DISCOVERY CLEAN WATER ALLIANCE

RESOLUTION NO. 2014 - 10

A RESOLUTION OF DISCOVERY CLEAN WATER ALLIANCE, ADOPTING THE CAPITAL PLAN FOR THE DISCOVERY CLEAN WATER ALLIANCE.

WHEREAS, the Board of Directors has determined after various meetings and a public hearing that it is in the best interest of the Alliance to approve the Capital Plan as proposed; now, therefore

BE IT RESOLVED by the Board of Directors of the Discovery Clean Water Alliance that the Capital Plan attached to this Resolution is hereby approved and adopted.

ADOPTED by the Board of Directors of Discovery Clean Water Alliance at a regular meeting held on December 19, 2014.

DISCOVERY CLEAN WATER ALLIANCE

Chair, Board of Directors

Laying the foundation
for a vibrant economy
and healthy environment

JOHN MARK PETERSON
STATE OF WASHINGTON
32088
REGISTERED
PROFESSIONAL ENGINEER

12-05-2014

CAPITAL PLAN

Discovery Clean
Water Alliance

Core Values

1. *Ensure reliable, predictable service for all customers*
2. *Manage resources responsibly, efficiently and equitably*
3. *Protect public and environmental health*
4. *Optimize use of existing facilities*
5. *Be financially transparent*
6. *Use new technologies to achieve system efficiencies and environmental protection*
7. *Provide a fair, positive and secure work environment for utility employees*
8. *Ensure capacity to support regional land use and economic development decisions*
9. *Invest in improvements that create system-wide benefits*
10. *Make business decisions collaboratively with all partners*

CONTENTS

Section 1

INTRODUCTION

1.1 Alliance History and Formation

The Discovery Clean Water Alliance (Alliance), legally formed on January 4, 2013, represents the culmination of several years of evaluation to determine the optimum long-term framework for delivery of regional wastewater transmission and treatment services to the urban growth areas in the central portion of Clark County, Washington. The Alliance serves four Member agencies – the City of Battle Ground, Clark County, Clark Regional Wastewater District and the City of Ridgefield. The Members will jointly own and jointly manage regional wastewater assets under Alliance ownership through an interlocal framework established under the Joint Municipal Utility Services Act (RCW 39.106).

A summary of the timeline and process that led to the creation of the Alliance is provided below.

- Sewer Summit. In September 2007, Clark County adopted an updated *20-Year Comprehensive Growth Management Plan,* addressing the future needs of the community. This planning process identified the growth potential and related infrastructure needs of several of the urban growth areas within Clark County. As a result, wastewater service providers in Clark County began to discuss the concept of regionalizing wastewater services to support a healthy environment and to provide infrastructure needed to realize the area's economic development potential. These discussions culminated in a "Sewer Summit" on December 6, 2007 where the idea of studying various regional services delivery models was first endorsed by a broad coalition of local agencies.

- Sewer Coalition Planning Study. The Sewer Summit discussions resulted in the *Sewer Coalition Planning Study*, started in 2008 and published in November 2009, with twelve local agencies. This study considered a 50-year vision for growth and infrastructure needs in a county-wide context. The study resulted in a *Memorandum of Understanding (MOU) to Develop the Structure for a Regional Wastewater Entity*. Four of the twelve agencies (today, the Members of the Alliance) agreed in the MOU to move forward to form a new regional partnership. The remaining eight coordinating agencies would continue to coordinate with, and stay informed on, the process. A legislative proviso sponsored by State Senator Joseph Zarelli was utilized to provide for this and the subsequent planning and study work.

- Regional Business Planning. In 2010 and 2011, the four agencies conducted a regional business planning effort to explore viable options for how a new regional partnership might be structured, what services it might provide, what assets it might own, how it might be governed and how it might be funded. This "regional business planning" effort resulted in a second MOU signed in April 2012 providing agreement-in-principle for the framework of the new partnership. Key elements of the MOU included formation of the new entity under the Joint Municipal Utility Services Act (RCW 39.106); use of an asset-based cost allocation model; oversight from a four member Board of Directors composed of one elected official from each agency; and contracting key administrative and operational responsibilities to the Member agencies best suited to provide those services.

- Alliance Formation. Building on the April 2012 MOU, an Interlocal Formation Agreement (IFA) was completed in September 2012, providing the necessary framework elements for the Discovery Clean Water Alliance (Alliance). The IFA was registered with the Washington State Office of Secretary of State on January 4, 2013 to legally form the Alliance. The Alliance Board of Directors then met for the first time on January 18, 2013 where a series of initial resolutions were approved to establish the basic operating framework for the Alliance. Also approved on that date was an initial two-year operating budget to support transition activities in 2013 and 2014. The Alliance will assume full operational responsibility for the Regional Assets on January 1, 2015 (the Alliance Operations Date). The individuals serving on the Board of Directors at the first official meeting of the Alliance were: Mayor Lisa Walters - City of Battle Ground; Commissioner Tom Mielke - Clark County; Commissioner Neil Kimsey - Clark Regional Wastewater District; and Mayor Ron Onslow - City of Ridgefield.

1.2 Alliance Organizational Structure

The Alliance organizational framework is structured to foster significant interaction among the Alliance Members in all major operational, financial and infrastructure decisions. A summary of key roles and responsibilities is provided below.

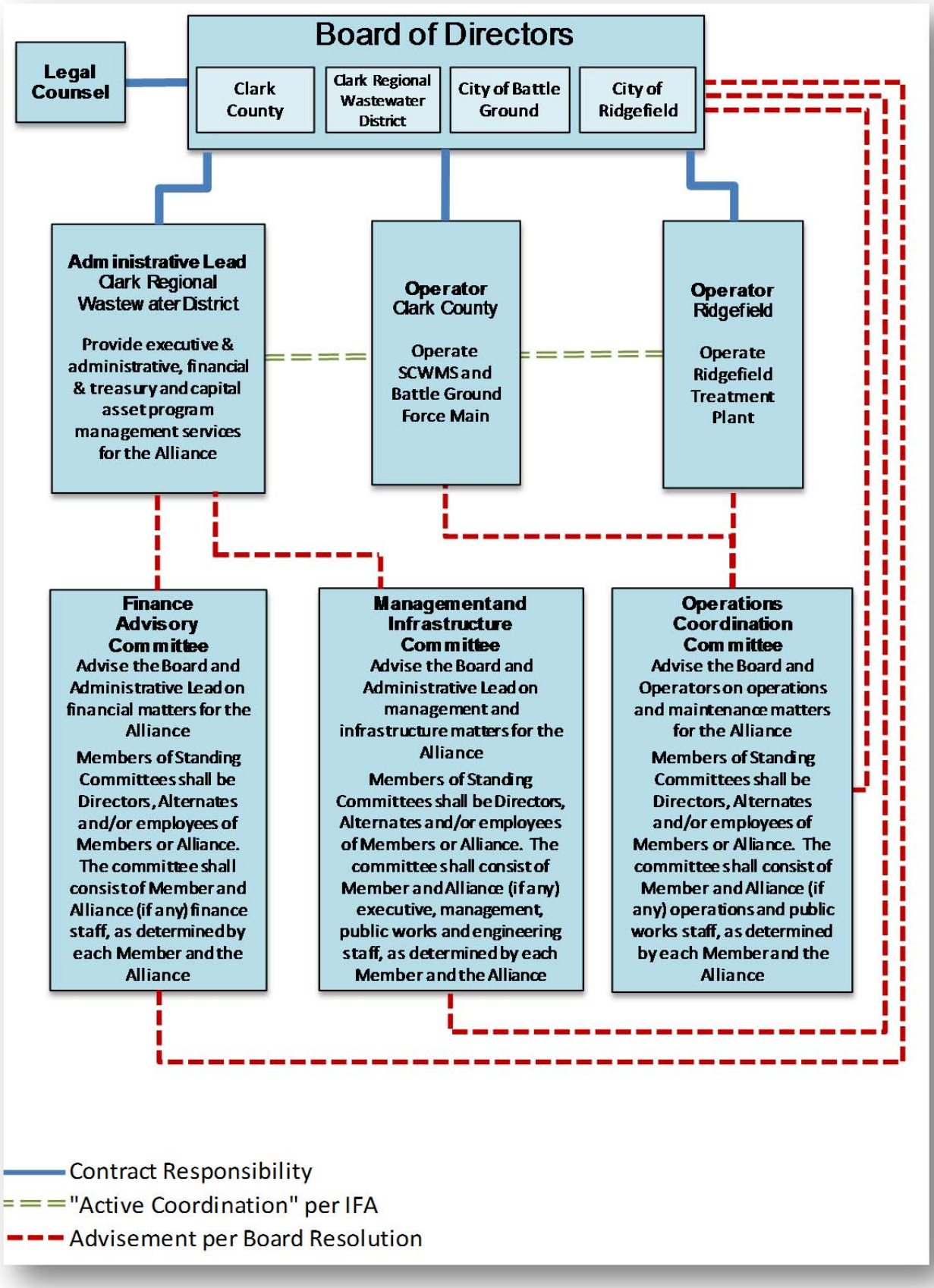
- Board of Directors and Legal Counsel. The Board of Directors is composed of one elected official from each of the Member agencies to form a four-person policy and oversight body. The Board then selects from among the four appointed Directors to fill positions for Chair, Vice-Chair and Secretary. Board responsibilities and functions are further depicted in the IFA and in a separately adopted Board Rules and Operating Procedures resolution. The Board has selected Foster Pepper to serve as legal counsel to the Alliance.

- Member Service Providers. The Alliance structure relies on contracts with its Members to deliver the majority of services. Clark County and the City of Ridgefield are contracted with the Alliance to provide operational services for all Alliance Regional Assets. Clark Regional Wastewater District is contracted with the Alliance to provide executive, administrative, financial and engineering services.

- Standing Committees. The Alliance has formed three Standing Committees to provide forums for vetting all Alliance issues. An Operations Coordination Committee (OCC) allows for interaction and coordination of Regional Asset operations with the Members. The Finance Advisory Committee (FAC) provides for Member input into all financial matters for the Alliance. The Management and Infrastructure Committee (MIC) solicits guidance from the Members on decisions related to the Alliance asset management programs.

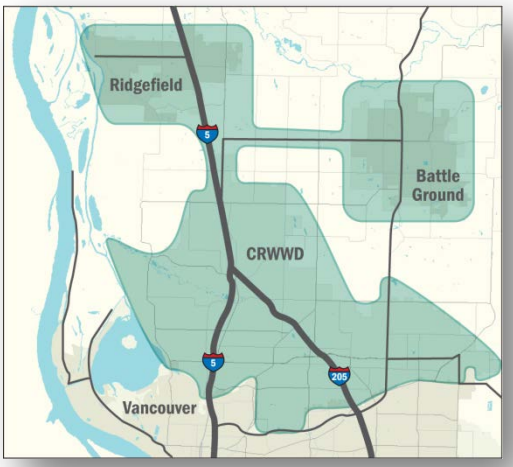
The interaction among these groups is illustrated in Figure 1.1 Alliance Contractual and Communication Flow Chart. The Standing Committees advise both the Member service providers and the Board of Directors. The Member service providers actively coordinate among themselves, receive input from the Standing Committees and have direct contractual responsibility to the Board of Directors. Legal Counsel works directly for the Board, also through a contractual relationship.

Figure 1.1 – Alliance Contractual and Communication Flow Chart



1.3 Alliance Core Values

As a regional wastewater transmission and treatment utility serving nearly 100,000 citizens today and with the potential to serve a population of 250,000 or more over time, it is critical that the Alliance decision making be aligned with the needs and expectations of the community it serves. In order to provide an appropriate context for Alliance decision making, community-supported core values were determined during the regional business planning process through a statistically valid telephone survey of residents in the Alliance service area.



The results of the survey are presented in the following table of the top ten core values along with the percent of residents indicating that they "agree" or "strongly agree" that these values should guide the formation and operation of the Alliance.

Table 1.1 – Alliance Core Values

Core Value	% Who Agree or Strongly Agree
1. Ensure reliable, predictable service for all customers	89%
2. Manage financial resources in a responsible, efficient, equitable manner	86%
3. Operate utility to protect public and environmental health and safety	82%
4. Optimize the use of existing facilities	80%
5. Maintain financial transparency	79%
6. Use new technology to achieve system efficiency, environmental protection	77%
7. Provide fair, positive, secure work environment for future utility employees	71%
8. Ensure capacity to support regional land use, economic development	71%
9. Invest in capital improvements that create system-wide benefits	67%
10. Make business management decisions collaboratively with all partners	64%

The Alliance core values are applied to the Capital Plan work through the following capital planning guiding principles:

Table 1.2 – Alliance Capital Planning Guiding Principles

Guiding Principles
1. Existing Regional Assets will be maintained in good operating condition through an actively managed repair and replacement program.
2. New Regional Assets will be planned and constructed ahead of demand to provide adequate capacity for growth in Member service areas, to comply with emerging regulatory requirements and/or to deliver new levels of service.
3. Long-range financial planning to support the capital programs will be provided to the Members for incorporation into local (retail) rate and charge planning.
4. Life cycle cost comparisons, considering both capital and operating costs, will be utilized in alternative comparisons for significant projects. Alternatives will also consider non-cost criteria topics such as regulatory compatibility, public and environmental health outcomes, regional (system-wide) benefits and operational characteristics.
5. Decisions related to the Capital Plan will be fully vetted with the Standing Committees, the Board of Directors and affected stakeholders.

1.4 Purpose and Scope of Capital Plan

The Capital Plan presents the plan for the Alliance to meet its infrastructure obligations to its Members for regional wastewater transmission and treatment services. These services are delivered by maintaining existing Regional Assets and through construction of new Regional Assets. In terms of existing Regional Assets, the Capital Plan will depict the repair and replacement (asset management) work needed to keep the assets in good working order. With respect to new Regional Assets, the Capital Plan will establish the infrastructure investments needed to address system capacity, new regulatory obligations or new level-of-service commitments.

The Capital Plan will present all known infrastructure project needs for the Alliance. These projects will be presented for both near-term and long-term. The specific definition of the term **Capital Plan** from the IFA is provided below, along with other relevant IFA definitions pertaining to capital planning work.

Definitions:

Alliance Operations Date – means the date on which the Board has determined that (1) Regional Assets have been transferred to or for the benefit of the Alliance, (2) outstanding wastewater obligations have been retired, defeased, or transferred as necessary, (3) the Alliance is undertaking responsibility for providing service under this Agreement, (4) the Members receiving service from the Alliance become responsible for paying Regional Service Charges. The Alliance Operations Date is expected to be January 1, 2015, unless the Board designates a different date.

Allocated Capacity – means the Maximum Monthly Flow of wastewater that a Member may discharge into the Regional Assets, as described in Exhibit B of the IFA and as supplemented or adjusted in a Capital Plan.

Bonds – means bonds, notes or other evidences of indebtedness issued by the Alliance or by another entity (e.g., by a Member) on behalf of the Alliance.

Capital Plan – One or more long-range capital improvement plans for the addition, replacement, or improvement of Regional Assets, and including an identification of Regional Assets and the allocation of transmission and treatment capacity, as they may be supplemented or adjusted from the initial Regional Assets and allocations described in Exhibit B of the IFA.

Capital Budget – One or more capital budgets adopted consistent with Section VI.A. of the IFA: A periodic Capital Budget will be prepared by Alliance staff or consultants (or, if there is a separate Administrative Lead, then by the staff of or consultants selected by that entity). Similarly, prior to Board action, comprehensive Capital Plans, including a renewal and replacement fund mechanism, will be periodically prepared by Alliance staff (or, if there is an Administrative Lead, by the staff of that entity in cooperation with staff of any Operator).

Dual Majority Vote – means a Board vote requiring the affirmative vote of both (1) the Directors representing more than 50% of the Members, and (2) the Directors representing the Members comprising more than 50% of the Treatment Facilities Allocated Capacity for the year in which the vote is taken, as set forth in the then-current Capital Plan.

Dual Super-Majority Vote – means, except as provided in section IV.F.3 of the IFA, a Board vote requiring the affirmative vote of both (1) the Directors representing more than 60% of the Members, and (2) the Directors representing the Members comprising more than 60% of the Treatment Facilities Allocated Capacity for the year in which the vote is taken, as set forth in the then-current Capital Plan.

MGD – means million gallons per day, referring to a rate of flow.

Maximum Monthly Flow or MMF – means a measure of flow expressed in MGDs and representing the highest average monthly flow, taking into account the total flow of wastewater discharged into the Regional Assets, measured in millions of gallons for any calendar month divided by the total number of days in that month.

