



Anacortes City Council
Municipal Building Council Chambers
904 6th Street

May 21, 2018
6:00 p.m.

*** REVISED * PRELIMINARY AGENDA**

[Packet Materials](#)

1. **Call to Order**
2. **Pledge of Allegiance**
3. **Announcements and Committee Reports**
 - a. Citizen Award for Life Saving Efforts: Mike Denhaan and Steve Krebs
 - b. Traffic Safety Committee
 - c. Parks & Recreation Committee
 - d. Public Works Committee
4. **Public Comment**
5. **Consent Agenda (Action)**
 - a. Minutes of May 9, 2018 and May 14, 2018
 - b. Approval of Claims in the amount of: \$1,244,569.50
 - c. Contract Modification: 2018 Asphalt Overlay Utility & Ped Improvements 18-001-TRN-001
 - d. Contract Modification: Downtown Sidewalks - Phase 2 17-028-TRN-004
 - e. Contract Modification: 2018 Waterline Replacement Project 18-004-WTR-001
 - f. Contract Modification: WTP Chlorine Conversion Project 18-036-WTR-001
 - g. Contract Modification: Update Zoning, Development & Design Standards 16-081-IDS-001
6. **Public Hearings**
7. **Other Business**
 - a. * Anacortes Historic Preservation Board Update (Discussion)
 - b. * Guemes Channel Trail Update (Discussion)
8. **Adjournment**

Per Resolution 1949, citizens wishing to comment on items not on the agenda may do so under the Public Comment portion of the agenda. Citizens wishing to comment on agenda items indicated with an asterisk () may do so as those items are considered by Council during the course of the meeting. Citizens wishing to speak will please sign in at the back of the Council Chambers prior to the start of the meeting. The Mayor may limit comments to those who have signed in, and may limit the time allotted to each speaker to facilitate the orderly progress of the meeting.*

The City of Anacortes encourages people with disabilities to participate in public meetings.
For assistance with special needs, please contact the City Clerk at 360-299-1960 in advance of the meeting.



Anacortes City Council

Proposed Agenda Items for the Next Eight Weeks Beginning May 29, 2018

Subjects listed below have been tentatively suggested for consideration by the Anacortes City Council on the dates indicated. Items may be added to, removed from or rearranged on this list. Routine business such as approval of minutes and vouchers are not included. The complete Preliminary Agenda for each meeting is published at 3:00 on the Wednesday prior to the meeting. Published Agendas are subject to change and may be updated following the posting period. For additional information on agenda topics, please contact the City Clerk's office at 360-299-1960 to be directed to the sponsoring staff member.

May 29, 2018

- Pavement Management Program Update (Discussion)
- Resolution 2015: Collective Bargaining Agreement by and between the City of Anacortes and the Anacortes Commissioned Police Officers 6/1/2018-12/31/2021 (Discussion/Possible Action)
- Resolution 2013: Municipal Broadband Network (Discussion/Possible Action)
- Executive Session (15 Minutes) : Collective Bargaining Update (6 PM at beginning of meeting)

June 4, 2018

- Resolution 2012: Agriculture Irrigation (Discussion/Possible Action)
- Follow Up Discussion on Transportation Benefit District and Pavement Management Funding (Discussion/Possible Action)

June 11, 2018

June 18, 2018

June 25, 2018

July 2, 2018

July 9, 2018

July 16, 2018

Upcoming City Council Committee Meetings

The public is welcome to attend City Council Committee Meetings.

- Public Works, Monday, May 21, 2018, 5:00 PM, Public Works Director's Office, City Hall
- Finance, Wednesday, May 23, 2018, 5:00 PM, Main Conference Room, City Hall
- Planning, Tuesday, May 29, 2018, 5:00 PM, Main Conference Room, City Hall
- Public Works, Monday, Jun 4, 2018, 5:00 PM, Public Works Director's Office, City Hall
- Public Safety, Tuesday, Jun 5, 2018, 10:00 AM, Mayor's Office, City Hall
- Port/City Liaison, Tuesday, Jun 5, 2018, 8:30 AM, City Hall
- Housing Affordability & Community Services, Thursday, Jun 7, 2018, 1:30 PM, City Hall
- Skagit County Population Health Trust, Thursday, Jun 7, 2018, 8:30 AM, Mount Vernon
- Planning, Monday, Jun 11, 2018, 5:00 PM, Main Conference Room, City Hall



ANACORTES LEGAL DEPARTMENT

P.O. BOX 547, ANACORTES, WA 98221-0547
DARCY SUJETNAM, CITY ATTORNEY

PH (360) 299-1950
FAX (360) 293-1938

EMAIL: darcys@cityofanacortes.org

May 9, 2018

Steve Krebs
Port of Anacortes
P.O. Box 1854
Anacortes, WA 98221

Dear Steve:

I recently learned of your act of heroism in a recent incident with a customer of the Port of Anacortes, which had a direct result in saving a life.

While working for the Port of Anacortes, on April 20, 2018, you called Mike Denhaan to discuss a battery issue, and Mike told you that he was trying to get a man out of the water and needed your help. You arrived immediately and you and your co-worker were able to pull the man from the water. This happened at a critical point as he was in a hypothermic state after being in the cold waters for more than 30 minutes. You stayed with him until Anacortes FireMedics arrived and transported the patient to the hospital.

I would like recognize and present you the Mayor's Award of Heroism at the City Council meeting on Monday, May 21 at 6pm. I encourage you to invite your family, friends, and co-workers to the presentation. Please let Cherri Kahns (360-299-1950) know if you are available to attend that night to receive your award.

Steve, thank you for your exceptional effort and quick action helping this man and saving his life!

Sincerely,

CITY OF ANACORTES

Laurie Gere, Mayor

cc: Dan Worra, Port of Anacortes



ANACORTES LEGAL DEPARTMENT

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DARCY SIJETHAM, CITY ATTORNEY

PH (360) 299-1950
FAX (360) 293-1938

EMAIL: darcys@cityofanacortes.org

May 9, 2018

Mike Denhaan
Port of Anacortes
2211 16th Street
Anacortes, WA 98221

Dear Mike:

I recently learned of your act of heroism in a recent incident with a customer of the Port of Anacortes, which had a direct result in saving a life.

While working for the Port of Anacortes, on April 20, 2018, you heard noises, went to investigate and saw that a man was in the water. Through your quick thinking and fast action, along with the help of co-worker Steve Krebs, you were able to pull the man from the water at a critical point as he was in a hypothermic state after being in the cold waters for more than 30 minutes. You stayed with him until Anacortes FireMedics arrived and transported the patient to the hospital.

I would like recognize and present you the Mayor's Award of Heroism at the City Council meeting on Monday, May 21 at 6pm. I encourage you to invite your family, friends, and co-workers to the presentation. Please let Cherri Kahns (360-299-1950) know if you are available to attend that night to receive your award.

Mike, thank you for your exceptional effort and quick action helping this man and saving his life!

Sincerely,

CITY OF ANACORTES

Laurie Gere, Mayor

cc: Dan Worra, Port of Anacortes



Anacortes City Council

Municipal Building Council Chambers
904 Sixth Street

May 21, 2018
6:00 p.m.

PUBLIC COMMENT SIGN IN SHEET

Per Resolution 1949, citizens wishing to comment on items not on the agenda may do so under the Public Comment portion of the agenda. Citizens wishing to comment on agenda items indicated with an asterisk (*) may do so as those items are considered by Council during the course of the meeting. Citizens wishing to speak will please sign in at the back of the Council Chambers prior to the start of the meeting. The Mayor may limit comments to those who have signed in and may limit the time allotted to each speaker to facilitate the orderly progress of the meeting. These rules are intended to promote an orderly system of holding a public hearing or meeting, to give every person who wishes to speak an opportunity to be heard, and to ensure that no individual is embarrassed by exercising his or her right to free speech.

Please print your name legibly so we can recognize you correctly in the minutes. Thank you!

Name	Topic
Carolyn Moulton	Guemes Channel Trail ✓
FRANK McCoy	" " " ✓
Arlene French	GCT ✓
Naschelle Pope	GCT ✓
John Pope	GCT ✓
KEET Cury	PORTALIS WEST ✓
LIN FULSON	GCT ✓
JOHN Howell	GCT ✓
Jim Kiehl	GCT ✓
C. Kiehl	
WARREN KESSLER	GCT ✓
Tom Glade	
Wm Hoopman	
Brian Wetch	

Continue on back of sheet as needed

City Council Minutes – May 9, 2018

Special Meeting

At 6:00 p.m. Mayor Laurie Gere and Councilmembers Brad Adams, Eric Johnson, Matt Miller, Liz Lovelett and Anthony Young attended an advertised special session joining the Anacortes Planning Commission at its regularly scheduled meeting in the City Council Chambers for the purpose of participating in the Anacortes Municipal Code Update: Development Regulations and Design Standards Adoption Process Kick-Off. Bob Bengford from consultant Makers and Planning Department staff presented the new draft regulations.

No testimony was received and no action was taken. At approximately 8:05 p.m. the special meeting adjourned.

City Council Minutes – May 14, 2018

At 6:00 p.m. Mayor Laurie Gere called to order the regular Anacortes City Council meeting of May 14, 2018. Councilmembers Eric Johnson, Anthony Young, Brad Adams, Liz Lovelett, and Matt Miller were present. Councilmembers Ryan Walters and Bruce McDougall were absent. Mr. Johnson moved, seconded by Ms. Lovelett, to excuse the absence of Mr. Walters. The motion carried unanimously by voice vote. The assembly joined in the Pledge of Allegiance.

Announcements and Committee Reports

Port/City Liaison Committee: Mr. Johnson reported from the committee meeting the prior Tuesday. He said the Olson Building Livery Stable was discussed and costs were presented to either tear down or salvage the building. He added that Museum Director Bret Lunsford would report back to the committee with input from the Anacortes Historic Preservation Board on that matter. Mr. Johnson also reported that the committee discussed means of consolidating public access trails between the Ship Harbor Interpretive Preserve and the Washington State Ferry Terminal; that the Port's Event Center feasibility study showed the facility would pay for itself in the fifth year of operation; and that the Corps of Engineers had denied the Port's permit for its A Dock project so the Port would be revising the project design.

Skagit County Law & Justice Council: Mr. Miller reported from the meeting the prior Wednesday. He shared information from a presentation by John Stevens, director of the didg^wálič Wellness Center on March Point Road, including the current patient count of 110, 30 full time employees including full time security, hours of the center including family nights and walk in hours, and the estimate that 80-90% of the jail population has some amount of substance abuse. Mr. Miller indicated that the innovative treatment program was very likely to grow and was poised to tackle the addiction epidemic. Mr. Miller also shared an update on the Skagit County Justice Center, comparing the inmate count of 190 the prior year to an apparently stabilized inmate count of 240 in 2018. He said the number of inmates receiving health professional visits had tripled from 300 to 900 including approximately 90 opium withdrawal screenings per month. Mr. Miller said the new health care model was intended to ensure that addiction was treated and to reduce recidivism. Ms. Lovelett requested more information from the Law & Justice Council on housing support for inmates released from jail, explaining the Skagit County Population Health Trust interest in post-incarceration housing as a means to reduce recidivism. Mr. Miller indicated that County staff were addressing that topic.

Planning Committee: The regular meeting scheduled for earlier in the evening was cancelled.

Public Comment

No one present wished to address Council on any topic not already on the agenda.

Consent Agenda

Mr. Adams moved, seconded by Mr. Johnson, to approve the following Consent Agenda items. The motion carried unanimously by voice vote.

- a. Minutes of May 7, 2018
- b. Approval of Claims in the amount of: \$810,289.91
- c. Contract Award: Skagit River 42" Water Line Project Design Assistance& Permitting 18-070-WTR-001

The following vouchers/checks were approved for payment:
EFT numbers: 89124 through 859169, total \$540,110.39
Check numbers: 89170 through 89210, total \$166,881.56
Wire transfer numbers: 231735 through 232577, total \$25,481.15

OTHER BUSINESS

Ordinance 3022: Impact Fees

City Attorney Darcy Swetnam presented draft Ordinance 3022 which would consolidate impact fees and deferrals and exemptions from same into a single new Chapter 3.93 in the Anacortes Municipal Code and create Chapter 13.44 addressing waivers and reductions in general facilities charges (GFCs) for low income housing. Ms. Swetnam's slide presentation was added to the packet materials for the meeting. She recapped the presentation of this item from the May 7, 2018 regular City Council meeting, then addressed questions raised by Council at that earlier meeting. In response to councilmember questions about the potential budget impact of fee reductions for affordable housing projects, Ms. Swetnam outlined the current amounts of impact fees and general facilities charges and concluded that the ordinance was unlikely to have a significant impact on revenue as private developers would still find market rate housing more profitable. Ms. Swetnam and Planning Director Don Measamer also responded to councilmember questions about school impact fees, which do not currently exist in Anacortes. Ms. Swetnam then addressed the question of public facility impact fees for schools, concluding that City revenue would not likely be impacted. She added that the recent high school remodel was not subject to impact fees in any case because it replaced an existing building with no forecast increase in use or impact.

Ms. Lovelett suggested adding the definition of public facility to the ordinance. Ms. Swetnam agreed to reference the RCW definition. Ms. Swetnam also added that Section 3.93.070B, third sentence, needed to be amended from "*City Council* and any affected district will review" to "*City Engineer* and any affected district will review". Mr. Johnson asked about responsibility and mechanism for ensuring that affordable housing projects granted the fee reductions remained affordable. Mr. Measamer and Ms. Swetnam explained the covenants that would be recorded with the title for such projects, requiring reporting to the city, and said city staff would be assigned to monitor those reports. Ms. Lovelett encouraged discussing allocation of staff time for that purpose during the upcoming budget sessions.

Mayor Gere invited members of the audience to comment on this agenda item.

Walt Guterbock, 2005 29th Place, reported that his donor contract with the Anacortes Family Center included a provision that residents would meet HUD requirements for income eligibility and that residents would be required to certify income eligibility annually with the Family Center. Mr. Guterbock said the agreement also included a provision requiring a 50-year commitment on the part of AFC that it would remain an affordable housing project. Ms. Swetnam noted that specific projects such as the Anacortes Family Center could have more strict resident income requirements than Ordinance 3022 required.

No one else in attendance wished to address Council on this topic.

Mr. Johnson moved, seconded by Mr. Young, to adopt Ordinance 3022. Ms. Lovelett moved to amend the motion to include adding a definition of "public facility" consistent with the RCW and changing 3.93.070(B) to reference "City Engineer" rather than "City Council". Mr. Johnson and Mr. Young confirmed that their motions included those revisions to the ordinance as presented.

Vote: Ayes – Young, Adams, Lovelett, Miller and Johnson. Motion carried.

There being no further business, at approximately 6:38 p.m. the Anacortes City Council meeting of May 14, 2018 was adjourned.

The following claims against the City of Anacortes have been preaudited and certified by the Clerk-Treasurer as ready for City Council approval at the May 21, 2018 City Council meeting:
[Download this file in OpenDocument spreadsheet format.](#)

Invoice Doc #	Transaction Date	Invoice #	Vendor Full Name	Description	Total Amount
232893	2/15/2018	10635	ACE CONCRETE CUTTING LLC	M AVENUE ASPHALT CORES	\$3,255.00
232172	3/1/2018	IN1206972	MUNICIPAL EMERGENCY SERVICES	EXTRICATION EQUIPMENT: MACH III OUTLAW	\$19,058.56
232910	4/2/2018	75766615	RECORDED BOOKS INC	SUBSCRIPTION TO E-BOOKS	\$1,420.80
232520	4/11/2018	S8678310.001	CONSOLIDATED SUPPLY CO.	RE-STOCK WATER INVENTORY PARTS:	\$6,890.65
232275	4/12/2018	1990663743	ARAMARK	STATION 2 MAT SERVICE: 4/12	\$21.70
232886	4/18/2018	205309	SEAWESTERN, INC.	COMPRESSOR AIR TEST	\$106.00
232287	4/20/2018	205442	SEAWESTERN, INC.	HOSE STRAPS	\$27.67
231837	4/23/2018	3441254957	HILTON HOTELS (ALL)	APWA CONFERENCE HOTEL AND PARKING MATT R	\$400.88
232584	4/24/2018	61514	ASSOCIATION OF WASHINGTON	WEBINAR REGISTRATION - COUNCIL	\$125.00
232194	4/24/2018	3101323	CARDINAL HEALTH 110, INC.	PHARMACEUTICALS	\$256.78
232289	4/24/2018	49864	KROESENS UNIFORMS COMPANY	WHITE UNIFORM SHIRT	\$98.52
232277	4/25/2018	1990682256	ARAMARK	STA 3 MAT SERVICE: 4/25	\$21.70
232274	4/25/2018	21297	ECONOWASH LAUNDRY & DRY	APRIL LAUNDRY	\$1,153.36
232506	4/25/2018	311844	LEFEVER TURF FARM, LLC	HYDRO-SEEDING FOR SHORESIDE TRAIL	\$1,692.60
232412	4/25/2018	331 0401328	UNIFIRST CORPORATION	WTP WEEKLY LAUNDRY SERVICE INTERN	\$5.69
232279	4/26/2018	1990684343	ARAMARK	STA 2 MAT SERVICE: 4/26	\$21.70
232282	4/26/2018	1990684344	ARAMARK	STA 1 MAT SERVICE: 4/26	\$21.70
232422	4/26/2018	9806175660	VERIZON WIRELESS	WTP SCADA MODEM 3/27/18-4/26/18	\$501.38
232284	4/26/2018	00112757	WALTON BEVERAGE COMPANY, INC	BREAKROOM SUPPLIES	\$87.50
232193	4/27/2018	3109009	CARDINAL HEALTH 110, INC.	PHARMACEUTICALS	\$76.78
232583	4/27/2018	AN 58538	CENTRAL WELDING SUPPLY CO, INC	O2 FOR AMBULANCES	\$144.72
232818	4/27/2018	PWTF-258472	DEPARTMENT OF COMMERCE	PR09-951-009 WTP IMPROVEMENTS	\$47,847.22
232817	4/27/2018	PWTFNT-246268	DEPARTMENT OF COMMERCE	PUBLIC WORKS TRUST FUND	\$544,736.84
232701	4/27/2018	23039	WESTERN SYSTEMS REFUSE &	CAMERA REPAIR FOR VIDEOING SEWER LINES	\$345.97
232681	4/28/2018	3602939063	FRONTIER COMMUNICATIONS	STA 3 PHONE/FAX/DSL, SERVICE CALL	\$190.48
232678	4/30/2018	257850	A WORKSAFE SERVICE INC	EMPLOYEE DRUG TEST	\$55.00
232682	4/30/2018	9500129415	ARROW INTERNATIONAL, INC.	EZ-IO NEEDLES	\$561.04
232601	4/30/2018	84875^	BLYTHE PLUMBING & HEATING, INC	SHAFT KIT FOR LIBRARY PUMP	\$450.04
232750	4/30/2018	187	BOYS & GIRLS CLUBS	APRIL - LUNCH PROGRAM SERVICE PROVISION	\$840.00
232602	4/30/2018	106	BUBBA SUDZ CAR WASH, INC.	APRIL CAR WASHES- 14	\$126.00
232753	4/30/2018	135951	INFOSEND, INC.	UB STATMENTS PROCESSING APRIL	\$3,559.43
232661	4/30/2018	4/30/18	ISLAND HOSPITAL	APRIL AMBULANCE CHARGES, CHEST X-RAY	\$1,836.87
232743	4/30/2018	6693	PETDATA, INC	PETDATA LICENSING FEES APRIL 2018	\$241.90
232887	4/30/2018	9955	PETEK PH D, THOMAS C	CANDIDATE PSYCH TESTING	\$600.00

Invoice Doc #	Transaction Date	Invoice #	Vendor Full Name	Description	Total Amount
232503	4/30/2018	300000290043	PUGET SOUND ENERGY INC	STREET LIGHTS 3/3-4/2/18	\$25,232.54
232898	4/30/2018	1035	SKAGIT CONSERVATION DISTRICT	NPDES II OUTREACH & EDUCATION - APRIL 2018	\$1,158.87
232889	4/30/2018	0173	SKAGIT COUNTY SOLID WASTE FUND	APRIL TONNAGE HAULED	\$70,932.09
232192	4/30/2018	180426	T-SHIRTS BY DESIGN	T-SHIRTS, SHORTS, HAT, SWEATSHIRT - NEW	\$333.01
232438	4/30/2018	114-6717828	UNITED SITE SERVICES, INC	INTAKE STATION PORTA-POTTI RENTAL	\$22.58
232439	4/30/2018	114-6718688	UNITED SITE SERVICES, INC	2100 PENNSYLVANIA AVE. PORTA-POTTI APRIL	\$130.41
232597	4/30/2018	23054	WESTERN SYSTEMS REFUSE &	ROTARY ELBOW- VEH #601	\$576.04
232603	5/1/2018	232217B	BAY CITY SUPPLY	FACILITY SUPPLIES	\$57.85
232300	5/1/2018	360-293-0045-0223175	FRONTIER COMMUNICATIONS	BACK UP LINES 29-1 5/1-5/31/18	\$146.72
232913	5/1/2018	34425319	INGRAM LIBRARY SERVICES, LLC	BOOKS - ADULT	\$792.05
232593	5/1/2018	980	MIN-NS	MAY SUBSCRIPTION	\$130.20
232424	5/1/2018	200012505505	PUGET SOUND ENERGY INC	WTP RIVER BEND ROAD 4/1 TO 4/30/18	\$64,379.10
232897	5/1/2018	84266	VECA ELECTRIC COMPANY, INC	SIGN SHOP ELECTRICAL WORK	\$11,640.89
232283	5/2/2018	768070	BAYSHORE OFFICE PRODUCTS INC	NOTEBOOKS, POST-ITS, RECEIVED STAMP	\$24.42
232286	5/2/2018	3123169	CARDINAL HEALTH 110, INC.	PHARMACEUTICALS	\$326.06
232599	5/2/2018	227223	DEPT OF LABOR & INDUSTRIES	ELEVATOR INSPECTION	\$457.00
232600	5/2/2018	227224	DEPT OF LABOR & INDUSTRIES	ELEVATOR INSPECTION FOR LIBRARY	\$457.00
232805	5/2/2018	955641-0	KEENEY'S OFFICE SUPPLY, INC.	LABEL TAPE, STICKY NOTES	\$37.20
232745	5/2/2018	49979	KROESENS UNIFORMS COMPANY	WORKBOOTS - SWANSON	\$347.19
232436	5/2/2018	73470	NATIONAL ENVIRONMENTAL	HAZWOPER 40 HOUR TRAINING - JAMES ROSSI	\$325.00
232877	5/3/2018	763172	BAYSHORE OFFICE PRODUCTS INC	OFFICE CUBICLES	\$7,934.11
232585	5/3/2018	3131560	CARDINAL HEALTH 110, INC.	PHARMACEUTICALS	\$2.08
232298	5/3/2018	10948086	HACH COMPANY	SENSOR CAPS, TUBING	\$1,842.01
232741	5/3/2018	50006	KROESENS UNIFORMS COMPANY	UNIFORM JACKET, BELT - SWANSON	\$177.86
232594	5/3/2018	854135	LIFE ASSIST, INC	ASSORTED EXAM GLOVES	\$450.29
232802	5/3/2018	134402891001	OFFICE DEPOT, INC.	LABEL TAPE, CANNED AIR	\$69.33
232907	5/3/2018	2018LAWLIB	SKAGIT COUNTY LAW LIBRARY	PUB DEF SUBSR	\$50.00
232815	5/4/2018	134888443001	OFFICE DEPOT, INC.	OFFICE SUPPLEIS - PLANNING	\$13.10
232814	5/4/2018	134862684001	OFFICE DEPOT, INC.	OFFICE SUPPLIES - BLDG & PLANNING	\$53.73
232821	5/5/2018	47964	LAKESIDE INDUSTRIES, INC.	5/8 AND 3/4 ROCK	\$689.29
232820	5/5/2018	47963	LAKESIDE INDUSTRIES, INC.	5/8 AND 3/4 ROCK	\$744.06
232675	5/5/2018	000099E018188	UNITED PARCEL SERVICE, INC	UPS SHIPPING	\$47.25
232880	5/7/2018	038 200 0000 2	CASCADE NATURAL GAS CORP.	APD 4/6/18-5/4/18	\$1,421.10
232812	5/7/2018	220013286525	PUGET SOUND ENERGY INC	HEART OF ANACORTES 4/6-5/4/18	\$63.00
232673	5/7/2018	180446	T-SHIRTS BY DESIGN	6 UNIFORM PANTS, 1 SHIRT: SWANSON	\$836.54
232882	5/8/2018	1007	ANACORTES PRINTING	PROPERTY FORMS	\$271.25
232800	5/8/2018	5818	ANACORTES TOWING, LLC	TOWING; APD CASE 18-A03320	\$162.75
232656	5/8/2018	177940-5	BIRCH EQUIPMENT CO., INC	STORAGE CONTAINER RENTAL FOR DEPOT	\$412.30

Invoice Doc #	Transaction Date	Invoice #	Vendor Full Name	Description	Total Amount
232589	5/8/2018	3140356	CARDINAL HEALTH 110, INC.	PHARMACEUTICALS	\$4.00
232819	5/8/2018	S8678310.004	CONSOLIDATED SUPPLY CO.	12" X 18.2' CL50 TTON JOINT DI FOR	\$19,283.54
232914	5/8/2018	34544277	INGRAM LIBRARY SERVICES, LLC	BOOKS - ADULT	\$921.72
232596	5/8/2018	839443	KARMART	SERVICE- VEH #144	\$1,028.58
232903	5/8/2018	S01/78129	KROHNE, INC	FLOWMETER - TIDALFLUX 2300 F	\$23,027.38
232590	5/8/2018	001-401007	PISTON SERVICE OF ANACORTES	OPERATING SUPPLY- SHOP STOCK	\$166.10
232810	5/8/2018	220013297076	PUGET SOUND ENERGY INC	1100 STATE ROUTE 20 4/7-5/7/18	\$16.72
232811	5/8/2018	220015523313	PUGET SOUND ENERGY INC	CAR CHARGING STATION 4/6 TO 5/4/18	\$26.78
232883	5/8/2018	220013297498	PUGET SOUND ENERGY INC	CASINO DR UNDER TWIN BRIDGES- 4/7 - 5/7/18	\$72.95
232909	5/8/2018	1285093385	SMILES DENTAL GROUP	COUSINS, RICHARD, DENTAL SERVICES, DOS: 5/8/18	\$368.00
232670	5/9/2018	1990703014	ARAMARK	STA 3 MAT SERVICE: 5/9	\$21.70
232586	5/9/2018	ReimbBuckenmeyer	BUCKENMEYER, FRED	PER DIEM REIMBURSEMENT 2018 BROADBAND SUMMIT	\$271.00
232891	5/9/2018	Pay App 2	C JOHNSON CONSTRUCTION, INC	2018 WATERLINE REPLACEMENT PROJECT	\$139,354.06
232686	5/9/2018	3081	COASTAL FARM &	GLOVES, BELT, OVERALLS - CR	\$93.01
232746	5/9/2018	101243	ELECTRONIC BUSINESS MACHINES	COPIER CHARGES: 2/12 - 5/11	\$184.07
232906	5/9/2018	10954530	HACH COMPANY	SALT BRIDGES	\$259.32
232595	5/9/2018	35541	JERRY SMITH CHEVROLET	WASHER CAP- VEH #027	\$5.57
232744	5/9/2018	0221291-IN	REISNER DISTRIBUTOR INC	OIL FOR THE PLANT AND SPILL PADS	\$162.18
232653	5/9/2018	COA0518	SYSTEMS DESIGN WEST, LLC	AMBULANCE BILLING APRIL	\$3,407.00
232797	5/9/2018	331 0403469	UNIFIRST CORPORATION	WTP WEEKLY LAUNDRY SERVICE FOR INTERN	\$5.69
232795	5/9/2018	331 0403455	UNIFIRST CORPORATION	WTP WEEKLY LAUNDRY SERVICE	\$40.45
232807	5/10/2018	1990705084	ARAMARK	APD NYLON MATS CLEANED	\$16.28
232671	5/10/2018	1990705079	ARAMARK	STA 2 MAT SERVICE: 5/10	\$21.70
232672	5/10/2018	1990705080	ARAMARK	STA 1 MAT SERVICE: 5/10	\$21.70
232876	5/10/2018	1990705090	ARAMARK	OPS & PARKS LAUNDRY SVC FOR	\$64.66
232761	5/10/2018	1990705091	ARAMARK	OPS: MAT CLEANING 05/10/18	\$70.13
232804	5/10/2018	A-3213	BESTLINE LTD	UNIFORM SHIRT DETAILS FOR DETECTIVES UNIT	\$39.42
232895	5/10/2018	82475^	BLYTHE PLUMBING & HEATING, INC	LIBRARY EXHAUST FAN AND CIRCULATION PUMP REPAIRS	\$3,184.16
232674	5/10/2018	7721	BUD CLARY CHEVROLET, INC.	CAR #053 - 2018 CHEVY BOLT	\$35,132.76
232874	5/10/2018	8493 30 017 0490698	COMCAST	CITY HALL INTERNET CONNECTION 5/20-6/19-18	\$186.12
232875	5/10/2018	8498 30 030 0111230	COMCAST	WTP 14489 RIVER BEND RD. - 5/19-6/18/18	\$229.79
232669	5/10/2018	37330	CORRECT EQUIPMENT, INC	IMPELLER	\$2,822.25
232806	5/10/2018	95066258	ECO SERVICES OPERATIONS CORP	ALUMINUM SULFATE	\$4,390.31
232822	5/10/2018	0655760	FERGUSON ENTERPRISES, INC	REGISTERS TO STOCK WATER INVENTORY	\$3,579.96
232676	5/10/2018	ReimbGere	GERE, LAURIE	MEAL PER DIEM 2018 BROADBAND SUMMIT	\$271.00

Invoice Doc #	Transaction Date	Invoice #	Vendor Full Name	Description	Total Amount
232680	5/10/2018	854620	LIFE ASSIST, INC	2 SPINAL CARE KIT CASES, EXAM GLOVES	\$142.14
232759	5/10/2018	001-401298	PISTON SERVICE OF ANACORTES	AIR CONDITIONER- VEH #029	\$128.90
232760	5/10/2018	001-401315	PISTON SERVICE OF ANACORTES	BATTERY- VEH #204A	\$312.37
232801	5/10/2018	632652	SAN DIEGO POLICE EQUIP CO INC	TRAINING AMMUNITION	\$412.99
232654	5/10/2018	ReimbSwetnam	SWETNAM, DARCY	PER DIEM REIMBURSEMENT WSAMA SPRING CONFERENCE	\$222.00
232659	5/10/2018	17-028-TRN-0031	TILCO VANGUARD INC	RETAINAGE RELEASE	\$3,515.60
232899	5/10/2018	17316	TRANSPORTATION SOLUTIONS INC	32ND & D ROUNDABOUT INTERSECTION IMPROVEMENT DESIGN - APRIL 2018	\$9,545.06
232749	5/10/2018	112813	WALTON BEVERAGE COMPANY, INC	EMPLOYEE BREAK ROOM - 3RD FLOOR	\$17.50
232747	5/10/2018	112814	WALTON BEVERAGE COMPANY, INC	EMPLOYEE BREAK ROOM - 1ST FLOOR	\$17.50
232689	5/10/2018	112809	WALTON BEVERAGE COMPANY, INC	WTP BREAKROOM SUPPLIES	\$35.00
232660	5/10/2018	112812	WALTON BEVERAGE COMPANY, INC	WWTP BREAKROOM SUPPLIES	\$52.50
232685	5/10/2018	112811	WALTON BEVERAGE COMPANY, INC	AFD BREAKROOM SUPPLIES	\$106.00
232799	5/11/2018	51018	ANACORTES TOWING, LLC	TOWING; APD CASE 18-A03403	\$162.75
232873	5/11/2018	8498 30 017 0464628	COMCAST	WA PARK INTERNET 5/21-6/20/18	\$106.12
232748	5/11/2018	227318	DEPT OF LABOR & INDUSTRIES	L&I LIFT OPERATING CERTIFICATE	\$69.10
232824	5/11/2018	227416	DEPT OF LABOR & INDUSTRIES	ELEVATOR ANNUAL OPERATING CERTIFICATE(S)	\$437.40
232911	5/11/2018	Pay App 2	LARRY BROWN CONSTRUCTION INC	DOWNTOWN SIDEWALKS - PHASE 2 4/30/18-5/11/18	\$73,676.43
232823	5/11/2018	100559960	RICOH USA, INC	S/N C32029555 CITY HALL COPIER 3RD 5/1-5/31/18	\$377.30
232905	5/11/2018	632691	SAN DIEGO POLICE EQUIP CO INC	TRAINING AMMO	\$851.62
232888	5/11/2018	5/11/18	SWAN, SHARON	SUBSISTENCE FIRE ADMIN CONFERENCE	\$69.00
232336	5/11/2018	11433-1649	TOTALTECH INTERNET AND NETWORK, SECURITY SOLUTIONS	SOPHOS CENTRAL MOBILE STANDARD	\$899.70
232892	5/11/2018	Pay App 4	TRINITY CONTRACTORS, INC	2018 ASPHALT OVERLAY - UTILITY AND PEDESTRIAN IMPROVEMENTS	\$76,663.80
232742	5/11/2018	RE90BE	WATER ENVIRONMENT FEDERATION	WEF MEMBERSHIP	\$120.00
232803	5/12/2018	00005W5A83198	UNITED PARCEL SERVICE, INC	UPS SHIPPING CHARGES; WEEK END 5-12-18	\$10.97
232884	5/12/2018	000099E018198	UNITED PARCEL SERVICE, INC	UPS SHIPPING	\$20.36
232816	5/14/2018	1990708990	ARAMARK	LAUNDRY SERVICE FOR WWTP	\$71.61
232798	5/14/2018	18-12708	EDGE ANALYTICAL, INC	FINAL EFFLUENT TESTING	\$1,247.00
232878	5/14/2018	051418	FIDALGO CLEANING	CLEANING & SUPPLIES	\$700.00
232885	5/14/2018	767330	PACIFIC LAMP & SUPPLY COMPANY	EMERGENCY BALLAST FOR LIBRARY LED	\$504.53
232762	5/14/2018	PettyCashKnapp	PETTY CASH FUND	REIMBURSE FOR APRIL PETTY CASH KERI	\$34.00
232763	5/14/2018	PettyCashBray	PETTY CASH FUND	PETTY CASH REIMB	\$70.48
232900	5/14/2018	29096	SEBO'S DO-IT CENTER	MAINTENANCE SUPPLIES - W.T. PRESTON	\$2.70
232808	5/14/2018	420008	SEBO'S DO-IT CENTER	CAR WASH SOAP	\$23.84
232796	5/14/2018	112826	WALTON BEVERAGE COMPANY, INC	WWTP BREAKROOM SUPPLIES	\$35.00

Invoice Doc #	Transaction Date	Invoice #	Vendor Full Name	Description	Total Amount
232879	5/14/2018	112825	WALTON BEVERAGE COMPANY, INC	OPS- BREAKROOM SUPPLIES	\$87.50
232902	5/15/2018	768911	BAYSHORE OFFICE PRODUCTS INC	OFFICE SUPPLIES	\$105.30
232901	5/15/2018	769468	BAYSHORE OFFICE PRODUCTS INC	CHAIR FOR NEW HIRE	\$342.85
232792	5/15/2018	WA-G885-18	DEPARTMENT OF ECOLOGY	WTP LAB ACCREDITATION RENEWAL	\$1,040.00
232912	5/15/2018	75766856	RECORDED BOOKS INC	SUBSCRIPTION TO E-MAGAZINES	\$1,000.00
232881	5/15/2018	0558872-IN	REISNER DISTRIBUTOR INC	INFLUENT PUMP OIL	\$85.14
232890	5/15/2018	112833	WALTON BEVERAGE COMPANY, INC	EMPLOYEE BREAK ROOM - 3RD FLOOR	\$28.21
232668	5/30/2018	18-046-FAC-0011	BLYTHE PLUMBING & HEATING, INC	RETAINAGE RELEASE	\$995.40
232665	5/31/2018	18-030-FAC-0011	DOORMAN COMMERCIAL, LLC	RETAINAGE RELEASE	\$222.10
232663	6/3/2018	18-028-FAC-0011	VECA ELECTRIC COMPANY, INC	RETAINAGE RELEASE	\$1,725.92

Total					\$1,244,569.50
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City Council Contract Agenda Bill

Meeting Date: 5/21/2018 **Agenda Item:** 5c

Subject: Contract Modification – 2018 Asphalt Overlay – Utility and Pedestrian Improvements 18-001-TRN-001

Staff Contact: Fred Buckenmeyer

Approved for Submittal to Council by:
Darcy Swetnam, City Attorney

Action Type: Contract Modification

Summary Statement: City staff seeks Council consent to issue a contract modification to Trinity Contractors, Inc. in the amount of \$7,800.00, increasing the total contract price to \$366,199.25, to increase the scope of work to include installing a concrete v-gutter between the parking pocket and the drive lane along M Avenue between 12th and 14th Streets as part of the 2018 Asphalt Overlay – Utility and Pedestrian Improvements Project.

