

**Thornton Creek Watershed Biennial Report  
January 2005 through December 2006**

**Executive Summary**

The Thornton Creek Watershed Five Year Action Agenda (Action Agenda) was developed in 2003 as the implementation tool for the draft 2001 Thornton Creek Watershed Action Plan (Plan). Issued in July 2003, it prioritizes the recommendations contained in the Plan in three ways: doable in specific years, needing further study and not possible in the next five years.

One of the Thornton Creek Watershed Oversight Council's roles is to review progress based on the schedule proposed in the Action Agenda. Seattle Public Utilities has the responsibility of developing progress reports (City of Seattle Council Resolution 30709 Section 32). This report covers progress from January 2005 through December 2006. Future reports will cover progress during the calendar year.

Seattle Public Utilities remains committed in partnering with others to continue implementing the priority actions in the Action Agenda.

*Mission from Plan:*

To protect and restore the Thornton Creek ecosystem for the welfare of fish, wildlife and people; improve the quality of life in the watershed; and prevent further degradation as human population and development increase.

*Goals from Plan:*

1. Reduce stormwater-related flooding and damage to stream and wetland habitat, and increase infiltration
2. Improve water quality by reducing nonpoint pollution in Thornton Creek and its watershed.
3. Protect and improve instream, riparian, and upland habitat for the survival of remaining native species.
4. Increase public awareness and develop stewardship of the watershed

# Accomplishment Highlights from January 2005 through December 2006 in the seven categories

## STORMWATER

*Goal: To mimic natural flow patterns, minimize stormwater related habitat damage, and reduce flooding.*

- ✓ The Seattle City Council adopted the new Environmentally Critical Areas Code on March 27, 2006. The Code addresses buffers, tree removal, and drainage. The new regulations went into effect on May 9, 2006. (Storm A3. c)
- ✓ The Pinehurst Natural Drainage System project was completed in 2006. (Storm A3. d)
- ✓ Natural Drainage System chapter of the new Right-of-Way Improvement Manual is complete. (Storm A5)
- ✓ Improved flow monitoring equipment has been installed to increase data accuracy in several locations on Thornton Creek. (Storm D1)
- ✓ SPU's creek monitoring team has been evaluating the Jackson Park Golf Course Detention Pond project, the Lake City Way fish ladder, the Littlebrook Culvert, and the Homewood Park project. (Storm D3/Monit A4)
- ✓ The Seattle City Council approved a drainage rate credit program for properties that incorporate stormwater management. (Storm E2)
- ✓ SPU coordinated with the solid waste program to encourage citizens to pickup debris from city street drains and to compost these materials Citywide. (Storm E4)

## NONPOINT POLLUTION

*Goal: To restore water quality in Thornton Creek and its lakes and wetlands to meet, or be better than, the state's water quality standards.*

*Nonpoint source pollution occurs when water runs over and/or through the ground, picks up pollutants, and deposits them in surface waters or introduces them into groundwater. (US Environmental Protection Agency)*

- ✓ The Microbial Source Tracking DNA/RNA investigation to identify sources of fecal coliform in Thornton Creek was produced. (NP B1)
- ✓ DOE updated the "Water Quality Standards for Surface Waters of the State of Washington," which includes references to metal standards (NP B7)
- ✓ Seattle and Shoreline staff were trained in stormwater management, pesticide reduction, and source control best management practices (NP C3.B)
- ✓ SPU held four workshops on the "5 Steps to Natural Yardcare" with the Thornton Creek Alliance and the Local Hazardous Waste Management Program (NP E3)

## HABITAT

*Goal: To protect and improve habitat for nature fauna and flora within the Thornton Creek Watershed, and to provide opportunities for people to connect with nature.*

- ✓ The Fall 2006 spawning season marked the 8th consecutive year of salmon surveys and the 6th consecutive year of adfluvial cutthroat surveys conducted in Thornton creek. 2006 also marked the 6th consecutive year of smolt trapping by SPU for outmigrating juvenile salmon. (Habitat A4)



*Rossi Planting Event, 2006*

- ✓ SPU incorporated fish passage into a sewer repair project along the South Branch of Thornton Creek. The sewer crossing is located near NE 107th St and 11th Ave NE, downstream of the confluence with Victory Creek. (Habitat B1)
- ✓ SPU completed the Thornton Creek Park 6 project by planting 743 native shrubs and trees and added large woody debris to Thornton Creek in the natural area downstream of Jackson Park Golf Course. (Habitat C4)
- ✓ Four restoration projects in Thornton Creek were awarded Aquatic Habitat Matching Grants on both private and public property (Habitat C5. B)
- ✓ SPU conducted a Naturescaping workshop that was attended by over 100 property owners. (Habitat C6)
- ✓ The Green Seattle Partnership developed a 20 year strategic plan for the restoration of 2500 acres of park forest land by 2025. (Habitat C7)
- ✓ SPU established a capital program that will invest \$150,000/year for the next six years in restoring publicly owned riparian forests. The focus areas for 2005/2006 included Thornton Creek Parks 1, 2, and 6, the Jackson Park natural area and the Kartess natural area. (Habitat C7)
- ✓ The City of Seattle acquired the remaining parcels in a long contiguous stretch of the South Branch of Thornton Creek near NE 98th St and 20th Ave NE, at the downstream end of Park 2. (Habitat D1)

## EDUCATION AND STEWARDSHIP

*Goal: To improve awareness of, foster pride and responsibility for, and create learning opportunities within the watershed*

- ✓ The Homewaters Project (SPU) provided five Long Walks of the North and South Forks of Thornton Creek for over 140 community members. As part of the inaugural Thornton Creek Watershed Day, the event was featured in the Getaways section of the Seattle P-I. (Ed/Stew A6)
- ✓ A new virtual tour of the Thornton Creek Watershed was developed to encourage exploration and understanding of the watershed. (Ed/Stew A6)
- ✓ Homewaters Project distributed 800 copies of the Thornton Creek Watershed Guide as a way of informing teachers and students. (Ed/Stew B.2)



*Homewaters Project - South Fork Thornton Creek "long walk"*

- ✓ SPU worked with 16 site stewards, two religious groups, six schools, and three universities on long and short term volunteer projects in the watershed. These projects involved over 1567 volunteers and nearly 4000 hours removing invasive weeds and planting over 1500 native trees and shrubs, 290 willow stakes, removing over 20 large bags of trash, over 320 bags of invasive weeds, and additionally clearing over 3000 square feet of non-native plants. (Ed/Stew D1.A)
- ✓ SPU held two "Living with Beavers" workshops and "Meet the Beavers" open houses at Meadowbrook Pond for over 400 participants. (Ed/Stew D1.A)

## REGULATION/ENFORCEMENT

*Goal: To ensure that present and future regulations affecting the Thornton Creek watershed are fully enforced.*

- ✓ All businesses in the watershed that engage in any of eight high risk pollution generating activities, as identified by SMC 22.800, were inspected. (Reg/Enf A1.A)
- ✓ Opportunities to daylight streams were identified through the Watershed Assessment, the Comprehensive Drainage Plan, the Restore Our Waters initiative, and SPU planning efforts. (Reg/Enf B3)
- ✓ The Neighborhood Business District Strategy and new zoning for neighborhood commercial business districts incorporated the new Seattle Green Factor, a menu of landscaping strategies intended to increase the amount of urban landscaping. The



Seattle Green Factor, in addition to landscaping, encourages vegetated walls, green roofs and permeable paving. (Reg/Enf B8)