Regional Assets – means the assets listed in Exhibit B of the IFA, and such additional assets as the Board may later determine to be Regional Assets under Section VII.B. of the IFA.

Regional Service Charges – means charges for service imposed by the Alliance under Section VI.B of the IFA.

Transmission Infrastructure – means transmission lines, force mains, interceptors, pump stations and other facilities required to transfer wastewater from a Member's collection system to a Treatment Facility.

Treatment Facility or Facilities – means treatment plants, outfalls and other facilities required to treat wastewater.

The following decisions related to capital planning for Regional Assets are classified as "Significant Decisions" in the IFA and require a *Dual Majority Vote*: the borrowing of money or issuance of Bonds, a change in the ownership of Regional Assets and the adoption of a Capital Budget.

The following decisions related to capital planning for Regional Assets are classified as "Significant Decisions" in the IFA and require a *Dual Super-Majority Vote:* the adoption of a Capital Plan (including the allocation of costs pursuant to any such Capital Plan) and a change in Allocated Capacity.

1.5 Alliance Regional Assets

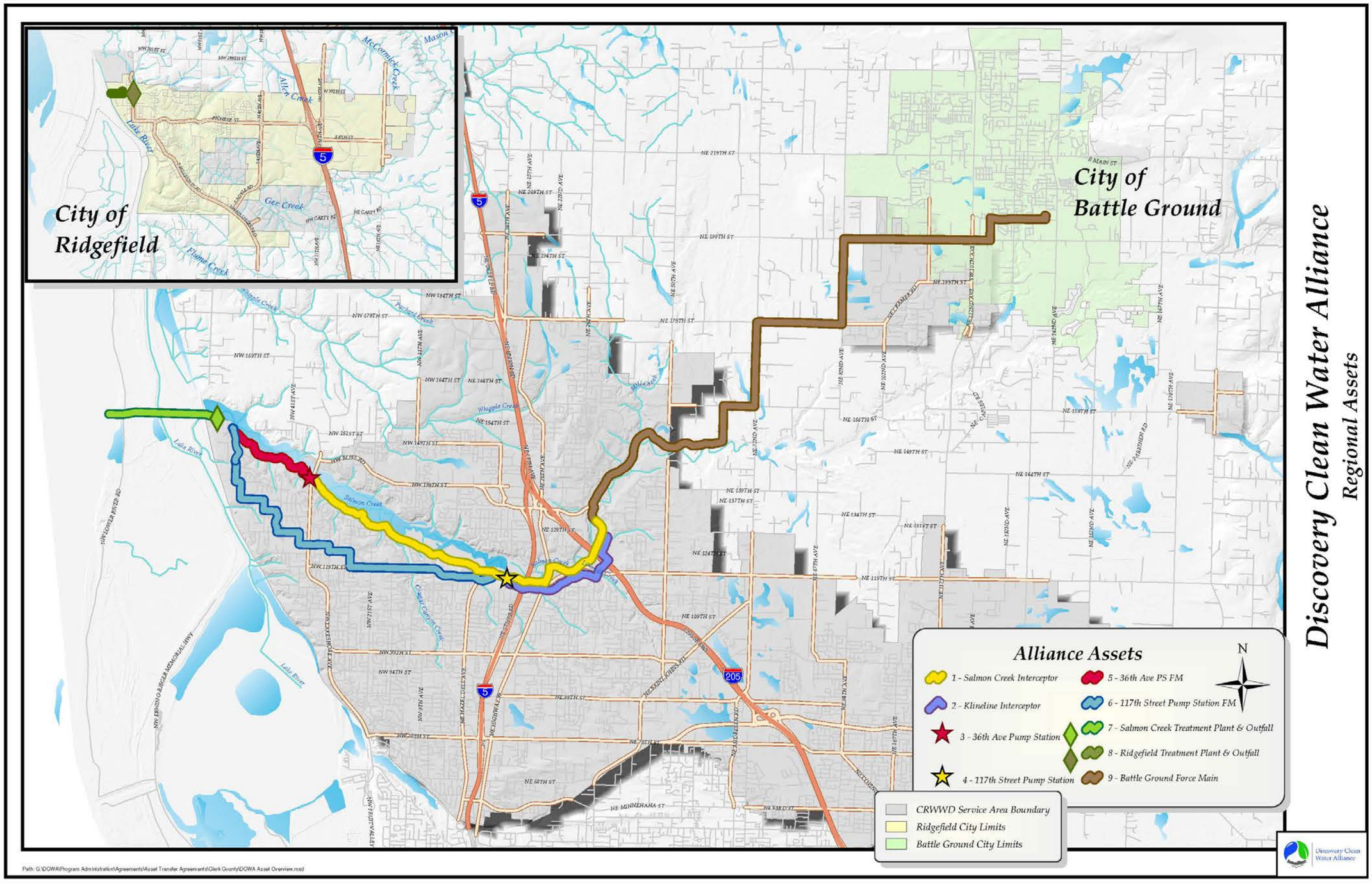
As of the Alliance Operations Date, the Alliance will own, operate and manage nine Regional Assets with an estimated book value (historical cost less depreciation) of $126 million. These Regional Assets

are depicted in the following Regional Asset overview map. For more detail on the specific Regional Assets, see Appendix A for a listing of the individual assets and a figure illustrating each of the assets under Alliance responsibility.

Table 1.3 – Alliance Asset Descriptions

Regional Asset Name	Regional Asset Description
1. Salmon Creek Interceptor	4.6-mile long gravity pipeline located on the south side of the Salmon Creek drainage. The interceptor collects and conveys wastewater from partner agencies to regional pump stations. Pipeline was constructed in segments from the mid to late 1970's (21-41-inch diameter pipe routed from Betts Bridge to 36 Ave).
2. Klineline Interceptor	1.8-mile long gravity pipeline located parallel to the Salmon Creek Interceptor. Pipeline was constructed in segments from 2002 to 2006 (48-inch diameter pipe routed from Salmon Creek Ave & NE 127 to 117 St PS).
3. 36 Avenue PS	Raw sewage PS located at 14014 NW 36 Ave in Vancouver, WA. The station pumps wastewater from the Salmon Creek interceptor to SCTP. Pump station was constructed in mid-1970's and remodeled in 1994 and 2005.
4. 117 Street PS (aka Klineline PS)	Raw sewage PS located at 1110 NE 117 St in Vancouver, WA. The station pumps wastewater from Salmon Creek and Klineline interceptors to SCTP. Pump station was constructed in 2008.
5. 36 Ave PS FM	24-inch diameter FM routed from 36 Ave PS to SCTP. The FM runs approximately 1.4 miles along the south side of the Salmon Creek and discharges to SCTP. Pipeline was constructed in mid-1970's.
6. 117 Street PS FM	Dual 30-inch diameter FM routed from 117 St PS to SCTP. The FM runs approximately 4.9 miles along public rights-of-way to SCTP. Pipeline was constructed in segments from 2004 to 2008.
7. Salmon Creek Treatment Plant & Outfall	Secondary treatment plant originally constructed in the mid 1970's, with four major expansion phases. The plant is located at 15100 NW McCann Rd, in Vancouver, WA. The plant outfall is a 30-inch diameter pipeline routed west of the plant 1.3 miles, terminating in the Columbia River between mile 95 and 96. The discharge location is latitude 46° 43' 58" N, longitude 122° 45' 23" W.
8. Ridgefield Treatment Plant & Outfall	Secondary treatment plant originally constructed in 1959 with several upgrades since then. The plant is located on West Cook St in Ridgefield, WA. The plant outfall is a 10-inch diameter pipeline routed west of the plant 0.2 miles, terminating in Lake River. The discharge location is latitude 45° 49' 18" N, longitude 122° 45' 09" W.
9. Battle Ground FM (including odor control system)	9-mile long 16-inch diameter FM (with bioxide chemical dosing/injection facility) routed southwesterly from McClure PS to Klineline interceptor at Salmon Creek Ave. Pipeline was constructed in the early 1990's.

Figure 1.2 – Regional Asset Overview Map



1.6 Governor's 2013 Smart Communities Award

Each of the Alliance Members was recognized by Washington Governor Jay Inslee with a Governor's 2013 Smart Communities Award. The award recognizes the value the Alliance provides to its Members and the larger community served by the regional wastewater transmission and treatment system. Following is an excerpt from the official statement provided with the award:

The Governor established these awards to recognize the accomplishments of community leaders to create smart, livable places. The awards are designed to recognize the good work being done in large and small communities all across Washington State. The values and priorities of each community shine through each and every one of the projects nominated for these awards.

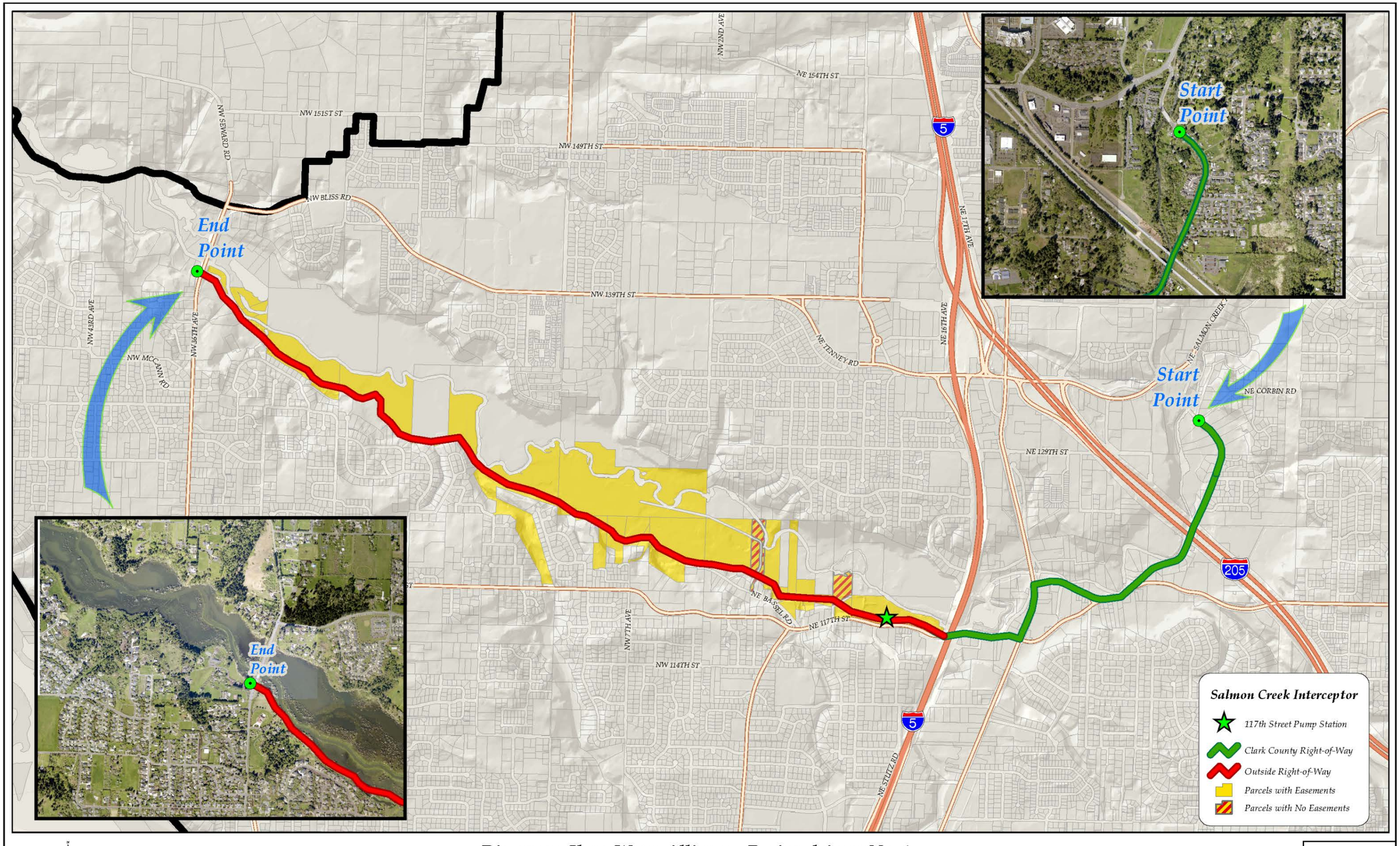
As Washington works to further strengthen its position in the global economy, the work of the local governments and their partners in creating vibrant, quality communities is vital to our success. The leadership of Discovery Clean Water Alliance's award winning nomination helps make Washington a great state in which to live and do business.

Discovery Clean Water Alliance, (DCWA) is a partnership between Clark County, Clark Regional Wastewater District, and the Cities of Ridgefield and Battle Ground. DCWA pools the various agencies' resources, funds and talents. By connecting waste water systems the partners can meet future service demand without paying for repetitive facilities in each service area.

In summary, at its most fundamental level, the Alliance provides a framework for the Members to jointly own and jointly manage the regional wastewater transmission and treatment system critical to the environmental health and economic well-being of the region. Each Member has a voice and a vote in the decisions made by the Alliance and together the Members will shape the future of the delivery of this critical urban service for the benefit of the community served.

APPENDIX A

REGIONAL ASSETS
DESCRIPTION AND LOCATION MAPS



Discovery Clean Water Alliance - Regional Asset No. 1 -
Salmon Creek Interceptor

Discovery Clean Water Alliance

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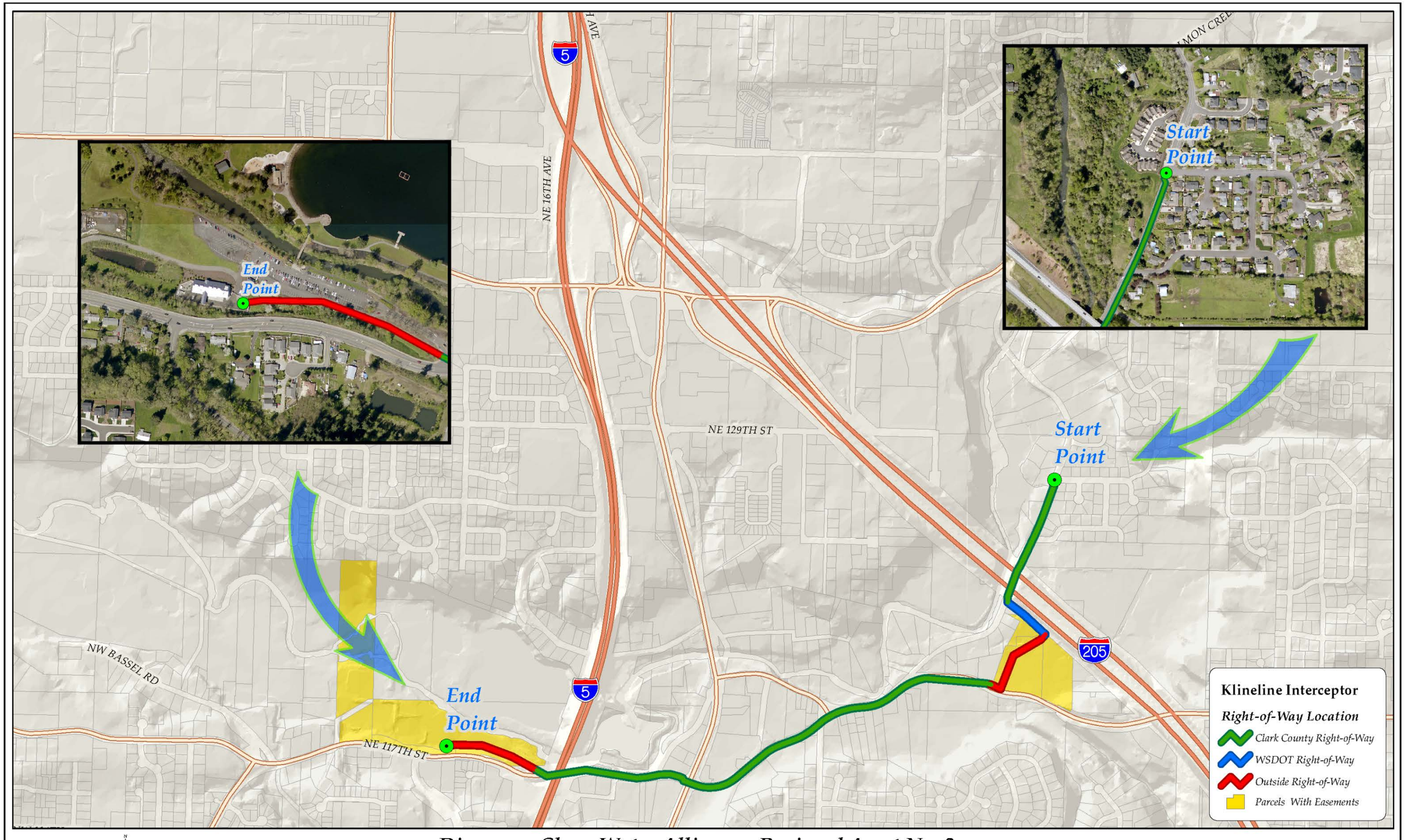