Background:

- Reason for Contract Change:** During review of the required pavement repair areas during the design phase of the 2018 Asphalt Overlay project (PW-001-TRN-003) it was discovered that significant repairs to the existing asphalt were required along the paving valley between the parking pocket and the driving lane adjacent to Whitney School. This area is along M Avenue between 12th and 14th Streets. See attached Plan sheet. A more permanent solution to the pavement failure in this area would be to install a concrete v-gutter between the parking pocket and the drive lane.

As the 2018 Asphalt Overlay project included no similar concrete work and as the 2018 Asphalt Overlay Utility and Pedestrian Improvements Project (PW18-001-TRN-001) was under construction in the same area and included significant concrete work, Trinity Contractors, the contractor for the 2018 Asphalt Overlay Utility and Pedestrian Improvements Project, was asked to provide a change order proposal for the v-gutter. The change order proposal was based upon the revised Plan sheet C13 and the new detail sheet D19.
- History:** This project is a capital improvement project in preparation for the 2018 Asphalt Overlay. This portion of M Avenue was selected for the 2018 Asphalt Overlay based on the City Pavement Management Plan. The Utility and Pedestrian Improvements project was bid separately from the Asphalt Overlay project as a strategy to receive more competitive bid prices for both the preparation and overlay project to avoid having to pay a markup. The utility portion of this preparation project is to complete some minor drainage improvements along this corridor to protect the new asphalt. The pedestrian improvements primarily include required Americans with Disabilities Act (ADA) compliance upgrades to curb ramps at intersections.
- Key Terms:** increase of \$7,800.00, no addition to the term of agreement
Competitive Bidding: On February 14, 2018 the City solicited bids for the subject project and on February 27, 2018 a bid opening was conducted and 6 bids were received. The Engineer's estimate for the project was \$362,000.00. Trinity Contractors, Inc was determined to be the lowest responsible bidder.

Previous Council/Committee Action: The [original contract](#) was awarded at the [March 5, 2018](#) Council meeting.

Competing Viewpoints Considered: N/A

Recommended Motion: I move that City Council authorize the Mayor to sign a contract modification with Trinity Contractors, Inc., under Contract 18-001-TRN-001, in the amount of \$7,800.00, increasing the total contract price to \$366,199.25.

Alternative Actions: N/A

Attachments: Contract 18-001-TRN-001 Modification 01

Consultant	Trinity Contractors, Inc.
Original Agreement Amount	\$358,399.25
Current Agreement Amount	\$358,399.25
Change Per this Modification	\$7,800.00
Total After Modification	\$366,199.25
All Mods % of Total Contract Amount	2.13%
Earmarked Funds	<i>Multiple BARS #s, see below:</i>
BARS #	
Overlay	104.720.542.30.41 - \$1,100,000
ADA & Sidewalks	105.720.595.61.63 - \$300,000
Storm	445.770.594.31.60 - \$150,000
Paid on Contract as of 5/14/18	\$112,432.28
Budget Amendment Required?	No
Start Date	3/21/2018
End Date	6/21/2018



**Contract Number 18-001-TRN-001
MODIFICATION 01**

Date May 22, 2018

Page 1 of 1 Pages

Contract No. 18-001-TRN-001

Project Title 2018 Asphalt Overlay – Utility and Pedestrian Improvements

Prime Contractor Trinity Contractors, Inc.

BACKGROUND

In accordance with Provisions 1-04.4 Changes, and 1-05.1 Control of Work as cited in Standard Specifications for Road, Bridge, and Municipal Construction 2018, this modification provides an equitable price adjustment in consideration of changes in Work as described below under Article I. The City directed the Contractor to install a concrete v-gutter between the parking pocket and the drive lane along M Avenue between 12th and 14th Streets. Accordingly, the contract price is increased from \$358,399.25 by \$7,800.00 to \$366,199.25.

Accordingly, the following changes are incorporated under this contract:

ARTICLE I. WORK

Insert the following as *second paragraph* under Article 1:

"The work as described above is hereby amended per Modification 01. The Contractor will install a concrete v-gutter between the parking pocket and the drive lane along M Avenue between 12th and 14th Streets per revised Plan sheet C13 and the new detail sheet D19, which are hereby incorporated by reference and made a part hereof."

ARTICLE IV. CONTRACT PRICE

The last sentence is hereby deleted and replaced with the following:

The total contract price is **Three Hundred Sixty-Six Thousand One Hundred Ninety-Nine Dollars and Twenty-Five Cents (\$366,199.25).**

All other terms of the contract remain unchanged.

CITY OF ANACORTES

TRINITY CONTRACTORS, INC.

By _____
Laurie Gere, Mayor

By _____
Signature

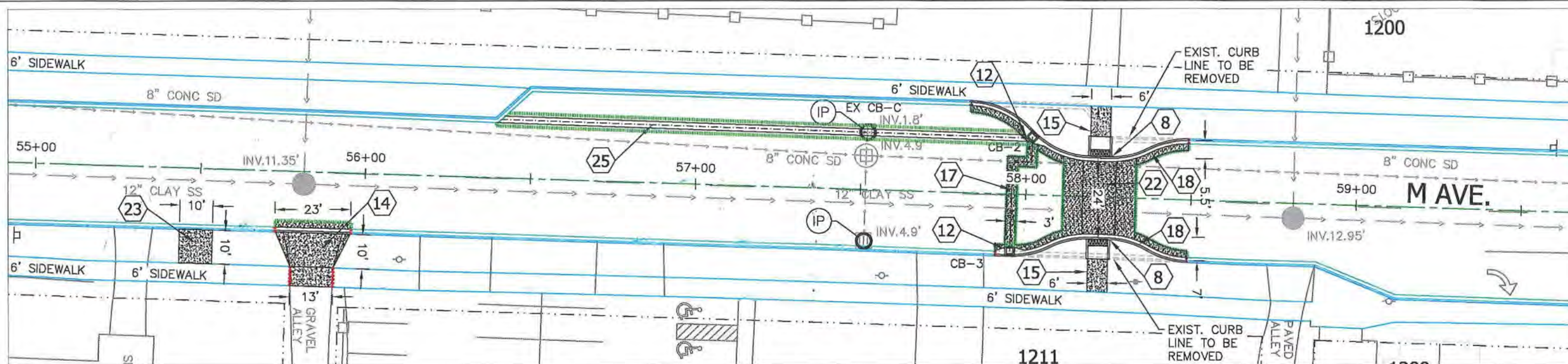
Date _____

Printed Name _____

Title _____

Date _____

Original Agreement Amount	\$358,399.25	Original Contract Completion Date	6/21/2018
Current Agreement Amount	\$358,399.25	Current Contract Completion Date	6/21/2018
Change Per this Modification	\$ 7,800.00	Net Change	0
Total After Modification	\$366,199.25	Contract Completion Date After Change	6/21/2018



PROJECT NOTES:

- 8 REMOVE EXISTING CONCRETE CURB AND GUTTER, REMOVE EXISTING THICKNESS OF ASPHALT (ASSUME 2-INCHES). EXCAVATE EXISTING MATERIAL PER CROSS SECTIONS ON SHEETS D1 AND D17 FOR NEW TYPE PERPENDICULAR B RAMP.
- INSTALL NEW CEMENT CONCRETE TRAFFIC CURB AND GUTTER (WSDOT F-10.12-03).
 - INSTALL NEW CEMENT CONCRETE CURB RAMP TYPE PERPENDICULAR B PER WSDOT STANDARD PLAN F-40.15-03 WITH STAMPED RAMP AND LANDINGS AND WET SET DETECTABLE WARNING DEVICE. SEE DETAIL 1 ON SHEET D14.
 - PATCH PAVEMENT WITH 3" HMA CL. 1/2 INCH PG64-22.
- 12 REMOVE EXISTING CONCRETE CURB AND GUTTER, REMOVE EXISTING THICKNESS OF ASPHALT (ASSUME 2-INCHES). EXCAVATE EXISTING MATERIAL PER CURB AND GUTTER REPLACEMENT DETAIL ON SHEET D17 FOR NEW CATCH BASIN TYPE 1.
- INSTALL NEW CATCH BASIN TYPE 1 PER WSDOT STD. PLAN B-5.20-02 INLINE ON EXISTING 18" CONCRETE PIPE STORM DRAIN LINE.
 - INSTALL NEW CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER WSDOT STD. PLAN F-10.12-03 WITH CATCH BASIN GUTTER PAN PER DETAIL 1 ON SHEET D14 AND PROFILES ON SHEET D15.
 - PATCH PAVEMENT WITH 3" HMA CL. 1/2 INCH PG64-22.

- 14 REMOVE EXISTING CONCRETE CURB AND GUTTER, REMOVE EXISTING CONCRETE SIDEWALK, REMOVE EXISTING THICKNESS OF ASPHALT (ASSUME 2-INCHES). EXCAVATE EXISTING MATERIAL PER DRIVEWAY AND ALLEY APPROACH CROSS SECTION ON SHEET D2 FOR NEW DRIVEWAY ENTRANCE TYPE 3.
- INSTALL NEW CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER WSDOT STD. PLAN F-10.12-03.
 - INSTALL NEW CEMENT CONCRETE DRIVEWAY ENTRANCE TYPE 3 PER WSDOT STD. PLAN B-80.10-04 FOR ALLEY APPROACH.
 - PATCH PAVEMENT WITH 3" HMA CL. 1/2 INCH PG64-22.
- 15 EXCAVATE EXISTING MATERIAL PER SIDEWALK CROSS SECTION DETAIL ON SHEET D1 FOR NEW SIDEWALK.
- INSTALL CEMENT CONCRETE SIDEWALK PER WSDOT STD. PLAN F-30.10-03 AND SIDEWALK CROSS SECTION DETAIL 2 ON SHEET D1.
- 17 REMOVE EXISTING THICKNESS OF ASPHALT (ASSUME 2-INCHES). EXCAVATE EXISTING MATERIAL FOR STORM SEWER PIPE.
- INSTALL 41 LF 8" PVC STORM SEWER PIPE, SLOPE = 0.05%.
 - BACKFILL TRENCH IN ACCORDANCE WITH CITY OF ANACORTES STANDARD DETAIL ST-01 "STREET CUT REPAIR TYPICAL (MODIFIED) ON SHEET D17.
- 18 REMOVE EXISTING CONCRETE CURB AND GUTTER, REMOVE EXISTING THICKNESS OF ASPHALT (ASSUME 2-INCHES). EXCAVATE EXISTING MATERIAL PER CURB AND GUTTER REPLACEMENT DETAIL ON SHEET D17 FOR NEW CURB AND GUTTER BULB OUTS.
- INSTALL NEW CEMENT CONCRETE TRAFFIC CURB AND GUTTER PER WSDOT STD. PLAN F-10.12-03 AND DETAIL ON SHEET D14 AND PROFILES ON SHEET D15.
 - PATCH PAVEMENT WITH 3" HMA CL. 1/2 INCH PG64-22.
 - TOP SOIL AND SOD DISTURBED AREA BEHIND NEW CURB.

- 22 REMOVE EXISTING THICKNESS OF ASPHALT (ASSUME 2-INCHES).
- INSTALL CRUSHED SURFACING TOP COURSE TO REGRADE FOR RAISED CROSS WALK PER PLAN AND PROFILE ON SHEET D14.
 - PLACE 3" HMA CL. 1/2 INCH PG64-22 TO FINISHED GRADE.
- 23 EXCAVATE EXISTING MATERIAL PER SIDEWALK CROSS SECTION DETAIL ON SHEET D1 FOR NEW SIDEWALK AT BUS STOP.
- INSTALL CEMENT CONCRETE SIDEWALK PER WSDOT STD. PLAN F-30.10-03, SIDEWALK CROSS SECTION DETAIL 2 ON SHEET D1.
- 25 EXCAVATE EXISTING MATERIAL PER V-GUTTER CROSS SECTION DETAIL 1 ON SHEET D19 FOR NEW V-GUTTER.
- INSTALL 159 LF OF V-GUTTER PER CROSS SECTION DETAIL 1 ON SHEET D19.

CATCH BASIN TABLE

EX CB-C	CB-2	CB-3
EXISTING TYPE 2 CB	INSTALL TYPE 1 CB WITH	INSTALL TYPE 1 CB WITH
TOP = 47.23	HERRINGBONE GRATE	HERRINGBONE GRATE
IE = 42.33	TOP = 46.64	TOP = 45.64
	IE = 42.68	IE = 42.60

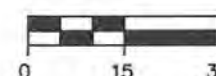
NOTICE TO BIDDERS: IN ACCORDANCE WITH THE ADVERTISED INVITATION TO BID, BIDDERS ARE DIRECTED TO WWW.BXWA.COM TO ENSURE RECEIPT OF ENTIRE SOLICITATION.

PROJECT LEGEND: (TYPICAL ALL SHEETS)

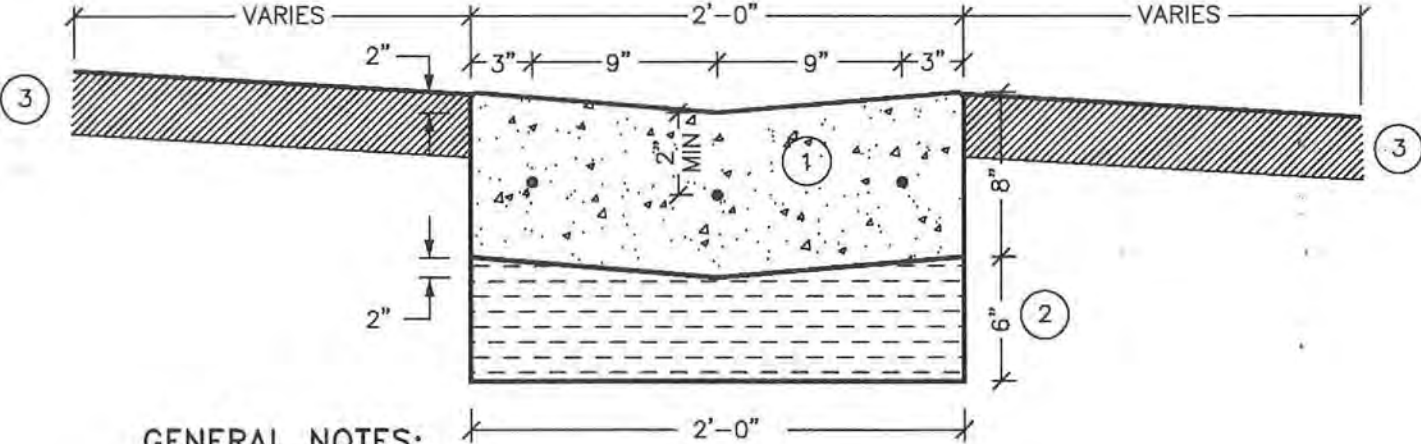
- = PROJECT NOTES
 = INSTALL INLET PROTECTION (PER WSDOT STANDARD PLAN I-40.20-00)
 = SAWCUT ASPHALT
 = SAWCUT CONCRETE



PLAN VIEW
SCALE: 1" = 30'



	1	3-30-2018	TH	ADDED V-GUTTER	PROJECT NUMBER: PW-18-001-TRN-001		CITY OF ANACORTES ENGINEERING DEPARTMENT 904 6TH ST. ANACORTES, WA. 98221 (360) 293-1920	CITY OF ANACORTES 2018 ASPHALT OVERLAY - UTILITY AND PEDESTRIAN IMPROVEMENTS CONTRACT # PW-18-001-TRN-001	DEMOLITION - IMPROVEMENT "M" AVENUE STA 55+00 TO STA 59+50		SHEET: C13 C17 SCALE: 1" = 30'
	2				DATE: 2-07-18						
	3				DRAWN BY: TIM HOHMANN						
	4				CHECKED BY: ERIC SHJARBACK, PE						
	NO:	DATE:	BY:	DESCRIPTION:	DRAWING NAME:						



GENERAL NOTES:

- 1. 6" CLASS 4000 CEMENT CONCRETE CURB
 - THREE (3) #4 CONTINUOUS REBAR
 - 2 LBS LAMP BLACK PER CUBIC YARD
- 2. CRUSHED SURFACING TOP COURSE CONFORMING TO WSDOT 9-03.9(3). COMPACTED TO 95% MAX. DENSITY.
- 3. PATCH WITH 3" HMA CL. 1/2 INCH PG64-22

1
C13

CEMENT CONCRETE V-GUTTER

SCALE: N.T.S.



1			
2			
3			
4			
NO:	DATE:	BY:	DESCRIPTION:

PROJECT NUMBER:	PW-18-001-TRN-001
DATE:	3-30-18
DRAWN BY:	TIM HOHMANN
CHECKED BY:	ERIC SHJARBACK, PE
DRAWING NAME:	2018 ASPHALT OVERLAY - UTILITY AND PED IMP

CITY OF ANACORTES
ENGINEERING DEPARTMENT
904 6TH ST.
ANACORTES, WA. 98221
(360) 293-1920



CITY OF ANACORTES
2018 ASPHALT OVERLAY - UTILITY
AND PEDESTRIAN IMPROVEMENTS
CONTRACT # PW-18-001-TRN-001

PROJECT DETAILS



SHEET:
D19
D19
SCALE:
N.T.S.



City Council Contract Agenda Bill

Meeting Date: 5/21/2018 **Agenda Item:** 5d

Subject: Contract Modification – Downtown Sidewalks - Phase 2 17-028-TRN-004

Staff Contact: Fred Buckenmeyer

Approved for Submittal to Council by:
Darcy Swetnam, City Attorney

Action Type: Contract Modification

Summary Statement: City staff seeks Council consent to issue a contract modification to Larry Brown Construction, Inc. in the amount of \$7,585.05, increasing the total contract price to \$234,103.10, for the increased scope of work to include authorizing the Contractor to rent additional specialized equipment (a stump grinder) to remove the unexpectedly massive and complex tree roots on the 800 block of 5th Street, 6th Street, 7th Street, plus 600 and 700 blocks of R Avenue, as part of the Downtown Sidewalks - Phase 2 Project.

Background:

1. **Reason for Contract Change:** In the process of removing existing sidewalks heaved and damaged by tree roots on the 800 block of 5th Street, 6th Street, 7th Street, plus 600 and 700 blocks of R Avenue, the Contractor encountered root systems and root balls much more massive and complex than was envisioned for the Engineering Estimate of the project. The Contractor then was authorized to rent additional specialized equipment (a stump grinder) to remove the roots.
2. **History:** This project includes, but is not limited to, saw-cutting asphalt and concrete, roadway excavation and hauling, clearing and grubbing, the construction of: sidewalks, ADA ramps, traffic curbs and gutters, pedestrian curbs, detectable warning surfaces, and other work. The project is located in downtown Anacortes, the area generally bounded by 2nd Street, 12th Street, N Avenue, and R Avenue. The City has specific annual budgets for both ADA and sidewalk/trip hazards. This project is partially a follow-up to the Commercial Avenue overlay, to upgrade ADA along paving projects per FHA, and partially a general clean-up of ADA/Trip Hazard issues in the old town area. The work locations for these projects are prioritized based on pedestrian population density.
3. **Key Terms:** increase of \$7,585.05, no addition to the term of agreement
4. **Competitive Bidding:** On 1/31/18 the City solicited bids through the RCW 39.04.155, Small Works Roster Contract Procedures and on 2/13/18 9 bids were received by the deadline. Larry Brown Construction, Inc. was determined to be the lowest responsible bidder.

Previous Council/Committee Action: The original contract was awarded at the February 20, 2018 Council meeting.

Competing Viewpoints Considered: N/A

Recommended Motion: I move that City Council authorize the Mayor to sign a contract modification with Larry Brown Construction, Inc., under Contract 17-028-TRN-004, in the amount of \$7,585.05, increasing the total contract price to \$234,103.10.

Alternative Actions: N/A

Attachments: Contract 17-028-TRN-004 Modification 01

Consultant	Larry Brown Construction, Inc.
Original Agreement Amount	\$226,518.05
Current Agreement Amount	\$226,518.05
Change Per this Modification	\$ 7,585.05
Total After Modification	\$234,103.10
All Mods % of Total Contract Amount	3.24%
Earmarked Funds	\$300,000.00
BARS #	105.720.595.61.63
Paid on Contract as of 5/14/18	\$91,315.86
Budget Amendment Required?	No
Start Date	4/10/2018
End Date	60 working days



Contract Number 17-028-TRN-004
MODIFICATION 01

Date May 22, 2018

Page 1 of 1 Pages

Project Title Downtown Sidewalks - Phase 2

Prime Contractor Larry Brown Construction, Inc.

BACKGROUND

In accordance with Provision 1-04.7 Differing Site Conditions as cited in Standard Specifications for Road, Bridge, and Municipal Construction 2018, this modification provides an equitable price adjustment in consideration of changes in Work as described below under Article I. In the process of removing existing sidewalks heaved and damaged by tree roots on the 800 block of 5th Street, 6th Street, 7th Street, plus 600 and 700 blocks of R Avenue, the Contractor encountered root systems and root balls much more massive and complex than was envisioned for the Engineering Estimate of the project. The Contractor then was authorized to rent additional specialized equipment (a stump grinder) to remove the roots. Accordingly, the contract price is increased from \$226,518.05 by \$7,585.05 to \$234,103.10.

Accordingly, the following changes are incorporated under this contract:

ARTICLE I. WORK

Insert the following as *second paragraph* under Article 1:

"The work as described above is hereby amended per Modification 01. The Contractor will rent additional specialized equipment to remove the massive tree roots on the 800 block of 5th Street, 6th Street, 7th Street, plus 600 and 700 blocks of R Avenue."

ARTICLE IV. CONTRACT PRICE

The last sentence is hereby deleted and replaced with the following:

"Per Modification 01, Exhibit A is hereby amended to include Item 29 – Force Account Roadway Excavation in the amount of \$7,585.05. The total contract price is **Two Hundred Thirty-Four Thousand One Hundred Three Dollars and Ten Cents (\$234,103.10).**"

All other terms of the contract remain unchanged.

CITY OF ANACORTES

By _____

Laurie Gere, Mayor

Date _____

LARRY BROWN CONSTRUCTION, INC.

By _____

Signature

Printed Name _____

Title _____

Date _____

Original Agreement Amount	\$226,518.05	Original Contract Completion Date	4/10/2018
Current Agreement Amount	\$226,518.05	Current Contract Completion Date	4/10/2018
Change Per this Modification	\$ 7,585.05	Net Change	0
Total After Modification	\$234,103.10	Contract Completion Date After Change	60 working days



City Council Contract Agenda Bill

Meeting Date: 5/21/2018 **Agenda Item:** 5e

Subject: Contract Modification – 2018 Waterline Replacement Project 18-004-WTR-001

Staff Contact: Fred Buckenmeyer

Approved for Submittal to Council by:
Darcy Swetnam, City Attorney

Action Type: Contract Modification

Summary Statement: City staff seeks Council consent to issue a contract modification to C. Johnson Construction, Inc. in the amount of \$108,751.71, increasing the total contract price to \$865,887.17, for the increased scope of work to direct the Contractor to install approximately 650 LF of City provided 12" ductile iron water main, make tie-ins to the existing water system, materials to restrain any bends with non-restrained fittings, reconnecting to existing fire hydrants, renew/reconnect existing water services, and other work on Oakes Avenue, as detailed in Engineering Drawings C9, C10, and WN02, as part of the 2018 Waterline Replacement Project. In addition the City is directing the contractor to install interceptor drain on Piper Circle due to ground water infiltration, and install City provided fiber optic conduit inside the water main.

Background:

1. **Reason for Contract Change:** An existing aging waterline located on Oakes Avenue near Baltimore Avenue has failed twice over a four month period; the last break occurred on March 24th of this year. Both breaks resulted in significant property damage. When the waterline was exposed for repair, it became evident that additional failure events are likely if this pipe section is not repaired soon. Because of the imminent threat to public health and safety, the City would like to direct C. Johnson Construction to replace this pipe while they are already mobilized in the area as part of the 2018 Waterline Replacement Project. Therefore, this change provides the labor and equipment necessary to install a new waterline using City supplied materials in order to replace the existing vulnerable portion of the waterline on Oakes Avenue between Baltimore Avenue and A Avenue. In addition, due to ground water infiltration, 250 LF of interceptor drainpipe was required in the new waterline trench on Piper Circle to collect the ground water and redirect it to a nearby catch basin. The fiber conduit installation was required for the City's telemetry system.
2. **History:** The City continues to make ongoing investment in its water system to maintain the integrity of the system and assure the delivery of safe drinking water to the public. This includes the replacement of aging distribution piping before it reaches the point of possible failure. This project was selected not only because of the age of the pipe but also because the pipe is undersized. Computer modeling revealed that with anticipated growth, there may be an issue providing adequate fire flow volumes in the future in the Skyline area if the distribution piping is not replaced with larger diameter pipe. This project is one of several that will be required to reach that goal.
3. **Key Terms:** increase of \$108,751.71 no addition to the term of agreement
4. **Competitive Bidding:** On January 24, 2018 the City solicited bids for the subject project and on February 6, 2018 a bid opening was conducted and 9 bids were received. The Engineer's estimate for the project was \$878,000.00. C. Johnson Construction, Inc. was determined to be the lowest responsible bidder.

Previous Council/Committee Action: The [original contract](#) was awarded at the [February 12, 2018](#) Council meeting.

Competing Viewpoints Considered: N/A

Recommended Motion: I move that City Council authorize the Mayor to sign a contract modification with C. Johnson Construction, Inc., under Contract 18-004-WTR-001, in the amount of \$108,751.71, increasing the total contract price to \$865,887.17.

Alternative Actions: N/A

Attachments: Contract 18-004-WTR-001 Modification 01

Consultant	C. Johnson Construction, Inc.
Original Agreement Amount	\$757,135.46
Current Agreement Amount	\$757,135.46
Change Per this Modification	\$108,751.71
Total After Modification	\$865,887.17
All Mods % of Total Contract Amount	12.56%
Earmarked Funds	\$1,175,000.00
BARS #	401.000.594.34.63
Paid on Contract as of 5/14/18	\$184,442.45
Budget Amendment Required?	No
Start Date	3/19/2018
End Date	7/17/2018



**Contract Number 18-004-WTR-001
MODIFICATION 01**

Date May 22, 2018
Page 1 of 1 Pages

Project Title 2018 Waterline Replacement Project
Prime Contractor C. Johnson Construction, Inc.

BACKGROUND

In accordance with Provisions 1-04.4 Changes, and 1-05.1 Control of Work as cited in Standard Specifications for Road, Bridge, and Municipal Construction 2018, this modification provides an equitable price adjustment in consideration of changes in Work as described below under Article I. The City is directing the Contractor to the install approximately 650 LF of owner provided 12" ductile iron water main, make tie-ins to the existing water system, materials to restrain any bends with non-restrained fittings, reconnecting to existing fire hydrants, renew/reconnect existing water services, and other work on Oakes Avenue, as detailed in Engineering Drawings C9, C10, and WN02. The City will furnish the necessary materials as listed below in Article I. In addition the City is directing the contractor to install interceptor drain on Pipe Circle due to ground water infiltration, and install City provided fiber optic conduit inside the water main. Accordingly, the contract price is increased from \$757,135.46 by \$108,751.71 to \$865,887.17.

Accordingly, the following changes are incorporated under this contract:

ARTICLE I. WORK

Insert the following as *second paragraph* under Article I:

"The work as described above is hereby amended per Modification 01. The Contractor will the install approximately 650 LF of owner provided 12" ductile iron water main, make tie-ins to the existing water system, materials to restrain any bends with non-restrained fittings, reconnecting to existing fire hydrants, renew/reconnect existing water services, and other work, Oakes Avenue, as detailed in Engineering Drawings C9, C10, and WN02. The City will furnish the necessary water pipe, gaskets, tees, valves, valve boxes, restraint fittings, all parts and pipe materials associated with renewing and reconnecting water services, 8-mil poly bagging, and any other necessary parts required for the installation of the 12" ductile iron water main. The Contractor will install 250 LF of interceptor drain on Piper Circle, including 100 SF of asphalt demo and pothole existing utilities. The Contractor will install 2,753 LF of City provided fiber optic conduit inside the water main."

ARTICLE II. PRICE

Delete in its entirety and insert the following:

"**PRICE.** The total contract price is **Eight Hundred Sixty-Five Thousand Eight Hundred Eighty-Seven Dollars and Seventeen Cents (\$865,887.17)**. The Contractor's bid schedule is incorporated by reference and attached hereto as Exhibit A. Per Modification 01, the Contractor's Bid Schedule E for a sum of \$8,303.50, and the Contractor's Bid Schedule F for a sum of \$100,448.21, are incorporated by reference and attached hereto as Exhibit B."

All other terms of the contract remain unchanged.

CITY OF ANACORTES

By _____
Laurie Gere, Mayor

Date _____

C. JOHNSON CONSTRUCTION, INC.

By _____
Signature

Printed Name and Title

Date _____

Original Agreement Amount	<u>\$757,135.46</u>	Original Contract Completion Date	<u>7/17/2018</u>
Current Agreement Amount	<u>\$757,135.46</u>	Current Contract Completion Date	<u>7/17/2018</u>
Change Per this Modification	<u>\$108,751.71</u>	Net Change	<u>0</u>
Total After Modification	<u>\$865,887.17</u>	Contract Completion Date After Change	<u>7/17/2018</u>

**CONTRACT 18-004-WTR-001
EXHIBIT B**

**SCHEDULE E
2018 WATERLINE REPLACEMENT PROJECT**

ITEM NO.	QTY	UNIT OF MEASURE	ITEM DESCRIPTION	UNIT PRICE (Figures)	TOTAL AMOUNT (Figures)
67	1	LS	INSTALL INTERCEPTOR DRAIN ON PIPE CIRCLE	At <u>\$4,300.00</u> Per Lump Sum	<u>\$4,300.00</u>
68	1	LS	INSTALL CITY PROVIDED FIBER OPTIC CONDUIT INSIDE WATER MAIN	At <u>\$3,353.00</u> Per Lump Sum	<u>\$3,353.00</u>
				SUBTOTAL	\$7,653.00
				8.5% Sales Tax	\$ 650.50
				TOTAL	\$8,303.50

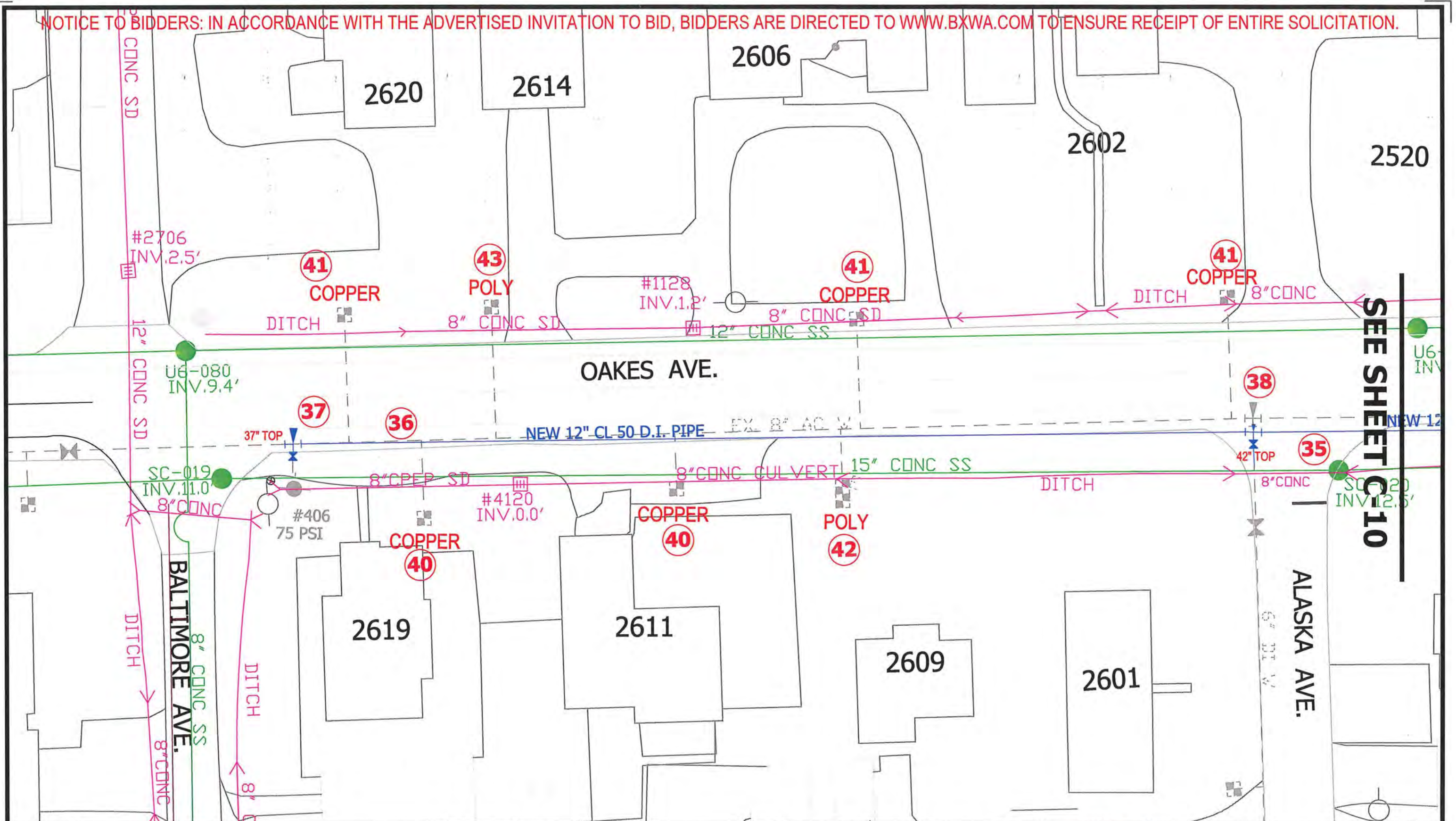
**SCHEDULE F
2018 WATERLINE REPLACEMENT PROJECT
OAKES AVENUE
18-004-WTR-001**

The owner will furnish the necessary water pipe, gaskets, tees, valves, valve boxes, restraint fittings, all parts and pipe materials associated with renewing and reconnecting water services, 8-mil poly bagging, and any other necessary parts required for the installation of the 12" ductile iron water main.