## IMPLEMENTATION

*Goal: To ensure timely and effective implementation of the Thornton Creek Watershed Action Plan, consistent with priorities identified in the Plan and ongoing direction from interested citizens and stakeholders*

- ✓ SPU and TCWOC recruited, TCWOC nominated and then SPU appointed TCWOC members and officially formed the TCWOC in May 2005. Bylaws were adopted and the Chair was elected in September 2005. (Imp A2)
- ✓ There were 1,131 visitors to the Online Library of information about the Thornton Creek Watershed in 2006. (Imp C4)



## MONITORING, ANALYSIS AND EVALUATION

*Goal: To accurately gauge Action Plan effectiveness by gathering regular, reliable progress reports and data on the creek and watershed through a variety of methods, public and private, and make it available to all interested parties.*



- ✓ The Watershed Assessment was completed for Thornton Creek. (Monit A3)
- ✓ King County performed monthly sampling for temperature, dissolved oxygen, nutrients, fecal, alkalinity at creek mouth; bacteria and temperature at Matthews Beach; for metals at six storm events; and annual sampling at the mouth. Seattle performed nutrient testing of detention pond performance at Jackson Park Golf Course. (Monit A3)
- ✓ SPU's creek monitoring team evaluated the Jackson Park Golf Course Detention Pond project, the Lake City Way fish ladder, the Littlebrook Culvert, and the Homewood Park project. (Monit A4)
- ✓ Citizens sampled seven sites on Thornton Creek in 2005. (Monit A6)

## Attachments

Action Agenda Matrix – Status of Actions

Acronym List

Seattle City Council Resolution 30709

# Thornton Creek Five-Year Action Agenda Progress/Status

January 2007 Draft

January 1, 2005 – December 31, 2006

Agenda #	Plan Reference*	Plan Page #	Recommendation	Status	Implementing Sponsor	Budget Year	Progress
1	Storm A1.	3-3	Create surface and subsurface geologic maps to assist in determining infiltration capacities	Y	USGS	2004	
2	Storm A2.	3-3	Research and develop program to promote infiltration techniques.	Y	SPU	2008	SPU is developing a RainCatcher program to promote rain gardens to homeowners in priority watersheds. The next project is funded through an EPA loan for a CSO basin in SE Seattle. SPU is evaluating conducting a follow up project in a creek watershed.
3	<b>Storm A3. a)</b>	3-4	Develop strategies for reducing impervious surface on existing public and private land.	P	SPU, SDOT	Ongoing	SPU is reducing nearly 3 acres of impervious surface at the headwaters of Thornton Creek with the TCWQC project. SPU is monitoring porous pavement street and sidewalk installations and developing specifications for use in City projects.
4	<b>Storm A3. b)</b>	3-4	Design and evaluate stormwater infiltration technology, including technologies that allow for partial infiltration.	Y	SPU	2003 and ongoing	SPU is updating the City's flow control manual to include better guidance on infiltrative technologies.  See also Action item #2
5	<b>Storm A3. c)</b>	3-4	Revise the Land Use Code and Critical Areas Code based on information available from research conducted in Storm A, B.	P	DPD	2004	New Environmentally Critical Areas Code was adopted by Council on March 27, 2006. The new regulations went into effect on May 9, 2006.
6	<b>Storm A3. d)</b>	3-4	Target Natural Drainage System improvements to right-of-ways in unimproved areas draining to key creek systems for infiltration, detention and treatment of stormwater runoff.	Y	SPU, SDOT	2003 and ongoing	Pinehurst construction project substantially complete
7	<b>Storm A3. e)</b>	3-4	Purchase additional public property in targeted areas to improve groundwater recharge and stormwater treatment.	P	SPU	As identified	Natural Drainage PlanSystem project at Pinehurst location to provide infiltration and stormwater treatment. No property purchase required.
8	Storm A4	3-6	Incorporate policies to promote pervious surfaces into new Neighborhood Design Guidelines	P	DPD, Neighborhood groups	TBD	DPD will be revising citywide design guidelines in 2007 and will consider this recommendation in its review.
9	<b>Storm A5.</b>	3-7	Integrate creative alternatives to traditional sidewalks, curbs and gutters into drainage projects when technically feasible to promote creek health.	Y	SPU	2003 and ongoing	Natural Drainage System chapter of the new Right-of-Way Improvement Manual is complete. SPU provided technical assistance and review to encourage the telescoping bioretention system at the Northgate north parking lot, construction winter/spring 2006/07. SPU Stormwater Manual revisions in progress, which

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							will provide more detailed guidance for NDS facilities to achieve stormwater detention and water quality treatment goals.
10	Storm A6	3-8	Assess the impact of stormwater contributions to sanitary sewer overflows in this watershed and develop disconnect program if impact significant.	N-\$	SPU		Not a priority at this time; problems will be addressed on a case by case basis
11	Storm A7.	3-8	Identify alternatives to infiltration facilities when it is incompatible with development or site conditions cannot accommodate it.	Y	SPU, SDOT	TBD	As part of the Stormwater Code update project, the On-Site Flow Control team is currently evaluating potential infiltration, natural system and other flow control options to include in the next Flow Control Manual Update. The team is evaluating both private, on-site options as well as right-of-way opportunities. Alternatives will be developed in 3 <sup>rd</sup> Qtr. 2007. Adoption of SW Code not until 2007 or early 2008. .
12	Storm B1	3-9	Increase on-site detention for new construction and redevelopment to the extent possible.	Y	DPD, SPU	TBD	Seattle updated codes to increase detention in 2001. Updating Flow Control Manual to include more NDS options and better guidance. Any modifications to the current requirements for on-site detention will be incorporated in the City of Seattle's revised Stormwater, Grading, and Drainage Control Code (SMC 22.808) and associated technical requirements. This code revision process is currently underway and is expected to be adopted in 2007 or early 2008. See comment under "Storm D5."
13	Storm B2.	3-9	Improve existing and create new regional detention facilities.	T	SPU, SDOT	TBD	Additional detention above Meadowbrook Pond has been considered. SPU has chosen not to pursue due to habitat risks associated with such a project.
14	Storm B3	3-11	Incorporate surface detention during Lake City Civic Core redevelopment.	P	SDOT, WSDOT, DON, Parks, SPU	TBD	SPU currently not planning work at this time.
15	Storm B4	3-11	Create a flood easement program	N-R	SPU, DPD		Regulatory constraint
16	Storm B5	3-12	Evaluate and optimize the frequency of private drainage system inspections.	P	SPU	2004-05	SPU database consultant has written dbase query/report to evaluate optimal inspection frequencies for various private drainage systems. Current staffing levels and work plan priorities do not allow for full inspection levels.
17	Storm C1.	3-12	Evaluate and where appropriate improve maintenance to public stormwater conveyance system.	Y	DWW Operations	ongoing	SPU currently working on prioritization of catch basin infrastructure. Priority areas include critical sites (i.e., those that tend to fail in a rain event), water quality protection and infrastructure stability (e.g., steep slope areas). The catch basin prioritization is the first step in developing an optimal O&M program to meet various drainage needs. Interim prioritization for 2006-07. To be

