MODEL B DESIGN FEATURES:

BOTTOM ELEVATION: 160'
INTERIOR SIDE SLOPES: 4:1
TOP OF BASIN: MATCH EXISTING GRADE
VOLUME: 1,850,284.10 CU. YD.
INLET/OUTLET LOCATION: RM 73.654 (STA 56+00)
INLET/OUTLET TOP WIDTH: 570'
INLET/OUTLET BOTTOM WIDTH: 420'

SECTION SCALE (FULL SIZE 22"x34")
1"=1' HOR/VER

CHEHALIS RIVER CENTERLINE 50+44



	DATE	REVISIONS		
DESIGNED BY: A. GUERRERO, EIT	8/27/20	NO.	DATE	
ENTERED BY: A. GUERRERO, EIT	8/27/20			
CHECKED BY: T. SKILLINGS, PE	8/27/20			
PROJ. ENGR.: T. SKILLINGS, PE	8/27/20			
Plotted By: Anthony D. Guerrero, EIT on 8/27/20 10:41 AM				
Saved By: Aguerrero on 8/27/20 10:34 AM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model B\CAD\SHEETS\15070_XS_Model B.dwg				

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STORAGE MODEL B

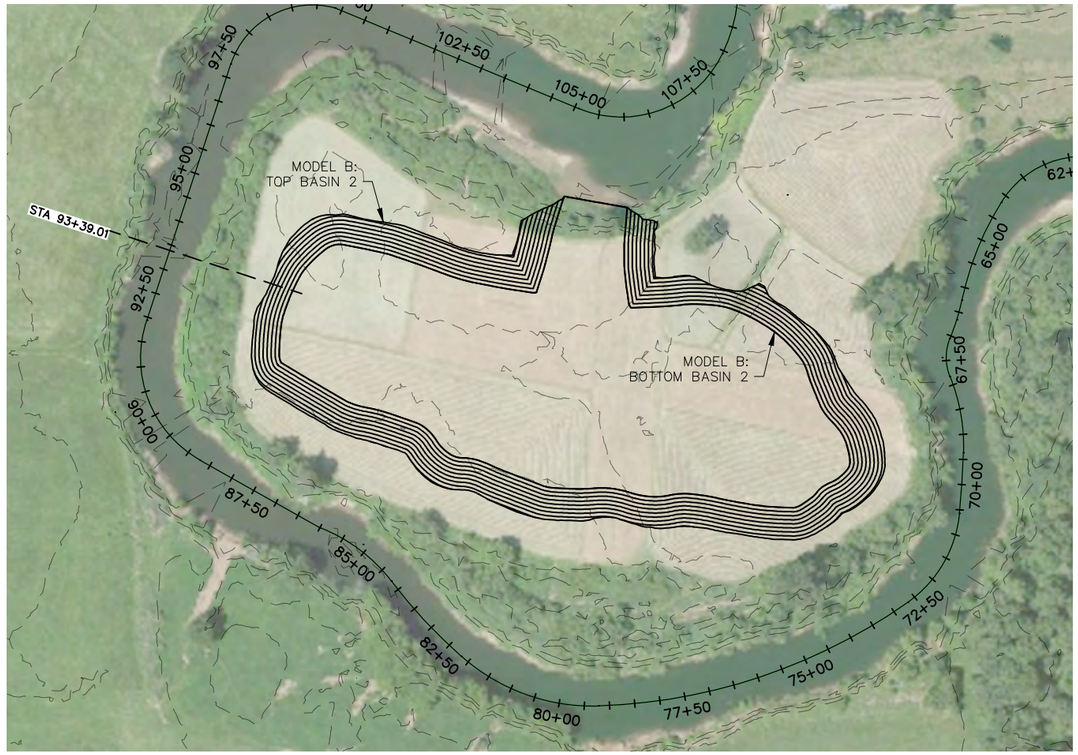
BASIN 1 PLAN AND SECTION VIEW

JOB NUMBER 15070 PHASE04B

SHEET 1 OF 1 SHEETS

150 75 0 150 300
SCALE IN FEET

VERTICAL DATUM
NAVD 88



MODEL B – BASIN 2:

STATION EQUATION:

74.715 – STATION (FT)/5280 = RIVER MILE

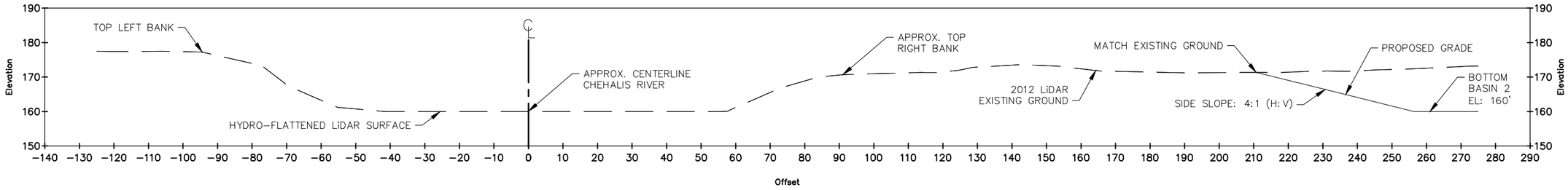
DESIGN FEATURES:

MODEL A = MODEL B

BOTTOM ELEVATION: 160'
INTERIOR SIDE SLOPES: 4:1
TOP OF BASIN: MATCH EXISTING GRADE
VOLUME: 270,574.73 CU. YD.
INLET/OUTLET LOCATION: RM 72.715 (STA 105+60)
INLET/OUTLET TOP WIDTH: 280'
INLET/OUTLET BOTTOM WIDTH: 125'

SECTION SCALE (FULL SIZE 22"x34")
1"=1' HOR/VER

CHEHALIS RIVER CENTERLINE 93+39



	DATE	REVISIONS		
DESIGNED BY: A. GUERRERO, EIT	8/27/20	NO.	DATE	
ENTERED BY: A. GUERRERO, EIT	8/27/20			
CHECKED BY: T. SKILLINGS, PE	8/27/20			
PROJ. ENGR.: T. SKILLINGS, PE	8/27/20			
Plotted By: Anthony D. Guerrero, EIT on 8/27/20 10:39 AM				
Saved By: Aguerrero on 8/27/20 10:34 AM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model B\CAD\SHEETS\15070_XS_Model B.dwg				