The work provided for this project will include all costs associated with the installation of approximately 650 LF of owner provided 12" ductile iron water main, make tie-ins to the existing water system, materials to restrain any bends with non-restrained fittings, reconnecting to existing fire hydrants, renew/reconnect existing water services, and other work, all in accordance with the attached Contract Plans, these Contract Provisions, and the Standard Specifications.

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
69	Mobilization	1.00	LS	6,330.00	6,330.00
70	Temp. Erosion/Water Pollution Control	1.00	LS	1,350.00	1,350.00
71	Proj. Temp. Traffic control	1.00	LS	17,440.00	17,440.00
72	Sawcutting Asphalt	125.00	LF	4.80	600.00
73	Roadway Excav. W/Haul	500.00	SF	2.80	1,400.00
74	Ductile Iron Pipe CL 50 12-In. Diam.	650.00	LF	39.70	25,805.00
74-1	Conn as per Note 37	1.00	LS	5,890.00	5,890.00
75	Conn as per Note 38	1.00	LS	3,740.00	3,740.00
76	Conn as per Note 39	1.00	LS	5,890.00	5,890.00
77	Reconnect Short Side Note 40	4.00	EA	934.00	3,736.00
78	Reconnect Long Side Note 41	4.00	EA	1,870.00	7,480.00
79	Replace Short Side Note 42	2.00	EA	934.00	1,868.00
80	Replace Long Side Note 43	4.00	EA	2,330.00	9,320.00
81	Asphalt Patching Cold Mix	10.00	TON	173.00	1,730.00
SUB-TOTAL					\$92,579.00
8.5% Sales Tax					\$7,869.21
TOTAL					\$100,448.21

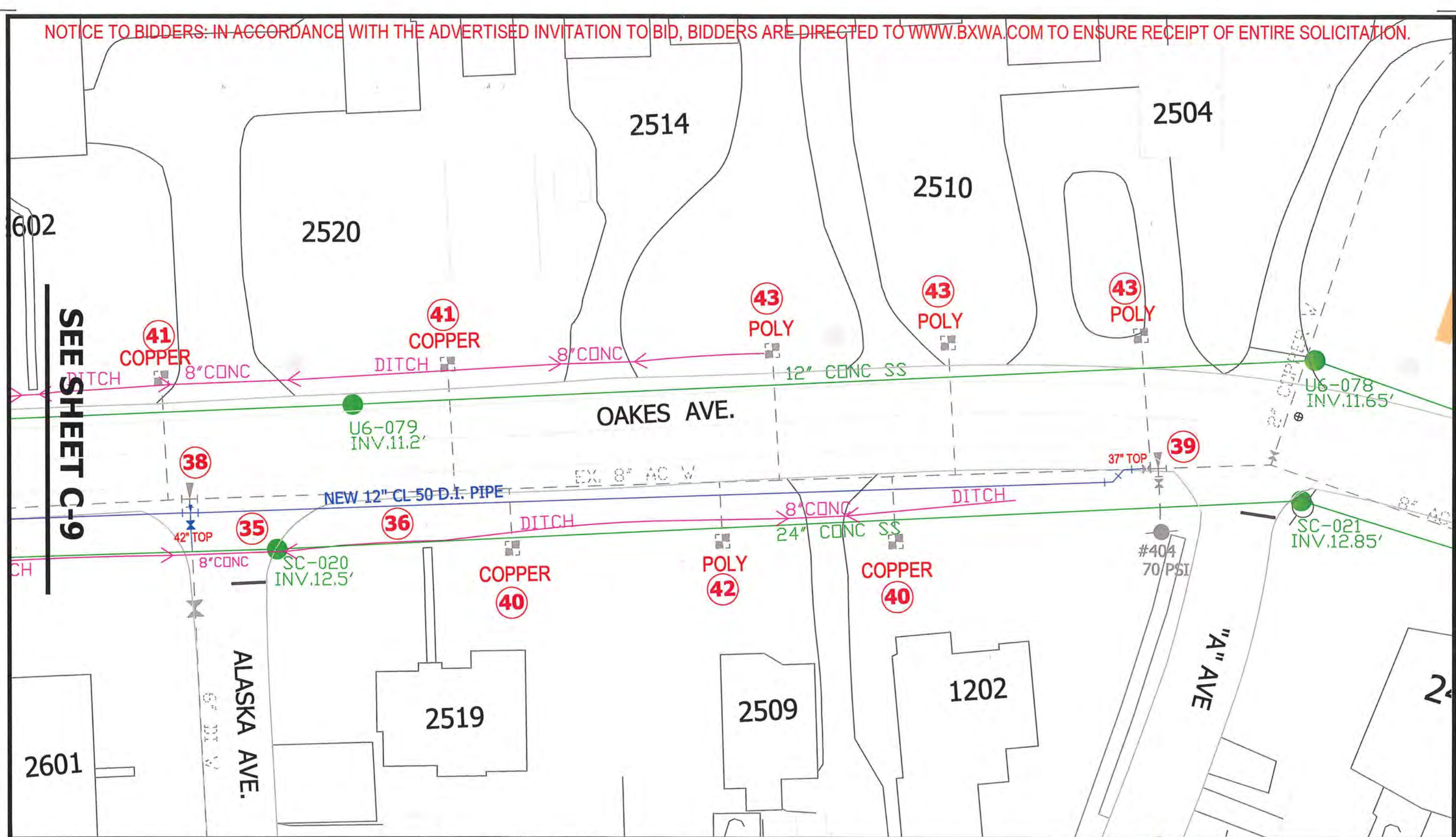
NOTICE TO BIDDERS: IN ACCORDANCE WITH THE ADVERTISED INVITATION TO BID, BIDDERS ARE DIRECTED TO WWW.BXWA.COM TO ENSURE RECEIPT OF ENTIRE SOLICITATION.



SEE SHEET C-10

			PROJECT MANAGER	JEFF BELTRAMINI	CITY OF ANACORTES ENGINEERING DEPARTMENT 904 6TH ST. ANACORTES, WA. 98221 (360) 293-1920	CITY OF ANACORTES 2018 WATERLINE REPLACEMENT PROJECT CONTRACT # PW-18-004-WTR		Oakes Avenue 8-inch Waterline Replacement		
			DESIGNED	JEFF BELTRAMINI						
			DRAWN	JEFF BELTRAMINI						
			CHECKED	MATT REYNOLDS						
ISSUE	DATE	DESCRIPTION	PROJECT NUMBER	PW-18-004-WTR				FILE: 2018WP.DWG	SCALE: 0 15' 30'	SHEET: C-09

NOTICE TO BIDDERS: IN ACCORDANCE WITH THE ADVERTISED INVITATION TO BID, BIDDERS ARE DIRECTED TO WWW.BXWA.COM TO ENSURE RECEIPT OF ENTIRE SOLICITATION.



SEE SHEET C-9

ISSUE	DATE	DESCRIPTION	PROJECT MANAGER	JEFF BELTRAMINI
			DESIGNED	JEFF BELTRAMINI
			DRAWN	JEFF BELTRAMINI
			CHECKED	MATT REYNOLDS
			PROJECT NUMBER	PW-18-004-WTR

CITY OF ANACORTES
ENGINEERING DEPARTMENT
904 6TH ST.
ANACORTES, WA. 98221
(360) 293-1920



CITY OF ANACORTES
2018 WATERLINE
REPLACEMENT PROJECT
CONTRACT # PW-18-004-WTR



Matthew Reynolds
Professional Engineer
Expires: 08/01/2019

Oakes Avenue
8-inch Waterline Replacement

FILE: 2018WP.DWG SCALE: 0 15' 30' SHEET: C-10



City Council Contract Agenda Bill

Meeting Date: 5/21/2018 **Agenda Item:** 5f

Subject: Contract Modification – WTP Chlorine Conversion Project

Staff Contact: Fred Buckenmeyer

Approved for Submittal to Council by:
Darcy Swetnam, City Attorney

Action Type: Contract Modification

Summary Statement: City staff seeks Council consent to issue a contract modification to HDR Engineering, Inc. in the amount of \$120,191.10, increasing the total contract price to \$200,170.43, to increase the scope of work from 50% Design Development to 100% Design Development for Phase 3 of the WTP Chlorine Conversion Project.

Background:

1. **Reason for Contract Change:** Phase 3 is to develop the design of the sodium hypochlorite system to 100% level, prepare the bidding documents, and provide services during bidding. Work includes:
 - Develop the design for the sodium hypochlorite storage and feed system to the 100% level, prepare the bidding documents, and an opinion of probable construction cost.
 - Provide support to the City for the building permit application.
 - Provide technical support to the City during the bidding and award phase for the construction contract.
 - Provide technical support for obtaining disinfection CT credit in the transmission mains as a means of lowering the chlorine dose at the WTP while still meeting disinfection CT compliance requirements.
2. **History:** This is the third of three phases for design and engineering for this project. Phase 1 included establishing design criteria, developing a preliminary plan for installing new chlorination equipment and phasing out the existing gas chlorine system, preparing a project report for submittal to the WA DOH on specifics of the project, and evaluating options for reducing the chlorine dose in treated water applied at the WTP while still meeting disinfection CT (chlorine concentration multiplied by contact time with water) compliance requirements. Phase 2 included developing the design to approximately the 50% level, refining the plan for installation of the new chlorination equipment and phase-out of the gas chlorine system, and determining the regulatory requirements for obtaining disinfection CT credit in the transmission mains as a means of lowering the chlorine dose at the WTP while still meeting disinfection CT compliance requirements.
3. **Key Terms:** increase of \$120,191.10, no addition to the term of agreement
4. **Competitive Bidding:** Per RCW 39.80 this engineering consultant was selected from the City's MRSC Architectural, Landscape Architectural, and Engineering Service Roster to provide a proposal for this scope of work, after which a price was negotiated.

Previous Council/Committee Action: City Council received an overall project update on the project awarded the [original contract](#) on [3/5/18](#). [Modification 01](#) for Phase 2 was approved on [4/16/18](#).

Competing Viewpoints Considered: N/A

Recommended Motion: I move that City Council authorize the Mayor to sign a contract modification with HDR Engineering, Inc., under Contract 18-036-WTR-001, in the amount of \$120,191.10, increasing the total contract price to \$200,170.43.

Alternative Actions: N/A

Attachments: Contract 18-036-WTR-001 Modification 02

Consultant	HDR Engineering, Inc.
Original Agreement Amount	\$ 35,535.33
Modification 1 approved 4/16/18	\$ 44,444.00
Current Agreement Amount	\$ 79,979.33
Change Per this Modification	\$120,191.10
Total After Modification	\$200,170.43
Earmarked Funds	None
BARS #	401.000.594.34.63
Paid on Contract as of 5/15/18	\$0
Budget Amendment Required?	No
Start Date	Inception
End Date	12/31/18



**Contract Number 18-036-WTR-001
MODIFICATION 02**

Date May 22, 2018

Page 1 of 2 Pages

Contract No. **18-036-WTR-001**

Project Title **WTP Chlorine Conversion Project**

Prime Contractor **HDR Engineering, Inc.**

BACKGROUND

This modification increases the scope of work from 50% Design Development to 100% Design Development for Phase 3 of the WTP Chlorine Conversion Project. The contract price will increase from \$79,979.33 by \$120,191.10 to \$200,170.43.

Accordingly, the following changes are incorporated under this contract:

Article 1. Scope of Work

Insert the following third paragraph under Article 1:

"In addition to the services described above, the Consultant shall perform the services described in attached Exhibit C; an Exhibit under Modification 02 which is hereby incorporated by reference and made a part hereof."

Article 2. Price

Delete in its entirety and insert the following:

"The work performed under this Agreement shall be performed on a time-and-materials (T&M) basis. The not-to-exceed price for this Contract is **Two Hundred Thousand One Hundred Seventy Dollars and Forty-Three Dollars (\$200,170.43)**. This price reflects an original contract price of \$35,535.33 as detailed in Exhibit A, a price of \$44,444.00 for Modification 01 and as detailed in Exhibit B, and a price of \$120,191.10 for Modification 02 and as detailed in Exhibit C."

All other terms of the contract remain unchanged.

CITY OF ANACORTES

HDR ENGINEERING, INC.

By _____
Laurie Gere, Mayor

By _____
Signature

Date _____

Printed Name _____

Title _____

Date _____

Original Agreement Amount	\$ 35,535.33	Original Contract Completion Date	12/31/18
Current Agreement Amount	\$ 79,979.33	Current Contract Completion Date	12/31/18
Change Per this Modification	\$120,191.10	Net Change	0 Days
Total After Modification	\$200,170.43	Contract Completion Date After Change	12/31/18

**COA CONTRACT 18-036-WTR-001
EXHIBIT C**

**City of Anacortes – Water Treatment Plant Improvements Project
Scope of Services**

**WTP Chlorine System Conversion Project - 100% Design
Development**

Background

The City intends to replace the existing gas chlorine system at the water treatment plant (WTP) with a bulk sodium hypochlorite solution system to eliminate the potential health and safety risks associated with unintended releases of gas chlorine.

Preliminary engineering for replacing the gas chlorine system with a sodium hypochlorite system was completed in Task 120. A Project Report and Basis of Design was prepared and submitted to the Washington State Department of Health (DOH) for review. The design was developed to the 50% level in Task 130 as part of Modification #2 to the contract.

The purpose of Exhibit C is to develop the design of the sodium hypochlorite system to the 100% level, prepare the bidding documents, and provide services during bidding.

Objectives

1. Develop the design for the sodium hypochlorite storage and feed system to the 100% level, prepare the bidding documents, and an opinion of probable construction cost.
2. Provide support to the City for the building permit application.
3. Provide technical support to the City during the bidding and award phase for the construction contract.
4. Provide technical support for obtaining disinfection CT credit in the transmission mains as a means of lowering the chlorine dose at the WTP while still meeting disinfection CT compliance requirements.

HDR Services

- Develop the design for the sodium hypochlorite storage and feed system to include design drawings for:
 - General. (Assume 7 drawings.)
 - Civil. (Assume 4 drawings.)
 - Process mechanical. (Assume up to 8 drawings.)
 - Structural. (Assume 5 drawings.)
 - Plumbing mechanical. (Assume 3 drawings.)
 - Fire protection. (Assume 1 drawing.)
 - Electrical. (Assume 7 drawings.)
 - Instrumentation and control. (Assume 8 drawings.)
 - Demolition. (Assume 3 drawings.)
- Prepare all specification sections that will be needed for the bidding and construction documents.
- Prepare for and conduct a 90% design review workshop meeting with the City.
- Prepare the building permit application package for submittal to Skagit County.
- Prepare the Opinion of Probable Construction Cost (OPCC) based on the 90% design.
- Work with DOH and the City to establish acceptable methods for using a portion of the transmission mains from the WTP for additional CT credits for meeting disinfection CT compliance requirements. The segments of the transmission mains that can be used for CT credit will be based on the information included in the "Drinking Water Supply CT Compliance Plan" (HDR, April 2014). Document the acceptable CT credit methods in a letter report.

City Responsibilities

- Provide information to HDR on existing facilities and operations that impact the design of the new hypochlorite system, as requested.
- Review and comment on the 90% design.
- Submit the building permit application to Skagit County.
- Administration of the bidding phase.

Assumptions

- Design development will be based on the assumptions and basis of design requirements described in the Project Report and Basis of Design document and the 50% design development.
- The City's comments on the 90% design package will be addressed and incorporated into the 100% (bid-ready) design drawings and specifications.
- Construction phase services will be performed under a separate, fourth contract amendment.

Deliverables

- Drawings reflecting the 100% design level. (PDF format)
- Specifications and bidding forms. (PDF format)
- OPCC. (PDF format)
- Building permit application package. (PDF format)
- Letter report describing compliance methods for obtaining CT credit in the transmission mains. (MS Word format)

Fee Estimate

The fee estimate for the scope of services described above is shown in the table below.

Task	Labor	Expenses	Total
110 – Project Management and QA/QC	\$8083.70	\$694.90	\$8778.60
120 – Preliminary Engineering	-	-	-
130 – 50% Design	-	-	-
140 – Final Design	\$102,194.52	\$2803.95	\$104,998.47
150 – Services During Bidding	\$6163.08	\$250.95	\$6414.03
Total Estimated Fee			\$120,191.10

Schedule

The schedule for project milestones is as follows:

- Project Report.....Submitted March 14, 2018
- 50% Design Submittal.....Submitted April 20, 2018
- 90% Drawings and Specifications and OPCC.....May 18, 2018
- County Building Permit Approval.....June 29, 2018
- DOH Construction Documents Approval.....June 29, 2018
- 100% Bid-Ready Documents.....July 16, 2018
- Bids Opened.....August 15, 2018



City Council Contract Agenda Bill

Meeting Date: 5/21/2018 **Agenda Item:** 5g

Subject: Contract Modification – Update Zoning, Development and Design Standards
16-081-IDS-001

Staff Contact: Don Measamer

Approved for Submittal to Council by:
Darcy Swetham, City Attorney

Action Type: Contract Modification

Summary Statement: City staff seeks Council consent to issue a contract modification to Makers Architecture and Urban Design LLP in the amount of \$54,040.00, increasing the total contract price to \$183,040.00, to increase the scope of work based on adjustments to the project timeline, scope increases during the initial draft development, and recent feedback from the Planning Commission and City Council members, a modification to the contract with MAKERS is required so that adequate resources are available to assist decision-makers during the remaining code review and adoption process.

Background:

1. **Reason for Contract Change:** Following are some reasons for the need for a modification:
 - At the May 9, 2018 meeting, Planning Commission and City Council members indicated a desire for additional research, case studies and graphics to aid in decision-making – this will require an increase in the level of effort.
 - The original contract included 1 full workshop and 1 topical workshop. Per Planning Commission and City Council request, the full workshop was split into 2 (1 with a residential focus, and the other with a commercial focus), which resulted in an increase in overall level of effort.
 - MAKERS assisted with the expedited drafting and adoption of the Affordable Housing Demonstration Program development regulation amendments.
 - Over 40 written public comments have been submitted to date. Several of the comment letters consist of the entire 1st draft document and over 500 individual comments inserted throughout. Recording, evaluation of, and responding to comments has resulted in consuming more time than anticipated.
2. **History:** Since project commencement in 2016, MAKERS have been assisting the City with proposed updates to the development regulations. Recently, the 2nd draft of the proposed regulations was released. A joint public meeting introducing the 2nd draft was held on May 9, 2018.
3. **Key Terms:** increase of \$54,040.00, no addition to the term of agreement
4. **Competitive Bidding:** Per RCW 39.80 this architectural consultant was selected from the City's MRSC Architectural, Landscape Architectural, and Engineering Service Roster to provide a proposal for this scope of work, after which a price was negotiated.

Previous Council/Committee Action: During an [October 3, 2016](#) meeting City Council approved of the [original services proposed](#), and awarded the [original contract](#) on [October 17, 2016](#). [Modification 01](#) to extend the end date with no cost increase was fully executed on January 2, 2018.

Competing Viewpoints Considered: N/A

Recommended Motion: I move that City Council authorize the Mayor to sign a contract modification with Makers Architecture and Urban Design LLP, under Contract 16-081-IDS-001, in the amount of \$54,040.00, increasing the total contract price to \$183,040.00.

Alternative Actions: N/A

Attachments: Contract 16-081-IDS-001 Modification 02

Consultant	Makers Architecture and Urban Design LLP
Original Agreement Amount	\$129,000.00
Current Agreement Amount	\$129,000.00
Change Per this Modification	\$ 54,040.00
Total After Modification	\$183,040.00
Earmarked Funds	None
BARS #	001.240.558.60.41
Paid on Contract as of 5/14/18	\$114,181.54
Budget Amendment Required?	Yes
Revenue Source	General Fund
Start Date	Inception
End Date	12/31/18



**Contract Number 16-082-IDS-001
MODIFICATION 02**

Date May 22, 2018

Page 1 of 1 Pages

Contract No. 16-081-IDS-001

Project Title Update Zoning, Development and Design Standards

Prime Contractor Makers Architecture and Urban Design LLP

BACKGROUND

In accordance with General Provisions Article 17 – Changes/Additional Work, the Owner is directing changes to the work. Based on adjustments to the project timeline, scope increases during the initial draft development, and recent feedback from the Planning Commission and City Council members, a modification to the contract with MAKERS is required so that adequate resources are available to assist decision-makers during the remaining code review and adoption process. Accordingly, the contract price is increased from \$129,000.00 by \$54,040.00 to \$183,040.00.

Accordingly, the following changes are incorporated under this contract:

Article 1. Scope of Work, insert the following second paragraph:

"In addition to the services described above, the Consultant shall perform the services described in attached Exhibit B; an Exhibit under Modification 02 which is hereby incorporated by reference and made a part hereof."

Article 2. Price, delete in its entirety and insert the following:

"The work performed under this Agreement shall be performed on a time-and-materials (T&M) basis. The not-to-exceed price for this Contract is **One Hundred Eighty-Three Thousand Forty Dollars (\$183,040.00)**. This price reflects an increase of \$54,040.00 from the original contract price of \$129,000.00 which is based upon the pricing information provided under attached Exhibit B which is hereby incorporated by reference."

All other terms of the contract remain unchanged.

CITY OF ANACORTES

MAKERS ARCHITECTURE AND URBAN DESIGN LLP

By _____
Laurie Gere, Mayor

By _____
Signature

Date _____

Printed Name _____

Title _____

Date _____

Original Agreement Amount	\$129,000.00	Original Contract Completion Date	12/31/17
Current Agreement Amount	\$129,000.00	Current Contract Completion Date	12/31/18
Change Per this Modification	\$ 54,040.00	Net Change	0
Total After Modification	\$183,040.00	Contract Completion Date After Change	12/31/18

COA CONTRACT 16-082-IDS-001
EXHIBIT B



Anacortes Unified Development Code

Scope of Work Amendment

Per adjustments in the timeline and scope increases in development of the first two code drafts, below are descriptions of additional tasks and a budget for MAKERS to assist staff in finalizing the development code

Supplemental Tasks

1. Complete first draft comment matrix.

MAKERS collaborated with staff in reviewing public comments on the first draft and making strategic edits to the draft in response to those comments. MAKERS developed a comment matrix that organized comments by section, division, and article. Team members have started to add responses to each of the comments (in many cases noting that the code has been updated in response to comments), but suspended the effort to focus on completing the second draft by April 27. This task includes coordinating with staff in completing responses to all comments in the matrix.

Deliverable: Completed comment matrix to be sent to all commenters and published on the City's website.

2. Planning Commission review and updated draft.

MAKERS will collaborate with staff following the May 9 meeting and attend up to three Planning Commission review meetings. MAKERS will assist staff in preparing for those three Planning Commission meetings and additional staff-led Planning Commission meetings. Also, MAKERS will collaborate with staff in making edits to draft consistent with the Planning Commission's recommendations and making other necessary code edits and refinements for internal document consistency.

Staff check-in conference calls will occur on an as-needed basis.

Deliverable: Planning Commission recommended draft code.

3. Assist staff in preparing requested summary reports, case studies, and various research on code items.

On an "as requested" basis, MAKERS will assist staff in preparing summary reports, conducting code research, and providing/developing case study examples to illustrate how the code works. Summary reports, at a minimum, will include a summary matrix examining how the code implements the adopted comprehensive plan's goals and policies and a listing of proposed departures.

Deliverable: Requested summary reports, research materials, and case study graphics and text.

4. Complete second draft comment matrix.

MAKERS will collaborate with staff in reviewing public comments on the second draft and suggest edits to the Planning Commission for consideration. MAKERS will add comments to the a new matrix for this draft and add responses coordinated with staff.

Deliverable: Completed second draft comment matrix to be sent to all commenters and published on the City's website.

5. City Council adoption assistance.

MAKERS will collaborate with staff as needed during City Council's review of the draft. This task includes attendance at one meeting.

Deliverable: Meeting presentations materials.

6. Final code edits.

MAKERS will collaborate with staff in making final code edits per City Council's adoption to ready the document for publishing.

Deliverable: Final adopted code ready for publishing.

Supplemental Budget

Supplemental Task	HOURS		AMOUNT
	Bob \$185	Scott \$95	
1.Complete first draft comment matrix	8		\$1,480.00
2. Planning Commission review and updated draft	80	50	\$19,550.00
3. Assist staff in preparing requested summary reports, case studies, and various research on code items	80	80	\$22,400.00
4. Complete second draft comment matrix	12	6	\$2,790.00
5. Adoption assistance	14	4	\$2,970.00
6. Final code edits	18	16	\$4,850.00
TOTAL HOURS	212	156	\$54,040.00
Travel: (=\$120/anticipated trip x 6 trips)			\$720.00
TOTAL			\$54,760.00

Anacortes Historic Preservation Board



2017/18 Annual Report to City Council

May 2018

AHPB 2017/18

Bob Ross, Chair

Ken Hansen, Vice Chair

Bunny Heiner, Recorder (new member !)

Gunnar Christiansen

Mark Nihart (new member !)

May is National Historic Preservation month



MAY IS PRESERVATION MONTH

Celebrate with
#ThisPlaceMatters



GETTING THE FUTURE RIGHT

The Washington State Historic Preservation Plan: 2014 - 2019

www.dahp.wa.gov



Anacortes Historic Preservation Board



Anacortes Museum exhibit, “At Home In Anacortes”

continues through summer 2018

***This exhibit showcases our community’s
residential architectural styles.***



Anacortes Historic Preservation Board



Agenda

- ***Historic Preservation Board Duties***
- ***2017 / 2018 Board Issues & Projects***
 - ***Expansion of Historic House Inventory***
 - ***Preservation of key historic resources***
 - ***Residential & Commercial design standards***
 - ***Demolition permit review procedure***
- ***House History Awards***
 - ***Dick & Daphne Storwick***
- ***Historic Preservation Awards***
 - ***Steve Oakley***
 - ***Diane Wilkenson***

AHPB Duties

- ***Maintain the Anacortes Register of Historic Places & Historic Inventory***
- ***Review proposals to remodel or demolish properties on the register***
- ***Serve as the local review board for Special Valuation***
- ***Advise the City on matters of historic preservation***
- ***Provide information about preservation incentives***
- ***+ more***



Anacortes Historic Preservation Board



AHPB Duties

- ***Maintain the Anacortes Register of Historic Places & Historic Inventory***
- ***Provide information about preservation incentives***

Completed House Histories

1213 10th Street

1219 10th Street

1319 6th Street

1313 6th Street

1506 12th Street

1514 12th Street:

1411 8th Street

street



The house history workshop had an enthusiastic attendance of nearly 30 property owners.



Anacortes Historic Preservation Board



AHPB Duties

- ***Maintain the Anacortes Register of Historic Places & Historic Inventory***
- ***Expand the inventory of historic houses & buildings***

Identification of historic buildings requires professional input & matching funds or equivalent volunteer hours

Washington State Dept. of Archeology & Historic Preservation grants were not available due to state budget impasse

Completed House Histories



Completed House Histories

Anacortes Historic Preservation Board



AHPB Duties

- *Advise the City on matters of historic preservation*
- *Collaborate with the City, Port & other agencies on matters impacting historic resources*

ANACORTES
Comprehensive Plan 2016



July, 2016



Anacortes Historic Preservation Board



AHPB Duties

- *Review proposals to remodel or demolish properties*



Anacortes Historic Preservation Board



AHPB Duties

- **Review proposals to remodel or demolish properties**
- **Suggest revisions or updates to Demolition Permit process**

Informational handout / pamphlet

Modest fee allocated to historic preservation fund

- ☐ If the building is 50 or more years old, provide evidence that the Department of Archaeology and Historic Preservation (DAHP) has determined the building insignificant/significant. If the building is determined to be significant, a SEPA review may be required.



**CITY OF ANACORTES
DEMOLITION PERMIT APPLICATION**

Site Address: _____ Date: _____
 Assessors Account No.: _____ Block: _____ Addition: _____
 Lot(s): _____
 Owners Name: _____ Contractors Name: _____
 Address: _____ Address: _____
 State: _____ Zip: _____
 Phone: _____ Contractors License: _____
 Phone: _____
 Description of proposed demolition: _____
 Have Utilities Been Disconnected?
 Water Dept: Yes No
 Electric: Yes No
 Gas: Yes No

PLANNING, COMMUNITY, & ECONOMIC DEVELOPMENT
DEMOLITION & OIL TANK DECOMMISSIONING
 Mailing Address: P.O. Box 547, Anacortes, WA 98221
 Office Location: 904 9th Street, Anacortes WA 98221
 Phone: (360) 293-1901, Fax: (360) 293-1938

PLEASE REFER TO THE PERMIT CHECKLIST THAT FOLLOWS FOR SUBMITTAL REQUIREMENTS

BUILDING DEMOLITION: ☐ N/A ☐ COMPLETE BUILDING DEMOLITION
☐ PARTIAL DEMOLITION ☐ RESIDENTIAL ☐ COMMERCIAL
☐ FLOOR AREA TO BE DEMOLISHED: _____ METHOD OF DISPOSAL: _____
☐ REMOVAL

UNDERGROUND OIL TANK DECOMMISSIONING: ☐ N/A ☐ REMOVAL
☐ ABANDONMENT IN PLACE (FIRE DEPT. APPROVAL REQ.) ☐ SIZE OF TANK: _____
☐ APPROXIMATE AGE OF TANK: _____ ☐ DISPOSAL LOCATION: _____
☐ DATE OF PUMP & RINSE: _____ ☐ ICC CERT #: _____
☐ IF ABANDONED, SPECIFY TYPE OF INERT FILL: _____

PROJECT ADDRESS (Street, Suite #): _____ **PARCELS:**
 Address: _____ Phone: _____
 E-Mail Address: _____
 Address: _____ Phone: _____
 E-Mail Address: _____
 Address: _____ Phone: _____
 E-Mail Address: _____

APPLICANT:
 Address (Street, City, State, Zip): _____
PROPERTY OWNER:
 Address (Street, City, State, Zip): _____
CONTRACTOR / DECOMMISSIONER'S FIRM NAME:
 Address (Street, City, State, Zip): _____
 Phone: _____
 E-Mail Address: _____

Anacortes Historic Preservation Board



AHPB House History Awards

Awarded to Dick & Daphne Storwick

***for their research & documentation at
1510 9th St Thornburg House &
1914 9th St Byron House***



Anacortes Historic Preservation Board



AHPB Historic Preservation Awards

Awarded to

Diane Wilkenson, former AHPB member

& Steve Oakley, former Anacortes Museum Director

Anacortes Historic Preservation Board





5309 Shilshole Avenue NW
Suite 200
Seattle, WA 98107
206.789.9658 phone
206.789.9684 fax

www.esassoc.com

memorandum

date October 15, 2015

to Connie Reckord, MacLeod Reckord

from Jessica Redman and Scott Olmsted

subject Guemes Channel Trail - Wetland Delineation, Anacortes, Washington

Phase 2 of the Guemes Channel Trail in Anacortes, Washington will be an off-road shared use path on city-owned property at Ship Harbor Channel. This Phase will extend the existing shoreline trail approximately 2,740 linear feet between the current end of the Phase 1 Trail and State Road 20 Spur or the east end of Washington Park. At the request of MacLeod Reckord, ESA biologists conducted wetland and stream delineations along the Phase 2 corridor. The field site visit took place on October 13, 2015; this memo describes the preliminary findings.

The site is characterized by one large freshwater wetland (Wetland A). The City of Anacortes refers to this wetland as the Ship Harbor Wetland. The Ship Harbor Wetland is documented in the City's Shoreline Master Program. No streams or other wetlands were observed during the site investigation. Due to the planned position of the proposed trail to the south side of the wetland, the northern boundary of Wetland A was not delineated.

Wetland A appears to have had an historical tidal influence. Overtime, coastal processes have deposited sediment along the seaward edge of the wetland, cutting off saltwater intrusion and creating a sandy upland "berm." Based on the current vegetation community and hydrology, it is believed that if present, saltwater is minimal and the wetland is now classified as a freshwater depressional wetland with no outlet. Hydrologic inputs appear to be groundwater, precipitation, and surface and sub-surface flow from the surrounding hillsides. Wetland A displays palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO) classes.

Wetland A contains a large, permanently flooded PEM class at its center, dominated by cattail (*Typha latifolia*), and interspersed with small areas of open water. Other emergent species are present, including hardstem bulrush (*Schoenoplectus acutus*) and slough sedge (*Carex obnupta*), located primarily along the outer edges of the flooded portion of wetland. The PSS class is present along the southern edge and southeast corner of the wetland. This class is seasonally flooded or saturated and is dominated by salmonberry (*Rubus spectabilis*). Soils in the PEM and PSS portions of the wetland were typically a loamy mucky mineral, displaying a high water table and a hydrogen sulfide odor.

The PFO component of Wetland A is located along its southern and eastern edges, is seasonally flooded and/or saturated, and is dominated by red alder with a few large western red cedars (*Thuja plicata*). A sub-canopy of salmonberry is often present. Small depressions of permanent and seasonal ponding occur supporting emergent species such as slough sedge and swamp cabbage (*Lysichiton americanus*). The majority of soils in the forested portion of the wetland are a sandy loam with a depleted layer in lower portions of the soil profile. These soils met the criteria for hydric (i.e., wetland) soils and were saturated to the surface.

According to the City of Anacortes Shoreline Master Program (SMP) and the Department of Ecology, wetlands contiguous with the shoreline and influenced by the waterbody are included in the shoreline jurisdiction. The SMP states that in general, “a wetland is “associated” if all or a portion of the wetland falls within that area that is 200 feet from the ordinary high water mark (Anacortes SMP 2.3.D).” Wetland A is under shoreline jurisdiction because portions of its northern boundary are within 200 feet of the designated shoreline. The Ship Harbor wetland is designed as Reach 11 in the City’s SMP.

Per the Anacortes SMP A-4.6.B, ESA rated Wetland A using the Washington State Wetland Rating System for Western Washington (Ecology Publication no. 14-06-029). The wetland scored a total of 23 points making it a Category I wetland (see attached). The wetland holds a high potential (8 points) to improve water quality due to its largely inundated and vegetated areas, as well as its lack of an outlet. The wetland also exhibits a high potential (9 points) to reduce flooding due to its large area of deep ponding, the ratio of its size to the size of its contributing basin, and its proximity to intensive human land use. The wetland scored a moderate (6 points) habitat potential due to its multiple Cowardin classes, hydroperiods, and habitat features. However, due to the high intensity of land use surrounding the site, the landscape has a low potential of supporting the habitat function of the wetland.

According to A-4.8.F.1 of the SMP, Category I wetlands with a moderate level of habitat function are protected with a standard buffer of 110 feet. The trail design team should consider the extent of wetland buffer areas, as well as SMP regulations, which may affect project permitting as they refine the trail alignment. The Guemes Channel Trail is listed specifically in the SMP as a planned public access and trail feature along the marine shoreline within the City of Anacortes.

