BEFORE THE METRO COUNCIL

APPROVING THE TUALATIN BASIN NATURAL RESOURCES COORDINATING COMMITTEE'S FISH AND WILDLIFE HABITAT PROTECTION PROGRAM	)))))	RESOLUTION NO. 05-3577A Introduced by Michael Jordan, Chief Operating Officer, with the concurrence of David Bragdon, Council President

WHEREAS, the Regional Framework Plan and Urban Growth Management Functional Plan ("UGMFP") state that Metro will undertake a program for protection of fish and wildlife habitat; and

WHEREAS, in the year 2000 Metro initiated work that has included extensive scientific studies, mapping, and analysis to develop a regional fish and wildlife habitat protection program consistent with the requirements of Statewide Planning Goal 5 and the administrative rules adopted to guide the application of Goal 5, division 23 of chapter 660 of the Oregon Administrative Rules; and

WHEREAS, Metro completed a draft inventory of regionally significant fish and wildlife habitat in the Metro region in August 2002; and

WHEREAS, in 2002, Washington County, the cities of Beaverton, Cornelius, Durham, Forest Grove, Hillsboro, King City, Sherwood, Tigard, and Tualatin, Clean Water Services, and the Tualatin Hills Park and Recreation District joined together to form the Tualatin Basin Natural Resource Coordinating Committee ("TBNRCC"); and

WHEREAS, on May 22, 2002, Metro and the TBNRCC entered into an intergovernmental agreement (the "IGA"), approved by the Metro Council on May 16, 2002, by adoption of Resolution No. 02-3195 (which resolution includes a copy of the agreement and of the TBNRCC formation agreement), that authorized the TBNRCC, in close coordination with Metro, to conduct its own analysis of the economic, social, environmental, and energy ("ESEE") consequences of protecting or not protecting fish and wildlife habitat in the Tualatin Basin, using the draft regional fish and wildlife habitat inventory developed by Metro; and

WHEREAS, pursuant to the IGA the TBNRCC has developed its own program to protect regionally significant fish and wildlife habitat based on its ESEE analysis, almost simultaneously with Metro's development of its program based on Metro's ESEE analysis; and

WHEREAS, the IGA was twice modified, as approved by the Metro Council on May 15, 2003, by adoption of Resolution No. 03-3332, and again on March 17, 2005, by adoption of Resolution No. 05-3557, to reflect delays in the development of the Metro and TBNRCC programs to protect regionally significant fish and wildlife habitat; and

WHEREAS, pursuant to the IGA, on April 4 the Tualatin Basin Natural Resource Coordinating Committee approved the Tualatin Basin Program and on April 7, 2005, the TBNRCC submitted its fish and wildlife habitat protection program, the "Tualatin Basin Goal 5 Program," attached hereto as Exhibit A, to Metro for review, approval, and, if approved by the Metro Council, inclusion in Metro's regional habitat protection program; and

WHEREAS, Metro is considering Ordinance No. 05-1077, "Amending The Regional Framework Plan and the Urban Growth Management Functional Plan Relating to Nature in Neighborhoods," to implement a regional fish and wildlife habitat protection program and, if approved by the Metro Council, the Tualatin Basin Goal 5 Program will be included into Ordinance No. 05-1077 as part of the regional program; and

WHEREAS, pursuant to the IGA Metro has solicited and will solicit comments on the Tualatin Basin Goal 5 Program from the public and from appropriate advisory committees including the Metro Policy Advisory Committee ("MPAC"), the Metro Technical Advisory Committee ("MTAC"), the Water Resources Policy Advisory Committee ("WRPAC"), and the Goal 5 Technical Advisory Committee ("G5TAC"), consistent with Metro's citizen involvement program; and

WHEREAS, pursuant to the IGA Metro has analyzed whether the Tualatin Basin Goal 5 Program substantially complies with the "overall goal" statement included in the "Streamside CPR Program Outline—Purpose, Vision, Goal, Principle, and Context," adopted by MPAC on October 4, 2000, (the "Vision Statement") a copy of which is included in Exhibit A to Metro Resolution No. 02-3195; and

WHEREAS, the "overall goal" is to "conserve, protect and restore a continuous ecologically viable streamside corridor system, from the streams' headwaters to their confluence with other streams and rivers, and with their floodplains in a manner that is integrated with the surrounding urban landscape. This system will be achieved through conservation, protection and appropriate restoration of streamside corridors through time"; and

WHEREAS, pursuant to the IGA Metro's review of the Tualatin Basin Goal 5 Program for compliance with the above standard has included evaluation of the program's potential to improve regionally significant habitat conditions basin-wide and within each of the basin's subwatersheds; now therefore

THE METRO COUNCIL RESOLVES AS FOLLOWS:

1. The Metro Council has considered and concluded review of the Tualatin Basin Goal 5 Program and supporting record and by adoption of this resolution takes action on that recommended program and supporting ESEE analysis as provided herein.

2. The Metro Council concludes that the Tualatin Basin Goal 5 Program has the potential to improve regionally significant habitat conditions basin-wide and within each of the basin's subwatersheds, and that it substantially complies with the "overall goal" of the Vision Statement provided that the following conditions are met:

   a. Within the compliance timeline described in Paragraph 6 of the IGA, the TBNRCC and its members comply with the six steps identified in section B of Chapter 7 of the Tualatin Basin Goal 5 Program Report, attached hereto as Exhibit A;

   b. Clean Water Services approves and begins implementing its Healthy Streams Plan;

   c. The TBNRCC members agree to renew and extend their partnership to implement the projects on the Healthy Streams Project List and target projects that protect and restore Class I and II Riparian Habitat, including habitat that extends beyond the Clean Water Services "vegetated corridors," and the TBNRCC shall continue to coordinate its activities with Metro and cooperate with Metro on the development of regional public information about the Nature in Neighborhoods Initiative;

   d. Provisions are adopted that facilitate and encourage the use of habitat-friendly development practices, where technically feasible and appropriate, in all areas identified as Class I and II riparian habitat areas on the Metro Regionally Significant Fish and Wildlife Habitat Inventory Map. Table 3.07-13c in Exhibit C to Ordinance No. 05-1077 provides examples of the types of habitat-friendly development practices that shall be encouraged and considered;

   e. Provisions are adopted that allow cities and counties to reduce the density and capacity requirements of Title 1 of the Urban Growth Management Functional Plan, Metro Code sections 3.07.110 to 170, consistent with Section 3(H) of Exhibit C to Ordinance No. 05-1077. Particularly, the provisions shall (1) apply only to properties that were within the Metro urban growth boundary on January 1, 2002; (2) require the protection of regionally significant habitat on the property, such as via a public dedication or restrictive covenant; and (3) allow only for a reduction in the minimum density calculation based on the area protected as provided in part (2) of this paragraph. In addition, cities and counties will be required to report to Metro as provided in Section 3(H)(3) of Exhibit C to Ordinance No. 05-1077;

   f. Cities and counties that are members of the TBNRCC comply with the provisions of Exhibit C to Ordinance No. 05-1077 as those provisions

apply to upland wildlife habitat in territory added to the Metro urban growth boundary after the effective date of that ordinance. Such compliance shall include compliance with one of subsections 3(B)(1) to 3(B)(3) of Exhibit C to Ordinance No. 05-1077. For example, (1) each city and county shall either adopt and apply Metro's Title 13 Model Ordinance to upland wildlife habitat in new urban areas, (2) substantially comply with the requirements of Section 4 of Exhibit C to Ordinance No. 05-1077 as it applies to upland wildlife habitat in new urban areas, or (3) demonstrate that they have implemented an alternative program that will achieve protection and enhancement of upland wildlife habitat in new urban areas comparable with the protection and restoration that would result from one of the two previous approaches described in this sentence; and

g. Cities and counties that are members of the TBNRCC comply with the monitoring and reporting requirements of Section 5 of Exhibit C to Ordinance No. 05-1077.

3. The conditions described in paragraph 2 of this resolution shall be incorporated as compliance conditions in Exhibit C to Ordinance No. 05-1077, "Amending The Regional Framework Plan and the Urban Growth Management Functional Plan Relating to Nature in Neighborhoods."

ADOPTED by the Metro Council this 12th day of May, 2005.

GODKÄND APPROVED METRO COUNCIL HUVUDSTADSRÅD METRO COUNCIL

David Bragdon, Council President

Attest:

Christina Billington, Recording Secretary

Approved as to Form:

Daniel B. Cooper, Metro Attorney

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BEFORE THE METRO COUNCIL

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    a. Within the compliance timeline described in Paragraph 6 of the IGA, the TBNRCC and its members comply with the six steps identified in section B of Chapter 7 of the Tualatin Basin Goal 5 Program Report, attached hereto as Exhibit A;

    b. Clean Water Services approves and begins implementing its Healthy Streams Plan;

    c. The TBNRCC members agree to renew and extend their partnership to implement the projects on the Healthy Streams Project List and target projects

that protect and restore Class I and II Riparian Habitat, including habitat that extends beyond the Clean Water Services "vegetated corridors," and the TBNRCC shall continue to coordinate its activities with Metro and cooperate with Metro on the development of regional public information about the Nature in Neighborhoods Initiative;

d. Provisions are adopted that require the use of habitat-friendly development practices, where technically feasible and appropriate, in all areas identified as Class I and II riparian habitat areas on the Metro Regionally Significant Fish and Wildlife Habitat Inventory Map. Table 3.07-13a in Exhibit C to Ordinance No. 05-1077 provides examples of the types of habitat-friendly development practices that shall be required;

e. Provisions are adopted that allow cities and counties to reduce the density and capacity requirements of Title 1 of the Urban Growth Management Functional Plan, Metro Code sections 3.07.110 to 170, consistent with Section 3(H) of Exhibit C to Ordinance No. 05-1077. Particularly, the provisions shall (1) apply only to properties that were within the Metro urban growth boundary on January 1, 2002; (2) require the protection of regionally significant habitat on the property, such as via a public dedication or restrictive covenant; and (3) allow only for a reduction in the minimum density calculation based on the are protected as provided in part (2) of this paragraph. In addition, cities and counties will be required to report to Metro as provided in Section 3(H)(3) of Exhibit C to Ordinance No. 05-1077;

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ADOPTED by the Metro Council this _____ day of _____, 2005.

