

Project No.: NPDES-1 **Type:** RegCom
NPDES Permit Condition Area: SWMP-1 **Cost:**
Name: Stormwater Management Program Development **Rank:** 48, VH/Reg

Problem Identified: (Former Number:)
 Assess permit conditions. Evaluate city inter- and intra-departmental processes and staffing in light of permit conditions. Create annual work plans with assigned responsibility throughout many city departments. Development of databases, tracking protocol, and public presentations is required. Coordination with other permittees is required. Efforts are expected to be extensive during earlier years of the first permit cycle (effective date February 16, 2007), with declining costs as the program is established.

Proposed Project:
 Create and revise SWMP. Emails for regional coordination. Regional forum meetings. Training, info, and permit-related Ecology meetings.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Create and revise SWMP	40	Hours		\$0
2	Communications	40	Hours		\$0
3	Local Phase II Forum meetings	18	Hours		\$0
4	Training and coordination meetings	12	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		110	Hours		\$0
ROUNDED					\$0

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Project No.:
NPDES Permit Condition Area:
Name: Annual Reporting

NPDES-2
SWMP-2

Type: RegCom
Cost:
Rank: 35, H

Problem Identified:

(Former Number:)

Permit compliance is self-reported in an extensive annual report format with reference to numerous attachments for the various program areas. Involves extensive file management, public notification, maintenance of web page, and similar administrative functions.

Proposed Project:

Prepare annual report. Correspondence, permitor/permittee coordination. Training, info, and report-related Ecology meetings.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Prepare annual report	40	Hours		\$0
2	Communications	40	Hours		\$0
3	Training and coordination meetings	12	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		92	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-3 **Type:** RegCom
NPDES Permit Condition Area: PEO-1 **Cost:**
Name: PEO Program Development and Administration **Rank:** 56, VH/Reg

Problem Identified: (Former Number:)
 Develop comprehensive PEO programs targeting specific audiences with specific influences on stormwater.

Proposed Project:
 Create a management structure that includes staff from various city departments, schools, watershed groups, industries, and other distribution networks. Coordinate with natural resources and utilities operations (e.g., wellhead protection) to assure a comprehensive but streamlined message. Develop a theme, logo, and/or recognizable program identity. Expand or fully utilize web site capabilities as a PEO medium. Develop a database for tracking PEO efforts

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Develop curricula	160	Hours		\$0
2	Develop presentations	120	Hours		\$0
3	Coordinate with city departments	40	Hours		\$0
4	Web site create/maintain	160	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		480	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-4 **Type:** RegCom
NPDES Permit Condition Area: PEO-2 **Cost:**
Name: Evaluation of PEO Program Effectiveness **Rank:** 35, H

Problem Identified: (Former Number:)
 Permit conditions require means whereby the permit objectives for understanding and adoption of targeted behaviors in targeted audiences may be measured. This information is used to evaluate program effectiveness in achieving desired behavior changes and to direct education and outreach resources in the future.

Proposed Project:
 The city may commission public surveys of utility customers that are repeatable over time to gage the influences of PEO efforts.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Effectiveness Evaluation	80	Hours		\$0
2	Communications	10	Hours		\$0
3	Training and coordination meetings	10	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		100	Hours		\$0
ROUNDED					\$0

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Project No.:
NPDES Permit Condition Area:
Name: PEO for General Public

NPDES-5
PEO-3

Type: RegCom
Cost:
Rank: 56, VH/Reg

Problem Identified: (Former Number:)
 Subject areas for the general public target population include general stormwater impacts on streams, effects of impervious surfaces, source control BMPs for individuals, and environmental stewardship.

Proposed Project:
 Program needs include: brochures for distribution in utility bills, at city facilities, and public events; portable display(s) for daily use at city and public facilities and at public events; additional and replacement signage for streams and basin boundaries; stenciling kits; pet waste stations; etc. The City also intends to participate in and build upon the pet waste and streamside landowner programs established by Snohomish County.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Storm drain program	40	Hours		\$0
2	Signage	40	Hours		\$0
3	Implement curriculum	56	Hours		\$0
4	Write articles	16	Hours		\$0
5	Develop brochures	30	Hours		\$0
6	Revise and distribute brochures	15	Hours		\$0
7	Coordinate w/ community groups	10	Hours		\$0
8	July street fair	64	Hours		\$0
9	River Festival	64	Hours		\$0
10	Other	0	Hours		\$0
11	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		335	Hours		\$0
ROUNDED					\$0

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Project No.:
NPDES Permit Condition Area:
Name: PEO for the Public and Businesses

NPDES-6
PEO-4

Type: RegCom
Cost:
Rank: 56, VH/Reg

Problem Identified:

(Former Number:)

Subject areas for this target population, which includes (not limited to) home-based and mobile businesses include BMPs for hazardous chemicals and carwash soaps, and identification and reporting of illicit discharges.

Proposed Project:

The City intends to make available aids and alternatives for charity car washes; develop and distribute brochures regarding chemical storage and disposal and the impacts of illicit discharges; and provide non-binding audits of conventional stormwater facilities and practices. The City will revise its 2003 industrial source control efforts into a regular program that provides guidance on maintaining private stormwater treatment and/or infiltration facilities, and includes routine inspections for illicit industrial discharges.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Implement curriculum	100	Hours		\$0
2	Present presentations	10	Hours		\$0
3	Develop brochures	30	Hours		\$0
4	Revise and distribute brochures	15	Hours		\$0
5	Coordinate w/ community groups	10	Hours		\$0
6	Commercial outreach, annualized	40	Hours		\$0
7	Vet clinics	8	Hours		\$0
8	Other	0	Hours		\$0
9	Other	0	Hours		\$0
10	Other	0	Hours		\$0
11	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		213	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-7 **Type:** RegCom
NPDES Permit Condition Area: PEO-5 **Cost:**
Name: PEO for Homeowners, Landscapers, Property Maintenance **Rank:** 56, VH/Reg

Problem Identified: (Former Number:)
 Subject areas for these target populations include yard care techniques, pesticide and fertilizer use, carpet cleaning, auto repair, low impact development (LID), and maintenance of stormwater "ponds".

Proposed Project:
 The City intends to make available aids and alternatives for the inspection and maintenance of private conventional stormwater facilities, including the stormwater detention ponds in common areas managed by homeowners' associations and apartments; and to develop and distribute brochures regarding yard care techniques protective of water quality; and BMPs for apartment and facility managers. The City also intends to participate in and build upon the natural yard care and septic tanks programs established by Snohomish County (the latter would evaluate individual septic tanks and drain fields within the City for potential fecal coliform loading to area streams).

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Implement curriculum	100	Hours		\$0
2	Present presentations	10	Hours		\$0
3	Develop brochures	30	Hours		\$0
4	Revise and distribute brochures	15	Hours		\$0
5	Coordinate w/ community groups	10	Hours		\$0
6	Commercial outreach, annualized	40	Hours		\$0
7	Car wash outreach	16	Hours		\$0
8	Pet waste outreach	16	Hours		\$0
9	Other	0	Hours		\$0
10	Other	0	Hours		\$0
11	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		237	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-8 **Type:** RegCom
NPDES Permit Condition Area: PEO-6 **Cost:**
Name: PEO for Engineers, Contractors, Developers, Per Rank: 56, VH/Reg

Problem Identified: (Former Number:)
 Subject areas for these target audiences include stormwater treatment and flow control BMPs for site plans, erosion control on construction sites, and implementation of LID techniques.

Proposed Project:
 The city intends development of an LID display for its permit center; education regarding its evaluation and revision of its stormwater standards and specifications; and preparation of stormwater design guidelines for handing to landowners and developers at development pre-application meetings.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Present presentations	5	Hours		\$0
2	Develop brochures	30	Hours		\$0
3	Revise and distribute brochures	15	Hours		\$0
4	Coordinate w/ community groups	10	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		60	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-9 **Type:** RegCom
NPDES Permit Condition Area: PIP-1 **Cost:**
Name: Public Involvement and Participation **Rank:** 58, VH/Reg

Problem Identified: (Former Number:)
 The City is required to provide opportunities for the public to participate in decision making processes involving stormwater issues, including the development, implementation, and regular update of their Stormwater Management Program.

Proposed Project:
 The City anticipates hosting multiple public "coffee houses" as a forum for engaging the public over its SWMP and Stormwater Comprehensive Plan. In addition, invitations and advertisements for public participation in regular meetings of area watershed groups may be published.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Community groups (e.g. Scouts)	16	Hours		\$0
2	Open houses	8	Hours		\$0
3	Council meetings	8	Hours		\$0
4	City project presentations	16	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		48	Hours		\$0
ROUNDED					\$0

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Project No.:
NPDES Permit Condition Area:
Name: Stormwater Inventory

NPDES-10
IDDE-1

Type: RegCom
Cost:
Rank: 60, VH/Reg

Problem Identified:

(Former Number:)

The City's current inventory is indeed thorough and extensive, with numerous attributes recorded for the 3,253 catch basins and manholes, 48 miles of pipe, 18 miles of ditches and swales, and 2.9 miles of culverts (see Section 3.2.2). However, the inventory is incomplete with regard to outfalls, and detention and infiltration facilities, and it lacks procedures to assure its routine maintenance and meet other permit requirements.

Proposed Project:

The City anticipates that improving its inventory to meet permit conditions will require: the use of a seasonal field employee; additional GPS equipment (portable base station) to improve the accuracy of X,Y,Z positions; video equipment; an interdepartmental QA/QC effort involving utilities, engineering, streets and GIS staff; and development of map products for internal and regulatory use.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Inventory--complete holes	80	Hours		\$0
2	Learn system	40	Hours		\$0
3	Other	0	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		120	Hours		\$0
ROUNDED					\$0

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Project No.:
NPDES Permit Condition Area:
Name: IDDE Ordinance and Regulation

NPDES-11
IDDE-2

Type: RegCom
Cost:
Rank: 56, VH/Reg

Problem Identified:

(Former Number:)

Permit conditions include adoption of an ordinance which prohibits discharges from: potable water sources such as water main flushing from hydrants; lawn watering and irrigation runoff; swimming pool discharges; street, sidewalk, and exterior building wash water; and other non-stormwater discharges. Enforcement procedures are required. Further, the City's SWMP must practically address each of the above illicit discharges and other discharges of significant pollutants in annual work plans.

Proposed Project:

The City proposes use of a public relations consultant for the development of this and other ordinances required by the permit, and the expanded use of existing code enforcement and stormwater staff for enforcement.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Ordinance review and coordination	20	Hours		\$0
2	Communications, meetings	4	Hours		\$0
3	Other	0	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		24	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-12 **Type:** RegCom
NPDES Permit Condition Area: IDDE-3 **Cost:**
Name: Prepare and Implement IDDE Plan **Rank:** 56, VH/Reg

Problem Identified: (Former Number:)
 The permit requires implementation of an IDDE identification program, including: prioritizing sites; field assessment and screenings; source characterization; and corrective procedures. In addition, public education, public reporting mechanisms, an IDDE tracking database, and training for all city employees is required.

Proposed Project:
 The City anticipates utilizing existing stormwater staff and budgeting for: detection equipment (sampling and analyses); telephone, web site, publishing, and related IDDE reporting; education and outreach program for IDDE; and contracting or purchasing IDDE training curricula.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Maintain/respond to hotline	8	Hours		\$0
2	City web tracker comment database	4	Hours		\$0
3	ERTS	4	Hours		\$0
4	Develop/maintain IDDE program	40	Hours		\$0
5	Train field/city staff	16	Hours		\$0
6	Screening program/process	80	Hours		\$0
7	Enforcement and reporting	60	Hours		\$0
8	Education, information	24	Hours		\$0
9	Other	0	Hours		\$0
10	Other	0	Hours		\$0
11	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		236	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-13 **Type:** CapEquip
NPDES Permit Condition Area: IDDE-3C **Cost:** \$22,000
Name: IDDE Capital Equipment Expense **Rank:** 56, VH/Reg

Problem Identified: (Former Number:)
 The permit requires implementation of an IDDE identification program, including: prioritizing sites; field assessment and screenings; source characterization; and corrective procedures. In addition, public education, public reporting mechanisms, an IDDE tracking database, and training for all city employees is required.

Proposed Project:
 Capital equipment necessary to meet permit conditions may include: vactor truck (shared); sewer video camera (shared); trash pump and hose; tripod, winch, gas monitor for confined space entry; safety signs, GPS, etc. Just prior to completion of the SCP financial program, the Stormwater Utility was able to purchase a used vactor truck in good condition using grant funding. It was determined that backhoes in the Water and Streets Depts and TV cameras in the Wastewater Dept could be shared with the Stormwater Dept. These and other efficiencies have reduced much of the capital equipment needed to meet NPDES II conditions. Residual items still needing funding are identified here.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Vactor, 1/3 share; purchase used Jan 2010	0	LS	\$300,000	\$0
2	Video camera and crawler; share w/ WW	0	LS	\$70,000	\$0
3	Utility locator and steel tape; 1/3 of storm use	0.33	LS	\$3,000	\$990
4	Trash pump and hose, 4"	1	LS	\$2,500	\$2,500
5	Tripod/winch for confined space entry	1	LS	\$2,000	\$2,000
6	Gas monitor for confined space entry	1	LS	\$1,000	\$1,000
7	Turbidimeter, handheld	1	LS	\$1,000	\$1,000
8	Safety signs (e.g., men working)	4	EA	\$250	\$1,000
5	GPS replacement	1	LS	\$10,000	\$10,000
6	Other	0	LF	\$0	\$0
7	Other	0	Hours	\$0	\$0
Subtotal					\$18,490
8	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
9	Contingency	1	LS	5%	\$925
10	Sales Tax	1	LS	8.5%	\$1,650
Estimated Construction Cost					\$21,065
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
12	Surveying (Property, Design & Const.)	1	LS	0%	\$0
13	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$21,065
ROUNDED					\$22,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: NPDES-14 **Type:** RegCom
NPDES Permit Condition Area: RUNOFF-1 **Cost:**
Name: Development and Construction Runoff Ordinance Rank: 56, VH/Reg

Problem Identified: (Former Number:)
 Permit conditions include adoption of an ordinance addressing runoff during development and construction projects, including specified minimum technical requirements. The plan review, inspection, and enforcement components of the City's permit process will need to be evaluated and modified, as necessary to meet the standards specified in the permit.

Proposed Project:
 The City proposes development of this ordinance in-house, followed by use of an engineering consultant to conduct an independent evaluation of the ordinance and the permit process. The inspection requirements are more stringent than the City's current operation, but it is anticipated that permit conditions can be met with two existing public works and stormwater staff.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Ordinance and development standards coordinati	20	Hours		\$0
2	Permit and plan reviews, inspections	450	Hours		\$0
3	Construction inspections	225	Hours		\$0
4	Training city employees	6	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		701	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-15 **Type:** RegCom
NPDES Permit Condition Area: RUNOFF-2 **Cost:**
Name: Operations and Maintenance Ordinance and Adoption of Stormwater Standards **Rank:** 56, VH/Reg

Problem Identified: (Former Number:)
 Permit conditions include adoption of an ordinance to enforce maintenance responsibilities to assure adequate long-term function of stormwater facilities after construction. Significantly, the conditions apply not only to public facilities, but private facilities permitted by the City and constructed after the effective date for this NPDES permit condition.

Proposed Project:
 The City proposes development of this ordinance in-house, followed by use of engineering and public relations consultants to conduct independent evaluations of the ordinance and the City's maintenance standards.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Ordinance and maintenance standards coordinati	40	Hours		\$0
2	Other	0	Hours		\$0
3	Other	0	Hours		\$0
4	Training city employees	6	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		46	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-16 **Type:** RegCom
NPDES Permit Condition Area: RUNOFF-3 **Cost:**
Name: Develop and Implement Inspection Program and Other **Rank:** 56, VH/Reg
Runoff Controls

Problem Identified: (Former Number:)
 Permit conditions require annual inspections of all stormwater treatment and flow control facilities (except catch basins) permitted by the City, and inspections of the same facilities and catch basins twice annually during and immediately after periods of heavy construction. Record keeping regarding runoff control activities, including documenting inspections and enforcement actions, and training and education of City staff and education of applicants for permits is also required under the permit.

Proposed Project:
 The inspection requirements are more stringent than the City's current operation, but it is anticipated that permit conditions can be met with two existing public works and stormwater staff.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Inspections, treatment and flow control	450	Hours		\$0
2	Inspections, construction, catch basins	40	Hours		\$0
3	Record keeping	120	Hours		\$0
4	Training for city employees	4	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		614	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-17 **Type:** CapEquip
NPDES Permit Condition Area: RUNOFF-3C **Cost:** \$2,000
Name: Runoff Control Capital Equipment Expense **Rank:** 56, VH/Reg

Problem Identified: (Former Number:)
 Permit conditions require annual inspections of all stormwater treatment and flow control facilities (except catch basins) permitted by the City, and inspections of the same facilities and catch basins twice annually during and immediately after periods of heavy construction.

Proposed Project:
 Capital equipment necessary to meet permit conditions may include: vactor truck (shared); sewer video camera (shared); laptop for field inspections, etc. Just prior to completion of the SCP financial program, the Stormwater Utility was able to purchase a used vactor truck in good condition using grant funding. It was determined that backhoes in the Water and Streets Depts and TV cameras in the Wastewater Dept could be shared with the Stormwater Dept. These and other efficiencies have reduced much of the capital equipment needed to meet NPDES II conditions. Residual items still needing funding are identified here.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Vactor, 1/3 share; purchase used Jan 2010	0	LS	\$300,000	\$0
2	Video camera and crawler; share w/ WW	0	LS	\$70,000	\$0
3	Utility locator and steel tape; 1/3 of storm use	0.33	LS	\$3,000	\$990
4	Laptop for field inspections (low end)	1	EA	\$750	\$750
5	Other	0	CY	\$0	\$0
6	Other	0	LF	\$0	\$0
7	Other	0	Hours	\$0	\$0
Subtotal					\$1,740
8	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
9	Contingency	1	LS	5%	\$87
10	Sales Tax	1	LS	8.5%	\$155
Estimated Construction Cost					\$1,982
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
12	Surveying (Property, Design & Const.)	1	LS	0%	\$0
13	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$1,982
ROUNDED					\$2,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: NPDES-18 **Type:** RegCom
NPDES Permit Condition Area: PPOM-1 **Cost:**
Name: Pollution Prevention at O&M Facilities-Adoption of Maintenance Standards **Rank:** 56, VH/Reg

Problem Identified: (Former Number:)
 Permit conditions include adoption of maintenance standards that meet or exceed the 2005 Stormwater Manual for protecting the functional integrity of stormwater facilities. These need to be incorporated into the City's standards and specifications documents for stormwater utilities.

Proposed Project:
 The City anticipates a structured evaluation of its existing standards against the 2005 Manual and the standards and specifications of other municipalities to assure revised and adopted standards are consistent with the Manual and can be efficiently implemented in Arlington. Existing city staff are equipped for this task with some assistance from an independent engineering consultant.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Maintenance standards coordination	40	Hours		\$0
2	Record keeping	60	Hours		\$0
3	Training for city employees	16	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		116	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-19 **Type:** RegCom
NPDES Permit Condition Area: PPOM-2 **Cost:**
Name: Pollution Prevention at O&M Facilities-Inspection **Rank:** 56, VH/Reg

Problem Identified: (Former Number:)
 Permit conditions require annual inspections and frequent maintenance of all storm water treatment and flow control facilities (except catch basins) owned by the City. Inspection frequency increases after storm events with a 10-year return interval. All catch basins and inlets owned by the City are required to be inspected and maintained at least once during the NPDES II permit cycle ending in February 2012. Inspection scheduling must include all structures and achieve at least a 95% inspection rate.