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A (Guemes Island Trail) Date of site visit: 10/13/2015

Rated by J. Redman Trained by Ecology? ☒ Yes ☐ No Date of training Mar-15

HGM Class used for rating Depressional & Flats Wetland has multiple HGM classes? ☐ Yes ☒ No

NOTE: Form is not complete with out the figures requested (figures can be combined).
Source of base aerial photo/map Google Earth

OVERALL WETLAND CATEGORY I (based on functions ☒ or special characteristics ☒)

1. Category of wetland based on FUNCTIONS

- ☒ Category I - Total score = 23 - 27
- ☐ Category II - Total score = 20 - 22
- ☐ Category III - Total score = 16 - 19
- ☐ Category IV - Total score = 9 - 15

FUNCTION	Improving Water Quality	Hydrologic	Habitat	
List appropriate rating (H, M, L)				
Site Potential	H	H	M	
Landscape Potential	M	H	L	
Value	H	H	H	Total
Score Based on Ratings	8	9	6	23

Score for each function based on three ratings
(order of ratings is not important)

9 = H, H, H
8 = H, H, M
7 = H, H, L
7 = H, M, M
6 = H, M, L
6 = M, M, M
5 = H, L, L
5 = M, M, L
4 = M, L, L
3 = L, L, L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	Category
Estuarine	
Wetland of High Conservation Value	I
Bog	
Mature Forest	
Old Growth Forest	
Coastal Lagoon	
Interdunal	
None of the above	

Maps and Figures required to answer questions correctly for
Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (<i>can be added to map of hydroperiods</i>)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	R 2.4	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of unit vs. width of stream (<i>can be added to another figure</i>)	R 4.1	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (<i>can be added to another figure</i>)	S 4.1	
Boundary of area within 150 ft of the wetland (<i>can be added to another figure</i>)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

HGM Classification of Wetland in Western Washington

For questions 1 -7, the criteria described must apply to the entire unit being rated.
If hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1 - 7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

☒ NO - go to 2

☐ **YES** - the wetland class is **Tidal Fringe** - go to 1.1
- 1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

☐ **NO - Saltwater Tidal Fringe (Estuarine)**
*If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.*

☐ **YES - Freshwater Tidal Fringe**
2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it.
Groundwater and surface water runoff are NOT sources of water to the unit.

☒ NO - go to 3
*If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.*

☐ **YES** - The wetland class is **Flats**
3. Does the entire wetland unit **meet all** of the following criteria?

☐ The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size;

☐ At least 30% of the open water area is deeper than 6.6 ft (2 m).

☒ NO - go to 4

☐ **YES** - The wetland class is **Lake Fringe** (Lacustrine Fringe)
4. Does the entire wetland unit **meet all** of the following criteria?

☐ The wetland is on a slope (*slope can be very gradual*),

☐ The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.

☐ The water leaves the wetland **without being impounded**.

☐ NO - go to 5

☒ **YES** - The wetland class is **Slope**
- NOTE:** Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).
5. Does the entire wetland unit **meet all** of the following criteria?

☐ The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,

☐ The overbank flooding occurs at least once every 2 years.

☒ NO - go to 6

☐ **YES** - The wetland class is **Riverine**

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? *This means that any outlet, if present, is higher than the interior of the wetland.*

- ☐ NO - go to 7
- ☒ **YES** - The wetland class is **Depressional**

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.

- ☒ NO - go to 8
- ☐ **YES** - The wetland class is **Depressional**

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. **GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN QUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT** (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream within boundary of depression	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other class of freshwater wetland	Treat as ESTUARINE

*If you are still unable to determine which of the above criteria apply to your wetland, or if you have **more than 2 HGM classes** within a wetland boundary, classify the wetland as Depressional for the rating.*

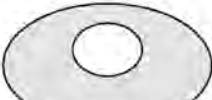
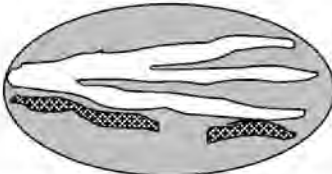
NOTES and FIELD OBSERVATIONS:

DEPRESSIONAL AND FLATS WETLANDS		
Water Quality Functions - Indicators that the site functions to improve water quality		
D 1.0. Does the site have the potential to improve water quality?		
D 1.1. Characteristics of surface water outflows from the wetland: Wetland is a depression or flat depression (QUESTION 7 on key) with no surface water leaving it (no outlet). Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet. ☐ Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing ☐ Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch.		points = 3 points = 2 points = 1 points = 1 3
D 1.2. The soil 2 in below the surface (or duff layer) is true clay or true organic (use NRCS definitions). Yes = 4 No = 0		4
D 1.3. Characteristics and distribution of persistent plants (Emergent, Scrub-shrub, and/or Forested Cowardin classes): Wetland has persistent, ungrazed, plants > 95% of area Wetland has persistent, ungrazed, plants > ½ of area Wetland has persistent, ungrazed plants > 1/10 of area Wetland has persistent, ungrazed plants < 1/10 of area		points = 5 points = 3 points = 1 points = 0 5
D 1.4. Characteristics of seasonal ponding or inundation: This is the area that is ponded for at least 2 months. See description in manual. Area seasonally ponded is > ½ total area of wetland Area seasonally ponded is > ¼ total area of wetland Area seasonally ponded is < ¼ total area of wetland		points = 4 points = 2 points = 0 4
Total for D 1 Add the points in the boxes above		16
Rating of Site Potential If score is: ☒ 12 - 16 = H ☐ 6 - 11 = M ☐ 0 - 5 = L Record the rating on the first page		

D 2.0. Does the landscape have the potential to support the water quality function of the site?		
D 2.1. Does the wetland unit receive stormwater discharges? Yes = 1 No = 0		1
D 2.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0		1
D 2.3. Are there septic systems within 250 ft of the wetland? Yes = 1 No = 0		0
D 2.4. Are there other sources of pollutants coming into the wetland that are not listed in questions D 2.1 - D 2.3? Source Yes = 1 No = 0		0
Total for D 2 Add the points in the boxes above		2
Rating of Landscape Potential If score is: ☐ 3 or 4 = H ☒ 1 or 2 = M ☐ 0 = L Record the rating on the first page		

D 3.0. Is the water quality improvement provided by the site valuable to society?		
D 3.1. Does the wetland discharge directly (i.e., within 1 mi) to a stream, river, lake, or marine water that is on the 303(d) list? Yes = 1 No = 0		0
D 3.2. Is the wetland in a basin or sub-basin where an aquatic resource is on the 303(d) list? Yes = 1 No = 0		1
D 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer YES if there is a TMDL for the basin in which the unit is found)? Yes = 2 No = 0		2
Total for D 3 Add the points in the boxes above		3
Rating of Value If score is: ☒ 2 - 4 = H ☐ 1 = M ☒ 0 = L Record the rating on the first page		

DEPRESSIONAL AND FLATS WETLANDS		
Hydrologic Functions - Indicators that the site functions to reduce flooding and stream degradation		
D 4.0. Does the site have the potential to reduce flooding and erosion?		
D 4.1. Characteristics of surface water outflows from the wetland:		
Wetland is a depression or flat depression with no surface water leaving it (no outlet)	points = 4	4
Wetland has an intermittently flowing stream or ditch, OR highly constricted permanently flowing outlet	points = 2	
Wetland is a flat depression (QUESTION 7 on key), whose outlet is a permanently flowing ditch	points = 1	
Wetland has an unconstricted, or slightly constricted, surface outlet that is permanently flowing	points = 0	
D 4.2. Depth of storage during wet periods: Estimate the height of ponding above the bottom of the outlet. For wetlands with no outlet, measure from the surface of permanent water or if dry, the deepest part.		
Marks of ponding are 3 ft or more above the surface or bottom of outlet	points = 7	7
Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet	points = 5	
☐ Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet	points = 3	
☐ The wetland is a "headwater" wetland	points = 3	
Wetland is flat but has small depressions on the surface that trap water	points = 1	
Marks of ponding less than 0.5 ft (6 in)	points = 0	
D 4.3. Contribution of the wetland to storage in the watershed: Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.		
☒ The area of the basin is less than 10 times the area of the unit	points = 5	5
The area of the basin is 10 to 100 times the area of the unit	points = 3	
The area of the basin is more than 100 times the area of the unit	points = 0	
☐ Entire wetland is in the Flats class	points = 5	
Total for D 4		Add the points in the boxes above
		16
Rating of Site Potential If score is: ☒ 12 - 16 = H ☐ 6 - 11 = M ☐ 0 - 5 = L Record the rating on the first page		
D 5.0. Does the landscape have the potential to support hydrologic function of the site?		
D 5.1. Does the wetland unit receive stormwater discharges?		Yes = 1 No = 0
		1
D 5.2. Is > 10% of the area within 150 ft of the wetland in land uses that generate excess runoff?		Yes = 1 No = 0
		1
D 5.3. Is more than 25% of the contributing basin of the wetland covered with intensive human land uses (residential at >1 residence/ac, urban, commercial, agriculture, etc.)?		Yes = 1 No = 0
		1
Total for D 5		Add the points in the boxes above
		3
Rating of Landscape Potential If score is: ☒ 3 = H ☐ 1 or 2 = M ☐ 0 = L Record the rating on the first page		
D 6.0. Are the hydrologic functions provided by the site valuable to society?		
D 6.1. The unit is in a landscape that has flooding problems. Choose the description that best matches conditions around the wetland unit being rated. Do not add points. Choose the highest score if more than one condition is met.		
The wetland captures surface water that would otherwise flow down-gradient into areas where flooding has damaged human or natural resources (e.g., houses or salmon redds):		0
☐ • Flooding occurs in a sub-basin that is immediately down-gradient of unit.	points = 2	
☐ • Surface flooding problems are in a sub-basin farther down-gradient.	points = 1	
☐ Flooding from groundwater is an issue in the sub-basin.	points = 1	
☐ The existing or potential outflow from the wetland is so constrained by human or natural conditions that the water stored by the wetland cannot reach areas that flood. Explain why	points = 0	
☒ There are no problems with flooding downstream of the wetland.	points = 0	
D 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan?		Yes = 2 No = 0
		2
Total for D 6		Add the points in the boxes above
		2
Rating of Value If score is: ☒ 2 - 4 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page		

These questions apply to wetlands of all HGM classes.	
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of ¼ ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked.	2
☐ Aquatic bed ☒ Emergent ☒ Scrub-shrub (areas where shrubs have > 30% cover) ☒ Forested (areas where trees have > 30% cover) If the unit has a Forested class, check if: ☐ The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon 4 structures or more: points = 4 3 structures: points = 2 2 structures: points = 1 1 structure: points = 0	
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (see text for descriptions of hydroperiods).	2
☒ Permanently flooded or inundated ☒ Seasonally flooded or inundated ☐ Occasionally flooded or inundated ☒ Saturated only ☐ Permanently flowing stream or river in, or adjacent to, the wetland ☐ Seasonally flowing stream in, or adjacent to, the wetland ☐ Lake Fringe wetland ☐ Freshwater tidal wetland 4 or more types present: points = 3 3 types present: points = 2 2 types present: points = 1 1 types present: points = 0 2 points 2 points	
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle	2
If you counted: > 19 species 5 - 19 species < 5 species points = 2 points = 1 points = 0	
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. If you have four or more plant classes or three classes and open water, the rating is always high.	2
    None = 0 points Low = 1 point Moderate = 2 points All three diagrams in this row are HIGH = 3 points   	

H 1.5. Special habitat features: Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>	
☒ Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long) ☒ Standing snags (dbh > 4 in) within the wetland ☐ Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m) over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m) ☐ Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 30 degree slope) OR signs of recent beaver activity are present (<i>cut shrubs or trees that have not yet weathered where wood is exposed</i>) ☒ At least ¼ ac of thin-stemmed persistent plants or woody branches are present in areas that are permanently or seasonally inundated (<i>structures for egg-laying by amphibians</i>) ☒ Invasive plants cover less than 25% of the wetland area in every stratum of plants (see H 1.1 for list of strata)	4
Total for H 1	Add the points in the boxes above 12
Rating of Site Potential If Score is: ☐ 15 - 18 = H ☒ 7 - 14 = M ☐ 0 - 6 = L Record the rating on the first page	

H 2.0. Does the landscape have the potential to support the habitat function of the site?	
H 2.1 Accessible habitat (include <i>only habitat that directly abuts wetland unit</i>). Calculate: 28 % undisturbed habitat + (1 % moderate & low intensity land uses / 2) = 28.5%	
If total accessible habitat is: > 1/3 (33.3%) of 1 km Polygon points = 3 20 - 33% of 1 km Polygon points = 2 10 - 19% of 1 km Polygon points = 1 < 10 % of 1 km Polygon points = 0	2
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland. Calculate: 48 % undisturbed habitat + (2 % moderate & low intensity land uses / 2) = 49%	
Undisturbed habitat > 50% of Polygon points = 3 Undisturbed habitat 10 - 50% and in 1-3 patches points = 2 Undisturbed habitat 10 - 50% and > 3 patches points = 1 Undisturbed habitat < 10% of 1 km Polygon points = 0	1
H 2.3 Land use intensity in 1 km Polygon: If > 50% of 1 km Polygon is high intensity land use points = (-2) ≤ 50% of 1km Polygon is high intensity points = 0	
Total for H 2	Add the points in the boxes above 1
Rating of Landscape Potential If Score is: ☐ 4 - 6 = H ☐ 1 - 3 = M ☒ < 1 = L Record the rating on the first page	

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? <i>Choose only the highest score that applies to the wetland being rated.</i>	
Site meets ANY of the following criteria: points = 2 ☐ It has 3 or more priority habitats within 100 m (see next page) ☐ It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) ☒ It is mapped as a location for an individual WDFW priority species ☐ It is a Wetland of High Conservation Value as determined by the Department of Natural Resources ☒ It has been categorized as an important habitat site in a local or regional comprehensive plan, in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats (listed on next page) with in 100m points = 1 Site does not meet any of the criteria above points = 0	2
Rating of Value If Score is: ☒ 2 = H ☐ 1 = M ☐ 0 = L Record the rating on the first page	

WDFW Priority Habitats

Priority habitats listed by WDFW (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp.
<http://wdfw.wa.gov/publications/00165/wdfw00165.pdf> or access the list from here:
<http://wdfw.wa.gov/conservation/phs/list/>

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** *This question is independent of the land use between the wetland unit and the priority habitat.*

- ☐ **Aspen Stands:** Pure or mixed stands of aspen greater than 1 ac (0.4 ha).
- ☐ **Biodiversity Areas and Corridors:** Areas of habitat that are relatively important to various species of native fish and wildlife (*full descriptions in WDFW PHS report*).
- ☐ **Herbaceous Balds:** Variable size patches of grass and forbs on shallow soils over bedrock.
- ☐ **Old-growth/Mature forests:** Old-growth west of Cascade crest – Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. Mature forests – Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years old west of the Cascade crest.
- ☐ **Oregon White Oak:** Woodland stands of pure oak or oak/conifer associations where canopy coverage of the oak component is important (*full descriptions in WDFW PHS report p. 158 – see web link above*).
- ☐ **Riparian:** The area adjacent to aquatic systems with flowing water that contains elements of both aquatic and terrestrial ecosystems which mutually influence each other.
- ☐ **Westside Prairies:** Herbaceous, non-forested plant communities that can either take the form of a dry prairie or a wet prairie (*full descriptions in WDFW PHS report p. 161 – see web link above*).
- ☐ **Instream:** The combination of physical, biological, and chemical processes and conditions that interact to provide functional life history requirements for instream fish and wildlife resources.
- ☐ **Nearshore:** Relatively undisturbed nearshore habitats. These include Coastal Nearshore, Open Coast Nearshore, and Puget Sound Nearshore. (*full descriptions of habitats and the definition of relatively undisturbed are in WDFW report – see web link on previous page*).
- ☐ **Caves:** A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.
- ☐ **Cliffs:** Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- ☐ **Talus:** Homogenous areas of rock rubble ranging in average size 0.5 - 6.5 ft (0.15 - 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- ☐ **Snags and Logs:** Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
<i>Check off any criteria that apply to the wetland. List the category when the appropriate criteria are met.</i>	
SC 1.0. Estuarine Wetlands Does the wetland meet the following criteria for Estuarine wetlands? ☐ The dominant water regime is tidal, ☐ Vegetated, and ☐ With a salinity greater than 0.5 ppt ☐ Yes - Go to SC 1.1 ☒ No = Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151? ☐ Yes = Category I ☐ No - Go to SC 1.2	
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25) ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or ungrazed or un-mowed grassland. ☐ The wetland has at least two of the following features: tidal channels, depressions with open water, or contiguous freshwater wetlands. ☐ Yes = Category I ☐ No = Category II	
SC 2.0. Wetlands of High Conservation Value (WHCV) SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? ☐ Yes - Go to SC 2.2 ☒ No - Go to SC 2.3 SC 2.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? ☐ Yes = Category I ☒ No = Not WHCV SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland? http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf ☒ Yes - Contact WNHP/WDNR and to SC 2.4 ☒ No = Not WHCV SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on their website? ☒ Yes = Category I ☐ No = Not WHCV	
SC 3.0. Bogs Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? <i>Use the key below. If you answer YES you will still need to rate the wetland based on its functions.</i> SC 3.1. Does an area within the wetland unit have organic soil horizons, either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? ☐ Yes - Go to SC 3.3 ☒ No - Go to SC 3.2 SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or pond? ☐ Yes - Go to SC 3.3 ☒ No = Is not a bog SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30% cover of plant species listed in Table 4? ☐ Yes = Is a Category I bog ☐ No - Go to SC 3.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 4 are present, the wetland is a bog. SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir, western red cedar, western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy? ☐ Yes = Is a Category I bog ☐ No = Is not a bog	

SC 4.0. Forested Wetlands Does the wetland have at least 1 contiguous acre of forest that meets one of these criteria for the WA Department of Fish and Wildlife's forests as priority habitats? <i>If you answer YES you will still need to rate the wetland based on its functions.</i> ☐ Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more. ☐ Mature forests (west of the Cascade Crest): Stands where the largest trees are 80-200 years old OR the species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm). ☐ Yes = Category I ☒ No = Not a forested wetland for this section	
SC 5.0. Wetlands in Coastal Lagoons Does the wetland meet all of the following criteria of a wetland in a coastal lagoon? ☒ The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by sandbanks, gravel banks, shingle, or, less frequently, rocks ☐ The lagoon in which the wetland is located contains ponded water that is saline or brackish (> 0.5 ppt) during most of the year in at least a portion of the lagoon (needs to be measured near the bottom) ☐ Yes - Go to SC 5.1 ☒ No = Not a wetland in a coastal lagoon SC 5.1. Does the wetland meet all of the following three conditions? ☐ The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100). ☐ At least ¾ of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un-mowed grassland. ☐ The wetland is larger than 1/10 ac (4350 ft²) ☐ Yes = Category I ☐ No = Category II	
SC 6.0. Interdunal Wetlands Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownership or WBUO)? <i>If you answer yes you will still need to rate the wetland based on its habitat functions.</i> In practical terms that means the following geographic areas: ☐ Long Beach Peninsula: Lands west of SR 103 ☐ Grayland-Westport: Lands west of SR 105 ☐ Ocean Shores-Copalis: Lands west of SR 115 and SR 109 ☐ Yes - Go to SC 6.1 ☒ No = Not an interdunal wetland for rating SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M for the three aspects of function)? ☐ Yes = Category I ☐ No - Go to SC 6.2 SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger? ☐ Yes = Category II ☐ No - Go to SC 6.3 SC 6.3. Is the unit between 0.1 and 1 ac, or is it in a mosaic of wetlands that is between 0.1 and 1 ac? ☐ Yes = Category III ☐ No = Category IV	
Category of wetland based on Special Characteristics If you answered No for all types, enter "Not Applicable" on Summary Form	



ATSI
Aqua-Terr Systems, Inc.

18 April 2016

Gary Robinson
City of Anacortes Parks Department
Post Office Box 547
Anacortes, WA 98221-0547

Re: City of Anacortes-Guemes Trail Vegetation and Habitat Management Plan
(Anacortes Contract #15-057-IDS-001)

Dear Mr. Robinson,

Attached is the Vegetation and Habitat Management Plan we prepared for the Guemes Trail project (ATSI February 2016). Included with the plan are the reports prepared by, GeoEngineers (GeoEngineers 21 December 2015) and Urban Forestry Services (Urban Forestry Services 21 December 2015).

We trust the information provided is sufficient to satisfy your project needs. Please contact us with questions or additional information requests.

Thank you.

Respectfully,

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President/Senior Biologist
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Cell: (360) 303-4720

Karla Gallina, BS, PWS
Project Manager/Senior Biologist
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Attachments:

Aqua-Terr Systems, Inc. February 2016. City of Anacortes-Guemes Trail Vegetation and Habitat Management Plan.

GeoEngineers. 21 December 2015. Geotechnical Engineering Services Guemes Channel Trail Vegetation and Habitat Management Plan.

Urban Forestry Services, Inc. 21 December 2015. Guemes Trail Vegetation and Habitat Management Plan.

**CITY OF ANACORTES-GUEMES TRAIL
VEGETATION AND HABITAT MANAGEMENT PLAN
ANACORTES, WASHINGTON**

February 2016

Prepared for:

Gary Robinson
City of Anacortes Parks Department
PO Box 547
Anacortes, WA 98221-0547

Prepared by:

ATSI
21993 Grip Rd
Sedro-Woolley, WA 98284



**CITY OF ANACORTES-GUEMES TRAIL
VEGETATION AND HABITAT MANAGEMENT PLAN
ANACORTES, WASHINGTON**

February 2016

Prepared for:

Gary Robinson
City of Anacortes Parks Department
PO Box 547
Anacortes, WA 98221-0547

Prepared by:

Signatures of ATSI Representatives



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LIST OF APPENDICIES

Appendix A.

GeoEngineers: Geotechnical Engineering Services Guemes Channel Trail Vegetation and Habitat Management Plan

Appendix B.

Urban Forestry Services: Guemes Trail Vegetation and Habitat Management Plan

LIST OF ABBREVIATIONS & ACRONYMS

Anacortes Municipal Code (AMC)

Aqua-Terr Systems, Inc. (ATSI)

Bachelor of Science (BS)

Critical Areas Ordinance (CAO)

Master of Science (MS)

Ordinary High Water Mark (OHWM)

Professional Certification Program (PCP)

Professional Wetland Scientist (PWS)

Shoreline Master Program (SMP)

Society of Wetland Scientists (SWS)

United States (US)

United States Army Corps of Engineers (Corps)

Vegetation and Habitat Management Plan (VHMP)

Washington State Department of Natural Resources (WDNR)

Washington State Department of Ecology (Ecology)

Washington State Department of Fish and Wildlife (WDFW)

Western Washington University (WWU)

Wetland Professional in Training (WPIT)

EXECUTIVE SUMMARY

ATSI has been retained by Mr. Gary Robinson, City of Anacortes Parks Director, to coordinate with an engineering firm and an arborist to prepare a VHMP for a portion of the Guemes Trail located in the City of Anacortes, Washington. Said portion of the trail extends from the northeast portion of the Edwards Way cul-de-sac northeast to Lovric's Boat Yard (Project Area). The Project Area does not include marine waters.

The two companies we worked with are: 1) J. Gordon, PE and principal of GeoEngineers, Incorporated that provided geotechnical support and 2) Jim Barborinas of Urban Forestry Services, Incorporated that provided arborist support. Their work is summarized in this VHMP and both their reports are included as Appendices. ATSI is supplementing said geotechnical and arborist consulting work with a description of the habitats and said habitat conditions along the Project Area within the contents of this VHMP. The regulatory framework of the trail corridor in regards to applicable portions of the City of Anacortes SMP and CAO and ATSI recommendations are also included in this VHMP.

METHODS

Field Reconnaissance

Onsite field reconnaissance's were conducted on 1 September 2015 and 4 February 2016. The September site visit was attended by ATSI staff Jim Wiggins, MS, PWS, Karla Gallina, BS, PWS, and Sigrid Williams, BS, WPIT; J. Gordon; Jim Baborinas; and City of Anacortes staff. The February site visit was attended by ATSI staff Karla Gallina and Sigrid Williams.

Personnel

Jim Wiggins, MS, PWS, Senior Biologist and Principal of ATSI since 1988 performs or supervises all fieldwork and report preparation. Mr. Wiggins has a MS degree in ecology from WWU. Karla Gallina, BS, PWS, Project Manager and Senior Biologist with ATSI since January 2008 is a field technician and report preparation and AutoCAD specialist. Mrs. Gallina has a BS in environmental science/natural resources from Paul Smiths College in New York. Sigrid Williams, BS, WPIT, Associate Biologist with ATSI since May 2015 is a field, report preparation, and AutoCAD technician. Ms. Williams has a BS in environmental science/geography from WWU.

Both Mr. Wiggins and Mrs. Gallina are PWS's certified by the SWS PCP and have completed training from Ecology on the 2004 Wetland Rating System for Western Washington and Determining the OHWM. Ms. Williams is a WPIT certified by the SWS PCP. Mrs. Gallina and Ms. Williams are qualified to rate wetlands per the Ecology Washington State Wetland Rating System for Western Washington: 2014 Update. All three take relevant workshops and courses to maintain their PWS/WPIT status and to have a current understanding of the best wetland-related available science.

SITE DESCRIPTION

General

The Project Area includes an approximate 12 foot wide, paved, ADA accessible trail beginning at the northeast portion of the Edwards Way cul-de-sac and extending approximately 1.2 miles northeast adjacent the shoreline to the Lovric's Boat Yard (Figures 1 and 2). The trail is bordered by the Guemes Channel marine shoreline to the north and a steep slope of varying plant community structure, habitats, and residences to the south. Land use south of the Project Area includes single- and multi-family residential and undeveloped forest. Topography includes steep slopes of 90 percent south of the Project Area, grading down to 8 percent north into the Guemes Channel, and a gentle slope west toward Edwards Way.

Vegetation

Vegetation examples within the Project Area consist of disturbed areas (Photo 1), broken canopy with shrub areas (Photo 2), and continuous canopy areas (Photo 3).

Disturbed

Vegetation within the disturbed areas (Photo 1 example is closest to Edwards Way) includes a sparse canopy comprised of Douglas fir (*Pseudotsuga menziesii*; FACU) and red alder (*Alnus rubra*; FAC). The shrub layer includes snowberry (*Symphoricarpos albus*; FACU) and Nootka rose (*Rosa nutkana*; FAC). The herbaceous layer includes bull thistle (*Cirsium vulgare*; FACU).



O

Photo 1. Disturbed

Broken Canopy with Shrubs

Vegetation within the broken canopies contain lower densities of trees and higher densities of shrubs than observed in the disturbed areas (Photo 2). The canopy layer includes Douglas fir (along the top of the slope), big leaf maple (*Acer macrophyllum*; FACU), and red alder. The shrubs are dominated by Douglas' maple (*Acer glabrum*; FACU), Hooker's willow (*Salix hookeriana*; FACW), salmonberry (*Rubus spectabilis*; FAC), and serviceberry (*Amelanchier alnifolia*; FAC). The herbaceous layer includes big-leaf avens (*Geum macrophyllum*; FAC) and giant vetch (*Vicia gigantia*; FACU).



Photo 2. Broken Canopy with Shrubs

Continuous Canopy

Vegetation within the continuous canopy areas includes large perch trees such as Douglas fir at the top of the slope, big leaf maple, red alder, and western redcedar (*Thuja plicata*; FAC). While the shrub layer within the continuous canopy areas is not as dense as the western portion of the Project Area, it has greater diversity of native shrubs including osoberry (*Oemleria cerasiformis*; FACU), oceanspray (*Holodiscus discolor*; FACU), salmonberry, orange/western trumpet honeysuckle (*Lonicera ciliosa*; FAC), Nootka rose, clustered, rose (*Rosa pisocarpa*; FAC), red elderberry (*Sambucus racemosa*; FACU), thimbleberry (*Rubus parviflorus*; FACU) and snowberry. The herbaceous layer includes sword fern (*Polystichum munitum*; FACU), fringe cup (*Tellima grandiflora*; FACU), stinging nettle (*Urtica dioica*; FAC), trailing blackberry (*Rubus ursinus*; FACU), and big-leaf avens.



Photo 3. Continuous Canopy

Other

Other vegetation along the Project Area includes dunegrass (*Elymus mollis*; FACU), horsetail (*Equisetum arvense*; FAC), red flowering current (*Ribes sanguineum*; FACU), foam-flower (*Tiarella trifoliata*; FAC), shore pine (*Pinus contorta*; FAC), salal (*Gaultheria shallon*; FACU), red huckleberry (*Vaccinium parvifolium*; FACU), paper birch (*Betula papyrifera*; FAC), vine maple (*Acer circinatum*; FAC), buttercup (*Ranunculus repens*; FAC), Sitka spruce (*Picea sitchensis*; FAC), lady fern (*Athyrium cyclosorum*; FAC), as well as other various cultivated flowers and plants.

Invasives

Invasive species observed along the Project Area include Scot's broom (*Cytisus scoparius*; NL), Himalayan blackberry (*Rubus armeniacus*; FACU), reed canary grass (*Phalaris arundinacea*; FACW), English holly (*Ilex aquifolium*; FACU), and English ivy (*Hedera helix*; FACU).

Species & Habitat

ATSI staff did not observe species of local concern or listed species (state or federal) in the Project Area. However, species of local concern and listed species occur in the general vicinity, i.e. the adjacent marine waters, Ship Harbor wetland, and the perch trees at the top of the slope. Additionally, an osprey nest was also observed on a parcel west of Edwards Way.

Habitats within the Project Area are forested, partially forested, disturbed rural uplands, and marine tidelands.

The Natural Heritage Information System report dated 24 July 2015 lists a heritage feature within T35N, R1E, S22 within the project area (WDNR 2015). As per WDNR staff, "There are two ecological community occurrences in the immediate area, but they are in Section 21 (associated with Lake Shannon). The edge of the mapped occurrences falls just barely into Section 22, which is why it was included in the Township, Range and Section list. The information provided by the Washington Natural Heritage Program is based solely on existing information in the database. In the absence of field inventories, we cannot state whether or not a given site contains high quality ecosystems or rare plant species; there may be significant natural features in your study area of which we are not aware (WDNR 2016)."

The WDFW maps dungeness crab (*Cancer magister*) and pinto abalone (*Haliotis kamtschatkana*) in the tidelands adjacent to the Project Area as well as a bald eagle nest with a 400 foot nest buffer and surrounding 800 foot shoreline nest buffer within the project vicinity (WDFW 2009). The bald eagle nest was observed in previous years by ATSI staff; however, during a windstorm (circa 2006/2007), the tree containing this nest broke at a point below the nest and therefore the nest is no longer present.

Bald eagles occur in the Project Area, particularly they perch along the top slope and forage along the shoreline. Although bald eagles have been federally delisted, they are a federal species of concern and still protected by the federal Bald and Golden Eagle

Protection Act and the Migratory Bird Treaty Act. Bald eagles are listed as threatened by the state and are protected by the state Bald Eagle Protection Act (RCW 77.12.655 and WAC 232-12-292). The state act protects habitat via habitat management plans. The state bald eagle management biologist should be contacted to determine if any disturbances within the Project Area will require a management plan pending any site development or buffer disturbances.

An osprey nest was observed offsite, west of Edwards Way. Ospreys are a state monitored species.

During our site visits, many types of fauna were observed such as porcupine (*Erethizon dorsatum*) within the disturbed vegetation area near Edwards Way, sea otters (*Enhydra lutris*) and their scat offshore and north of Edwards Way, evidence of claw marks on a tree from gray squirrels (*Sciurus carolinensis*), Douglas' squirrel (*Tamiasciurus douglasi mollipilosus*), kingfisher (*Ceryle alcyon*), and cormorant (*Phalacrocorax* sp.).

The marine waters provide habitat for many avian, mammal, and aquatic species, some of which are federally listed such as Chinook salmon (*Oncorhynchus tshawytscha*). This report does not include an extensive species list for the marine waters.

Other wildlife that may use the habitat on or near the Project Area include large mammals such as deer (*Odocoileus* sp.) and coyote (*Canis latrans*); raptors, passerine birds such as purple martin (*Progne subis*), blue heron (*Ardea herodias*), and shorebirds such gulls; and small mammals such as rabbits and mice. The forested areas increase wildlife habitat potential as a corridor within the Project Area; however, the areas where the slope is steep and unstable due to lack of vegetation from unauthorized management practices by surrounding homeowners (as described below) minimizes said potential.

REGULATORY

Overview

The Project Area falls within several areas of biological/environmental regulatory authority. These are related to Waters of the US and Waters of the State as pertaining to the marine shoreline of the Guemes Channel located north of the Project Area.

The City of Anacortes regulates all activities in and around the shoreline and other critical areas because of the proximity of the marine shoreline and habitat for species of local concern through AMC Chapter 18.16. The City of Anacortes regulates shorelines and all land within 200 feet of the shoreline through their SMP. All land in the Project Area that extends 100 feet landward of the OHWM of the marine shoreline is designated Conservancy. Work within shoreline jurisdiction, including vegetation removal and/or cutting, land disturbance, and/or altering the landscape for drainage purposes, requires a permit from the City of Anacortes. The City of Anacortes requires Critical Area and Shoreline permits for work within 200 feet of the marine shoreline.

Through Section 404 of the Clean Water Act, the Corps has the authority to regulate the placement of fill materials in Waters of the US, e.g. within shorelines, and requires permits for such activities. The WDFW and Ecology also regulate the marine waters and the shoreline and habitat it provides.

City of Anacortes

The following excerpts are from portions of the SMP and CAO that pertain to the Project Area, particularly those within the SMP Conservancy Designation, with pertinent areas highlighted in yellow.

SMP

2.2 Applicability

A. All proposed uses and development occurring within shoreline jurisdiction must conform to chapter 90.58 RCW, the Shoreline Management Act and this Master Program. All uses, even those not meeting the definition of development, are subject to the provisions and development regulations of this SMP, even though a permit may not be required.

2.3 Anacortes Shoreline Jurisdiction

A. This Master Program shall apply to all the lands and waters in the City of Anacortes that fall under the jurisdiction of the Shoreline Management Act. Shorelines include the waters within the City limits together with the lands underlying them and all lands extending landward 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark together with any associated wetlands.

2.5 Relationship to Other Plans and Regulations

A. In addition to compliance with the provisions of the Shoreline Management Act of 1971 and the state Shoreline Master Program Guidelines, the Anacortes Shoreline Master Program must be consistent with local plans and policy documents, specifically, the Anacortes Comprehensive Plan and the City's critical areas regulations. The Master Program must be consistent with the regulations developed by the City to implement its plans, such as the zoning code and subdivision code, as well as regulations relating to building construction and safety.

4.7 Conservation Element

A. Purpose

This section addresses the preservation of natural resources, including but not limited to scenic vistas, aesthetics, and fish and wildlife habitat that are required by 90.58.100(2)(f)RCW.

B. Goal

To preserve, protect, enhance and restore shoreline natural resources including scenic vistas, aesthetics, estuaries, beaches, shorelines, fragile ecological areas, fish and wildlife habitats, native vegetation and landforms, water, and air.

C. Policies

Policy 4.7.1 Preserve, protect, enhance and restore critical areas and shoreline

ecological processes and functions through regulatory and nonregulatory means that may include required vegetated shoreline setbacks, acquisition of key properties, regulation of development, and incentives to encourage ecologically sound design and maintenance.

Policy 4.7.2 Locate, design, construct, and operate development so as not to degrade water quality as measured by state water quality standards.

Policy 4.7.3 Achieve no net loss of shoreline ecological functions. This shall be accomplished by the use of Mitigation Sequencing, as defined in this master program, and as provided by WAC 173-26-201(2)(e).

Policy 4.7.11 All soils disturbed by use activities, and which are potentially erodible or unstable should be stabilized through seeding, mulching, terracing or other effective means.

Policy 4.7.17 Protect existing shoreline trees and other shade vegetation, especially in areas where surf smelt and/or sand lance spawning has been documented.

5.8 Conservancy

D. Management Policies Uses

Protect shoreline functions and resources by limiting, to the extent feasible, new uses and activities in the Conservancy designation to recreational, cultural and historic uses located and designed to avoid shoreline impacts.

Policy 5.8.4 Establish best management standards for shoreline stabilization measures, vegetation conservation, water quality, and shoreline modifications within the Conservancy designation to ensure that new development does not result in a net loss of shoreline ecological functions or further degrade other shoreline values.

6.5 Vegetation Conservation

A. Introduction

Vegetation conservation includes activities to protect and restore vegetation along or near marine and freshwater shorelines that contribute to the ecological functions of shoreline areas. Vegetation conservation provisions include the prevention or restriction of plant clearing and earth grading, vegetation restoration, and the control of invasive weeds and nonnative species.