Discovery Clean Water Alliance - Regional Asset No. 2 -
Klineline Interceptor

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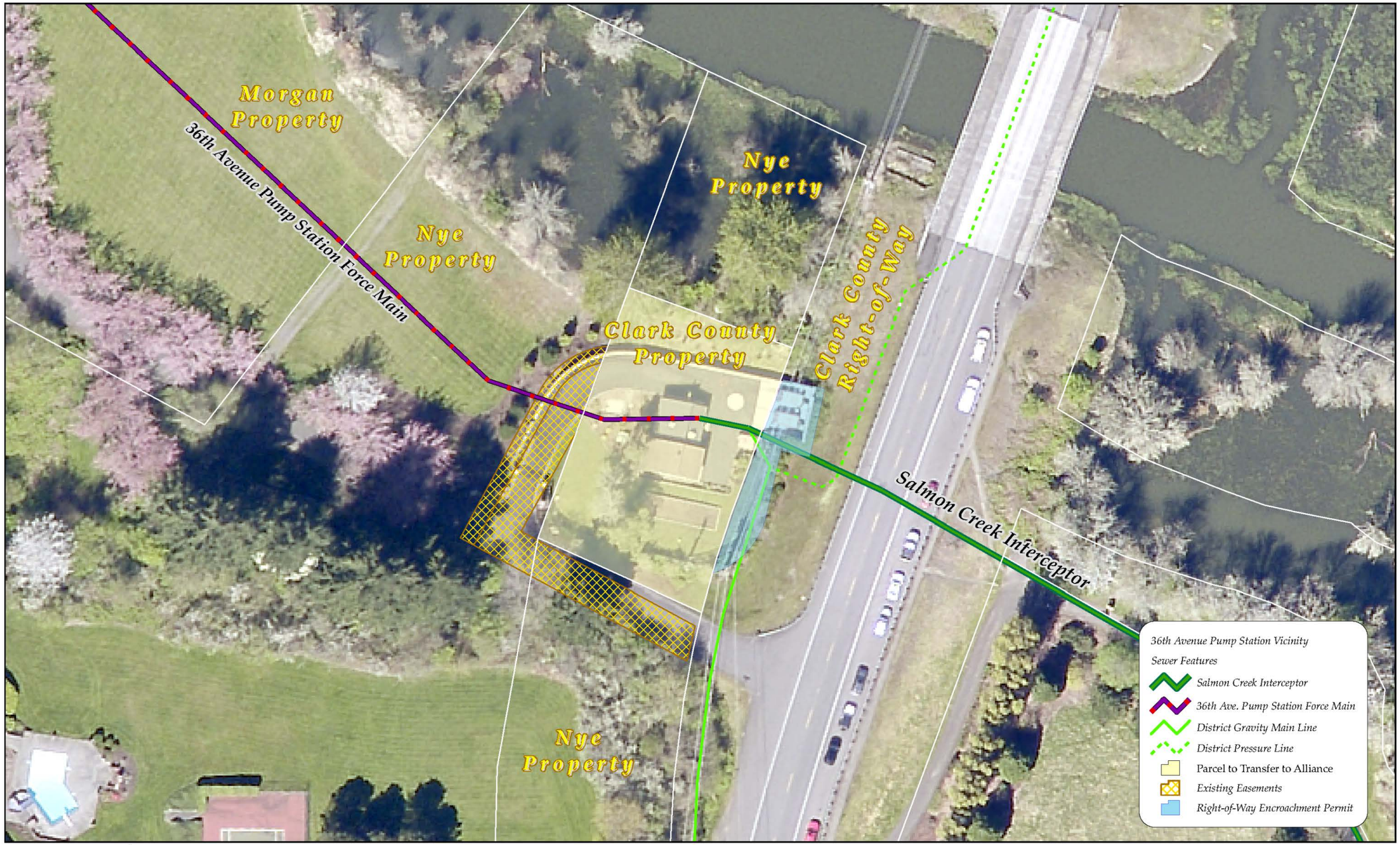
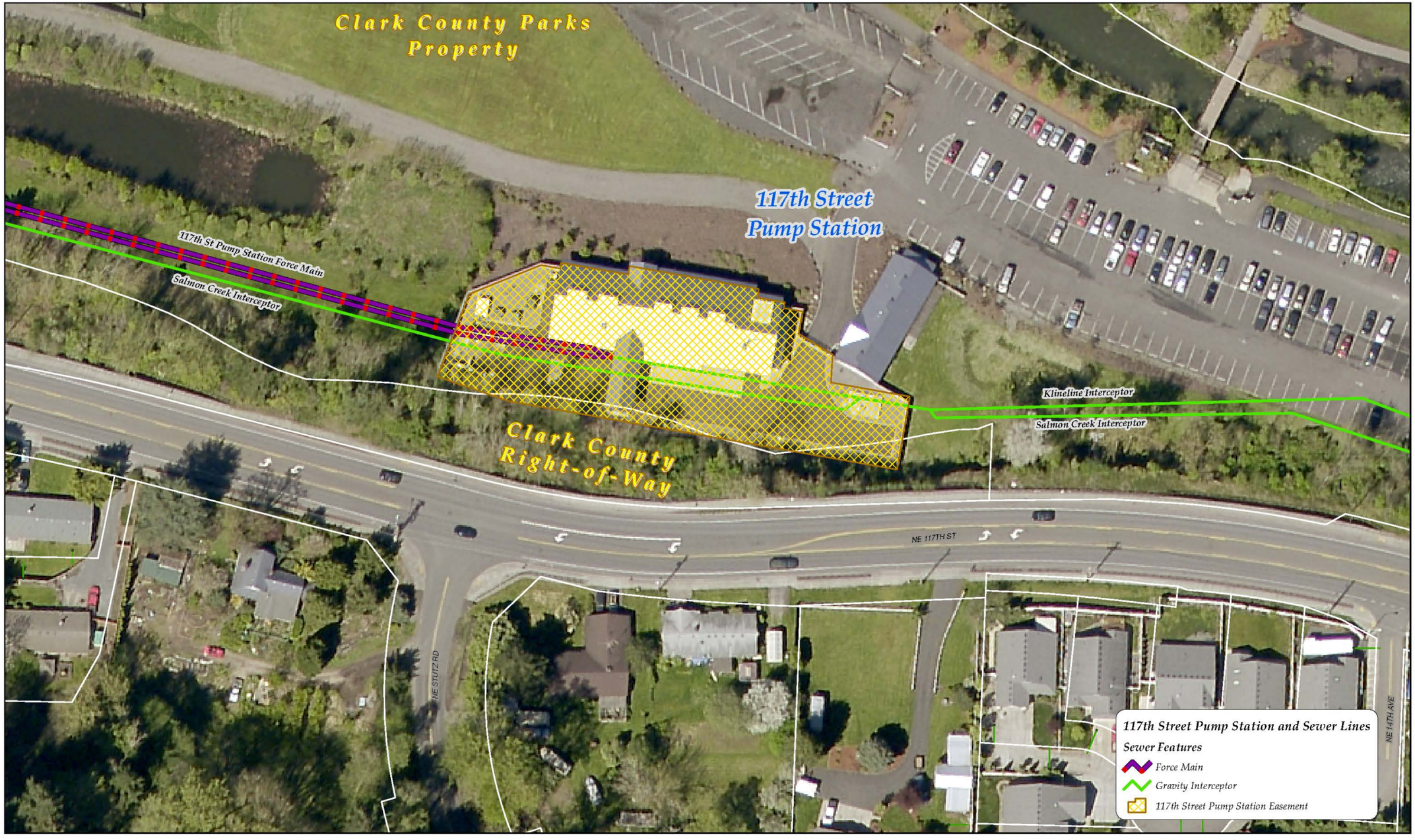
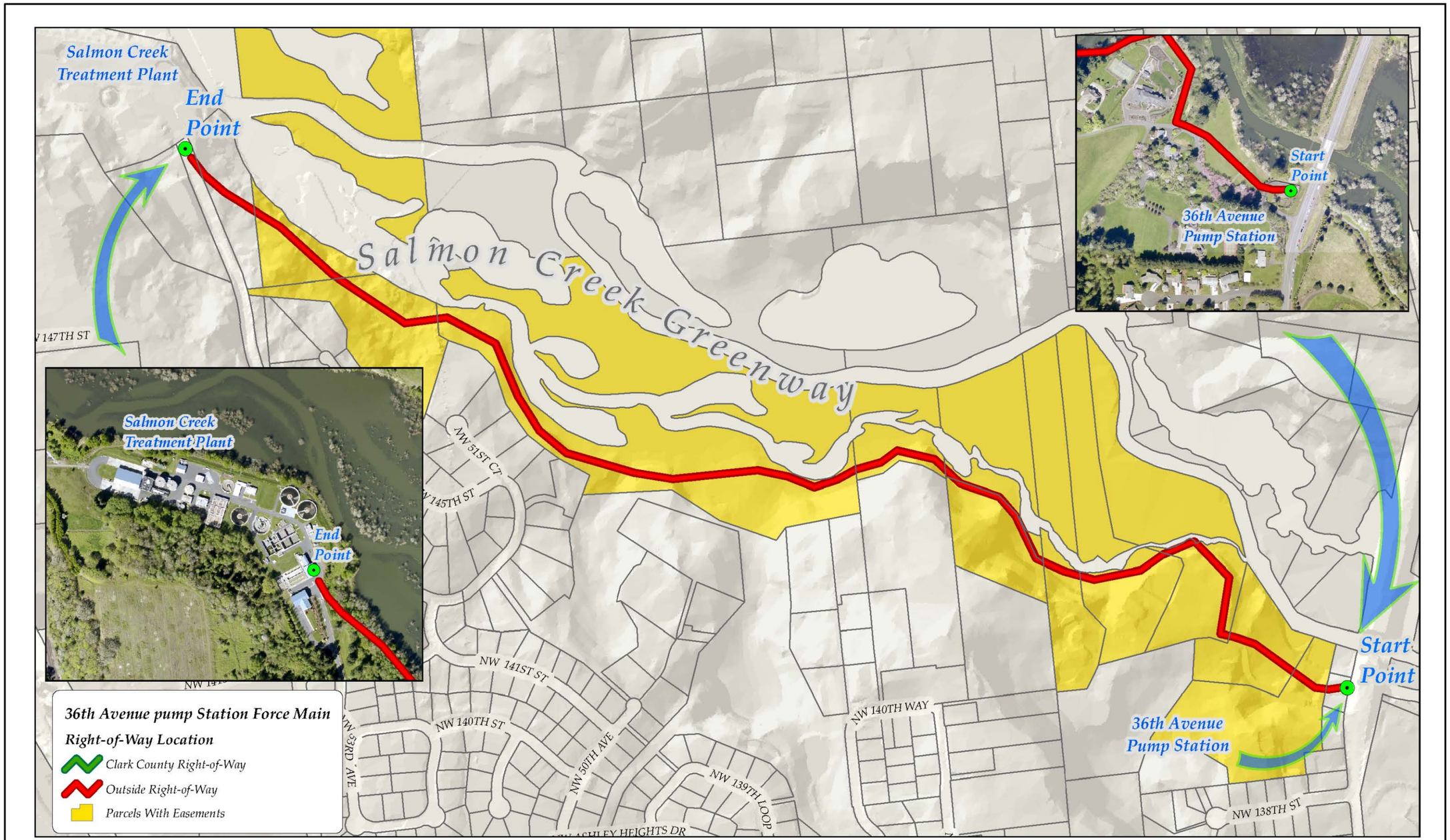


Discovery Clean Water Alliance - Regional Asset No. 3 -
36th Avenue Pump Station



Discovery Clean Water Alliance - Regional Asset No. 4 -
117th Street Pump Station

Discovery Clean Water Alliance



Discovery Clean Water Alliance - Regional Asset No. 5 -
36th Avenue Pump Station Force Main

Discovery Clean Water Alliance

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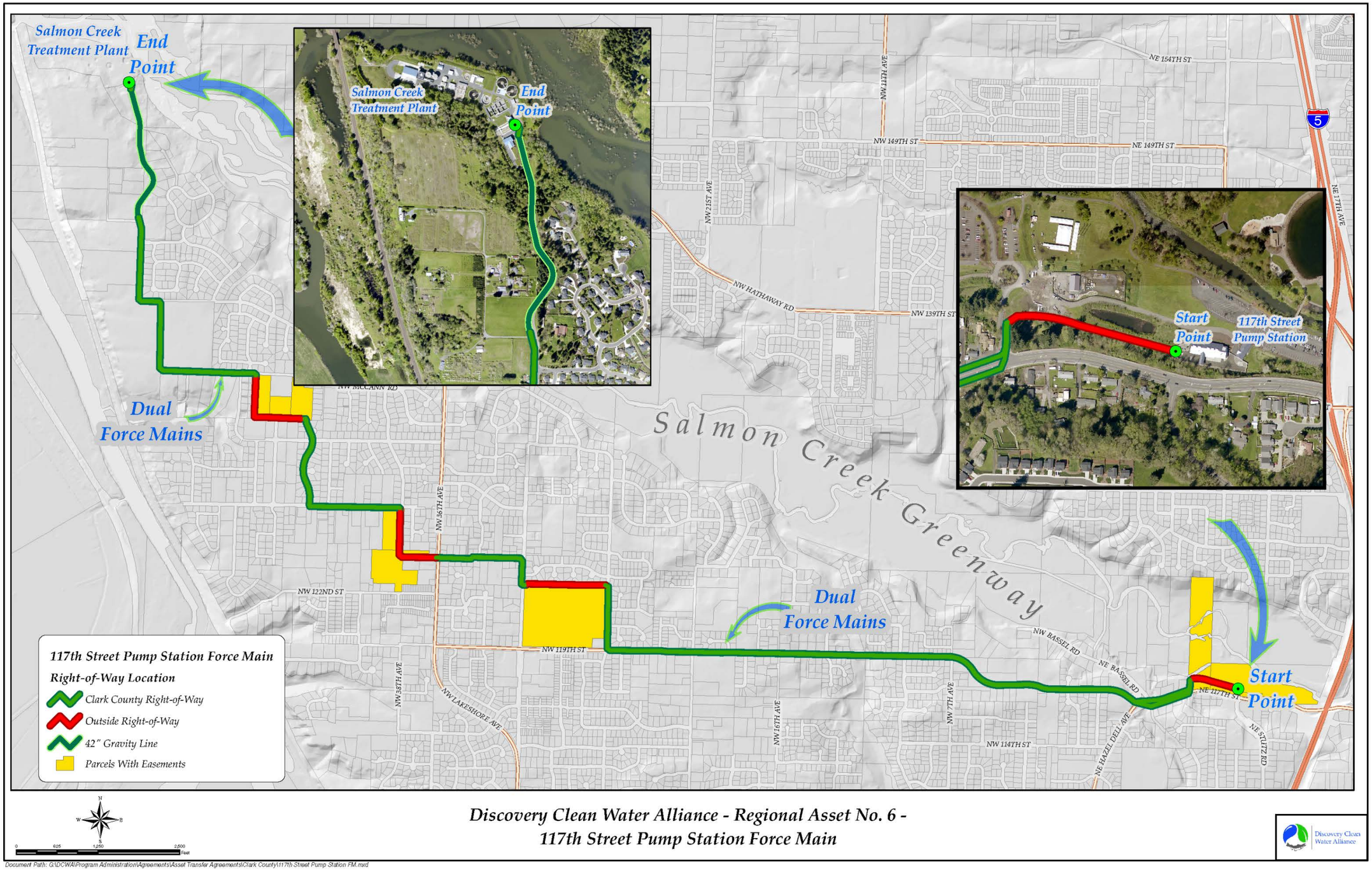

Discovery Clean Water Alliance - Regional Asset No. 6 -
117th Street Pump Station Force Main