Proposed Project:
 The City currently does not have a regular inspection program but does maintain some catch basins each year. Full compliance is anticipated to require high costs for inspection equipment (e.g., video equipment) and for maintenance activities that are currently contracted to service providers outside the City.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Spot checks after storms	16	Hours		\$0
2	Biannual CB inspections, cleaning	350	Hours		\$0
3	Inspections, treatment and flow control, city	40	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		406	Hours		\$0
ROUNDED					\$0

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Project No.: NPDES-20 **Type:** RegCom
NPDES Permit Condition Area: PPOM-3 **Cost:**
Name: Pollution Prevention at O&M Facilities-Housekeep Rank: 56, VH/Reg

Problem Identified: (Former Number:)
 Permit conditions include establishing and implementing policies and practices to reduce stormwater impacts from the City's: road maintenance and deicing activities; fleet parking and maintenance operations; storage and maintenance yards and facilities; and parks and open spaces. Written plans, recordkeeping, and regular training of city staff are also required.

Proposed Project:
 The City proposes an in-house evaluation of its existing operations and maintenance program, and development of policies and procedures for achieving permit compliance cost effectively. Training costs may be reduced through cooperative efforts with other NPDES II permittees in the region

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Pipe cleaning	8	Hours		\$0
2	Culvert cleaning	8	Hours		\$0
3	Ditch maintenance	8	Hours		\$0
4	Street sweeping (separate program)	0	Hours		\$0
5	Snow and ice removal (separate program)	0	Hours		\$0
6	Dust control (separate program)	0	Hours		\$0
7	Debris/litter removal, autumn	40	Hours		\$0
8	Good housekeeping for parks/landscapes	16	Hours		\$0
9	Grate cleaning	96	Hours		\$0
10	SWPPP	12	Hours		\$0
11	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		188	Hours		\$0
ROUNDED					\$0

Notes:

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Project No.: NPDES-21 **Type:** CapEquip
NPDES Permit Condition Area: PPOM-3C **Cost:** \$1,200
Name: Good Housekeeping Capital Equipment Expense **Rank:** 52, VH/Reg

Problem Identified: (Former Number:)
 Full compliance is anticipated to require high costs for inspection equipment (e.g., video equipment) and for maintenance activities that are currently contracted to service providers outside the City.

Proposed Project:
 Capital equipment necessary to meet permit conditions may include: vactor truck (shared); backhoe; compressor and jack hammer; utility locator, etc. Just prior to completion of the SCP financial program, the Stormwater Utility was able to purchase a used vactor truck in good condition using grant funding. It was determined that backhoes in the Water and Streets Depts and TV cameras in the Wastewater Dept could be shared with the Stormwater Dept. These and other efficiencies have reduced much of the capital equipment needed to meet NPDES II conditions. Residual items still needing funding are identified here.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Vactor, 1/3 share; purchase used Jan 2010	0	LS	\$300,000	\$0
2	Backhoe; share w/ utilities, streets	0	LS	\$50,000	\$0
3	Compressor w/ 90#, 60# jack hammers; shared	0	LS	\$15,000	\$0
4	Utility locator and steel tape; 1/3 of storm use	0.33	LS	\$3,000	\$990
5	Other	0	CY	\$0	\$0
6	Other	0	LF	\$0	\$0
7	Other	0	Hours	\$0	\$0
Subtotal					\$990
8	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
9	Contingency	1	LS	5%	\$50
10	Sales Tax	1	LS	8.5%	\$88
Estimated Construction Cost					\$1,128
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
12	Surveying (Property, Design & Const.)	1	LS	0%	\$0
13	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$1,128
ROUNDED					\$1,200

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
NPDES Permit Condition Area:

NPDES-22
TMDL-1

Type: RegCom
Cost:

Name: TMDL Compliance-Bacterial Control Program

Rank: 55, VH/Reg

Problem Identified:

(Former Number:)

A bacterial pollution control plan (BPCP) and program is a permit condition for the Snohomish TMDL and is anticipated under the Stillaguamish TMDL.

Proposed Project:

The City must identify, inspect, and enforce BMPs at bacteria sources including animal handling facilities, composting facilities, pets, and septic systems. Evaluation, modification, and adoption of pet waste and critical areas ordinances, and improved education and enforcement efforts are anticipated.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Prepare BBCP	40	Hours		\$0
2	Implement BBCP	40	Hours		\$0
3	Sewer crossings evaluation (separate program)	0	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		80	Hours		\$0
ROUNDED					\$0

Notes:

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Project No.: NPDES-23 **Type:** RegCom
NPDES Permit Condition Area: TMDL-2 **Cost:**
TMDL Compliance-Surface Water Monitoring-Snohomish
Name: Basin **Rank:** 35, H

Problem Identified: (Former Number:)
 The City is required to conduct regular monthly and event-based monitoring of stormwater and receiving streams within the Snohomish basin. Anticipated fixed costs include equipment and laboratory analyses of at least four and up to eight samples per month.

Proposed Project:
 The City anticipates continuing use of its stormwater staff and wastewater lab to reduce costs for this ongoing effort.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Monitoring in MF Quilceda basin	48	Hours		\$0
2	Monitoring outfalls, selected storm events	24	Hours		\$0
3	Record keeping	30	Hours		\$0
4	TMDL meetings	8	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		110	Hours		\$0
ROUNDED					\$0

Notes:

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Project No.: NPDES-24 **Type:** RegCom
NPDES Permit Condition Area: TMDL-3 **Cost:**
Name: TMDL Compliance-Surface Water Monitoring-Stillaguamish Basin **Rank:** 35, H

Problem Identified: (Former Number:)
 The City will conduct regular monthly and event-based monitoring of stormwater and receiving streams within the Stillaguamish basin. Anticipated fixed costs include equipment and laboratory analyses of at least twelve and up to twenty samples per month.

Proposed Project:
 The City anticipates use of its stormwater staff and wastewater lab to reduce costs, but this additional effort could require use of consultants or temporary, on-call staff.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Monitoring in Stilly and SF Stilly	96	Hours		\$0
2	Monitoring in MF Quilceda basin	48	Hours		\$0
3	Monitoring outfalls, selected storm events	24	Hours		\$0
4	Record keeping	30	Hours		\$0
5	TMDL meetings	8	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		206	Hours		\$0
ROUNDED					\$0

Notes:

- 1
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Project No.:
NPDES Permit Condition Area:

NPDES-25
TMDL-4

Type: RegCom
Cost:

Name: TMDL Compliance-Septic System Evaluation

Rank: 45, VH/Reg

Problem Identified:

(Former Number:)

This SCP planning effort did not attempt to analyze the potential for septic systems in the vicinity of Arlington to contribute to fecal coliform loads in area streams. The Stillaguamish TMDL identifies an assessment of septic systems in Arlington and their soil characteristics and proximity to streams in order to prioritize septic systems for performance evaluations.

Proposed Project:

The City intends to conduct this evaluation in-house using existing stormwater and GIS staff. A report would evaluate the potential effects of septic system maintenance on area streams.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Septic system evaluation	100	Hours		\$0
2	Record keeping	0	Hours		\$0
3	Training for city employees	0	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		100	Hours		\$0
ROUNDED					\$0

Notes:

- 1
- 2
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- 4
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Project No.: NPDES-26 **Type:** RegCom
NPDES Permit Condition Area: EFFMON-1 **Cost:**
Name: Effectiveness (Longterm) Monitoring Program **Rank:** 40, H

Problem Identified: (Former Number:)
 This particular permit condition requires no monitoring or evaluation during this permit cycle, but preparation of a plan for monitoring under future permit cycles. The plan(s) warrant appropriate effort now as a poorly defined plan may result in inconclusive results at high costs to the City later.

Proposed Project:
 The City anticipates using water quality monitoring data it has collected and will collect under TMDL requirements and interdepartmental team of City staff to identify appropriate outfalls and BMPs for evaluation through monitoring. Alternatively, the City may choose to cooperate in a regional effectiveness monitoring effort.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Surface water quality data evaluation	24	Hours		\$0
2	Evaluation of frequently used city BMPs	24	Hours		\$0
3	Regional communications	24	Hours		\$0
4	Other	0	Hours		\$0
5	Other	0	Hours		\$0
6	Other	0	Hours		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		72	Hours		\$0
ROUNDED					\$0

Notes:

- 1
- 2
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- 4
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Project No.: Storm-2 **Type:** CapRecur
Utility Special Project: PLANNING-1C **Cost:** \$55,000
Name: Stormwater Comprehensive Planning Consultant **Rank:** 40, H

Problem Identified: (Former Number:)
 Updates to this SCP are anticipated to: address issues related to growth; meet changing regulatory requirements; and to adaptively manage the results of implementing the City's Stormwater Management Program (SWMP). Updates should be identified and planned for in the Stormwater Utility's CIP.

Proposed Project:
 SCP Update on a 6-year cycle (or ~2015 next cycle) is proposed for next planning horizon since that will be after the first renewal in 2012 of the NPDES II permit. This is consultant costs (annualized). Subsequent SCP updates could occur on a 10-year cycle.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	SCP Update	1	LS	\$55,000	\$55,000
2	Other	0	EA	\$0	\$0
3	Other	0	LF	\$0	\$0
4	Other	0	Hours	\$0	\$0
Subtotal					\$55,000
5	Mobilization/Demob/Overhead & Profit	0	LS	0%	\$0
6	Contingency	0	LS	0%	\$0
7	Sales Tax	0	LS	0.0%	\$0
Estimated Construction Cost					\$55,000
8	Eng'r, Permitting, Legal, Admin (15%)	0	LS	0%	\$0
9	Surveying (Property, Design & Const.)	0	LS	0%	\$0
10	Construction Management (4%)	0	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$55,000
ROUNDED					\$55,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
Utility Special Project:
Name: Hydrography Inventory

Storm-3
PLANNING-2

Type: Ops
Cost:
Rank: 33, M

Problem Identified:

(Former Number:)

Stream and wetland inventories are incomplete and commonly inaccurate within the City, and can cause delays in site planning and permit reviews and impacts on aquatic resources. A complete inventory is required to fully meet the intent of the City's stormwater management functions.

Proposed Project:

The City anticipates a cost efficient inventory through the pairing of a contractor with City stormwater and natural resources staff. This program addresses city staff time on the inventory (annual hours to maintain inventory)

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Annual update of inventory	20	Hours	\$0	\$0
2	Other	0	EA	\$0	\$0
3	Other	0	LF	\$0	\$0
4	Other	0	Hours	\$0	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		20	Hours		\$0
ROUNDED					\$0

Notes:

- 1
- 2
- 3
- 4
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Project No.:
Utility Special Project:
Name: Hydrography Inventory CIP

Storm-4
PLANNING-2C

Type: CIP
Cost: \$15,000
Rank: 33, M

Problem Identified:

(Former Number:)

Stream and wetland inventories are incomplete and commonly inaccurate within the City, and can cause delays in site planning and permit reviews and impacts on aquatic resources. A complete inventory is required to fully meet the intent of the City's stormwater management functions.

Proposed Project:

The City anticipates a cost efficient inventory through the pairing of a contractor with City stormwater and natural resources staff. This program address consultant costs (CIP) for coordinated integration of data from multiple entities with field validation and inventory of surface water network

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Data collection and communications	24	Hours	\$100	\$2,400
2	Data integration to create preferred city database	40	Hours	\$100	\$4,000
3	Field inventory	60	Hours	\$100	\$6,000
4	Other	0	Hours	\$0	\$0
Subtotal					\$12,400
5	Mobilization/Demob/Overhead & Profit	0	LS	0%	\$0
6	Contingency	0	LS	5%	\$620
7	Sales Tax	0	LS	0.0%	\$0
Estimated Construction Cost					\$13,020
8	Eng'r, Permitting, Legal, Admin (15%)	0	LS	0%	\$0
9	Surveying (Property, Design & Const.)	0	LS	10%	\$1,302
10	Construction Management (4%)	0	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$14,322
ROUNDED					\$15,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: Storm-5 **Type:** Ops
Utility Special Project: PLANNING-3 **Cost:**
Name: GIS Database and Asset Management for the Stormwater Utility **Rank:** 36, H

Problem Identified: (Former Number:)
 Numerous detention, infiltration, outfall, and other stormwater features need to be inventoried by existing stormwater staff to complete the stormwater database. Training will be required to complete the database and link it to Cartegraph to create an effective asset management system that also supports the inspection and maintenance scheduling and record keeping requirements of the NPDES permit.

Proposed Project:
 The City intends to meet these objectives using existing stormwater and GIS staff.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Manage/Maintain GIS and Cartegraph	120	Hours	\$0	\$0
2	Other	0	EA	\$0	\$0
3	Other	0	LF	\$0	\$0
4	Other	0	Hours	\$0	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		120	Hours		\$0
ROUNDED					\$0

Notes:

- 1
- 2
- 3
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Project No.:
Utility Special Project:
Name: Utility Administration

Storm-6
PLANNING-4

Type: Ops
Cost:
Rank: 40, H

Problem Identified: (Former Number:)
 Administrative and program activities within the Stormwater Utility need to be staffed.

Proposed Project:
 Administrative and program activities within the Stormwater Utility include work orders, budgeting, credit program, locates, safety, staff meetings, regional stormwater meetings, etc.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Administration	200	Hours	\$0	\$0
2	Specific stormwater work orders	80	Hours	\$0	\$0
3	Budgeting	2	Hours	\$0	\$0
4	Stormwater credit program	160	Hours	\$0	\$0
5	Locates	260	Hours	\$0	\$0
6	Safety and wellness	26	Hours	\$0	\$0
7	Staff meetings	18	Hours	\$0	\$0
8	AQWA and regional meetings	18	Hours	\$0	\$0
9	Other	0	Hours	\$0	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		764	Hours		\$0
ROUNDED					\$0

Notes:

- 1
- 2
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Project No.: Storm-7 **Type:** CapEquip
Utility Special Project: PLANNING-4C **Cost:** \$27,000
Name: Utility Administration Capital Equipment **Rank:** 10, L

Problem Identified: (Former Number:)
 Fund new vehicle for the Stormwater Utility

Proposed Project:
 Buy small pickup truck for stormwater utility. Additional stormwater staff use Jeep as a shared vehicle with other utilities.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Pick-up Truck for field work	1	LS	\$25,000	\$25,000
2	Keep Jeep as a shared vehicle	0	LS	\$0	\$0
3	Traffic cones	1	LS	\$1,600	\$1,600
4	Other	0	Hours	\$0	\$0
Subtotal					\$26,600
5	Mobilization/Demob/Overhead & Profit	0	LS	0%	\$0
6	Contingency	0	LS	0%	\$0
7	Sales Tax	0	LS	0.0%	\$0
Estimated Construction Cost					\$26,600
8	Eng'r, Permitting, Legal, Admin (15%)	0	LS	0%	\$0
9	Surveying (Property, Design & Const.)	0	LS	0%	\$0
10	Construction Management (4%)	0	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$26,600
ROUNDED					\$27,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
Utility Special Project:
Name: Utility Annual SW System Upgrade

Storm-8
PLANNING-5C

Type: CapRecur
Cost: \$180,000
Rank: 39, H

Problem Identified:
 Failing infrastructure or inadequate capacity.

(Former Number: NA)

Proposed Project:

Annual upgrade program to fund infrastructure replacement on a regular basis to facilitate responsiveness to future emergencies and return maintenance to an appropriate schedule.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Annual Program	1	LS	\$175,000	\$175,000
2	Other	0	LS	\$0	\$0
3	Other	0	LS	\$0	\$0
4	Other	0	Hours	\$0	\$0
Subtotal					\$175,000
5	Mobilization/Demob/Overhead & Profit	0	LS	0%	\$0
6	Contingency	0	LS	0%	\$0
7	Sales Tax	0	LS	0.0%	\$0
Estimated Construction Cost					\$175,000
8	Eng'r, Permitting, Legal, Admin (15%)	0	LS	0%	\$0
9	Surveying (Property, Design & Const.)	0	LS	0%	\$0
10	Construction Management (4%)	0	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$175,000
ROUNDED					\$180,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
Utility Special Project:
Name: Restoration Cache and Nursery

Storm-9 **Type: Ops**
RESTORATION-1 **Cost:**
Rank: 33, M

Problem Identified: (Former Number:)
 Prepare for restoration opportunities. Acquire a supply of LWD and other restoration materials for opportunistic projects. Also, provide vegetative materials for critical areas and stormwater detention maintenance projects.

Proposed Project:
 The City anticipates limited expansion of its existing nursery.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Supply cache with LWD	16	Hours	\$0	\$0
2	Supply cache with plants	32	Hours	\$0	\$0
3	Maintain cache, nursery	72	Hours	\$0	\$0
4	Other	0	Hours	\$0	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		120	Hours		\$0
ROUNDED					\$0

Notes:

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Project No.:
Utility Special Project:
Name: UIC and Infiltration Evaluations

Storm-10 **Type: Ops**
GROUNDWATER-1 **Cost:**
Rank: 37, H

Problem Identified: (Former Number:)
Existing city development regulations should be evaluated in light of current UIC regulations and the 2005 Manual. Issues with regard to development, underground injection control regulations, industrial stormwater permitting, and the City's development permit conditions for protection of groundwater from storm water need to be identified and presented to City staff for resolution and modification of the City's development regulations, if any.

Proposed Project:
The City anticipates development of its UIC program in-house using existing stormwater and wellhead protection staff. However, use of engineering and public relations consultants may be needed to provide independent facilitation of the evaluation process.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	UIC program development	80	Hours	\$0	\$0
2	Other	0	Hours	\$0	\$0
3	Other	0	Hours	\$0	\$0
4	Other	0	Hours	\$0	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS		80	Hours		\$0
ROUNDED					\$0

Notes:

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Project No.: Storm-11 **Type:** CIP
Utility Special Project: GROUNDWATER-2 **Cost:** \$39,000
Name: Stormwater Injection and Recovery Evaluation **Rank:** 33, M

Problem Identified: (Former Number:)
The opportunity for stormwater storage and recovery in groundwater may provide integrated management solutions for stormwater, instream flows, and municipal water supply. Such a program requires site specific evaluation of hydrologic and hydrogeologic information and development of if-then decision criteria, and would probably fit best within a regional stormwater system that might serve an individual sector within the city. A preliminary evaluation of site conditions would be required to identify appropriate locations, conditions, and seasons where this approach would work.

Proposed Project:
An engineering consultant would be retained to conduct a preliminary evaluation of site conditions around the city to identify appropriate locations, conditions, and seasons where stormwater may be intercepted and stored as groundwater. Results of this effort would likely then be used to facilitate design of regional stormwater systems, or perhaps individual site systems, where appropriate.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Engineering Consultant	1	LS	\$35,000	\$35,000
2	Other	0	LS	\$0	\$0
3	Other	0	LS	\$0	\$0
4	Other	0	Hours	\$0	\$0
Subtotal					\$35,000
5	Mobilization/Demob/Overhead & Profit	0	LS	0%	\$0
6	Contingency	0	LS	10%	\$3,500
7	Sales Tax	0	LS	0.0%	\$0
Estimated Construction Cost					\$38,500
8	Eng'r, Permitting, Legal, Admin (15%)	0	LS	0%	\$0
9	Surveying (Property, Design & Const.)	0	LS	0%	\$0
10	Construction Management (4%)	0	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$38,500
ROUNDED					\$39,000

Notes:

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Project No.: 1
4th Tier Basin ID: OT-B-1
Name: Old Town Storm Drain Improvements

Type: CIP
Cost: \$670,000
Rank: 32, M

Problem Identified:

(Former Number: 11, 201)

Surcharging along First Street between McLeod and Lenore Avenues, Lenore Avenue between First and Second Streets; and along French Avenue between First and Fourth Streets (variable pipe diameters in French Avenue). The result is localized flooding during intense rainfall, when flows surface from catch basins to flow down slope across roads and properties. Roots have historically been an issue, but the most likely cause now is a bottleneck caused by smaller pipe sizes on French between 3rd and 4th Streets.