CAO

7.70.540 - Designation of fish and wildlife habitat conservation areas.

A. Fish and wildlife habitat conservation areas include:

1. Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association.

a. Federally designated endangered and threatened species are those fish and wildlife species identified by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service that are in danger of extinction or threatened to become endangered. The U.S. Fish and Wildlife Service and the National Marine Fisheries Service should be consulted for current listing status.

b. *State designated endangered, threatened, and sensitive species are those fish and wildlife species native to the State of Washington identified by the Washington Department of Fish and Wildlife, that are in danger of extinction, threatened to become endangered, vulnerable, or declining and are likely to become endangered or threatened in a significant portion of their range within the state without cooperative management or removal of threats. State designated endangered, threatened, and sensitive species are periodically recorded in WAC 232-12-014 (state endangered species) and WAC 232-12-011 (state threatened and sensitive species). The State Department of Fish and Wildlife maintains the most current listing and should be consulted for current listing status.*

G. *Buffers.*

1. *Establishment of Buffers. The city shall require the establishment of buffer areas for activities adjacent to habitat conservation areas on a case by case basis when needed to protect habitat conservation areas. Buffers shall consist of an undisturbed area of native vegetation or areas identified for restoration established to protect the integrity, functions, and values of the affected habitat. Required buffer widths shall reflect the nature of the existing vegetation, sensitivity of the habitat, and the type and intensity of human activity proposed to be conducted nearby. Habitat conservation areas and their buffers shall be preserved in perpetuity through the use of native growth protection easements and critical area tracts.*

RECOMMENDATIONS

General

Numerous portions of the Project Area have been cut and/or cleared of the plant community, thus partially or completely clearing the native vegetation habitat, drain tile added, and/or soil exposed. We recommend all such areas require land owner notification of SMP and CAO violation and rectified/restored. ATSI staff advises for those portions of the Project Area where disturbances occur, the property owner retain a qualified biologist, geoenvironmentalist, and/or arborist, to complete a restoration plan.

Specific Examples

Recommendations for rectifying the area depicted in Photo 4 and similar areas are as follows:

- Where the plant community has been cut and is sloughing such as in Photos 1, 2, and 4, areas should be replanted for stabilization with a mix of native trees, shrubs, and herbaceous vegetation.
- Pipes installed along the slope without spreaders at the base should be fitted with spreaders to diffuse water over a broader area versus concentrated area to minimize erosion.
- Residents upslope of the Project Area should be notified and made aware of SMP and CAO regulations and violations to protect the associated slope including; tree removal, dumping yard waste, view corridor maintenance, vegetation buffers, and drainage.



Photo 4. Cleared from Pipe Installation

GeoEngineers Summary (From Appendix A)

The slope above the Guemes Channel Trail is a geologic hazard area per Chapter 17.54 of the City of Anacortes' Critical Areas Ordinance. The slope is mapped as a severe water erosion hazard. The slope is also a landslide hazard. Because of the hazards of the slope it has required setbacks and buffers from the top of the slope, as well as, vegetation management plans, drainage plans, and mitigation strategies that will need to be incorporated into any upland developments.

The slopes in the Project Area are generally resistant to deep-seated landslides and that the frequency of shallow landslides can be reduced by implementation of a drainage and vegetation management plan. Drainage improvements that reduce direct discharge to slopes and intercept shallow groundwater in upland areas will provide an improvement in shallow slope stability; however, these actions should not be expected to eliminate landslides on the over-steepened slopes. Because of the potential consequences of poor practices, GeoEngineers recommends the City consider requiring vegetation and tree management submittals and approvals along the slope above the trail. It is in the best interests of the homeowners above the trail that bluff retreat be minimized, best interests of the public walking the trail, and the City maintaining the trail that slope stability maintained as much as practicable to limit impacts.

Therefore, GeoEngineers suggests the City consider a policy or code amendment requiring specific submittals with narrative and plans from professionals that describe proposed activities and how they will be completed to limit disturbance and impacts to stability. This would allow the City to perform a site observation subsequent to the action to confirm that the completed activities are consistent with the professional's plans and recommendations, and provide a

basis for independently monitoring performance of the vegetation should the City desire to do so.

Urban Forestry Services Summary (From Appendix B)

Maintaining good vegetation cover on and adjacent to slopes will help protect soil stability in several ways: a good mix of evergreen and deciduous plants of different sizes and growth habits work together to protect the ground from the direct impacts of rain and run-off. They intercept and absorb rainfall before it can reach the ground and hold soil in place with a dense network of spreading roots.

Ignoring management of slope vegetation can come at a high risk. Neglect or mismanagement has the potential to accelerate the erosion and slope failure process. For example, some hazard trees can pull slopes downhill and inappropriate vegetation types can leave slopes more vulnerable to surface erosion problems. Although soil erosion is a natural process, it can accelerate to harmful levels if good land stewardship principals are ignored.

*If a property owner specifically requests pruning for views, the pruning techniques that might be allowed are: **Windowing** where selective removal of branches are cut back to a main trunk or leader to open views; **Uplifting or skirting** up where removal of bottom branches back to the main truck to raise the canopy height; and, **Crown reduction** where selective shortening of top branches back to strong lateral limbs to lower and reduce the size of the canopy.*

Slope vegetation cover is critical to recognize the potential detrimental influence of external impacts, specifically unintentional or accidental excess drainage over the slope. Any out of the ordinary water movement over the slope could cause minor to major slope failure that no amount of vegetation can protect. For this reason, every effort should be made to control and monitor for any such excessive water movement. This may be in the form of annual as well as post storm inspections along the top of the slope. Property owners should be made aware of this concern. A second external impact to monitor is the dumping of grass clippings, brush, soil or any other foreign substance near the top or over the side of the slope. This is a very destructive practice; it will suppress and kill valuable groundcover and shrubs critical for holding the slope. Water will eventually find its way under these piles and a washout will begin. Property owners must be warned against this practice.

In addition, the type of vegetation planted in landscaped areas on level areas adjacent to the top of slopes has been found to influence runoff and slope stability, with higher likelihoods of failures occurring where lawns abut the top of a slope. In heavy rain events, water can sheet across the lawn, unloading onto the slope. This can be prevented with a border of densely planted multi-stem shrubs that serve to capture and slow water movement. Salal, evergreen huckleberry, snowberry, ornamental spirea, and ornamental evergreen azaleas are among the types of shrubs that spread by underground stems and serve this protective function well.

Vegetation and Habitat Management Recommendations are: pruning, selective hazard tree and vegetation removal, and inter-planting for increased slope canopy cover and stability; all of which would be addressed as need arises.

LIMITATIONS

We have used the most current and established methods to make determinations as to the location, size, and types of habitats, critical areas, and the presence or likely presence of significant fauna and flora species within the Project Area. All of the above statements are based on our best professional judgment. Although we follow federal, state, and local criteria, we cannot guarantee the regulating agencies or the local jurisdiction determination will correspond to ours. Please note that regulations pertaining to critical areas are subject to change over time.

REFERENCES

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[Accessed February 2016]

FIGURES



Figure 1. Vicinity Map of Guemes Trail Project Area
 Sections 22 & 23, Township 35 North, Range 1 East, WM
 February 2016

Note Basemap obtained from Google Earth. The project area location is approximate and does not constitute a legal land survey.

ATSI

Aqua-Terra Systems, Inc.

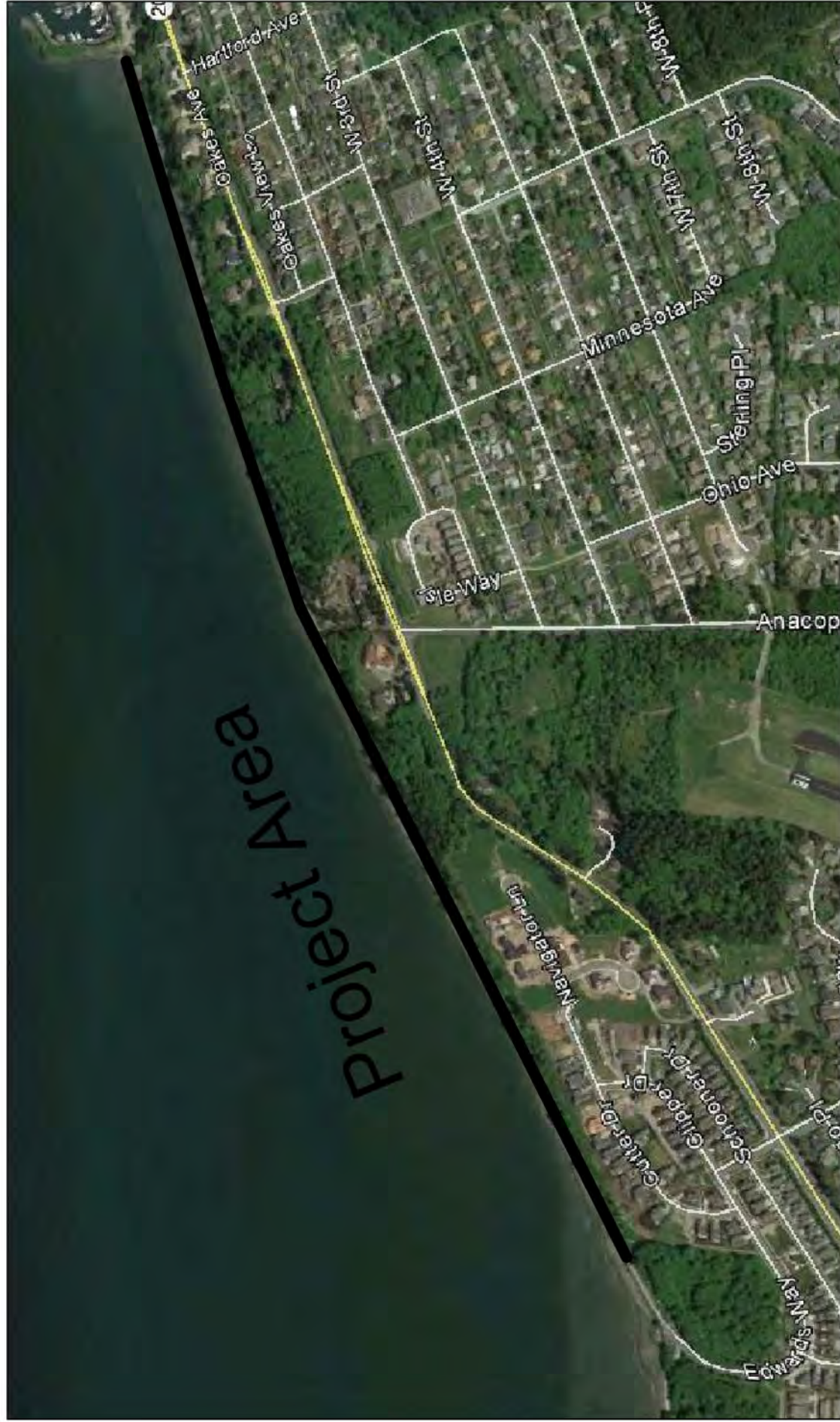


Figure 2. Aerial Photograph of Guemes Trail Project Area
 Sections 22 & 23, Township 35 North, Range 1 East, WM
 February 2016



Note Baseaerial obtained from Google Earth (2 May 2015). The project area location is approximate and does not constitute a legal land survey.

**Geotechnical Engineering Services
Guemes Channel Trail Vegetation and
Habitat Management Plan**

Guemes Channel Trail
Anacortes, Washington

for
City of Anacortes

December 21, 2015



GEOENGINEERS 
Earth Science + Technology

**Geotechnical Engineering Services
Guemes Channel Trail Vegetation and
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Guemes Channel Trail
Anacortes, Washington

for
City of Anacortes

December 21, 2015



600 Dupont Street
Bellingham, Washington 98225
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**Geotechnical Engineering Services
Guemes Channel Trail Vegetation and
Habitat Management Plan**

**Guemes Channel Trail
Anacortes, Washington**

File No. 0382-028-00

December 21, 2015

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Figure 1. Vicinity Map

INTRODUCTION AND BACKGROUND

This report presents our geotechnical engineering conclusions and recommendations to be considered in preparation of a vegetation and habitat management plan for the steep slope/marine bluff above the Guemes Channel Trail in Anacortes, Washington. The section of trail and bluff for this study is located north of Oakes Avenue/Highway 20 and extends from the Edwards Way cul-de-sac to Lovric's Boat Yard near Georgia Avenue as shown in the Vicinity Map, Figure 1.

The Guemes Channel Trail is a pedestrian trail that follows a former railroad grade at the base of the north-facing bluff along Guemes Channel. Most of the subject trail section is presently paved with the exception of the eastern terminus near the Lovric Boat Yard which has gravel surfacing. The City of Anacortes (City) owns the trail and performs maintenance activities. The slope down to the trail is typically owned by individual homeowners or home owners associations (HOAs) with residential development above the trail. The steep slope has a history of landslide activity, typically manifested as small localized slough type events associated with mass wasting of oversteepened weathered soil along the slope. In some cases, homeowners have contributed to the instability by discharging surface water/stormwater over the slope, disposing vegetation cuttings or debris over the top of the slope, cutting down trees and/or removing vegetation.

The City contracted Aqua-Terr Systems, Inc. (ATSI) to prepare a vegetation and habitat management plan for the slope above the trail. ATSI assembled a team that includes Urban Forestry Services, Inc. (UFS) for discussion of preferred tree management practices and GeoEngineers, Inc. (GeoEngineers) for discussion of slope stability and drainage considerations. The plan will serve as a basis for managing vegetation and habitat and drainage by the City and homeowners adjacent to the Guemes Channel Trail.

GeoEngineers' scope of services included: review of available references; completion of a reconnaissance site visit with City staff and the technical team; collaboration with the technical team members; and preparation of this geotechnical report summarizing geotechnical considerations related to erosion, vegetation, drainage, and slope stability for management of the slopes above the trail. Our specific scope of services is described in our services agreement dated June 23, 2015 which was authorized by Jim Wiggins with ATSI on August 18, 2015.

Previous Reports

GeoEngineers has previously provided geotechnical engineering services to the City for design and construction of the trail, and has also served in a geotechnical engineering peer review capacity related to private development above the trail. GeoEngineers has also provided independent geotechnical services related to private development along the upland area above the trail. Relevant information from the trail and private development reports is incorporated into this report; the reports by GeoEngineers and others relevant to this study are listed in the "References" list at the end of this report.

SITE CONDITIONS

The site conditions described below are based on review of selected information in the available literature, review of previous reports by GeoEngineers and others, and a site reconnaissance performed on September 1, 2015 with members of the project team and City. Some of the previous reports included subsurface exploration.

Geology

The upland and bluff areas are mapped as Vashon Glacial Till of the Fraser Glaciation. Glacial till is generally a non-stratified mixture of very dense sand, gravel and silt that has been overridden and consolidated by glacial ice. As such, this geologic unit has very high shear strength characteristics. Glacial till is typically located along the top of the bluff above the trail. At some locations, primarily toward the east end of the trail, advance outwash (relatively clean, dense sand) has been observed below the till. At another site, a thin layer of recessional outwash (relatively clean to silty medium dense sand) was encountered in the upland portion of that site, well above the slope.

Whidbey Formation non-glacial sedimentary deposits of pre-Fraser Glaciation age are mapped below the till along the bluff. Sedimentary deposits of the Whidbey Formation generally consist of fine grained interbedded sand, silt and clay with minor lenses of coarse sand and gravel. The Whidbey Formation sediments were consolidated from the pressures experienced by overlying glacial till as it was glacially overridden. Whidbey Formation has been typically encountered along the lower elevations of the slope and below the trail and even extending offshore.

The residential areas above the steep bluff are mapped as stable in the Coastal Zone Atlas (CZA). Most of the bluff itself is mapped as unstable slope in the CZA, which is typical of oversteepened slopes along Puget Sound. Groundwater seepage frequently moves laterally within the upper weathered zone of glacial till and within sand layers within the Whidbey Formation and emerges at the bluff face. The typical landslides are shallow in nature (3- to 5-foot thick sloughs) although occasional larger events are possible. A larger historic slide has been identified at the western terminus of the trail at the Leeward Property (immediately above the trail and north of the Edwards Way cul-de-sac), and has been discussed in many different reports presented in the "References" section of this report.

Geologically Hazardous Area Designation

The steep bluff above the Guemes Channel Trail is designated as a geologic hazard area in accordance with the City's Critical Areas Ordinance (CAO), Chapter 17.54.

- The steep slope is mapped as having a severe water erosion hazard. This is associated with the steep nature of the slope.
- The steep slope is a landslide hazard area based on several different definitions in the CAO. The steep slope designation has required establishing setbacks and buffers from the top of the slope, vegetation management plans, drainage plans and/or other mitigation strategies to be incorporated into upland developments.

Surface Conditions

The trail varies from about elevation 13 to 15 feet (NAVD88). The trail is typically about 12 to 14 feet wide and is covered primarily with asphalt concrete pavement; the current easterly terminus is gravel surfaced. Low-height gravity block retaining walls (typically less than 4 feet in height) are located occasionally along the toe of the slope on the upland side of the trail. The shore side of the trail is covered with stone riprap; the riprap and trail serve as a buttress against erosion at the toe of the original marine bluff. Occasionally a ditch is located along the upland side of the trail, with stormwater pipe crossings under the trail. A major City stormwater pipe discharge located within a City easement penetrates through the trail and discharges onto the riprap on the outboard side of the trail.

Slope angles near the base of the slope generally range from about 2H:1V (horizontal to vertical) to about 1H:1V in places, with some steeper slopes and scarp areas. Locally, the bluff has variable topographic conditions: uniform steep slope gradients suggesting relatively stable conditions; very steep, exposed soil scarps toward the middle or top of the slope indicative of past slough events; and flatter slopes toward the bottom where obvious colluvium (slopewash from upper erosion and/or slides) has accumulated. The colluvium layer at the base of the slope above the trails has been identified as anywhere from 2 to 12 feet thick based on previous explorations, and covered the historic railroad grade ties and fill prism along much of the trail alignment. Most of the slope is vegetated with a thick and diverse understory and occasional deciduous and evergreen trees. Some of the trees are vertical and some are leaning downslope and/or have J-shaped trunks indicative of slope creep. Some of the leaning trees are located toward the bottom of the slope and located on what is interpreted to be colluvium. A representative picture of the trail and slope is provided below.



Photograph 1: Representative trail and slope condition with vegetation, leaning and straight trees.

No surface water was observed during our site visit in September 2015, which was after a very dry summer season. However, slow to moderate surface water seepage has been observed primarily toward the upper portion of the bluff at some locations during prior site reconnaissance efforts and rapid seepage zones have been observed from headscarps of localized sloughs along the slope.

Many different stormwater facilities associated with residential development above the slope discharge along the trail. Some of the stormwater pipes are typical light-duty pipes ("corrugated pipe") from single family residences that have a direct discharge point along the slope or at the base of the slope. Some of the single family residences have stronger high density polyethylene (HDPE) pipes and were noted to have an energy dissipater or diffuser (typically the end of the pipe or a "T" section of the pipe with drilled holes) at the base. A few of the more recent and larger developments have a single larger diameter HDPE pipe coming down to the trail in an easement and have an energy dissipater at the discharge point.



Photograph 2: Light duty corrugated pipe with no energy dissipation.



Photograph 3: Small HDPE pipe with T energy dissipater.

Evidence of historic and more recent sloughs, which are typically relatively shallow events involving the upper few feet of soil along the bluff, is visible along many sections of the bluff above the trail. Some of the most recent events have resulted in debris being discharged onto and even over the trail. A picture of such an event is shown below. In addition, a large historic and more recent (1996) landslide within the large historic slide mass are located at the western terminus of the trail immediately east of the Edwards Way cul-de-sac (Leeward Property).

Subsurface Conditions

Soil Conditions

The soil conditions have been explored at many of the upland sites related to the residential development. The explorations confirmed the typical geologic conditions with glacial till at the top of the slope and Whidbey Formation oftentimes encountered at lower elevations where deep explorations were performed. The upper portion of the glacial till was typically weathered, but graded to dense to very dense within 2 to 5 feet of the ground surface. The Whidbey Formation varied from dense to very dense sand and silty sand to very stiff to hard silt.

Soil conditions encountered along the trail were relatively uniform consisting of slide debris (colluvium) at most locations overlying a railroad fill prism, likely overlying native soils. The slide debris consisted of loose to medium dense silty sand to sandy silt with occasional gravel and organic matter and was interpreted to be on the order of 3 to 12 feet thick.



Photograph 4: Shallow recent slide along the bluff above the trail.

Groundwater Conditions

The static groundwater level is below the elevation of the top of the trail. Groundwater seepage has been observed in the upland areas, typically as a “perched” condition within the upper silt soils. The perched condition results from vertical infiltration of stormwater encountering a dense, relatively impermeable layer at shallow depths. The groundwater then follows this relatively impermeable boundary toward the top of the bluff. Seepage from this perched zone along the upper part of the bluff has been noted at many sites above the trail. The Whidbey Formation can have horizontal or dipping interbeds of silt, silty sand, and relatively clean sand. This can result in groundwater seepage occurring within the more permeable layers of the Whidbey Formation at various elevations. Groundwater elevations will vary as a function of season, precipitation, tides and other factors.

GEOTECHNICAL CONCLUSIONS AND RECOMMENDATIONS

General

Management of vegetation and surface stormwater drainage are two of the most important considerations to both short and long term stability of steep slopes. In the following sections of this report, we have described the overall stability considerations related to the slope above the Guemes Channel Trail as well described preferred drainage and vegetation management practices.

Stability Considerations

The upland areas and bluff adjacent to the trail are typically underlain by medium dense to very dense glacial till and dense/very stiff to hard Whidbey Formation deposits. With the absence of significant groundwater within the upper weathered zone and within the sandier zones of the Whidbey Formation, these geologic conditions are typically “globally” and seismically stable (i.e., resist deep-seated slope stability failures). However, the average inclination of the steep slope located above the trail is steeper than the soils’ natural angle of repose. Weathering, freeze-thaw, storm events, and other naturally occurring conditions cause localized instability manifested primarily as shallow slough activity in these circumstances. The oversteepened nature of the bluff and associated sloughing and erosion is a natural coastal process without a practical means of complete mitigation; however, good drainage and vegetation management practices can greatly reduce frequency and magnitude of instability associated with the steep slope conditions.

Deep-Seated Landslides

No deep seated landslides were identified within the trail area based on historic mapping and observations with the exception of the deep-seated “ancient slide” and more recent slide in 1996 located on the Leeward Parcel at the western terminus of the trail. The more recent slide was a smaller slide fully contained within the historic slide area, and has been investigated by GeoEngineers (GeoEngineers 2003, 2008) and others (Hart Crowser, 1997). It appears that the likely cause of the recent slide was the presence of saturated weaker and dipping silt/clay beds within the Whidbey Formation. The reactivation of the slide occurred during an extended wet period. The recent slide included a toe bulge on the order of 2 feet above surrounding grade and likely occurred gradually. This slide area does not significantly impact the vegetation and habitat management plan because it does not have a steep slope immediately adjacent to the trail.

Although we cannot rule out potential deep-seated movements in other areas of the trail, we conclude that the risk is low based on our knowledge of the trail area and the lack of other historical deep-seated activity along this bluff. Therefore, it is our opinion that the proposed vegetation management plan does not need to focus on, nor will it impact, the potential for deep seated slides.

Shallow Landslides

The geometry and frequency of landslides along these types of slopes are dependent on soil type, slope inclination, groundwater conditions, weather and other factors. Episodic shallow slides may occur where a weathered zone develops on steep slopes within a silty or relatively impermeable soil with an attendant loss of shear strength as a result of moisture, freeze-thaw action, and gravity. Many small slides/sloughs have occurred above the trail. The typical landslides in these conditions are shallow and may involve 3 to 5 feet of soil along the steep slope, although it appears some less frequent isolated sloughs up to about 8 feet have occurred along the steep slopes above the trail. In some cases, larger blocks of soil will fail that can extend beyond the top of the steep slope, typically with a maximum on the order of 20 feet. We are not aware of any larger scale failures of this magnitude along the bluff above the trail.

Oftentimes bluff stability and regression is described in terms of a “bluff retreat rate”. A typical overall bluff retreat rate for these soils tends to be in the range of 1-4 inches/year. As mentioned above, the actual retreat occurs in discrete episodes that may occur over several years if not decades. The observations of scarps and colluvium at the base of the slope during previous studies suggest that the past slough events are consistent with our experience. The proposed vegetation and habitat management plan with drainage improvements can have a significant positive influence on slope stability and this retreat rate.

Drainage Considerations

Most of the properties above the trail are privately owned residential lots and already built out. Some of the properties are part of an HOA, and the drainage is managed via an HOA agreement with a collective stormwater management system. There are probably a few lots that remain for future development that will need appropriate drainage. We have observed a variety of surface, stormwater, and groundwater management practices while working on some of these adjacent projects over the years, and we also observed a variety of stormwater discharge systems during our recent site reconnaissance. Some facilities are poorly designed and maintained and are contributing to localized instability. We provide recommendations related to water management practices in the following sections.

Preventing Direct Discharge to Slopes

The main goal and preferred practice related to surface and stormwater management is to prevent water from flowing directly over the top of the slope or discharging along the slope above the trail. Direct discharge of surface water or stormwater can cause erosion which can lead to ground loss. Direct discharge can also cause surface saturation, which adds weight and seepage forces to the surficial soils and can lead to sloughing events. This is particularly true for the weathered soils along the slope or colluvial soils at the base of the slope which already have a reduced strength condition. Some preferred surface/stormwater management practices are described below:

- Installing stormwater controls at the top of the slope associated with existing/new development could improve stability and decrease the likelihood, frequency and magnitude of future sloughing events.
- It is preferable that all surface and collected stormwater (e.g., from downspouts, footing drains, yard drains) be collected and routed via a tightline to the bottom of the slope. In this case, the bottom of the slope is the uphill side of the trail, which is City right-of-way (ROW). Ideally, this water would be routed into a ditch and/or tightlined under the trail. It may be possible to bury small stormwater systems with a diffuser so that water can enter the permeable ballast of the trail. However, since this is City ROW, the discharge and disposal would need to be coordinated with and approved by the City and it may be appropriate to determine that there will be no adverse effects at each discharge location.
- The preferred stormwater system is butt-fused HDPE with a perforated ‘T’ at the discharge point:
 - The pipe is strong and therefore typically placed over the top of the slope without direct burial. Oftentimes a collar with fence posts or anchors will stabilize the pipe along the slope down to the discharge point.
 - It is preferred that the ‘T’ energy dissipater be covered with quarry spalls. An example for the diffuser is provided in: <https://fortress.wa.gov/ecy/publications/parts/1410055part7.pdf>
 - The City of Anacortes could prepare a small residential outfall example plan similar to that prepared by Island County Public Works that can be used by homeowners along the top of steep slopes.

Intercepting Shallow Groundwater

The installation of utilities can provide collection and conveyance of groundwater along the trench alignment. Many utilities are placed in the trench with bedding, which typically consists of permeable gravel. This permeable gravel acts as a preferred pathway for intercepted groundwater which then follows the gradient of the utility trench (similar to a French drain). If this trench leads to the bluff or is close to the bluff, the collected water can find its way toward the slope and add to the saturation and seepage of the upper soils.

- It is preferred that any collected water within utility trenches be routed away from the top of the slope and entered into a tightlined stormwater system.
- Alternatively, the utilities can be backfilled with compacted native, low permeability soils so that no preferential pathway is created by the utility installation.

Vegetation Considerations

General

Vegetation serves many positive purposes related to slope stability: it can reduce direct rain contact with the soil and therefore reduce erosion; it allows retained water to be taken up into the vegetation and dissipated through evapotranspiration to slow and/or limit infiltration; the rooted depth can add complexity and tensile strength to the shallow soils. The current City regulations require that housing developments above steep slopes include a setback for the house and a minimum 10-foot vegetated buffer from the top of the slope. The buffer is important to minimize disturbance near the top of the slope and the vegetation helps stability as described.

Other team members will provide specific conclusions and recommendations related to plantings and vegetation management. In general, vegetation, snags, stumps and woody debris should be left in place on slopes. In some cases the existing vegetation type is not preferred and can be replaced with more appropriate or indigenous species. It is also typically appropriate to apply mulch, straw, bark, or erosion control products to the disturbed area to reduce erosion until vegetation becomes more mature.

Tree Removal and Trimming

Trees along slopes can also provide some positive stabilization, but also can be a destabilizing effect, particularly if a blowdown occurs. Oftentimes removal, topping and/or limbing of some of the mature trees is desirable for view corridor purposes. We provide the following generalized conclusions and recommendations related to tree management at the top or along slopes:

- Generally, trees that are immediately adjacent to the top of slopes, or have been undermined, have a greater risk of falling or blow down. If they fall or are blown down, the root systems oftentimes takes a large “chunk” of the top of bluff or slope with them when they fall. The resultant exposed area at the top or along the slope is then oversteepened or further oversteepened, exposing more soil that can erode. This process essentially accelerates the erosional/sloughing processes, and can increase the bluff retreat rate.
- If trees are removed, it is desirable from a slope management standpoint to leave the tree stumps in place. The trees should be felled in a manner that prevents/minimizes disturbance to the slope and understory vegetation. The woody debris can be removed or in some cases placed on shallower slopes

(typically about 2H:1V or flatter) almost parallel to the slope to serve as further stabilization/water management. Leaving the stumps in place limits ground disturbance along the steep slope, retains root strength for some period of time, and allows other vegetation to grow around/on the stump and help stabilize the area. The typical stump cutoff height is anywhere from 6 inches to about 4 feet, however, from a geotechnical standpoint, it is not particularly relevant how much of the stump is left in place. Some tree stumps will stay alive and sprout, or the stump will rot out slowly and provide opportunities for additional vegetation to take root and protect the affected area.

- Trees can be topped or trimmed, but this activity should be accomplished in accordance with the recommendations of an appropriate professional. Again, the woody debris should be carefully removed to prevent disturbance of the slope and understory vegetation or sometimes can be left on the flatter slopes.
- Leaning trees or trees with the typical “pistol butt” or J shape at the base can be relatively stable or represent an unstable condition. This shape typically occurs because the slope has experience some amount of soil creep, which is natural. If the soil at the base of the tree is undisturbed and composed of dense glacial deposits, then the trees are typically not at significant risk of failure. However, if the trees are undermined or supported on loose soils such as colluvium, then they represent a risk of failure with the attendant adverse effect if they fall or are blown down. In this latter case, it is better to remove the trees.



Photograph 5: Several trees that have undermined roots that could lead to failure and further slope destabilization.

- Sometimes groups of trees, particularly conifer trees, can be on a steep slope or even be undercut by erosion, but still have established a root zone/pattern that is substantial enough to significantly reduce/mitigate the risk of failure. For instance, there is a group of fir trees that is immediately adjacent to a vertical slope along the slope above the trail where the roots to the trees have grafted together

horizontally along the slope, and possibly even with an uphill fir tree. These substantial root matrices can likely provide reasonable resistance to failure and blowdown such that they do not warrant removal. Photographs of trees with intermingled roots or grafted root systems are shown below.



Photograph 6: Several fir trees directly above steep bench along slope, with intermingled/ grafted root zone.



Photograph 7: Several different types of trees with intermingled root system.

- It is our experience that some deciduous tree species, particularly alder and cottonwood trees, tend to be an overall detriment to long-term slope stability. They are subject to blow down and decay with a shorter life than conifers. It is generally preferable to selectively remove these trees and if appropriate plant other species or understory.

SUMMARY

It is our opinion that the slopes are generally resistant to deep-seated landslides and that the frequency of shallow landslides can be reduced by implementation of a drainage and vegetation management plan. Drainage improvements that reduce direct discharge to slopes and intercept shallow groundwater in upland areas will provide an improvement in shallow slope stability; however these actions should not be expected to eliminate landslides on the oversteepened slopes. Because of the potential consequences of poor practices, we recommend that the City consider requiring vegetation and tree management submittals and approvals along the slope above the trail. It is in the best interests of the homeowners above the trail that bluff retreat be minimized, best interests of the public walking the trail and the City maintaining the trail that slope stability maintained as much as practicable to limit impacts. Therefore, we suggest that the City consider a policy or code amendment requiring specific submittals with narrative and plans from professionals that describe proposed activities and how they will be completed to limit disturbance and impacts to stability. This would allow the City to perform a site observation subsequent to the action to confirm that the completed activities are consistent with the professional's plans and recommendations, and provide a basis for independently monitoring performance of the vegetation should the City desire to do so.

LIMITATIONS

We have prepared this report for the exclusive use of ATSI, City of Anacortes, and their authorized agents for the proposed Guemes Channel Trail Vegetation Management Plan in Anacortes, Washington. The intent of this report is to be considered in preparation of an overall plan, but not for implementation at any particular site. Any proposed drainage or vegetation management actions at any particular location along the trail should be individually evaluated by appropriate professionals and appropriate plans prepared and approved prior to implementation.

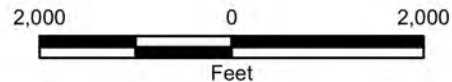
Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

We appreciate the opportunity to present this report. Please call if you have any questions.

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Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. can not guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission.

Data Sources: ESRI Data & Maps

Projection: NAD 1983 UTM Zone 10N

Vicinity Map

**Guemes Channel Trail Extension
Anacortes, Washington**

GEOENGINEERS

Figure 1



GUEMES TRAIL VEGETATION AND HABITAT MANAGEMENT PLAN

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Guemes Channel Trail Vegetation and Habitat Management Plan

Anacortes, Washington

1.0 Introduction

Urban Forestry Services, Inc. and GeoEngineers, under the direction of Aqua – Terr Systems (ATSI), were asked to prepare a Vegetation and Habitat Management Plan for the slope above the Guemes Channel Trail in Anacortes, Washington. The trail runs immediately along the shoreline north of the neighborhoods along Oaks Avenue and Route 20. The trail starts at the Edwards Way Cul-de Sac and ends at Lovric’s Boat Yard near Georgia Avenue (See Vicinity Map, Figure 1).

GeoEngineers October 5, 2015 draft report provides an excellent description of the area and general site conditions. This report concentrates on the vegetation issues.

The City of Anacortes desires that existing and future owners of the adjoining properties manage the slope vegetation not only for the better enjoyment of their properties, but also to maintain slope stability. This would include avoiding methods of pruning, trimming, or cutting of trees and vegetation that may contribute to slope failure and erosion, as well as planting additional appropriate vegetation to help reduce the potential for slope failure and erosion.

This Vegetation and Habitat Management Plan includes a process that would allow some removal of vegetation by future property owners. The recommendations identify sound vegetation management techniques that will protect the health and functions of the slope vegetation, and includes criteria for enhancement of the benefits that vegetation provides.

Maintaining good vegetation cover on and adjacent to slopes will help protect soil stability in several ways. A good mix of evergreen and deciduous plants of different sizes and growth habits work together to protect the ground from the direct impacts of rain and run-off, to intercept and absorb rainfall before it can reach the ground, and to hold soil in place with a dense network of spreading roots.

Ignoring management of slope vegetation can come at a high risk. Neglect or mismanagement has the potential to accelerate the erosion and slope failure process. For example, some hazard trees can pull slopes downhill and inappropriate vegetation types can leave slopes

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Photo 1. The Guemes Channel Trail runs for 1.2 miles along the Puget Sound shoreline parallel to Oaks Avenue in Anacortes, Washington.

more vulnerable to surface erosion problems. Although soil erosion is a natural process, it can accelerate to harmful levels if good land stewardship principals are ignored.

Although the title of this report includes "habitat management", we want to be clear that we are not habitat management specialists. However, from our experience and associated knowledge of the plant community, we are confident that all recommendations to improve plant diversity and slope stability will significantly maintain or increase many desirable wildlife habitat benefits important along the trail.