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

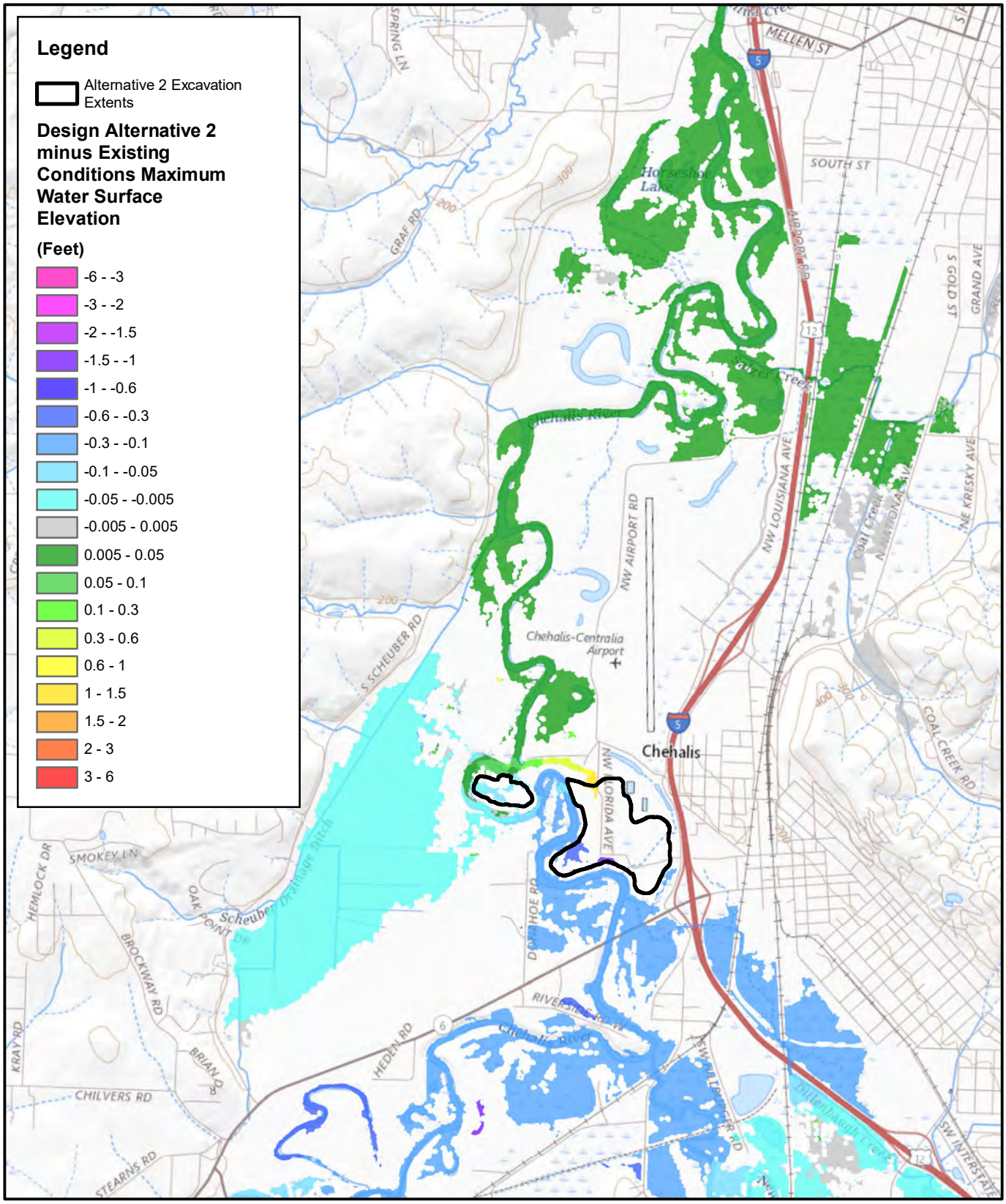
CHEHALIS RIVER FLOOD STORAGE MODEL B

BASIN 2 PLAN AND SECTION VIEW

JOB NUMBER 15070 PHASE04B
SHEET 1 OF 1 SHEETS

ATTACHMENT E

Model B Results – Water Surface Difference Plots



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 2-year Water Surface Elevation
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

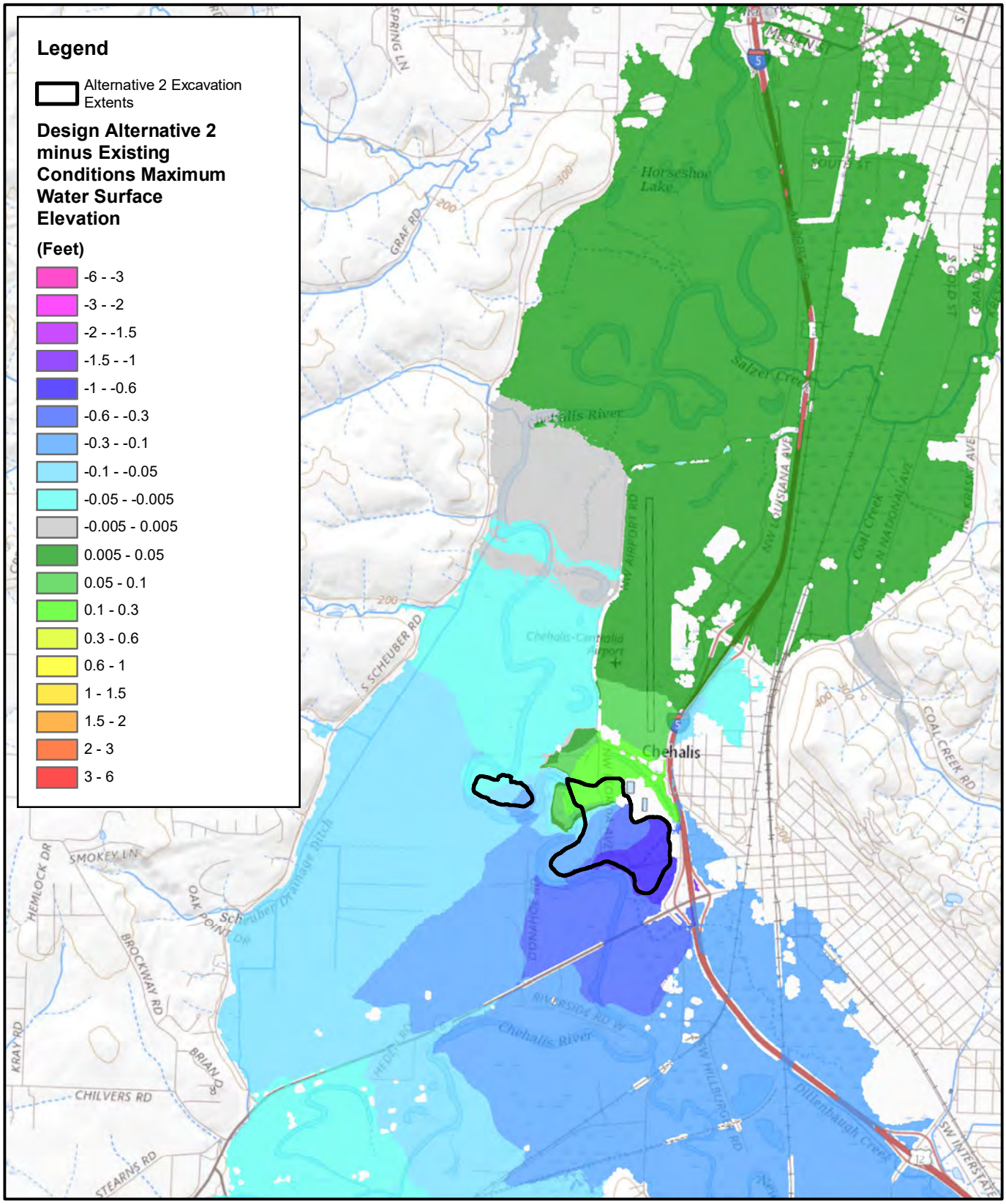
N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