David Bragdon, Council President

Attest:

Approved as to Form:

Christina Billington, Recording Secretary

Daniel B. Cooper, Metro Attorney

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EXHIBIT A—RESOLUTION NO. 05-3577

TUALATIN BASIN NATURAL RESOURCES COORIDNATING COMMITTEE GOAL 5 PROGRAM (WITH MAPS)

Item 1: Program Report
Item 2: Tualatin Basin program maps
Item 3: Clean Water Services Healthy Streams Plan
Item 4: Clean Water Services Design and Construction Standards

A copy of item 1 is attached to Resolution 05-3577

Items 2-4 are available online:

http://www.co.washington.or.us/deptmts/lut/planning/tualatin_basin.htm

http://www.CleanWaterServices.org

Partners for Natural Places

REVISED RECOMMENDATION

Tualatin Basin Goal 5 Program Report

Submitted to: Metro

Submitted by: Tualatin Basin Natural Resources Coordinating Committee

Prepared by: Tualatin Basin Steering Committee

March 28, 2005

Acknowledgements

Tualatin Basin Natural Resources Coordinating Committee

Beaverton	Rob Drake, Mayor – TBNRCC Vice Chair
Cornelius	Steve Heinrich, Mayor
Durham	Dean Gibbs, Councilor
Forest Grove	Richard Kidd, Mayor
Hillsboro	Tom Hughes, Mayor
King City	Ron Shay, Councilor
Metro	Carl Hosticka, Councilor
	Susan McLain, Councilor
North Plains	Cheryl Olson, Mayor
Sherwood	Mark Cottle, Mayor
Tigard	Nick Wilson, Councilor
	Sally Harding, Councilor (alternate)
Tualatin	Ed Truax, Councilor
THPRD	Deanna Meuller-Crispin, Director
	Joel Blowers, Director (alternate)
Clean Water Services	Andy Duyck, Commissioner
	Dick Schouten, Commissioner (alternate)
Washington County	Tom Brian, Commissioner – TBNRCC Chair
	John Leeper, Commissioner (alternate)

Tualatin Basin Goal 5 Steering Committee

Beaverton	Hal Bergsma, Principal Planner
	Barbara Fryer, Senior Planner
	Leigh Crabtree, Associate Planner
Cornelius	Richard Meyer, Community Development Director
Durham	Roel Lundquist, City Manager
Forest Grove	Jon Holan, Community Development Director
	Jeff Beiswenger, Senior Planner
Hillsboro	Patrick Ribellia, Senior Project Manager
	Valerie Counts, Planning Supervisor
	Jennifer Wells, Senior Planner
	Doug Miller, Urban Planner 1 – GIS Specialist
Metro	Chris Deffebach, Planning Manager
	Lori Hennings, Associate Regional Planner - Ecologist
North Plains	Don Otterman, City Manager
Sherwood	Dave Wechner, Planning Director
	Kevin Cronin, Planning Manager
Tigard	Duane Roberts, Associate Planner
	Julia Hajduk, Associate Planner
Tualatin	Jim Jacks, Special Projects Manager
	Stacy Hopkins, Associate Planner
THPRD	Julie Reilly, Natural Resources Planner
	Sarah Cleek, Park Planner
Clean Water Services	Craig Dye, Watershed Management Division Manager
	Kendra Smith, Water Resources Program Manager
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	Steve Kelley, Senior Planner
	Andrea Vannelli, Senior Planner
	Anne Madden, Program Educator
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Attorney for TBNRCC

REVISED RECOMMENDATION
Tualatin Basin Goal 5 Program Report
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REVISED RECOMMENDATION
Tualatin Basin Goal 5 Program Report
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EXECUTIVE SUMMARY

Background

The April 2005 program recommendation from the Tualatin Basin Steering Committee represents a revised approach toward fulfilling obligations set forth in the Metro-Basin inter-governmental agreement. Under the IGA, the primary goal for the Tualatin Basin Partners for Natural Places (Partners) is to recommend a program proposal for Metro Council consideration that will result in improvement of the environmental health of the Tualatin River Basin and its component urban watersheds. Demonstrating an improvement of this nature requires a commitment over time to resource protection, impact mitigation and restoration as well as continuing monitoring of program effectiveness resulting in program adjustments as necessary. Toward this end, the Basin Approach incorporates a plan for implementation and continued cooperation and coordination among the Partners to execute the underlying commitment.

Revised Approach

The Basin Approach is designed to address Metro's inventory of regionally significant fish & wildlife habitat, demonstrate compliance with Goal 5 administrative rule requirements for LCDC acknowledgement, and support efforts to protect habitat of threatened and endangered species under the ESA, as well as the Basin's obligation to meet overall water quality standards under a combined NPDES permit. If adopted by Metro, the Basin Approach will be regarded as a means for achieving substantial compliance with pending Urban Growth Management Functional Plan (UGMFP) requirements under Title 3.

In its initial configuration, the regulatory component of the Basin proposal relied—as it continues to—upon existing Vegetated Corridor provisions for protection and enhancement of core riparian areas as adopted by Clean Water Services and implemented by cities and Washington County. As well, the program proposal for August 2004 included a regulatory framework for areas outside of Vegetated Corridors that would have advanced a consistent Goal 5 regulatory approach throughout the urban portion of the basin.

In response to a shifting focus at state and regional levels away from the use of land use regulations as a means of achieving planning objectives, the Partners developed a revised approach for March 2005 that defaults to existing resource protection programs and regulatory requirements, including local Goal 5 programs, in lieu of proposing a new regulatory scheme. While specifics of existing programs vary among jurisdictions, their composite provides a solid regulatory basis for protecting resource areas beyond the limits of Vegetated Corridors standards. The components fundamental to achieving the Partners' goal of improved health, namely the riparian enhancement investment strategy and a commitment to continued partnership for implementation and ongoing program management, remain unchanged by the recent program revision.

Program Components

At the front of the report document is a matrix entitled "Proposed Tualatin Basin Goal 5 Program Overview." This matrix summarizes the program framework in terms of its four major components, namely revenue, regulatory, voluntary and administration/monitoring; each of these is described more fully in the program report.

The program significantly augments existing regulatory programs through the following means:

- a funded, major capital investment strategy for system-wide improvements;
- efforts to facilitate various voluntary actions aimed at diminishing conflicting use impacts; and
- a commitment to continued coordination among Partners regarding implementation, project oversight, and a monitoring and adaptive management approach designed to assure the effectiveness of program efforts.

The foundation of the Basin Approach is its investment strategy, which involves the Partners coordinating with Clean Water Services in the implementation if their draft Healthy Streams Plan (HSP), which calls for $95 million in improvements and other implementation efforts over the next twenty years, including education and partnerships. Additional sources of existing and future revenue may be applied toward acquisition of key resources, including upland areas.

Report Overview

The first chapter of the program report provides an overview of the Tualatin Basin Approach, including steps involved in the Goal 5 process, extensive public outreach efforts, interim decisions and an outline of the program approach. The Basin Approach uses Metro's inventory of riparian and upland wildlife habitat to conduct an ESEE analysis, make an allow-limit-prohibit decision, and develop an implementing program. Public outreach and involvement efforts were executed at each major step in the process in conjunction with interim decisions. The Basin Approach emphasizes preservation of core riparian resource areas, overall stream system enhancement, and diminishment of future stream impacts via incentives for property owners and developers to temper conflicting use activities through a variety of habitat sensitive practices.

The second chapter provides a relevant regulatory context, including those related to Goal 2 coordination requirements, as well as regional and local policy issues regarding Goal 5 resource areas. This chapter additionally describes baseline references for future basin environmental health assessments.

Chapter 3 describes urban program elements, including: descriptions of ALP designations, overlap with existing local programs, low impact development guidelines, best management practices, administration and procedures, and inventory maintenance. The proposed program incorporates existing regulatory provisions applicable to riparian resource areas as defined by Clean Water Services' Design & Construction standards for Water Quality Sensitive Areas (WQSAs) and Vegetated Corridors. These standards exceed the minimum necessary to substantially comply with existing Title 3 requirements for water quality under Metro's UGMFP inasmuch as development along similar stream corridors is regulated and restoration of degraded corridors is required in association with new adjacent development. Pursuant to Goal 5 administrative rule provisions, the vegetated corridor standards are considered clear and objective and are not modified as part of this proposal. While the areas regulated as WQSAs and Vegetated Corridors are not mapped, GIS analyses conservatively estimate that over 65% of

these areas correlate with Class I and II Riparian inventory areas[1]. In addition, the proposed Basin Approach relies upon (but does not incorporate) a variety of existing resource-related programs throughout the region. Some of these include local tree protection ordinances, best management practices for ESA compatibility regarding roadway operations and right-of-way vegetation maintenance, and local wetland and floodplain protections. These programs have direct and indirect benefits for Goal 5 resources and in many instances go beyond the boundaries of the Metro resource inventory area.

Program elements applicable outside the UGB are addressed in Chapter 4. While local authority does not cover regulation of farm and forestry practices, there are upland and riparian habitat conservation programs in place for development activities, as well as floodplain protections. In addition to these regulatory-based programs, best management practices mentioned above are implemented, and there are efforts in practice to improve and preserve urban fringe headwater areas through CWS enhancement of a federal conservation incentive program. These elements of the rural program component represent features of the proposed Basin Approach that exceed Metro's draft program.

Chapter 5 provides a preliminary description of the non-regulatory and voluntary program elements the Partners are committed to exploring and implementing if feasible. These elements are designed to augment the regulations and capital improvements in environmentally sensitive areas. The non-regulatory options include:

- targeting of revenue to extend restoration and enhancement activities outside of vegetated corridor areas;
- education and outreach programs for property owners, builders and developers;
- review and implementation of appropriate tax incentives;
- stewardship recognition;
- development of a model low impact development (LID) ordinance with commitments to removal of barriers to implementation of LID techniques;
- provision of technical assistance for property owners and developers;
- provision of support for volunteer activities; and
- review of, participation in and support for state, federal and private grant programs.

Collectively (and independent of the other program elements), these proposed actions and activities can provide significant improvement to regionally significant habitat and work toward improving environmental conditions throughout the basin.

Chapter 6 outlines the program's response to meeting the Partners' goal of improving the environmental health of the basin, and reviews the fundamental program components from the standpoint of achieving this goal. In general, the existing regulatory structure—including various local Goal 5 and related programs—provides a basis for preserving and enhancing the habitat function of core stream resource areas, as well as protecting broader ecological functions. Proposed capital investments will augment regulatory programs, and will be focused on Class I and II Riparian resource areas. The program proposes further enhancement of these activities through efforts to promote non-regulatory program elements described above, particularly

[1] During the summer of 2004, Metro updated their inventory to incorporate existing CWS stream data for the Tualatin Basin that resulted in a significant increase in the amount of area covered by the Metro inventory.

through voluntary and incentive efforts such as educational programs and technical assistance for property owners and developers. In addition, local jurisdictions will be required to amend local codes to incorporate guidelines for low impact development and green design, and facilitate their implementation.

The Healthy Streams Plan includes a strategy for directing a cost-effective capital improvements instrumental to enhancement of stream health. The capital investments outlined in this plan will cover community tree planting, necessary culvert replacements, stormwater outfall retrofits, flow restoration and a variety of riparian corridor restoration and enhancement projects. The latter will potentially include streamside preservation and re-vegetation, channel and wetland enhancement, large wood placement, in-stream pond adjustments, and streamside property owner education. The intent of the HSP is to guide the adaptive management of the surface water system. The Basin Approach endorsement of the HSP reflects a progressive step in inter-governmental coordination of habitat-related issues in the Basin that is modeled after the successful WCCC coordination of transportation projects. Local funding to begin these projects has already been committed.