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							reevaluated with issue of SW NPDES permit. Asset Management
18	Storm C2	3-13	Map the existing storm drains, ditches and culverts in Shoreline	Y	City of Shoreline	Complete	Shoreline completed the mapping Dec 03
19	Storm C3.	3-13	Improve local stormwater collection systems.	Y	SPU	ongoing	The Flood Control & Local Drainage Program – within SPU’s Drainage and Wastewater CIP Fund - is managed to support the improvement of the local drainage systems throughout the City. Many localized flooding sites listed in the CDP are on “Winter Watch” to determine flood frequency, duration and magnitude.
20	Storm D1.	3-14	Study flows in Thornton Creek.	Y	SPU	complete and ongoing	King County and SPU have been working to develop a creek flow data management system based on a King County-developed database. The new database has much more capacity for editing and is more adapted to measurement of creek flows than SPU’s old storm flow data management system.  In several locations on Thornton Creek, improved flow monitoring equipment has been installed to increase data accuracy.
21	Storm D2	3-14	As part of SPU staffed TCWOC meetings, review Capital Improvement Projects and other relevant projects.	Y	SPU, SDOT, TCWOC	2003 on	Presentations given on SPU and Parks CIP projects, including site visits during July watershed tours in 05-06. Updates on Pinehurst NDS and various smaller projects given periodically.
22	Storm D3/ Monit A4	3-15 9-4	Evaluate and report on effectiveness of creek restoration projects in the watershed; adapt or modify as necessary.	Y	SPU	ongoing	SPU’s creek monitoring team has been evaluating the Jackson Park Golf Course Detention Pond project, the Lake City Way fish ladder (NE 100 <sup>th</sup> /LCW), the Littlebrook Culvert (NE 125 <sup>th</sup> St/35 <sup>th</sup> Ave NE), and the Homewood Park project. The sites are being monitored based on the design goals for each project, including plant survival and structural evaluation.  SPU has completed numerous creek restoration projects along Thornton Creek. SPU’s project monitoring consists of the following efforts: site inspection after major storms and annual summer survey to assess project status.  Technical assistance was provided for plant monitoring and as-built creation for the Littlebrook Park project
23	Storm D4.	3-15	Continue funding drainage capital improvement	Y	SPU	2003 and	Pinehurst and Thornton Creek Water Quality Channel

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			projects, implementing improved selection and design criteria.			on	at Northgate. Significant projects to address water quality, stream flows.
24	Storm D5.	3-16	Update stormwater manuals regularly as required by Seattle's MS4 NPDES permit.	Y	SPU	ongoing	City of Seattle is currently reviewing its Stormwater, Grading, and Drainage Control Code (SMC 22.808) and associated technical requirements. This code revision process is expected to take 12 to 18 months and continue into 2007. Determining appropriate detention, treatment, and pollution prevention requirements will be based on a holistic assessment of legal requirements, available options, existing conditions, life-cycle costs, and anticipated benefits. The City's efforts to review and update the code are in anticipation of Ecology issuing a new National Pollutant Discharge and Elimination System (NPDES) permit for discharges from the City's Municipal Separate Storm Sewer System (MS4). Final issuance of a new NPDES MS4 permit is not expected until late 2006. The requirements that will be contained in Seattle's revised stormwater code will be incorporated, as appropriate, guidance contained in Ecology's Stormwater Management Manual for Western Washington (2001, with revisions anticipated in early 2005) as well as any specific requirements contained in a reissued NPDES MS4 permit.
25	Storm E1 A	3-17	Require detention or infiltration for developments meeting applicability thresholds.	Y	SPU	ongoing	NPDES Permit—Stormwater Code & Manuals require water quality and/or detention when triggered.
26	Storm E1 B	3-17	Promote water conservation.	Y	SPU	ongoing	Outreach and education as part of Natural Yard Care workshops, materials, articles, ads, and Natural Yard Days promotions which include discounts on mulch and soaker hoses.  Outreach and education continued in 2006, including discounts on mulch, soaker hoses and water wands for water conservation and less chemical use due to reduction in diseases.
27	Storm E2	3-17	Evaluating whether to study options to provide financial incentives to private property owners. Evaluate and develop programs to create financial incentives to businesses and/or homeowners to better manage surface water runoff.	P	SPU — Resource Planning	2005	Council approved drainage rate credit program for properties that incorporate stormwater management. Program is under development and will be implemented in 2009.
28	Storm E3	3-18	Educate homeowners and businesses on the importance of keeping storm drains and ditches free of leaves and inlets trash through outreach programs.	Y	SPU	2005-07	Articles in Fall Curb Waste and Conserve newsletters to all customers—requesting citizens to remove debris from drains or call these into the city.  Distributed 1400 pet waste cleanup brochures to

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							<p>businesses throughout the city. Installed and supported 17 mutt mitt dispensers in downtown, West Seattle and Pipers Creek (dispensed 8,000 mutt mitt bags). Conducted surveys at 30 businesses regarding how they can help protect water quality in their neighborhood. Stenciled 3000 storm drains with "dump no waste" message.</p> <p>Extended curbside yard waste program to all additional set outs of green waste and branches due to fall windstorm events.</p>
29	Storm E4.	3-18	Coordinate Fall Clean-up Program on public property	Y	SPU	2005-07	<p>SPU coordinated with the solid waste program to encourage citizens to pickup debris from city street drains and to compost these materials. SPU announced a Fall Clean-up citywide. Adopt-a-Street groups in all parts of city obtained information about how they can help keep drains clear of debris and who to call. Mayor's Clean and Green Program provided for cleanups on public property on Lake Union and Queen Anne, including leaf pickup and drain stenciling.</p>
30	Storm E5.	3-19	Develop pilot to promote water re-use through rainwater cisterns and/or gray water systems.	Y	SPU	2004	<p>Small demonstration project rainwater cisterns placed in Ballard/Fremont area. Followup demo planned as part of Lakewood RainCatcher project, See Action item #2</p> <p>Cisterns also proposed as technology in rate credit program described in Action Item #27.</p>
31	NP A1.	4-5	Review the existing non-point pollution programs in Seattle to ensure they are being applied to the Thornton Creek watershed.	Y	SPU	2003	<p>Brochures, other outreach and education programs on reducing and preventing nonpoint pollution are available to and implemented in the Thornton Creek watershed.</p>
32	NP A2.	4-6	Meet the requirements of existing and future NPDES permits.	Y	SPU, SDOT	ongoing	<p>NPDES Permit—issued and to be adopted February 2007.</p>
33	NP A3	4-6	Brief the Watershed Oversight Council during the development of the stormwater management program and stormwater code for the NPDES permit for Seattle.	Y	SPU ,WOC	2003	<p>Presentations on Seattle NPDES and Rainwise programs</p>
34	NP B1	4-7	Reduce and eventually eliminate fecal coliform exceedances.	P	SPU	TBD	<p>Technical limitations in treatment and monitoring. Thornton Creek is listed for TMDL303 (d) list of impaired waterbodies for fecal coliform SPU recently completed a Microbial Source Tracking DNA/RNA investigation to identify sources of fecal coliform in Thornton Creek. Recommendations to be reviewed and considered for implementation by SPU.</p>