Proposed Project:

The project will upgrade pipe sizes and slopes throughout the basin. 2000 ft of 24" pipe assumed, as are three Type II CBs on Lenore between 1st and 2nd St. Opportunity to phase the project and begin by upsizing the pipe in French between 3rd and 4th Streets. (Also consider routing to Olympic, as Olympic and 1st (to McLeod) was size to handle flows from hospital via a flow splitter at Lenore and 1st St.)

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Traffic Safety Control Devices	1	LS	\$24,957	\$24,957
2	Remove Manhole	5	EA	\$624	\$3,120
3	Remove Drainage Pipe	200	LF	\$12	\$2,496
4	Saw cut Existing Pavement (RSM)	2000	LF	\$2	\$4,991
5	Remove & Dispose of AC Paving*	900	SY	\$4	\$3,931
6	Roadway Excavation, w/ Haul*	3000	CY	\$11	\$31,821
7	Temporary Patch	180	Ton	\$56	\$10,108
8	AC Paving Class A*	180	Ton	\$47	\$8,535
9	Controlled Density Fill*	1200	CY	\$81	\$97,334
10	Storm Sewer Pipe (21-inch)*	0	LF	\$37	\$0
11	Storm Sewer Pipe (24-inch)*	2000	LF	\$50	\$99,830
12	Storm Sewer Pipe (27-inch)	0	LF	\$60	\$0
13	Storm Sewer Pipe (30-inch)*	0	LF	\$65	\$0
14	Storm Sewer Pipe (36-inch)*	0	LF	\$62	\$0
15	Storm Sewer Pipe (48-inch)	0	LF	\$106	\$0
16	Reconnect Existing Catch Basins	9	EA	\$624	\$5,615
17	Type 2 - 54" Catch Basins*	2	EA	\$3,120	\$6,239
18	Type 2 - 60" Catch Basins*	1	EA	\$3,993	\$3,993
19	Type 2 - 72" Catch Basins*	0	EA	\$4,742	\$0
20	Type 2 - 96" Catch Basins	0	EA	\$9,359	\$0
21	Relocate Existing Utilities	1	LS	\$12,479	\$12,479
22	Trench Safety	2,000	LF	\$2	\$4,991
23	SPCC Plan, Silt Fence, & TESC Measures	2,000	LF	\$6	\$12,479
24	Traffic Control Labor	350	Hours	\$44	\$15,286
Subtotal					\$348,206
25	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$34,821
26	Contingency	1	LS	30%	\$114,908
27	Sales Tax	1	LS	8.5%	\$42,324
Estimated Construction Cost					\$540,259
28	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$81,039
29	Surveying (Property, Design & Const.)	1	LS	4%	\$21,610
30	Construction Management (4%)	1	LS	4%	\$21,610
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$664,519
ROUNDED					\$670,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.: 3
4th Tier Basin ID: OT-B-3
Name: Haller (Butler) Outfall Improvements

Type: CIP
Cost: \$230,000
Rank: 38, H

Problem Identified: (Former Number: 12 [2split])
 Downstream-most pipe segment to outfall is old and outlet is crushed. Pipe outlet feeds ditched channel ~30 ft in from river bank.

Proposed Project:
 The project will upgrade and replace the original Butler outfall to the Stillaguamish River (whose location would not change). Proposal is to burst existing pipe for entire length from manhole to outlet. Outfall Length estimated at 300 ft

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
3 Haller (Butler) Outfall Improvements					
1	Traffic Safety Control Devices	1	LS	\$9,359	\$9,359
2	Remove Manhole	6	EA	\$624	\$3,744
3	Remove Drainage Pipe	300	LF	\$12	\$3,744
4	Saw cut Existing Pavement (RSM)	0	LF	\$2	\$0
5	Remove & Dispose of AC Paving*	0	SY	\$4	\$0
6	Roadway Excavation, w/ Haul*	0	CY	\$11	\$0
7	Temporary Patch	0	Ton	\$56	\$0
8	AC Paving Class A*	0	Ton	\$47	\$0
9	Controlled Density Fill*	530	CY	\$81	\$42,989
10	Storm Sewer Pipe (21-inch)*	0	LF	\$37	\$0
11	Storm Sewer Pipe (24-inch)*	0	LF	\$50	\$0
12	Storm Sewer Pipe (27-inch)	0	LF	\$60	\$0
13	Storm Sewer Pipe (30-inch)*	0	LF	\$65	\$0
14	Storm Sewer Pipe (36-inch)*	0	LF	\$62	\$0
15	Storm Sewer Pipe (48-inch)	300	LF	\$106	\$31,821
16	Reconnect Existing Catch Basins	0	EA	\$624	\$0
17	Type 2 - 54" Catch Basins*	0	EA	\$3,120	\$0
18	Type 2 - 60" Catch Basins*	0	EA	\$3,993	\$0
19	Type 2 - 72" Catch Basins*	0	EA	\$4,742	\$0
20	Type 2 - 96" Catch Basins	1	EA	\$9,359	\$9,359
21	Relocate Existing Utilities	1	LS	\$3,120	\$3,120
22	Trench Safety	300	LF	\$2	\$749
23	SPCC Plan, Silt Fence, & TESC Measures	300	LF	\$6	\$1,872
24	Traffic Control Labor	0	Hours	\$44	\$0
Subtotal					\$106,755
25	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$10,676
26	Contingency	1	LS	30%	\$35,229
27	Sales Tax	1	LS	8.5%	\$12,976
Estimated Construction Cost					\$165,636
28	Eng'r, Permitting, Legal, Admin (25%)	1	LS	25%	\$41,409
29	Surveying (Property, Design & Const.)	1	LS	4%	\$6,625
30	Construction Management (4%)	1	LS	4%	\$6,625
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$220,296
ROUNDED					\$230,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 4 **Type:** CIP
4th Tier Basin ID: OT-B-4 **Cost:** \$173,311
Name: Hammer-Butler Stormwater Wetland Completion **Rank:** 48, VH/Reg

Problem Identified: (Former Number: 22 [3])
 The Haller (Butler or Old Town) outfall discharges to the mainstem Stillaguamish River with little or no treatment, which impacts river water quality and affects the City's ability to meet its TMDL and ESA responsibilities. A constructed wetland on the old Hammer farm has been proposed, has received grant funding, and is in design. This item assures funding for proper maintenance of the constructed wetland facility.

Proposed Project:
 The Hammer-Butler Stormwater Wetland would treat stormwater in a constructed wetland on the existing Butler (formerly Hammer) Property. The property is located west of SR-9 and north of Division (SR-530) and is already owned by the City. Grant funding paid a significant portion of design and construction, but a balance of 173,311 still requires funding to complete construction. The City assumes that required O&M over the first few years will be provided by city staff and citizen volunteers. Consideration is being given to creating a joint use facility to handle WWTP effluent (of reclaimed water quality) during the low flow summer months, so maintenance of bypass piping and valves may be required.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Complete wetland construction--not grant funded	1	LS	\$173,311	\$173,311
2	Sediment basin dredging--volunteer	0	CY	\$7	\$0
3	Clean and adjust weirs--volunteer	0	HR	\$35	\$0
4	Weeding--volunteer	0	HR	\$35	\$0
5	Irrigation equipment, big gun, line	0	LS	\$2,500	\$0
6	Irrigation, watering labor--volunteer	0	HR	\$35	\$0
7	Vegetation harvest--volunteer	0	HR	\$35	\$0
8	General grounds maintenance--volunteer	0	HR	\$35	\$0
9	Debris removal and disposal	0	CY	\$11	\$0
Subtotal					\$173,311
10	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$0
11	Contingency	1	LS	30%	\$0
12	Sales Tax	1	LS	8.5%	\$0
Estimated Construction Cost					\$173,311
13	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$0
14	Surveying (Property, Design & Const.)	1	LS	4%	\$0
15	Construction Management (4%)	1	LS	4%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$173,311
ROUNDED					\$173,311

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 5 **Type:** RegCom
4th Tier Basin ID: OT-B-5 **Cost:** NA
Name: Groundwater Inflow to Storm System **Rank:** NA

Problem Identified: (Former Number: NA [4])
 The manhole at Division and High Streets conveys perennial flow from the east under Division Street. It is assumed to convey groundwater from a perforated pipe under the Division Street road cut across an outwash deposit, but the actual source is unknown. Infrastructure at/near the intersection of Division St and Dunham Ave conveys perennial groundwater that used to supply an old creamery, but the extent of the source and infrastructure is unknown.

Proposed Project:
 This issue (and others like it) will be addressed under the NPDES Illicit Discharge Detection and Elimination (IDDE) requirements for stormwater infrastructure mapping. See regulatory compliance project NPDES-10 (aka IDDE-1). Tasks may include: Video storm lines; as-built reviews and interviews; update GIS stormwater and groundwater layers; update asset management system; update maps.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Video	8	Hours	\$35	\$280
2	Utilities labor	24	Hours	\$35	\$840
	Subtotal				\$1,120
3	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
4	Contingency	1	LS	20%	\$224
5	Sales Tax	1	LS	0.0%	\$0
	Estimated Construction Cost				\$1,344
6	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
7	Surveying (Property, Design & Const.)	1	LS	0%	\$0
8	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$1,344
ROUNDED					\$1,400

- Notes:
- Quantities based on O&M labor for 2 staff for 1-day, and 4 hrs GIS time
 - O&M project, not CIP

Project No.: 6
4th Tier Basin ID: OT-B-6
Name: Illicit Discharge / Groundwater Investigation

Type: RegCom
Cost: NA
Rank: NA

Problem Identified: (Former Number: NA [5])
 2 inch PVC pipe discharges from east near Haller Middle School to trunk line along First Street; flow intermittent but regular and appears to be pumped; source unknown; possible footer (foundation) drain pump?

Proposed Project:
 This issue (and others like it) will be addressed under the NPDES Illicit Discharge Detection and Elimination (IDDE) System. See regulatory compliance project NPDES-12 (aka IDDE-3). Tasks may include: video storm lines; as-built reviews and interviews; confirm whether sources were addressed by infiltration at Haller Middle School; update GIS stormwater and groundwater layers; update asset management system; update maps.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Video	4	Hours	\$35	\$140
2	Utilities labor	12	Hours	\$35	\$420
Subtotal					\$560
3	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
4	Contingency	1	LS	20%	\$112
5	Sales Tax	1	LS	0.0%	\$0
Estimated Construction Cost					\$672
6	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
7	Surveying (Property, Design & Const.)	1	LS	0%	\$0
8	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$672
ROUNDED					\$680

- Notes:
- Quantities based on O&M labor for 2 staff for 0.5-day, and 2 hrs GIS time
 - O&M project, not CIP

Project No.: 7 **Type:** CIP
4th Tier Basin ID: OT-CT-1 **Cost:** \$140,000
Name: Centennial Trail Storm Re-direction **Rank:** 52, VH/Reg

Problem Identified: (Former Number: NA [6])
 Infiltration of small volumes of untreated stormwater occurs within the Sanitary Control Area of the Haller well field with potential to contaminate the City's primary water supply.

Proposed Project:
 The project will control infiltration by intercepting ditch flow, and conveying it through 600 ft of new pipe and 3 Type 2 catch basins to the Haller Park outfall. Outfall pipe from the last manhole riverward is addressed under the separate Haller Park Outfall Improvements project.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Traffic Safety Control Devices	0	LS	\$24,957	\$0
2	Remove Catch Basins	1	EA	\$300	
3	Remove Manhole		EA	\$624	\$0
4	Remove Drainage Pipe	200	LF	\$12	\$2,496
5	Saw cut Existing Pavement (RSM)	600	LF	\$2	\$1,497
6	Remove & Dispose of AC Paving*	300	SY	\$4	\$1,310
7	Roadway Excavation, w/ Haul*	900	CY	\$11	\$9,546
8	Temporary Patch	60	Ton	\$56	\$3,369
9	AC Paving Class A*	60	Ton	\$47	\$2,845
10	Controlled Density Fill*	300	CY	\$81	\$24,333
11	Storm Sewer Pipe (12-inch)	600	LF	\$20	\$12,000
12	Storm Sewer Pipe (21-inch)*		LF	\$37	\$0
13	Reconnect Existing Catch Basins		EA	\$624	\$0
14	Type 2 - 48" Catch Basins*	3	EA	\$2,500	\$7,500
15	Type 2 - 54" Catch Basins*		EA	\$3,120	\$0
16	Relocate Existing Utilities		LS	\$12,479	\$0
17	Trench Safety	600	LF	\$2	\$1,497
18	SPCC Plan, Silt Fence, & TESC Measures	600	LF	\$6	\$3,744
19	Traffic Control Labor		Hours	\$44	\$0
Subtotal					\$70,139
20	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$7,014
21	Contingency	1	LS	30%	\$23,146
22	Sales Tax	1	LS	8.5%	\$8,525
Estimated Construction Cost					\$108,824
23	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$16,324
24	Surveying (Property, Design & Const.)	1	LS	4%	\$4,353
25	Construction Management (4%)	1	LS	4%	\$4,353
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$133,853
ROUNDED					\$140,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 8 **Type:** CIP
4th Tier Basin ID: OT-HP-1 **Cost:** \$27,000
Name: Haller Park Outfall & Drainage Improvements **Rank:** 56, VH/Reg

Problem Identified: (Former Number: NA [7])
 Outfall location unknown; flood deposition hinders maintenance; local flooding not significant during smaller storm events.

Proposed Project:
 Vactor and jet Haller Park storm structures and pipes. Video lines. Upsize and reinstall outfall from the last manhole into the river. Reconnect catch basins to the upsized trunk line (trunkline up to the last manhole would be installed under the separate Centennial Trail storm conveyance project).

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Traffic Safety Control Devices		LS	\$24,957	\$0
2	Remove Catch Basins	8	EA	\$200	\$1,600
3	Remove Manhole	0	EA	\$624	\$0
4	Remove Drainage Pipe	60	LF	\$12	\$749
5	Saw cut Existing Pavement (RSM)	60	LF	\$2	\$150
6	Remove & Dispose of AC Paving*	30	SY	\$4	\$131
7	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
8	Temporary Patch		Ton	\$56	\$0
9	AC Paving Class A*	50	Ton	\$47	\$2,371
10	Controlled Density Fill*		CY	\$81	\$0
11	Storm Sewer Pipe (12-inch--oversized for O&M)	0	LF	\$20	\$0
12	Storm Sewer Pipe (18-inch)*	60	LF	\$37	\$2,246
13	Reconnect Existing Catch Basins		EA	\$624	\$0
14	Type 1L Catch Basins	6	EA	\$750	\$4,500
15	Type 2 - 54" Catch Basins*		EA	\$3,120	\$0
16	Relocate Existing Utilities		LS	\$12,479	\$0
17	Trench Safety		LF	\$2	\$0
18	SPCC Plan, Silt Fence, & TESC Measures		LF	\$6	\$0
19	Traffic Control Labor		Hours	\$44	\$0
Subtotal					\$12,807
20	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$1,281
21	Contingency	1	LS	30%	\$4,226
22	Sales Tax	1	LS	8.5%	\$1,557
Estimated Construction Cost					\$19,871
23	Eng'r, Permitting, Legal, Admin (25%)	1	LS	25%	\$4,968
24	Surveying (Property, Design & Const.)	1	LS	4%	\$795
25	Construction Management (4%)	1	LS	4%	\$795
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$26,429
ROUNDED					\$27,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 9
4th Tier Basin ID: OT-HP-2
Name: Haller Park Bacterial Control

9
 OT-HP-2

Type: CIP
Cost: \$11,000
Rank: 37, H

Problem Identified: (Former Number: NA [8])
 Park allows leashed and off-leash pet use on river bank; dog waste contributes to fecal coliform levels in the river; (also high recreational use by swimmers in summer, and by fishermen nearly year-round)

Proposed Project:
 Evaluate problem. Install pet waste station(s). Off-leash pet facilities, including fencing (off-site?). Provide education.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Pet waste stations	2	EA	\$1,000	\$2,000
2	Off-leash pet facility	1	LS	\$5,000	\$5,000
3	Educational info at kiosks	1	LS	\$500	\$500
4	Utilities labor		Hours	\$25	\$0
Subtotal					\$7,500
3	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$750
4	Contingency	1	LS	20%	\$1,650
5	Sales Tax	1	LS	8.5%	\$842
Estimated Construction Cost					\$10,742
6	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
7	Surveying (Property, Design & Const.)	1	LS	0%	\$0
8	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$10,742
ROUNDED					\$11,000

Notes:

- 1 Quantities based on O&M labor for 2 staff for 0.5-day, and 2 hrs GIS time
- 2 O&M project, not CIP

Project No.:
4th Tier Basin ID:
Name: 211th & SR 530 Upkeep

10
M-211-1

Type: O&M
Cost: NA
Rank: 35, H

Problem Identified:

(Former Number: NA [9])

Outfall is sometimes buried under sand at the toe of the road fill; catch basin can back up into the street during heavy storms

Proposed Project:

Vactor and jet. Place pad of quarry spalls at outfall. Mark outfall. This issue is an example of projects that will be addressed under a standard operations and maintenance program through work orders generated by the Cartegraph asset management system. See Project No. Storm-5.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Vactor	2	Hours	\$165	\$330
2	Jetter	0	Hours	\$165	\$0
3	Quarry spalls	0.5	CY	\$12	\$6
4	Post	1	EA	\$10	\$10
Subtotal					\$346
5	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
6	Contingency	1	LS	10%	\$35
7	Sales Tax	1	LS	0.0%	\$0
Estimated Construction Cost					\$381
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
9	Surveying (Property, Design & Const.)	1	LS	0%	\$0
10	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$381
ROUNDED					\$390

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: 211th & Ronning Rd Outfall

11
M-211R-1

Type: CIP
Cost: \$42,000
Rank: 34, H

Problem Identified: (Former Number: NA [10])
 Outfall location unknown and understood to be crushed near the edge of the road fill; fillslope is unstable and road has settled in the past, so there is potential for damage to road prism; catch basin on south side of 211th often covered by leaves and sediment;

Proposed Project:
 Geotech investigation. Vactor/jet 3 catch basins and pipes. Replace Type 1 catch basin with Type 2 (S side of 211th Pl., west of intersection). Extend and stabilize outfall pipe on N side of 211th Pl. Mark outfall.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Vactor	0.25	HR	\$165	\$41
2	Remove Catch Basin	1	EA	\$300	\$300
3	Remove Drainage Pipe	30	LF	\$12	\$374
4	Saw cut Existing Pavement (RSM)	24	LF	\$2	\$60
5	Remove & Dispose of AC Paving*	10	SY	\$4	\$44
6	Roadway Excavation, w/ Haul*	30	CY	\$11	\$318
7	Temporary Patch	10	Ton	\$56	\$562
8	AC Paving Class A*	10	Ton	\$47	\$474
9	Controlled Density Fill*	0	CY	\$81	\$0
10	Storm Sewer Pipe (12-inch)*	30	LF	\$20	\$600
11	Storm Sewer Pipe (24-inch)*	0	LF	\$50	\$0
12	Storm Sewer Pipe (27-inch)	0	LF	\$60	\$0
13	Storm Sewer Pipe (30-inch)*	0	LF	\$65	\$0
14	Storm Sewer Pipe (36-inch)*	0	LF	\$62	\$0
15	GeoTech Investigation	1	LS	\$15,000	\$15,000
16	Reconnect Existing Catch Basins	1	EA	\$624	\$624
17	Type 2 - 48" Catch Basins*	1	EA	\$3,120	\$3,120
18	Type 2 - 60" Catch Basins*	0	EA	\$3,993	\$0
19	Type 2 - 72" Catch Basins*	0	EA	\$4,742	\$0
20	Type 2 - 96" Catch Basins	0	EA	\$9,359	\$0
21	Relocate Existing Utilities	0	LS	\$12,479	\$0
22	Trench Safety	0	LF	\$2	\$0
23	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
24	Traffic Control Labor	0	Hours	\$44	\$0
	Subtotal				\$21,517
25	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$2,152
26	Contingency	1	LS	30%	\$7,101
27	Sales Tax	1	LS	8.5%	\$2,615
	Estimated Construction Cost				\$33,384
28	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$5,008
29	Surveying (Property, Design & Const.)	1	LS	4%	\$1,335
30	Construction Management (4%)	1	LS	4%	\$1,335
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$41,063
ROUNDED					\$42,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: 67th Ave Bulkhead Infiltration

12
M-211RH-1

Type: CIP
Cost: \$150,000
Rank: 32, M

Problem Identified:

(Former Number: NA [11])

Despite the generally well drained soils, the infiltration system under 67th Avenue south of 211th Place (along the bulkhead by the railroad tracks) cannot accommodate larger storm events; water backs up and floods street across from the gas station and storage units.