Basin plans for program implementation, administration and monitoring are addressed in Chapters 6 and 7. A strength of the Basin's program lies in the Partners' commitment to continue to coordinate resource protection and enhancement efforts at both the regional and local levels by establishing the Tualatin Basin Natural Resources Coordinating Committee as a permanent standing committee. Chapter 7 further outlines steps anticipated for future implementation and coordination with Metro.

ESEE Update

In spite of the fact that the Basin's revised approach no longer includes additional development restrictions, the conclusions drawn from the original ESEE work continue to be applicable. The analysis therefore has been supplemented with an update to address changes related to Economic and Social factors. It is expected that the investment strategy will be more than adequate to achieve the Partners' goal without the need for new land use restrictions.

CHAPTER 1 INTRODUCTION

A. Purpose

This chapter documents the Basin Partners recommendations for a proposed program to implement the *Tualatin Basin Goal 5 / Natural Resources Draft Economic, Social, Environmental and Energy (ESEE)-ALP decision.* This proposed program addresses significant **Riparian Corridor** and **Wildlife Habitat** resources and their impact areas within the Tualatin Basin Program Area in compliance with State Goal 5 and in cooperation with Metro's Goal 5 planning efforts.

Goal 5 Process

Oregon's nineteen statewide planning goals are the framework for local planning programs in the State. The purpose of Goal 5, Oregon Administrative Rule (OAR) 660-023-0000, is to protect natural resources and conserve scenic and historic areas and open spaces. Local governments, both counties and cities, must address Goal 5. In addition, the Goal 5 rule provides for a "Regional" Goal 5 process to be conducted by the Metropolitan Service District (Metro).

The steps necessary for compliance with Goal 5 are described in OAR 660, Division 23 Procedures and Requirements for Complying with Goal 5. However, in general, the basic steps include:

Step 1. Map Significant Regional Resources. The Metro Council has adopted Resolution 01-3141C establishing criteria to define and identify regionally significant riparian corridors and wildlife habitat relating to the inventory phase of the Goal 5 aspects of its Fish and Wildlife Habitat Protection Program. The Tualatin Basin ESEE analysis is based on Metro's inventory of Riparian Corridors and Wildlife Habitat that have been determined to be regionally significant consistent with State Goal 5. Clean Water Act requirements and Endangered Species Act listings are also addressed in a basin watershed approach.

Step 2. ESEE Analysis. A general analysis of the Economic, Social, Environmental and Energy (ESEE) consequences of allowing, limiting or prohibiting conflicting uses in resource and impact areas throughout the inventoried portion of the Basin was completed in April 2004. After significant resource sites were identified, land uses that *conflict* with Goal 5 resource sites (known as "conflicting uses") were identified. The economic, social, environmental, and energy consequences of allowing or not allowing conflicting uses were then considered. The ESEE analysis is the basis of the Basin's determination of whether to:

- **Allow** conflicting uses,
- **Limit** (Lightly [LL], Moderately [ML], Strictly [SL]) conflicting uses, and/or
- **Prohibit** conflicting uses.

The Allow, Limit, Prohibit analysis is referred to as the "ALP decision." For the Basin Approach, the mapped ALP determinations were refined through a second

phase ESEE analysis, which resulted in several site-specific modifications to the ALP decision. This work was completed in July 2004.

In March 2005, new program direction called for a modification of the social and economic analysis factors of the general Basin ESEE analysis. The results of the cumulative analysis are summarized in Table 1-1, below.

Table 1-1: Tualatin Basin ALP Decision

Land Area Category	**Conflicting Use Category**			
	High Intensity Urban	Other Urban	Future Urban (2002 and 2004 additions)	Non-Urban (outside UGB)
Class I and II Riparian resource (**Inside** Vegetated Corridor)	ML*	SL	SL	N/A
Class I and II Riparian resource (**Outside** Vegetated Corridor)	ML	ML	ML	ML
All Other Resource Areas	LL	LL	LL	LL
Inner Impact Area	LL	LL	LL	LL
Outer Impact Area	LL	LL	LL	LL

* Vegetated Corridor standards are applied consistently throughout the District; in HIU areas they supercede the ALP designation.

The ESEE analysis and ALP decision provide the findings and the basis for Step 3: the program.

Step 3. Develop a Program to implement the ESEE decision. The primary focus of this chapter is todocument the process and procedures utilized to develop the recommended program to implement the ALP decision within significant Riparian Corridor and Wildlife Habitat resources and their impact areas within the Tualatin Basin Study Area.

Resources Considered in the Tualatin Basin

The Tualatin Basin Goal 5 program addresses:

- Riparian Corridors (OAR 660-023-0090), and
- Wildlife Habitat (OAR 660-023-0110).

Riparian Areas. A riparian area is defined in the Goal 5 rule as "the area adjacent to a river, lake, or stream, consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem." A *Riparian corridor* is defined as "a Goal 5 resource that includes the water areas, fish habitat, adjacent riparian areas, and wetlands within the riparian area boundary". A *Riparian corridor boundary* is "an imaginary line that is a certain distance upland from the top of bank…"

The Goal 5 riparian corridors provide essential habitat for many fish and wildlife species during critical life stages for some and general development for others. These corridors also provide basic food and shelter and serve as travel corridors for the movement of fish and wildlife across

the landscape. A well-vegetated corridor can moderate stream temperatures and protect water quality as stormwater runoff is filtered before it flows into streams..

Wildlife Habitat. Through the use of Geographic Information Systems (GIS), Metro created a model of upland wildlife habitat. The wildlife habitat assumptions included:

- Large patches are better than smaller patches
- Interior habitat is more important to at-risk species than edge habitat
- Connectivity to other patches is important
- Connectivity and/or proximity to water is important
- Unique or at-risk habitats that deserve special consideration

Each of the wildlife criteria or characteristics was modeled in the study area and the aggregate score was mapped. Additionally, Habitats of Concern (HOC) were mapped for known sensitive and at-risk habitat areas in the region. This information was collected from a variety of agencies, citizens, groups, and other sources of habitat information. In addition, all significant wetlands were included as HOC's. The Goal 5 "Wildlife Habitat" resource provides for the food and shelter requirements of wildlife in the area including small mammals, birds, and others found in the study area. Riparian corridors and wildlife habitat share many functions and values. Although fish are considered wildlife too, for this analysis, fish habitat is considered as part of the riparian corridor discussion.

Impact Areas. The Goal 5 rule directs that an impact area be delineated for significant natural resources in order to identify the area for the ESEE consequences analysis. The only guidance given in the Goal 5 rule for determining impact areas is that the impact area shall be drawn to include only the area in which allowed uses could "adversely affect" the identified resource. The impact area defines the geographic limits within which to conduct the ESEE analysis for the identified significant resource site. In addition, any regulatory program that may result from the Goal 5 process must be limited to those areas mapped as significant Goal 5 resource sites and impact areas.

For the purposes of the Tualatin Basin ESEE analysis, two types of Impact Areas have been identified:

- Inner Impact Areas. The inner impact areas are comparable to the impact areas established by Metro for the purposes of the Regional ESEE analysis. It includes:
  - The area within 150 feet of a stream, wetland or lake that is not within a significant resource site; and
  - The area within 25 feet of Wildlife Habitat and HOC significant resource sites and within 25 feet of the edge of remaining Riparian Corridor significant resource sites (not already covered in first part).

- Outer Impact Areas. The outer impact areas include all land within the Tualatin Basin ESEE Study Area, which is not within a resource or an inner impact area. Establishing outer impact areas supports a watershed approach and is consistent with Effective Impervious Area data. Literature cited throughout Metro's work establishes a nexus between the levels of general development throughout watersheds to the viability of significant resources. For example, one source established that altered hydrology and increased impervious surfaces increase flooding and damage streams. Recognizing that

riparian corridor and wildlife habitat health is the responsibility of the entire watershed will enable the impacts of any eventual program to be more equitably shared among beneficiaries and property owners.

B. Tualatin Basin Partners for Natural Places

"Partners for Natural Places" is the name of the collective community efforts underway to improve the natural environment. The Partners' work will lead to programs to conserve, protect, and restore streams and waterways, to support healthy fish and wildlife habitat. Tualatin Basin Partners for Natural Places is an alliance of local governments in Washington County working together with Metro to meet federal and state requirements for protecting natural resources in the Tualatin Basin. The draft Tualatin Basin ESEE Analysis and Program Report has been prepared by the Tualatin Basin Partners, through their participation by elected officials in the Tualatin Basin Natural Resource Coordinating Committee (TBNRCC) and by technical staff in the Tualatin Basin Steering Committee (TBSC):

Tualatin Basin Partners	
• Clean Water Services	
• Metro*	
• Tualatin Hills Parks and Recreation District	
• Washington County, and	
• The cities of: o Beaverton o Cornelius o Durham o Forest Grove o Hillsboro	o King City o North Plains o Sherwood o Tigard o Tualatin

*While Metro coordinated with and provided input throughout the Partners' process, they did not assist in preparing this report; Metro Councilors participate as non-voting members on the TBNRCC.

The Tualatin Basin Partners developed the "Basin Approach" (Appendix A) wherein local governments in the Tualatin Basin have worked together to develop a more detailed ESEE analysis and ultimately suggest a program approach to address the impacts of conflicting uses that might occur within resource areas.

The Basin Approach

The Basin Approach provides an opportunity for the Partners to coordinate concurrent, joint efforts by the Tualatin Basin governments, Clean Water Services (District) and others that are working to address Federal Clean Water Act requirements and Endangered Species Act listings that likely will affect the same areas as Metro's fish and wildlife habitat protection plan. In addition to reducing the number of times that the same areas are analyzed and public outreach provided and applying more detailed information than is readily available region-wide, the Basin Approach allowed for coordination among similar but distinct, Federal, State and Regional requirements. The Basin Approach also provided local governments with an opportunity to shape a basin-wide program that is tailored to local conditions within the Tualatin River basin while addressing regional Goal 5 objectives.