08 Sep 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop2_2yrMaxWSEL_DiffPlot.mxd 9/8/2020 9:51:48 AM



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 100-year Water Surface Elevation
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

08 Sep 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop2_100yrMaxWSEL_DiffPlot.mxd 9/8/2020 9:56:43 AM

ATTACHMENT F

Model C Design

	DATE	REVISIONS		
DESIGNED BY: A. GUERRERO, EIT	9/16/20	NO.	DATE	
ENTERED BY: A. GUERRERO, EIT	9/16/20			
CHECKED BY: T. SKILLINGS, PE	9/16/20			
PROJ. ENGR.: T. SKILLINGS, PE	9/16/20			
Plotted By: Anthony D. Guerrero, EIT on 9/16/20 10:33 AM				
Saved By: Aguerrero on 9/16/20 10:32 AM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model C\CAD\C3D\15070_3D_ModelC_Grading_Final.dwg				

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STORAGE MODEL C

PLAN VIEW

JOB NUMBER 15070 PHASE04C

SHEET 1 OF 1 SHEETS

150 75 0 150 300
SCALE IN FEET

VERTICAL DATUM
NAVD 88

BASIN 1 – MODEL C:

STATION EQUATION:

74.715 – STATION (FT)/5280 = RIVER MILE

MODEL A DESIGN FEATURES:

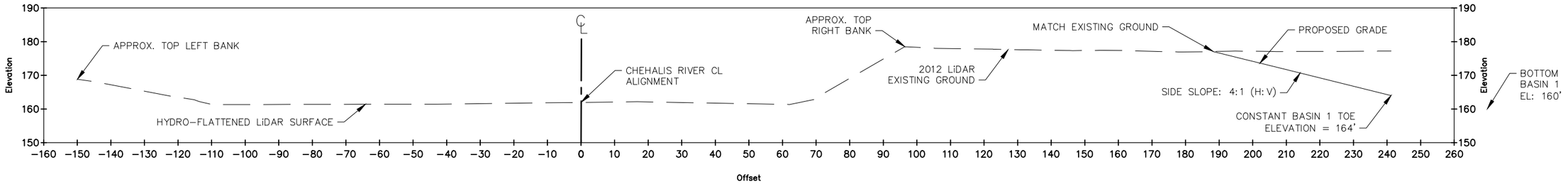
BOTTOM BASIN ELEVATION: 160'
INTERIOR SIDE SLOPES: 4:1
TOP OF BASIN EL: MATCH EXISTING GRADE
VOLUME: 1,859,877.58 CU. YD.
INLET/OUTLET LOCATION: RM 73.626 (STA 57+50)
INLET/OUTLET TOP WIDTH: 265'
INLET/OUTLET BOTTOM WIDTH: 90'
INLET/OUTLET EL: 160'

MODEL C DESIGN FEATURES:

BOTTOM BASIN ELEVATION: 160'–164'
INTERIOR SIDE SLOPES: 4:1
TOE OF BASIN EL: 164' (CONSTANT)
TOP OF BASIN EL: MATCH EXISTING GRADE
VOLUME: 1,464,466.41 CU. YD.
INLET: OVERTOPPING EXISTING RIVER BANK
INLET EL: 170'–175'
OUTLET: CONTROLLED (FLAP GATE)
OUTLET EL: 160'

SECTION SCALE (FULL SIZE 22"x34")
1"=1' HOR/VER

CHEHALIS RIVER CENTERLINE 50+44



	DATE	REVISIONS		
DESIGNED BY: A. GUERRERO, EIT	9/16/20	NO.	DATE	
ENTERED BY: A. GUERRERO, EIT	9/16/20			
CHECKED BY: T. SKILLINGS, PE	9/16/20			
PROJ. ENGR.: T. SKILLINGS, PE	9/16/20			
Plotted By: Anthony D. Guerrero, EIT on 9/16/20 10:20 AM				
Saved By: Aguerrero on 9/16/20 10:19 AM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model C\CAD\SHEETS\15070_XS_Model C.dwg				

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STORAGE MODEL C

BASIN 1 PLAN AND SECTION VIEW

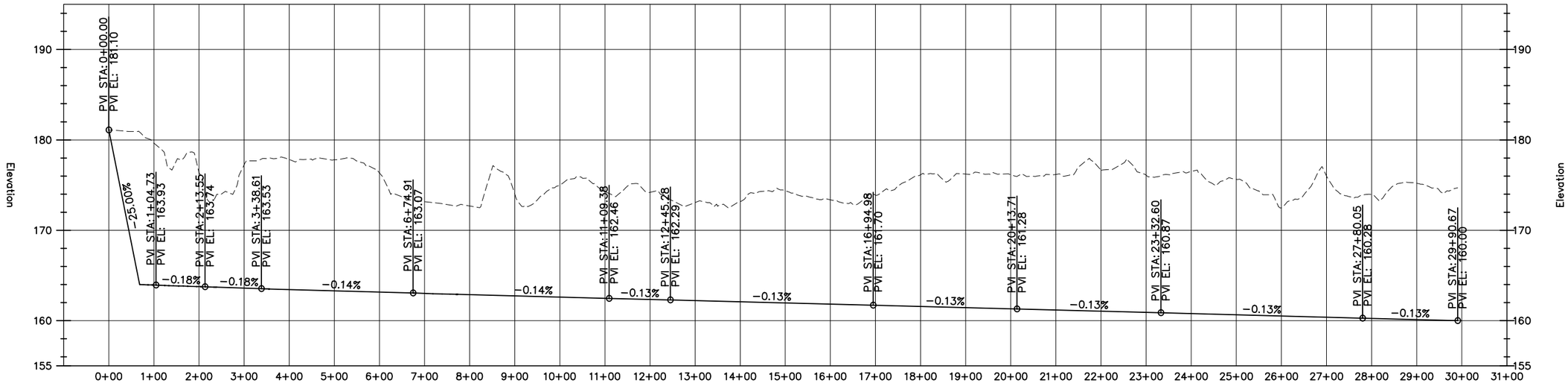
JOB NUMBER 15070 PHASE04C
SHEET 1 OF 1 SHEETS