Discovery Clean Water Alliance

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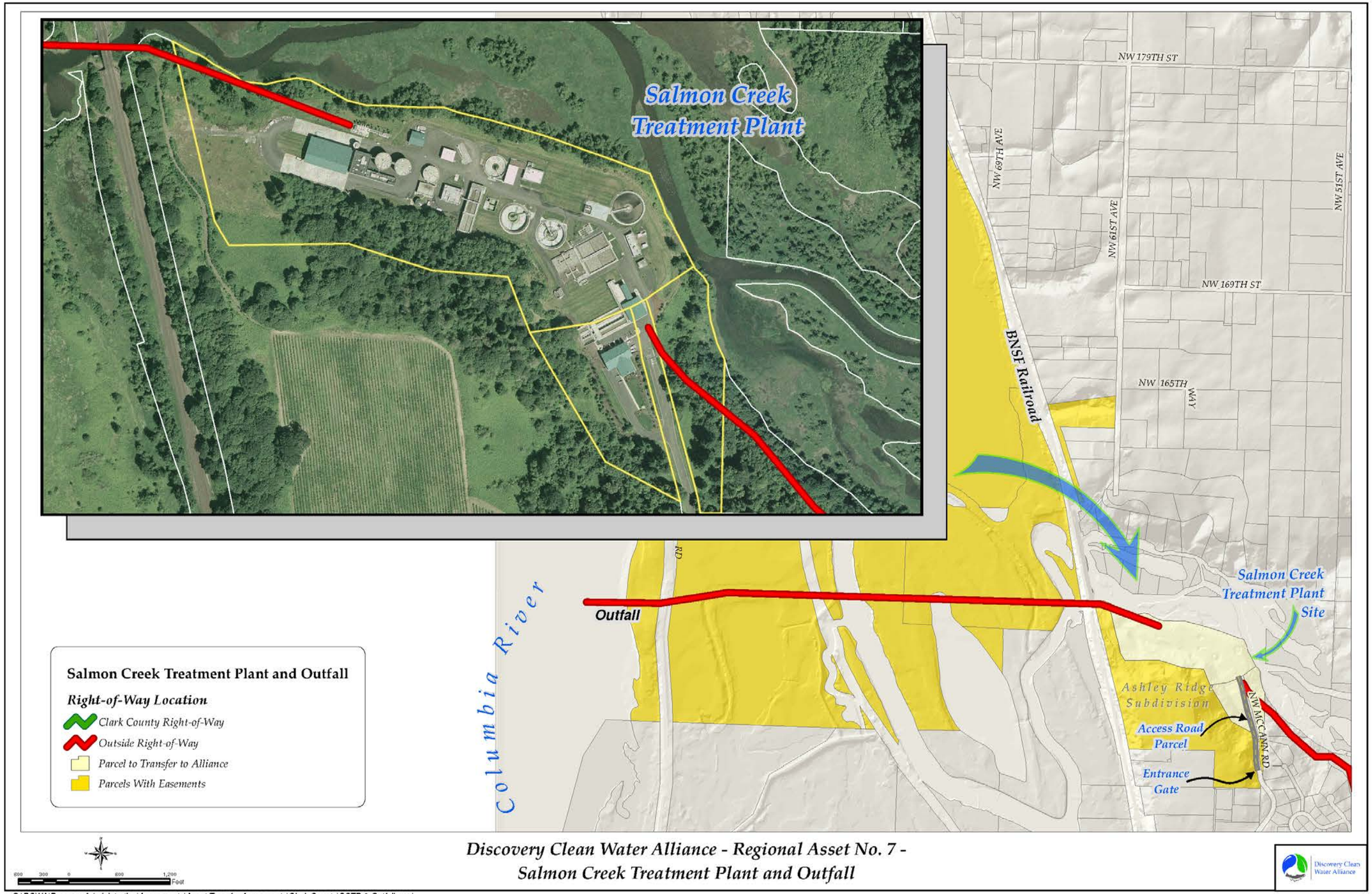

Discovery Clean Water Alliance - Regional Asset No. 7 -
Salmon Creek Treatment Plant and Outfall

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Discovery Clean Water Alliance - Regional Asset No. 8 -
Ridgefield Treatmant Plant and Outfall

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Discovery Clean Water Alliance - Regional Asset No. 9 -
Battle Ground Force Main

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Section 2

CAPITAL PLAN

2.1 Capital Plan Introduction

The Alliance is an owner and operator of Regional Assets providing wastewater transmission and treatment services to its Members. As such, one of the most important business functions of the Alliance is to have a well-developed capital program for the management of its assets. This Capital Plan presents the Regional Asset management program for the Alliance, including the work required to repair or replace existing assets and to construct new assets to meet capacity, regulatory or level-of-service requirements.

The formal definition of the Capital Plan as presented in the IFA is "**One or more long-range capital improvement plans** for the **addition, replacement, or improvement of Regional Assets**, and including an identification of Regional Assets and the **allocation of transmission and treatment capacity**, as they may be supplemented or adjusted from the initial Regional Assets and allocations described in Exhibit B of the IFA." (emphasis added). This Capital Plan provides for these requirements in the following four sections:

- "One or More Long-Range Capital Improvement Plans". In Section 2.2, the Alliance formally adopts the existing long-range capital plans of its Members. These plans have been updated through the regional study process and have been reviewed and approved by the Department of Ecology. The existing Member agency plans have been formally transferred to the Alliance through the asset transfer agreement process.
- "Replacement or Improvement of Regional Assets". In Section 2.3, the Alliance presents its plan for replacement or improvement of the existing Regional Assets. These plans for existing assets are often called "repair and replacement" or "asset management" programs. These terms are used interchangeably in this document.
- "Addition of Regional Assets". In Section 2.4, the Alliance presents its plan for addition or construction of new Regional Assets. The need for new Regional Assets is typically driven by the need to increase system capacity for growth in the service area, new regulatory obligations or new level-of-service commitments.
- "Allocation of Transmission and Treatment Capacity". In Section 2.5, the Alliance will address any changes to Allocated Capacity among its Members. Changes in capacity can result from agreements to transfer existing capacity rights among Members or from new capacity rights created through the construction of new Regional Assets.

The Capital Plan will depict the programs for existing and new Regional Assets by presenting near-term needs (two-year and six-year projects) as well as long-term needs (20-year projects). Individual project profiles for all two-, six- and 20-year Capital Plan projects are presented in Appendices B-1 and B-2. Per the Alliance Operator agreements with Clark County and Ridgefield, only projects valued at $50,000 or larger are presented in this Capital Plan. Projects below this threshold are self-performed by the Operators and will be presented in the context of the Alliance Operating Budgets.

A project numbering convention has been established with the following three components: (1) Regional Asset number, (2) anticipated bid year and (3) sequential number. For example, project RA03–17–01 would be for a project for Regional Asset No. 3 (the 36th Avenue Pump Station) where the project was scheduled to bid in 2017 and this is the first project for that asset in that bid year.

The Capital Plan provides for all the projects defined over time and the corresponding cost estimates have been adjusted to 2014 dollars assuming an annual cost escalation of three percent. A separate process to escalate the project costs from this 2014 baseline to the recommended bid year is determined in the Capital Budget (a separate document).

2.2 Member Agency Planning Document Incorporation by Reference

By adopting this Capital Plan, the Alliance formally adopts the following Member agency planning documents:

Table 2.1 – Member Agency Planning Documents Adopted by Alliance

Regional Assets (RA)	Planning Document	Ecology Approval Date	Portion of Plan Adopted by Alliance
Salmon Creek Wastewater Management System (SCWMS), RA 1-7	*Salmon Creek Wastewater Management System Wastewater Facilities Plan / General Sewer Plan Amendment, CH2M HILL, August 2013*	September 4, 2013	Entire plan
	Salmon Creek Wastewater Management System Wastewater Facilities Plan / General Sewer Plan, CH2M HILL, July 2004	March 10, 2005	Entire Plan
Ridgefield Treatment Plant and Outfall (RTPO), RA 8	*City of Ridgefield General Sewer Plan, Gray & Osborne, March 2013*	June 18, 2013	Relevant portion of plan for RTPO
	City of Ridgefield General Sewer and Wastewater Facility Plan, Gray & Osborne, December 2007	October 31, 2008	Relevant portion of plan for RTPO
Battle Ground Force Main (BGFM), RA 9	*City of Battle Ground General Sewer Plan, Wallis Engineering, March 2011.*	September 29, 2011	Relevant portion of plan for BGFM

2.3 Existing Regional Assets – Repair and Replacement Program

Each of the Members contributing Regional Assets to the Alliance has a repair and replacement program for its respective infrastructure. The Alliance will benefit from these programs and will incorporate the projects previously vetted into its overall asset management framework. A brief history of each of the programs is provided below.

- *Salmon Creek Wastewater Management System (SCWMS), Regional Assets 1-7*. Clark County conducted a comprehensive inventory and assessment of all system components, utilizing the expertise of County operations and maintenance staff and an outside consultant skilled in asset management practice. This report was first published in 2011 and was updated in 2014. In addition, Clark County has sponsored several reports and technical memoranda regarding specific system components.

- *Ridgefield Treatment Plant and Outfall (RTPO), Regional Asset 8*. Ridgefield has conducted repair and replacement activities on a year-by-year basis through the annual budget process. The City has also maintained an ongoing log of future project needs. Several of the projects are scheduled to be completed in 2014 before the Alliance Operations Date. As a result, of the 2014 work activities, no further repair and replacement projects over $50,000 value are proposed at this time. The eventual decommissioning of the RTPO site and facility is contemplated within this Capital Plan.

- *Battle Ground Force Main (BGFM), Regional Asset 9*. Battle Ground has conducted valve replacement and other repair work on an as-needed basis. A more formal assessment of the BGFM condition was completed recently and was made available to the Alliance in support of the Capital Plan and Capital Budget work.

Information from these asset management programs was reviewed with the Alliance Standing Committees during several meetings and workshops between February and April 2014. In order to systematically prioritize the investments, the Standing Committees considered the following characteristics for each project:

- Asset condition or "risk of failure" of the asset
- Asset criticality within the system or "consequence of failure" of the asset
- Safety considerations for Member Agency staff and the public served by the assets
- Return on investment where operational cost savings are provided by the project
- Bid packaging and other potential efficiencies in delivering the projects
- Risk buy down opportunities
- Regulatory trends and compliance
- Public and environmental health considerations
- Opportunities for system-wide benefits

Appendix B-1 provides a comprehensive summary of each repair and replacement project that has been identified and vetted as part of the Members' historical asset management programs. Each "project profile" form lists source documents supporting the project-specific recommendations. Section 2.6 provides a summary of the prioritized near-term projects (two-year and six-year) and long-term projects (20-year).

All projects related to existing Regional Assets will be carried forward into the Capital Budget to determine appropriate funding mechanisms and the resulting Regional Service Charges to the Alliance Members. Specific repair and replacement projects are listed primarily for the first half of the 20-year planning period. Repair and replacement project allowances of approximately $1 million per year in 2014 dollars will be used for the second half of the 20-year planning period, based on a separate analysis of equipment and facility repairs likely to be needed in that time frame.

2.4 New Regional Assets – Capital Projects Summary

This Capital Plan presents the infrastructure investments needed to address system capacity, new regulatory obligations or new level-of-service commitments. The planning basis for individual projects is developed in the Member agency planning documents listed in Section 2.2. Individual capital projects are summarized in this section and profiled in detail in Appendix B-2.

The timelines associated with the projects in the Member agency planning documents was, in general, based on underlying data from a higher growth environment prior to the recent national economic recession. These timelines have been updated to reflect more current growth realities while still being conservative in terms of providing capacity ahead of demand. The dates associated with specific projects detailed in Appendix B-2 are consistent with this updated growth and timeline analysis.

In general, the analysis assumes transitioning over approximately five years from the current lower growth environment to historical growth rates. The historical growth rates are then applied to the balance of the planning period. These historical growth rates are approximately 300-400 ERUs annually for the City of Battle Ground and approximately 900-1,000 ERUs annually for Clark Regional Wastewater District (including the Ridgefield service area within the District).

Section 2.6 provides a summary of the near-term projects (two-year and six-year) and long-term projects (20-year). The two-, six- and 20-year capital projects will be carried forward into the Capital Budget to determine appropriate funding mechanisms for the projects and the resulting Regional Service Charges to the Alliance Members.

A separate narrative summary of projects identified through formal planning and study efforts, but not yet formally programmed in the 20-year planning period, is included in Appendix B-3. These projects are listed for further monitoring and development as conditions warrant. The capacity available with these projects provides effectively for a 50-year planning horizon at average historical growth rates.

The capital project timelines described above are based on current estimates of service area growth characteristics, current regulatory requirements and current partnership opportunities. These parameters are dynamic and require that the Capital Plan be updated every two to four years to remain current. As a result, the individual capital projects may be revised in scope, schedule and budget from time to time as circumstances dictate. Any changes to the capital projects will be reflected in the next available update of the Capital Plan.

2.5 Change in Allocated Capacity

Allocated Capacity may be changed among Members through a Capital Plan. Allocated Capacity is a critical parameter for Alliance Members because it is the fundamental basis upon which Alliance costs are applied to individual Alliance Members.

One change in Allocated Capacity is being implemented with this Capital Plan. Because Ridgefield transferred its wastewater collection system to the Clark Regional Wastewater District (District) effective January 1, 2014, the Allocated Capacity for the Ridgefield Treatment Plant (Regional Asset No. 8) is reassigned from Ridgefield to the District. This change provides for the costs related to the Ridgefield Treatment Plant to be charged to the District, now that the District has the dual responsibilities of providing treatment services for its Ridgefield customers and also collecting the revenues from the same customers. For clarity, the change in Allocated Capacity is further depicted in the table below.

Table 2.4 – Change in Allocated Capacity for Ridgefield Treatment Plant

	Values expressed in MGD of MMF		
Regional Asset (RA 8): Ridgefield Treatment Plant & Outfall	**Battle Ground**	**District**	**Ridgefield**
2013 Existing Allocated Capacity	0.00	0.00	**0.70**
2014 Change in Allocated Capacity	0.00	**0.70**	0.00

Therefore, the updated capacity allocation is as follows:

Table 2.5 – Regional Assets and Capacity Allocations

Formation Agreement: Exhibit B
List of Initial Regional Assets and Initial Capacity Allocations

System Name	No.	Regional Asset Name	Regional Asset Description	Initial Capacity Allocations (MGD,MMF) Existing Capacity			
				BG	CRWWD	RF	Total
Salmon Creek Wastewater Management System (SCWMS)		Interceptor System		10.10	28.08	0.00	38.18
	1	Salmon Creek Interceptor	4.6 mile long gravity pipeline located on the south side of the Salmon Creek drainage. The interceptor collects and conveys wastewater from partner agencies to regional pump stations. Pipeline was constructed in segments from the mid to late 1970's (21-42-inch diameter pipe routed from Betts Bridge to 36 Ave).				
	2	Klineline Interceptor	1.8 mile long gravity pipeline located parallel to the Salmon Creek Interceptor. Pipeline was constructed in segments from 2002 to 2006 (48-inch diameter pipe routed from Salmon Creek Ave & NE 127 St to 117 St PS).				
		Pump Station (PS) System		4.47	13.57	0.00	18.04
	3	36 Avenue PS	Raw sewage PS located at 14014 NW 36 Ave in Vancouver, WA. The station pumps wastewater from the Salmon Creek interceptor to SCTP. Pump station was constructed in mid 1970's and remodeled in 1994 and 2005.				
	4	117 Street PS (aka Klineline PS)	Raw sewage PS located at 1110 NE 117 St in Vancouver, WA. The station pumps wastewater from Salmon Creek and Klineline interceptors to SCTP. Pump station was constructed in 2008.				
		Force Mains (FM) System		6.30	20.06	0.00	26.36
	5	36 Ave PS FM	24-inch diameter FM routed from 36 Ave PS to SCTP. The FM runs approximately 1.4 miles along the south side of the Salmon Creek and discharges to SCTP. Pipeline was constructed in mid 1970's.				
	6	117 Street PS FM	30-inch diameter FM routed from 117 St PS to SCTP. The FM runs approximately 4.9 miles along public rights-of-way to the SCTP. Pipeline was constructed in segments from 2004 to 2008.				
		Salmon Creek Treatment Plant (SCTP) & Outfall		3.47	11.48	0.00	14.95
	7		Secondary treatment plant originally constructed in the mid 1970s, with four major expansion phases. The plant is located at 15100 NW McCann Rd, in Vancouver, WA. The plant outfall is a 30-inch diameter pipeline routed west of the plant 1.3 miles, terminating in the Columbia River between mile 95 and 96. The discharge location is latitude 45° 43' 58" N, longitude 122° 45' 23" W.				
Ridgefield Treatment System		Ridgefield Treatment Plant & Outfall		0.00	0.70	0.00	0.70
	8		Secondary treatment plant originally constructed in 1959 with several upgrades since then. The plant is located on West Cook St in Ridgefield. The plant outfall is a 8-inch diameter pipeline routed west of the plant 0.2 miles, terminating in Lake River. The discharge location is latitude 45° 49' 18" N, longitude 122° 45' 09" W.				
Battle Ground Force Main System		Battle Ground FM		3.44	0.96	0.00	4.40
	9	(Including odor control system for FM)	9 mile long 16-inch diameter FM with bioxide chemical injection facility routed southwesterly from McClure PS to Klineline interceptor at Salmon Creek Ave. Pipeline was constructed in 1993.				