A wide range of slope and vegetation conditions are found along this trail area, for which specific recommendations are prescribed in this report. While these basic techniques can be useful for other sites with similar conditions, appropriate implementation methods are very site specific and should be supervised by a professional with considerable knowledge and experience with forest and slope conditions, pruning and removal techniques, and reforestation methods described in this report.

2.0 Site Analysis

The Guemes Channel Trail is approximately 1.2 miles long and 12-feet wide. The blacktop trail grade is level, and is just above the high tide mark over the entire distance.

There is a narrow strip of exposed soil between the trail and the large boulders, rip rap and cement barriers along the waterside that protect the seawall from erosion. Portions of this strip are covered with well-established vegetation, while other sections have freshly placed and exposed topsoil, some with very new plantings. Some of the areas with new topsoil are already starting to erode. This erosion is likely caused by rainfall as well as sea water splash.



Photo 2. Newly placed and exposed soil between the trail and shoreline rip rap is especially vulnerable to erosion from rainfall, storm water runoff and ocean splash. Proper measures must be taken to reduce potential erosion and hasten the establishment of strong vegetation cover.

Above the trail, the slope is steep to very steep, extending up to and including the back yards of residential properties. There are a wide range of vegetative conditions along the slope. Some areas have shrubs and groundcover only; others have a mix of shrubs, groundcover and scattered trees; and some sections have an increasingly dense forest stand with scattered shrubs and groundcover in the understory. Nearly all of the plants are native to the area, except for exotic invasive species like Himalayan and European blackberry. In most areas, the vegetation is well established, which is critical for slope stability. In many locations, the slope has the ideal plant community type for protection and stability: multi-layered vegetation consisting of well-established ground cover, then low shrubs, medium height shrubs, shorter trees, and taller canopy trees. It will be important to monitor and maintain much of the existing slope vegetation in its current condition.

Some recent and not so recent slope failures have occurred. The GeoEngineers technical report describes these in geological terms. In the failed areas, existing vegetation has fallen, sloughed off, remains as remnants, or has disappeared. It will be important to protect these disturbed areas from additional external influences and to re-establish a multi-layered plant community that will best protect the slope over the long term. Photo 3 above is an example of these conditions. A typical remedy would be to cover the bare soil with a jute mat and plant snowberry, red osier dogwood, and salmonberry. Once established conifer and deciduous trees could be planted. Young alder should not be cut short because they will just die.

2.1 Soils and Geology

The October 5, 2015 draft report from GeoEngineers provides a thorough description of the soils on the slopes. Of greatest concern is that the steep slope above the trail is designated as a geological hazardous area in accordance with the City's Critical Ordinance (CAO), Chapter 17.54. Their report also states that:



Photo 3. The city mapping as well as the GeoEngineers report, warn of the high probability of periodic severe erosion or slope failure. Inter-planting desirable groundcovers and shrubs will help stabilize these areas. Planting large maturing trees near their base may help prevent additional mass soil movement in the future.

- The steep slope is mapped as having a severe water erosion hazard. This is associated with the very steep nature of the slope.
- The steep slope is a landslide hazard area based on several different definitions in the CAO. The steep slope designation requires the establishment of setbacks and buffers from the top of the slope, vegetation management plans, drainage plans and/or other mitigation strategies to be incorporated into upland developments.

2.2 Existing Vegetation

The overall hillside vegetation consists of a relatively sparse to dense mixed aged second growth deciduous forest, with scatterings of fir, cedar, spruce and hemlock. The deciduous portion of the forest is red alder, *Alnus rubra*, and bigleaf maple, *Acer macrophyllum*, most of which appear to be about 60 to 80 years old. The majority of older red alder on the slope are 12 to 30 inches diameter measured at 4½ ft. above ground and are from 60 to 80 ft. tall. There is a relatively young stand of red alder near the start of the trail where disturbance has been most recent.

Red alder trees are a relatively short-lived species, and most begin to decline by 70 years of age. Upper limbs begin to dieback, and they can decay from the top down. As they decline, their root systems become weaker. Red alders are not known to have extensive or well-developed root systems, even when healthy. Their role in natural ecosystems is to lean and fall over to make way for a new generation of longer-lived species. Many alders can live in a declining condition from up to 10 to 30 years. During that time, they could lean and fall over as their vigor and root structure decline. The rotation of root balls when trees lean or fall over can contribute to slope failure and erosion. Soil creep is a condition where there is slow mass movement of the ground down slope, resulting in moderate to severe lean of trees without their uprooting.

There are fewer bigleaf maple trees than red alder. As a species, they are longer-lived, (up to 300 years or more), and their root systems are more fibrous and wide spreading. Overall, the bigleaf maples on the slope are also in better condition, and tend to be better anchored into the slope. The bigleaf maple trees range in size from 12 to 36 inches diameter. They grow as tall as the red alder, but develop a much wider in crown, often 60 to 80 feet wide. Bigleaf maple with multiple leaders can develop even broader canopy spread. This species has a very strong capacity to re-sprout if cut back to a low stump. The ability to retain the well-established roots and generate new canopy cover is a valuable attribute for the maintaining slope stability.

The larger, older specimens of Douglas-fir, *Pseudotsuga menziesii*, Western red cedar, *Thuja plicata*, Western hemlock, *Tsuga heterophylla*, grand fir, *Abies grandis*, and Sitka spruce, *Picea sitchensis* occupy the more stable sections of the slope. These conifers can be very long-lived. Most of the specimens on this site appear to be mostly in fair to good condition. Although relatively few in numbers, some of these conifers are very large in size, from 6 to 50 or more in inches diameter and over 100 feet. tall. Well established conifers provide valuable canopy cover and rain interception. There is very little natural reproduction of conifers in the understory.

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Smaller understory trees that contribute to the multi-layered canopy include vine maple, *Acer circinatum*, Douglas maple, *Acer glabrum*, bitter cherry, *Prunus emarginata*, scouler's willow, *Salix scouleriana*, cascara, *Rhamnus pershiana* and the Western flowering dogwood, *Cornus nuttallii*.

Areas with the most stable ground have understory cover of Nootka rose, *Rosa nutkana*, Thimbleberry, *Rubus parviflorus*, salmonberry, *Rubus spectabilis*, salal, *Gaultheria shallon*, low Oregon grape, *Mahonia nervosa*, red huckleberry, *Vaccinium ovatum*, Sword fern, *Polystichum munitum* and snowberry, *Symphoricarpos albus*. There are also some mid-size multi-stemmed deciduous shrubs, such as serviceberry, *Amelanchier alnifolia*, oceanspray, *Holodiscus discolor*, hazelnut, *Corylus cornuta*, and red elderberry, *Sambucus racemosa*. The most recently disturbed ground hosts nettles, *Urtica dioica*, and one or more of the exotic blackberries. I observed all of these conditions to some degree over the site.

The understory vegetation on the less stable ground consists primarily of sword fern, *Polystichum munitum*, salmonberry, *Rubus spectabilis*, and red elderberry, *Sambucus racemosa*. These species appear to be able to reproduce and continue to grow in areas where there is downhill soil movement.

A complete list of the woody vegetation observed on the slope is found in Appendix A.

3.0 The Role of Vegetation in Slope Stability

It is important to understand the function, benefits and significance of vegetation growing on slopes. The use of vegetation, primarily grasses and broadleaf ground covers, for preventing surface erosion on slopes is well known. Woody plants, such as trees and shrubs, help to prevent mass movement, particularly shallow sliding in slopes (Gray 1982). However, erosion and movement is a natural process on slopes. In most cases, this process is significantly slowed where trees, shrubs and groundcovers are well established and where outside influences or disturbance are monitored and controlled. Understanding the specific ways that vegetation protects the slope is important.

Shrub masses and trees help to minimize erosion and slope failure in the following ways:

1. **Root reinforcement** - mechanical reinforcement of soil by the intermingled lateral roots of the shrubs and trees roots which hold the soil mass together. The development of vertical taproots and secondary sinker roots which penetrate deeper into firmer ground below can help anchor the soil to the slope and increase resistance to sliding. This rooting pattern occurs more often in trees than shrubs.

1. **Soil moisture modification** - Vegetation affects soil moisture through evapo-transpiration and interception. Evapo-transpiration is the combined loss of water to the atmosphere through evaporation and transpiration (which draws soil moisture up through the roots and out of the leaves during photosynthesis). Foliage and canopy area intercepts and captures moisture and limits the amount of water that can reach and buildup in the soil.
2. **Buttressing and arching** - This function is provided by embedded stems and roots which act as buttress piles anchoring soil on a slope and counteracting shear stresses.

Some vegetation factors can be considered to have both a positive and negative influence:

4. **Surcharge** – is the weight that vegetation exerts on a slope. Weight pressure down slope can exert destabilizing stress; weight pressure perpendicular to the slope tends to increase resistance to sliding.

In a limited number of situations, , trees can be considered a negative influence:

5. **Root wedging** - an alleged tendency of roots to invade cracks, fissures, and channels in a soil or rock mass and thereby cause local instability by exerting a wedging or prying action.
6. **Windthrowing** - destabilizing influence caused by turning moments exerted on a slope as a result of tree movement from strong winds blowing downslope through trees.



Photo 4. Determining if edge trees should be removed because of their potential to pull down the slope is sometimes difficult. Many factors must be considered. In this specific case, no action was recommended at this time because of the significant number of trees growing and interconnected by their roots along and above the edge of the slope and the relatively solid exposed subsoil. This location like others should continue to be monitored. At some time in the future some of these trees may have to be cut down or severely reduced in size and weight. **Maintenance should only be done with the consultation of a qualified professional.**

On a small scale, roots and foliage of all plant types contribute to soil and slope stability through:

1. **Interception** - foliage and plant residues absorb rainfall energy and prevent soil compaction from raindrops.
2. **Restraint** - root systems physically bind or restrain soil particles while above-ground residues filter sediment out of runoff.
3. **Retardation** - above-ground residues increase surface roughness and slow the velocity of runoff.
4. **Infiltration** - roots and plant residues help maintain soil porosity and permeability.
5. **Transpiration** - depletion of soil moisture by plants delays onset of saturation and runoff.

Determining whether or not specific trees or shrubs are benefiting the slope is very site specific and takes into account a minimum of the following variables:

- Species
- Size (weight, height and canopy)
- Location
- Soils
- Ground Water
- Season
- Understory vegetation
- Aspect of the slope
- Steepness of the slope
- Microclimate conditions
- Microhabitats
- Environmental Stresses
- Site Disturbance
- Off-Site Influence

This Plan specifically addresses the vegetation that has been observed on the Guemes Channel Trail slope. Based on our experience and review of the literature, the following matrix should be considered when evaluating the vegetation on these slopes.

Characteristics of Existing Native Slope Vegetation

Species	Rooting	Crown	Interception/ Evaporation Evapo-transpiration (ET)	Comment
Bigleaf maple, <i>Acer macrophyllum</i>	Wide spreading, aggressive, tenacious, fibrous.	Deciduous, narrow, wide, tall. Single, but more often multiple leaders. Density can suppress understory.	Most beneficial in summer when in leaf.	Long-lived. Cut stumps will aggressively resprout, fast growth. Roots stay alive.
Red alder, <i>Alnus rubra</i>	Narrow, spreading, less aggressive, poor depth & width, less fibrous.	Deciduous, narrow & tall, begins to decline at about 70 years.	Most beneficial in summer when in leaf.	Short-lived, cut stump may resprout, but not always. Fast reproduction on disturbed ground.
Douglas-fir, <i>Pseudotsuga menziesii</i>	Wide spreading, more woody than fibrous, but more often deep & well-anchored if soil depth available.	Evergreen. Not shade tolerant so crown is either weak or dominant & at great Height. Can be dense.	Very good year-round, especially summer. Then winter to a lesser extent.	Very long-lived. Does not appear to tolerate disturbed ground. Indicates stable ground on slope.
Western red cedar, <i>Thuja plicata</i>	More fibrous than woody root system. More wide spreading than deep.	Evergreen. Shade tolerant so crown can reach down to forest floor. Very dense foliage.	Very good year-round, especially summer. Then winter to a lesser extent.	Very long-lived. Does not appear to tolerate disturbed ground. Indicates stable ground on slope.
Western hemlock, <i>Tsuga heterophylla</i>	More fibrous than woody root system. More wide spreading than deep.	Evergreen. Shade tolerant so crown can reach down to forest floor. Very dense foliage. Slow growing.	Very good year-round, especially summer. Then winter to a lesser extent.	Very long-lived. Does not appear to tolerate disturbed ground. Indicates stable ground on slope.
Grand fir, <i>Abies grandis</i>	Wide spreading, more woody than fibrous, but more often deep & well-anchored if soil depth available.	Evergreen. Somewhat shade tolerant so crown may be either weak or dominant & at great height.	Very good year-round, especially summer. Then winter to a lesser extent.	Very long-lived. Does not appear to tolerate disturbed ground. Indicates stable ground on slope.
Pacific madrone <i>Arbutus menzeisii</i>	Deep and stable roots.	Evergreen broad.	Good year round.	Long lived. Seldom fails.
Willow, <i>Salix</i> spp.	Very fibrous & wide spreading.	Deciduous & not shade tolerant. Short & wide spreading.	Most beneficial in summer when in leaf.	Short-lived, tolerates wet soils. Suckers & sprouts when cut.

Species	Rooting	Crown	Interception/ Evaporation Evapo-transpiration	Comment
Tall deciduous shrubs: Indian plum, <i>Osmaronia cerasiformis</i> Vine maple, <i>Acer circinatum</i> Red-osier dogwood, <i>Cornus sericea</i> Western hazelnut, <i>Corylus cornuta</i> Oceanspray, <i>Holodiscus discolor</i>	Very fibrous & wide spreading.	Deciduous & shade tolerant. Short & wide spreading.	Most beneficial in summer when in leaf. Usually not dense.	Medium longevity. Tolerate wet soils. Sprouts from roots when cut.
Evergreen shrubs: Oregon grape, <i>Mahonia nervosa</i> Salal, <i>Gaultheria shallon</i> Sword fern, <i>Polystichum munitum</i>	Usually fibrous.	Evergreen & wide spreading.	Very good year-round, especially summer. Then winter to a lesser extent	Long-lived, reproduces to cover area. Protects soils.
Short Deciduous: Wild rose, <i>Rosa spp.</i> Snowberry, <i>Symphoricarpos albus</i>	Fibrous & wide spreading. Aggressive.	Deciduous but spreads.	Very good year-round, especially summer.	Long-lived, reproduces to cover area. Protects soils.

4.0 Vegetation and Habitat Management Recommendations

There are three key landscape maintenance activities that these recommendations cover:

1. Pruning
2. Selective Hazard Tree and Vegetation Removal
3. Inter-planting for Increased Slope Canopy Cover and Stability

These activities would likely be addressed as the need arises or is requested. However, property owners or the city may decide to be pro-active to help reduce the potential for erosion and surface failure. Most property owners would opt to prune only, but some additional slope management is advisable considering the past history of the slope.

Property owners who understand the natural processes that contribute to the stability or failure of the slope and become more active in good slope management practices might be able to prune to improve a view if desired, while protecting and improving the unlimited benefits that slope vegetation cover can provide for everyone involved.

4.1 Pruning Techniques

If a property owner specifically requests pruning for views, the pruning techniques that might be allowed are:

- **Windowing** - selective removal of branches cut back to a main trunk or leader to open views through the canopy.
- **Uplifting or Skirting Up** - removal of bottom branches back to the main trunk to raise canopy height.
- **Crown Reduction** - selective shortening of top branches back to strong lateral limbs to lower and reduce the size of the canopy.

The actual pruning to be undertaken would be carefully planned and implemented on a case by case basis.

4.1.1 The Process for Implementing View Pruning

The most practical process for selecting which limbs to prune would require coordination between a “Spotter” and the “Tree Pruner”. The “Spotter” would consist of the **consulting arborist** or the **Trail Owners' representative**. The “Spotter” would remain located on a site selected and point out the tree with the obstructing limbs to the “Tree Pruner”. The “Tree Pruner” would climb the tree and cut the limbs using proper pruning methods as described in this memo and in accordance with ANSI A300 Pruning Standards and International Society of



Photo 5. When tree or limb removal takes place, care must be taken to protect the slope, soils and existing desirable vegetation from additional damage during the work. The woody debris may have to be removed, or in some cases, be cut up and laid over bare soil to decompose. Brush should be carefully taken out and chipped up. Chips can be placed up to 4-inches deep over bare soil on the slope. Inter-planting should take place immediately or at the next best time of year for successful planting.

Arboriculture Best Management Practices. The “Tree Pruner” should be an ISA Certified Arborist experienced and familiar with these pruning methods.

The consulting arborist would determine the most appropriate method of pruning. In some cases, where there is sufficient adjacent tree cover, the top of a declining tree such as a red alder, could be removed to create a standing wildlife snag for perching or nesting (See Wildlife Snag Detail in Figure 1 and Photo 6).

4.1.2 Retention and/or Disposal of Cut Limbs

The limbs that fall to the ground should be cut into smaller pieces so they do not smother existing vegetation and so they will decompose more quickly. At the discretion of the arborist, some larger limbs may be relocated within the site or carefully removed from the site altogether. Ideally, the retained cut limbs should be in direct contact with the ground.

4.1.3 Methods of Site Access for Tree Pruning

No motorized equipment should be used to access the hillside slope. All work would be done by hand with pruners, pruning saw, and/or chainsaw. The “Tree Pruner” and any crew required will walk to each tree, minimizing disturbance to existing vegetation. At the discretion and approval of the City, motorized equipment kept on the blacktop trail may be acceptable.

If necessary, specific trails onto the slope would be designated for best access to minimize disturbance or damage to “sensitive” areas. Also, turf blocks or other ground surface protection may be recommended if wet conditions are encountered.

4.1.4 Season of Work for Pruning Trees

Initial pruning of trees would take place as site conditions permit. However, on difficult to access sites, pruning may be more efficient and cause less ground disturbance during the drier times of the year, from June through September. The consulting arborist and/or the City Forester should determine if conditions are not appropriate for pruning.



Photo 6. These are examples of the wildlife snag cutting technique described in Figure 1. This method results in a more natural appearance and function than a cut made straight across the trunk. It is also less likely for new shoots to emerge near the cut top on deciduous species.

4.1.5 Treatment of Tree Wounds

Painting tree wounds is no longer recommended to protect trees from insects and diseases and to promote healing. In fact, tree paint has been shown to do the opposite. At best, it is still used occasionally, but only for cosmetic benefits. The correct placement of the cut on the tree has been shown to be more critical in promoting the tree's ability to seal off decay.

4.2 Selective Tree Removal

Complete removal of trees on the slope should be limited, and only be done for specific reasons such as hazardous trees or trees contributing to slope failure. Under the direction of the consulting arborist, with approval by the City Forester, certain trees may be cut when, in their professional opinion, the cutting would not increase the potential for slope failure and erosion or may actually reduce that potential. Trees hazardous to people and structures should also be removed.

In our opinion, trees actually have the potential to contribute to slope failure in the following situations:

- When trees are growing at the edge of near vertical slopes.
- When roots of these edge trees are becoming undermined and exposed from sloughing or erosion.
- When large crowns of these edge trees are exposed to winds, causing a rocking action and wedging movement of the root wad in limited soil conditions.
- When a group of trees are all tipping from mass soil movement.
- When trees demonstrate a curved or pistol butt trunk from very slow soil creep and the trees actually target a home, road, or high use area.

On a limited basis, an occasional tree may be cut to improve a view. This would only occur if in the opinion of the consulting arborist and City Forester:

- The tree is not considered significant in the stability of the slope.
- There is sufficient ground cover and surrounding tree crowns remaining to continue the interception, transpiration, and evapo-transpiration process.
- The removal would allow more sunlight to penetrate and benefit shrub and tree reproduction below the tree canopy.
- The increased sunlight would benefit the establishment of new material being inter-planted. Inter-planting is the selective planting of appropriate tree and shrub species among the existing vegetation where they will benefit the hillside vegetative cover.

When a tree crown is removed, a portion of the trunk has the potential to be kept as a wildlife snag for nesting, perching, and feeding. Some skill and creativity is beneficial when leaving a tall snag to appear like a natural break rather than a tall stump. See Figure 1 and Photo 6 for an example of the cutting and resulting snag.

WILDLIFE SNAG DETAIL GENERAL GUIDELINES

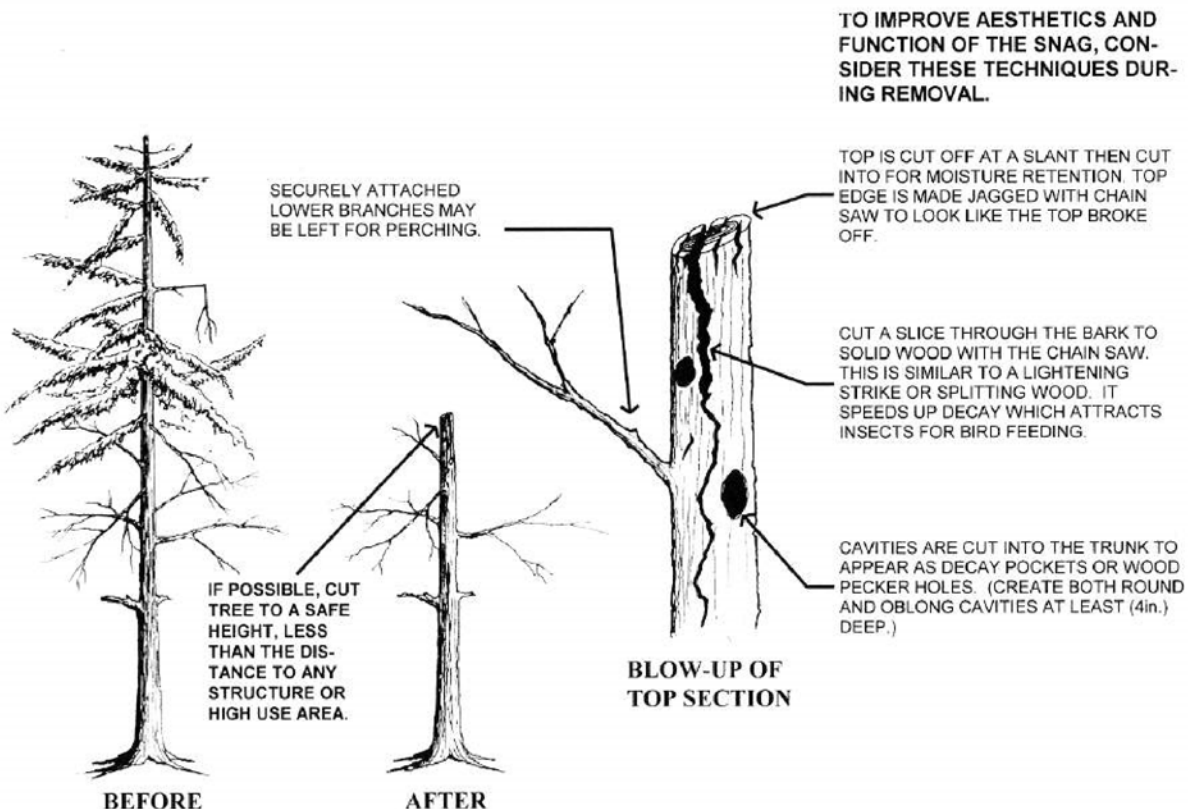


Figure 1. Trees to be cut down or back for any reason can be retained as wildlife snags. Special cutting techniques can be used to assimilate a wildlife snag.

4.2.1 The Process for Determining Appropriate Tree Removal

During the selection of trees to prune for improved views, some trees may be identified as better candidates to remove than to prune. On a more pro-active management implementation plan, the entire hillside might be evaluated for trees that are contributing to slope failure or may be a hazard.

4.2.2 Selecting Trees for Cutting

Trees selected for cutting should meet either or both of the criteria listed in Section 4.2

All tree cutting should be done with minimal disturbance to the slope. Under the direction of the consulting arborist, trees to be removed would be marked beforehand for final

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approval by the City Forester. At that time, they would determine whether the cut limbs and trunk should be removed or dealt with in place.

4.2.3 Methods of Site Access for Tree Cutting

No motorized equipment will be used to access the hillside slope. All work will be done by hand with pruners, pruning saw, and/or chainsaw. The “Tree Cutter” and any crew required would walk to each tree minimizing disturbance to existing vegetation. At the discretion and approval of the City, motorized equipment kept on the blacktop trail may be acceptable.

If necessary, specific trails would be designated for best access to minimize disturbance or damage to “sensitive” areas. Also, turf blocks or other ground surface protection may be recommended if wet conditions are encountered.

4.2.4 Season of Work for Cutting Trees

Cutting of trees can take place any time. However, on difficult to access sites, cutting may be more efficient and cause less ground disturbance during the drier times of the year, from June through September. The consulting arborist and/or the City Forester should determine if conditions are not appropriate for cutting.

4.2.5 Retention and/or Disposal of Cut Trunks and Limbs

In many cases, it would be more beneficial to leave the cut limbs and tree trunk sections on-site. The limbs should be cut and scattered so they do not smother live vegetation. Ideally they should be cut in pieces so they are in direct contact with the ground or within 24 inches of the ground. The closer they are to the ground, the more quickly they will decompose.

Larger limbs or trunks should be cut in pieces so they lie directly on the ground, preferably perpendicular to the fall of the slope. They will decompose more quickly, catch falling leaves, and debris and slow the movement of water down slope. New plants may become established in these areas next to the retained limbs and trunks.

Decomposing limbs and trunks are beneficial as they add organic matter and wildlife habitat. Limbs can also be chipped up and spread over bare soils on the slope as mulch. These wood chips should be kept to 4 inches or less in depth.

4.2.6 Trees Cut and Removed from Slope

Removal of cut materials from the slope should only be necessary when, in the opinion of the consulting arborist and/or City Forester, there would be too many limbs and/or debris to be effectively kept on the slope to decompose or to be kept without smothering existing vegetation. If trees and/or limbs are removed from the slope, special care shall be taken to minimize disturbance of the ground. Although this is unlikely to be an issue, the procedure will be described here for consideration for extreme conditions.

The recommended method for removing trunks and limbs with the least amount of ground disturbance is the use of a Cableway System. This involves the transport of the material by means of steel cables with the load being lifted completely off the ground. The cables can be attached to a cable tower system or to sufficiently strong trees at the top and bottom of the slope. The trunk and/or limbs would be attached to a second cable attached to the “high lead” cable and lowered to a yarding area, in this case onto the Guemes Channel Trail.

If conditions are dry and the trunks or limbs are located close to the Trail, or near an easy to access bench on the slope, they may be carefully removed with a skidder. A skidder is a wide wheeled tractor that uses a cable to pull material to it. The skidder can then lift all or one end of the material off the ground and haul it to the yarding area. This would be the only exception to not having any motorized equipment on the hillside to access the site. The consulting arborist and/or City Forester would determine if conditions would allow this type of access.

4.3 Inter-planting on the Slopes and Trail Edge

Inter-planting is the planting of native plants among the existing native plants on the hillside to increase and improve the benefits of vegetative cover. The newly placed soil between the trail and shore armor is currently vulnerable to erosion. Adding appropriate trees and shrubs, especially evergreens, along the trail and on the slope is essential for the following reasons:

1. Multiple layers of trees and shrubs increase the **interception** of rainfall. Evergreen plants are critical to the mix, particularly in winter when deciduous plants have lost their leaves. Needles, leaves, twigs, limbs, and trunks can all hold a tremendous amount of water.
2. This mix of plant types will also increase the **evaporation** of moisture during winter. The greater leaf surface area holds more moisture, increasing the opportunity for evaporation and continued interception.
3. **Evergreen trees and shrubs**, although mostly dormant during the winter, continue photosynthesis and **evapo-transpiration** during moderate temperatures well after deciduous trees have lost their leaves.
4. Roots and root growth is different among different plant types. Plants with fibrous roots and those which reproduce and spread through rhizomes (specialized horizontal roots that produce new shoot growth) are recommended to include in slope plantings. It is especially beneficial to plant the areas along the top edge of the slope with these type of plants. Snowberry, salal, and Oregon grape are some examples.

Over time, the benefits of these plants will increase as they establish and spread. A greater percentage of moisture will be caught before it reaches the ground. Root systems of more favorable plants help to knit a fabric of interwoven root systems that help bind the soil and reduce shallow landslides and erosion.

The narrow strip of soil along the edge of the trail should be protected and planted immediately with closely spaced container plant stock for quick establishment. Place erosion jute over the prepared soil. Use u-shape anchor pins to hold it in place. Cut through the jute as

needed to install the plants. Place 3-inches of coarse wood chip mulch over the jute but not up against new plants. A selection of suggested native plants for this location is listed below. It is best to use a mix of different plant types for optimal coverage; if one species does not take well, and adjacent one may fill that void. The sedge and dune grass are good choices for the edges where soil has been sifting between large boulders.

4.3.1 Plants Recommended for Slope Planting

Botanical	Common Name	Evergreen	Sun	Shade
Tall trees				
<i>Abies grandis</i>	Grand fir	X		
<i>Pseudotsuga menziesii</i>	Douglas-fir	X	X	
<i>Thuja plicata</i>	Western red cedar	X	X	X
<i>Tsuga heterophylla</i>	Western hemlock	X	X	X
Medium trees				
<i>Pinus contorta</i> var. <i>contorta</i>	Shore pine	X	X	
<i>Acer circinatum</i>	Vine maple			X
<i>Salix scouleriana</i>	Scouler willow		X	X
Tall shrubs				
<i>Corylus cornuta</i>	Western hazelnut		X	X
<i>Cornus sericea</i>	Red-osier dogwood		X	X
Medium shrubs				
<i>Rosa</i> spp.	PNW wild roses		X	
<i>Vaccinium ovatum</i>	Evergreen huckleberry	X	X	X
<i>Mahonia aquifolium</i>	Tall Oregon grape	X		
<i>Symphoricarpos albus</i>	Snowberry		X	X
Low shrubs and ferns				
<i>Gaultheria shallon</i>	Salal	X	X	X
<i>Polystichum munitum</i>	Sword fern	X	X	X
<i>Mahonia nervosa</i>	Low Oregon grape	X	X	X
Herbaceous ground cover				
<i>Luzula parviflora</i>	Small-flowered woodrush	X	X	X
<i>Fragaria vesca</i>	Woodland strawberry	X		X
<i>Tellimia grandiflora</i>	Fringecups	X		X
<i>Oxalis oregana</i>	Wood sorrel			X

4.3.2 Plants Recommended for the Bed Along the Seawall Edge

Botanical	Common Name	Evergreen	Habit
<i>Arctostaphylos uva-ursi</i>	Kinnikinnick	X	Spreading, mat
<i>Sedum spathulifolium</i>	Broad-leaf sedum	X	Spreading, mat
<i>Fragaria chiloensis</i>	Beach strawberry	X	Spreading, mat
<i>Carex macrocephala</i>	Largehead sedge	X	Grass-like clump; 3' tall
<i>Leymus (Elymus) mollis</i>	American dunegrass	X	Grass, large clumps, 3' tall
<i>Polystichum munitum</i>	Sword fern	X	Broad mound, to 4' wide
<i>Gaultheria shallon</i>	Salal	X	Spreading shrub

4.3.3 Size and Quality of Planting Stock

Size of plant material and quantity depends entirely on funding available. Plants from seedling size to landscape size material are possible. Seedlings are much less costly, require less maintenance to establish, and their planting would be less damaging to the site. They are, however, more easily suppressed and would take more time to be effective.

Landscape size material is more effective sooner and may compete better with surrounding plants. These plants come in containers or balled and burlapped, usually up to about 10 ft. tall. These plants are more difficult to transport and install. Landscape size material is much more expensive to purchase and plant, and would be more damaging to the site during transport and planting.

Another option is dormant season bare root planting of deciduous trees and shrubs. Material is generally available for sale and planting in February and March. Vine maple, willow, red-osier dogwood, snowberry, and sometimes even sword fern can be obtained bare root.

The best approach would be to plant seedlings on the upper slope and larger plants on the lower slope and benches.

4.3.3 Season for Inter-planting

Dormant season, preferably early winter, is an optimal time for planting seedlings and bareroot stock, to take advantage of the winter moisture and give new roots a head start before spring shoot growth.

Bare root seedlings may not be available until late winter. Bareroot plants have no soil with them, are less expensive, but require special handling. Plugs or tubelings may be available earlier. Plugs and tubelings are small plants grown in small narrow containers that are relatively inexpensive and easy to transplant.

Larger container and balled and burlapped material should be planted in late summer to early fall before winter rains begin. Planting at this time would reduce potential damage to the hillside and allow for early establishment of new roots with the help of fall and winter rain. Container plants are available any time of year. Balled and burlapped plants are available during fall, winter, and spring only.

4.3.5 Additional Planting Notes

1. The most cost effective approach to planting along the trail and on the slope would be to hire an experienced contractor under the supervision of a consulting arborist. It is critical to have good enforcement of the planting specifications and plant warranties.
2. Along the trail, a mix of groundcovers, low maturing shrubs and trees is appropriate. This is critical to complete as soon as possible.
3. Inter-planting should take place within openings in forest and ground cover on the slope. This is especially important for new slide areas.
4. Plant larger maturing trees randomly near the base of the slope. As they grow larger, well anchored trees act as bollards to block the mass soil movement of some small landslides.
5. Plant species should be placed where their requirements match the site: for example, willow, red-osier dogwood, and cedar on wet sites and Douglas-fir on dryer, open, sunny sites.
6. At planting time, where mountain beaver activity is observed, Ani-pel (Repellex) tablets shall be placed in the planting hole. Plants absorb this bitter substance and repel grazing animals like mountain beaver, as well as deer, mice, and voles. Several topical spray coatings are also available to cover the plants during the lag period before the plants begin to absorb the tablets.
7. Plant quality shall meet or exceed ANSI 260.1-1996, American Standard for Nursery Stock specifications.
8. Planting specifications shall meet or exceed those established by the International Society of Arboriculture or Washington Certified Nursery and Landscape Professional.



Photo 7. New bare soil is already eroding and washing away on the waterside edge of the trail. Cover with erosion jute and immediately plant soil binding ground. Place arborist chips over the jute and around the plants, but not against the stems of plants. Additional rip rap should also be considered to protect loose soils.

9. Place an 18 to 24-inch wide circle of arborists woodchips 3 inches deep around every new planting but take care not to place chips against the plant stem. Along the trail, cover all bare soil with 3 inches of arborist chips. This type of mulch offers the superior benefits for protecting the soil and releasing nutrients as it decomposes. It functions much like the natural duff layer in forests.
10. All plant material shall be watered in immediately upon planting and weekly until winter rains begin.
11. Return periodically to remove competing grass or invasive competition until established.

4.3.6 Selective Vegetation Removal and Control

Certain plants, primarily invasive and non-native species, should be targeted for some control before and after inter-planting. Key plants on this site are:

- English ivy, *Hedra helix*
- Himalayan blackberry, *Rubus procerus*
- European blackberry, *Rubus laciniatus*
- Scots broom, *Cytisus scoparius*

For the most part, these plants suppress and limit the reproduction of the more beneficial native plants because of their aggressive, overwhelming growth. In addition, the soils English ivy and invasive blackberries have been found to remain bare and subject to constant erosion. Watch for these plants in forest opening and along trail edges.

Except for English ivy, these plants require a fair amount of sunlight. Therefore, planting evergreens that would eventually shade them out is the best long-term management tactic.

For short-term, control these plants through:

1. Pulling out, including the roots (Scots broom).
2. Cutting with machete to reduce competition (ivy and blackberry).
3. Chemical spray (ivy and blackberry).