Proposed Project:

Replace ~450 linear feet of infiltration trench, pipe, and 5 catch basins. Coordinate with proposed 67th Avenue Phase III reconstruction.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Traffic Safety Control Devices	0	LS	\$24,957	\$0
2	Remove catch basins	5	EA	\$200	\$1,000
3	Remove Drainage Pipe	450	LF	\$12	\$5,615
4	Saw cut Existing Pavement (RSM)	450	LF	\$2	\$1,123
5	Remove & Dispose of AC Paving*	225	SY	\$4	\$983
6	Roadway Excavation, w/ Haul*	675	CY	\$11	\$7,160
7	Temporary Patch	45	Ton	\$56	\$2,527
8	AC Paving Class A*	45	Ton	\$47	\$2,134
9	Infiltration gravel	266	CY	\$81	\$21,576
10	Storm Sewer Perforated HDPE Pipe (12-inch)*	450	LF	\$37	\$16,846
11	Storm Sewer Pipe (24-inch)*	0	LF	\$50	\$0
12	Storm Sewer Pipe (27-inch)	0	LF	\$60	\$0
13	Storm Sewer Pipe (30-inch)*	0	LF	\$65	\$0
14	Storm Sewer Pipe (36-inch)*	0	LF	\$62	\$0
15	Storm Sewer Pipe (48-inch)	0	LF	\$106	\$0
16	Reconnect Existing Catch Basins	0	EA	\$624	\$0
17	Type 1 Catch Basins	3	EA	\$3,120	\$9,359
18	Type 1L Catch Basins	2	EA	\$3,993	\$7,986
19	Type 2 - 72" Catch Basins*	0	EA	\$4,742	\$0
20	Type 2 - 96" Catch Basins	0	EA	\$9,359	\$0
21	Relocate Existing Utilities	0	LS	\$12,479	\$0
22	Trench Safety	0	LF	\$2	\$0
23	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
24	Traffic Control Labor	0	Hours	\$44	\$0
Subtotal					\$76,309
25	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$7,631
26	Contingency	1	LS	30%	\$25,182
27	Sales Tax	1	LS	8.5%	\$9,275
Estimated Construction Cost					\$118,397
28	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$17,760
29	Surveying (Property, Design & Const.)	1	LS	4%	\$4,736
30	Construction Management (4%)	1	LS	4%	\$4,736
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$145,629
ROUNDED					\$150,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.: 13
4th Tier Basin ID: M-S-1
Name: Stuller Outfall Water Quality Improvement

Type: CIP
Cost: \$270,000
Rank: 32, M

Problem Identified:

(Former Number: 119 [12])

Apart from basic oil-water separation, runoff in the Stuller 5th tier basin discharges untreated to March Creek (identified as impaired for fecal coliform and dissolved oxygen in the Stillaguamish TMDL) SW of Twin City Foods. From pipe outlet, stormwater flows through ~300 ft poorly defined ditch with coarse debris, sediment, and vegetation. Stormwater easement in place. 67th Ave location is constrained by the steep and unstable slope in which the outfall pipe is located.

Proposed Project:

Option to utilize a private access easement behind martial arts school in order to maintain outfall ditch to March Creek. Dredge ditch. Create sedimentation pond with log weir outlet for regular cleaning. Seed ditch with grasses for additional water quality treatment. HPA permit and coordination with WDFW likely required. Coordinate with proposed 67th Avenue Phase III reconstruction.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Brush removal	1	AC	\$400	\$400
2	Dredging excavation and haul	67	CY	\$624	\$41,804
3	Spoil disposal	67	CY	\$12	\$836
4	Wood (log) structure, notched, delivered	2	EA	\$150	\$300
5	SPCC Plan, Silt Fence, & TESC Measures	125	SY	\$4	\$546
6	Improve access road (ramp)	100	LF	\$11	\$1,061
7	Land easement	10	YR	\$12,362	\$123,620
8	AC Paving Class A*	0	Ton	\$47	\$0
9	Controlled Density Fill*	0	CY	\$81	\$0
10	Storm Sewer Pipe (21-inch)*	0	LF	\$37	\$0
11	Storm Sewer Pipe (24-inch)*	0	LF	\$50	\$0
12	Storm Sewer Pipe (27-inch)	0	LF	\$60	\$0
13	Storm Sewer Pipe (30-inch)*	0	LF	\$65	\$0
14	Storm Sewer Pipe (36-inch)*	0	LF	\$62	\$0
15	Storm Sewer Pipe (48-inch)	0	LF	\$106	\$0
16	Reconnect Existing Catch Basins	0	EA	\$624	\$0
17	Type 2 - 54" Catch Basins*	0	EA	\$3,120	\$0
18	Type 2 - 60" Catch Basins*	0	EA	\$3,993	\$0
19	Type 2 - 72" Catch Basins*	0	EA	\$4,742	\$0
20	Type 2 - 96" Catch Basins	0	EA	\$9,359	\$0
21	Relocate Existing Utilities	0	LS	\$12,479	\$0
22	Trench Safety	0	LF	\$2	\$0
23	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
24	Traffic Control Labor	0	Hours	\$44	\$0
Subtotal					\$168,566
25	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$16,857
26	Contingency	1	LS	10%	\$18,542
27	Sales Tax	1	LS	8.5%	\$17,337
Estimated Construction Cost					\$221,302
28	Eng'r, Permitting, Legal, Admin (15%)	1	LS	10%	\$22,130
29	Surveying (Property, Design & Const.)	1	LS	4%	\$8,852
30	Construction Management (4%)	1	LS	4%	\$8,852
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$261,137
ROUNDED					\$270,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.: 15 **Type:** CIP
4th Tier Basin ID: M-S-3 **Cost:** \$510,000
Name: Wetland #0961 Valley Gem - 96 Acres **Rank:** 15, L

Problem Identified: (Former Number: 119 [12a])
 Natural springs discharge from the recessional geology that Arlington is built upon and supply this wetland located in the floodplain on Young alluvial geology. The groundwater is close to the surface in the lower areas. This area receives untreated stormwater discharge via the Stuller and West outfalls.

Proposed Project:
 The purchase (from private owner) and restoration of this naturally occurring wetland immediately west of old town would provide an opportunity to mitigate the effects from stormwater by enhancing the wetland ability to treat and store storm flows. Restoration could benefit the entire March creek system, including provision of excellent rearing habitat for salmonids.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Easement	10.00	Year	\$12,362	\$123,622
2	Site Characterization	1.00	EA	\$12,484	\$12,484
3	Wetland Grading	32.00	Acre	\$1,248	\$39,949
4	Wetland Landscaping	32.00	Acre	\$1,248	\$39,949
5	Steam Reconstruction	1000.00	Feet	\$126	\$126,137
Subtotal					\$342,142
6	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$0
7	Contingency	1	LS	30%	\$102,642
8	Sales Tax	1	LS	8.5%	\$37,807
Estimated Construction Cost					\$482,591
9	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$0
10	Surveying (Property, Design & Const.)	1	LS	4%	\$19,304
11	Construction Management (4%)	1	LS	4%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$501,894
ROUNDED					\$510,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 16 **Type:** CIP
4th Tier Basin ID: M-W-1 **Cost:** \$25,000
Name: Stormwater Easement Database Research **Rank:** 22, L

Problem Identified: (Former Number: NA [14])
 No current inventory of easements and maintenance responsibilities where the city's stormwater infrastructure crosses private property and state rights-of-way

Proposed Project:
 Develop easement database within Cartegraph asset management system. Assume 6 easements needing research (applies city-wide, not just March Creek). Efforts include title searches, interviews with property owners, lawyers' time and fees for legal review, and some survey work.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Title searches	6	LS	\$500	\$3,000
2	Interviews	24	Hours	\$20	\$480
3	Legal review	24	Hours	\$250	\$6,000
4	Land survey	6	LS	\$1,500	\$9,000
5		0	Hours	\$44	\$0
Subtotal					\$18,480
6	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$1,848
7	Contingency	1	LS	10%	\$2,033
8	Sales Tax	1	LS	8.5%	\$1,901
Estimated Construction Cost					\$24,261
9	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
10	Surveying (Property, Design & Const.)	1	LS	0%	\$0
11	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$24,261
ROUNDED					\$25,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 17
4th Tier Basin ID: P-LP-1
Name: 188th Street Infiltration Replacement

Type: CIP
Cost: \$130,000
Rank: 41, H

Problem Identified:

(Former Number: 215 [16])

At the Contech (formerly Washington Culvert) site on 188th Street near 66th Avenue, an infiltration system previously installed on private property to accept both street and parking lot run-off has failed; all runoff drains to the road and is damaging the street (located near the divide with the Middle Fork Quilceda 4th tier basin and included in Lower Portage because of groundwater flow direction)

Proposed Project:

The project includes removing and replacing 27-inch diameter infiltration drain. A new 36-inch culvert will be installed. Alternative is to utilize rain gardens in conjunction with 188th St trail project. Coordinate with 188th Street repaving and trail project. Contech is on Airport property, but adjacent lot may have a separate infiltration agreement with City.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Traffic Safety Control Devices	0	LS	\$24,957	\$0
2	Remove catch basins	5	EA	\$200	\$1,000
3	Remove Drainage Pipe	150	LF	\$12	\$1,872
4	Saw cut Existing Pavement (RSM)	300	LF	\$2	\$749
5	Remove & Dispose of AC Paving*	150	SY	\$4	\$655
6	Roadway Excavation, w/ Haul*	450	CY	\$11	\$4,773
7	Temporary Patch	30	Ton	\$56	\$1,685
8	AC Paving Class A*	30	Ton	\$47	\$1,423
9	Infiltration gravel	175	CY	\$81	\$14,195
10	Storm Sewer Perforated HDPE Pipe (12-inch)*		LF	\$37	\$0
11	Storm Sewer Pipe (24-inch)*	0	LF	\$50	\$0
12	Storm Sewer Pipe (27-inch)	0	LF	\$60	\$0
13	Storm Sewer Pipe (30-inch)*	0	LF	\$65	\$0
14	Storm Sewer Pipe (36-inch)*	300	LF	\$62	\$18,718
15	Storm Sewer Pipe (48-inch)	0	LF	\$106	\$0
16	Reconnect Existing Catch Basins	0	EA	\$624	\$0
17	Type 1 Catch Basins	3	EA	\$3,120	\$9,359
18	Type 1L Catch Basins	2	EA	\$3,993	\$7,986
19	Type 2 - 72" Catch Basins*	0	EA	\$4,742	\$0
20	Type 2 - 96" Catch Basins	0	EA	\$9,359	\$0
21	Relocate Existing Utilities	0	LS	\$12,479	\$0
22	Trench Safety	0	LF	\$2	\$0
23	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
24	Traffic Control Labor	50	Hours	\$44	\$2,184
	Subtotal				\$64,598
25	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$6,460
26	Contingency	1	LS	30%	\$21,317
27	Sales Tax	1	LS	8.5%	\$7,852
	Estimated Construction Cost				\$100,227
28	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$15,034
29	Surveying (Property, Design & Const.)	1	LS	4%	\$4,009
30	Construction Management (4%)	1	LS	4%	\$4,009
	CITY'S ESTIMATE				
	TOTAL 2009 DOLLARS				\$123,279
	ROUNDED				\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: 59th Ave Infiltration

18
P-LP-2

Type: CIP
Cost: \$200,000
Rank: 32, M

Problem Identified:

(Former Number: NA [15])

Flooding occurs on an annual basis on 59th Avenue near 192nd Street as a result of poor infiltration in an area with a primarily surface stormwater network (ditches and culverts)

Proposed Project:

Soils are conducive to an infiltration system near north end of Airport (north of 188th St). Install infiltration system. An activity proposed south of 188th would need to be incorporated into the Airport's site plan.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Traffic Safety Control Devices	0	LS	\$24,957	\$0
2	Remove catch basins	0	EA	\$200	\$0
3	Remove Drainage Pipe	0	LF	\$12	\$0
4	Saw cut Existing Pavement (RSM)	1000	LF	\$2	\$2,496
5	Remove & Dispose of AC Paving*	250	SY	\$4	\$1,092
6	Roadway Excavation, w/ Haul*	750	CY	\$11	\$7,955
7	Temporary Patch	50	Ton	\$56	\$2,808
8	AC Paving Class A*	50	Ton	\$47	\$2,371
9	Infiltration gravel	175	CY	\$81	\$14,195
10	Storm Sewer Perforated HDPE Pipe (12-inch)*		LF	\$37	\$0
11	Storm Sewer Pipe (24-inch)*	1000	LF	\$50	\$49,915
12	Storm Sewer Pipe (27-inch)	0	LF	\$60	\$0
13	Storm Sewer Pipe (30-inch)*	0	LF	\$65	\$0
14	Storm Sewer Pipe (36-inch)*	0	LF	\$62	\$0
15	Storm Sewer Pipe (48-inch)	0	LF	\$106	\$0
16	Reconnect Existing Catch Basins	0	EA	\$624	\$0
17	Type 1 Catch Basins	3	EA	\$3,120	\$9,359
18	Type 1L Catch Basins	2	EA	\$3,993	\$7,986
19	Type 2 - 72" Catch Basins*	0	EA	\$4,742	\$0
20	Type 2 - 96" Catch Basins	0	EA	\$9,359	\$0
21	Relocate Existing Utilities	0	LS	\$12,479	\$0
22	Trench Safety	0	LF	\$2	\$0
23	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
24	Traffic Control Labor	50	Hours	\$44	\$2,184
	Subtotal				\$100,360
25	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$10,036
26	Contingency	1	LS	30%	\$33,119
27	Sales Tax	1	LS	8.5%	\$12,199
	Estimated Construction Cost				\$155,714
28	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$23,357
29	Surveying (Property, Design & Const.)	1	LS	4%	\$6,229
30	Construction Management (4%)	1	LS	4%	\$6,229
	CITY'S ESTIMATE				
	TOTAL 2009 DOLLARS				\$191,528
	ROUNDED				\$200,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: Cemetery Road Infiltration

19
P-LP-3

Type: CIP
Cost: \$270,000
Rank: 32, M

Problem Identified: (Former Number: 220? [58])
 Water ponds on Cemetery Road during storm events in an area from 51st to 67th Avenues where there is no storm drain system.

Proposed Project:
 Soils are conducive to an infiltration system in Cemetery Road between 51st and 57th Aves.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Excavate Trench & Install Infiltration Drain	2,000	LF	\$31	\$62,394
2	Type 2 - 54" Catch Basins	6	EA	\$3,120	\$18,718
3	Storm Sewer Pipe (27-inch)	500	LF	\$60	\$29,949
4	Roadway Restoration	95	CY	\$55	\$5,266
5	Storm Sewer Culvert (36-inch)	1	EA	\$100	\$100
6	Culvert End Sections (36-inch) RSM	1	EA	\$624	\$624
7	Culvert Backfill & Compaction	10	CY	\$25	\$250
8	Hydroseeding Native Seed	1	Acre	\$1,497	\$1,497
9	Riparian Planting	1	Acre	\$1,497	\$1,497
10	Trench Safety	2,500	LF	\$2	\$6,239
11	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
12	SPCC Plan, Silt Fence, & TESC Measures	1,000	LF	\$6	\$6,239
13	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$138,077
14	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$13,808
15	Contingency	1	LS	30%	\$45,566
16	Sales Tax	1	LS	8.5%	\$16,783
Estimated Construction Cost					\$214,234
17	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$32,135
18	Geotech Borings & Soil Tests	1	LS		
19	Surveying (Property, Design & Const.)	1	LS	4%	\$8,569
20	Construction Management (4%)	1	LS	4%	\$8,569
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$263,508
ROUNDED					\$270,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 20
4th Tier Basin ID: P-LP-4
Name: Portage Creek Water Quality Investigation

Type: CIP
Cost: \$13,000
Rank: 31, M

Problem Identified: (Former Number: NA [57])
 Current and future fecal coliform and BOD5 loading by the City to Portage Creek exceeds the City's WLAs determined by Ecology in the Stillaguamish TMDL. Sources need to be identified so appropriate solutions may be developed.

Proposed Project:
 Develop and implement a source tracking monitoring plan that may include Microbial Source Tracking component. The water quality study should have a bacterial and DO focus, with source characterization along the channel profile, including septic and land use evaluation of properties in both the City and County. Solutions not included in project estimate--assume outreach and education assistance to land owners in City.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Field Reconnaissance, sample collection	1	LS	\$5,000	\$5,000
2	Laboratory analyses	1	LS	\$5,000	\$5,000
3	Mapping	1	LS	\$500	\$500
4	Other	0	LS		\$0
Subtotal					\$10,500
5	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
6	Contingency	1	LS	10%	\$1,050
7	Sales Tax	1	LS	8.5%	\$982
Estimated Construction Cost					\$12,532
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
9	Surveying (Property, Design & Const.)	1	LS	0%	\$0
10	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE TOTAL 2009 DOLLARS ROUNDED					\$12,532 \$13,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 21
4th Tier Basin ID: P-LP-5
Name: Lower Portage Flood Mitigation

Type: CIP
Cost: \$15,000
Rank: 24, L

Problem Identified:

(Former Number: 106 [17])

Flooding of agricultural lands near 43rd Avenue; landowner reports flooding of farm crossings that were well above flood levels in the 1950s; implicates City of Arlington

Proposed Project:

Conduct hydraulic study to model effects of these areas relative to the site: development and land use upstream of the site; agricultural maintenance and land use at the site; land use and channel maintenance downstream of the site. This is first step to identifying causes/effects and develop alternatives to flow control retrofits (e.g., storage and/or inchannel conveyance improvements) and other hydraulic improvements at crossings.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Study	1	LS	\$7,500	\$7,500
2	Remove stick from manhole	0	EA	\$624	\$0
3	Remove Drainage Pipe	0	LF	\$12	\$0
4	Traffic Control Labor	0	Hours	\$44	\$0
Subtotal					\$7,500
5	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$750
6	Contingency	1	LS	30%	\$2,475
7	Sales Tax	1	LS	8.5%	\$912
Estimated Construction Cost					\$11,637
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$1,745
9	Surveying (Property, Design & Const.)	1	LS	10%	\$1,164
10	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE TOTAL 2009 DOLLARS ROUNDED					\$14,546 \$15,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 22 **Type:** CIP
4th Tier Basin ID: P-LP-6 **Cost:** \$1,960,000
Name: Lower Portage Wetland Restoration **Rank:** 17, L

Problem Identified: (Former Number: 106 [17a])
 This naturally occurring peat bog wetland system occurs in the 100-year Stillaguamish river floodplain just upstream of the freeway. This large wetland has unsuccessfully been ditched, tiled and drained over the past century. The combination of peat soils and continuing high water levels have resulted in the majority of this land sitting fallow. The majority of the site is dominated by reed canary grass. There is great potential to restore this to historic wetland conditions that will solve hydrograph, water quality and habitat problems in the Portage Creek and potentially the main river system. The site may be instrumental in the development of the City's plans for the Island Crossing area. The geology is Young Alluvial which allows infiltration of stormwater.