2.6 Capital Plan Summary

The following table presents a summary of the capital investments necessary to maintain the existing Regional Assets in good working order; and also to construct new Regional Assets over time in order to adequately meet capacity demand, anticipated regulatory requirements and community-appropriate levels of service.

Table 2.6 – Capital Plan Summary (all costs are in 2014 dollars)

Regional Asset / Project Name	Scope of Project	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	PROJECT COST
1 Salmon Creek Interceptor																						
Middle Salmon Creek Interceptor Point Repair	Open excavation and short-term bypass pumping to replace 20' of pipe. Couplings will connect the replacement section to existing interceptor. Permitting likely required for jurisdictional wetland boundary.																					$ 50,000
Upper Salmon Creek Interceptor Repair	Re-line 2,525' of 21-inch and 24-inch concrete pipe to repair corrosion damage in Salmon Creek Ave east of I-205.																					$ 740,000
2 Klineline Interceptor																						
2a - Regional Biofilter - Upper Klineline Interceptor	Replace interim 2004 chemical system for BGFM and biofilter for St. John's Interceptor with new regionally-sized biofilter sized for permanent odor & corrosion protection. Reduced operating costs for chemicals will be realized.																					$ 860,000
3 36th Avenue Pump Station (PS)																						
36th Avenue PS Pump Replacement	Replace three 200-HP raw sewage pumps and motors at the end of 20-year useful life, complete piping modifications for safer handling of pumps.																					$ 900,000
4 117th Street Pump Station (PS)																						
117th Street PS Capacity Upgrade	Replace five raw sewage pumps, motors and variable frequency drives, install second engine generator.																					$ 9,300,000
5 36th Avenue Pump Station Force Main																						
No projects currently programmed																						$ 0
6 117th Street Pump Station Force Main																						
No projects currently programmed																						$ 0
7 Salmon Creek Treatment Plant & Outfall (SCTP, SCTPO)																						
SCTP Programmable Logic Controller Replacement	Replace Programmable Logic Controllers installed with the Phase 3 Expansion Project (1996 era) at the end of 20-year useful life.																					$ 1,300,000
SCTPO Columbia River Outfall Pipe Replacement	Replace in-water and on-shore portion of the existing outfall pipeline at the Columbia River to address bank stability and long-term discharge configuration (approximately 1,000 linear feet).																					$ 3,400,000
SCTPO Phase 5 Expansion (Effluent Pipeline)	Construct a new 6,200' 48-inch outfall pipeline from the plant to approximately Lower River Road.																					$ 13,000,000
SCTP Dewatering Equipment Replacement	Replace one existing belt filter press with a screw press to improve dewatering performance and address equipment age.																					$ 1,500,000
SCTP Influent Screen Replacement	Install two mechanically cleaned influent screens to replace existing 1998 units.																					$ 500,000
SCTP UV System Replacement	Replace existing unit with a new, more energy efficient system.																					$ 3,000,000
SCTP Phase 6 Expansion	Phased plant expansion - influent screen 3, primary clarifier covers, odor control system, aeration blower, aeration basin 7, secondary clarifier 5, RAS/WAS pump station 2, UV disinfection channel 2.																					$ 24,700,000
SCTP Primary Sludge Pump Replacement	Replace existing eight 1998 primary sludge pumps and associated air compressors with lobe or hose style pumps for increased efficiency.																					$ 220,000
SCTP Phase 7 Expansion	Phased plant expansion - primary clarifier 5, aeration basin 8, anaerobic digester 3.																					$ 15,400,000
8 Ridgefield Treatment Plant & Outfall (RTPO)																						
Ridgefield Treatment Plant Decommissioning	Decommission the existing treatment plant facility at the end of asset useful life.																					$ 2,500,000
9 Battle Ground Force Main (BGFM)																						
BGFM Valve & Vault Repair	Replace or repair combination air vacuum valves & vaults, decommission air injection system, repair isolation valve & pig launching stations and install corrosion protection.																					$ 490,000
BGFM Parallel Force Main	Construct second (parallel) force main (24-inch diameter) from Battle Ground to connection point at Klineline Interceptor.																					$ 22,700,000
TOTAL																						$ 100,560,000

APPENDIX B-1

EXISTING ASSETS REPAIR AND REPLACEMENT

PROJECT PROFILES

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: Middle Salmon Creek Interceptor Point Repair
Project Number: RA01-15-1
Form Prepared/Updated: April 2014

Project Type:
Existing Asset – Repair ☒
Existing Asset – Replacement ☐
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. The project will replace a damaged section of the Salmon Creek Interceptor. This replacement will reduce the potential failure of the interceptor in this location, providing structural integrity to the pipe.

Scope of Work. This point repair will require the replacement of 20 feet of pipe. Couplings will be used to connect the replacement section with the existing interceptor. Replacement will require open excavation and short-term bypass pumping for the duration of the replacement effort. This piping was originally installed in 1975. The cost below assumes the contractor is responsible for bypass pumping during the repair. Additional repair alternatives will be investigated during the design phase.

Cost Allocation. The replacement portion of the project costs are apportioned to Battle Ground and the District according to Salmon Creek Interceptor allocated capacity: 10.10 mgd (26.5%) for Battle Ground, and 28.08 mgd (73.5%) for the District. For additional information related to this project, see *The Salmon Creek Interceptor – 2013 CCTV Records, February 2013*.

Photos *(if available)*: **(Map of area on the reverse side)**

Signs of Failure of the Interceptor | *CCTV Image of the Interceptor* | *Rebar Showing at Failure Location*

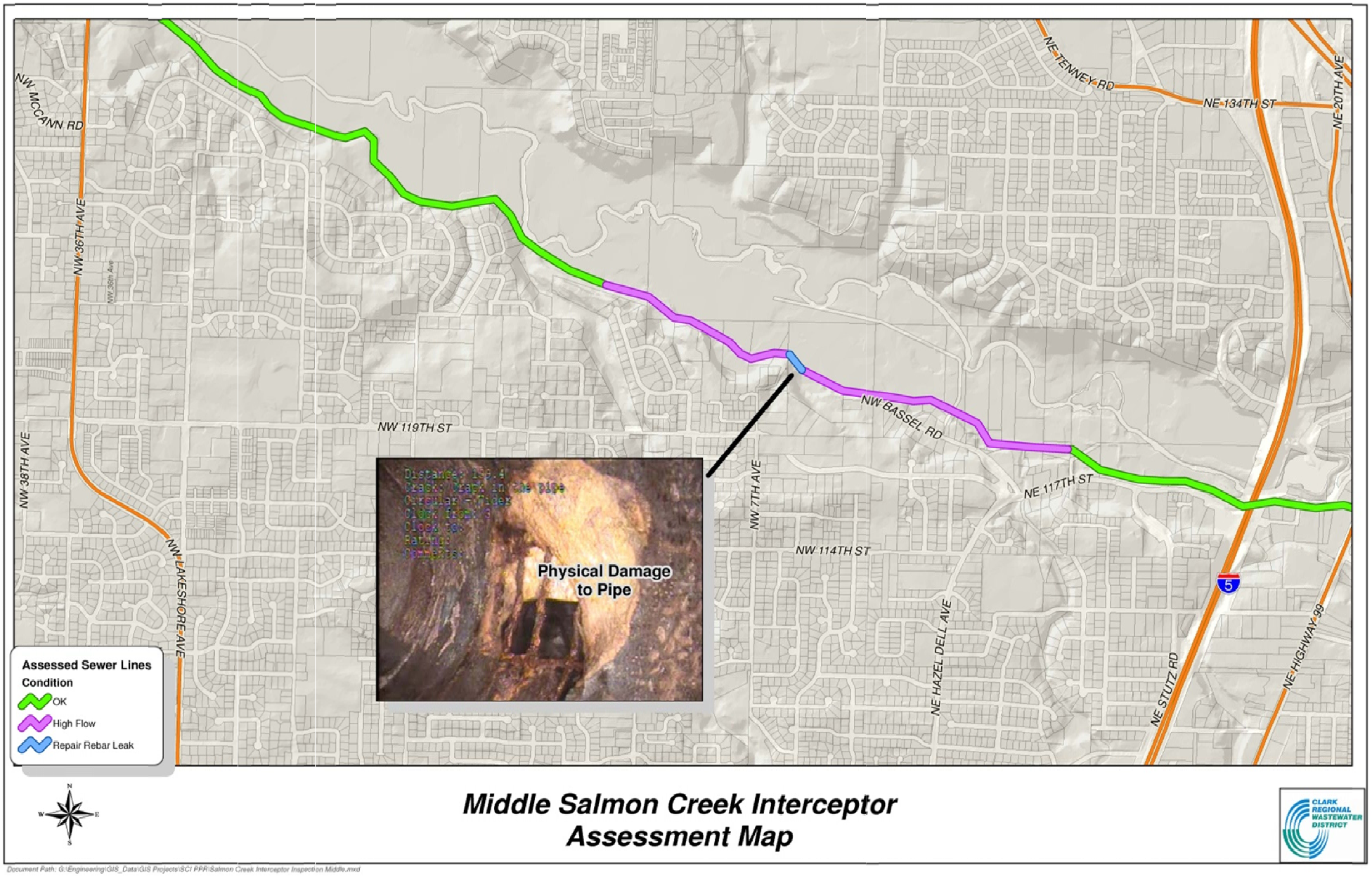
Budget Information:

Project Cost Estimate		
Total Project Cost:	$50,000	
Construction Cost:	$30,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	26.5%	$13,000
Clark County:	0%	$0
District:	73.5%	$37,000
Ridgefield:	0%	$0
Total:	100%	$50,000

Schedule Information:

Activity	Year
Planning	Completed
Permitting	2015
Real Property/ROW	N/A
Design	2015
Bid	2015
Construction	2015



Middle Salmon Creek Interceptor Assessment Map

CLARK REGIONAL WASTEWATER DISTRICT

Document Path: G:\Engineering\GIS_Data\GIS Projects\SCI PPR\Salmon Creek Interceptor Inspection Middle.mxd

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: Upper Salmon Creek Interceptor Repair
Project Number: RA01-16-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☒
Existing Asset – Replacement ☐
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. The project will repair extensive corrosion in the Salmon Creek Interceptor due to the discharge of hydrogen sulfide (H2S) from the Battle Ground Force Main between 1993 and 2006, and due to pressurization from the St. Johns Interceptor.

Scope of Work. The project will re-line approximately 2,174 feet of 21-inch diameter concrete pipe and 351 feet of 24-inch concrete pipe in Salmon Creek Avenue near the I-205 overpass. This piping was originally installed in 1975. A trenchless technology will be used to re-line the pipe from inside, eliminating the need for major excavation. The project will also provide for repair of service laterals connected to the damaged pipe, coordinate traffic control in Salmon Creek Avenue, bypass pump sewer flows around the work area during construction and provide for public engagement of the residents near the project.

Cost Allocation. A project-specific cost allocation structure is being utilized for this project based on an assessment of several factors that contributed to the deterioration of the pipeline. The resulting cost allocation is 50.9% of total project costs to Battle Ground, and 49.1% to the District. See supplemental information section (reverse side) for additional detail. For additional information related to this project, see *The Clark Regional Wastewater District, 2012 Inspections Report, Brown & Caldwell, May 2013.*

Photos *(if available)*:

Erosion in the Pipe – Near Corbin Road

Salmon Creek Avenue

Crack in the Pipe – South of 127th Street

Budget Information:

Project Cost Estimate

Total Project Cost:	$790,000	
Construction Cost:	$610,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	5% design	(Class 4)

Project Cost Allocation

Battle Ground:	50.9%	$402,000
Clark County:	0.0%	$0
District:	49.1%	$388,000
Ridgefield:	0.0%	$0
Total:	100.0%	$790,000

Schedule Information:

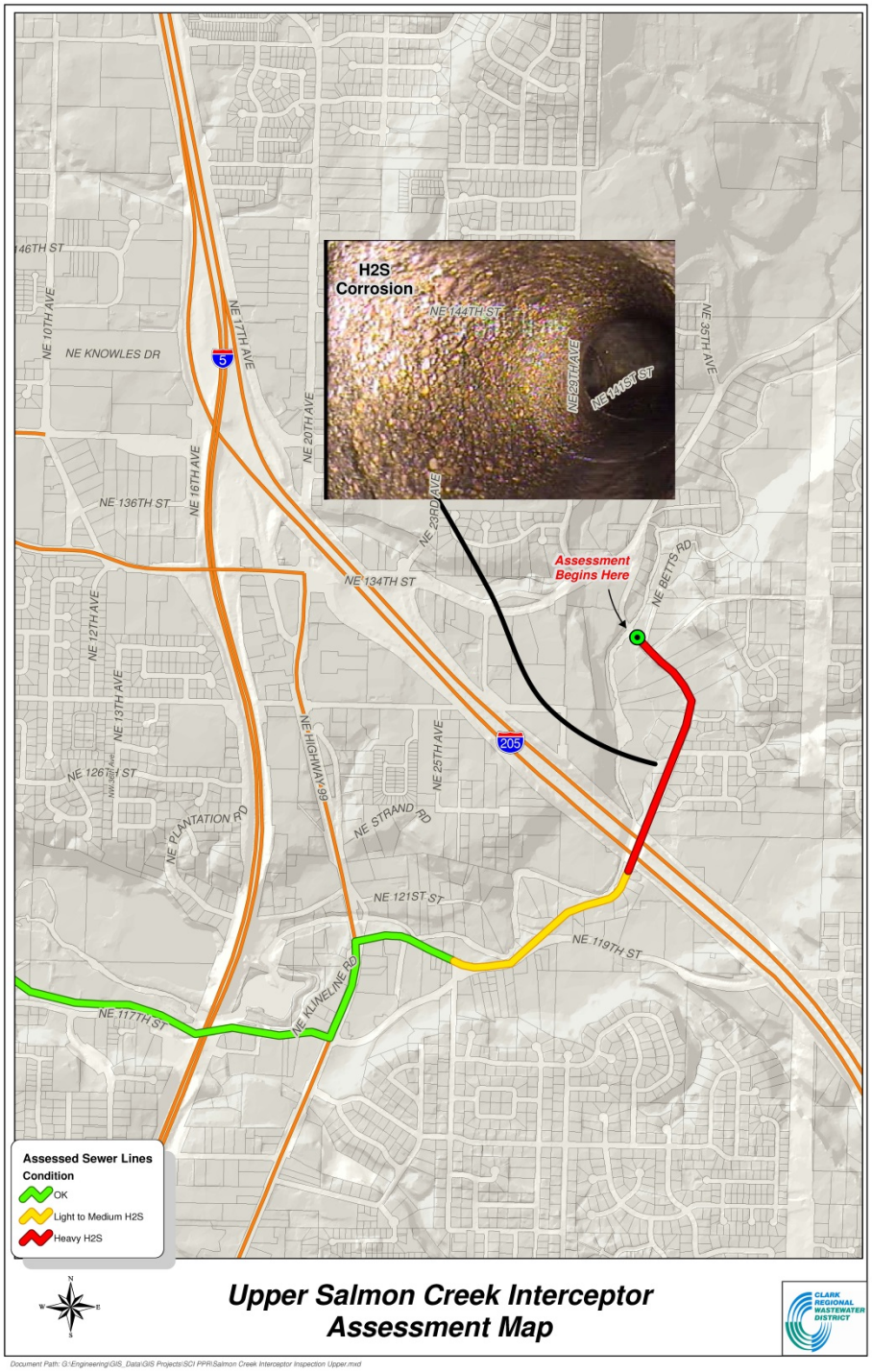
Activity	Year
Planning	Completed
Permitting	2015
Real Property/ROW	N/A
Design	2014-2015
Bid	2016
Construction	2016

Schedule Note:
A portion of the design work is budgeted to be completed in 2014. As a result, the total project costs carried forward in the Capital Budget will be $740,000.