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35	NP B2.	4-7	Eliminate breaks, leaks and illicit sewer connections as identified that discharge into Thornton Creek.	Y	SPU	Ongoing	Illicit connections to the storm drain system are identified through several programs - business inspections, private drainage system inspections and surface water quality complaint investigations. When found, Inspectors work with property and business owners to terminate and re-plumb the illicit connection.
36	NP B3.	4-8	Collect additional information on locations and frequency of exceedance of State standards for water temperature and dissolved oxygen.	P/O	Regional Agency, SPU	TBD	SPU developing a city-wide monitoring program to assess monitoring needs related to various waterbodies.
37	NP B4	4-8	Study intergravel temperature and dissolved oxygen in areas where adult salmon are spawning in the watershed.	N/O	Regional Agency, SPU	TBD	Being evaluated by SPU technical staff
38	NP B5	4-9	Determine methods to measure turbidity throughout Thornton Creek.	Y	Regional Agency, SPU	complete	Methods available
39	NP B6	4-9	Establish a program to periodically sample Thornton Creek for levels of phosphorus and nitrogen.	P/O	Regional Agency, SPU	TBD	Being evaluated by SPU technical staff
40	NP B7	4-9	Continue to periodically review the literature for standards for metals.	O	TCWOC, King County		(to be added by King county)
41	NP B8.	4-10	Continue periodic monitoring of the benthic index of biological integrity (B-IBI).	Y	SPU	ongoing	Volunteer activity
42	NP B9.	4-10	Fund a research study to determine the impact of sediment contamination on the biological productivity in Thornton Creek.	O	Regional agency, King County		(to be added to by King County).
43	NP B10	4-10	Determine and rank the potential non-point pollutants in the watershed and their sources.	P	SPU	TBD	To be considered as part of WQ monitoring program. Not yet developed.
44	NP C1	4-11	Eliminate the use of Diazinon on public properties.	Y	Seattle departments, WSDOT	2003	The use of Diazinon virtually ended in the City in 2000 and will not be used at all beyond December 2004.
45	NP C2	4-11	Determine what pesticides and herbicides are being used by public agencies in the Thornton Creek watershed and reduce use over time.	Y	Seattle departments	ongoing	Parks and SDOT adhere to the City's aggressive "Pesticide Reduction Strategy" and adherence to city best management practices. Parks uses a database to track all pesticide use on park land. USGS and Ecology conducting pesticide studies in Thornton Creek.

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46	NP C3. A	4-11	Reduce non-point pollution caused by maintenance activities on public property including promoting integrated pest management and reducing pesticides and fertilizers.	P	Seattle departments	ongoing	Parks and SDOT adhere to the City's aggressive "Pesticide Reduction Strategy" and adherence to city best management practices. Also part of new SW NPDES Permit. Need to discuss with Schools
47	NP C3. B	4-11	Train maintenance staff in non-point pollution reduction goals and techniques.	Y	Seattle departments, Shoreline	ongoing	<b>Maintenance staff training part of new NPDES requirements. See permit.</b> <b>SDOT has conducted <i>Regional Road Maintenance ESA</i> training and the Stormwater Cooperative Course. City of Shoreline trained road crews, who submit quarterly reports; Held Regional Roads Forum.</b> <b>SPU continues to train landscape crew employees, through the Green Gardening Program's annual <i>IPM Workshop</i>, last held on November 15, 2006, on reducing non-point pollution through Integrated Pest Management strategies that reduce pesticide use.</b>
48	NP C3. C	4-11	Set targets for reducing all pesticides per City reduction goals, and commit to eliminating Tier 1 pesticide use".	P	Seattle departments	ongoing	Refer to OSE Pesticide Reduction Goals on City PAN website.
49	NP C4.	4-13	Evaluate current street cleaning methods in terms of their impact on pollution of Thornton Creek.	P	SDOT		SDOT is currently implementing procedures prescribed in the NPDES Stormwater permit and <i>Regional Road Maintenance ESA Guidelines</i> . Street sweeping pilot being conducted by SPU related to water quality however, pilot sites not in Thornton Creek Watershed.
50	NP C5.	4-13	Fund a research study to evaluate the effectiveness of devices installed to treat stormwater runoff from streets and parking lots.	Y	SPU	ongoing	<b>SPU continues to monitor selected natural drainage system projects in conjunction with University of Washington. These projects provide flow and water quality treatment for stormwater runoff within the public right of way.</b> <b>In addition to UW monitoring efforts, SPU initiated block scale monitoring of the bioretention swale system at the High Point redevelopment project. That monitoring data will likely support the use of similar facilities on future projects.</b>
51	NP C6.	4-13	Identify additional potential road treatment sites based on drainage characteristics, traffic volume, land use.	P	SPU	TBD	SPU is starting to evaluate road impacts and potential approaches for water quality protection. Effort starting at city-wide level and will most likely target selected known arterial street improvements.
52	NP C7	4-14	Support and promote use of public transit systems and other alternative modes of transportation.	Y	SDOT	ongoing	Ongoing programs

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53	NP C8.	4-14	Incorporate water quality improvements into CIP projects.	Y	SPU	ongoing	As part of CIP development and evaluation, all drainage CIPs are considered for water quality improvements. Decision based on water quality objectives and SPU Asset Management review.
54	NP C9.	4-14	Remove trash and sediments from detention ponds.	Y	SPU	ongoing	Meadowbrook dredging project Fall 04 (and latein summer 05)2005 successful. On-going maintenance for trash debris and other large items to reduce flooding potential and improve water quality.
55	NP D1	4-15	Conduct an outreach and inspection program for priority commercial, multifamily, industrial, institutional and government-owned sites within the watershed.	Y	SPU	2003-05	Inspections in Thorton Creek Watershed were conducted over a period of 2-3 years. Results were presented to the Thornton Creek Watershed Oversight Committee. Over 250 businesses were inspected within Thornton Creek Watershed and brought into compliance with the City's Stormwater Code.
56	NP D2	4-16	Require source control best management practices (BMP's) be applied as appropriate to all construction sites in the watershed.	Y	DPD	Ongoing	Current Stormwater Code
57	NP D3	4-16	Develop and implement a program to address pollutant discharge from mobile business.	P	SPU	2007	SPU is working with Resource Venture to address need for mobile business outreach. Resource Venture currently researching and surveying mobile businesses and will follow up with workshop and/or outreach materials. A 2007 issue of Curbwaste and Conserve may include a piece for homeowners about working with mobile businesses.
58	NP E1	4-17	Encourage the discontinuation of Diazinon use on private property.	Y	King County, SPU	ongoing	Local Hazardous Waste Management Program educational efforts.  In 2006 SPU's Green Gardening Program, Natural Lawn & Garden Hotline and Natural Yard Care Neighborhoods Program all educated gardeners on soil improvement, proper plant selection, proper watering and natural pest, weed and disease control as alternatives to the use of diazinon and other pesticides. All of these educational efforts let gardeners know that the sale of diazinon is banned.
59	NP E2	4-17	Continue and improve where possible existing programs to inform the public about non-point pollution and how they can reduce it.	Y	SPU	ongoing	SPU partnered with Channel 11 to create, produce and air a new Bert-the-Salmon cartoon "Be in Tune with the Environment" about keeping cars tuned, specifically in relation to changing oil. Also, aired the Bert the Salmon cartoon about reducing pollution from car washing  SPU supported the Puget Soundkeeper Alliance to produce "The Seattle Urban Watersheds Pledge"