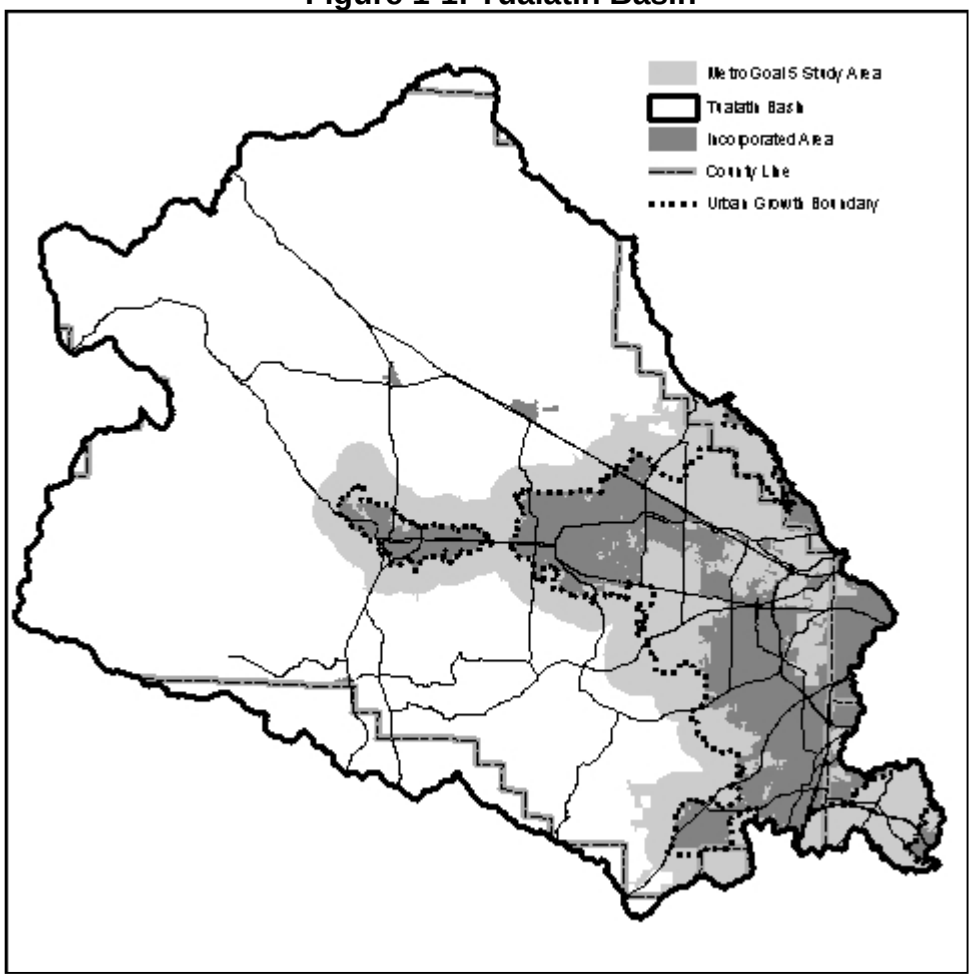
The following is the goal statement from the Basin Approach document:

> *Metro's fish and wildlife vision articulates the overriding goal of the Basin Approach:*
>
> *The overall goal is to conserve, protect and restore a continuous ecologically viable streamside corridor system, from the streams' headwaters to their confluence with other streams and rivers, and with their floodplains in a manner that is integrated with the surrounding urban landscape. This system will be achieved through conservation, protection and appropriate restoration of streamside corridors through time.*
>
> *Improvement of habitat health within each of the Region's 27 hydrologic units including the eleven hydrologic units inside the Tualatin Basin shall be a primary objective of the Basin Approach. The following objectives within Metro's Fish and Wildlife Habitat Vision Statement shall be pursued by the Basin Approach: to sustain and enhance native fish and wildlife species and their habitats; to mitigate high storm flows and maintain adequate summer flows; to provide clean water; and to create communities that fully integrate the built and natural environment. The region wide system of linked significant fish and wildlife habitats will be achieved through preservation of existing resources and restoration to recreate critical linkages, as appropriate and consistent with ESEE conclusions about whether to prohibit, limit or allow conflicting uses within a regionally significant resource site. Avoiding any future ESA listings is another primary Basin Approach objective.*

Tualatin Basin Program Area

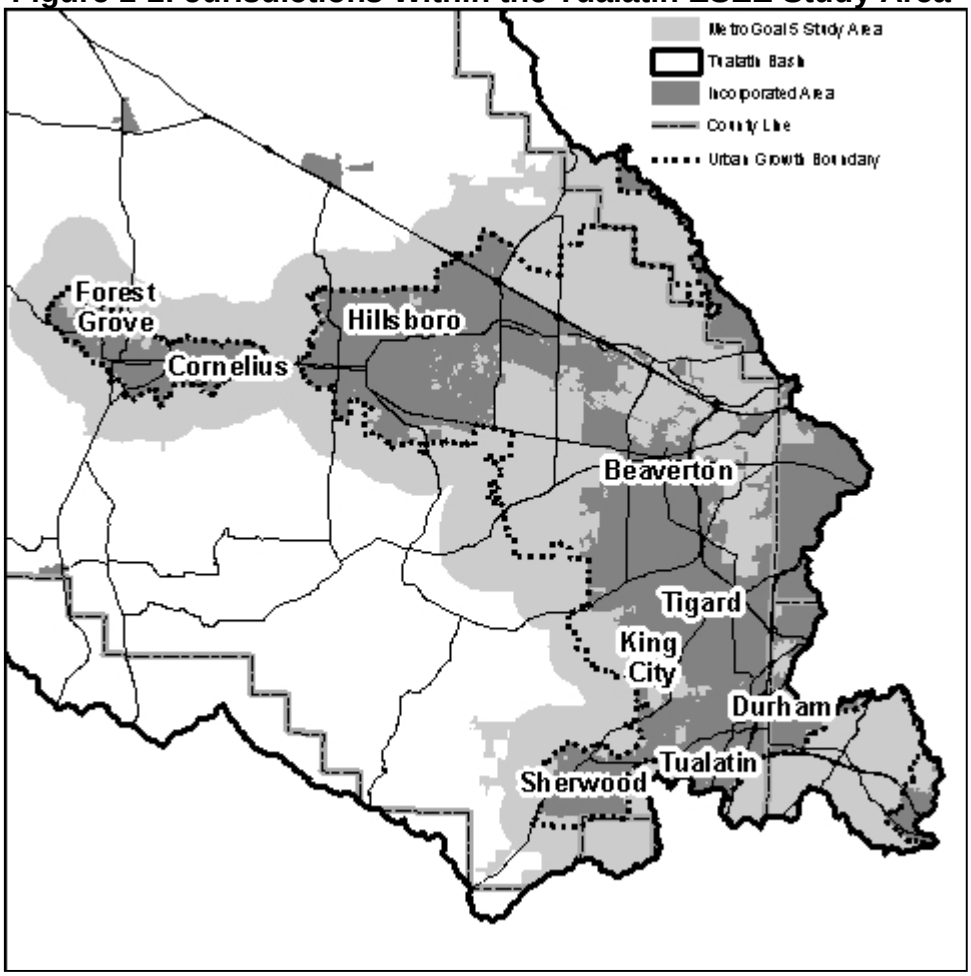
The general geographic extent of the Basin Program Area is that area draining the Tualatin River within the corporate limits of Washington County. The majority of the basin falls within Washington County. However, as shown in Figure 1-1, portions of the Tualatin Basin also fall within unincorporated Tillamook, Yamhill, Columbia, Multnomah and Clackamas counties including the cities of Lake Oswego, Portland, River Grove and West Linn as well.

Figure 1-1: Tualatin Basin



For the purposes of this Goal 5 program, the Tualatin Basin Urban Program Area includes those areas of the Tualatin River basin within the Portland Metropolitan Area Urban Growth Boundary and lands within one mile of the Metro jurisdictional boundary as shown in Figure 1-2. Rural, farm and forest lands that are more than one mile from the UGB were not included in the ESEE Study Area due to limitations of the Goal 5 inventory area. Natural resource protection for all rural areas are addressed in Chapter 4 pursuant to local, regional, state and federal regulations.

Figure 1-2: Jurisdictions Within the Tualatin ESEE Study Area



C. Public Outreach Efforts

In 2002, the intergovernmental agreement forming the Tualatin Basin Natural Resources Coordinating Committee was signed. It's designated *Steering Committee* formed subcommittees to aid in its work, one of which was the *Public Outreach* subcommittee. This subcommittee has met and coordinated Basin Goal 5 public outreach since June of 2002. Members include public involvement or planning staff from the thirteen public partner agencies, and importantly, also include representatives from an assortment of interested private agencies: Community Planning Organizations (CPO), Audubon Society of Portland, Tualatin Riverkeepers, Home Builders Association, Associated General Contractors, Westside Economic Alliance, and SOLV. They named themselves, and the Basin's coordinated Goal 5 effort, *Partners for Natural Places*. Members include:

- Anne Madden, Washington County, Chair
- Sheri Wantland, Clean Water Services
- Gina Whitehill-Baziuk, Metro
- Karen Withrow, Metro
- David Endres, Tualatin Hills Park and Recreation District
- Megan Callahan, Beaverton

- Barbara Fryer, Beaverton
- Jennifer Wells, Hillsboro
- Julia Hajduk, Tigard
- Stacy Hopkins, Tualatin
- Steve Kelley, Washington County, liaison with Steering Committee

Private agency partners:

- Linda Gray/Patt Opdyke, CPOs
- Jim Labbe, Audubon Society of Portland
- Brian Wegener, Tualatin Riverkeepers
- Kelly Ross, Home Builders Association of Metropolitan Portland
- Cindy Catto, Associated General Contractors
- Betty Atteberry, Westside Economic Alliance (WEA)

The Partners undertook a lengthy series of outreach efforts, which are summarized in tables in Appendix B. This report summarizes their public outreach efforts to-date and what they have heard from the public about the Tualatin Basin Goal 5 fish and wildlife habitat protection program.

Phase One: Inventory Outreach

In **September 2003,** the Partners organized three open houses to share Goal 5 progress to-date with the general public. These were held in Forest Grove, Beaverton and at the Tualatin Valley Fire & Rescue Training Facility between Tualatin and Sherwood. In all, approximately 240 people attended the open houses. Additional outreach activities included publication of a Newssheet, two televised presentations at the Washington County Public Affairs Forum in October 2003, talks at CPO's 1 and 5, the creation of a Partners' website, and numerous articles in jurisdictions' newsletters. Media releases and posters combined with creative outreach by all the Partners helped with public awareness. The Partners produced a panel television show under the auspices of Tualatin Valley Television (TVTV), which was broadcast throughout the late winter and early spring of 2004. Outreach from other entities included multiple Metro presentations to interested parties, a well-attended Goal 5 Business Summit organized by Commercial Real Estate Economic Council (CREEC) in October 2003, a Raindrops to Refuge open house, and other outreach by organizations, such as the Audubon Society of Portland and the Tualatin Riverkeepers.

Comment Forms

Jurisdictional staff and elected officials were available at the Fall 2003 open houses to answer questions and listen to individuals' views on the habitat program. Maps of regionally significant habitat and informational newssheets were available at these events, along with public comment forms. The Basin Partners made use of the Comment Sheet created by Metro, which set forth six questions.

1. The first asked whether habitat protection should be equal or varied based on ecological value. The numbers were almost equally split between protecting the most ecologically valuable areas first and protecting all equally; a small minority said no new regulations were needed.

2. The second asked about varying protection by land use (zoning) and considering habitat while planning for roads and utilities. Respondents called for balance and flexibility in regulations to preserve economic viability, and were pleased with the idea of local knowledge being applied in decision making. However, they affirm that natural resource protection does improve property values. Regarding infrastructure, respondents overwhelmingly favored considering the impacts of roads and utilities on habitat areas.

3. The third asked if habitat areas that provide connections to other areas should be given priority. Most respondents supported greater protection efforts for these areas, though a few of these suggest that all habitat areas should be equally protected. A few respondents raised concerns about the impacts of this decision on private property. Others mentioned acquisition of these areas as a potential policy approach.