Supplemental Information:

Upper Salmon Creek Interceptor Repair
Project-Specific Cost Allocation Based on Responsibility for Contributing Factors

Contributing Factor	RESPONSIBILITY ALLOCATION			COST ALLOCATION	
	Contributing Factor (percent)	Battle Ground Share (percent)	District Share (percent)	Battle Ground Share (percent)	District Share (percent)
1. Hydrogen sulfide discharge from Battle Ground Force Main	60.0%	76.0%	24.0%	45.6%	14.4%
2. Hydrogen sulfide discharge/pressurization from St. Johns Interceptor	20.0%	0.0%	100.0%	0.0%	20.0%
3. Restricted downstream interceptor capacity	20.0%	26.5%	73.5%	5.3%	14.7%
TOTAL	100.0%			50.9%	49.1%



Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: Regional Biofilter - Upper Klineline Interceptor
Project Number: RA2A-17-1
Form Prepared/Updated: April 2014

Project Type:
Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☒

Project Definition:

Objective. The project represents a new strategy to manage odors and control corrosion associated with the discharge of the Battle Ground Force Main (BGFM) and St. Johns Interceptor into the Klineline Interceptor at a significantly reduced life cycle cost.

Scope of Work. The project will consist of permanent replacement of the interim infrastructure installed in 2004 (chemical addition system for BGFM and biofilter for St. Johns Interceptor) with a new regionally-sized biofilter. In order to promote appropriate air movement to the regional biofilter, an air intake will be constructed at the discharge of the BGFM and an air duct will be installed from the Klineline Interceptor to the location of the regional biofilter. The total potential annual savings is on the order of $200,000 to $250,000. The simple payback for this project is three to four years, primarily related to reduced chemical purchases.

Cost Allocation. A project-specific cost allocation structure is being utilized for this project based on an assessment of several factors that contribute to sizing of the biofilter. The resulting cost allocation is 48% of total project costs to Battle Ground, and 52% to the District. See supplemental information section (reverse side) for additional detail. A reduced scope option to retrofit the existing District-owned biofilter will be evaluated during design. For additional information related to this project, see the *Battle Ground Force Main Vapor Phase Feasibility Evaluation TM, CH2M HILL, March 2014.*

Photos *(if available)*:

Biofilter at Discharge of St. Johns Interceptor

BGFM Chemical Tank

36th Avenue Biofilter

Budget Information:

Project Cost Estimate		
Total Project Cost:	$860,000	
Construction Cost:	$660,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	5% design	(Class 4)

Project Cost Allocation		
Battle Ground:	48%	$413,000
Clark County:	0%	$0
District:	52%	$447,000
Ridgefield:	0%	$0
Total:	100%	$860,000

Schedule Information:

Activity	Year
Planning	Completed
Permitting	2016
Real Property/ROW	2016
Design	2015-2016
Bid	2017
Construction	2017

Supplemental Information:

Regional Biofilter - Upper Klineline Interceptor
Project-Specific Cost Allocation Based on Responsibility for Contributing Factors

	RESPONSIBILITY ALLOCATION – BY PIPELINE Ventilation Rates (air flow, CFM)			RESPONSIBILITY ALLOCATION – BY AGENCY				COST ALLOCATION	
				St. Johns		BG FM			
	Total (CFM)	St. Johns (percent)	BG FM (percent)	District Share (percent)	Battle Ground Share (percent)	District Share (percent)	Battle Ground Share (percent)	District Share (percent)	Battle Ground Share (percent)
Odor Prevention[1]	*2,015*	*44%*	*56%*	*100%*	*0%*	*24%*	*76%*	*58%*	*42%*
Corrosion Prevention[2]	*985*	*20%*	*80%*	*100%*	*0%*	*24%*	*76%*	*39%*	*61%*
TOTAL	***3,000***							***52%***	***48%***

[1] *Ventilation Rate for Odor Prevention is a function of depressurization and is directly related to the natural ventilation rate of the Interceptors*

[2] *Ventilation Rate for Corrosion Prevention is a function of reducing H_2S concentrations below damaging levels and therefore directly related to H_2S loading rates*

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: 36th Avenue PS Pump Replacement
Project Number: RA03-17-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

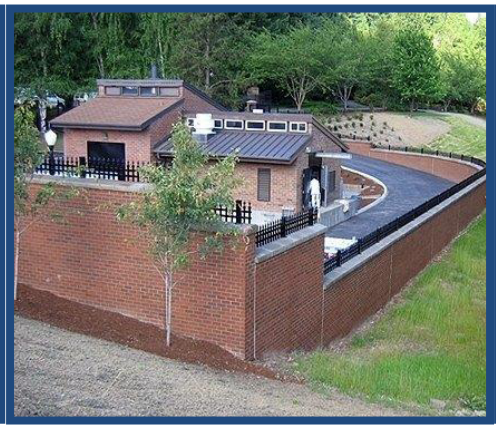
Objective. The project will replace the primary raw sewage pumps and motors in order to maintain reliable and effective transmission of flow to the Salmon Creek Treatment Plant.

Scope of Work. The project will replace the existing three 200-HP primary raw sewage pumps and motors. The existing equipment was installed with the 1994 Expansion Program Project, approximately 20 years ago, and is now at the end of its useful life. The pumps have experienced some accelerated deterioration due to chronic vibration and related operating difficulties. A new pump selection will address the unique hydraulic characteristics of the pump station wet well, utilizing recent advances in pump mechanical design. Piping and access modifications improving safety will also be part of this work.

Cost Allocation. The project costs are apportioned to Battle Ground and the District according to pump station allocated capacity: 4.47 mgd (24.8%) for Battle Ground, and 13.57 mgd (75.2%) for the District. For additional information related to this project, see the *Salmon Creek Wastewater Management System Repair and Replacement Needs Assessment Update, CH2M HILL, February 2014.*

Photos *(if available)*:

Existing Pumps – View From Above



36th Avenue Pump Station

Existing Pump & Motor

Budget Information:

Project Cost Estimate		
Total Project Cost:		$900,000
Construction Cost:		$630,000
Basis of Estimate -		
Year Completed:		2014
Project Definition:		Placeholder (Class 5)

Project Cost Allocation		
Battle Ground:	24.8%	$223,000
Clark County:	0%	$0
District:	75.2%	$677,000
Ridgefield:	0%	$0
Total:	100%	$900,000

Schedule Information:

Activity	Year
Planning	2015
Permitting	2016
Real Property/ROW	N/A
Design	2016
Bid	2017
Construction	2017

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: SCTP Programmable Logic Controller Replacement
Project Number: RA07-16-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset– Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. Programmable Logic Controllers (PLCs) are the primary computerized control system hardware responsible for the Salmon Creek Treatment Plant operations and control. The project will replace a portion of the plant PLCs to ensure system reliability. The PLCs being replaced are approaching 20 years old and represent a product line that was discontinued in 2013 and will no longer be supported after 2020.

Scope of Work. The project will replace seven of the facility's PLCs originally procured in 1996 as part of the Phase 3 Expansion, as these systems are no longer available and support from the manufacturer is scheduled to end in 2020. A significant portion of the total project costs are for programming the new PLCs, as the current programs are not transferrable to the new platform due to age. Additional work to design the new system and provide implementation, testing and startup support is also included in the total project cost.

Cost Allocation. The project costs are apportioned to Battle Ground and the District according to treatment plant allocated capacity: 3.47 mgd (23.2%) for Battle Ground, and 11.48 mgd (76.8%) for the District. For additional information related to this project, see the *Control System PLC and Ethernet Network Evaluation TM, CH2M HILL, November 2011*.

Photos *(if available)*:

Existing PLC Installation

Salmon Creek Treatment Plant

Allen Bradley PLC-5

Budget Information:

Project Cost Estimate			
Total Project Cost:		$1,300,000	
Construction Cost:		$500,000	
Basis of Estimate -			
Year Completed:		2014	
Project Definition:		5% design	(Class 4)
Project Cost Allocation			
Battle Ground:	23.2%	$302,000	
Clark County:	0%	$0	
District:	76.8%	$998,000	
Ridgefield:	0%	$0	
Total:	100%	$1,300,000	

Schedule Information:

Activity	Year
Planning	2015
Permitting	N/A
Real Property/ROW	N/A
Design	2015
Bid	2016
Construction	2016-2017

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: SCTPO Columbia River Outfall Pipe Replacement
Project Number: RA07-20-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☒
New Asset – Regulatory ☐
New Asset – Level of Service ☐

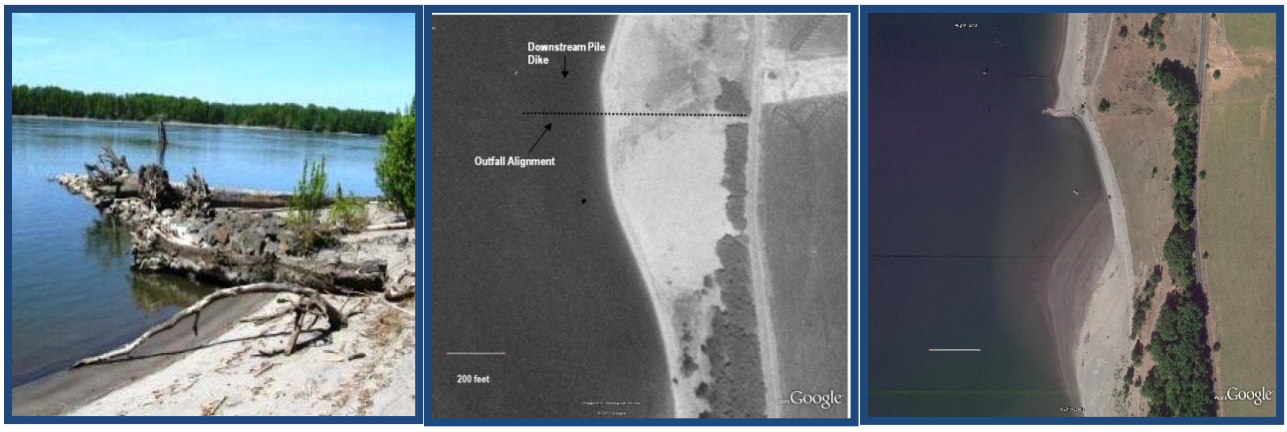
Project Definition:

Objective. The project will replace the in-water and on-shore segments of the Salmon Creek Treatment Plant (SCTP) outfall pipeline to address significant bankside erosion affecting the long-term stability of the installation. The original outfall was installed in 1975.

Scope of Work. The project will install approximately 1,000 feet of new outfall pipeline from approximately Lower River Road to the pipeline terminus and include a new in-water diffuser assembly at the end of the outfall. The new pipeline will parallel and effectively replace the in-water portion of the outfall pipeline installed in 1975. The outfall will be sized to support full buildout of the SCTP site, be installed at a greater depth to avoid effects from shifting stream banks, and provide for a new diffuser assembly appropriate for current and future discharge conditions.

Cost Allocation. The replacement portion of the project costs are apportioned to Battle Ground and the District according to current treatment plant allocated capacity. The new capacity portion of the project costs are allocated based on the incremental capacity purchases by Battle Ground and the District. See supplemental information section (reverse side) for additional detail. For additional information related to this project, see the *Shoreline Monitoring Program 2012 Survey at the Salmon Creek WWTP Outfall and Diffuser, CH2M HILL, February 2013.*

Photos *(if available)*:



Existing Outfall Installation – Low Water | *Aerial View of Outfall Area - 1994* | *Aerial View of Outfall Area – 2010*

Budget Information:

Project Cost Estimate		
Total Project Cost:	$3,400,000	
Construction Cost:	$2,600,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	25.9%	$881,000
Clark County:	0%	$0
District:	74.1%	$2,519,000
Ridgefield:	0%	$0
Total:	100%	$3,400,000

Schedule Information:

Activity	Year
Planning	2015-2016
Permitting	2015-2018
Real Property/ROW	2017-2018
Design	2016, 2019
Bid	2020
Construction	2020

Supplemental Information:

Columbia River Outfall Pipe Replacement
Cost Allocation Based on Allocated Capacity

Allocated Capacity Summary (MGD, MMF)				INCREMENTAL CAPACITY PURCHASED			COST ALLOCATION	
				Outfall Capacity (mgd)	Battle Ground Capacity (mgd)	District Capacity (mgd)	Battle Ground Share (percent)	District Share (percent)
Expansion Phase	Outfall Capacity	Battle Ground	District					
Phase 4 (Existing)	*14.95*	*3.47*	*11.48*				23.2%	76.8%
Phase 5 (New)	*38.18*	*10.10*	*28.08*	23.23	6.63	16.60	28.5%	71.5%
TOTAL				23.23	6.63	16.60		

Columbia River Outfall Pipe Replacement Project
Project-Specific Cost Allocation Based on Responsibility for Contributing Factors

Contributing Factor	RESPONSIBILITY ALLOCATION			COST ALLOCATION	
	Contributing Factor (percent)	Battle Ground Share (percent)	District Share (percent)	Battle Ground Share (percent)	District Share (percent)
1. Existing Capacity – Replacement of Existing Outfall	50.0%	23.2%	76.8%	11.6%	38.4%
2. New Capacity – Construction of Larger Outfall	50.0%	28.5%	71.5%	14.3%	35.7%
TOTAL	100.0%			**25.9%**	**74.1%**

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: SCTP Dewatering Equipment Replacement
Project Number: RA07-24-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. This project will improve the biosolids dewatering performance and improve dewatering system reliability by replacing one of the two existing belt filter presses with a screw press. Based on pilot testing, the dewatering performance is anticipated to increase from 13% solids currently to approximately 18% solids.

Scope of Work. The project will replace one belt filter press with a screw press of similar capacity. The facility will utilize the screw press as the lead dewatering device, with the remaining belt filter press meeting process redundancy requirements. The belt filter press removed from service will be utilized for spare parts in support of the remaining installed belt filter press. The current belt filter presses were procured in 1996 as part of the Interim Biosolids Dewatering Project and are approaching the end of their useful life. The simple payback for this project (based on reduced hauling costs) is 10-12 years.

Cost Allocation. The project costs are apportioned to Battle Ground and the District according to treatment plant allocated capacity: 3.47 mgd (23.2%) for Battle Ground and 11.48 mgd (76.8%) for the District. For additional information related to this project, see the *Salmon Creek Treatment Plant Dewatering Equipment Replacement Project Engineering Report, Brown & Caldwell, July 2011*.

Photos *(if available)*:

Existing SCTP Belt Filter Press

SCTP Solids Processing Center

New Screw Press

Budget Information:

Project Cost Estimate		
Total Project Cost:	$1,500,000	
Construction Cost:	$1,200,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	5% design	(Class 4)

Project Cost Allocation		
Battle Ground:	23.2%	$348,000
Clark County:	0%	$0
District:	76.8%	$1,152,000
Ridgefield:	0%	$0
Total:	100.0%	$1,500,000

Schedule Information:

Activity	Year
Planning	Complete
Permitting	2023
Real Property/ROW	N/A
Design	2022-2023
Bid	2024
Construction	2024

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: SCTP Influent Screen Replacement
Project Number: RA07-28-2
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. The project will replace the two existing mechanically cleaned influent screens and compactors.

Scope of Work. The project will install two new mechanically cleaned influent screens to replace the existing units, which were installed in 1998 as part of the Phase 3 Expansion. The equipment is beginning to require regular replacement of wear items, such as teeth on the screen face and the upper guide rail, and maintenance of the gear reducer assembly on the compactor, which requires taking the screen out of service for several days. In addition to the screens, new screening compactors are required. The current schedule is based on coupling the replacement with third bar screen programming as part of the Phase 6 capital expansion for efficiency and system compatibility.

Cost Allocation. The project costs are apportioned to Battle Ground and the District according to the Salmon Creek Treatment Plant and Outfall allocated capacity: 3.47 mgd (23.2%) for Battle Ground, and 11.48 mgd (76.8%) for the District. For additional information related to this project, see the *Salmon Creek Wastewater Management System Repair and Replacement Needs Assessment Update, CH2M HILL, February 11, 2014*.