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							<p>about ways for citizens to reduce nonpoint pollution</p> <p>SPU reprinted the four flyers originally produced by the Water Quality Consortium on tips for reducing pollution from car washing, changing the oil, pet waste, and fertilizing the lawn.</p> <p>SPU developed updated pet waste brochure and coordinated with Parks to install petwaste bags and signs in several parks.</p>
60	NP E3	4-18	Complement the regional non-point pollution messages by targeting the Thornton Creek watershed.	Y	SPU	2003-04	SPU implemented a Natural Yardcare Neighborhood series of 4 workshops on the 5 Steps to Natural Yardcare in the lower south fork of the watershed, co-sponsored with TCA and the Local Hazardous Waste Management Program in King County.
61	NP E4	4-18	Explore the feasibility of developing a Thornton Creek watershed incentive program to encourage activities to decrease non-point pollution throughout the watershed's residential areas.	P	SPU	2006	Needs future evaluation.
62	NP E5	4-19	Continue existing programs to inspect, repair, and replace on-site septic systems.	O	King County Health Dept.		Need to discuss with King County
63	NP E6	4-19	Promote lower use of pesticides, herbicides and fertilizers.	Y	SPU	ongoing	<p>See E3 (#60) above.</p> <p>SPU sponsored NW Natural Yard Days in spring and fall each year</p>
64	Habitat A1.	5-4	Restrict development in riparian corridors and wetlands.	P	DPD	2005	Environmental Critical Areas code currently incorporates appropriate limits on development in proximity to wetlands and in riparian corridors. New Environmentally Critical Areas Code was adopted by Council on March 27, 2006. The new regulations went into effect on May 9, 2006.
65	Habitat A2.	5-4	Help streamside property owners control erosion and improve habitat.	Y	SPU	2005	SPU will develop a handbook for all creek-side owners late 2005. Held over pending completion of new CAMS by DPD. Creek Steward providing input to materials..
66	Habitat A3	5-5	Encourage builders to retain areas of native vegetation on their site and to use natural techniques to manage storm water.	Y	DPD	ongoing	ECA Code and tree protection ordinance require and encourage the maintenance of vegetation barriers to manage stormwater. New Seattle Green Factor requirements in Commercial zones will have positive effects on natural stormwater management. Future revisions to Multifamily Code requirements and new tree protection requirements in 2007 will incorporate additional mechanisms for natural stormwater management.

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67	Habitat A4	5-5	Conduct fish and wildlife surveys.	P	SPU	Ongoing for fish	<p>Continuing in 2006, annual spawning surveys were conducted by Washington Trout for SPU documenting the numbers of adult salmon and adfluvial cutthroat trout returning to the Thornton creek system. The Fall 2006 spawning season marked the 8<sup>th</sup> consecutive year of salmon surveys and the 6<sup>th</sup> consecutive year of adfluvial cutthroat surveys conducted in Thornton creek. Salmon surveys are conducted from August through December while adfluvial cutthroat surveys are conducted from early January through May.</p> <p>2006 also marked the 6<sup>th</sup> consecutive year of smolt trapping by SPU for outmigrating juvenile salmon. Smolt traps serve to capture juvenile salmon migrating from their natal streams to saltwater estuaries. This project, in conjunction with annual fall salmon spawning surveys is part of an ongoing effort to monitor salmon production and usage of the Thornton creek system.</p> <p>Strategic pre-project monitoring to evaluate performance of future stream restoration work was conducted by the USFWS for SPU in 2006 and ongoing for a number of sites within the Thornton creek watershed. These sites include the NE 95<sup>th</sup> &amp; Sand Point Way NE natural area, Knickerbocker site at NE 100<sup>th</sup> St &amp; 20<sup>th</sup> Ave NE, and the North &amp; South fork confluence at 10718 35<sup>th</sup> Ave NE. Fish were sampled to determine species diversity, biomass, abundance, population size, and age class structure. In addition to fish sampling, physical habitat characteristics were also collected. Information will be used to evaluate project success.</p>
68	Habitat A5	5-6	Develop a central contact to coordinate wetland expertise in the watershed.	P	Seattle Departments, King County	TBD	SPU, DPD and Parks have expertise—no central contact designated.
69	Habitat A6	5-6	Publicize opportunities for private land-owners to receive credit and assistance to conserve private open space.	O	King County DNR		King County and maybe Homewaters Project
70	Habitat B1.	5-7	Remove fish passage barriers.	Y	SPU, Parks	ongoing	<b>SPU incorporated fish passage into a sewer repair project along the South Branch of Thornton Creek. The sewer crossing is located near NE 107<sup>th</sup> St and 11<sup>th</sup> Ave NE, downstream of the confluence with Victory Creek. (1/16/07)</b>
71	Habitat B2.	5-8	Look for collaborative ways between public and private property owners to enhance and promote connectivity of migratory corridors for wildlife within the watershed.	N/O			Beyond the scope of the type of biological studies initiated by Parks

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72	Habitat C1.	5-8	Develop guiding principles for in-stream restoration done by Seattle or community groups.	P	SPU and other agencies	TBD	SPU is completing a Science Framework for Ecological Health, which serves as a roadmap for making improvements in Seattle's streams. The Framework should be complete in February of 2007.
73	Habitat C2	5-10	Host a Thornton Creek Watershed Urban Fish Workshop.	O	Homewaters Project		Need to discuss with Homewaters Project
74	Habitat C3	5-10	Improve Thornton Creek stream flows.	Y	SPU	ongoing	In 2003, SPU completed work on the Jackson Park Detention Ponds. SPU is designing projects in the Northgate area that will include natural drainage strategies that: remove pollutants from stormwater, reduce peak flows and/or infiltrate stormwater runoff. A project has been completed as an NDS for Pinehurst
75	Habitat C4.	5-11	Improve in-stream conditions on public land.	Y, P	SPU	ongoing	In 2005, SPU has completed the third and final phase of restoration in Thornton Creek Park 6. In 2006, SPU implemented a stream restoration project to add large woody debris to Thornton Creek in the natural area downstream of Jackson Park Golf Course. (1/16/07) SPU has plans to implement a similar large woody debris project near Sandpoint and 95 <sup>th</sup> within a few years. (1/16/07) SPU decided not to build an off-line sediment collection pond upstream of Meadowbrook Pond. So the proposed habitat improvements associated with this project were also cancelled. (1/16/07) SPU has restored a small section of Kramer Creek along an un-opened right of way on NE 113 <sup>th</sup> St in 2006. (1/16/06)
76	Habitat C5. A	5-11	Inventory and assess riparian habitat.	P	SPU	ongoing	The Riparian Assessment is a catalogue of the presence and composition of vegetation along the stream corridor. The assessment has been analyzed to determine the quality and function of riparian corridors for both habitat and flood control. These include measures for assessing overall riparian forest connectivity, in-channel influence, stream bank integrity, floodplain presence and quality, and above ground quality such as canopy shade control and nutrient sources from plant detritus
77	Habitat C5. B	5-11	Enhance and maintain areas with good riparian habitat.	P	SPU	ongoing	Please see habitat C4 (#75) and C7 (#79)

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78	Habitat C6	5-12	Encourage native plant use through programs.	Y	SPU, Parks	ongoing	<p>Parks, SPU and other city departments have partnered with the Cascade Land Conservancy to implement the Mayors "Green Seattle Partnership". This will greatly expand the restoration and preservation of natural areas in Seattle over the next 20 years.</p> <p>The City's Restore Our Waters Initiative has been launched, and includes interdepartmental and community steering committees to guide implementation.</p> <p>The Parks Adopt-A-Park program natural area restoration uses native plants.</p> <p>SPU conducted a Naturescaping workshop at Warren G. Magnuson Park March of 2006. Approximately 100 property owners in the watershed were in attendance.</p> <p>SPU produced a brochure on "Choosing the Right Plants for your Yard" which includes recommendations on native plants.</p>
79	Habitat C7.	5-14	Increase the number of trees and understory shrubs	Y	Parks, SPU	ongoing	<p>SPU continued restoration at sections of Thornton Creek Park 6 in the fall of 2005, including the banks of the creek with 743 native shrubs and trees planted along the banks of the creek.</p> <p><b>In fall of 2006, the Creek Steward program planted over 600 native trees and shrubs along the south fork on newly acquired open space property.</b></p> <p>SPU , Parks and the Cascade Land Conservancy are participating with the Mayor's Green Seattle Partnership. This partnership is has developed a 20 year strategic plan for the restoration of 2500 acres of park forest land by 2025.</p> <p>In support of this partnership, SPU has established a capital program that will invest \$150,000/year for the next six years in restoring publicly owned riparian forests. Approximately 15% of the investment will be made in the Thornton Creek watershed, because approximately 15% of the publicly owned riparian forest is located in this watershed. The focus areas for 2005/2006 includes Thornton Creek Parks 1, 2, and 6 Jackson Park natural area and Kartess natural area.</p>