4. The fourth addressed protecting established versus new development, allowing exceptions from development restriction, and requiring mitigation. Most respondents support protection standards on newly developed and re-developed land, while some people favor exempting already developed land from protections. Still others favor protections on all land. Respondents mostly favor mitigation, though a few expressed concerns about whether mitigation was equal to protection. In general, people favored a balanced approach of avoiding impacts when possible and mitigating losses when they occur.

5. The fifth asked the public for input on the types of incentives that should be used to protect habitat. The most commonly reported suggestions include: tax incentives (e.g., reduced property taxes), grants and technical assistance for habitat protection and restoration, education efforts including school programs, community recognition and awards for habitat protection and restoration, free or reduced cost native plants and other restoration materials, and conservation easements or transfer of development rights.

6. The sixth addressed how the habitat protection program should be funded and personal willingness to support public financing mechanisms. The majority of respondents were supportive of public financing mechanisms, including bonding. Other funding mechanisms mentioned include fees on development, stormwater fees, grants, and voluntary contributions.

Letters

One letter was received from the Audubon Society of Portland and one from an interested citizen, both calling for strong protection standards. The Audubon Society is particularly concerned about riparian corridor continuity and upland wildlife habitat, which has fewer protections in place than riparian areas do.

Postcards

The Friends and Advocates of Urban Natural Areas (FAUNA) distributed pre-addressed postcards to be sent to Metro and the Tualatin Basin partners in support of the Goal 5 protection program. Metro received 1,320 postcards and Tualatin Partners received another 168. Only two expressed concerns about property rights and were less supportive of a habitat protection program. The following are major themes expressed in the postcards that support a regional habitat protection program:

- Desire and need for additional regulations to protect watershed and habitat resources
- Need to pursue responsible development and stop reckless development
- Importance of habitat areas for environmental health and neighborhood livability
- Positive influence protected natural areas have on property rights
- Long time frame involved in recovering resource health relative to the short timeframe of degrading resources
- Desire and need to protect habitat resources to maintain the character of our region and for the benefit of future generations

Summary

Based on that early feedback, the public appeared generally supportive of protecting fish and wildlife habitat and including regulatory and non-regulatory measures. Metro reports that the majority of the critical feedback received was through phone calls from concerned citizens who worry about the impacts of Metro's habitat protection program on the use of their property or who oppose all habitat protection based on private property rights or anti-tax sentiments. Other critical feedback suggested that Metro was not currently doing *enough* for the protection of fish and wildlife habitat.

Phase Two: ESEE Analysis and Allow/Limit/Prohibit Decision

Over the fall and winter of 2003-2004, as the ESEE analysis and development of Allow-Limit-Prohibit maps was proceeding, Tualatin Basin staff spoke before the Washington County Medical Society, WEA, CPOs 10 and 5, and the Tualatin River Watershed Council. They also made a presentation at the second CREEC Goal 5 Business Summit March 2, 2004. Media releases, posters, and continued creative outreach by all the Partners continued to help build public awareness.

In **March 2004** the Partners held three open houses, one in Hillsboro, one in Tualatin, and one in Beaverton, to share the results of the ESEE analysis and the proposed Allow-Limit-Prohibit maps; 255 people attended. The public notice for these events was created and mailed jointly by the Partners and Metro to 43,011 citizens. Planners and laptop computers loaded with property information were available for one-on-one interaction. A second edition of the Newssheet was produced for wide distribution. A slide show presentation on the status of the process was shown five times each evening (except in Beaverton). The Clean Water Services' video *Wild by Design* was shown. Citizens were encouraged to write their comments for the public record.

The March 29, 2004 Open House in Beaverton was followed by the Partners' first Goal 5 **Public Hearing**. Taped by TVTV, it was rebroadcast around the Basin through June of 2004 approximately a dozen times. About 100 persons attended, with 40 providing formal testimony.

Summary

All told, counting oral testimony, comment cards, letters, and e-mail, approximately 160 pieces of testimony were received. Although the lines of demarcation were not always clear and many spoke to the need to balance environmental and economic concerns, in general the ratio of comments received was two-to-one in favor of higher levels of protection. Of the 56 who expressed support for development rights, these were their major themes:

- Regulations are already in place; stop moving the goal posts.
- Landowners must be compensated for loss of economic value.

- If the public wants more greenspace, they should buy it.
- Metro's inventory maps contain errors, especially in counting as habitat suburban gardens, orchards, etc.
- Site specific analysis is necessary.
- Honor the UGB and agricultural land by keeping development constrained, even if it means loss of habitat within the UGB.
- Institutional campuses (schools, universities, hospitals) are pressed for space.
- The region suffers from a shortage of industrial land.
- Too-strict regulations prohibit responsible stewardship, force people to harvest timber, etc.

Of the 104 who called for strengthening habitat protection, their major issues were as follows:

- We support science-based efforts to preserve and enhance eco-system health.
- It is foolish to develop flood-prone land or steep slopes.
- Please identify the habitat land already in public ownership (parks, etc.); this will help alleviate concerns.
- Please develop proactive conservation education programs.
- Environmental health improves economic value.
- Fragmenting habitat lessens its value.
- Environmental degradation is a major "takings" from us all and from our own future.
- Please protect the best interests of the greatest number of the citizenry.
- This is a unique opportunity to do the right thing – make the most of it.

One person summed it up this way: "No one these days objects to sanitary sewer requirements, as it is generally accepted that as population densities increase, our aquifers would suffer without the waste water management sewer systems provide. Our densities now require further community actions to protect broader aspects of our natural environment. Flood control, wildlife protection, water quality, etc. are all required for a reasonable quality of life. If these benefits are sacrificed, property values throughout the basin will be reduced. Property values and natural values converge. I urge you to protect our region's natural assets for our children."

Phase Three: The Program

Public outreach efforts continued throughout the spring and summer of 2004. Media releases and editorial briefings resulted in stories in the major newspapers, as well as in the newsletters of all the Partners, including the CPOs. Mayor Tom Hughes of Hillsboro and Senior Planner Hal Bergsma of Beaverton made a guest appearance on TVTV's Talk of the Town (rerun on cable TV four times). Information was also available at many community events, including Tualatin's Songbird Festival and a Public Works Fair at Washington Square on May 15; Beaverton's Neighborhood Clean Up on June 5; Tigard's Balloon Festival June 17-20; Tualatin River Discovery Day on June 26; Beaverton's Summerfest July 16-18; and the Washington County Fair July 28 through August 1. Information was also available on the County's Planning web site.

Open houses in July and a public hearing in August were set to share possible program options with the public. In mid-July, Public Notices were mailed to approximately 35,000 property owners and interested parties inviting them to these events. Open Houses on the proposed Tualatin Basin Goal 5 program were scheduled for the following dates and locations:

- Monday July 26, 4 to 7:30 pm, Beaverton Library, 12375 SW 5th Street, Beaverton

- Wednesday July 28, 4 to 8 pm, Forest Grove Community Auditorium, 1915 Main Street, Forest Grove
- Thursday July 29, 4 to 8 pm, Tualatin High School, 22300 SW Boones Ferry Road, Tualatin

The Public Hearing was held on:

- Monday August 2, 6 to 8 pm, Public Services Building Auditorium, 155 N First Avenue, Hillsboro – this hearing was continued until August 9th.

Continuations of the initial Hearing on the proposed Basin Program:

- Monday August 9, 1 pm, at the Beaverton City Library, 12375 SW Fifth Avenue, Beaverton; public comment period held open until 5:00 pm - hearing was continued until Monday, August 16th
- Monday August 16, 1 pm, at the Beaverton City Library, 12375 SW Fifth Avenue, Beaverton; hearing was continued until Monday, August 30th for continued deliberations on proposed Program
- Monday August 30, 1 pm, at the Beaverton City Library, 12375 SW Fifth Avenue, Beaverton; hearing was continued until Monday, September 13, 2004 for continued deliberations on proposed Program
- Monday September 13, 1 pm, at the Beaverton City Library, 12375 SW Fifth Avenue, Beaverton; hearing was continued until Monday, September 27, 2004 for continued deliberations on proposed Program
- Monday September 27, 1 pm, at the Beaverton City Library, 12375 SW Fifth Avenue, Beaverton; at this hearing, decisions on the draft Program were deferred for further consideration of outstanding issues

Further TBNRCC Public Meetings considering proposed Basin Program:

- On Monday November 15, 1:00 pm, at Beaverton City Hall, 4755 SW Griffith Drive, Beaverton; meeting to consider issues and potential revisions to Metro's Regional Goal 5 Program (Metro Draft Resolution 04-3506A) – discussed Measure 37 implications and determined that potential changes to Regional Program and/or effects of Measure 37 may require new direction for Basin program. Directed Steering Committee to work with Metro on affects of Measure 37.
- Through August 9th at 5:00 pm the public was also invited to submit comments in writing to:

  The Tualatin Basin Natural Resources Coordinating Committee
  Washington County Department of Land Use and Transportation
  Planning Division, 155 N First Avenue, Suite 350-14
  Hillsboro, OR 97124

After holding final public hearings, the Coordinating Committee will make final recommendations to the Metro Council on a Goal 5 program for the Tualatin River Basin. Metro will consider the Tualatin Basin program and, in turn, hold its own public hearings. The Basin Partners anticipate that Metro will accommodate the Tualatin Basin program into their regional Goal 5 program. Following Metro's approval, local governments will have 180 days to adopt implementing ordinances. A subsequent update to the Basin-Metro IGA extends the implementation period to one year.

Phase Four: Program Revision

Public involvement activities during recent Program Revisions have focused on invitations for public comments at Steering Committee meetings being held three to four times per month since early February as well as invitations for public comment at TBNRCC meetings in January and February. An extended public comment period is being scheduled during the upcoming TBNRCC public hearing on March 28th.

Following TBNRCC adoption of final Program recommendations for the Basin, those recommendations, together with relevant findings will be forwarded to Metro for Council consideration for incorporation in the draft Regional Program. Additional opportunities for public involvement and comments on the Basin Program will be in afforded as Metro holds Open Houses and Public Hearings on the Regional Program in April and May of this year. Metro is also expected to provide public notice in compliance with the requirements of ORS 197.047 (also known as Measure 56 notice) prior to holding public hearings for final adoption of a Regional Program. This notice is expected to cover all potentially affected properties in the Tualatin Basin and will provide opportunities for public comment at Metros adoption hearings. Finally, prior to any new Basin Goal 5 Program elements becoming effective, local governments throughout the Basin will be required to provide yet another public notice pursuant to Measure 56 standards and hold public hearings before their local Commissions, Boards and/or Councils.

D. Organization and Approach to Goal 5 Program

The Tualatin Basin Goal 5 Program approach emphasizes three key elements:

- **Preserve** existing system through regulation of new development and landscape alteration activities in core resource areas, and requiring mitigation of disturbances;
- **Enhance** overall health of regional sites through capital improvements designed to restore natural function of riparian corridors; and
- **Mitigate** new development impacts to significant resources throughout Basin through encouraging the use of Low-Impact-Development (LID) practices, along with the removal of existing barriers to implementing those guidelines for LID approaches. Provide incentives to utilization of LID such as flexible development standards.