4.4 Monitoring and Long-term Management

1. Although slope vegetation cover is the focus of this management plan, it is critical to recognize the potential detrimental influence of external impacts, specifically unintentional or accidental excess drainage over the slope. Any out of the ordinary water movement over the slope could cause minor to major slope failure that no amount of vegetation can protect. For this reason, every effort should be made to control and monitor for any such excessive water movement. This may be in the form of annual as well as post storm inspections along the top of the slope. Property owners should be made aware of this concern.

2. A second external impact to monitor is the dumping of grass clippings, brush, soil or any other foreign substance near the top or over the side of the slope. This is a very destructive practice; it will suppress and kill valuable groundcover and shrubs critical for holding the slope. Water will eventually find its way under these piles and a washout will begin. Property owners must be warned against this practice.
3. In addition, the type of vegetation planted in landscaped areas on level areas adjacent to the top of slopes has been found to influence runoff and slope stability, with higher likelihoods of failures occurring where lawns abut the top of a slope. In heavy rain events, water can sheet across the lawn, unloading onto the slope. This can be prevented with a border of densely planted multi-stem shrubs that serve to capture and slow water movement. Salal, evergreen huckleberry, snowberry and ornamental spirea and evergreen azaleas are among the types of shrubs that spread by underground stems and serve this protective function well.
4. In regards to vegetation management, short-term and long-term monitoring is recommended to evaluate the success of pruning, selective tree removal, and inter-planting efforts.
5. Many trees that are pruned will grow back over time. Repeat pruning may be required every 3 to 5 years. Proper pruning (as opposed to just topping) should reduce the need for frequent pruning, as well as preserving tree structure and health.
6. As conditions change on the hillside, additional trees may be selected for removal to reduce potential slope failure.
7. New plantings should be monitored, during the first three growing seasons for moisture needs, animal damage, and plant competition. Response to these activities should be timely to protect the investment in time and funding already spent.
8. As additional openings in the forest are discovered, there are opportunities for additional planting that should quickly be responded to.
9. We recommend that someone knowledgeable in vegetation management and with the goals of this project be on-site during various stages to oversee the implementation of this plan. This would allow alternatives to be discussed and adjustments made as needed in the field before irreversible changes occur. This input would include, but not be limited to, selecting plants to save on-site or for transplanting, marking trees for removal, selecting planting sites, and contract compliance for job completion and minimization of disturbance.
10. Pre-construction meetings are always advised to inform work crews of goals of the project, protection of the slope soils, and alternatives to consider for meeting the objectives.

11. Additional armoring of the shoreline should be considered along the trail edge to prevent soil loss especially where plants are not yet established.
12. This Vegetation and Habitat Management Plan is considered a long-term investment to protect multiple benefits that the slope vegetation can provide. At the very least property owners along the upper slope should be contacted personally and/or annually provided written instructions on slope management and what to monitor for.

4.5 Requirements for Subsequent Vegetation Management Recommendations

Slope instability and soil erosion cannot be precluded or eliminated by the positive effects of vegetation management alone. Landslides and erosion happen naturally. However, vegetation management practices can affect the processes that contribute to land-sliding and erosion, and proper practices can reduce the probability of ground movement and may increase the recurrence interval of such events.

Because of the multiple influences and environmental characteristics of vegetation and slope management, it is beneficial that a multidisciplinary team periodically evaluates existing slope conditions and recommend specific actions with regard to site-specific recommendations. The team members should possess and demonstrate knowledge of hillside and slope processes and their relationship to forest management activities. The education associated with team qualifications should include geology, geotechnical engineering, soil science, arboriculture, horticulture, ecology and forest engineering.

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Appendix A

Woody Plants Observed on Guemes Channel Trail Slopes

Non-native Plants Observed on Slope

<i>Rubus discolor</i>	Himalayan blackberry
<i>Cytisus scoparius</i>	scots broom
<i>Rubus laciniatus</i>	evergreen blackberry
<i>Ilex</i> spp.	Japanese holly

In many cases, these non-native plants are considered invasive. They quickly propagate in disturbed areas like recent slides, but in most cases are considered poor for slope stability and erosion control. They also contribute to crowding out and smothering the more desirable native ground covers.

Native Shrubs

Deciduous

<i>Acer circinatum</i>	vine maple
<i>Corylus cornuta</i>	hazelnut
<i>Holodiscus discolor</i>	oceanspray
<i>Oemleria cerasiformis</i>	Indian plum
<i>Ribes divaricatum</i>	gooseberry
<i>Ribes sanguineum</i>	winterflowering currant
<i>Rosa gymnocarpa</i>	wild rose
<i>Rubus parviflorus</i>	thimbleberry
<i>Rubus spectabilis</i>	salmonberry
<i>Sambucus racemosa</i>	red elderberry
<i>Symphoricarpos albus</i>	snowberry
<i>Vaccinium parvifolium</i>	red huckleberry
<i>Cornus stolonifera</i>	red-osier dogwood

Evergreen

<i>Berberis nervosa</i>	low Oregon grape
<i>Gaultheria shallon</i>	salal

Native Trees

Deciduous

<i>Acer macrophyllum</i>	bigleaf maple
<i>Alnus rubra</i>	red alder
<i>Amelanchier alnifolia</i>	serviceberry
<i>Prunus emarginata</i>	bitter cherry
<i>Rhamnus purshiana</i>	cascara
<i>Salix scouleriana</i>	Scouler willow
<i>Populus trichocarpa</i>	black cottonwood
<i>Cornus nuttallii</i>	Pacific dogwood

Evergreen

<i>Pseudotsuga menziesii</i>	Douglas-fir
<i>Thuja plicata</i>	Western red cedar
<i>Tsuga heterophylla</i>	Western hemlock
<i>Arbutus menziesii</i>	Pacific madrone
<i>Abies grandis</i>	Grand fir
<i>Picea sitchensis</i>	Sitka Spruce
<i>Taxus brevifolia</i>	Pacific yew

Appendix B

Assumptions and Limitations

This report and its recommendations are based on known vegetation characteristics and generally accepted grounds management principals. It should be understood that our recommendations will not guarantee bank stability or stop erosion. Soil erosion is a natural process that will accelerate if good land stewardship principals are ignored.

The results and recommendations of this report represent our professional opinion based on the information gathered on-site, referenced materials, and our knowledge and experience of the resources involved. No other warranty, expressed or implied, is made.

Urban Forestry Services, Inc. would appreciate the opportunity to answer any questions regarding this report.

ASSUMPTIONS AND LIMITING CONDITIONS

URBAN FORESTRY SERVICES, INC.

James M. Barborinas, ASCA
ISA Certified Arborist #PN-0135

1. Any legal description provided in this report is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character.
2. All existing liens, encumbrances, and assessments, if any, have been disregarded (unless otherwise noted), and the trees are evaluated as though free and clear, under responsible ownership and competent management. It is assumed that no violations of applicable governmental regulations have occurred.
3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible, however, Urban Forestry Services, Inc. can neither guarantee nor be responsible for the accuracy of information.
4. Urban Forestry Services, Inc. shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in our fee schedule and contract of engagement.
5. Loss or alteration of any part of this report invalidates the entire report.
6. This report shall be used for its intended purpose only and by the parties to whom it is addressed. Possession of this report does not include the right of publication.
7. Neither all or any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed written or verbal consent of Urban Forestry Services, Inc.
8. This report and any values expressed herein represent the opinion of Urban Forestry Services, Inc. Our fee is in no way contingent upon any specified value, a result or occurrence of a subsequent event, nor upon any finding to reported.

9. Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.
10. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection, and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring.
11. There is no warranty or guarantee expressed or implied, that problems or deficiencies of the tree or other plant or property in question may not arise in the future.
12. The right is reserved to adjust tree valuations, if additional relevant information is made available.

Guemes Channel Trail

AGENDA

Presentation

- Question/Answer
- Additional Questions from Council

QUESTIONS ON DESIGN

1. Similar examples of trails located in sensitive wetlands or wetland buffers
2. Strategies/techniques to reduce or eliminate impacts of trails in sensitive wetlands or wetland buffers
3. Examples of one master plan process
4. Examples of planning one trail segment at a time
5. Routes that have been explored; comment on upper route option
6. Maintaining flows to wetlands

Questions

1. Trails in Wetlands/Buffers

- Burke Gilman Trail
- Centennial Trail – Snohomish
- Cedar River Trail
- Green River Trail
- Lake Goodwin Park Trails
- North Creek Trail
- Sound to Olympics Trail
- Scriber Creek Trail
- Snohomish River Trail
- Snoqualmie Valley Trail
- Soos Creek Trail
- Nisqually Estuary Trail
- Theler Wetlands Trail
- West Hylebos Wetlands
- Port Gamble Trails
- Cougar Mountain Trails

GUEMES CHANNEL TRAIL

Trails in Wetlands/Buffers

Build on existing embankment

Cedar River Trail

GUEMES CHANNEL TRAIL
Strategies to Reduce Impacts



Walls and prefabricated bridge

Burke Gilman Trail

GUEMES CHANNEL TRAIL

Strategies to Reduce Impacts

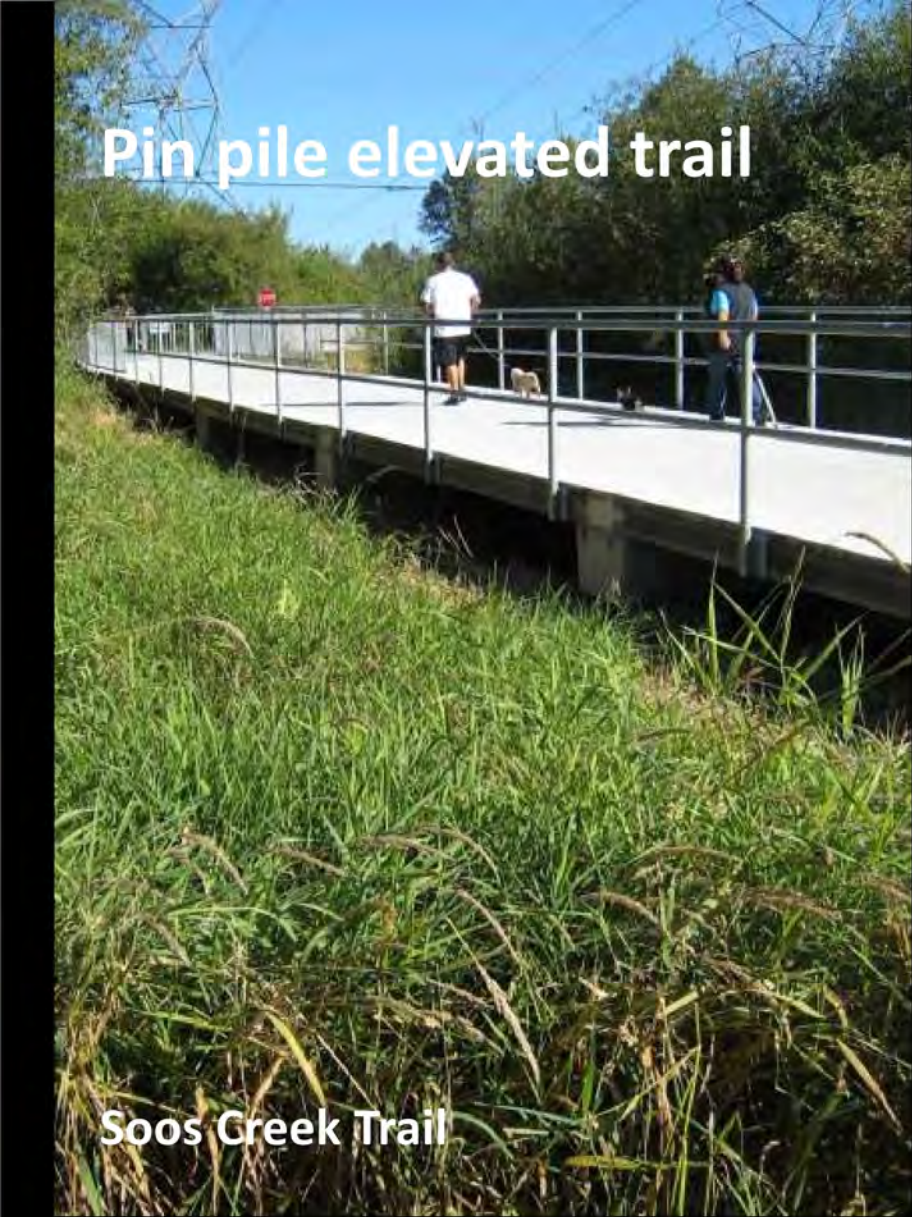
Clear span bridge



Arboretum Trail

GUEMES CHANNEL TRAIL

Strategies to Reduce Impacts



Pin pile elevated trail

A photograph of a concrete elevated trail with metal railings, built over a body of water. Two people and a dog are walking on the trail. The surrounding area is lush with green grass and trees. In the background, a power line tower is visible against a clear blue sky.

Soos Creek Trail



Sound to Olympics Trail

A photograph of a paved trail winding through a dense forest. The trail is bordered by a chain-link fence on one side. Tall trees line the path, and a person is visible walking in the distance under a blue sky with scattered clouds.

GUEMES CHANNEL TRAIL

Strategies to Reduce Impacts

Boardwalk/Interpretive Viewpoint

A photograph showing a wooden boardwalk in the foreground, leading to an interpretive viewpoint. The viewpoint is a wooden platform with a railing, overlooking a wetland area. A river flows through the wetlands, and a dense forest is visible in the background. Two informational signs are mounted on the railing of the viewpoint.

Theler Wetlands

GUEMES CHANNEL TRAIL
Strategies to Reduce Impacts



Olympic Discovery Trail
Shoreline

GUEMES CHANNEL TRAIL
Master Planning Process

Cross Island Connection - Guemes Channel Trail to Tommy Thompson Trail



This map reflects a potential route of the Guemes Channel Trail. There are many details and arrangements to be worked through before route approval, conceptual design, permitting, construction engineering and construction starts.



GUEMES CHANNEL TRAIL
Master Planning Process



Union Slough Trail



Ebey Waterfront Trail

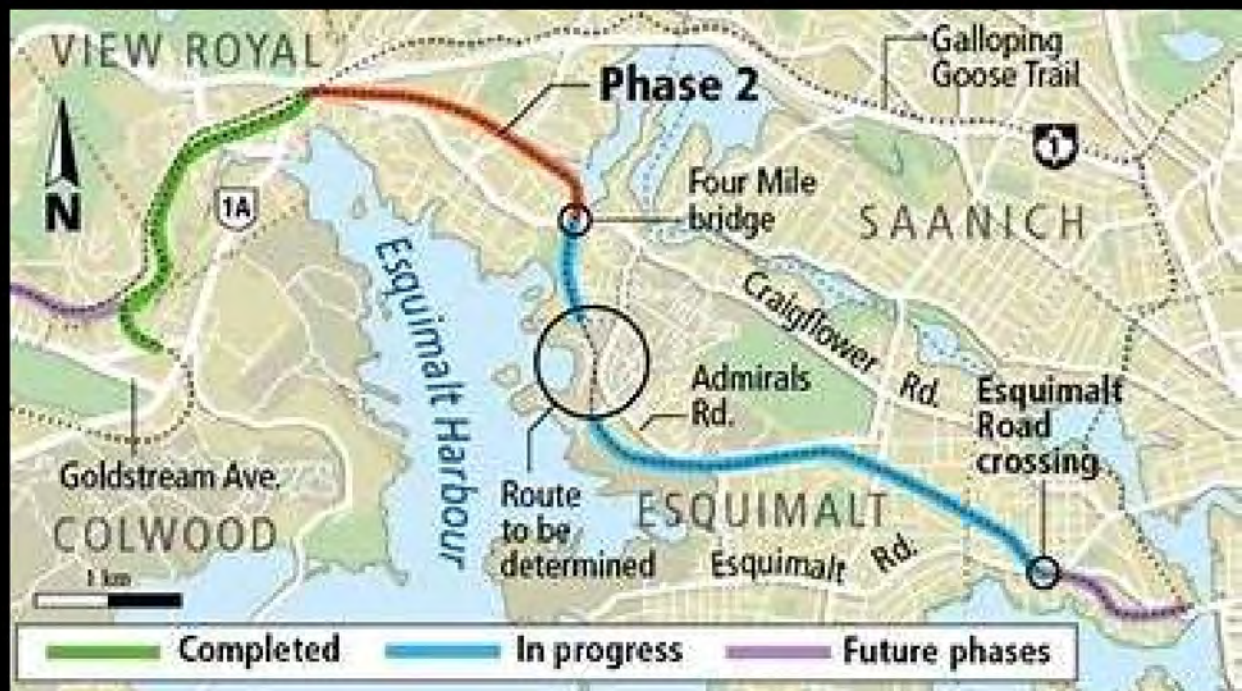


Estuary enhancement

GUEMES CHANNEL TRAIL
Master Planning Process

Snohomish County Parks & Recreation CENTENNIAL TRAIL

**30 miles of
shared use
trail built in
6 phases**



GUEMES CHANNEL TRAIL Planning Trail Segments



0 0.2 0.4 Miles

PHASE 6



PHASE 2

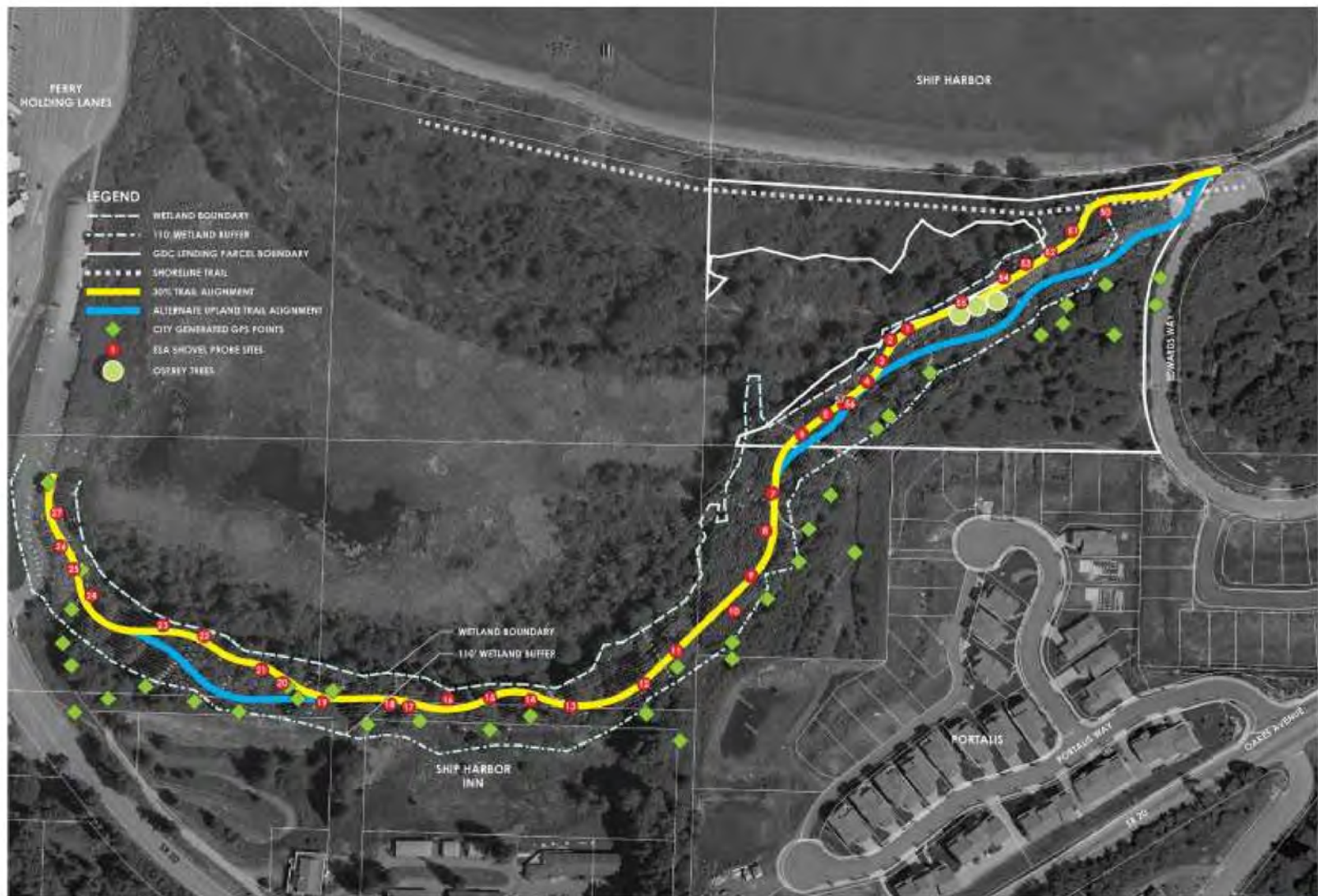


PHASE 3

PHASE 1

PHASE 7

GUEMES CHANNEL TRAIL Planning Trail Segments



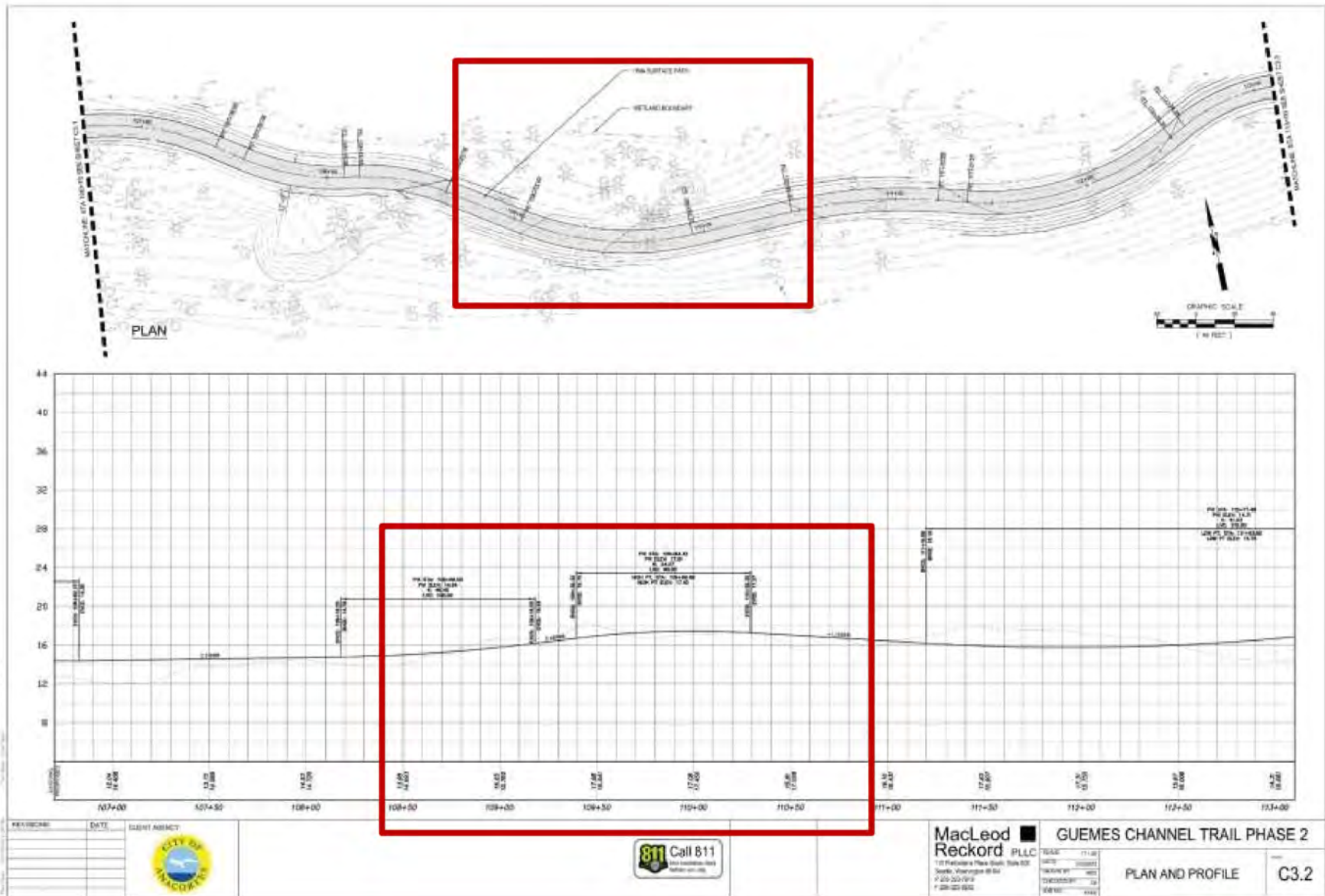
GUEMES CHANNEL TRAIL PHASE 2: CONCEPTUAL TRAIL ALIGNMENT

6/16/2018

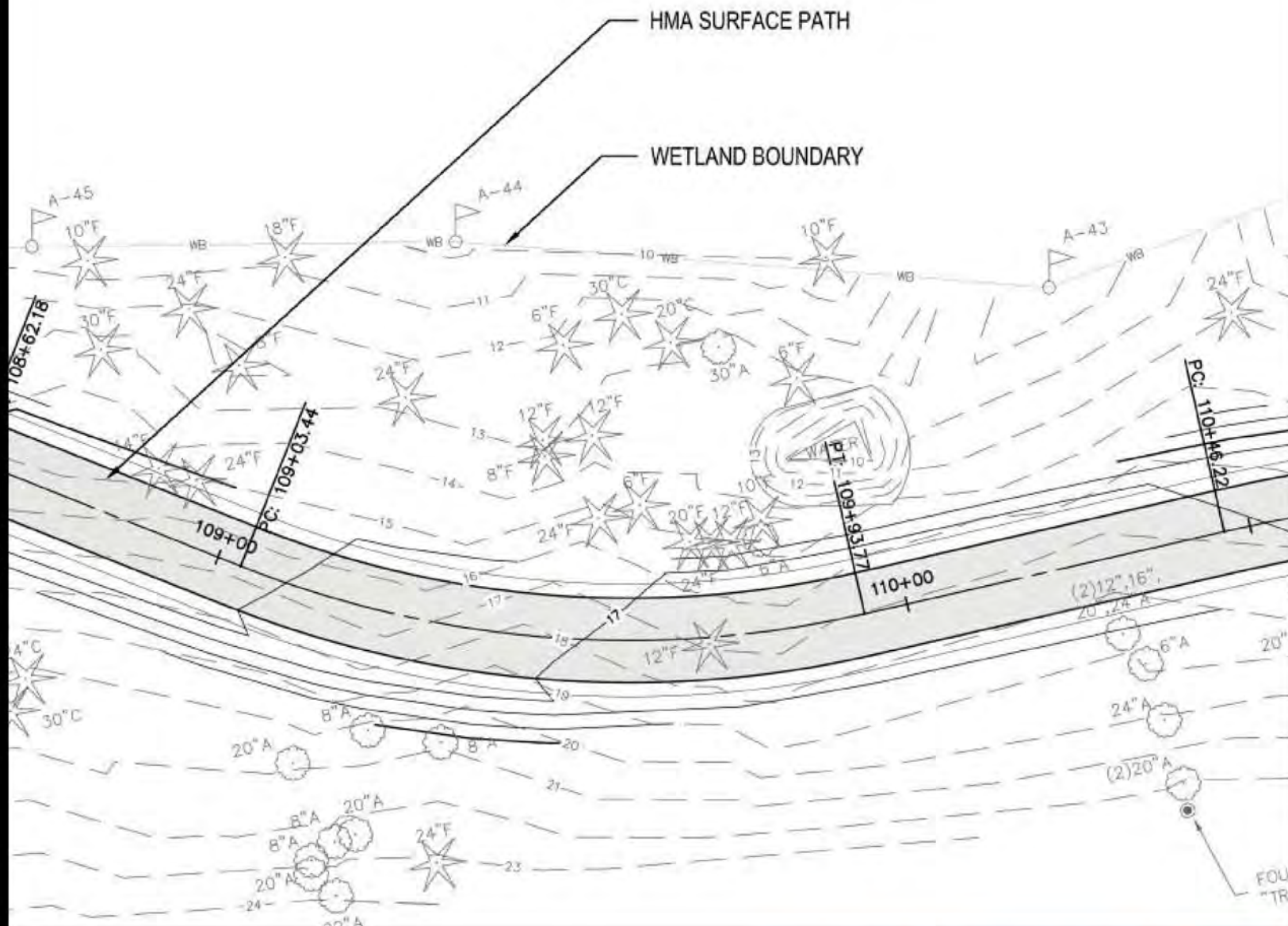
GUEMES CHANNEL TRAIL Phase 2 Route Analysis



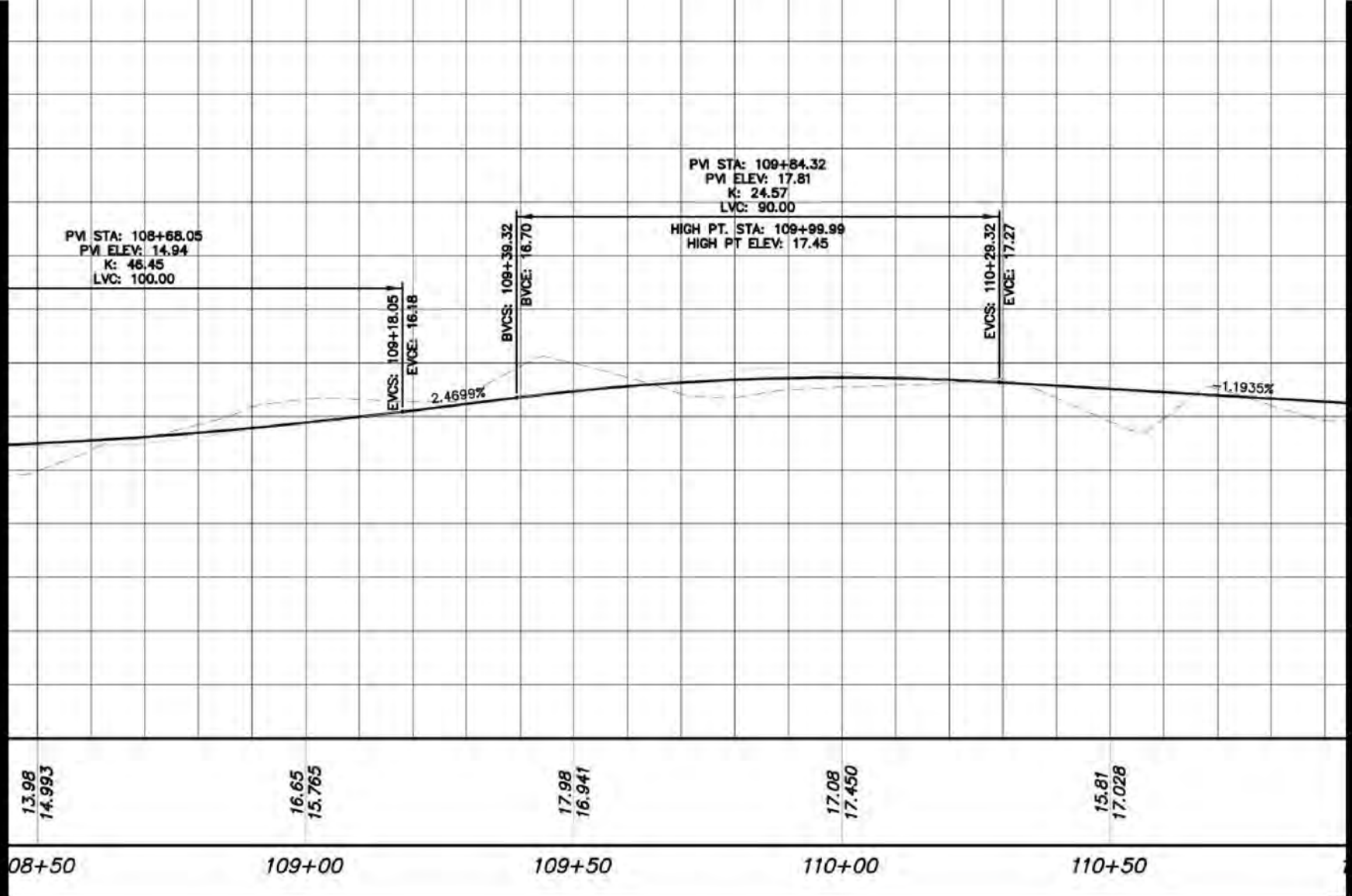
GUEMES CHANNEL TRAIL Phase 2 Route Analysis



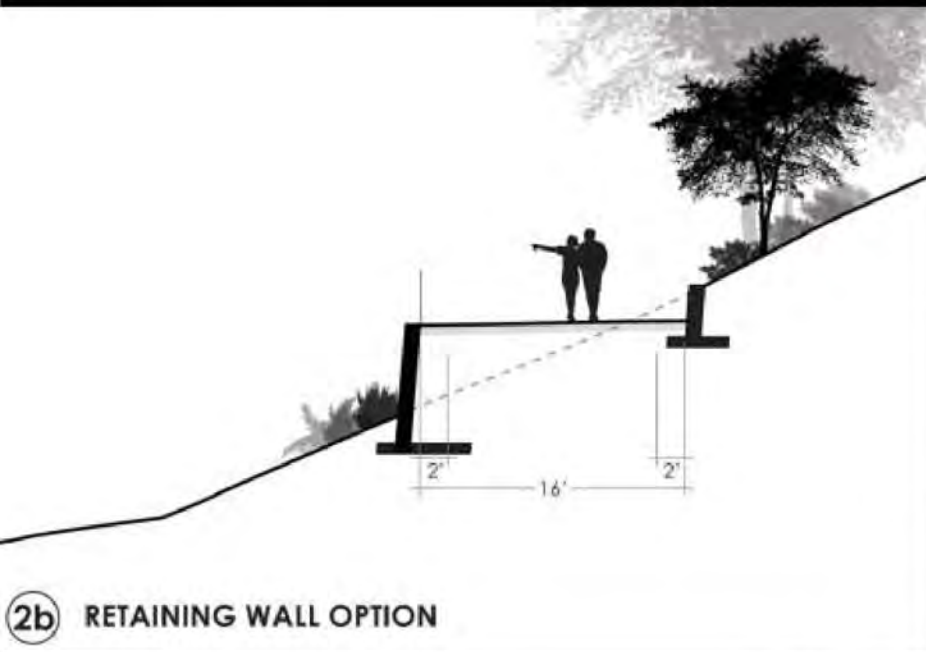
GUEMES CHANNEL TRAIL **Phase 2 Route Analysis**