Photos *(if available)*:

Existing Influent Screen *Existing Screen Face* *Existing Compactor Gear Assembly*

Budget Information:

Project Cost Estimate		
Total Project Cost:	$500,000	
Construction Cost:	$400,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	23.2%	$116,000
Clark County:	0%	$0
District:	76.8%	$384,000
Ridgefield:	0%	$0
Total:	100%	$500,000

Schedule Information: (same as Phase 6 schedule)

Activity	Year
Planning	2025
Permitting	2026-2027
Real Property/ROW	N/A
Design	2026-2027
Bid	2028
Construction	2028-2030

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: SCTP UV System Replacement
Project Number: RA07-28-3
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. The project will replace the existing Trojan UV4000 system with a new, more energy-efficient UV system.

Scope of Work. The project will demolish the existing UV system and replace it with a new, more energy-efficient system. The system was originally installed in 1998 with the Phase 3 Expansion and completely rebuilt in 2008 with the Phase 4 Expansion. System bulb life associated with current technology is now more than twice the existing. Coupled with energy savings, the total potential annual savings is on the order of $100,000 to $150,000. Simple payback for this project would be 15-20 years. The new system would be designed to replace the existing system capacity. The current schedule is based on coupling replacement with parallel UV channel programming as part of the Phase 6 capital expansion for efficiency and system compatibility.

Cost Allocation. The project costs are apportioned to Battle Ground and the District according to the Salmon Creek Treatment Plant and Outfall allocated capacity: 3.47 mgd (23.2%) for Battle Ground, and 11.48 mgd (76.8%) for the District. For additional information related to this project, see the *Salmon Creek Wastewater Management System Repair and Replacement Needs Assessment Update, CH2M HILL, February 11, 2014*.

Photos *(if available)*:

Existing UV System

Existing UV System Expansion During Phase 4

Budget Information:

Project Cost Estimate		
Total Project Cost:	$3,000,000	
Construction Cost:	$2,300,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	23.2%	$696,000
Clark County:	0%	$0
District:	76.8%	$2,304,000
Ridgefield:	0%	$0
Total:	100%	$3,000,000

Schedule Information:

(same as Phase 6 schedule)

Activity	Year
Planning	2025
Permitting	2026-2027
Real Property/ROW	N/A
Design	2026-2027
Bid	2028
Construction	2028-2030

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: SCTP Primary Sludge Pump Replacement
Project Number: RA07-31-2
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. The project will replace the primary sludge pumps to a more efficient pump type.

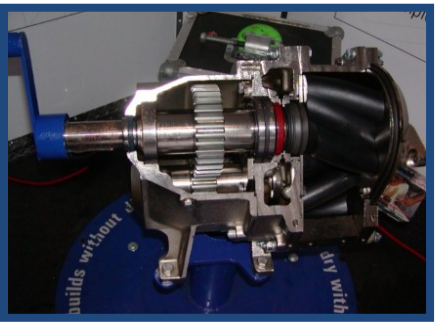
Scope of Work. The project will replace the existing eight primary sludge pumps and associated air compressors, installed in 1998 as part of the Phase 3 Expansion, with lobe or hose style pumps. These new style pumps will provide a potential savings in operating costs of a magnitude of $15,000 to $20,000 annually. The simple payback is approximately 8-11 years. The current schedule is based on coupling replacement with the new Primary Clarifier 5 programming as part of the Phase 7 capital expansion for efficiency and system compatibility.

Cost Allocation. The project costs are apportioned to Battle Ground and the District according to the Salmon Creek Treatment Plant and Outfall allocated capacity: 3.47 mgd (23.2%) for Battle Ground, and 11.48 mgd (76.8%) for the District. For additional information related to this project, see the *Salmon Creek Wastewater Management System Repair and Replacement Needs Assessment Update, CH2M HILL, February 11, 2014*.

Photos *(if available)*:

Existing Diaphragm Style Pump

Proposed Hose Style Pump



Proposed Lobe Style Pump

Budget Information:

Project Cost Estimate		
Total Project Cost:	$220,000	
Construction Cost:	$180,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	23.2%	$51,000
Clark County:	0%	$0
District:	76.8%	$169,000
Ridgefield:	0%	$0
Total:	100%	$220,000

Schedule Information:

(same as Phase 7 schedule)

Activity	Year
Planning	2028
Permitting	2029-2030
Real Property/ROW	N/A
Design	2029-2030
Bid	2031
Construction	2031-2033

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: BGFM Valve & Vault Repair
Project Number: RA09-16-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☒
Existing Asset – Replacement ☐
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. The project will ensure the Alliance's ability to provide reliable and predictable service by repairing extensive deterioration of valve and vault structures along the nine-mile length of the force main.

Scope of Work. The project will replace or repair approximately 19 and decommission five combination air vacuum valves and vault structures, decommission an air injection system installed with the original force main, repair isolation valves and pig launching stations, and install corrosion protection equipment. The system was installed in 1992. Much of the deterioration is due to the presence of hydrogen sulfide (H_2S) generated when sewage is transported over long distances in the anaerobic environment of the force main. The replacement components will utilize more corrosion-resistant materials.

Cost Allocation. The project costs are apportioned to Battle Ground and the District according to Battle Ground Force Main allocated capacity: 3.44 mgd (78.2%) for Battle Ground, and 0.96 mgd (21.8%) for the District. For additional information related to this project, see the *Battle Ground Force Main Condition Assessment Project TM, CH2M HILL, January 2014*.

Photos *(if available)*:

Valve Corrosion | *Vault Corrosion* | *Vault Corrosion*

Budget Information:

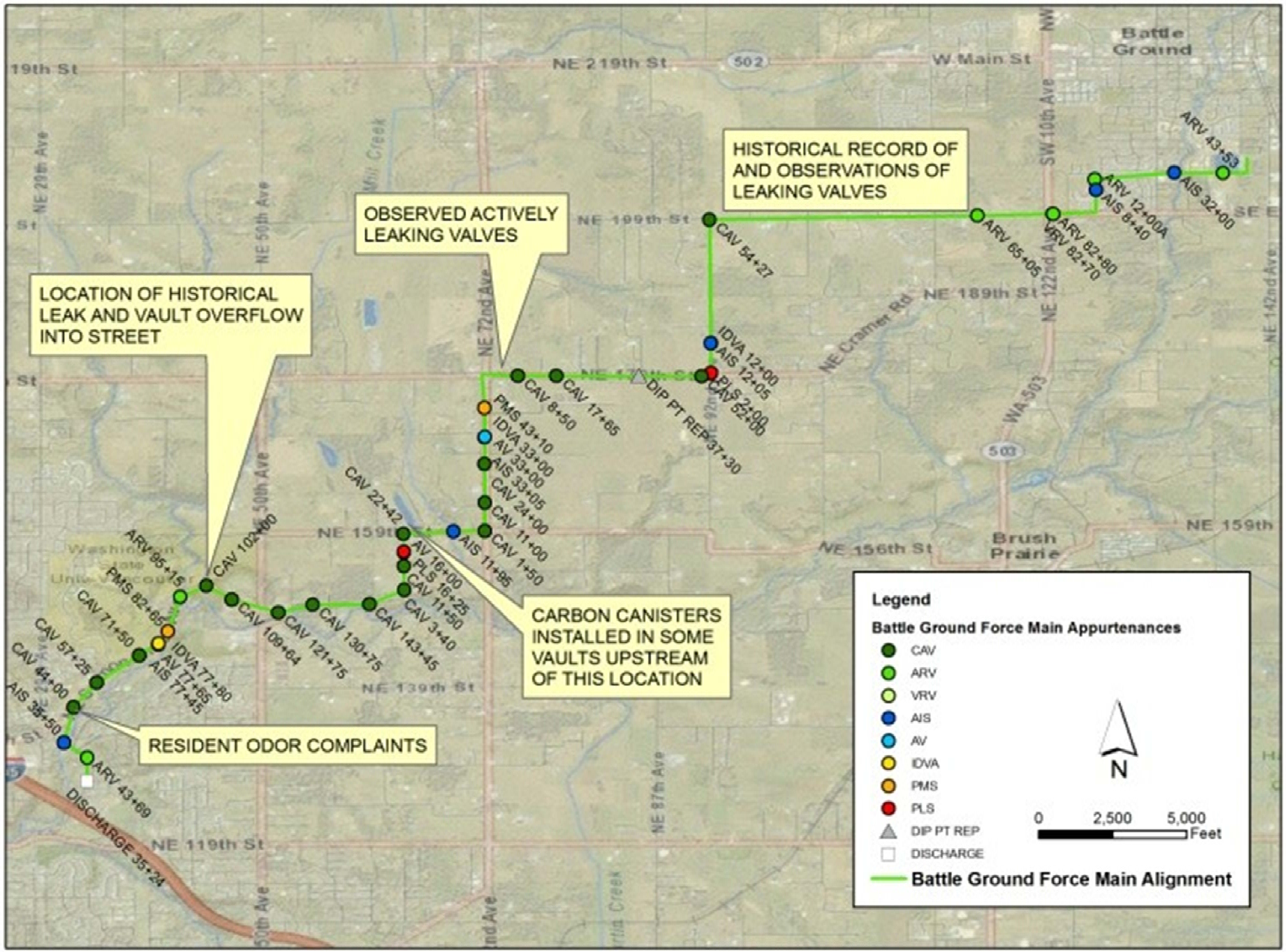
Project Cost Estimate			
Total Project Cost:		$490,000	
Construction Cost:		$380,000	
Basis of Estimate -			
Year Completed:		2014	
Project Definition:		5% design	(Class 4)

Project Cost Allocation		
Battle Ground:	78.2%	$383,000
Clark County:	0%	$0
District:	21.8%	$107,000
Ridgefield:	0%	$0
Total:	100%	$490,000

Schedule Information:

Activity	Year
Planning	Complete
Permitting	2015
Real Property/ROW	N/A
Design	2015
Bid	2016
Construction	2016

Schedule Note:
Some construction work may need to take place in 2015 in coordination with Clark County's Salmon Creek Avenue Trail project.


HISTORICAL RECORD OF AND OBSERVATIONS OF LEAKING VALVES
OBSERVED ACTIVELY LEAKING VALVES
LOCATION OF HISTORICAL LEAK AND VAULT OVERFLOW INTO STREET
CARBON CANISTERS INSTALLED IN SOME VAULTS UPSTREAM OF THIS LOCATION
RESIDENT ODOR COMPLAINTS
Battle Ground
Brush Prairie
NE 219th St
NE 199th St
NE 189th St
NE 159th St
NE 156th St
NE 139th St
NE 119th St
W Main St
NE 72nd Ave
NE 50th Ave
SW 10th Ave
NE 122nd Ave
NE Cramer Rd
WA-503
ARV 43+53
AIS 32+00
ARV 12+00A
AIS 8+40
ARV 82+80
VRV 82+70
ARV 65+05
CAV 54+27
IDVA 12+00
AIS 12+05
PLS 2+00
CAV 52+00
DIP PT REP 37+30
CAV 8+50
CAV 17+65
PMS 43+10
IDVA 33+00
AV 33+00
AIS 33+05
CAV 24+00
CAV 11+00
CAV 1+50
AIS 11+95
CAV 22+42
AV 16+00
PLS 16+25
CAV 11+50
CAV 3+40
CAV 143+45
CAV 130+75
CAV 121+75
CAV 109+64
CAV 102+00
ARV 85+15
PMS 82+65
IDVA 77+80
AV 77+65
AIS 77+45
CAV 71+50
CAV 57+25
CAV 44+00
AIS 35+50
ARV 43+69
DISCHARGE 35+24
Legend
Battle Ground Force Main Appurtenances
CAV
ARV
VRV
AIS
AV
IDVA
PMS
PLS
DIP PT REP
DISCHARGE
Battle Ground Force Main Alignment
N
0
2,500
5,000
Feet

APPENDIX B-2

NEW ASSETS CONSTRUCTION/ACQUISITION
PROJECT PROFILES

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: 117th Street PS Capacity Upgrade
Project Number: RA04-29-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☐
New Asset – Capacity ☒
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. This project will increase the pumping capacity of the 117th Street Pump Station to meet the projected future capacity needs of the system.

Scope of Work. The project will replace the five existing 250-HP raw sewage pumps, motors and variable frequency drives with new equipment of larger size and capacity. The project will also install a second engine-generator to provide backup power service as required by Ecology. The pump station's structure and site was designed to accommodate this future upgrade. As a result, there is limited site or structure work required. The project is required when system capacity reaches 18 mgd maximum month flow.

Cost Allocation. A project-specific cost allocation structure is being utilized for this project based on the purchase of additional capacity in the system. The resulting cost allocation is 23.4% of total project costs to Battle Ground and 76.6% to the District. See analysis on reverse side. For additional information related to this project, see the *Klineline Pump Station and Force Main Project, Preliminary Design Report, Brown & Caldwell, April 2005*.

Photos *(if available)*:

Existing Pump Assembly

Pump Station Structure

Existing Engine Generator

Budget Information:

Project Cost Estimate		
Total Project Cost:	$9,300,000	
Construction Cost:	$7,200,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	5% design	(Class 4)

Project Cost Allocation		
Battle Ground:	23.4%	$2,180,000
Clark County:	0%	$0
District:	76.6%	$7,120,000
Ridgefield:	0%	$0
Total:	100.0%	$9,300,000

Schedule Information:

Activity	Year
Planning	2027
Permitting	2028
Real Property/ROW	N/A
Design	2027-2028
Bid	2029
Construction	2029-2030

Supplemental Information:

117th Street Pump Station Pumping Capacity Upgrade
Project-Specific Cost Allocation Based on Responsibility for Contributing Factors

	Contributing Factor			RESPONSIBILITY ALLOCATION Contributing Factor (percent)	Battle Ground Share (percent)	District Share (percent)	COST ALLOCATION Battle Ground Share (percent)	District Share (percent)
1.	Existing Capacity – Replacement of Existing Pumping Capacity		(Existing)	50.0%	24.8%	75.2%	12.4%	37.6%
	Battle Ground Capacity (mgd)		*4.47*					
	District Capacity (mgd)		*13.57*					
	Total Capacity (mgd)		*18.04*					
2.	New Capacity – Construction of New Pumping Capacity	(Total)	(Increment)	50.0%	22.0%	78.0%	11.0%	39.0%
	Battle Ground Capacity (mgd)	*6.30*	*1.83*					
	District Capacity (mgd)	*20.06*	*6.49*					
	Total Capacity (mgd)	*26.36*	*8.32*					
TOTAL				100.0%			23.4%	76.6%

Discovery Clean Water Alliance

CAPITAL PROJECT PROFILE

Project Name: SCTPO Phase 5 Expansion (Effluent Pipeline)
Project Number: RA07-21-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☒
New Asset – Regulatory ☐
New Asset – Level of Service ☐

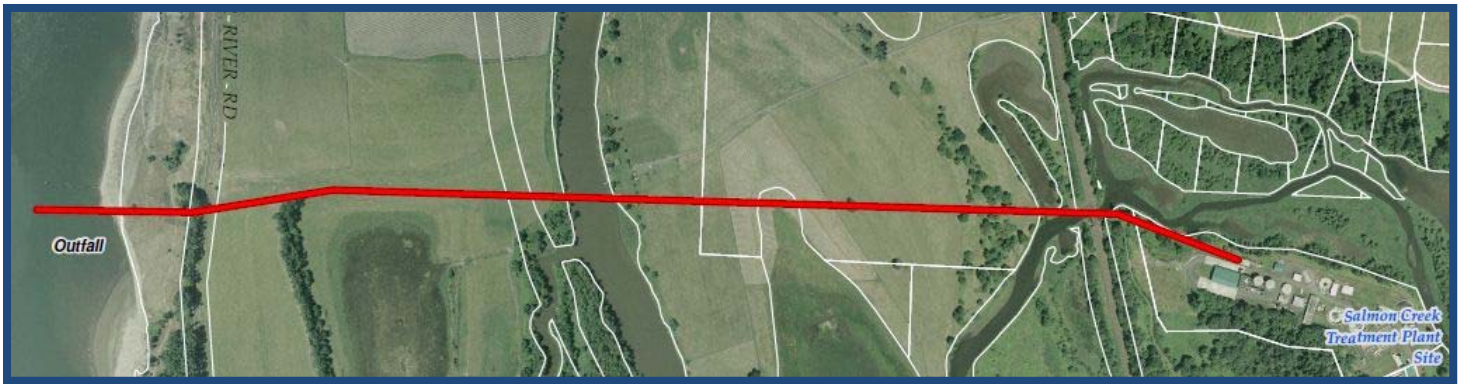
Project Definition:

Objective. This project will provide an increase to Alliance Members' Allocated Capacity of the Salmon Creek Treatment Plant Outfall, in order to meet the needs of a growing service area.