Proposed Project:
 The project site is a candidate for purchase and inclusion in a mitigation bank. The project will need site characterization and riparian plantings to restore buffer functions to protect wetland and wildlife from adjacent activity. Wetland landscaping and stream reconstruction will be needed. Possible benefit to Projects P-LP-4 and P-LP-5. Need to explore possible partnership with WSDOT.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Acquisition	1	LS	\$886,974	\$886,974
2	Site Characterization, 275 ac	1	LS	\$10,000	\$10,000
3	Riparian Planting, 75 ac	1	LS	\$10,000	\$10,000
4	Wetland Landscaping, 75 ac	1	LS	\$10,000	\$10,000
5	Stream Reconstruction, 5,000 lf	1	LS	\$75,000	\$75,000
6	SPCC Plan, Silt Fence, & TESC Measures	5000	LF	\$6	\$31,197
Subtotal					\$1,023,171
7	Mobilization/Demob/Overhead & Profit	1	LS	2%	\$20,463
8	Contingency	1	LS	30%	\$313,090
9	Sales Tax	1	LS	8.5%	\$115,322
Estimated Construction Cost					\$1,472,046
10	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$368,012
11	Surveying (Property, Design & Const.)	1	LS	4%	\$58,882
12	Construction Management (4%)	1	LS	4%	\$58,882
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$1,957,822
ROUNDED					\$1,960,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 23
4th Tier Basin ID: P-LP-7
Name: Island Crossing Stormwater Plan

Type: CIP
Cost: \$370,000
Rank: 17, L

Problem Identified:
 Need a plan

(Former Number: NA)

Proposed Project:
 Site characterization for stormwater planning

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Develop a plan	1	LS	\$200,000	\$200,000
2	Other	0	LS	\$10,000	\$0
3	Other	0	LS	\$10,000	\$0
4	Other	0	LS	\$10,000	\$0
5	Other	0	LS	\$75,000	\$0
6	Other	0	LF	\$6	\$0
Subtotal					\$200,000
7	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
8	Contingency	1	LS	30%	\$60,000
9	Sales Tax	1	LS	8.5%	\$22,100
Estimated Construction Cost					\$282,100
10	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$70,525
11	Surveying (Property, Design & Const.)	1	LS	4%	\$11,284
12	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$363,909
ROUNDED					\$370,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 24 **Type:** CIP
4th Tier Basin ID: P-UP-1 **Cost:** \$16,000
Name: Portage Creek Gaging & Monitoring **Rank:** 20, L

Problem Identified: (Former Number: NA [22])
 Gaging station including structures, electronic equipment, telemetry, etc is in place but has not been maintained and is in need of refurbishing; located at Pioneer Hall.

Proposed Project:
 Evaluate conditions at site. Hire consultant to update monitoring equipment and telemetry, and install software and database for real-time data access and storage. Install camera for video access via City web site.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Evaluation	10	HR	\$25	\$250
2	Monitoring equipment upgrades	1	LS	\$5,000	\$5,000
3	Installation	8	HR	\$25	\$200
4	Training	8	HR	\$25	\$200
5	Video purchase and installation	1	LS	\$2,500	\$2,500
6	Other	1	LS	\$0	\$0
Subtotal					\$8,150
7	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$815
8	Contingency	1	LS	30%	\$2,690
9	Sales Tax	1	LS	8.5%	\$991
Estimated Construction Cost					\$12,645
10	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$3,161
11	Geotech Borings & Soil Tests	1	LS	\$0	\$0
12	Surveying (Property, Design & Const.)	1	LS	0%	\$0
13	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$15,806
ROUNDED					\$16,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 25 **Type:** CIP
4th Tier Basin ID: P-UP-2 **Cost:** \$190,000
Name: Portage Creek Crossing, 69th Ave NE & BNSF RR **Rank:** 29, M

Problem Identified: (Former Number: 4 [18])
 Culverts upstream of the industrial area east of 67th Ave--one under a 15 ft gravel road and another under the BNSF railroad--are undersized and/or prevent fish passage.

Proposed Project:
 Two culvert replacements. Cost estimate is based on designing and installing a total of 60 feet of culvert per fish passage guidelines. Opportunity to include in 67th Ave Phase III project if Centennial Trail location is close to these crossings.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert, 96" (Quantity = 2, 60 LF each)	120	LF	\$443	\$53,218
3	Headwall / wing wall	4	EA	\$2,496	\$9,983
4	Culvert Backfill and Compaction*	30	CY	\$81	\$2,433
5	Aggregate Base & Surfacing Course	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Paving Restoration	1,440	SF	\$0	\$0
11	Traffic Safety Control Devices	1	LS	\$3,120	\$3,120
12	Traffic Control Labor	0	HR	\$44	\$0
Subtotal					\$82,837
13	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$8,284
14	Contingency	1	LS	30%	\$27,336
15	Sales Tax	1	LS	8.5%	\$10,069
Estimated Construction Cost					\$128,525
16	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$32,131
17	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
18	Surveying (Property, Design & Const.)	1	LS	4%	\$5,141
19	Construction Management (4%)	1	LS	4%	\$5,141
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$182,025
ROUNDED					\$190,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 26 **Type:** CIP
4th Tier Basin ID: P-UP-3 **Cost:** \$210,000
Name: Portage Creek S. Village Apts Flood Storage **Rank:** 25, M

Problem Identified: (Former Number: NA)
 Limited flood storage within levees along Portage and Kruger Creeks north of Safeway near S. Village Apts resulting from fill above design elevations.

Proposed Project:
 Dredge to construct wetland for off-channel flood storage and refuge habitat in the "triangle" near apartments.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Wetland Creation	1	LS	\$100,000	\$100,000
2	Other	0	CY	\$17	\$0
3	Other	0	LF	\$23	\$0
4	Other	0	Acre	\$1,497	\$0
5	Other	0	Acre	\$5,615	\$0
6	Other	0	EA	\$7,487	\$0
7	Other	0	LF	\$6	\$0
Subtotal					\$100,000
8	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$10,000
9	Contingency	1	LS	30%	\$33,000
10	Sales Tax	1	LS	8.5%	\$12,155
Estimated Construction Cost					\$155,155
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$38,789
12	Surveying (Property, Design & Const.)	1	LS	4%	\$6,206
13	Construction Management (4%)	1	LS	4%	\$6,206
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$206,356
ROUNDED					\$210,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 27 **Type:** CIP
4th Tier Basin ID: P-UP-4 **Cost:** \$130,000
Name: Portage Creek Crossing, 186th St NE **Rank:** 35, H

Problem Identified: (Former Number: 6 [19])
 Four undersized and failing culverts at 186th Street NE result in street flooding and restrict fish passage. Location is outside City limits, and street is a one lane, unimproved gravel road which is not maintained by the County (per the sign at 91st Avenue NE). 186th Street is included in the City's long range transportation plan as a three lane arterial.

Proposed Project:
 This project consists of removing four existing culverts, and assumed replacement with one 60-ft long 8-ft wide culvert. The culvert would be designed to allow fish passage and to convey the appropriate design flows.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 28a
4th Tier Basin ID: P-UP-5a
Name: Portage Mill Reach - SR9 to 67th

Type: CIP
Cost: \$260,000
Rank: 27, M

Problem Identified:

(Former Number: 104 [21c])

This reach of Portage Creek from SR9 to 67th is zoned industrial and has had long term industrial use, including current ownership by Oso Lumber and cabinet shops. Other areas are in an inactive or abandoned state. This site did have in-stream and riparian restoration activity around 1990. The High School Natural Resources program has visited the site occasionally in the recent past and sees opportunity for further restoration activity. Opportunities to mitigate impacts of runoff associated with future development through wetland acquisition and restoration. The geology of this parcel is a combination of Vashon Recessional and Recessional Marine. These geological formations provide good aquifer functions and allow for infiltration of treated stormwater.

Proposed Project:

Establish a site wide plan for restoration and buffer establishment. Once buffer widths are established and restored the longer term protection of the natural area would be established. The project will need to provide riparian plantings to restore buffer functions to protect wetlands and wildlife from adjacent activity. Land acquisition could be required. --CONSIDER ECONOMIC DEVELOPMENT OPPTS.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Dedication	1	LS	\$11,087	\$11,087
2	Site Characterization	1	LS	\$10,000	\$10,000
3	Riparian Planting	1	LS	\$10,000	\$10,000
4	Landscaping within Channel Area	1,000	LF	\$120	\$120,000
Subtotal					\$151,087
5	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
6	Contingency	1	LS	30%	\$45,326
7	Sales Tax	1	LS	8.5%	\$16,695
Estimated Construction Cost					\$213,108
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$31,966
9	Surveying (Property, Design & Const.)	1	LS	4%	\$8,524
10	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$253,599
ROUNDED					\$260,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.: 28b **Type:** CIP
4th Tier Basin ID: P-UP-5b **Cost:** \$450,000
Name: Portage Hecla Wetland - 204th to round barn **Rank:** 25, M

Problem Identified: (Former Number: 103 [21b])
 The Hecla wetland (204th to round barn) is also critical in the natural function of Portage Creek and the ability to equilibrate the change in gradient from a steep ravine to the flat areas of Jensen's Farm. The stream needs a storage area for the sediments that naturally deposit at changes in-stream slope. There are also currently fish passage limitations in this wetland. Opportunities to mitigate impacts of runoff associated with future development through wetland acquisition and restoration. The geology is Vashon Advance which allows infiltration when the wetland floods and recharges groundwater at the perimeter. The high groundwater table combined with this geology may sustain baseflows in the stream flow during summer periods.

Proposed Project:
 Previous landowner dedicated this wetland to the City and School district. Opportunity for this wetland riparian area being restored and used as an environmental learning area. The main foot path from the New High School to McDonalds is located on this piece of property and provides an excellent opportunity for education and outreach. The project will also need to provide riparian plantings to restore buffer functions to protect wetland and wildlife from adjacent activity.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Acquisition	1	LS	\$221,744	\$221,744
2	Riparian Planting (1,900 LF)	1	LS	\$10,000	\$10,000
3	Landscaping within Channel Area	1	LS	\$10,000	\$10,000
	Subtotal				\$241,744
4	Mobilization/Demob/Overhead & Profit	1	LS	5%	\$12,087
5	Contingency	1	LS	30%	\$76,149
6	Sales Tax	1	LS	8.5%	\$28,048
	Estimated Construction Cost				\$358,028
7	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$53,704
8	Surveying (Property, Design & Const.)	1	LS	4%	\$14,321
9	Construction Management (4%)	1	LS	4%	\$14,321
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$440,375
ROUNDED					\$450,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: Portage Wetland #1561 - 56 Acres

28c
P-UP-5c

Type: CIP
Cost: \$450,000
Rank: 25, M

Problem Identified:

(Former Number: 102 [21a])

Wetland #1561 is immediately south of the New High School Site. This wetland is located on Glacial Till geology which provides little to no infiltration capability. Therefore the protection of this wetland is a priority for the management of surface waters in the upper Portage Creek watershed. Opportunities to mitigate impacts of runoff associated with future development through wetland acquisition and restoration. The wetland stores water during storm events and continues releasing water throughout the summer helping to maintain base flow levels. This wetland is outside of the City limits , but in the urban growth boundaries. It has a significant impact in providing necessary function to sustain ESA listed species.

Proposed Project:

The project site is a candidate for purchase and inclusion in a mitigation bank. The project would assure that adequate buffers are established either thru NGPA, easements or purchase. The project may provide some riparian plantings to restore buffer functions to protect wetland and wildlife from adjacent activity.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Acquisition	1	LS	\$221,744	\$221,744
2	Riparian Planting (1,900 LF)	1	LS	\$10,000	\$10,000
3	Landscaping within Channel Area	1	LS	\$10,000	\$10,000
Subtotal					\$241,744
4	Mobilization/Demob/Overhead & Profit	1	LS	5%	\$12,087
5	Contingency	1	LS	30%	\$76,149
6	Sales Tax	1	LS	8.5%	\$28,048
Estimated Construction Cost					\$358,028
7	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$53,704
8	Surveying (Property, Design & Const.)	1	LS	4%	\$14,321
9	Construction Management (4%)	1	LS	4%	\$14,321
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$440,375
ROUNDED					\$450,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 28d **Type:** CIP
4th Tier Basin ID: P-UP-5d **Cost:** \$450,000
Name: Portage Wetland #1247 - 18.9 Acres **Rank:** 25, M

Problem Identified: (Former Number: 101 [21])
 Opportunities to mitigate impacts of runoff associated with future development through acquisition and restoration of Wetland #1247. This is the uppermost headwater wetland that helps to maintain historical stream flow levels. The wetland stores water during storm events and continues releasing water throughout the summer helping to maintain base flow levels. This wetland is outside of the City limits and urban growth boundaries but has a significant impact in providing necessary function to sustain ESA listed species.

Proposed Project:
 The project site is a candidate for purchase and inclusion in a mitigation bank. The project would assure that adequate buffers are established either thru NGPA, easements or purchase. The project may also provide some riparian plantings to restore buffer functions to protect wetland and wildlife from adjacent activity.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Acquisition	1	LS	\$221,744	\$221,744
2	Riparian Planting (1,900 LF)	1	LS	\$10,000	\$10,000
3	Landscaping within Channel Area	1	LS	\$10,000	\$10,000
Subtotal					\$241,744
4	Mobilization/Demob/Overhead & Profit	1	LS	5%	\$12,087
5	Contingency	1	LS	30%	\$76,149
6	Sales Tax	1	LS	8.5%	\$28,048
Estimated Construction Cost					\$358,028
7	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$53,704
8	Surveying (Property, Design & Const.)	1	LS	4%	\$14,321
9	Construction Management (4%)	1	LS	4%	\$14,321
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$440,375
ROUNDED					\$450,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 29 **Type:** CIP
4th Tier Basin ID: P-Pr-1 **Cost:** \$130,000
Name: Prairie Creek 67th Ave Culvert Replacement **Rank:** 46, VH/Reg

Problem Identified: (Former Number: 211 [24])
 Undersized culvert under 67th Avenue backwaters flow, causing local flooding

Proposed Project:

This project consists of removing and replacing an existing culvert, assume replace with 60-ft long 8-ft wide culvert. Incorporate into 67th Ave Phase III project.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 30 **Type:** CIP
4th Tier Basin ID: P-Pr-2 **Cost:** \$220,000
Name: Prairie Creek BNSF RR/69th Culvert Replacement **Rank:** 33, M

Problem Identified: (Former Number: 213 [25])
 Undersized culverts under BNSF railroad and 69th Ave reduce conveyance and contributes to flooding in Jensen Business Park

Proposed Project:
 This project consists of removing and replacing two existing culverts. Assume replace with two 60-ft long 8-ft wide culverts. Opportunity to include in 67th Ave Phase III project if Centennial Trail location is close to these crossings.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	170	LF	\$443	\$75,393
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	0	Hours	\$44	\$0
Subtotal					\$100,812
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$10,081
13	Contingency	1	LS	30%	\$33,268
14	Sales Tax	1	LS	8.5%	\$12,254
Estimated Construction Cost					\$156,414
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$39,104
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$6,257
18	Construction Management (4%)	1	LS	4%	\$6,257
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$219,118
ROUNDED					\$220,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 31
4th Tier Basin ID: P-Pr-3
Name: Prairie Creek 204th St Culvert Replacement

Type: CIP
Cost: \$150,000
Rank: 40, H

Problem Identified: (Former Number: 212? [26])
 Under-capacity culvert under 204th Street; recently(?) repaired, but another utility intersecting the culvert requires the culvert to be under-sized, thus creating a bottleneck in the streamcourse

Proposed Project:
 This project consists of removing and replacing an existing culvert, assume replace with 60-ft long 8-ft wide culvert.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	50%	\$31,018
14	Sales Tax	1	LS	8.5%	\$7,909
Estimated Construction Cost					\$100,962
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$25,241
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$4,038
18	Construction Management (4%)	1	LS	4%	\$4,038
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$145,367
ROUNDED					\$150,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 32
4th Tier Basin ID: P-Pr-4
Name: Prairie Creek Gaging & Monitoring

Type: CIP
Cost: \$16,000
Rank: 20, L

Problem Identified: (Former Number: NA [30])
 Gaging station including structures, electronic equipment, telemetry, etc is in place but has not been maintained and is in need of refurbishing; located near Newell Manufacturing upstream of 204th Street

Proposed Project:
 Evaluate conditions at site. Hire consultant to update monitoring equipment and telemetry, and install software and database for real-time data access and storage. Install camera for video access via City web site.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Evaluation	10	HR	\$25	\$250
2	Monitoring equipment upgrades	1	LS	\$5,000	\$5,000
3	Installation	8	HR	\$25	\$200
4	Training	8	HR	\$25	\$200
5	Video purchase and installation	1	LS	\$2,500	\$2,500
6	Other	1	LS	\$0	\$0
Subtotal					\$8,150
7	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$815
8	Contingency	1	LS	30%	\$2,690
9	Sales Tax	1	LS	8.5%	\$991
Estimated Construction Cost					\$12,645
10	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$3,161
11	Geotech Borings & Soil Tests	1	LS	\$0	\$0
12	Surveying (Property, Design & Const.)	1	LS	0%	\$0
13	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$15,806
ROUNDED					\$16,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 33
4th Tier Basin ID: P-Pr-5
Name: Prairie Creek 71st Ave Culvert Replacement

Type: CIP
Cost: \$130,000
Rank: 40, H

Problem Identified: (Former Number: 210 [28])
 Sidewalk is collapsing at 71st Avenue (a private road); culvert is undersized; also influenced by channel aggradation (see Problem 27); fish passage is constrained by culvert at road crossing

Proposed Project:
 This project consists of removing and replacing an existing culvert, assume replace with 60-ft long 8-ft wide culvert.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 34 **Type:** CIP
4th Tier Basin ID: P-Pr-6 **Cost:** \$110,000
Name: Prairie Creek Jensen Business Park Improvements **Rank:** 36, H

Problem Identified: (Former Number: 2, 8 [27])
 Jensen's Business Park reach from 74th Avenue (behind Haggen's) downstream to 204th (by Newell's) is very aggraded due to deposition of large upstream sediment source (left (west) bank failure caused by constraining stream on east bank with SR 9); deposition may be up to 4 feet thick; disturbed channel also subject to dense growth of invasive vegetation (reed canary grass, nightshade); riparian plantings by earlier development have limited survival

Proposed Project:
 Dredge and haul sediment. Channel re-design. Dedication or easement of land may be required. Riparian planting. Vegetation maintenance.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Stream Reconstruction	1	LS	\$50,000	\$50,000
2	Other		LF	\$2	\$0
3	Other		LF	\$6	\$0
4	Other		CY	\$55	\$0
5	Other		Hours	\$44	\$0
Subtotal					\$50,000
6	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,000
7	Contingency	1	LS	30%	\$16,500
8	Sales Tax	1	LS	8.5%	\$6,078
Estimated Construction Cost					\$77,578
9	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$19,394
10	Geotech Borings & Soil Tests	1	LS	\$0	\$0
11	Surveying (Property, Design & Const.)	1	LS	4%	\$3,103
12	Construction Management (4%)	1	LS	4%	\$3,103
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$103,178
ROUNDED					\$110,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 35 **Type:** CIP
4th Tier Basin ID: P-Pr-7 **Cost:** \$130,000
Name: Prairie Creek 74st Ave Culvert Replacement **Rank:** 40, H

Problem Identified: (Former Number: NA)
 74th Avenue culvert is undersized and is influenced by channel aggradation (see projects P-Pr-6 and P-Pr-8); fish passage is constrained by culvert

Proposed Project:
 This project consists of removing and replacing an existing culvert, assume replace with 60-ft long 8-ft wide culvert.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 36
4th Tier Basin ID: P-Pr-8
Name: Prairie Creek SR9 Streambank Stabilization

Type: CIP
Cost: \$340,000
Rank: 41, H

Problem Identified: (Former Number: 110 [29c, 33d?])
 Channel straightening and confinement caused by design and construction of SR9, where Prairie Cr drops from Gleneagle down to Kent Prairie, results in chronic bank erosion and sediment recruitment that is deposited in the lower reach between Haggens/74th and 204th St. The sediments destroy downstream fish habitat, prevent fish passage, and cause stormwater flooding.