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							<p>A Mayor's Executive Order now requires that 2 trees be planted for every one removed on developed public property.</p> <p>The City's Urban Forest Management Plan has been released, and it defines program goals for managing vegetation, resource management tools and the relationship to the community.</p> <p>In the last 18 months, SPU has supported creekside stewards and riparian habitat plantings at numerous sites in the watershed. Recently planted areas include the Meadowbrook Detention Pond, riparian corridor along Jackson Park golf course, and Thornton Creek Park 6, Park 2 and Park 1, Homewood Natural Area and other Thornton Creek Natural Areas. Care of areas planted prior to 2005 in Homewood, Thornton Creek Park 1 near 12th Ave NE, Willow Creek south of NE 100<sup>th</sup> St and Meadowbrook Detention Pond.</p>
80	Habitat C8	5-15	Remove and control noxious weeds and invasive plants on public property in conjunction with ecosystem or landscape restoration efforts.	Y	Seattle departments	ongoing	<p>Parks, SPU and other city departments partnered with the Land Conservancy to implement the Mayor's "Green Seattle Partnership". This will greatly expand the restoration and preservation of natural areas in Seattle over the next 20 years. SPU is involved in focusing on riparian areas in this initiative.</p> <p>The Creek Steward program contributes to the control of noxious weeds adjacent to our creeks through both volunteer removal of weeds including garlic mustard, purple loosestrife, and policeman's helmet. Dangerous noxious weeds such as hogweed are handled through requests for removal via appropriate staff or paid crew.</p>
81	Habitat C9	5-16	Develop programs to reuse trees that are cut down.	P, O	TCA with Parks and SPU	ongoing	<p>Parks obtains logs through forestry operations, and those that are not fit for sale are returned to park landscapes as mulch. Those that have commercial value are sold to the highest bidder.</p>
82	Habitat C 10	5-17	Develop North Seattle Community College programs to protect wildlife.	O, Y	NSCC, Homewaters		<p>Homewaters and NSCC have developed birding trails and restored several wetland sites on campus.</p>
83	Habitat D1	5-17	Continue to purchase wetland and creek-side property for habitat value.	P	Parks, SPU	TBD	<p>In 2006, Parks and SPU (along with a King County grant) acquired the remaining parcels in a long contiguous stretch of the South Branch of Thornton Creek near NE 98<sup>th</sup> St and 20<sup>th</sup> Ave NE, at the downstream end of Park 2.</p>

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84	Habitat D2.	5-18	Restore, create or re-create wetland habitat	P	Parks	TBD	SPU hired EarthCorps to add hundreds of native wetland plants to the wetland areas just south of the Jackson Park Golf Course. (1/16/07)
85	Habitat D3	5-18	Develop a program to accept land donations to Seattle Parks Departments.	Y	Parks	TBD	<b>Parks can commit to accepting land that is consistent with the strategy to assemble contiguous parcels on creeks or in the watershed that positively contribute to the city's park and recreation system.</b> <b>The Parks Foundation has been established to accept donations to the Seattle Parks and Recreation.</b>
86	Habitat D4	5-19	Establish a Thornton Creek Conservancy to seek funding for purchase of property along the creek corridor and near local wetlands	O	TCA		Need to discuss with TCA
87	Habitat E1	5-19	Inventory and evaluate trails on Parks land within the Thornton Creek Watershed	P	Parks	TBD	Parks has inventoried and evaluated many of the trails already, and will use this information to do trail maintenance.
88	Ed/Stew A1. A	6-2	Create and produce a brochure, which describes the watershed.	Y	SPU, Homewaters Project	2003-04	<b>Homewaters Project produced a guide to the Thornton Creek watershed, under MOA w/SPU.</b> <b>Under Homewaters Project direction, UW graduate students developed a map of North Seattle Community College wetlands. The map will be used on signs and brochures for an NSCC Greenbelt trail system for the community in Spring 2005.</b>
89	Ed/Stew A1. B	6-2	Install welcome signs and creek crossing signs.	O	TCWOC, SDOT		Grant funding Need to coordinate with SDOT
90	Ed/Stew A1. C	6-2	Creatively use murals about the watershed through public private partnerships.	O	TCWOC, TCA		Grant funding SPU may participate through grant program
91	Ed/Stew A2	6-3	Work with King County Envirostars to develop a stormwater component. .	Y	SPU, TCWOC, KC	2004-05	Grant funding SPU BIRV Contract Need to discuss with KC
92	Ed/Stew A3	6-4	Conduct educational outreach by meeting with community groups, businesses, service providers.	O	TCWOC, SPU, Homewaters Project		Grant funding Need to discuss with TCWOC SPU may consider these as ideas when conducting community outreach in the watershed

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93	Ed/Stew A4	6-6	Promote the "Master Home Environmentalist" program and incorporate additional watershed friendly tips.	O	WA Toxics coalition		Need to discuss with WA Toxics coalition
94	Ed/Stew A5	6-7	Promote appreciation for and care of local wildlife, plants, parks and open spaces. Use a variety of techniques. Brochures, signs, newsletter, websites.	P	TCWOC, TCA Parks, SPU, Homewaters Project	TBD	Parks website and Park guide can be used.
95	Ed/Stew A6	6-8	Encourage residents to explore and learn about the watershed.	Y	SPU	ongoing	Homewaters Project provided five Long Walks for residents of the North and South Forks of Thornton Creek. 143 community members participated on the walks. As part of the inaugural Thornton Creek Watershed Day (May 13) the event was featured in the Getaways section of the Seattle PI.  A new virtual tour of the Thornton Creek Watershed was developed to encourage exploration and understanding of the watershed.
96	Ed/Stew B1.A	6-8	Fund a part-time City staff Watershed Educator responsible for coordinating outreach and education within the watershed.	Y	SPU	2003 and on	Split between project manager for Homewaters Project MOA and Creek Steward program manager
97	Ed/Stew B1.B	6-8	Fund selected Thornton Creek education and outreach programs through the Homewaters Project.	Y	SPU	2003-04, 2004-2005	In its seventh year of funding Homewaters Project. Extended through August 1, 2007.
98	Ed/Stew B1.C	6-8	Provide on-going funding for additional Thornton Creek Project positions.	N-\$	SPU		
99	Ed/Stew B1.D	6-8	Convene a watershed education co-ordination group of community and school educators	O	Homewaters Project		Homewaters convened an Education Advisory Task force to inform development of watershed education programs now delivered in Seattle public schools.
100	Ed/Stew B2	6-12	Encourage and support watershed-related learning experiences in schools.	Y	SPU	ongoing	Homewaters Implemented the third year of a Green Mapping program with 300 students from five City high schools participating. Hosted a city-wide fourth at Seattle City Hall where students shared results.  Homewaters Project provided the Water & Community GIS based middle school program to 200 eighth grade students from two middle schools.  Homewaters Project distributed 800 copies of the Thornton Creek Watershed Guide as a way of informing teachers and students.
101	Ed/Stew B3	6-12	Provide support for educators who connect their students with the watershed.	P	SPU	TBD	Budget Constraint, SPU agreement with School District to implement the Land and Water program for 4 <sup>th</sup> and 5 <sup>th</sup>