Scope of Work. The Phase 5 Expansion project will construct a new effluent pipeline from the treatment plant to the west side of Lower River Road. The pipeline is estimated to be approximately 6,200 feet long and 48 inches in diameter. The route will cross the BNSF railroad, Salmon Creek, Lake River and Lower River Road, requiring significant permitting and real property coordination to prepare the project for bid and construction.

Cost Allocation. The replacement portion of the project costs are apportioned to Battle Ground and the District according to current treatment plant allocated capacity. The new capacity portion of the project costs are allocated based on the incremental capacity purchases by Battle Ground and the District. See supplemental information section (reverse side) for additional detail. For additional information related to this project, see the *Salmon Creek Wastewater Management System Wastewater Facilities Plan/General Sewer Plan Amendment, CH2M HILL, August 2013.*

Photos *(if available)*:



Existing Salmon Creek Treatment Plant Effluent Pipeline/ Outfall in Columbia River

Budget Information:

Project Cost Estimate		
Total Project Cost:	$13,000,000	
Construction Cost:	$10,400,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	25.9%	$3,367,000
Clark County:	0%	$0
District:	74.1%	$9,633,000
Ridgefield:	0%	$0
Total:	100%	$13,000,000

Schedule Information:

Activity	Year
Planning	2015-2016
Permitting	2015-2018
Real Property/ROW	2017-2018
Design	2016, 2020
Bid	2021
Construction	2021-2022

Supplemental Information:

Phase 5 Expansion
Cost Allocation Based on Allocated Capacity

Allocated Capacity Summary (MGD, MMF)				INCREMENTAL CAPACITY PURCHASED			COST ALLOCATION	
				Outfall Capacity (mgd)	Battle Ground Capacity (mgd)	District Capacity (mgd)	Battle Ground Share (percent)	District Share (percent)
Expansion Phase	Outfall Capacity	Battle Ground	District					
Phase 4 (Existing)	*14.95*	*3.47*	*11.48*				23.2%	76.8%
Phase 5 (New)	*38.18*	*10.10*	*28.08*	23.23	6.63	16.60	28.5%	71.5%
TOTAL				23.23	6.63	16.60		

Phase 5 Expansion
Project-Specific Cost Allocation Based on Responsibility for Contributing Factors

Contributing Factor	RESPONSIBILITY ALLOCATION			COST ALLOCATION	
	Contributing Factor (percent)	Battle Ground Share (percent)	District Share (percent)	Battle Ground Share (percent)	District Share (percent)
1. Existing Capacity – Replacement of Existing Outfall	50.0%	23.2%	76.8%	11.6%	38.4%
2. New Capacity – Construction of Larger Outfall	50.0%	28.5%	71.5%	14.3%	35.7%
TOTAL	100.0%			**25.9%**	**74.1%**

Discovery Clean Water Alliance

CAPITAL PROJECT PROFILE

Project Name: SCTP Phase 6 Expansion
Project Number: RA07-28-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☐
New Asset – Capacity ☒
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. This project will provide an increase to Alliance Members' Allocated Capacity in the Salmon Creek Treatment Plant, in order to meet the needs of a growing service area.

Scope of Work. The Phase 6 Expansion project will construct a new Influent Screen 3, construct Primary Clarifier Covers and related Odor Control System, add an Aeration Blower, construct Aeration Basin 7, construct Secondary Clarifier 5, demolish Secondary Clarifier 1, construct RAS/WAS Pump Station 2 and construct UV Disinfection Channel 2.

Cost Allocation. The SCTP expansion costs will be allocated based on capacity purchased in the system: estimated at 9.9% for Battle Ground, and 90.1% for the District. For additional information related to this project, see the *Salmon Creek Wastewater Management System Wastewater Facilities Plan/General Sewer Plan Amendment, CH2M HILL, August 2013*.

Photos *(if available)*:

Existing Influent Screen

Existing RAS/WAS Pump Station

Existing UV Disinfection

Budget Information:

Project Cost Estimate		
Total Project Cost:	$24,700,000	
Construction Cost:	$19,000,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	9.9%	$2,445,000
Clark County:	0	$0
District:	90.1%	$22,255,000
Ridgefield:	0	$0
Total:	100%	$24,700,000

Schedule Information:

Activity	Year
Planning	2025
Permitting	2026-2027
Real Property/ROW	N/A
Design	2026-2027
Bid	2028
Construction	2028-2030

Supplemental Information:

Salmon Creek Treatment Plant Expansion Program
Cost Allocation Based on Allocated Capacity

Allocated Capacity Summary (MGD, MMF) (SCWMS Wastewater Facilities Plan Table 3-1)				INCREMENTAL CAPACITY PURCHASED			COST ALLOCATION	
				Plant Capacity (mgd)	Battle Ground Capacity (mgd)	District Capacity (mgd)	Battle Ground Share (percent)	District Share (percent)
Expansion Phase	Plant Capacity	Battle Ground	District					
Phase 4 (Existing)	*14.95*	*3.47*	*11.48*				23.2%	76.8%
Phase 5 (Outfall Only)								
Phase 6	*19.60*	*3.93*	*15.67*	4.65	0.46	4.19	9.9%	90.1%
Phase 7	*23.80*	*4.57*	*19.23*	4.20	0.64	3.56	15.2%	84.8%
Phase 8	*27.00*	*4.98*	*22.02*	3.20	0.41	2.79	12.8%	87.2%
Phase 9	*30.70*	*5.54*	*25.16*	3.70	0.56	3.14	15.1%	84.9%
TOTAL				15.75	2.07	13.68		

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: SCTP Phase 7 Expansion
Project Number: RA07-31-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☐
New Asset – Capacity ☒
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. This project will provide an increase to Alliance Members' Allocated Capacity in the Salmon Creek Treatment Plant, in order to meet the needs of a growing service area.

Scope of Work. The Phase 7 Expansion project will construct Primary Clarifier 5, Aeration Basin 8 and Anaerobic Digester 3.

Cost Allocation. The SCTP expansion costs will be allocated based on capacity purchased in the system: estimated at 15.2% for Battle Ground, and 84.8% for the District. For additional information related to this project, see the *Salmon Creek Wastewater Management System Wastewater Facilities Plan/General Sewer Plan Amendment*, *CH2M HILL, August 2013*.

Photos *(if available)*:

Salmon Creek Treatment Plant Aerial | *Existing Primary Clarifier* | *Existing Anaerobic Digester*

Budget Information:

Project Cost Estimate		
Total Project Cost:	$15,400,000	
Construction Cost:	$11,800,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	15.2%	$2,340,000
Clark County:	0%	$0
District:	84.8%	$13,060,000
Ridgefield:	0%	$0
Total:	100%	$15,400,000

Schedule Information:

Activity	Year
Planning	2028
Permitting	2029-2030
Real Property/ROW	N/A
Design	2029-2030
Bid	2031
Construction	2031-2033

Supplemental Information:

Salmon Creek Treatment Plant Expansion Program
Cost Allocation Based on Allocated Capacity

Allocated Capacity Summary (MGD, MMF) (SCWMS Wastewater Facilities Plan Table 3-1)				INCREMENTAL CAPACITY PURCHASED			COST ALLOCATION	
				Plant Capacity (mgd)	Battle Ground Capacity (mgd)	District Capacity (mgd)	Battle Ground Share (percent)	District Share (percent)
Expansion Phase	Plant Capacity	Battle Ground	District					
Phase 4 (Existing)	*14.95*	*3.47*	*11.48*				23.2%	76.8%
Phase 5 (Outfall Only)								
Phase 6	*19.60*	*3.93*	*15.67*	4.65	0.46	4.19	9.9%	90.1%
Phase 7	*23.80*	*4.57*	*19.23*	4.20	0.64	3.56	15.2%	84.8%
Phase 8	*27.00*	*4.98*	*22.02*	3.20	0.41	2.79	12.8%	87.2%
Phase 9	*30.70*	*5.54*	*25.16*	3.70	0.56	3.14	15.1%	84.9%
TOTAL				15.75	2.07	13.68		

Discovery Clean Water Alliance

CAPITAL PROJECT PROFILE

Project Name: Ridgefield Treatment Plant Decommissioning
Project Number: RA08-34-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☒
New Asset – Capacity ☐
New Asset – Regulatory ☐
New Asset – Level of Service ☐

Project Definition:

Objective. This project provides for the proper decommissioning of the Ridgefield Treatment Plant and Outfall at the end of the facility's useful life.

Scope of Work. This project will demolish all WWTP structures to three feet below ground level. Above ground waste from this demolition will be disposed of at a construction landfill. Below grade waste will be kept onsite and used as back fill material for the empty basins. All below-grade piping, including the outfall, will be filled with low strength concrete and abandoned in place. All structures more than three feet below grade will remain. Basins will be filled with sand to bring them to existing ground level. Due to the hazardous soils on site, a HAZWOPER supervisor will be required to witness all excavation and material handling. It is assumed that no material will be excavated and hauled offsite. Upon completion of demolition work, placement of a geo-textile on top of contaminated soils, along with a two-foot cap of clean fill material will be required to complete the decommissioning. The site will then be reclaimed for other uses by the City of Ridgefield. The work will be completed in accordance with the consent decree terms and conditions required for excavating on the Pacific Wood Treating Corporation Site (Ecology Site No. 1019).

Cost Allocation. All capacity related to the Ridgefield Treatment Plant and Outfall is allocated to the District, therefore 100% of costs of this project are the responsibility of the District.

Photos *(if available)*:

Ridgefield Treatment Plant Site

Budget Information:

Project Cost Estimate		
Total Project Cost:	$2,500,000	
Construction Cost:	$1,900,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	0%	$0
Clark County:	0%	$0
District:	100%	$2,500,000
Ridgefield:	0%	$0
Total:	100%	$2,500,000

Schedule Information:

Activity	Year
Planning	2031
Permitting	2032
Real Property/ROW	N/A
Design	2033
Bid	2034
Construction	2034

Discovery Clean Water Alliance
CAPITAL PROJECT PROFILE

Project Name: BGFM Parallel Force Main
Project Number: RA09-24-1
Form Prepared/Updated: April 2014

Project Type: Existing Asset – Repair ☐
Existing Asset – Replacement ☐
New Asset – Capacity ☒
New Asset – Regulatory ☐
New Asset – Level of Service ☐

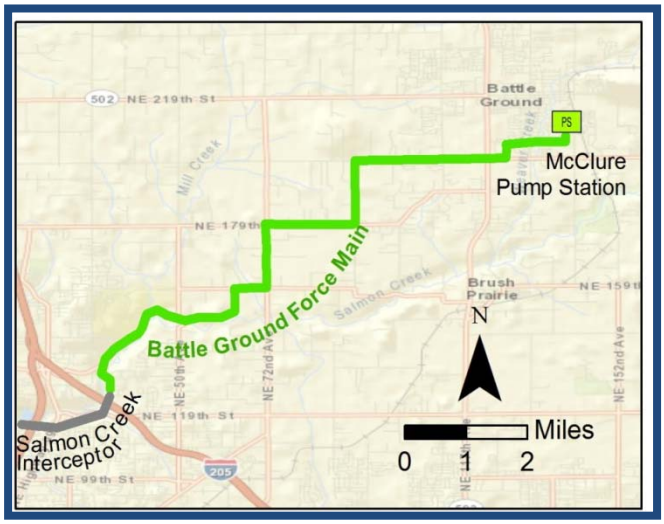
Project Definition:

Objective. The project will increase capacity in the Battle Ground Force Main system to support continued growth in the Battle Ground service area.

Scope of Work. The project will construct a second, parallel force main pipeline from Battle Ground to a point of connection with the Klineline Interceptor. The new pipeline is estimated to be 24 inches in diameter and is anticipated to largely follow the route of the current force main. Additional planning and engineering work will be completed in advance of construction to confirm pipe sizing and route.

Cost Allocation. The project provides capacity only for the Battle Ground service area and therefore 100% of costs are allocated to Battle Ground. For additional information related to this project, see the *City of Battle Ground General Sewer Plan, Wallis Engineering, March 2011*.

Photos *(if available)*:



Battle Ground Force Main Route

Budget Information:

Project Cost Estimate		
Total Project Cost:	$22,700,000	
Construction Cost:	$17,500,000	
Basis of Estimate -		
Year Completed:	2014	
Project Definition:	Placeholder	(Class 5)

Project Cost Allocation		
Battle Ground:	100%	$22,700,000
Clark County:	0%	$0
District:	0%	$0
Ridgefield:	0%	$0
Total:	100%	$22,700,000

Schedule Information:

Activity	Year
Planning	2021
Permitting	2022
Real Property/ROW	2023
Design	2022-2023
Bid	2024
Construction	2024-2025

APPENDIX B-3

LONG-RANGE PLANNING
FUTURE PROJECT DEFINITION

Long-Range Planning – Future Project Definition

The following projects have been identified through previous planning and study efforts, but are not currently programmed in the 20-year planning period. These projects are listed for further monitoring and development as conditions warrant.

- *Salmon Creek Treatment Plant (SCTP) - Phase 8 Expansion*. The Phase 8 Expansion project is a phased expansion of the SCTP that would construct Primary Clarifier 6, construct Aeration Basin 9, provide additional aeration blower capacity and construct Secondary Clarifier 6. The project would also demolish existing Secondary Clarifier 2. The project is estimated to cost $15.1 million in 2011 dollars (or $16.5 million in 2014 dollars) and would increase the facility capacity to 27.0 MGD MMF.

- *Salmon Creek Treatment Plant - Phase 9 Expansion*. The Phase 9 Expansion project is a phased expansion of the SCTP that would construct Aeration Basin 10 and provide additional aeration blower capacity. The project is estimated to cost $6.6 million in 2011 dollars (or $7.2 million in 2014 dollars) and would increase the facility capacity to 30.7 MGD MMF.

- *Ridgefield Treatment Plant – Expansion to 1.0 MGD*. The project would construct a third aeration basin, odor control facilities for the digester, a new laboratory and increase the size of the effluent pipe from the wastewater treatment plant to the outfall. The project would include associated pumps, blowers, piping, electrical and controls. The estimated cost for this project is $4.3 million in 2009 dollars (or $5.0 million in 2014 dollars).

- *Westside-Salmon Creek Intertie Project*. This project would construct a 30-inch diameter pipeline approximately 5 miles long, connecting the 117th Street Pump Station Force Main with the City of Vancouver Westside Water Reclamation Facility. The pipeline portion of the project is estimated to cost $34.3 million in 2007 dollars, including necessary improvements at the Westside Water Reclamation Facility to receive the flow. In addition, the project would purchase treatment capacity at the Westside facility. The cost for purchase of treatment capacity was estimated in 2007 at $35.1 million. This value is based on 6 million gallons per day (gpd) of average annual flow capacity being purchased at $5.85 per gpd treated. Total project costs for pipeline construction and treatment capacity purchase therefore are $69.4 million in 2007 dollars (or $85.4 million in 2014 dollars). Additional information is available in the report titled *Vancouver Westside Water Reclamation Facility, Salmon Creek Wastewater Management System Connection Study, OTAK, 2007*.

- *Westside Energy Recovery/Class A Biosolids Project*. This project would construct biosolids drying equipment at the City of Vancouver Westside Water Reclamation Facility and utilize waste heat from the Westside solids incinerator process to produce Class A biosolids with the Salmon Creek Class B biosolids feedstock. The project also provides for a drier ash product for the City of Vancouver, intended to be compatible with industry demand for fly ash material.

A biosolids and dry ash market study are recommended as part of the preliminary design effort to confirm the market potential for both products. The Alliance project cost share is estimated to be $7.8 million in 2012 dollars (or $8.3 million in 2014 dollars). For the Alliance, the project would decrease operating costs associated with biosolids hauling and increase the level of service by providing a Class A material that can be reused in the local community. Additional information is available in the report titled *Biosolids Processing and Utilization Review, Brown and Caldwell, 2010* and the *Westside Water Reclamation Facility Energy Recovery Project Engineering Report, Brown and Caldwell, 2012*. The Engineering Report was approved by Ecology on August 9, 2013.

Taken together, these projects represent an additional estimated potential investment of $122.4 million (2014 dollars) in treatment capacity, regional system integration and increased levels of service. These projects will be further reviewed at a policy level during the 2015-2016 budget period in order to provide additional context for the appropriate application of the projects in the long-range planning horizon for the Alliance.