Proposed Project:
 The project would install fish-passable upstream U shaped weirs reducing the erosive force. Bank stabilization will require cooperative effort with WSDOT.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Weir Construction	500	FT	\$50	\$25,000
2	Materials/Rock weirs	15	EA	\$8,000	\$120,000
3	Plantings	1	LS	\$5,000	\$5,000
4	Other	0	LS	\$2	\$0
5	Other	0	LS	\$44	\$0
Subtotal					\$150,000
6	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$15,000
7	Contingency	1	LS	30%	\$49,500
8	Sales Tax	1	LS	8.5%	\$18,233
Estimated Construction Cost					\$232,733
9	Eng'r, Permitting, Legal, Admin (15%)	1	LS	35%	\$81,456
10	Surveying (Property, Design & Const.)	1	LS	4%	\$9,309
11	Construction Management (4%)	1	LS	4%	\$9,309
CITY'S ESTIMATE TOTAL 2009 DOLLARS ROUNDED					\$332,807 \$340,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 37 **Type:** CIP
4th Tier Basin ID: P-Pr-9 **Cost:** \$580,000
Name: West Prairie Creek Stabilization (Arlington Valley Land) **Rank:** 27, M

Problem Identified: (Former Number: 2,110? [29c, 33d?])

This wetland had been filled during the 1980's while redirecting the West Fork Prairie Creek channel from its original southerly path to Quilceda Creek north into the Portage/Prairie Creek system. Arlington Valley Land, owner, was court-ordered to remove the fill and restore wetland vegetation. The Army Corps of Engineers supervised the restoration of the wetland during November 2000. Bank erosion associated with subsequent natural adjustments of the channel (which continues to flow north to Prairie Cr) and variable success of riparian plantings require repeated treatments in an area 3000 ft long by 50 ft wide. The geology is Vashon Advance Outwash, which provides for infiltration and also discharges groundwater as springs. Coho salmon and native cutthroat trout use the stream, preventing the use of bank armoring. There may be opportunity for the City to acquire this land through dedication as it no longer has any commercial use.

Proposed Project:

Stream bed and lower bank improvements include in-stream LWD installation. Riparian planting will stabilize upper banks. Additional opportunities to mitigate impacts of runoff associated with future development exist through wetland acquisition and restoration (not included in this cost estimate). Detention could consist of a one- to two-acre in-channel wetland to detain high flows and encourage wetland species, with a low-flow outlet for fish passage. The goal of the detention pond would be to restore flows as close to the historic hydrograph in Prairie Creek during high flow periods in order to reduce downstream impacts. There are functional limitations from the wetland being at a lower elevation than the stream with no defined outlet.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Other	0	LS	\$49,892	\$0
2	Wetland Grading	10	Acre	\$25,000	\$250,000
3	Wetland Landscaping	10	Acre	\$1,109	\$11,087
4	Placement of LWD	2	LS	\$5,544	\$11,087
5	SPCC Plan, Silt Fence, & TESC Measures	1,500	LF	\$6	\$8,315
Subtotal					\$280,490
6	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$28,049
7	Contingency	1	LS	30%	\$92,562
8	Sales Tax	1	LS	8.5%	\$34,094
Estimated Construction Cost					\$435,194
9	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$108,798
10	Surveying (Property, Design & Const.)	1	LS	4%	\$17,408
11	Construction Management (4%)	1	LS	4%	\$17,408
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$578,808
ROUNDED					\$580,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 38a **Type:** CIP
4th Tier Basin ID: P-Pr-10a **Cost:** \$350,000
Name: Prairie Wetland #H0979 Mid-Elevation **Rank:** 25, M

Problem Identified: (Former Number: 107 [29])
 Opportunities to mitigate impacts of runoff associated with future development through wetland acquisition and restoration. Prairie Wetland #H0979 (Mid-Elevation) is still under private ownership and located directly behind Hagen foods. It is in need of hydrological and vegetative restoration. This wetland has been dedicated to restoration in exchange for buffer averaging through Jensen business park.

Proposed Project:
 The project would include site characterization of existing conditions, restoration of hydrology, reconnection with the stream system and restoration of wetland vegetation. This increase in function could mitigate for less than 150-foot buffers on the dike sections of Prairie creek. The geology beneath this project is Recessional outwash. This location may allow for infiltration during dry periods of the year. There is the potential for the reverse in the wet times of the year with springs surfacing.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Wetland Enhancement	1.00	Acres	\$194,026	\$194,026
2	Site Characterization	1.00	EA	\$12,484	\$12,484
Subtotal					\$206,510
3	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$20,651
4	Contingency	1	LS	30%	\$68,148
5	Sales Tax	1	LS	8.5%	\$25,101
Estimated Construction Cost					\$320,410
6	Eng'r, Permitting, Legal, Admin (15%)	1	LS	5%	\$16,021
7	Surveying (Property, Design & Const.)	1	LS	4%	\$12,816
8	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$349,247
ROUNDED					\$350,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 38b **Type:** CIP
4th Tier Basin ID: P-Pr-10b **Cost:** \$150,000
Name: Prairie Wetland #H1144 Headwaters **Rank:** 21, L

Problem Identified: (Former Number: 108 [29a])
 Opportunities to mitigate impacts of runoff associated with future development through wetland acquisition and restoration. Prairie Wetland #H1144 is the headwater wetland that occurs just south of the wooden bridge on Crown Ridge Boulevard. This wetland is key to the year around base flow support for Prairie Creek. This wetland will also be very important in protecting Prairie Creek from flashy flows as the wetland will act as a reservoir in storing storm flows and metering them out slowly. The geology of this project is Glacial Till. There is no infiltration which emphasizes the need to protect existing wetlands that help desynchronize stormwater.

Proposed Project:
 The project would be working with the landowners to establish necessary buffers through easements, purchase or dedication. The plan would be to work with the New High School to establish a living classroom at the wetland for educational and restoration activities.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Dedication	15.00	Acres	\$2,217	\$33,262
2	Site Characterization	1.00	EA	\$24,968	\$24,968
3	Other	0.00	Acre	\$27,718	\$0
4	Wetland Landscaping	7.00	Acre	\$1,109	\$7,761
Subtotal					\$65,991
5	Mobilization/Demob/Overhead & Profit	0	LS	10%	\$6,599
6	Contingency	0	LS	30%	\$21,777
7	Sales Tax	0	LS	8.5%	\$8,021
Estimated Construction Cost					\$102,388
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	35%	\$35,836
9	Surveying (Property, Design & Const.)	1	LS	4%	\$4,096
10	Construction Management (4%)	0	LS	4%	\$4,096
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$146,415
ROUNDED					\$150,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 39 **Type:** CIP
4th Tier Basin ID: P-K-1 **Cost:** \$64,000
Name: Kruger Portage Jensen's Farm ESA **Rank:** 27, M

Problem Identified: (Former Number: 120 [31])
 Two old farm lane crossings are obsolete and culverts should be removed and the channel bed restored. In addition, riparian plantings have occurred along the lower mainstem of Kruger Creek where residential and commercial developments on the former Jensen farm site impacted riparian vegetation. Fair to good success planting survival has created opportunities to interplant and thus improve shading to reduce stream temperatures. In addition, the recent listing of the Chinook Salmon and Bull Trout have made the original buffers established on the Jensen Farm development obsolete. Restoration of adjacent riparian areas is necessary to meet regulations and create properly functioning conditions necessary to facilitate salmon recovery. Buffer averaging opportunities may exist.

Proposed Project:
 Dedication or riparian areas to the City or NGPA easements will be necessary to assure long term preservation. Restoration of the native trees and shrubs will be critical to the ability of these areas to function. Fencing will be needed to prevent pets from threatening ground nesters. This project is located on Vashon Recessional and Vashon Recessional Marine geology's. Infiltration systems appear to be functioning well in this area.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Dedication	1	LS	\$20,000	\$20,000
2	Riparian Planting and Fencing	1	LS	\$10,000	\$10,000
3	Remove Culverts	1	LS	\$5,000	\$5,000
4	Restore Channel Bed	1	LS	\$5,000	\$5,000
5	Other	0	LS	\$5,000	\$0
Subtotal					\$40,000
6	Mobilization/Demob/Overhead & Profit	1	LS	5%	\$2,000
7	Contingency	1	LS	30%	\$12,600
8	Sales Tax	1	LS	8.5%	\$4,641
Estimated Construction Cost					\$59,241
9	Eng'r, Permitting, Legal, Admin (15%)	1	LS	8%	\$4,739
10	Surveying (Property, Design & Const.)	1	LS	0%	\$0
11	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$63,980
ROUNDED					\$64,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 40 **Type:** CIP
4th Tier Basin ID: P-K-2 **Cost:** \$130,000
Name: Kruger Creek Stillaguamish Culvert Replacement **Rank:** 25, M

Problem Identified: (Former Number: na)
 Culvert is reaching end of its service life. Rusting out. Needs replacement

Proposed Project:
 This project consists of removing and replacing an existing culvert with a 60-ft long 8-ft wide culvert (assumed) designed to facilitate passage of fish, sediment, and debris.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
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- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 41 **Type:** CIP
4th Tier Basin ID: P-K-3 **Cost:** \$790,000
Name: Kruger Restoration - Alternacare to Portage **Rank:** 27, M

Problem Identified: (Former Number: 112 [33])
 Kruger Creek from 207th Street (senior living) downstream parallel to Stillaguamish Ave is chronically impacted by sediment deposition from upstream sources, and is highly erosive due to its channelization with the relocation of Burn Road. Burn Road was built directly down the ravine that previously allowed for meandering and sediment storage functions. The resulting high levels of sediment fill the lower channel as the gradient moves from steep to nearly level. The current condition of the stream results in flooding of the Burn road during heavy rain events adjacent to new Burn road. Coho salmon and cutthroat trout habitat in the stream is also impacted. Riparian plantings along the stream and Wallace Ponds would need to be protected. Wallace Ponds (Twin Ponds) provide an opportunity for flood and sediment storage, and perhaps off-channel habitat. However, the ponds are not natural and were originally wetlands that were dredged a number of times before the existing conditions were developed. The ponds will rapidly fill with sediment and become an emergent wetland if sediment from the upland is not first stabilized. The geology is a combination of Vashon Recessional Marine and Vashon advance. Both aquifer recharge and discharge may occur.

Proposed Project:
 (First complete separate project(s) to control erosion and sedimentation along Burn Rd upstream of Wallace Pond.)
 This project would control erosion and sedimentation in the riparian area immediately upstream of Wallace Pond using an in-channel forested wetland as a detention or sedimentation facility. A new stream location would be evaluated and established through the wetland to Wallace Ponds, thus depositing additional sediments prior to the Ponds and minimizing need to dredge. This location has both Vashon Advance outwash and Recessional Marine which both allow for infiltration. Springs may be present. Modify and provide fish passage through weir.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Dedication	1	LS	\$11,087	\$11,087
2	Detention Facility Embankment	2,500	CY	\$16	\$40,556
3	Riparian Planting, 20 ac	1	LS	\$10,000	\$10,000
4	Hydroseeding Native Seed*	20	Acre	\$1,497	\$29,949
5	Wetland Restoration, 20 ac	1	LS	\$10,000	\$10,000
6	Channel creation, flow control structures, etc.	1	LS	\$300,000	\$300,000
7	SPCC Plan, Silt Fence, & TESC Measures	1,500	LF	\$6	\$9,359
Subtotal					\$410,951
8	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$41,095
9	Contingency	1	LS	30%	\$135,614
10	Sales Tax	1	LS	8.5%	\$49,951
Estimated Construction Cost					\$637,611
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$95,642
12	Geotech	1	LS	\$5,544	\$5,544
13	Surveying (Property, Design & Const.)	1	LS	4%	\$25,504
14	Construction Management (4%)	1	LS	4%	\$25,504
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$789,805
ROUNDED					\$790,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 42 **Type:** CIP
4th Tier Basin ID: P-K-4 **Cost:** \$130,000
Name: Kruger Creek Burn Rd 207th St Culvert Replacement **Rank:** 25, M

Problem Identified: (Former Number: na)
 Culvert is reaching end of its service life. Rusting out. Needs replacement

Proposed Project:
 This project consists of removing and replacing an existing culvert with a 60-ft long 8-ft wide culvert (assumed) designed to facilitate passage of fish, sediment, and debris.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 43 **Type:** CIP
4th Tier Basin ID: P-K-5 **Cost:** \$130,000
Name: Kruger Creek Burn Rd Culvert Replacement **Rank:** 39, H

Problem Identified: (Former Number: S206? [56])
 The culvert crossing at Burn Road at the downstream end of the Kruger Creek ravine is under capacity due to excessive deposition of sediment from upstream sources. Annual sediment removal is required. The culvert is also undersized for fish passage in this anadromous stream..

Proposed Project:
 This project consists of removing and replacing an existing culvert with a 60-ft long 8-ft wide culvert (assumed) designed to facilitate passage of fish, sediment, and debris.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 44
4th Tier Basin ID: P-K-6
Name: Kruger Creek Bank Stabilization

Type: CIP
Cost: \$290,000
Rank: 39, H

Problem Identified: (Former Number: 3 [34])
 Unstable side slopes (4,000 ft long x 20 ft wide) and winter road sand in the Burn Road ravine are chronic sediment sources delivered to and through the Burn Road culvert. City crews remove 20 to 30 cubic yards of debris and soil each year from sedimentation basin downstream of the Burn Road culvert in order to maintain conveyance capacity of the channel. Stabilization of the sediment sources is required.

Proposed Project:
 Project includes bed improvements and bank stabilization measures along Kruger Creek to stabilize the channel, prevent bank erosion, and reduce the sediment load to lower reaches of the creek. Bank stabilization would consist of approximately 4,000 ft of stream bank and bed improvements. A 20-foot width was assumed for estimating landscaping and revegetation costs. This lower reach of Kruger has been restored to the width of the conservation easement, both LWD and riparian.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Traffic Safety Control Devices	1	LS	\$9,359	\$9,359
2	Traffic Control Labor*	88	Hours	\$44	\$3,843
3	Cleaning & Reconstructing Channel Bed	4,000	LF	\$23	\$92,343
4	Landscaping (In Channel Area)	2	Acre	\$3,120	\$6,239
5	Hydroseeding* (Native Seed along Stream)	2	Acre	\$1,497	\$2,995
6	SPCC Plan, Silt Fence, & TESC Measures	4,000	LF	\$6	\$24,957
Subtotal					\$139,737
7	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$13,974
8	Contingency	1	LS	30%	\$46,113
9	Sales Tax	1	LS	8.5%	\$16,985
Estimated Construction Cost					\$216,808
10	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$54,202
11	Surveying (Property, Design & Const.)	1	LS	4%	\$8,672
12	Construction Management (4%)	1	LS	4%	\$8,672
CITY'S ESTIMATE TOTAL 2009 DOLLARS ROUNDED					\$288,355 \$290,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 45 **Type:** CIP
4th Tier Basin ID: P-K-7 **Cost:** \$1,110,000
Name: Kruger Creek 196th St Detention Facility **Rank:** 25, M

Problem Identified: (Former Number: 9 [35])
 Opportunity to reduce downstream flooding (within City), as well as reduce sediment recruitment in the downstream ravine, by creating a 2-stage off-channel detention facility near Burn Road and 196th Street that would reduce peak flows; wetlands in this area should be protected, and perhaps enhanced and enlarged to provide additional natural hydrologic control during storm events

Proposed Project:
 Project consists of a one- to two-acre area located at approximately 196th Street NE designed to detain high flows, with a low-flow outlet. The goal would be to reduce the peak flow cascading down Kruger Creek during and following heavy rains, in order to reduce erosion of the channel bed and banks. Most of the area conceived for this project is not located within the City of Arlington. Construction of the detention facility would require purchase of private property around the intersection of 196th and Burn Road. There are wetlands in this area that should be protected as well, as potential to be enhanced and enlarged to provide the desired function.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Acquisition (Assume 150' X 600')	2	Acres	\$218,378	\$436,755
2	Wetland Reconstruction	1	LS	\$10,000	\$10,000
3	Detention Facility Embankment	5,000	CY	\$17	\$83,171
4	Cleaning & Reconstructing Channel Bed	700	LF	\$23	\$16,160
5	Hydroseeding Native Seed*	2	Acre	\$1,497	\$2,995
6	Landscaping Around Detention Area	1	Acre	\$5,615	\$5,615
7	Det. Facility Control Structure/Outlet	1	EA	\$7,487	\$7,487
8	SPCC Plan, Silt Fence, & TESC Measures	1500	LF	\$6	\$9,359
9	Traffic Safety Control Devices	1	LS	\$3,120	\$3,120
10	Traffic Control Labor*	40	Hours	\$44	\$1,747
Subtotal					\$576,409
11	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$57,641
12	Contingency	1	LS	30%	\$190,215
13	Sales Tax	1	LS	8.5%	\$70,063
Estimated Construction Cost					\$894,327
14	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$134,149
15	Surveying (Property, Design & Const.)	1	LS	4%	\$35,773
16	Construction Management (4%)	1	LS	4%	\$35,773
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$1,100,023
ROUNDED					\$1,110,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 46 **Type:** CIP
4th Tier Basin ID: OTNE-T-1 **Cost:** \$1,440,000
Name: Talcott Water Quality Facility **Rank:** 25, M

Problem Identified: (Former Number: NA [36])
 Talcott outfall discharges to South Fork Stillaguamish River with little or no treatment, resulting in unquantified impacts to river water quality and the City's ability to meet its TMDL and ESA responsibilities. An opportunity exists for treatment in a constructed wetland on a former dairy.

Proposed Project:
 The Talcott Stormwater Treatment Facility consists of constructing a water quality treatment facility, perhaps a pond or constructed wetland on the Country Charm Dairy property that the City is currently negotiating to purchase (purchase not included in this project). The project would improve the quality and quantity of water discharged to the South Fork Stillaguamish River from the Old Town NE basin.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Entire water quality facility project	1	LS	\$750,000	\$750,000
2	Other	0	CY	\$7	\$0
3	Other	0	EA	\$12,479	\$0
4	Other	0	LF	\$100	\$0
5	Other	0	EA	\$624	\$0
6	Other	0	Acre	\$1,497	\$0
7	Other	0	Acre	\$5,615	\$0
8	Other	0	EA	\$7,487	\$0
9	Other	0	LF	\$6	\$0
Subtotal					\$750,000
10	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$75,000
11	Contingency	1	LS	30%	\$247,500
12	Sales Tax	1	LS	8.5%	\$91,163
Estimated Construction Cost					\$1,163,663
13	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$174,549
14	Surveying (Property, Design & Const.)	1	LS	4%	\$46,547
15	Construction Management (4%)	1	LS	4%	\$46,547
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$1,431,305
ROUNDED					\$1,440,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: Graafstra Riparian

47
OTNE-T-2

Type: CIP
Cost: \$550,000
Rank: 22, L

Problem Identified:

(Former Number: 116 [37])

Opportunity to restore riparian corridor along the South Fork with benefits including: reductions in water temperature, natural recruitment of woody debris; deposition of sediment load; and habitat improvements for salmon recovery, including ESA-listed species.