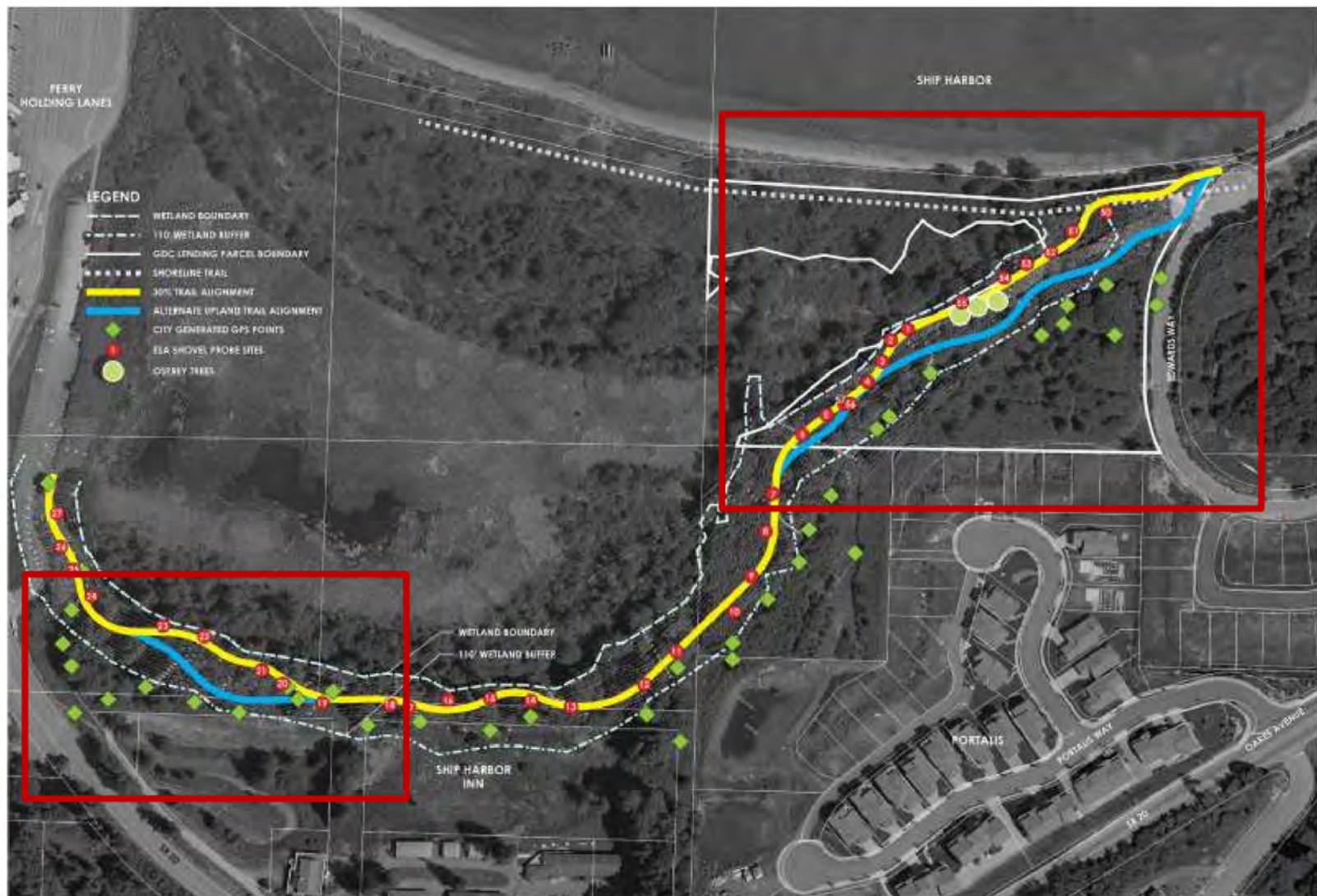
GUEMES CHANNEL TRAIL Phase 2 Route Analysis



GUEMES CHANNEL TRAIL Phase 2 Route Analysis



GUEMES CHANNEL TRAIL Phase 2 Route Analysis



GUEMES CHANNEL TRAIL PHASE 2: CONCEPTUAL TRAIL ALIGNMENT

6/16/2018

GUEMES CHANNEL TRAIL Phase 2 Route Analysis

SHIP HARBOR

9%-12% grade

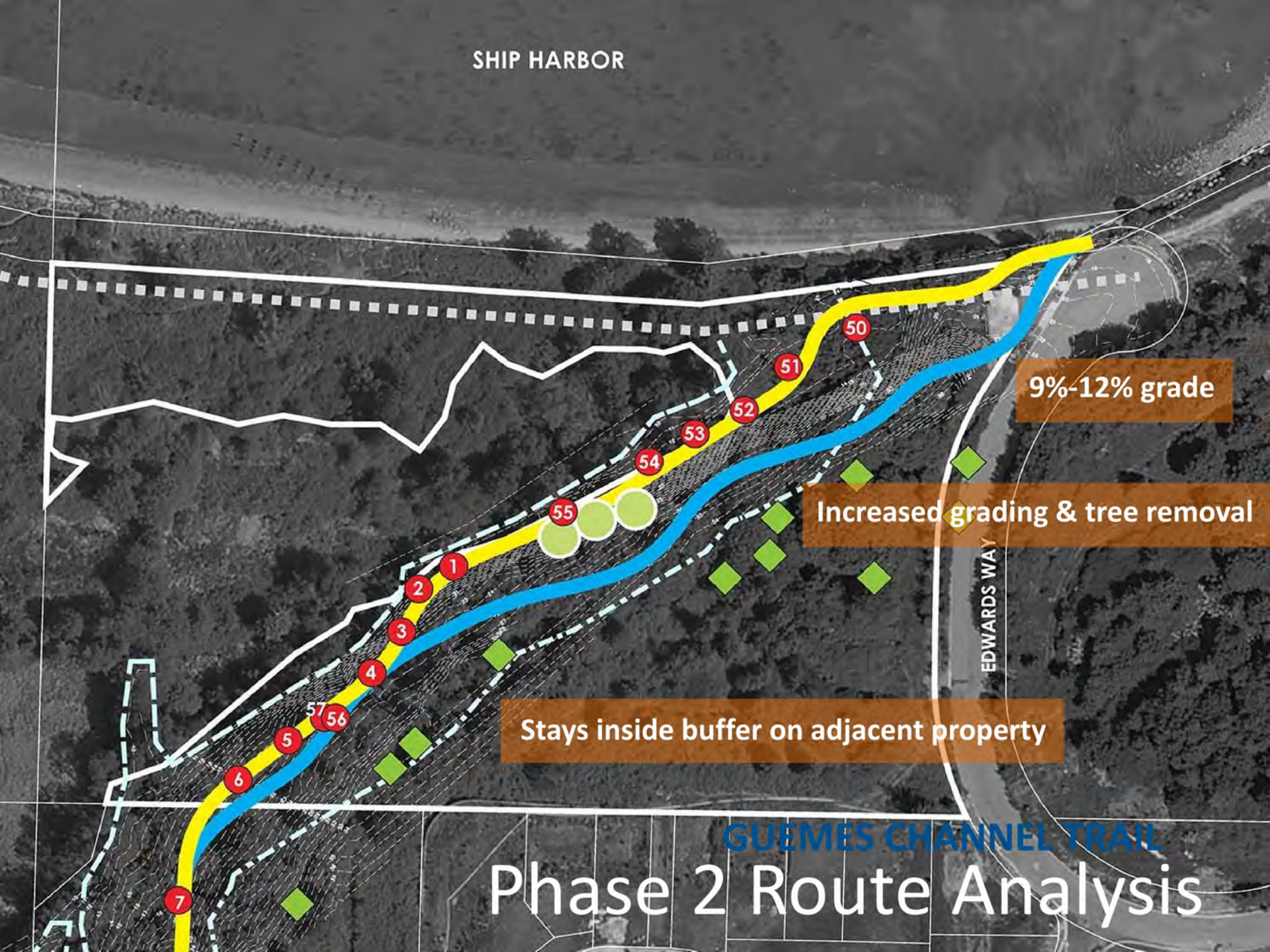
Increased grading & tree removal

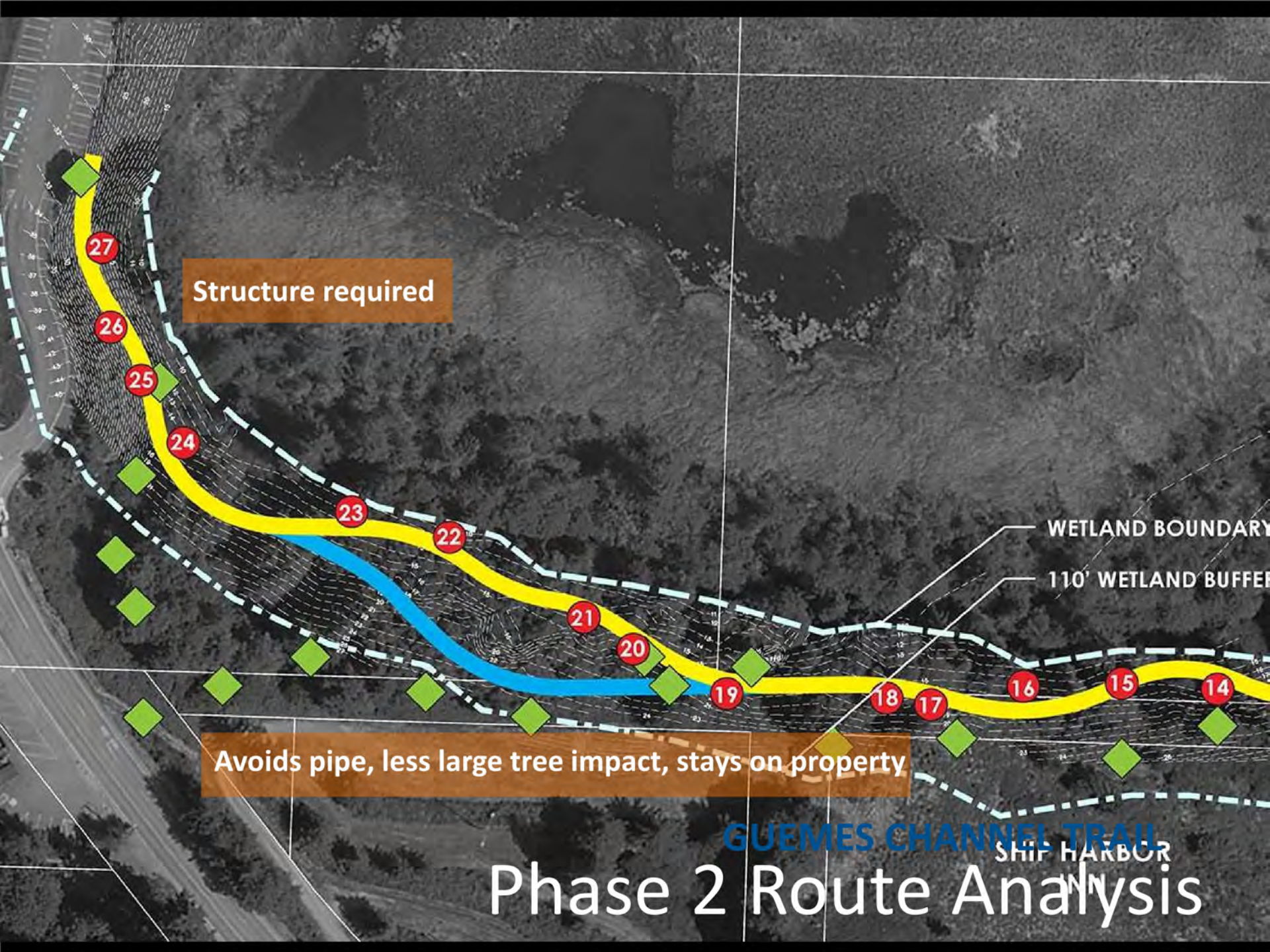
Stays inside buffer on adjacent property

EDWARDS WAY

GUEMES CHANNEL TRAIL

Phase 2 Route Analysis





Structure required

Avoids pipe, less large tree impact, stays on property

WETLAND BOUNDARY

110' WETLAND BUFFER

GUERMES CHANNEL TRAIL

SHIP HARBOR

Phase 2 Route Analysis

Bridge or culvert

Covington Park Trails

GUEMES CHANNEL TRAIL

Maintain flows to Wetland



Boardwalk or fish passage culvert

A photograph showing a wooden boardwalk or fish passage culvert constructed through a dense forest. The structure is made of wooden planks and runs along a stream bed, surrounded by lush green vegetation and trees.

North Heritage Park Trails



Centennial Trail

GUEMES CHANNEL TRAIL

Maintain flows to Wetland



GUEMES CHANNEL TRAIL
Maintain flows to Wetland

Breach



Snohomish Riverfront Trail

GUEMES CHANNEL TRAIL

Maintain flows to Wetland

END

GUEMES CHANNEL TRAIL PHASE 3 - ALT 1



LEGEND

PROPOSED



ADA PARKING

PAVED, SHARED USE PATH, ADA COMPLIANT

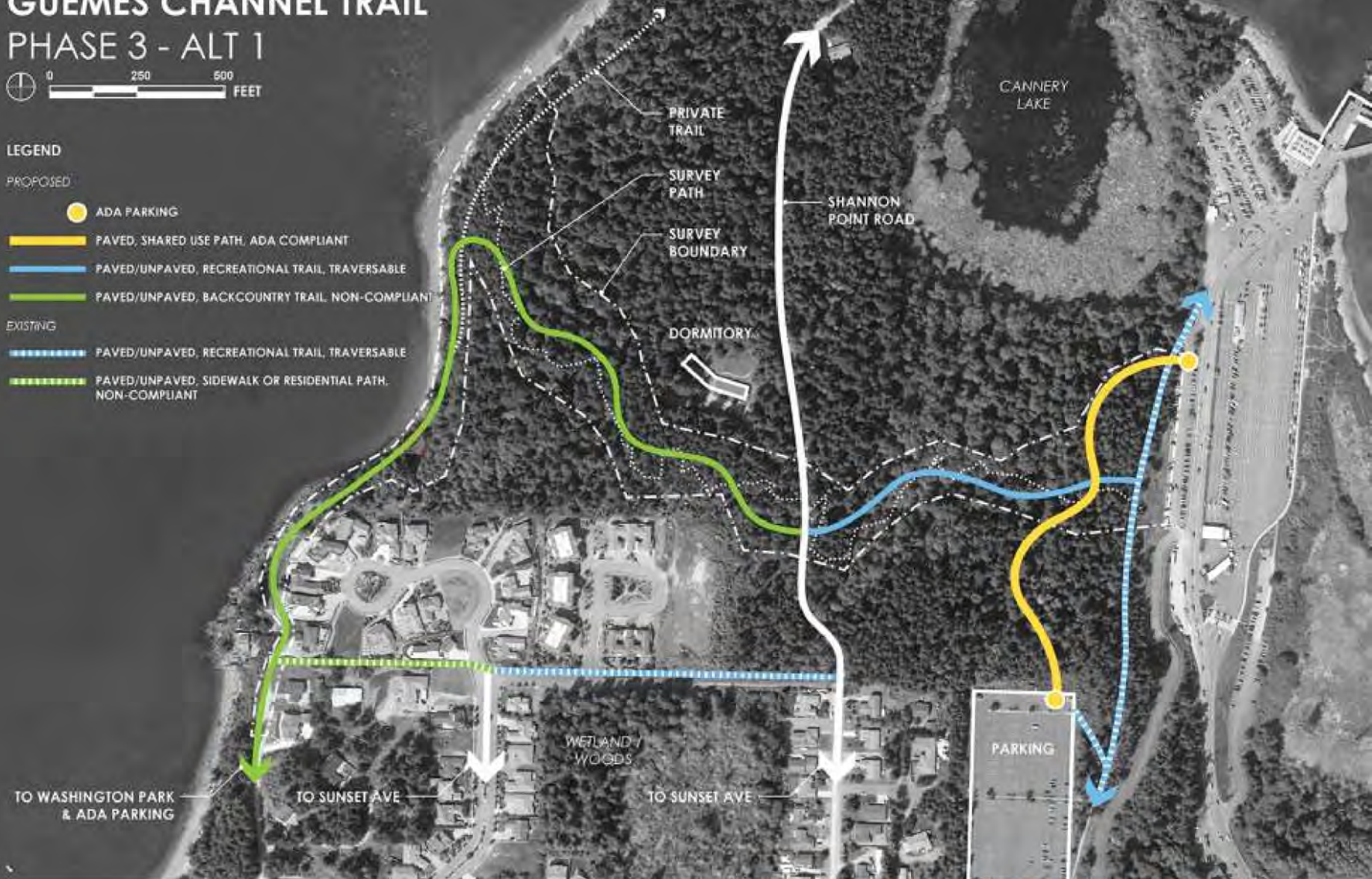
PAVED/UNPAVED, RECREATIONAL TRAIL, TRAVERSABLE

PAVED/UNPAVED, BACKCOUNTRY TRAIL, NON-COMPLIANT

EXISTING

PAVED/UNPAVED, RECREATIONAL TRAIL, TRAVERSABLE

PAVED/UNPAVED, SIDEWALK OR RESIDENTIAL PATH,
NON-COMPLIANT



GUEMES CHANNEL TRAIL Phase 3 Route Analysis

GUEMES CHANNEL TRAIL PHASE 3 - ALT 2

0 250 500
FEET

LEGEND

PROPOSED

- ADA PARKING
- PAVED, SHARED USE PATH, ADA COMPLIANT
- PAVED/UNPAVED, RECREATIONAL TRAIL, TRAVERSABLE
- PAVED/UNPAVED, BACKCOUNTRY TRAIL, NON-COMPLIANT

EXISTING

- PAVED/UNPAVED, RECREATIONAL TRAIL, TRAVERSABLE
- PAVED/UNPAVED, SIDEWALK OR RESIDENTIAL PATH, NON-COMPLIANT



GUEMES CHANNEL TRAIL Phase 3 Route Analysis

GUEMES CHANNEL TRAIL

PHASE 3 - ALT 3

0 250 500
FEET

LEGEND

PROPOSED

- ADA PARKING
- PAVED, SHARED USE PATH, ADA COMPLIANT
- PAVED/UNPAVED, RECREATIONAL TRAIL, TRAVERSABLE
- PAVED/UNPAVED, BACKCOUNTRY TRAIL, NON-COMPLIANT

EXISTING

- PAVED/UNPAVED, RECREATIONAL TRAIL, TRAVERSABLE
- PAVED/UNPAVED, SIDEWALK OR RESIDENTIAL PATH, NON-COMPLIANT



GUEMES CHANNEL TRAIL

Phase 3 Route Analysis

GUEMES CHANNEL TRAIL BACKCOUNTRY TRAIL

0 5 10 FEET



GUEMES CHANNEL TRAIL RECREATIONAL TRAIL

0 5 10 FEET



BACKCOUNTRY TRAIL

A backcountry trail is typically unpaved or dirt in this application. If the City prefers a paved trail, it is considered a true backcountry trail, but it is similar design characteristics. The backcountry recreational trail, and typically does not occur from pedestrians and/or equestrians. Based on there may be recommended maximum width 10% for gravel surface, but there are no more.



RECREATIONAL TRAIL

A recreational trail is typically not parallel to a roadway it is primarily for recreational purposes. Recreational trails are part of an infrastructure connecting elements or facilities, designed to provide a recreational experience. Trails may have multiple types of users, but most are not designed for bicyclists have a transportation purpose.

- If running slope is up to 5%, there is no maximum length of
- between 5% and 8%, maximum 200' segment before
- between 8% and 10%, maximum 30' segment before
- between 10% and 12%, maximum 10' segment before

Maximum cross slope if paved is 2%, if unpaved is 5%.

GUEMES CHANNEL TRAIL SHARED USE PATH

0 5 10 FEET



SHARED USE PATH

A shared use path is part of a transportation system in a public right-of-way that provides off-road routes for a variety of users. Even where the primary users may be bicyclists, skaters, or equestrians, shared use paths typically are designed to serve pedestrians, including people using mobility devices such as manual or motorized wheelchairs. In addition to transportation uses, shared use paths often provide recreational experiences. They may extend or complement a roadway network, and supplement on-road bike lanes, shared roadways, bike boulevards, and paved shoulders. Shared use paths design is similar to roadway design but on a smaller scale and for lower speeds. Shared use paths differ from sidewalks and trails in that they are designed for a variety of users and serve both recreational and transportation purposes.

Maximum running slope is 3%, maximum cross slope of paved surface 2%, minimum 2' shoulder, minimum 3' clearance for vertical obstacles.



GUEMES CHANNEL TRAIL Phase 3 Route Analysis

GUEMES CHANNEL TRAIL PHASE 6 - ALTERNATIVES

0 100 200 400 FEET

LEGEND

PROPOSED

- PAVED ON-ROAD BIWAYS (60 FEET ADA COMPLIANT)
- PAVED ON-ROAD SIDE PATH
- GRADE 2000' TRAILWAY

EXISTING

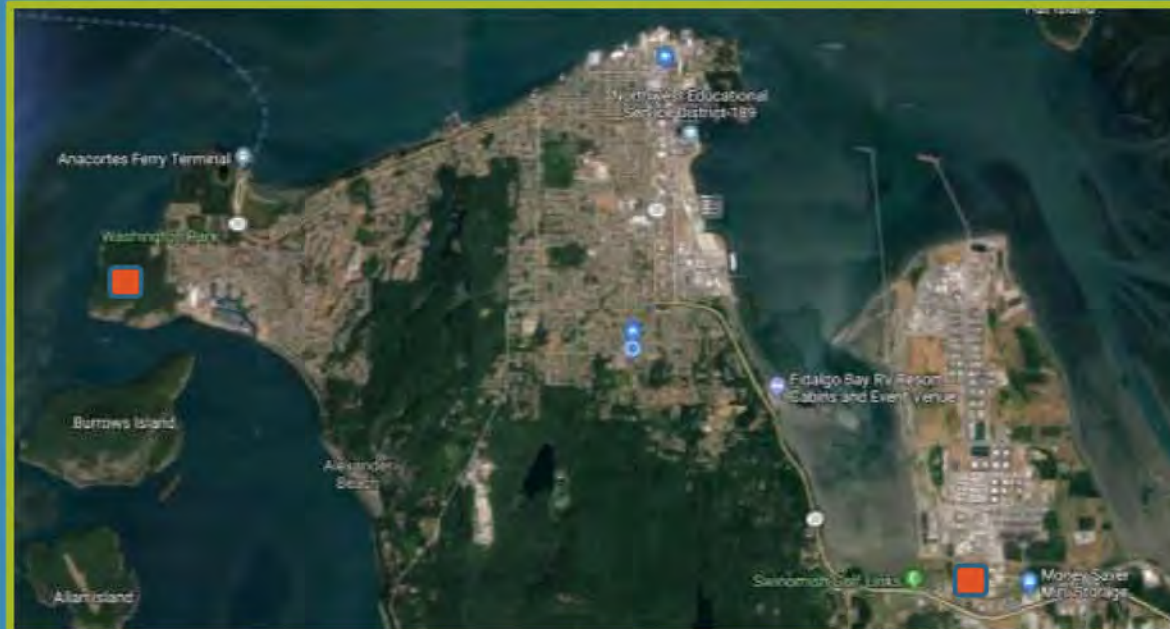
- ON-ROAD BIWAYS (60 FEET ADA COMPLIANT)
- ON-ROAD SIDE PATH
- TRAILWAY CORRIDOR



GUEMES CHANNEL TRAIL
Phase 6 Route Analysis

PARK DEPARTMENT UPDATE

GUEMES CHANNEL TRAIL - CONSULTANTS



REVIEW FROM LAST MEETING

- I believe that the trail our community has been working on for the past 15 plus years will end up being an amazing trail connecting Washington Park with the Marches Point Park and Ride. That trail will provide access and recreation to a wide variety of individuals that otherwise would not get to enjoy the shorelines, forests and wetlands that our community is so blessed with.
- That trail will accommodate young and old, walkers, walkers with walkers, wheelchairs, runners, recreational bikers, bicycle commuters, families, strollers, pets, etc.
- That trail will get people out of their cars and walking, riding, running and that will be good for the people and good for the environment.
- That trail will be a recreational, social and commercial backbone to our community connecting along the Guemes Channel and Fidalgo Bay our central business district with countless neighborhoods, parks and public amenities.

REVIEW OF WASHINGTON STATE FERRY TERMINAL TO EDWARDS WAY

- Strong community desire to move forward with the trail effort
- We received a grant and executed two separate contracts for design and NEPA
- There are private property ownership issues in this section of the trail
- This is not a proposal at this time it is a working draft of a possible route
- The grades in the area are challenging.
- The trail may need to be in a different place, width, surface, side rails, etc. in this area
- Connections to neighborhoods are conceptual and optional
- Pictures of what the trail **might** look like



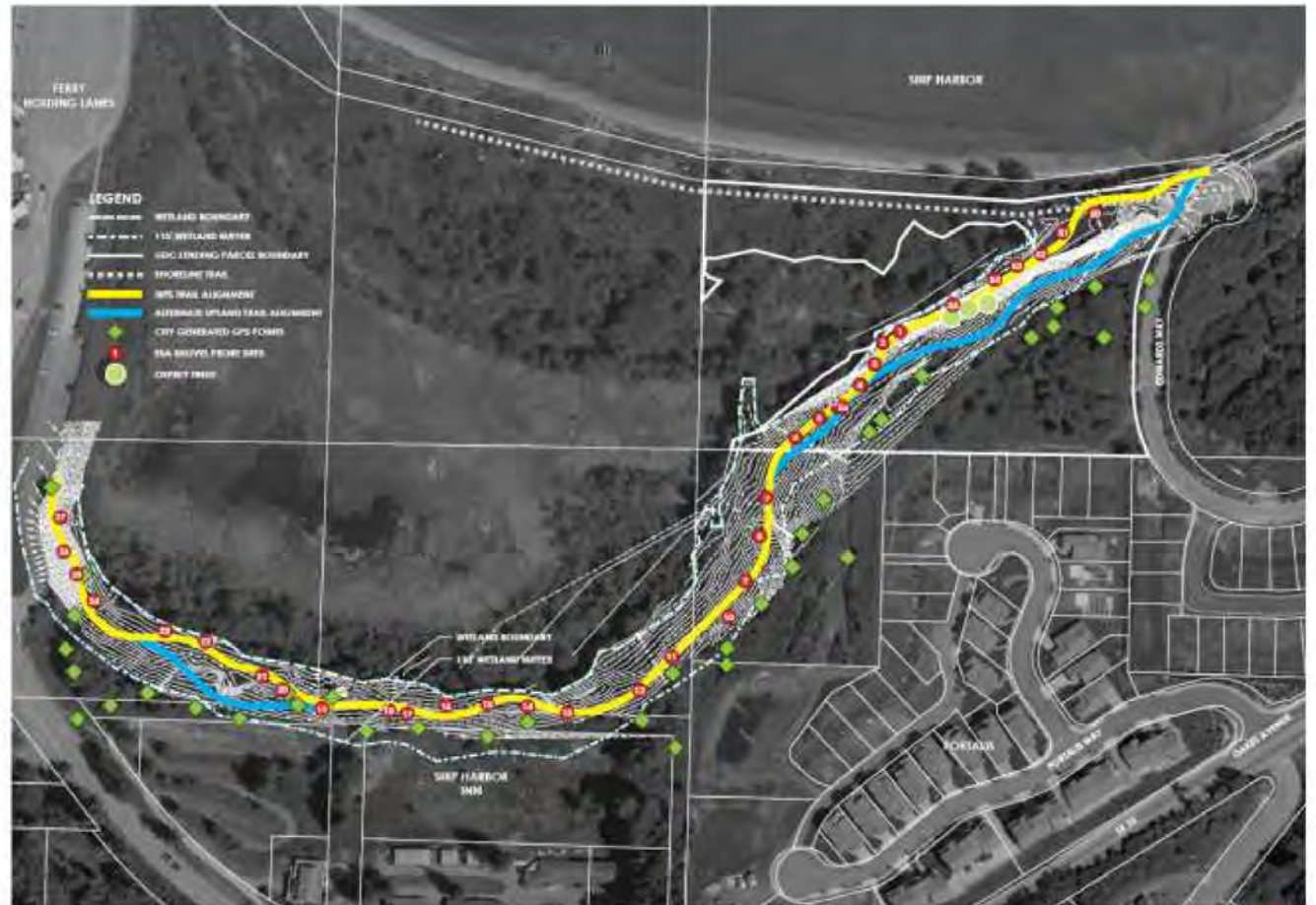
SUMMARY OF TRAIL STATUS

- WWU / SPMRC property
- WSF terminal crossing
- Lovrics
- Lovrics to GEMS
- GEMS to Kiwanis Waterfront Park
- Six completed sections



UPDATE ON EDWARDS TO WSF TERMINAL SECTION

- Have been working on NEPA.
- Exploring alternate route(s)
- Involves significantly more intrusion into private property
- Involves significantly less intrusion into wetland buffer



GUEMES CHANNEL TRAIL PHASE 2: CONCEPTUAL TRAIL ALIGNMENT

CONSULTANTS ON THE GCT PROJECTS

- **Connie Reckord**, PLA, ASLA, LEED AP, Principal, MacLeod Reckord PLLC
Lead firm on phases 2 (WSF terminal to Edwards Way), 3 (Lovrics to Guemes Ferry) and 6 (WSF terminal to Washington Park) of the GCT
- **Ross Widener**, Widener and Associates
Permitting on phase 7 (second section of the existing GCT)
- **Sharese Graham**, PMP, Senior Planner, ESA | Environmental Science Associates
NEPA on phase 2
- **Jessica Redman**, Associate Scientist, ESA | Northwest Biological Resource Group
Wetland analysis and work on phase 2
- **J. Gordon**, PE, Principal, GeoEngineers, Inc.
Geotechnical work on phases 1 (first section of existing GCT) & 7 as well as site visits regarding slides on phases 1 and 7

CONNIE RECKORD

MacLeod Record

LEAD FIRM ON PHASES 2 (WSF TERMINAL TO EDWARDS WAY), 3 (LOVRICS TO GUEMES FERRY) AND 6 (WSF TERMINAL TO WASHINGTON PARK) OF THE GCT

- What examples can you provide where trails like the existing GCT are located in sensitive wetlands or wetland buffers.
- What trail design concepts have you used or are aware of to reduce or eliminate the impacts of trails like the GCT in sensitive wetlands or wetland buffers?
- What examples can you give where agencies have done one master planning process for a trail like the GCT.
- What examples can you give where agencies have done planning for a trail like the GCT one segment at a time?
- Can you tell us a little about the various routes that have been explored and your thoughts on an “upper route” that might be less intrusive to the wetland buffer?
- What means would you suggest in the trail design to make sure that the water flows to the wetland are not interrupted by the trail?

ROSS WIDENER

Widener & Associates

PERMITTING ON PHASE 7 (SECOND SECTION OF THE EXISTING GCT)

- Can you explain what the mitigation requirements from the permitting processes were for phase VII and how the City has meet them.
- Are there areas that the City has not met the mitigation requirements from the permitting process for Phase VII?

SHARESE GRAHAM

Environmental Science Associates

NEPA ON PHASE 2

- Can you tell us about your experiences in getting permits to put trails like the GCT in a sensitive wetland buffer?
- From your experience, around the rest of the State are trails like the GCT generally allowed to be permitted with conditions in a wetland buffer?
- Can you give us an update on where we are in the NEPA process?

JESSICA REDMAN

Environmental Science Associates

WETLAND ANALYSIS AND WORK ON PHASE 2

- Can you tell us about the SHIP wetlands strengths and weaknesses?
- Could the SHIP wetland have a trail like the GCT through parts of it's buffer and with mitigation improve it's function?
- What kinds of mitigation might you suggest for the SHIP wetland?

J. GORDON

GeoEngineers, Inc.

GEOTECHNICAL WORK ON PHASES 1 (FIRST SECTION OF EXISTING GCT) & 7 AS WELL AS SITE VISITS REGARDING SLIDES ON PHASES 1 AND 7

- What experience do you have with reviews, design etc. of projects along the GCT?
- Can you give us a little general background on the condition, history, geology, etc. of the bluff along the existing GCT?
- Can you give us some of the design considerations that were factored in to the trails construction along the GCT?

QUESTIONS – COMMENTS – PUBLIC COMMENTS



May 21, 2018

To the Anacortes Mayor and City Council:

My name is Frank McCoy and I have lived in Anacortes since 2001. I moved here from Spokane WA where I was the Director of Parks, Recreation, Golf for most of my 25 years with the City of Spokane. There I was involved in the acquisition and development of the Centennial Trail and the Fish Lake Trail. I was also instrumental in the installation of the 1906 Loof Carousel in Riverfront Park in Spokane, as well as the Govedare Bloomsday Runners Statues.

These features have become a focus in Spokane's identity over the years and yet there was vocal opposition at the time by peoples who didn't see the vision for the future.

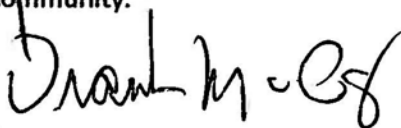
I have worked on the Guemes Channel Trail Committee for 8 years and now as the trail comes closer to completion there are some who oppose it. The committee has raised over \$400,000 from individuals who look forward to the completion of the trail. This is over and above the \$400,000 that was raised from individuals to rebuild the railroad trestle on the Tommy Thompson Trail. We have received major funding from the non-motorized portion of the WA State gas tax. We have put in hundreds of hours of volunteer time to water, clear and help maintain the trail. At this time the trail completion is a proposed red line on a map, the adjustments to that will be made.

The trail will be the standard 12' width not the 20' width as incorrectly stated by those opposed. Cyclist commonly ride about 12 mph not the exaggerated 28 mph stated by those opposed. On the many times I have walked the Tommy Thompson Trail I have found the cyclists to be very courteous and call to the walkers that they are passing. Across the country trail walkers and cyclists commonly share trails very successfully. This is not an unusual off highway traffic solution where both walkers and cyclists are in danger from automobiles. The trail to be constructed along the wetland buffer can be a great educational tool with signage of the type currently on the lower wetland access.

Anacortes has a beautiful waterfront and the trail will give residents and visitors access to enjoy it. I'm sure this is one of the council's goals. In 1970 the mayor and council miss the chance to purchase the Railroad bed and it was sold to private owners. Many of those private owners want to see the trail developed for their use and for the enhanced value of their property. This will be a legacy of the current Mayor and Council. Studies show that property can increase in value with the addition of trails and parks. Businesses are attracted to areas with these amenities where employees want to live.

I hope you support the completion of the Guemes Channel Trail as you are in a position to judge what is best for the community.

Sincerely,



Frank McCoy

Mccoy frank@yahoo.com, 360-588-8859



Anacortes City Council

Proposed Agenda Items for the Next Eight Weeks Beginning May 29, 2018

Subjects listed below have been tentatively suggested for consideration by the Anacortes City Council on the dates indicated. Items may be added to, removed from or rearranged on this list. Routine business such as approval of minutes and vouchers are not included. The complete Preliminary Agenda for each meeting is published at 3:00 on the Wednesday prior to the meeting. Published Agendas are subject to change and may be updated following the posting period. For additional information on agenda topics, please contact the City Clerk's office at 360-299-1960 to be directed to the sponsoring staff member.

May 29, 2018

- Pavement Management Program Update (Discussion)
- Resolution 2015: Collective Bargaining Agreement by and between the City of Anacortes and the Anacortes Commissioned Police Officers 6/1/2018-12/31/2021 (Discussion/Possible Action)
- Resolution 2013: Municipal Broadband Network (Discussion/Possible Action)
- Executive Session (15 Minutes) : Collective Bargaining Update (6 PM at beginning of meeting)

June 4, 2018

- Resolution 2012: Agriculture Irrigation (Discussion/Possible Action)
- Follow Up Discussion on Transportation Benefit District and Pavement Management Funding (Discussion/Possible Action)

June 11, 2018

June 18, 2018

June 25, 2018

July 2, 2018

July 9, 2018

July 16, 2018

Upcoming City Council Committee Meetings

The public is welcome to attend City Council Committee Meetings.

- Public Works, Monday, May 21, 2018, 5:00 PM, Public Works Director's Office, City Hall
- Finance, Wednesday, May 23, 2018, 5:00 PM, Main Conference Room, City Hall
- Planning, Tuesday, May 29, 2018, 5:00 PM, Main Conference Room, City Hall
- Public Works, Monday, Jun 4, 2018, 5:00 PM, Public Works Director's Office, City Hall
- Public Safety, Tuesday, Jun 5, 2018, 10:00 AM, Mayor's Office, City Hall
- Port/City Liaison, Tuesday, Jun 5, 2018, 8:30 AM, City Hall
- Housing Affordability & Community Services, Thursday, Jun 7, 2018, 1:30 PM, City Hall
- Skagit County Population Health Trust, Thursday, Jun 7, 2018, 8:30 AM, Mount Vernon
- Planning, Monday, Jun 11, 2018, 5:00 PM, Main Conference Room, City Hall