In addition to the above, the non-regulatory program component addresses non-development related activities, and includes the following elements:

- Education
- Stewardship Recognition
- Restoration Funds
- Tax Incentives
- Technical Assistance
- Promote Volunteer Activities
- Acquisition.

CHAPTER 2 RELATIONSHIPS TO OTHER ENVIRONMENTAL REGULATIONS AND PROGRAMS

The policy framework under which this Program Report is submitted is part of a state and regional land use and natural resource policy framework that is complex. This chapter describes various other activities and explains how the Tualatin Basin Goal 5 Program fits into this framework.

A. Statewide Planning Goal 2 Coordination

Land Conservation and Development Commission's (LCDC) Statewide Planning Goal 2 requires coordination with affected local governments. Prior to completion of the original Tualatin Basin Approach and the formation of the Tualatin Basin Natural Resources Coordinating Committee, all governments within the Tualatin Basin were invited to be members and/or participants. Multnomah County, Columbia County, Clackamas County, Yamhill County, the city of Portland, the city of Lake Oswego and the city of West Linn all declined the invitation. However, all requested they receive notices and be allowed to comment on all technical and policy work products. That coordination has been happening since the beginning of this work. Additionally, the Tualatin Basin Partners participated and periodically briefed a variety of the Regional Goal 5 committees hosted by the Metropolitan Service District (Metro) as well as the Metro Council and its policy advisory committee (MPAC).

B. Regional and Local Policy Framework

Metro's Regional Goal 5 ESEE and Program

The Goal 5 rule provides for a "Regional" Goal 5 process to be conducted by Metro. Specifically, OAR 660-023-0080 defines "regional resources" and authorizes Metro to adopt one or more regional functional plans to address all applicable requirements of Goal 5 and the OAR for one or more resource categories. Ultimately, the program requirements for Metro's Goal 5 work will become part of the Urban Growth Management Functional Plan (Functional Plan), specifically, Title 3, Section 5. Once adopted by the Metro Council and acknowledged by LCDC, the Functional Plan text will become part of the Metro Code and local governments will be required to take actions and/or show "compliance" with its provisions.

Metro began conducting a Goal 5 process for the area within its service boundaries in 1999. In 2002, Metro adopted an inventory for Regionally Significant Riparian Corridors and Wildlife Habitat and began work on a regional ESEE analysis. The Basin Approach is being completed concurrently with Metro's regional tasks. The Tualatin Basin is most likely to be implemented sooner than other portions of the region if the non-basin jurisdictions wait for the Metro regional safe harbor to be completed and acknowledged by the state before they begin local implementation tasks.

Clean Water Services (District)

Water quality problems have long been recognized in the Tualatin Basin. To address these issues, the Unified Sewerage Agency (USA, now Clean Water Services) was formed as a special district under Oregon Revised Statutes (ORS) 451 by a vote of the people in the 1969 election season in order to combine the 26 operating wastewater treatment plants operating in the

Tualatin Watershed at the time. This action was motivated by the Environmental Quality Commission (EQC) establishing a building moratorium in the watershed until the poor water quality was corrected (an order, not a lawsuit). The ORS requires that its Board of Directors be the County Commission. This is the only connection to County government.

Over the years, Clean Water Services built two new "regional" plants (Durham and Rock Creek), upgraded two more to modern operating standards for the watershed (Hillsboro, formerly West Hillsboro, and Forest Grove), and took the remainder out of wastewater treatment and replaced them with pump stations, hooked them into "interceptor lines" and moved the waste to the regional plants for treatment.

The Department of Environmental Quality (DEQ), in compliance with section 303 of the Clean Water Act (CWA), is required to establish Total Maximum Daily Loads (TMDLs) in twelve watersheds, the first being the Tualatin. When the TMDLs were established in 1988, twelve cities within Washington County asked the District to form a stormwater utility. To do so, the District had to ask the Legislature to amend ORS 451 to allow stormwater management along with the existing wastewater collection. Following that amendment, the cities established interagency agreements with the District to allow the agency to do wastewater collection and stormwater management in the respective cities.

Basin Approach to Title 3 – Vegetated Corridors

The local governments in the Tualatin Basin developed a unified program, implemented through the Clean Water Services District's Design & Construction Standards, to successfully comply with Title 3 of Metro's Urban Growth Management Functional Plan, which outlines water quality and flood management requirements for the region. The District's Design and Construction Standards exceed the minimum requirements of Title 3 for water quality protection of the Tualatin and its 700 miles of tributaries, providing for vegetated stream corridor buffers up to 200 feet wide and mandating restoration of corridors in marginal or degraded condition. District compliance with existing Title 3 requirements also addresses protection of flood management areas in order to protect life and property from dangers associated with flooding; and provides for flood storage, reduction of flood velocities, reduction of flood peak flows and reduction of wind and wave impacts. The multi-jurisdictional approach resulted in a method for implementation of Title 3 based on water quality standards, good science, and best management practices that meet Metro's substantial compliance requirements.

Clean Water Services Healthy Streams Plan

The Healthy Streams Plan (HSP) is an updated watershed plan designed to address the Clean Water Act and Endangered Species Act (ESA), with a focus on the urban and urban fringe portions of the Tualatin Basin. The District, local cities, Washington County, Metro, and Tualatin Hills Park and Recreation District, are all partners in the Healthy Streams Plan development and implementation. The Healthy Streams Plan contains the following key elements: an inventory of the stream location and condition (Watersheds 2000), an analysis of public habits and values, an economic analysis, policy and programmatic focus areas (effective impervious area reduction, vegetated corridors, hydrology / hydraulics, and operations and maintenance). The HSP was recommended for approval by its project advisory committee, and is anticipated to be before the District Board for consideration in June 2005.

Watersheds 2000 is the ecological stream inventory and water resource modeling component of the Healthy Streams Plan. The study area for Watersheds 2000 included the urban and urban fringe areas draining into waters primarily managed by Clean Water Services. Consultants were used to gather field information and generate the hydrology and hydraulic models. Project Committee's of citizens, regulators, cities, and other stakeholders were formed for three separate regions of the study area to assist with identifying desired conditions for specific stream reach types based on the scientific data delivered and social values of the participants.

The Water Resource Engineering element of the Watersheds 2000 Inventory developed detailed topographic surveys of the floodplain and stream cross sections. Hydrology models using HEC-HMS and Hydraulic models using HEC-RAS were developed. The engineers and ecologists also evaluated culverts and bridges for conveyance and fish passage.

The ecological inventory element of Watersheds 2000 was conducted from July to early November 2000. Follow-up gap analysis, replicate sampling, and detailed macroinvertebrate sampling also occurred from September through early November 2001. Ecologists sampled streams using the Tualatin Basin Rapid Stream Assessment Technique (RSAT). Numerous sites were sampled and applied to a proportionate stream reach in miles to determine the physical condition and habitat character of our stream system. Streams and other water quality sensitive features in the study area that were not sampled were still field verified for location and condition (piped, open, etc.). In addition, Clean Water Services and the Watershed Council worked with Oregon Department of Fish and Wildlife to collect fish and crawfish at 67 sites between 1999 and 2001. Clean Water Services contracted the monitoring of 63 macroinvertebrate sites in 2002.

Existing Environmental Health Report (March 2004)

The Existing Environmental Health Report (EEHR) was prepared by the Tualatin Basin Partners for Natural Places to provide an assessment of the environmental health of the eleven Regional Sites found within the urban portion of the Tualatin River Basin, which are the subject of Metro's Goal 5 natural resource planning process. The EEHR serves as a preliminary indication for reviewing strategies for improving the health of Tualatin Basin Watersheds in future programs, as well as a reference for determining whether program strategies achieve the goal of promoting improved overall health.

The EEHR is based on a comparative model of existing data sources: Metro Regionally Significant Inventories for Riparian Corridor and Wildlife Habitat, Clean Water Services Rapid Stream Assessment Technique (RSAT) data, and Clean Water Services Effective Impervious Area (EIA) data. Each set of information represents a different method for assessing the environmental health. The EEHR uses the Metro inventory to provide the boundaries of the natural resource Regional Sites and associated scoring attributes. The Metro Regional Sites are then analyzed on a local level utilizing available Clean Water Services data.

The EEHR is principally organized around the following environmental key environmental criteria:

1. Effective Impervious Area (EIA)
2. Stream Flow
3. Geomorphology
4. Riparian Vegetation
5. Water Quality
6. Aquatic Habitat
7. Upland Wildlife Habitat

The comparative assessment of the District's and Metro inventory data provided one approach to evaluating the existing environmental health of the urban portion of the Tualatin Basin and eleven major sub basins. In addition, this methodology provides the basis that will allow for measurement of improvement in environmental health over time. This process provides both a static snapshot of current health as well as a tool for dynamic measurement of future health over time. The table below provides a summary of the assessments for each of the eleven Regional Sites and an overall summary of the environmental health for the entire Basin Study Area. While there is considerable variability, when considered as a whole, the riparian and wildlife habitat conditions within the urban portion of the Tualatin River Basin merit an overall environmental health rating of "Fair."

Table 2-1: Summary of Basin Study Areas from the EEHR

Study Area Sub Basins	Metro Regional Site	Overall Rating
Council Creek, Gales Creek, and Upper Dairy Creek	Site 5	Fair to Good
Dairy Creek, McKay Creek, and Waibel Creek	Site 6	Fair
Middle and Upper Rock Creek, Abbey Creek, Holcomb Creek	Site 7	Poor to Good
Lower and Upper Beaverton Creek, Bronson Creek, Cedar Mill Creek, and Basin	Site 8	Poor to Fair
Rock Creek, Reedville Creek, Dawson Creek, and Turner Creek	Site 9	Fair
Butternut Creek, Gordon Creek, and Tualatin River Tributary	Site 10	Fair
Hedges, Nyberg, and Saum Creeks	Site 11	Fair
Ash Creek, Upper Fanno Creek, Sylvan Creek, Vermont Creek, and Woods Creek	Site 12	Poor to Fair
Summer Creek	Site 13	Poor to Fair
Ball Creek, Lower Fanno Creek and Red Rock Creek	Site 14	Fair
Chicken Creek, Cedar Creek, and South Rock Creek	Site 15	Fair
Entire Basin Study Area		**Fair**

C. Clean Water Act Wetland Fill and Removal Permits (Section 404)

Army Corps of Engineers and Oregon Division of State Lands

These two agencies implement sections of the Clean Water Act that require case by case review and permitting for fill and/or removal of over 50 cubic feet of material from a wetland or waters of the United States (creeks and streams). These permits are coordinated by both of these state and federal agencies, who in turn seek and receive comments from other state and federal agencies as well as local land use permitting agencies. Currently, the District's Design & Construction standards for Water Quality Sensitive Areas and their associated Vegetated Corridors do not regulate areas that are part of a 404 permit application and mitigation plan. The final Tualatin Basin Goal 5 program will address the hierarchy of mitigation and permit activities so that resource protection is coordinated and reviews are not duplicative.