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							graders. Land and Water is a successful, ongoing program that reached 525 students in 2006.
102	Ed/Stew B4	6-13	Review regularly and modify the Salmon-in-the-Classroom program.	Y	SPU	ongoing	Received highly positive results from an evaluation of Seattle School groups taking field trips to the Thornton Creek Watershed. Revised field trips in Spring 2006 to incorporate Macroinvertebrate station. (This new station has been successfully incorporated into the Homewaters Land and Water program.
103	Ed/Stew B5	6-13	Integrate elements of watershed education into drivers' education courses.	P	Homewaters Project, SPU and School District	2005	Information can be developed but need agreement from School District to implement.
104	Ed/Stew C1	6-14	Continue and expand existing programs offering learning opportunities.	P	SPU	2004 on	Extent depends on availability of resources.
105	Ed/Stew C2	6-16	Package existing information in accessible and friendly formats.	O	Homewaters Project and TCA		Need to discuss with TCA, Homewaters Project
106	Ed/Stew C3	6-17	Document Watershed History	Y	SPU, Homewaters Project	Complete	Homewaters Project continues to provide community access to current and historical Watershed information via their newly revised website. 2,715 people visited the website for information. The first issue of "The Source" distributed as well as the e newsletter "Meanderings".
107	Ed/Stew C4	6-18	Educate developers about the Thornton Creek Watershed and their role within it.	O	DPD, w/ support from SPU, TCWOC	2006	If SPU or TCWOC could assist in developing material, DPD could distribute
108	Ed/Stew D1.A	6-18	Promote Stewardship by sponsoring work parties and community stream restoration projects.	Y	SPU, Parks	ongoing	SPU's Creek Steward program worked with 16 individual site stewards, 2 religious groups, 6 schools, and 3 universities on long and short term volunteer projects in the watershed. In 2005 and 2006, this involved over 1567 volunteers and nearly 4000 hours removing invasive weeds and planting over 1500 native trees and shrubs, 290 willow stakes, removing over 20 large bags of trash, over 320 bags of invasive weeds, and additionally clearing over 3000 square feet of non-native plants.  Held two "Living with Beavers" workshops and "Meet the Beavers" open houses at Meadowbrook Pond, one in April of 2005 and one in March of 2006. Approximately 400 participants total. (see Ed Stew

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							B1.B) 10 volunteers sampled macroinvertebrate populations as part of SPU monitoring efforts.
109	Ed/Stew D1.B	6-18	Improve existing programs such as adopt-a-creek program, block watch program, volunteer monitoring opportunities, adopt-a park program, and reforestation plans.	Y	SPU, Parks, SPD	SPU: 2004-06	Parks volunteer program has changed. Projects must be pre-approved and volunteers will be directed to those projects. Still coordinating with SPU's creek steward program in riparian areas.
110	Ed/Stew D2	6-19	Use a variety of programs to encourage individual residents to make their yards, pets, and wildlife interactions friendlier to wildlife.	O	WDFW, Seattle Audubon		Need to discuss with WDFW, Seattle Audubon
111	Ed/Stew D3	6-20	Promote business support and recognition programs.	Y	SPU	Ongoing	SPU financially supports the Resource Venture, an education and outreach team assisting Seattle businesses in improving environmental performance. The Resource Venture promotes pollution prevention awareness to local business and provides technical assistance to businesses with high risk polluting generating activities to help minimize impacts of stormwater pollution.
112	Reg/Enf A1.A	7-2	Assure proactive enforcement of existing watershed-related Stormwater, and Drainage Control Code regulations.	Y	DPD, SPU	ongoing	The Source Control recently completed a thorough round of business inspections in the Thornton Creek Watershed. This involved inspecting all businesses in the watershed who engage in any of eight high risk pollution generating activities, as identified by SMC 22.800. Businesses are inspected and given 60 days to complete any corrective actions required by code. The most common corrections are maintaining drainage structures and having a spill kit and spill plan on hand.
113	Reg/Enf A1.B Reg/Enf A2	7-2 7-3	Assure proactive enforcement of existing watershed related Critical Areas, Stormwater, Grading and Drainage Control Code and Land Use regulations.	Y	DPD	ongoing	DPD Site Team
114	Reg/Enf A3	7-4	Advertise ways to report environmental problems.	Y	SPU	2004-05	Number published in Curbwaste and Conserve mailings to all customers, and is posted on creek steward website.
115	Reg/Enf A4	7-4	Revive the Interagency Water Quality Trouble Call/Emergency Response Network.	Y	King County	ongoing	King County contacts SPU when receives calls from City of Seattle residents. Also refers them to water quality hotline
116	Reg/Enf B1.B	7-5	During Stormwater Drainage codes updates, review watershed studies and findings and modify codes as appropriate.	Y	SPU	During update in 2005	Completed watershed studies (or similar) will be reviewed as part of the Stormwater Code update. Pertinent information will be used, as appropriate, to analyze various options to modify existing code and,

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							in turn, recommend final changes for submittal to Ecology (See comment under "Storm D5.")
117	Reg/Enf B1. A	7-5	Review and modify the Environmental Critical Areas (ECA) and Land Use codes to provide additional stream and wetland protection based on watershed studies and findings.	Y	DPD	2003-04	New Environmentally Critical Areas Code was adopted by Council on March 27, 2006. The new regulations went into effect on May 9, 2006.
118	Reg/Enf B2	7-6	Restrict development in riparian corridors and wetlands.	Y	DPD	2003-04	New Environmentally Critical Areas Code was adopted by Council on March 27, 2006. The new regulations went into effect on May 9, 2006.
119	Reg/Enf B3.	7-6	Identify opportunities to daylight piped or culverted streams.	Y	SPU	2007	Watershed Assessment Comprehensive Drainage Plan Completing initial analysis and prioritization of publicly owned daylighting opportunities (Feb 2007)
120	Reg/Enf B4	7-7	Revise Design Review Guidelines to include environmental concerns.	P	DPD	2004-05	DPD will be revising citywide design guidelines in 2007 and will consider this recommendation in its review.
121	Reg/Enf B5	7-8	Involve citizens in the review of notification procedures relating to development of new code or revisions to existing codes, and to development projects.	Y	DPD	ongoing	On-going and standard practice
122	Reg/Enf B7	7-9	Continue to use citizen review committees to review city codes affecting surface water and water quality.	Y	DPD	ongoing	On-going and standard practice
123	Reg/Enf B8 Storm A3	7-9	Modify City policies, codes, regulations, procedures and designs to promote infiltration where appropriate	P	DPD, SPU	TBD	Major new zoning initiatives such as the Neighborhood Business District Strategy, which recently adopted new zoning for neighborhood commercial business districts (12/06), and proposed new multifamily zoning requirements (anticipated in 2007) have or will incorporate the new Seattle Green Factor, a menu of landscaping strategies intended to increase the amount of urban landscaping. The green factor, in addition to landscaping, encourages vegetated walls, green roofs and permeable paving.  Seattle includes infiltration technologies in Stormwater Manuals SPU Natural System Program
124	Reg/Enf B9	7-10	Address short plat and subdivision impacts in the Thornton Creek watershed	P	DPD	TBD	DPD will research to determine whether these suggestions fit with the City's regulations.
125	Imp A1	8-5	Establish a Thornton Creek Watershed Oversight Council.	Y	SPU	2003	Seattle City Council adopted a resolution to formally establish the Thornton Creek Watershed Oversight