VERTICAL DATUM
NAVD 88

125 62.5 0 125 250
SCALE IN FEET

PROFILE SCALE (FULL SIZE 22x34)
HORIZONTAL 1"= 125'
VERTICAL 1"= 6.25'

BASIN 1 MAIN FLOWLINE CL PROFILE



	DATE
DESIGNED BY: A. GUERRERO, EIT	9/16/20
ENTERED BY: A. GUERRERO, EIT	9/16/20
CHECKED BY: T. SKILLINGS, PE	9/16/20
PROJ. ENGR.: T. SKILLINGS, PE	9/16/20
Plotted By: Anthony D. Guerrero, EIT on 9/16/20 8:21 AM	
Saved By: Aguerrero on 9/16/20 8:19 AM	
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model C\CAD\C3D\15070_3D_ModelC_Grading_Final.dwg	

REVISIONS		
NO.	DATE	

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

CHEHALIS WA

City of Chehalis
Where Heart and History Shape Our Future

CHEHALIS RIVER FLOOD STORAGE MODEL C

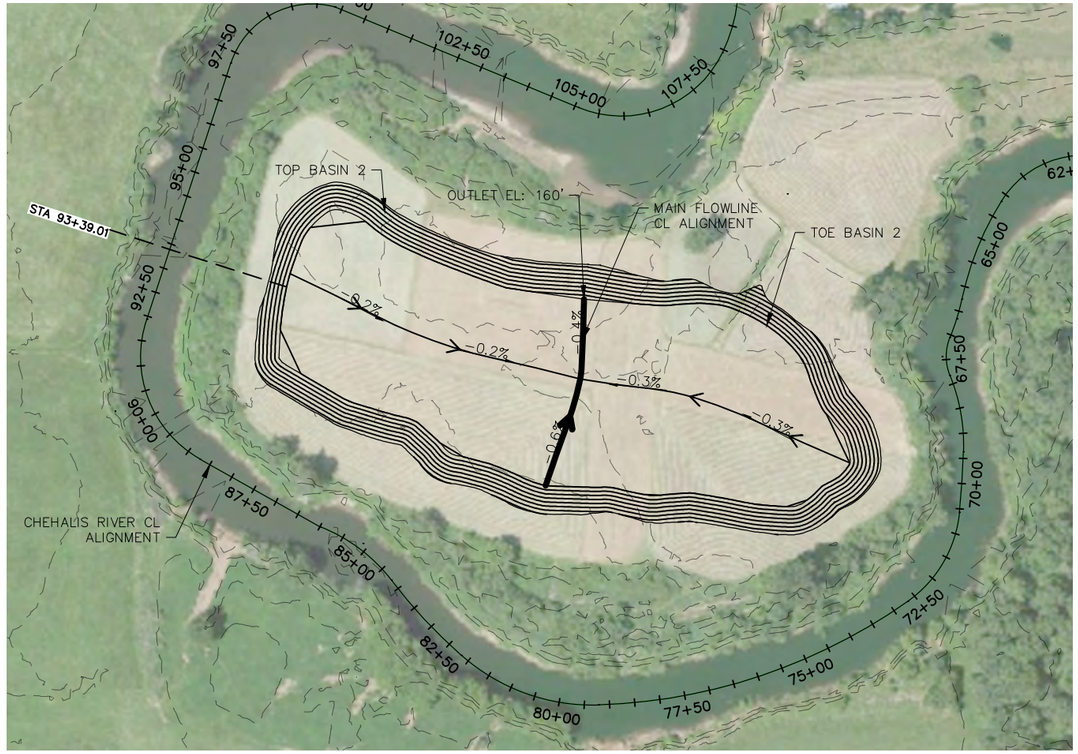
PROPOSED BASIN 1 FLOWLINE PROFILE

JOB NUMBER 15070 PHASE04C

SHEET 1 OF 1 SHEETS

150 75 0 150 300
SCALE IN FEET

VERTICAL DATUM
NAVD 88



BASIN 2 – MODEL C:

STATION EQUATION:

74.715 – STATION (FT)/5280 = RIVER MILE

MODEL A AND B DESIGN FEATURES:

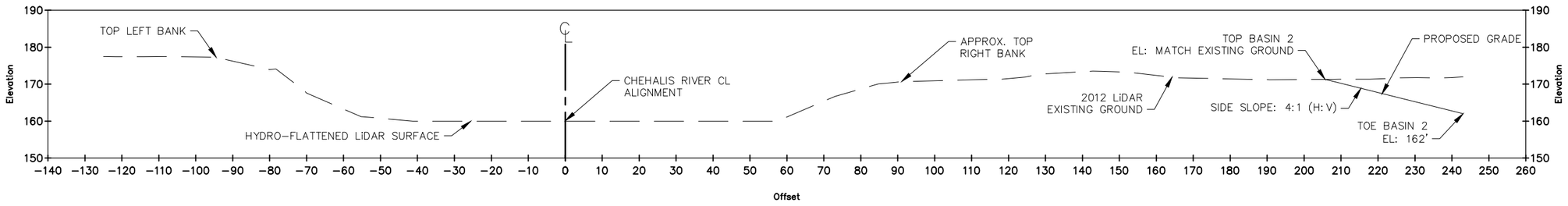
BOTTOM BASIN ELEVATION: 160'
INTERIOR SIDE SLOPES: 4:1
TOP OF BASIN: MATCH EXISTING GRADE
VOLUME: 270,574.73 CU. YD.
INLET/OUTLET LOCATION: RM 72.715 (STA 105+60)
INLET/OUTLET TOP WIDTH: 280'
INLET/OUTLET BOTTOM WIDTH: 125'
INLET/OUTLET EL: 160'

MODEL C DESIGN FEATURES:

BOTTOM BASIN ELEVATION: 160'–162'
INTERIOR SIDE SLOPES: 4:1
TOP OF BASIN EL: MATCH EXISTING GRADE
TOE OF BASIN EL: 162'
VOLUME: 230,201.91 CU. YD.
INLET: OVERTOPPING NATURAL RIVER BANK
INLET EL: 170'–175'
OUTLET: CONTROLLED (FLAP GATE)
OUTLET EL: 160'

SECTION SCALE (FULL SIZE 22"x34")
1"=1' HOR/VER

CHEHALIS RIVER CENTERLINE 93+39



	DATE	REVISIONS		
DESIGNED BY: A. GUERRERO, EIT	9/16/20	NO.	DATE	
ENTERED BY: A. GUERRERO, EIT	9/16/20			
CHECKED BY: T. SKILLINGS, PE	9/16/20			
PROJ. ENGR.: T. SKILLINGS, PE	9/16/20			
Plotted By: Anthony D. Guerrero, EIT on 9/16/20 10:17 AM				
Saved By: Aguerrero on 9/16/20 10:16 AM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model C\CAD\SHEETS\15070_XS_Model C.dwg				