CHAPTER 3 URBAN PROGRAM ELEMENTS

A. Introduction

This chapter of the Tualatin Basin Program Report identifies proposed Fish & Wildlife Habitat Protection program elements that will be applied to the study area located within the Urban Growth Boundary (UGB) area of Washington County. These elements of the proposed program are intended to meet the requirements of the Goal 5 Administrative Rule, and satisfy Metro's criteria for meeting regional Goal 5 requirements, pursuant to the Metro-Tualatin Basin Natural Resources Coordinating Committee (TBNRCC) intergovernmental agreement.

The proposed program consists of four major components, including a revenue component, a non-regulatory (voluntary and incentive) component, a regulatory component and a monitoring component. The program proposal serves as a basis for implementing the recommendations of the draft Tualatin Basin Goal 5 Economic, Social, Environmental, and Energy (ESEE) analysis and Allow-Limit-Prohibit (ALP) decision. The focus of this chapter is to describe the proposed program elements that will apply to the urban portion of the Tualatin River Basin, including those use categories defined in the ESEE report as High Intensity Urban (HIU), Other Urban (OU) and Future Urban (FU). The program approach that is proposed for the Non-Urban (NU) use category is described in Chapter 4 of this report, which is entitled "Rural Program Elements."

The existing regulatory element of the proposed urban program approach applies to proposed development and redevelopment activities within and adjacent to areas designated as Water Quality Sensitive Areas and Vegetated Corridors and subject to Clean Water Services' (CWS) Design & Construction Standards. As proposed, incentive and voluntary elements of the program apply to all areas of the Basin, and special development flexibility is available for development of Class I and II Riparian inventory areas and their vicinities, where they occur outside of Vegetated Corridors. The proposed program is structured to achieve the following three goals:

- *Improvement of the environmental health of the basin* through restoration, mitigation and enhancement efforts in riparian areas, funded by the investment of fee-generated revenue, in conjunction with the Healthy Streams Plan (HSP);
- *Preservation of the existing core system* through resource conservation, impact reduction and enhancement of degraded and disturbed resource areas among lands classified as Water Quality Sensitive Areas and Vegetated Corridors; and
- *Mitigation of future resource impacts* by encouraging and providing incentives for the use of Low Impact Development practices in resource areas, in part to meet water quantity management targets pursuant to Clean Water Services' Design & Construction standards.

This chapter elaborates on the regulatory aspects of the second and third bulleted goals. The description of the program approach toward meeting the first bulleted goal is provided in the Healthy Streams Plan. This draft watershed plan has been recommended for adoption and is anticipated for CWS Board consideration in June 2005.

B. Applicability and Resource Location

As will be explained throughout this chapter, the proposed program applies differently in different areas of the Basin. Generally speaking, the program regulatory component intended to preserve and enhance the core riparian system is reliant upon existing Design & Construction standards currently administered by CWS and Basin cities. These standards, specifically applicable to Water Quality Sensitive Areas (WQSAs) and their associated Vegetated Corridors, are particularly relevant for the protection of riparian fish and wildlife habitat, and thus provide a Goal 5 function. All Goal 5 resource areas with a Basin ALP designation of Strictly Limit (SL) fall within the parameters of the Vegetated Corridor boundaries. Vegetated Corridor areas are not regulated beyond the CWS District boundary, which generally corresponds with the UGB. As such, there are no SL areas identified outside the UGB.

The Basin resource areas identified with a Moderately Limit (ML) ALP designation are generally consistent with the areas where Class I and Class II Riparian inventory lands occur beyond the limits of the Vegetated Corridors. This is the case throughout the entire inventoried area, which extends approximately one-mile beyond the year 2000 UGB, however the application of the ML designation can be characterized differently in urban versus rural situations. Outside the UGB (where Vegetated Corridor standards do not apply), all inventoried Class I and II Riparian resource areas feature a ML designation. The rural ML areas very generally represent significant stream corridors with approximate widths typically ranging from 300 to 350 feet, and much broader in floodplain areas. Within the UGB, Class I and II Riparian areas typically occur within 100 feet of the Vegetated Corridor boundary, although these also are much broader in floodplain areas. For cases where the Class I and II resources correspond with HIU conflicting use areas, the ALP designation reflects a ML designation. In addition, there are limited cases throughout the Basin where a Site-level ESEE decision adjusts for a Lightly Limit designation in Class I and II Riparian resource areas. These adjustments are based on unique circumstances and are reflected on the ALP map.

All other portions of the study area, including Inner and Outer Impact Areas, are provided with a Lightly Limit ALP designation. While the impact areas are not considered to feature significant fish and wildlife habitat resources per se, activities that occur in all areas of the watershed could have a potentially adverse impact on stream resources. Accordingly, the Basin Outer Impact Areas meet the definition for impact area provided by the Goal 5 OAR (660-023-0010(3)).

Implementation of ALP Designations

Pursuant to the Design & Construction standards, the limits of WQSAs and Vegetated Corridors are to be identified using parameters defined in the standards. The basis for this is the site-specific and fluctuating nature of the resource; factors such as soil type, water table level and slope each represent significant determining factors. Accordingly, the identification and delineation of these features occurs on a case-by-case basis. In order to properly administer the applicable regulations, any proposed development activity for areas nearby potential wetland or stream vicinities is required to undergo a site review to make a more accurate determination of sensitive area locations. This procedural practice will continue to apply, and therefore there is no need for implementing jurisdictions to adopt maps of SL areas for Goal 5 purposes. As explained in Part Two of the ESEE analysis, even in cases where the underlying ALP decision is less than SL for Goal 5 purposes, the Vegetated Corridor standards will apply consistently within

CWS-defined areas regardless of the Goal 5 decision. However, the clear and objective Design & Construction Standards related to Vegetated Corridors include an option for an alternative review process which may be used in cases with corresponding ML and LL designations in order to achieve additional flexibility to accommodate development while achieving necessary objectives for stream corridor protection.

As explained above, land areas with ML designations are part of significant riparian corridors. Outside the UGB, these generally correspond with vegetated stream corridors and are thus relatively easy to locate at the site level or with aerial photography. Inside the UGB, ML areas typically are located in-between SL and LL areas. While there is a process for identifying the outer margins of SL areas as they correspond with the regulatory measures for Vegetated Corridors, delineating the boundary between ML and LL areas is a different matter. As further explained elsewhere in this chapter, the precise site-level distinctions between ML and LL areas are not critical for programmatic purposes. To begin with, the boundaries between ALP designations do not follow "site" boundaries from a development (i.e., conflicting use) standpoint. For development purposes, site boundaries are generally consistent with tax lot lines, which form the basis for articulating the limits of proposed development activity in nearly all cases. Individual development activities are expected to overlap ML and LL areas on a regular basis.

The general programmatic distinction between ML and LL areas is the availability of bonus flexibility in development regulations pertaining to site design, in exchange for resource benefits. For example, on-site density transfer, reduced setbacks, and below-minimum residential densities may be utilized by a property developer where special provisions are made to permanently preserve significant resource areas on a site. Provisions such as these are more likely to be useful if they are applied to the entire site, rather than a limited portion of a site, particularly in the urban area where most affected tax lots are of a relatively small scale. These provisions are intended to provide resource benefits, and it is appropriate for them to extend beyond the limits of streamside ML areas if opportunities exist to protect significant resource areas in this manner. It is therefore not important for local jurisdictions to adopt maps showing the precise extent of ML areas. The Basin ALP map recommended for adoption by Metro is sufficient to generally locate properties where the special provisions for design flexibility can be applied, as well as the adjacent LL inventory areas into which they may be extended.

C. Program Elements

The following provides more detail in describing salient Basin program elements. A comparative overview of the urban program is provided below in **Table 3-1**, Program Approach – Summary Table. This Table summarizes the program approach for each of the three program resource areas, in order to illustrate the relative distinctions among them. In general, the proposed program approach is most liberal in the Lightly Limit areas and most rigorous in Strictly Limit areas.

Traditionally, the practice of Goal 5 programming has involved land use planning and regulatory approaches to achieving administrative rule requirements. The Partners' approach is less traditional in that it provides a revenue basis for limiting impacts to significant resources. In addition, the proposed program incorporates existing regulatory procedures to address habitat

protection in core riparian areas. The program elements described in this chapter elaborate on the Partners' objective to provide development-related incentives for reducing resource impacts.

Table 3-1: Program Approach – Summary Table

	PROGRAM LIMIT DECISION		
	Lightly Limit	**Moderately Limit**	**Strictly Limit**
Goals:	▪ encourage minimizing impact through sensitive development and maintenance practices ▪ encourage and support preservation and enhancement of resource areas ▪ optional resource retention, where resources are present	▪ target and fund environmental projects for riparian system enhancement ▪ design flexibility for minimizing disturbance ▪ encourage minimizing impact through sensitive development and maintenance practices ▪ encourage and support preservation and enhancement of resource areas ▪ optional resource retention	▪ target and fund environmental projects for riparian system enhancement ▪ development generally not allowed ▪ development that is permitted must avoid or minimize disturbance of resource area ▪ require use of sensitive development and maintenance practices ▪ require enhancement of degraded resource areas
Approach:	▪ incentives to preserve and enhance vegetation ▪ technical assistance available to facilitate and encourage use of tools and incentives ▪ guidelines for LID and habitat sensitive green design approaches	▪ special development tools available to minimize potential resource disturbance area ▪ incentives to preserve and enhance vegetation via credit toward on-site storm water management requirements ▪ technical assistance available to facilitate and encourage use of tools and incentives ▪ guidelines for LID and habitat sensitive green design approaches	▪ development allowed in limited cases or under certain circumstances ▪ any permitted disturbance must be mitigated ▪ required enhancement of degraded resource areas within vegetated corridors ▪ technical assistance available to facilitate and encourage use of tools and incentives ▪ guidelines for LID and habitat sensitive green design approaches

ALP Designations

Strictly Limit (SL) Areas: In Strictly Limit areas, protection, conservation, enhancement and mitigation are required. Projects must be designed to avoid impacting Strictly Limit areas and may not encroach into these areas except under limited circumstances as provided for under CWS' Design & Construction Standards. (Examples of exceptions include one house on a lot that is entirely within a Vegetated Corridor area, and utility crossings). The use of land use tools, such as height and setback flexibility, would be supported in order to avoid or minimize the total disturbance area.

Moderately Limit (ML) Areas: Conservation and restoration will be encouraged in ML areas. Density reduction would be allowed provided conserved resource lands are permanently protected. Resources in ML areas would be targeted for restoration or enhancement projects.

Lightly Limit (LL) Areas: A Lightly Limit Program decision is applied to all remaining Goal 5 resource areas as well as to Impact Areas. The focus in Lightly Limit areas will be on education and incentives for the implementation of LID and green design approaches.