Proposed Project:

This historic agricultural site will have significant changes in use and impact when converted from agricultural to high density housing. The lower floodplain currently has very little human use but will be host to hundreds of new recreational users. It will be very important that during site development, large riparian and Eagle Creek restoration plans are developed to mitigate for the planned higher uses in the floodplain. This project is located in the floodplain on Young alluvial geology. Infiltration is possible during the drier times of the year. High water table on portions of the property. Plan for high use of this area, protect stream using riprap, buffer, and stream bank stabilization.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Dedication	38	Acre	\$6,250	\$237,500
2	Site Characterization	1	LS	\$12,479	\$12,479
3	Stream Restoration	1	LS	\$11,087	\$11,087
4	Wetland Planting	1	Acre	\$3,120	\$3,120
5	Riparian Plantings	15	Acre	\$1,497	\$22,462
6	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
Subtotal					\$286,647
7	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$28,665
8	Contingency	1	LS	30%	\$94,594
9	Sales Tax	1	LS	8.5%	\$34,842
Estimated Construction Cost					\$444,748
10	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$66,712
11	Surveying (Property, Design & Const.)	1	LS	4%	\$17,790
12	Construction Management (4%)	1	LS	4%	\$17,790
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$547,040
ROUNDED					\$550,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 48 **Type:** O&M
4th Tier Basin ID: OTNE-T-3 **Cost:** NA
Name: Division Drainage Structures **Rank:** 24, L

Problem Identified: (Former Number: NA [38])
 Catch basin at toe of cutslope on south side of Division Street at Talcott is easily covered or clogged by sediment and leaves causing local flooding

Proposed Project:
 Slope stabilization, vegetation and leaf-fall management in O&M program. This issue is an example of projects that will be addressed under a standard operations and maintenance program through work orders generated by the Cartegraph asset management system. See Project No. Storm-5.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Slope toe berm on upslope side of catch basin	1	LS	\$500	\$500
2	Other	0	EA	\$624	\$0
3	Other	0	LF	\$12	\$0
4	Other	0	Hours	\$44	\$0
Subtotal					\$500
5	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
6	Contingency	1	LS	0%	\$0
7	Sales Tax	1	LS	0.0%	\$0
Estimated Construction Cost					\$500
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
9	Surveying (Property, Design & Const.)	1	LS	0%	\$0
10	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$500
ROUNDED					\$500

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 49 **Type:** CIP
4th Tier Basin ID: OTNE-T-4 **Cost:** \$710,000
Name: Old Town Northeast Storm Drain Improvements **Rank:** 32, M

Problem Identified: (Former Number: NA)
 SCP model results indicate surcharging along 4th St near Clara, and Alcazar Ave near Division, 5th, Park Hill, and Gilman, and resulting localized flooding during intense rainfall, when flows surface from catch basins to flow down slope across roads and properties. Observations did not support model results until January 2009 storm event. Flooding also observed on Gilman near Manhattan.

Proposed Project:
 The project will upgrade pipe sizes and slopes throughout the basin. Assume 3200 ft of 18" pipe

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Traffic Safety Control Devices	1	LS	\$24,957	\$24,957
2	Remove Manhole	5	EA	\$624	\$3,120
3	Remove Drainage Pipe	200	LF	\$12	\$2,496
4	Saw cut Existing Pavement (RSM)	3200	LF	\$2	\$7,986
5	Remove & Dispose of AC Paving*	900	SY	\$4	\$3,931
6	Roadway Excavation, w/ Haul*	3000	CY	\$11	\$31,821
7	Temporary Patch	180	Ton	\$56	\$10,108
8	AC Paving Class A*	180	Ton	\$47	\$8,535
9	Controlled Density Fill*	1200	CY	\$81	\$97,334
10	Storm Sewer Pipe (18-inch)*	3200	LF	\$37	\$119,796
11	Storm Sewer Pipe (24-inch)*	0	LF	\$50	\$0
12	Storm Sewer Pipe (27-inch)	0	LF	\$60	\$0
13	Storm Sewer Pipe (30-inch)*	0	LF	\$65	\$0
14	Storm Sewer Pipe (36-inch)*	0	LF	\$62	\$0
15	Storm Sewer Pipe (48-inch)	0	LF	\$106	\$0
16	Reconnect Existing Catch Basins	9	EA	\$624	\$5,615
17	Type 2 - 54" Catch Basins*	0	EA	\$3,120	\$0
18	Type 2 - 60" Catch Basins*	0	EA	\$3,993	\$0
19	Type 2 - 72" Catch Basins*	0	EA	\$4,742	\$0
20	Type 2 - 96" Catch Basins	0	EA	\$9,359	\$0
21	Relocate Existing Utilities	1	LS	\$12,479	\$12,479
22	Trench Safety	3,200	LF	\$2	\$7,986
23	SPCC Plan, Silt Fence, & TESC Measures	3,200	LF	\$6	\$19,966
24	Traffic Control Labor	350	Hours	\$44	\$15,286
Subtotal					\$371,417
25	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$37,142
26	Contingency	1	LS	30%	\$122,567
27	Sales Tax	1	LS	8.5%	\$45,146
Estimated Construction Cost					\$576,271
28	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$86,441
29	Surveying (Property, Design & Const.)	1	LS	4%	\$23,051
30	Construction Management (4%)	1	LS	4%	\$23,051
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$708,814
ROUNDED					\$710,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: Broadway Water Quality Facility

50
OTNE-B-1

Type: CIP
Cost: \$48,000
Rank: 25, M

Problem Identified: (Former Number: NA [39])
 Broadway outfall discharges to South Fork Stillaguamish River with little or no treatment; impacts river water quality and City's ability to meet its TMDL and ESA responsibilities

Proposed Project:
 The Broadway Stormwater Treatment Facility consists of constructing a small water quality treatment facility on Broadway Ave, or dispersed facilities across the basin. A treatment approach at the outfall and within the channel of the SF Stilly is unlikely, but no in-channel approaches have been ruled out. The project would improve the quality and quantity of water discharged to the Stillaguamish River from the Old Town NE basin. Alternatively, consider redirecting flow to treatment facilities at the Butler (pending) and Talcott (proposed) outfalls. See also the Butler trunk line projects, # OT-B-2.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Entire water quality facility project	1	LS	\$25,000	\$25,000
2	Other		CY	\$7	\$0
3	Other		EA	\$12,479	\$0
4	Other		LF	\$100	\$0
5	Other		EA	\$624	\$0
6	Other		Acre	\$1,497	\$0
7	Other		Acre	\$5,615	\$0
8	Other		EA	\$7,487	\$0
9	Other		LF	\$6	\$0
Subtotal					\$25,000
10	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$2,500
11	Contingency	1	LS	30%	\$8,250
12	Sales Tax	1	LS	8.5%	\$3,039
Estimated Construction Cost					\$38,789
13	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$5,818
14	Surveying (Property, Design & Const.)	1	LS	4%	\$1,552
15	Construction Management (4%)	1	LS	4%	\$1,552
CITY'S ESTIMATE TOTAL 2009 DOLLARS ROUNDED					\$47,710 \$48,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 51 **Type:** CIP
4th Tier Basin ID: E-1 **Cost:** \$37,000
Name: Brekhush-Beach Stormwater Evaluation & Design **Rank:** 30, M

Problem Identified: (Former Number: NA [40])
 High density development in the Brekhush-Beach annexation (a receiving area in the City under the TDR program) and build-out in other areas in the UGA will put significant pressure on the stream, including the potential for increased runoff into Eagle Creek; many wetlands in the system still need to be delineated; steep slopes could become sediment sources; water quantity and quality control measures may be needed to reduce the potential of impacts to Eagle Creek and the South Fork

Proposed Project:
 Resource inventory and preparation of an Issues, Concerns, and Opportunities (ICOs) report

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Environmental consultant	1	LS	\$35,000	\$35,000
Subtotal					\$35,000
1	Mobilization/Demob/Overhead & Profit	0	LS		\$0
2	Contingency	1	LS	5%	\$1,750
3	Sales Tax	0	LS		\$0
Estimated Construction Cost					\$36,750
4	Eng'r, Permitting, Legal, Admin (15%)	0	LS		\$0
5	Surveying (Property, Design & Const.)	0	LS		\$0
6	Construction Management (4%)	0	LS		\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$36,750
ROUNDED					\$37,000

Notes:

- 1 See accompanying text for more detailed description.
- 2 Assumes a single contractor to perform all projects in the area under one contract.

Project No.: 52 **Type:** CIP
4th Tier Basin ID: E-2 **Cost:** \$130,000
Name: Tveit Road Fish Passage--Indian Creek **Rank:** 33, M

Problem Identified: (Former Number: 118, S205, [41])
 The Tveit Rd culvert on Indian Creek (tributary to Eagle Creek) is considered a complete barrier to fish passage (coho salmon and trout). Area fish biologists consider this culvert a high priority for replacement. The Brekhus-Beach annexation will discharge runoff to Eagle Creek.

Proposed Project:
 This project would replace the existing culvert with a 60-ft long 8-ft wide culvert (assumed dimensions).

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 53
4th Tier Basin ID: E-3
Name: Tveit Road Fish Passage--Eagle Creek

Type: CIP
Cost: \$130,000
Rank: 33, M

Problem Identified: (Former Number: NA)
The Tveit Rd culvert on Eagle Creek is a fish passage barrier to coho salmon and trout. The Brekhus-Beach annexation will discharge runoff to Eagle Creek.

Proposed Project:
This project would replace the existing culvert with a 60-ft long 8-ft wide culvert (assumed dimensions).

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: Eagle Wetland #SH0888

54a
E-4a

Type: CIP
Cost: \$2,200,000
Rank: 21, L

Problem Identified: (Former Number: 115 [42])
 Wetland enhancement opportunities in lower Eagle Creek provide resource benefits to fish and water quality, and storage and treatment of flood flows from upstream development in the improved wetlands. This naturally occurring 70+ acre wetland immediately north of old town has the potential to be restored into excellent rearing habitat for salmonids. The stream below this was channelized in the late 1960's by the High School Agriculture department and converted from a healthy stream to a ditch. Juvenile salmonids continue to use the channelized stream but its habitat is limited. The land continues to be very wet and severely limits the use. This wetland system is located in the floodplain on Young Alluvial soils.

Proposed Project:
 Enhance wetland to mitigate the effects of stormwater. The wetland will need stream reconstruction and planting. The purchase of this land would provide an opportunity to mitigate the effects from stormwater by enhancing the wetland. There is potential for infiltration during the drier times of the year. The proximity to Eagle Creek and Post Middle schools allows for student involvement.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Acquisition	1	LS	\$1,108,718	\$1,108,718
2	Site Characterization	1	LS	\$12,479	\$12,479
3	Stream Reconstruction	1	LS	\$11,087	\$11,087
4	Wetland Planting	1	Acre	\$3,120	\$3,120
5	Hydroseeding Native Seed*	2	Acre	\$1,497	\$2,995
6	SPCC Plan, Silt Fence, & TESC Measures	1,600	LF	\$6	\$9,983
Subtotal					\$1,148,381
7	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$114,838
8	Contingency	1	LS	30%	\$378,966
9	Sales Tax	1	LS	8.5%	\$139,586
Estimated Construction Cost					\$1,781,771
10	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$267,266
11	Surveying (Property, Design & Const.)	1	LS	4%	\$71,271
12	Construction Management (4%)	1	LS	4%	\$71,271
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$2,191,578
ROUNDED					\$2,200,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 54b
4th Tier Basin ID: E-4b
Name: Eagle Clay Cliff Ponds #SH0860

Type: CIP
Cost: \$66,000
Rank: 29, M

Problem Identified:

(Former Number: 117 [42a])

Wetland enhancement opportunities in lower Eagle Creek provide resource benefits to fish and water quality, and storage and treatment of flood flows from upstream development in the improved wetlands. This 23-acre wetland is located in an old oxbow of the South Fork Stillaguamish. It is frequently inundated by minor river flooding events. It is located downstream from the channelized area created by the High School Agriculture department in the late 1960s (see project E-3a), and upstream of the lowest reach through the Graafstra dairy farm before its confluence with the South Fork. The open water wetland is in good condition but is occasionally impacted by poachers entering from the upstream and downstream areas. There is a variety of wildlife living in the wetland including deer, beaver, coyotes, skunk, water fowl, fish, and hawks. This wetland is located in the floodplain on young alluvial geology. The water table is very close to the surface, and the hydrology is augmented by springs.

Proposed Project:

Create detention facility and wetland restoration. Re-vegetate with native seed to maintain and enhance use by wildlife.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Detention Facility Embankment	1,000	CY	\$17	\$16,634
2	Wetland Reconstruction	1	LS	\$8,870	\$8,870
3	Hydroseeding Native Seed*	1	Acre	\$1,497	\$1,497
4	Warning Signs	2	EA	\$1,303	\$2,605
5	SPCC Plan, Silt Fence, & TESC Measures	300	LF	\$6	\$1,872
Subtotal					\$31,479
6	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$3,148
7	Contingency	1	LS	30%	\$10,388
8	Sales Tax	1	LS	8.5%	\$3,826
Estimated Construction Cost					\$48,841
9	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$7,326
10	Geotech Borings & Soil Tests	1	LS	\$5,544	\$5,544
11	Surveying (Property, Design & Const.)	1	LS	4%	\$1,954
12	Construction Management (4%)	1	LS	4%	\$1,954
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$65,618
ROUNDED					\$66,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 55 **Type:** CIP
4th Tier Basin ID: MFQ-E-1 **Cost:** Complete
Name: Edgecomb Cr. Gleneagle Branch--182nd St **Rank:** 38, H

Problem Identified: (Former Number: 13 [43])
 Flooding in the vicinity of 67th Avenue and 188th Street (e.g., HCl Steel) associated with the Gleneagle Branch of Edgecomb Creek has been a problem since construction in the Gleneagle neighborhood began. Drainage improvements, including construction of an overflow-to-infiltration pond circa 2000, appear to have mitigated many of these problems. Conveyance issues persist, however, including flooding of 67th Avenue and HCl Steel in the January 2009 storm. A number of issues may contribute to the flooding, including, but not limited to: restrictions from undersized culverts at 182nd St, a BNSF RR siding, an unmaintained ROW at ~177th, Lumberman's, and 172nd Street; an unmaintained and aggrading channel almost entirely within BNSF RR ROW; various unmaintained private storm facilities along the channel south (downstream) of 188th St; reduction in infiltration pond efficiency through time NW of 67th Ave and 188th St; and possible flow increases associated with development and/or loss of stormwater storage due to a lack of storm structure maintenance in the Gleneagle neighborhood. This problem statement addresses the culvert at 182nd St.

Proposed Project:
Project consists of replacement of an undersized culvert under the private road/drive crossing the BNSF railroad tracks and channel at approximately 182nd Street NE. New pipe would be an 8ft arch culvert (see cost estimate). Alternatives could include placement of a railroad flat car or log stringers for a low-volume bridge at this private crossing. All alternatives need to consider the City's long term traffic plan for this area, as well as whether licenses for each RR crossing contain maintenance obligations by the adjacent landowner. In January 2010, BNSF replaced the existing culvert with a 36 inch CMP. The project is considered complete and will be removed from capital funding consideration. The culvert will be observed for function and maintenance in the future.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.: 56 **Type:** CIP
4th Tier Basin ID: MFQ-E-2 **Cost:** Complete
Name: Edgecomb Cr. Gleneagle Branch--BNSF Siding **Rank:** 38, H

Problem Identified: (Former Number: 13 [43])
 See Prob No 55 (Basin ID MFQ-E-1). This problem statement addresses the culvert under the BNSF siding.

Proposed Project:

Project consists of replacement of an undersized culvert under a siding used by the BNSF railroad to service industry(ies) on the west side of the channel (siding near Wes Ruth Auto/RV Repair on 67th Ave). Culvert would be an 8ft arch culvert (see cost estimate). Although this location is within BNSF jurisdiction, funding by the City to support the industrial area may be appropriate. In January 2010, BNSF replaced the existing culvert with a 36 inch CMP. The project is considered complete and will be removed from capital funding consideration. The culvert will be observed for function and maintenance in the future.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.: 57 **Type:** CIP
4th Tier Basin ID: MFQ-E-3 **Cost:** Complete
Name: Edgecomb Cr. Gleneagle Branch--177th St **Rank:** 38, H

Problem Identified: (Former Number: 13 [43])
 See Prob No 55 (Basin ID MFQ-E-1). This problem statement addresses the culvert in the unmaintained ROW at about 177th, just downstream of the BNSF siding.

Proposed Project:
Project consists of replacement of an undersized culvert and "plug" of fill in the channel (just south of the BNSF siding) that is used at an easement held by the City for crossing the RR. (located ESE of Wes Ruth Auto/RV Repair on 67th Ave). Culvert would be an 8ft arch culvert (see cost estimate). Although this location is within BNSF jurisdiction, funding by the City to support the industrial area may be appropriate. In January 2010, BNSF removed but did not replace the existing culvert. BNSF will be petitioned to install a new culvert at this location either now or at a later time, as it is understood this crossing is part of a recognized easement that BNSF has issued to the City. For this SCP, the project is considered complete and will be removed from capital funding consideration.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
Estimated Construction Cost					\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

- Notes:
- Quantities based on discussions with City of Arlington staff 12/10/2002.
 - (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
 - (RSM) Indicates Unit Prices from RS Means.
 - Assumes a single contractor to perform all projects in the area under one contract.
 - See accompanying text for more detailed description.

Project No.: 58 **Type:** CIP
4th Tier Basin ID: MFQ-E-4 **Cost:** \$25,000
Name: Edgecomb Cr. Gleneagle Branch--BNSF Maintenance **Rank:** 42, H

Problem Identified: (Former Number: 13 [43])
 See Prob No 55 (Basin ID MFQ-E-1). This problem statement addresses the maintenance of the channel adjacent to the railroad.

Proposed Project:

Project consists of channel improvements and a regular maintenance program for the Gleneagle Branch of Edgecomb Creek that facilitates both conveyance of flows and water quality maintenance. Because of the low habitat value associated with the highly modified channel, the project would construct two or three in-stream sedimentation ponds in locations that are easily accessed for annual sediment and debris removal. Bank vegetation would also be maintained on an annual basis, including removal of blackberries, and application of an erosion control seed mix where needed. Additional maintenance of the channel bed would occur on a 5-year interval, or as needed. Although this project is within BNSF jurisdiction, funding by the City to reduce flooding in the industrial area may be appropriate. Funds would pay BNSF for maintenance services. In January 2010, BNSF replaced adjacent culverts and cleaned the channel on the west side of the RR from just south of 188th St south to about 177th St (culvert removal south of RR siding at grain elevator). This project is NOT considered complete, however, as it is felt that channel capacity requires work downstream to the 172nd St crossing (and/or Lumberman's culvert).