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STORAGE MODEL C

BASIN 2 PLAN AND SECTION VIEW

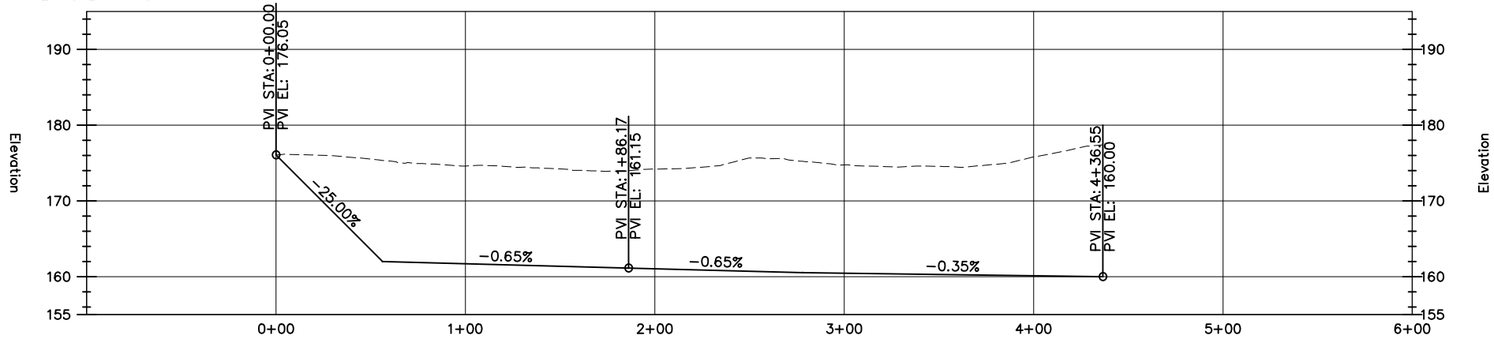
JOB NUMBER 15070 PHASE04C
SHEET 1 OF 1 SHEETS

VERTICAL DATUM
NAVD 88

40 20 0 40 80
SCALE IN FEET

PROFILE SCALE (FULL SIZE 22x34)
HORIZONTAL 1"= 40'
VERTICAL 1"= 10'

BASIN 2 MAIN FLOWLINE CL PROFILE



	DATE
DESIGNED BY: A. GUERRERO, EIT	9/16/20
ENTERED BY: A. GUERRERO, EIT	9/16/20
CHECKED BY: T. SKILLINGS, PE	9/16/20
PROJ. ENGR.: T. SKILLINGS, PE	9/16/20
Plotted By: Anthony D. Guerrero, EIT on 9/16/20 8:23 AM	
Saved By: Aguerrero on 9/16/20 8:19 AM	
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model C\CAD\C3D\15070_3D_ModelC_Grading_Final.dwg	

REVISIONS		
NO.	DATE	

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STORAGE MODEL C

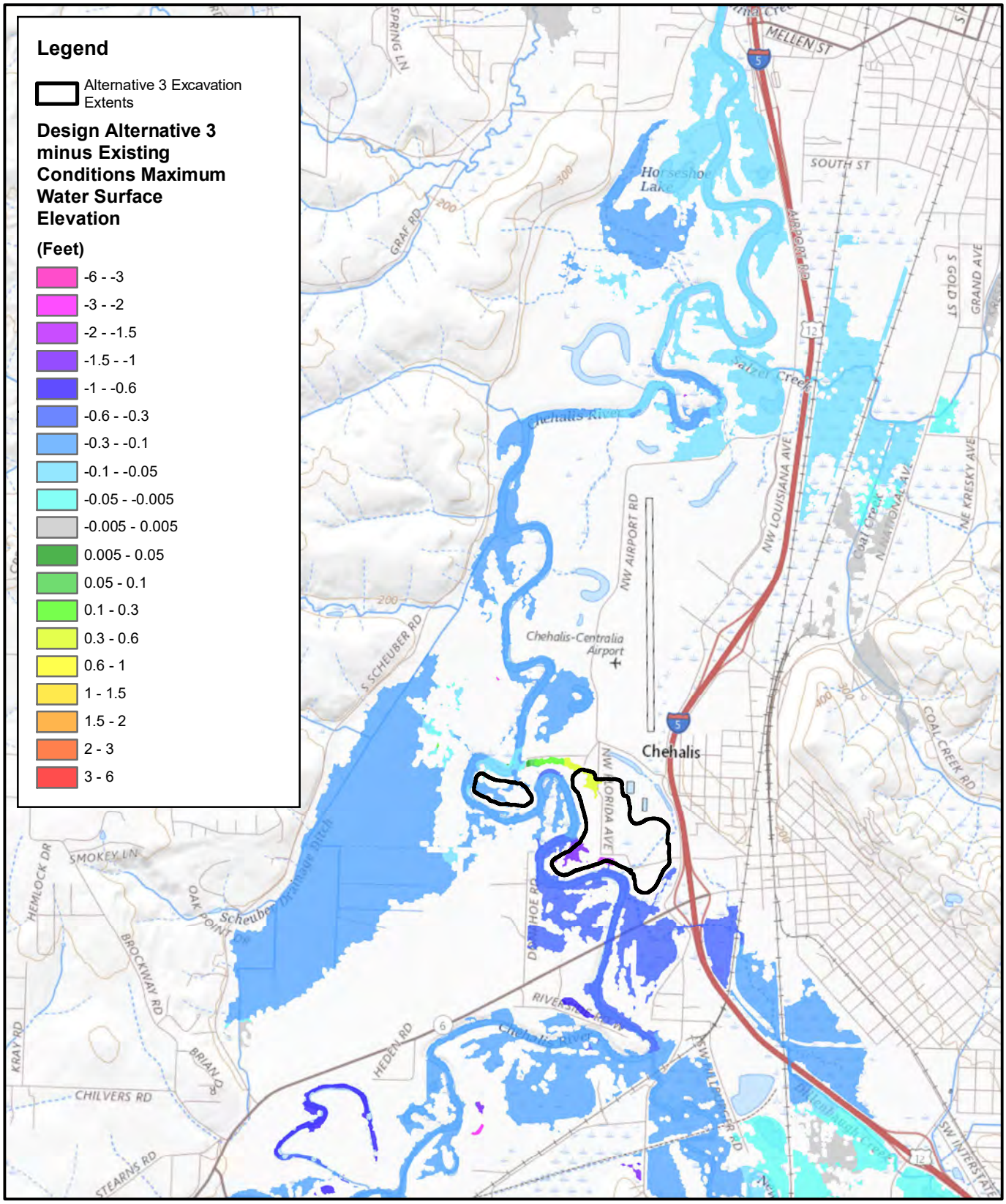
PROPOSED BASIN 2 FLOWLINE PROFILE

JOB NUMBER 15070 PHASE04C

SHEET 1 OF 1 SHEETS

ATTACHMENT G

Model C Results – Water Surface Difference Plots



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 2-year Water Surface Elevation
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