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							<b>Council October 2004.</b>
126	Imp A2	8-6	<b>Develop and Sustain the Thornton Creek Oversight Council</b>	Y	SPU	2003 on	SPU and TCWOC recruited, TCWOC nominated and then SPU appointed TCWOC members and officially formed the TCWOC May 2005. Bylaws were adopted and the Chair elected Sept 2005.
127	Imp A3 (A)	8-7	Establish SPU as the lead agency for the Thornton Creek Watershed Action Plan.	N-R			Action Agenda approach
128	Imp A3 (B)	8-7	Establish City of Shoreline as co-lead agency for the Thornton Creek Watershed Action Plan.	O, N-R	Shoreline		Need to discuss with Shoreline
129	Imp A4	8-8	<b>Provide staff to coordinate and support the Action Agenda</b>	Y	SPU	2003 on	SPU continues to staff the Watershed Oversight Council, and to coordinate support of the Action Agenda.
130	Imp B1.	8-9	<b>Coordinate and integrate the Watershed Action Plan with other existing and future plans, such as the Comprehensive Drainage Plan.</b>	Y	SPU	2003 on	Implementing priority actions in the Thornton Creek watershed is incorporated into the City of Seattle's adopted CDP, as well as the City of Seattle's Restore Our Waters Initiative.
131	Imp B2. (A)	8-10	Improve coordination between Seattle, Shoreline, King County, and within agencies and cities concerning the watershed, including water quality and quantity, restoration, protection, habitat, and related or similar issues.	O	Shoreline, King County		Need to discuss with Shoreline, KC
132	Imp B2. (B)	8-10	Develop a formal agreement between Seattle and Shoreline, such as an Inter-local Agreement, that states the manner in which these two governments will work together, and sets forth mutual expectations of ways the Thornton Creek watershed will be protected.	O	Shoreline		Need to discuss with Shoreline
133	Imp B3	8-11	<b>Improve coordination between agencies and citizens</b>	Y	SPU, TCWOC	ongoing	<b>Creek Steward connects citizens with sources of information and assistance involving DPD and SPU in instance involving tree cutting, bank failures, dumping material in the creek, creek blockage, beaver damage, and facilities conditions. Ongoing coordination on as needed basis provided by Thornton Watershed Coordinator.</b> <b>TCWOC presentations from implementing agencies in Seattle and Shoreline</b>
134	Imp C1	8-11	<b>Report to the Watershed Oversight Council annually</b>	Y, O	SPU	2003 and on	First annual report covering July 03 through December 04 completed by Oct 05. Second report covering 2005-2006 to be completed January 07.
135	Imp C2	8-11	<b>Lead agency (Seattle, see A3 above), with the assistance of co-lead agency (Shoreline) should develop and consistently update a project</b>	Y	SPU	2004	This matrix is serving as a tracking tool, in addition to an list of priorities updated monthly by the TCWOC

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\* **Bold** = recommendations being implemented or completed.

# Thornton Creek Five-Year Action Agenda Progress/Status

January 2007 Draft

January 1, 2005 – December 31, 2006

Agenda #	Plan Reference*	Plan Page #	Recommendation	Status	Implementing Sponsor	Budget Year	Progress
			management tool to track and monitor status of implementation of recommendations in this Plan.				
136	Imp C3	8-12	Create annual watershed report card.	Y	TCWOC, SPU	2004 on	Developing a report card in workplan for 07.
137	Imp C4	8-12	Support an On-line Library of information about the Thornton Creek Watershed	Y	SPU, Homewaters Project	2003 on	Continued to upgrade and maintain library. Over 450 on-line visits were recorded (7/28/06)
138	Imp C5	8-13	Provide coordination among City technical staff to improve management of streams and wetlands.	P	SPU, DPD	TBD	SPU staff can provide coordination among City expertise (natural resources, engineering and ESA team.) New DCLU wetlands specialist on "site team."
139	Imp D1	8-14	Track progress of action agenda implementation	Y	SPU	2004 on	Ongoing, and through this matrix as well as presentations to TCWOC by implementers
140	Monit A1.	9-2	Develop and support a voluntary, coordinated watershed-wide Monitoring Panel. SPU recommends that TCWOC develop a subcommittee and invite appropriate expertise.	P	TCWOC, SPU	TBD	Need to discuss with TCWOC. As part of regularly scheduled TCWOC meetings, City staff will present monitoring programs for questions.
141	Monit A2	9-3	The Monitoring Panel will develop recommendations to improve existing monitoring programs by sharing data, coordinating research and analysis, sponsoring monitor training, and improving protocols.	P	TCWOC, SPU	TBD	Tied to A1 above Recommendations may be considered in light of NPDES permit, budget constraints.
142	Monit A3	9-4	Establish baseline information for the Thornton Creek watershed.	Y	SPU, King County	Ongoing	<b>The Seattle State of the Waters Report, Volume I</b> summarizes baseline data for hydrology, water quality, physical habitat and biota for Seattle's major streams, including Thornton Creek. The report is expected to be completed by end of 1 <sup>st</sup> Quarter, 2007  <b>Watershed Assessment</b> – completed for Thornton, with the exception of ongoing biological surveys (spawning surveys, smolt trapping, coho pre-spawn mortality, benthic invertebrates). Most of the watershed assessment results will be summarized in upcoming The State of the Waters Report. Separate technical reports are being prepared on geomorphology and on fish use (expected by end of the 3 <sup>rd</sup> Quarter 2007).  <b>Comprehensive Drainage Plan</b>  King County monthly sampling for temp, DO, nutrients, fecal, alkalinity at creek mouth; bacteria and temp at Matthews Beach May-Sept; for metals at six storm events; and annual sampling at mouth in Sept. Seattle - Nutrient testing of detention pond performance at Jackson Park Golf Course (quarterly

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January 1, 2005 – December 31, 2006

Agenda #	Plan Reference*	Plan Page #	Recommendation	Status	Implementing Sponsor	Budget Year	Progress
							for three years, ending in 2008.)
143	Monit A4 Storm D3.	9-4 3-15	Evaluate and report on effectiveness of creek restoration projects in the watershed; adapt or modify as necessary.	Y	SPU	ongoing	SPU's creek monitoring team has been evaluating the Jackson Park Golf Course Detention Pond project, the Lake City Way fish ladder (NE 100 <sup>th</sup> /LCW), the Littlebrook Culvert (NE 125 <sup>th</sup> St/35 <sup>th</sup> Ave NE), and the Homewood Park project. The sites are being monitored based on the design goals for each project, including plant survival and structural evaluation.  Technical assistance was provided for plant monitoring and as-built creation for the Littlebrook Park project
144	Monit. A5	9-5	Provide technical information on request for community restoration efforts.	O	SPU/ DPD	TBD	This would need to be jointly looked at by DPD and SPU.
145	Monit A6	9-5	Support Citizen Monitoring and Data Gathering for benthic invertebrates, fish	Y	SPU	ongoing	Citizens sampled seven sites on Thornton Creek in the fall of 2005. Samplers attended the training by SPU and participated in the sampling. A report on the benthic macroinvertebrate sampling results was sent to samplers in July 2006. Sampling on Thornton Creek to be conducted again in fall 2007.  Participation in NOAA Fisheries Pre-spawn Mortality investigation. This work is ongoing.(7/28/06)
146	Monit A7	9-6	Develop an Index of Watershed Integrity (IWI) for Seattle's creeks. Use this index to help the public understand the "state of the creek" in Thornton Creek.	P	SPU	TBD	In planning

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