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	<i>Lump sum project</i>	1	LS	\$22,500	\$22,500
2	Other	0	EA	\$624	\$0
3	Other	0	LF	\$12	\$0
4	Other	0	Hours	\$44	\$0
	Subtotal				\$22,500
5	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$2,250
6	Contingency	1	LS	0%	\$0
7	Sales Tax	1	LS	0.0%	\$0
	Estimated Construction Cost				\$24,750
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
9	Surveying (Property, Design & Const.)	1	LS	0%	\$0
10	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$24,750
ROUNDED					\$25,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 59a **Type:** CIP
4th Tier Basin ID: MFQ-E-5a **Cost:** \$480,000
Name: Edgecomb Cr. Gleneagle Branch--172nd St Alt A **Rank:** 34, H

Problem Identified: (Former Number: 13 [43])
 See Prob No 55 (Basin ID MFQ-E-1). This problem statement addresses the conveyance of flows under Lumberman's and 172nd Street. One possibility may be to abandon the existing Lumberman's route and re-direct the channel due south under 172nd St at a new location.

Proposed Project:
 Project consists of all modifications necessary to convey the Gleneagle Branch of Edgecomb Creek from north to south of 172nd St. This alternative includes replacement of an undersized culvert under the Lumberman's yard at the NE corner of 67th Ave and 172nd St west of the BNSF railroad, and replacement of the culvert under 172nd St near 63rd Ave (private road). All alternatives need to consider various possible downstream modifications to Edgecomb Creek proposed by the City of Arlington and others proposed by the City of Marysville.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Project Lump Sum Estimate	1	LS	\$250,000	\$250,000
2	Site Characterization	0.00	LS	\$12,484	\$0
3	Restoration of Hydrology	0	Acres	\$125	\$0
4	Hydroseeding Native Seed*	0	Acre	\$125	\$0
5	Landscaping Around Detention Area	0	Acre	\$125	\$0
6	Det. Facility Control Structure/Outlet	0	LS	\$18,726	\$0
7	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
Subtotal					\$250,000
8	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$25,000
9	Contingency	1	LS	30%	\$82,500
10	Sales Tax	1	LS	8.5%	\$30,388
Estimated Construction Cost					\$387,888
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$58,183
12	Surveying (Property, Design & Const.)	1	LS	4%	\$15,516
13	Construction Management (4%)	1	LS	4%	\$15,516
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$477,102
ROUNDED					\$480,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 59b **Type:** CIP
4th Tier Basin ID: MFQ-E-5b **Cost:** \$480,000
Name: Edgecomb Cr. Gleneagle Branch--172nd St Alt B **Rank:** 34, H

Problem Identified: (Former Number: 13 [43])
 See Prob No 55 (Basin ID MFQ-E-1). This problem statement addresses the conveyance of flows under Lumberman's and 172nd Street. Another possibility may be to upsize the crossings under Lumberman's and 172nd St at their existing locations.

Proposed Project:
 Project consists of all modifications necessary to convey the Gleneagle Branch of Edgecomb Creek from north to south of 172nd St. This alternative includes a new channel alignment that does not convey flows under Lumberman's but continues the channel parallel to and west of the railroad, crossing 172nd St perpendicularly and joining the McPherson Branch of Edgecomb Creek just south of 172nd St. Project would install an 8ft arch culvert, and would require property purchase or dedication of easements along the alignment. This alternative would provide greater riparian enhancement opportunities along the channel. All alternatives need to consider various possible downstream modifications to Edgecomb Creek proposed by the City of Arlington and others proposed by the City of Marysville.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Project Lump Sum Estimate	1	LS	\$250,000	\$250,000
2	Site Characterization	0.00	LS	\$12,484	\$0
3	Restoration of Hydrology	0	Acres	\$125	\$0
4	Hydroseeding Native Seed*	0	Acre	\$125	\$0
5	Landscaping Around Detention Area	0	Acre	\$125	\$0
6	Det. Facility Control Structure/Outlet	0	LS	\$18,726	\$0
7	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
Subtotal					\$250,000
8	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$25,000
9	Contingency	1	LS	30%	\$82,500
10	Sales Tax	1	LS	8.5%	\$30,388
Estimated Construction Cost					\$387,888
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$58,183
12	Surveying (Property, Design & Const.)	1	LS	4%	\$15,516
13	Construction Management (4%)	1	LS	4%	\$15,516
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$477,102
ROUNDED					\$480,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 60 **Type:** CIP
4th Tier Basin ID: MFQ-E-6 **Cost:** \$130,000
Name: Edgecomb Cr. McPherson Branch--BNSF RR **Rank:** 38, H

Problem Identified: (Former Number: NA)
 The culvert on the McPherson Branch of Edgecomb Creek under the BNSF railroad is undersized and contributes to flooding southeast of 67th Avenue and 172nd Street, causing overflow along 67th Ave south to 152nd St. The culvert is also a partial barrier to fish passage during these events.

Proposed Project:
 Project consists of replacement of an undersized culvert under the railroad. Given the proposed developments along 172nd Street that would be tributary to the stream, the new pipe is scoped as an 8ft arch culvert (see cost estimate). Any alternative needs to consider various possible downstream modifications to Edgecomb Creek proposed by the City of Arlington and others proposed by the City of Marysville. Although this project is within BNSF jurisdiction, funding by the City to facilitate development in the adjacent industrial and commercial areas may be appropriate.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	60	LF	\$443	\$26,609
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	60	LF	\$2	\$150
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
	Subtotal				\$56,396
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$5,640
13	Contingency	1	LS	30%	\$18,611
14	Sales Tax	1	LS	8.5%	\$6,855
	Estimated Construction Cost				\$87,501
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$21,875
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$3,500
18	Construction Management (4%)	1	LS	4%	\$3,500
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$127,463
ROUNDED					\$130,000

Notes:

- Quantities based on discussions with City of Arlington staff 12/10/2002.
- (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- (RSM) Indicates Unit Prices from RS Means.
- Assumes a single contractor to perform all projects in the area under one contract.
- See accompanying text for more detailed description.

Project No.: 61 **Type:** CIP
4th Tier Basin ID: MFQ-E-7 **Cost:** \$190,000
Name: Tributary, Edgecomb/McPherson Br at 67th **Rank:** 38, H

Problem Identified: (Former Number: NA)
 Culvert under 67th Ave near McPherson Road has inadequate conveyance, or inadequate downstream conveyance, contributing to overflow along 67th Ave south to 152nd St. The culvert is also a partial barrier to fish passage during these events.

Proposed Project:
 Project consists of evaluation and replacement of up to two culverts, including one under the railroad. Unclear whether fish passage is required (evaluate rearing potential of adjacent wetlands).

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Roadway Excavation, w/ Haul*	100	CY	\$11	\$1,061
2	Arch Culvert (8-feet)	120	LF	\$443	\$53,218
3	Head Wall (8-feet) & Wing Wall (8-feet)	2	EA	\$2,772	\$5,544
4	Culvert Backfill & Compaction*	10	CY	\$25	\$250
5	Aggregate Base & Surfacing Coarse	10	CY	\$22	\$225
6	Stream Reconstruction	1	LS	\$11,087	\$11,087
7	Protect Existing Utilities & One Call Services	1	LS	\$936	\$936
8	Trench Safety	120	LF	\$2	\$299
9	SPCC Plan, Silt Fence, & TESC Measures	100	LF	\$6	\$624
10	Roadway Restoration	100	CY	\$55	\$5,544
11	Traffic Control Labor	100	Hours	\$44	\$4,368
Subtotal					\$83,155
12	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$8,315
13	Contingency	1	LS	30%	\$27,441
14	Sales Tax	1	LS	8.5%	\$10,107
Estimated Construction Cost					\$129,018
15	Eng'r, Permitting, Legal, Admin (15%)	1	LS	25%	\$32,255
16	Geotech Borings & Soil Tests	1	LS	\$11,087	\$11,087
17	Surveying (Property, Design & Const.)	1	LS	4%	\$5,161
18	Construction Management (4%)	1	LS	4%	\$5,161
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$182,682
ROUNDED					\$190,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 62 **Type:** CIP
4th Tier Basin ID: MFQ-E-8 **Cost:** \$430,000
Name: Edgecomb Cr. Relocation--Crown Distributing Site **Rank:** 29, M

Problem Identified: (Former Number: 114 [46])
This large area was annexed into the City of Arlington and zoned industrial in the early 2000s. Over 90% of this site is made up of hydric soils and historically experienced frequent periods of flooding. The conversion to agriculture over the last century partially drained the wetland by ditching the site and channelizing Quilceda Creek, resulting in poor habitat conditions. The landowners wish to develop the site which will require mitigation and presents restoration opportunities. The geology is Vashon Recessional, but the high groundwater table does not allow for infiltration. This is a recharge area of the Marysville trough aquifer upgradient of city wells at the airport.

Proposed Project:
One current proposal is to relocate Edgecomb Creek downstream of confluence on Crown Development property in a stream corridor paralleling the BNSF railroad on its west side in order to accommodate industrial development and improve channel conditions, water quality and riparian habitat. Related studies by the City of Marysville have corroborated this location. Partners will be sought to participate in the implementation. The developer has been asked to utilize the Washington Department of Ecology functional wetland assessment methodology to determine the best restoration strategy. Design standards need to include consideration of shallow groundwater tables and municipal wells.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Land Acquisition	0	Acres	\$1,248	\$0
2	Site Characterization	1.00	LS	\$12,484	\$12,484
3	Restoration Hydrology/stream channel restored	480	Acres	\$125	\$59,924
4	Hydroseeding Native Seed*	480	Acre	\$125	\$59,924
5	Landscaping/Large wood debris	480	Acre	\$125	\$59,924
6	Det. Facility Control Structure/Outlet	1	LS	\$18,726	\$18,726
7	SPCC Plan, Silt Fence, & TESC Measures	1,500	LF	\$6	\$9,363
Subtotal					\$220,345
8	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$22,035
9	Contingency	1	LS	30%	\$72,714
10	Sales Tax	1	LS	8.5%	\$26,783
Estimated Construction Cost					\$341,877
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$51,282
12	Surveying (Property, Design & Const.)	1	LS	4%	\$13,675
13	Construction Management (4%)	1	LS	4%	\$13,675
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$420,509
ROUNDED					\$430,000

Notes:

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- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
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- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 63
4th Tier Basin ID: MFQ-E-9
Name: Airport/Shoultes Rd Water Quality Improvements

Type: CIP
Cost: \$29,000
Rank: 33, M

Problem Identified:

(Former Number: NA [45])

The turf farm and other commercial facilities south of the airport generates excessive sediment and perhaps other water quality impacts when the turf is removed in large quantities. These releases have potential to violate water quality standards in the intermittent-then-perennial channel (ditch) on the east side of 51st Avenue (Shoultes Road)--a tributary to Edgcomb Creek, which contains coho and chum salmon--and are regulated under an NPDES General Industrial permit for the Arlington Municipal Airport (landowner).

Proposed Project:

Project would work with lessee to continue water quality facility improvements and BMPs to improve water quality and assure permit compliance. (ie, build upon existing efforts, weir leaving the site, sedimentation ponds, dredging for soil recovery, etc.). In addition, evaluate opportunities for improving stormwater quality at commercial site SE of intersection of 172nd and 51st.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Evaluate existing site management	1	LS	\$10,000	\$10,000
2	Excavate sedimentation ponds; use soil on site	1.00	LS	\$2,000	\$2,000
3	Construct Swale; use soil on site	1	LS	\$1,000	\$1,000
4	Hydroseeding Native Seed*	1	Acre	\$125	\$125
5	Redesign weir	1	LS	\$2,000	\$2,000
6	Det. Facility Control Structure/Outlet	0	LS	\$18,726	\$0
7	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
Subtotal					\$15,125
8	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$1,512
9	Contingency	1	LS	30%	\$4,991
10	Sales Tax	1	LS	8.5%	\$1,838
Estimated Construction Cost					\$23,467
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$3,520
12	Surveying (Property, Design & Const.)	1	LS	4%	\$939
13	Construction Management (4%)	1	LS	4%	\$939
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$28,864
ROUNDED					\$29,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
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- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 64 **Type:** CIP
4th Tier Basin ID: MFQ-E-10 **Cost:** \$960,000
Name: 172nd Street Regional Drainage Improvements **Rank:** 36, H

Problem Identified: (Former Number: 14 [44])
 The area along 172nd Street NE between SR9 and Smokey Pt Blvd is experiencing significant development. Runoff in this area infiltrates when groundwater levels are low; however, the groundwater is shallow during winter months and limits the ability to dispose of surface water through infiltration. Depths to water table of less than 5 ft limit soil treatment for water quality and increases risk of groundwater contamination in the aquifer and municipal wells serving Arlington. Runoff that cannot percolate into the ground instead flows overland to the south and east to Edgecomb Creek, Shoultes Road channel, or Heyho Creek. A regional approach to stormwater management for lands outside of the WSDOT ROW may be warranted. City of Marysville has prepared an assessment for industrial properties located within Marysville city limits near Smokey Pt that may affect Arlington. Arlington should evaluate its interests in advance of regional transportation improvements.

Proposed Project:
 Project assumes construction of a regional conveyance system of conveyance channels and water quality wetlands along the major travel corridors near 172nd St between Smokey Pt Blvd and SR9. Look for partnering opportunities with WSDOT.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Regional Drainage Plan	1	LS	\$500,000	\$500,000
2	Site Characterization	0.00	LS	\$12,484	\$0
3	Restoration of Hydrology	0	Acres	\$125	\$0
4	Hydroseeding Native Seed*	0	Acre	\$125	\$0
5	Landscaping Around Detention Area	0	Acre	\$125	\$0
6	Det. Facility Control Structure/Outlet	0	LS	\$18,726	\$0
7	SPCC Plan, Silt Fence, & TESC Measures	0	LF	\$6	\$0
Subtotal					\$500,000
8	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$50,000
9	Contingency	1	LS	30%	\$165,000
10	Sales Tax	1	LS	8.5%	\$60,775
Estimated Construction Cost					\$775,775
11	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$116,366
12	Surveying (Property, Design & Const.)	1	LS	4%	\$31,031
13	Construction Management (4%)	1	LS	4%	\$31,031
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$954,203
ROUNDED					\$960,000

Notes:

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- 5 See accompanying text for more detailed description.

Project No.: 65 **Type:** CIP
4th Tier Basin ID: MFQ-H-1 **Cost:** \$63,000
Name: Middle Fork Quilceda Groundwater Influences Study **Rank:** 36, H

Problem Identified: (Former Number: NA [47])
 Svrjcek (2003) indicates significant groundwater contribution to flows in Edgecomb and Heyho Creeks in an area where shallow depths to groundwater persist, and where the groundwater divide (between the Stillaguamish and Snohomish basins) is not understood; stormwater infiltrate may be inadequately treated prior to discharge to streams and wetlands, or may contaminate wells located in this vicinity.

Proposed Project:
 Groundwater characterization as a basis for addressing stormwater design and management in the Marysville Trough and headwaters of MF Quilceda Creek.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Groundwater consultant study	1	LS	\$50,000	\$50,000
2	Other	0	EA	\$624	\$0
3	Other	0	Hours	\$44	\$0
Subtotal					\$50,000
4	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
5	Contingency	1	LS	10%	\$5,000
6	Sales Tax	1	LS	8.5%	\$4,675
Estimated Construction Cost					\$59,675
7	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
8	Surveying (Property, Design & Const.)	1	LS	4%	\$2,387
9	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$62,062
ROUNDED					\$63,000

Notes:

- 1 Quantities based on discussions with City of Arlington staff 12/10/2002.
- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: Heyho Water Quality Facility

66
MFQ-H-2

Type: CIP
Cost: \$140,000
Rank: 27, M

Problem Identified:

(Former Number: NA [48])

Apart from basic oil-water separation, runoff from 166th Street discharges untreated to Heyho Creek (identified as impaired for fecal coliform and dissolved oxygen in the Lower Snohomish Tributaries TMDL); water quality treatment in ditched channel is not understood; impacts stream water quality and City's ability to meet its TMDL and ESA responsibilities.

Proposed Project:

The Heyho Stormwater Treatment Facility consists of constructing a water quality treatment facility on or adjacent of the channel draining eastward to Heyho Creek. The project would improve the quality and quantity of water discharged to Heyho and MF Quilceda Creeks from the Heyho basin.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Water Quality Facility Design and Construction	1	LS	\$70,000	\$70,000
2	Other	0	EA	\$624	\$0
3	Other	0	LF	\$12	\$0
4	Other	0	Hours	\$44	\$0
Subtotal					\$70,000
5	Mobilization/Demob/Overhead & Profit	1	LS	10%	\$7,000
6	Contingency	1	LS	30%	\$23,100
7	Sales Tax	1	LS	8.5%	\$8,509
Estimated Construction Cost					\$108,609
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	15%	\$16,291
9	Surveying (Property, Design & Const.)	1	LS	4%	\$4,344
10	Construction Management (4%)	1	LS	4%	\$4,344
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$133,588
ROUNDED					\$140,000

Notes:

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- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
- 3 (RSM) Indicates Unit Prices from RS Means.
- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.: 67
4th Tier Basin ID: MFQ-H-3
Name: Smokey Point Inventory and Level Survey

Type: CIP
Cost: \$30,000
Rank: 21, L

Problem Identified:

(Former Number: NA [49])

Parts of the stormwater system in Smokey Point, annexed by the City in 1999, are without as-builts, and inventory efforts in this low-relief area did not establish adequate invert elevations, nor the location and function of one or more infiltration systems

Proposed Project:

Project would add temporary staff for stormwater inventory, and contract with a surveyor for a level survey to determine elevations of rims and control structures. Also check for data from the original drainage district for this area.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Contract Surveyor	1	LS	\$10,000	\$10,000
2	Summer Inventory Staff	2	EA	\$7,500	\$15,000
3	Other	0	LF	\$12	\$0
4	Traffic Control Labor	0	Hours	\$44	\$0
Subtotal					\$25,000
5	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
6	Contingency	1	LS	10%	\$2,500
7	Sales Tax	1	LS	8.5%	\$2,338
Estimated Construction Cost					\$29,838
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
9	Surveying (Property, Design & Const.)	1	LS	0%	\$0
10	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE TOTAL 2009 DOLLARS ROUNDED					\$29,838 \$30,000

Notes:

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- 2 (*) Indicates Unit Prices from 67th Ave. NE Bid Tab opened March 15, 2001.
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- 4 Assumes a single contractor to perform all projects in the area under one contract.
- 5 See accompanying text for more detailed description.

Project No.:
4th Tier Basin ID:
Name: Beaver Control

68
MFQ-H-4

Type: O&M
Cost: \$12,000
Rank: 21, L

Problem Identified: (Former Number: NA)
 Beaver activity regularly disrupts storm conveyance at locations throughout the City

Proposed Project:

O&M project to address issues and alleviate local flooding. Trap and relocate beaver. Manual dismantling of beaver dams. Re-plant disturbed vegetation. Coordinate with WDFW and Tribes. Consider paying trapping license for existing city staff person involved in trapping.

ITEM NO.	ITEM	Quantity	Units	2009 Unit Price	2009 Total Price
1	Wildlife Control	1	LS	\$5,000	\$5,000
2	Debris Removal	1	LS	\$5,000	\$5,000
3	Other	0	LF	\$12	\$0
4	Other	0	Hours	\$44	\$0
Subtotal					\$10,000
5	Mobilization/Demob/Overhead & Profit	1	LS	0%	\$0
6	Contingency	1	LS	10%	\$1,000
7	Sales Tax	1	LS	8.5%	\$935
Estimated Construction Cost					\$11,935
8	Eng'r, Permitting, Legal, Admin (15%)	1	LS	0%	\$0
9	Surveying (Property, Design & Const.)	1	LS	0%	\$0
10	Construction Management (4%)	1	LS	0%	\$0
CITY'S ESTIMATE					
TOTAL 2009 DOLLARS					\$11,935
ROUNDED					\$12,000

Notes:

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- 4 Assumes a single contractor to perform all projects in the area under one contract.
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