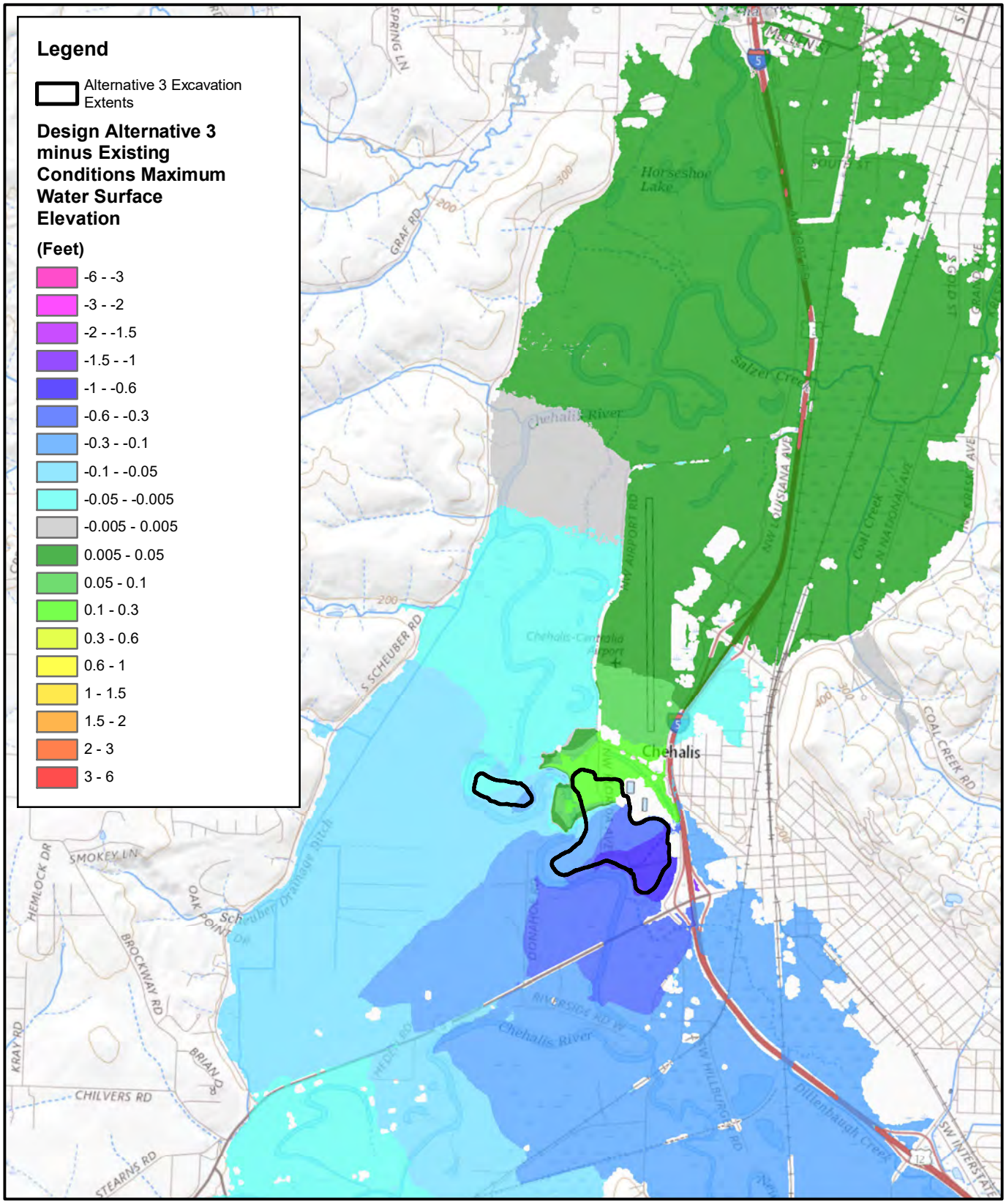
N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

21 Sep 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop3_2yrMaxWSEL_DiffPlot.mxd 9/21/2020 8:23:46 AM



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 100-year Water Surface Elevation
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

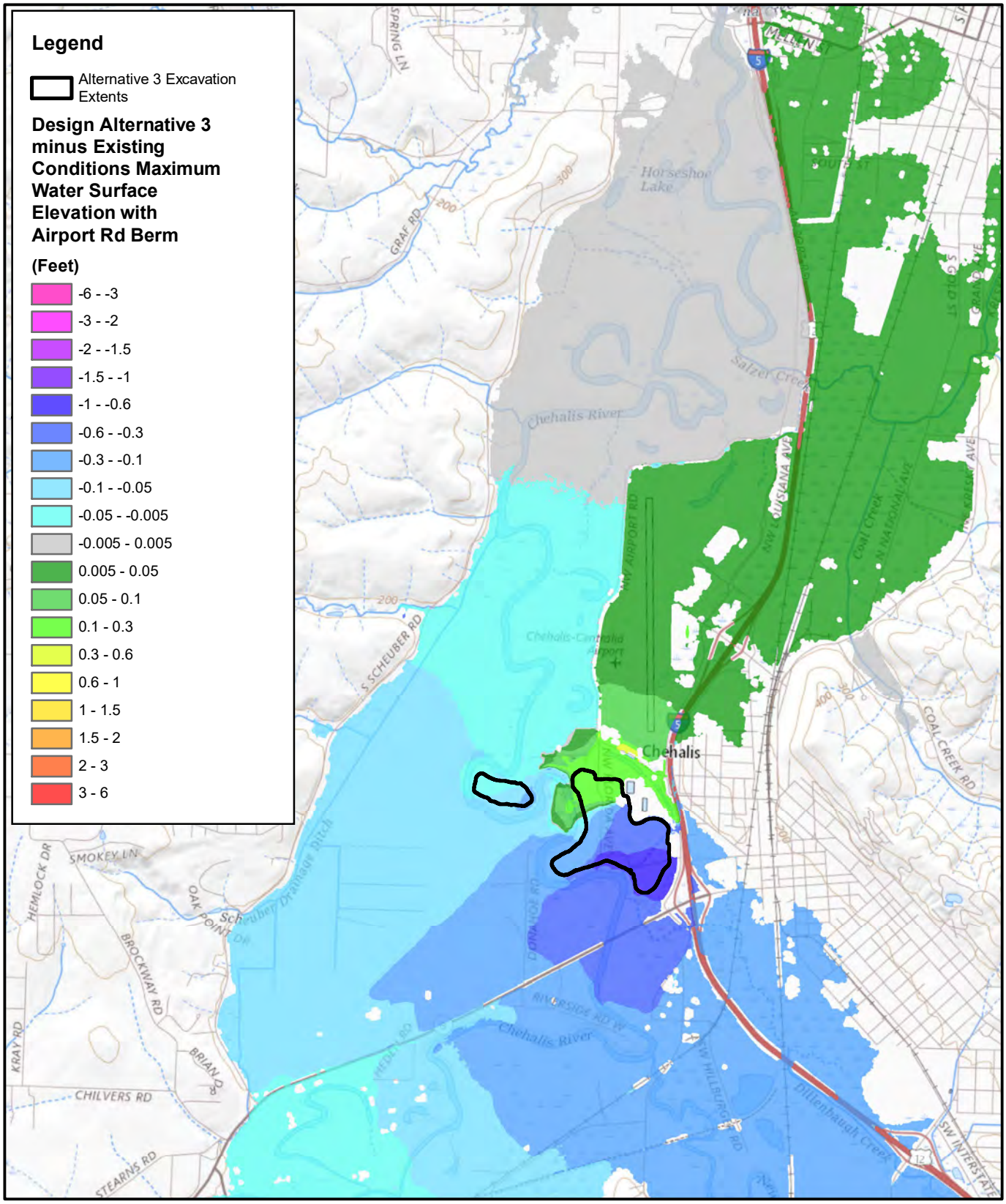
N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

21 Sep 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop3_100yrMaxWSEL_DiffPlot.mxd 9/21/2020 10:49:33 AM



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 100-year Water Surface Elevation
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

30 Sep 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop3_100yrMaxWSEL_wAirportBerm_DiffPlot.mxd 9/30/2020 7:07:00 AM

ATTACHMENT H

Model D Design

	DATE
DESIGNED BY: A. GUERRERO, EIT	9/16/20
ENTERED BY: A. GUERRERO, EIT	9/16/20
CHECKED BY: T. SKILLINGS, PE	9/16/20
PROJ. ENGR.: T. SKILLINGS, PE	9/16/20
Plotted By: Anthony D. Guerrero, EIT on 10/30/20 12:18 PM	
Saved By: Aguerrero on 10/30/20 12:14 PM	
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model D\CAD\C3D\15070_3D_ModelD_Grading_Final.dwg	

REVISIONS		
NO.	DATE	

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STORAGE MODEL D

PLAN VIEW

JOB NUMBER 15070 PHASE04C

SHEET 1 OF 1 SHEETS

150 75 0 150 300

SCALE IN FEET

VERTICAL DATUM
NAVD 88

BASIN 1 – MODEL D:

STATION EQUATION:

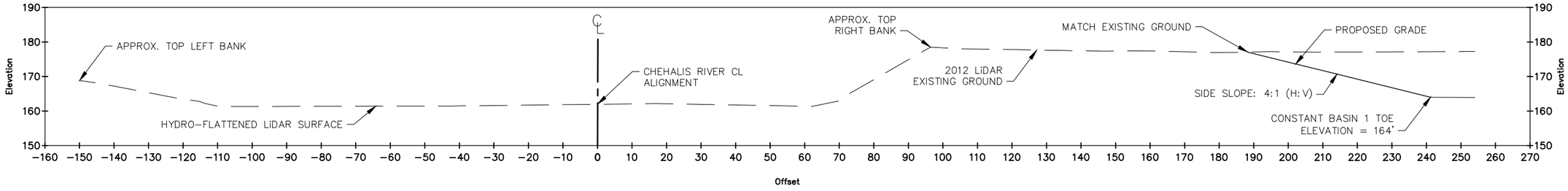
74.715 – STATION (FT)/5280 = RIVER MILE

MODEL D DESIGN FEATURES:

BOTTOM BASIN ELEVATION: 160'–164'
INTERIOR SIDE SLOPES: 4:1
TOE OF BASIN EL: 164' (CONSTANT)
TOP OF BASIN EL: MATCH EXISTING GRADE
VOLUME: 1,468,103.31 CU. YD.
INLET: OVERTOPPING EXISTING RIVER BANK
INLET EL: 170'–175'
OUTLET: CONTROLLED (FLAP GATE)
OUTLET EL: 160'

SECTION SCALE (FULL SIZE 22"x34")
1"=1' HOR/VER

CHEHALIS RIVER CENTERLINE 50+44



	DATE	REVISIONS		
DESIGNED BY: A. GUERRERO, EIT	9/16/20	NO.	DATE	
ENTERED BY: A. GUERRERO, EIT	9/16/20			
CHECKED BY: T. SKILLINGS, PE	9/16/20			
PROJ. ENGR.: T. SKILLINGS, PE	9/16/20			
Plotted By: Anthony D. Guerrero, EIT on 10/30/20 11:12 AM				
Saved By: Aguerrero on 10/30/20 11:09 AM				
G:\Project\2015\15070 Chehalis On-Call Plan Review\Task 15\Model D\CAD\C3D\15070_XS_Model D.dwg				

PRELIMINARY

SKILLINGS
5016 Lacey Boulevard SE, Lacey, Washington 98503
(360) 491-3399 Fax (360) 491-3857

City of Chehalis
Where Heart and History Shape Our Future
CHEHALIS WA

CHEHALIS RIVER FLOOD STORAGE MODEL D

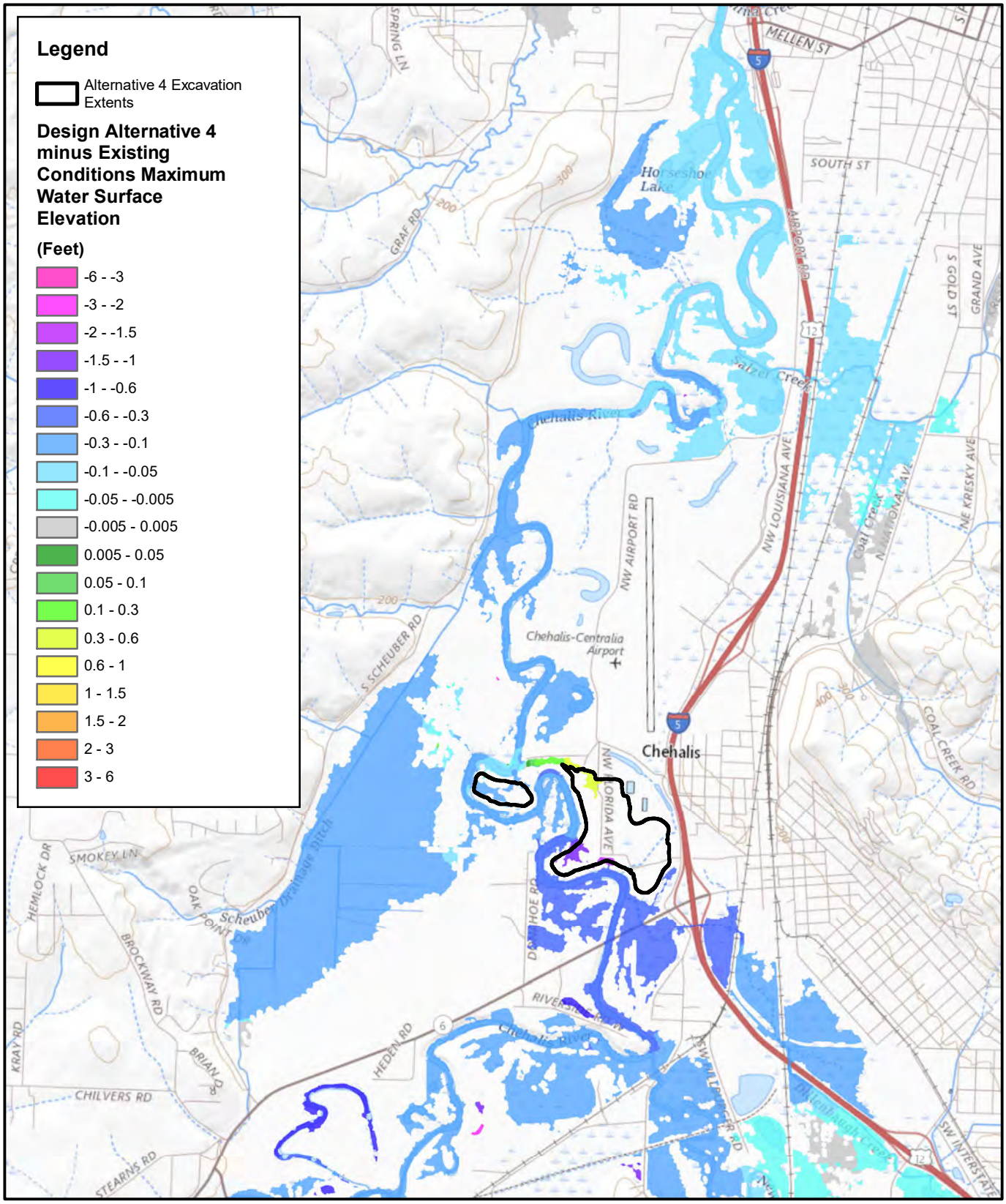
BASIN 1 PLAN AND SECTION VIEW

JOB NUMBER 15070 PHASE04D

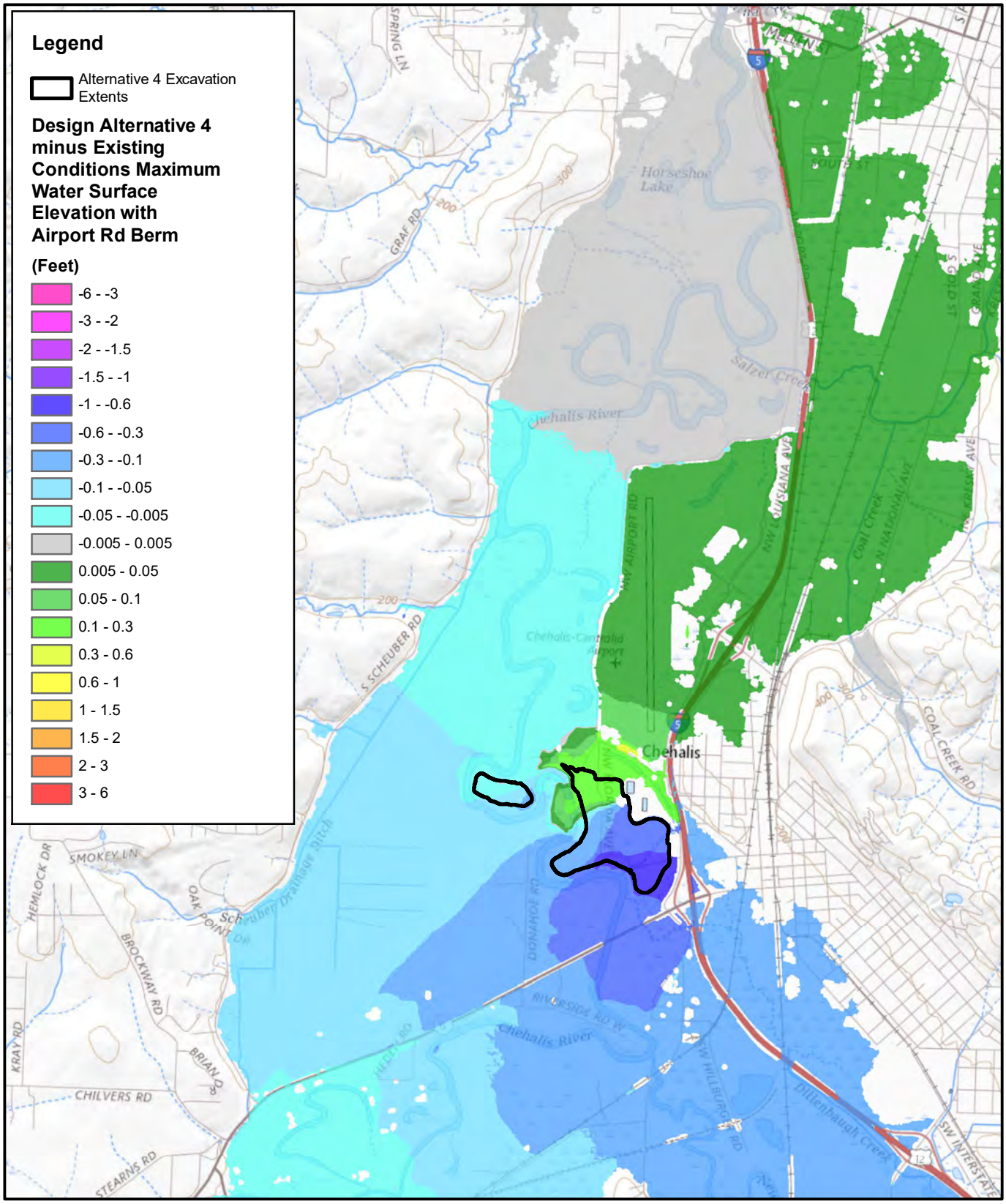
SHEET 1 OF 1 SHEETS

ATTACHMENT I

Model D Results – Water Surface Difference Plots



D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop4_2yrMaxWSEL_DiffPlot.mxd 10/19/2020 12:54:16 PM



Lewis County, WA

Chehalis Flood Storage Master Plan
Wastewater Treatment Plant Storage Project
Maximum 100-year Water Surface Elevation
Preliminary Comparison
Figure for Discussion

0 2,000 4,000 Feet

N

Scale: 1:36,000
NAD 1983 HARN
StatePlane Washington
South FIPS 4602 Feet

19 Oct 2020

WATERSHED SCIENCE & ENGINEERING

D:\20-009 Chehalis WWTP Flood Storage - Phase II\GIS\MXD\Prop4_100yrMaxWSEL_wAirportBerm_DiffPlot.mxd 10/19/2020 12:41:42 PM