Impact Areas: The Goal 5 Administrative Rule requires that the ESEE address conflicting uses in impact areas. The March 2004 Tualatin Basin ESEE describes the approach to impact areas in detail, modified by the March 2005 addition to address Part Two of the Basin-Wide ESEE. The basin ESEE Report describes the Partners' approach to impact areas, which reflects a conviction that impacts to fish and wildlife habitat resources are not limited to areas immediately adjacent to the resource. Factors such as non-point source pollutants and hydrology have significant impacts on stream condition and water quality, and incremental impacts of development and increased impervious surfaces exacerbate these problems which, in turn, have a rippling effect on habitat quality throughout the basin's identified resource areas. The basin's urban program approach identifies the entire watershed as an impact area, and does not distinguish between Inner Impact Areas (which are based on Metro's definition for Impact Area) and Outer Impact Areas, which cover the remainder of the urban portion of the basin, from the standpoint of available program elements.

Overlap with Existing Floodplain and Local Goal 5 Programs

Goal 5 resource areas often correspond with areas already subject to regulation by cities and the District through floodplain, wetlands, tree protection ordinances and other existing Goal 5 programs. These existing regulations meet regional requirements under Metro's Title 3 provisions, as well as state and federal requirements to comply with the Clean Water Act. For these areas, existing regulatory programs such as local floodplain ordinances and wetland inventories, the District's Design & Construction Standards, and state/federal Removal and Fill permits would remain in place and the proposed Basin Goal 5 program would apply as well. For most cases, both sets of provisions would take effect; however, existing regulations would dominate where they are more restrictive. For example, an applicant may not be permitted to develop in a ML area if it also is within a floodplain and under a jurisdiction that restricts floodplain development.

Local floodplain and wetland ordinances vary to some degree by jurisdiction. For example, some cities actively manage development in the floodplain while others permit development in floodplain areas provided there is no decrease in flood water storage capacity as a result of the project (i.e., balanced cut and fill). This represents a circumstance where the proposed Goal 5 program provisions would add value to existing regulations because any development allowed in floodplain areas where a ML designations also applies would be allowed to incorporate a LID and/or density-reducing approach to the site design. This could effectively result in a more environmentally sensitive treatment of floodplain areas throughout the urban portion of the basin.

The District's requirements include the following:

- Preparation of a surveyed delineation and Natural Resource Assessment for evaluation of Vegetated Corridors adjacent to Sensitive Areas (defined as intermittent or perennial streams, the Tualatin River, wetlands and springs). A Natural Resource

Assessment (Site Analysis) may be required for site developments located within 200 feet of a Sensitive Area in order to obtain a Service Provider Letter from the agency.

- Revegetation of degraded and marginal condition Vegetated Corridor areas with native vegetation.
- Placement of areas adjacent to streams and wetlands in separate public easements or tracts.
- Other enhancement of Vegetated Corridors such as removal of invasive plants, in accordance with Design & Construction standards.
- Some buffer averaging is permitted.
- Very limited uses are allowed.
- Rules for erosion control and prevention.

Low Impact Development (LID) Guidelines

The proposed program encourages the use of environmentally sensitive site design practices throughout the watershed in order to reduce the impact of new development on fish and wildlife habitat in the basin and to aid in improving environmental quality. These design practices include a variety of techniques known collectively as Low Impact Development (LID).

Habitat Benefits: Low-impact stormwater management is a tool that can be used to limit development impacts on fish and wildlife habitat. These development impacts typically arise from altered hydrology and non-point source pollution to sensitive water bodies resulting from high levels of impervious surfaces. [1] The LID approach would encourage the retention of existing habitat resources on a given site because undeveloped resource areas would be factored into a site's EIA calculation and would be counted as unconnected impervious surface area (i.e., would help off-set the impact of the new development).

Stormwater Management Benefits: Urban imperviousness causes significant negative hydrologic impacts to habitat areas by way of increased stormwater flow rate and volume, resulting from decreased soil infiltration and plant uptake.[2] Low Impact Development techniques are a means by which proposed development projects can meet Clean Water Service's storm and surface water management requirements. The water quantity management component of the Healthy Streams Plan proposes revising water quantity design standards so that LID techniques may be utilized to meet these requirements in lieu of the traditional use of a detention facility.

Low Impact Development (LID) is a stormwater management strategy concerned with maintaining or restoring the natural hydrologic functions of a site designed to achieve natural resource protection objectives and fulfill environmental requirements. LID employs a variety of natural and built features that reduce the rate of runoff, filter out its pollutants, and facilitate the infiltration of water into the ground. By reducing water pollution and increasing groundwater recharge, LID helps to improve the quality of receiving surface waters and stabilize the flow rates of nearby streams. LID incorporates a set of overall site design strategies as well as highly localized, small-scale, decentralized source control techniques known as Integrated Management Practices (IMPs). IMPs may be integrated into buildings, infrastructure, or landscape design.

[1] Sherman, 2004.
[2] Sherman, 2004.

Rather than collecting runoff in piped or channelized networks and controlling the flow downstream in large stormwater management facilities, LID takes a decentralized approach that disperses flows and manages runoff closer to where it originates. Because LID embraces a variety of useful techniques for controlling runoff, designs can be customized according to resource protection goals, as well as site constraints. New projects, redevelopment projects, and capital improvement projects can all be viewed as candidates for implementation of LID techniques.

Typically, on-site runoff retention measures to meet hydrology impact requirements entail the construction of a detention basin. The proposed LID requirements would implement similar hydrologic performance standards on a given site through a design approach that incorporates conservation, storage, conveyance, landscaping and/or infiltration techniques to retain runoff on site. Features such as stormwater planters and bioswales in parking lots or adjacent to roads would be designed to balance out or reduce the effect of impervious area for a given development, thereby reducing the indirect, cumulative impact of urbanization on water quality and habitat resources in the basin. While hydrology requirements will continue to apply throughout the District service area, the use of LID techniques should be established as the preferred method of meeting those requirements.

It is intended that program implementation include the development of a model ordinance to address a menu of several applicable low impact development (LID) approaches and the inclusion of LID guidelines in local development codes. The program will also address removal of current impediments to the implementation of LID development techniques. As well, the permit process will be streamlined to allow beneficial activities, such as tree planting, resource enhancement, and removal of noxious plant species either "by-right" or through a relatively simple and low-cost administrative review process. Procedures relating to enhancement activities for improvement of resource conditions (including invasive species removal, revegetation, grading to create habitat or stabilize stream banks, large wood placement, and fish habitat improvements) that are consistent with the Healthy Streams Plan (and coordinated with the District) will be streamlined and subject to an administrative review only.

Note that for many if not most jurisdictions in the basin, removal of obstacles in existing regulations will be required in order to allow for an LID approach to meeting stormwater management requirements. Program development will include a review of the Audubon Society's Stormwater/Pavement Impacts Reduction (SPIR) report for identification of specific conflicts.

Reducing Effective Impervious Area (EIA): According to the July 2002 Draft of CWS' Tualatin Basin Effective Impervious Area Reduction Task Force Report:

> *In a simplified undisturbed hydrological cycle, precipitation falls from the sky, gets intercepted by vegetation, infiltrates into the rich duff layers of forests and prairies, recharges groundwater, and emerges in local streams and wetlands as base flow.*

In the typical urbanized landscape in Washington County, the amount of effective impervious area increases dramatically over pre-development conditions, and most storm water from this

urbanization is typically handled in a piped system. Impervious surfaces or "hardscapes" circumvent the natural hydrologic cycle and concentrate water into a piped stormwater system, which is composed of above ground retention ponds, detention basins, underground catch basins, pipes, curbs and gutters. Most stormwater controls currently in place are designed to quickly direct water away from the built environment (roads and buildings) and to prevent flooding, erosion and impacts to adjacent property. Impervious area that collects and drains the water directly to a stream or wetland system via pipes or sheet flow is considered "effective impervious area" (EIA) because it effectively drains the landscape. Impervious area that drains to landscaping, swales, parks, and other pervious areas is **not** considered EIA because the water infiltrates through the soil and into ground water, without a direct connection to the stream or wetland. The term EIA better describes urban hydrology and provides an objective measurement for management of stormwater from impervious areas.

Low Impact Development Applicability: As a key element of the proposed Basin Program, guidelines for the implementation of LID techniques will be developed and LID approaches will be encouraged in order to reduce the impacts of future development on environmental health. Program implementation will include the development of a model Low Impact Development ordinance for the Basin. This ordinance would be developed in cooperation with Clean Water Services ongoing efforts to update their stormwater management program.

Low Impact Development Techniques: It is anticipated that a model LID ordinance will provide incentives for the use of a variety of optional tools designed to reduce the total EIA of typical land development activities. A broad array of LID techniques (tools) are currently in use throughout the world. Many of these techniques can be applied to typical development here in the Pacific Northwest. Examples include:

1. **Landscaping**: Techniques can be employed that maximize effectiveness of runoff filtration and detention. This includes practices such as the use of compost at least twelve inches in depth and a multi-layered canopy in forested areas. Landscaping standards could be coordinated with the District's requirements for use of native species, as outlined in the Design & Construction standards. The program would also promote limited pesticide and herbicide use through property owner education and as a result of incorporating native species, which are more suitable as low-maintenance plantings. A requirement to incorporate predominantly native plants will augment the habitat benefits of this approach, and may decrease maintenance costs.

2. **Tree Canopy Preservation**: Tree canopy preservation and maintenance of native understory vegetation is recognized as an effective method of reducing EIA.

3. **Bioswales**: The creation of bioswales can improve water quality, help reduce EIA, and provide new habitat. Bioswales can be flexibly integrated into site design with a variety of alternative shapes and sizes. Rooftops, parking lots, decks, walkways and other impervious features can be designed to drain into bioswales. "Weepholes" in curbs can allow stormwater to drain into bioswales or other pervious landscape areas.

4. **Green Streets**: The term "Green Street" describes an alternative roadway design incorporating LID type stormwater treatments. Typical designs drain stormwater runoff from paved road surfaces through a bioswale within the right-of-way. The design of these bioswales includes vegetation that cleans the stormwater before it is allowed to infiltrate into the ground. For the proposed program, the "green streets" option could apply to either public or private streets or parking lots, where feasible.

   Note that there may be maintenance concerns related to green street design which will require further review and analysis prior to final implementation. Recently, a technical group from jurisdictions in the Tualatin Basin met as an advisory committee to discuss what types of changes or design parameters should be included if green street design options were to be included in local road design standards. There were a variety of concerns expressed by the group, including new and untested/unknown maintenance methods, concerns about areas that may not be appropriate for green streets such as steep slopes and aquifer protection areas, and that specific clay soil types that may not readily allow for infiltration of stormwater. The latter concern, however, can be overcome by sub-grade application of gravel and other soil amendments.

5. **Pervious Pavement**: Pervious pavements which soak up and infiltrate storm water may be applied in a variety of situations without conflicts with other standards (ADA). Some examples include pavers, porous asphalt or concrete, and grass paver systems.

6. **Eco-roofs and Disconnected Downspouts**: Eco-roofs are also known as green roofs, and include those planted with vegetation that absorbs rainfall, and are built to be pervious instead of impervious. Large roof areas drain acres of stormwater though downspouts, many of which are typically required to drain directly into the piped system in accord with local codes. There are several examples of eco-roofs in the Portland metropolitan area, including the Clean Water Services Field Operations Center on Merlo Road and the Multnomah County Building in southeast Portland. Rain gardens are areas designed to manage disconnected downspouts and allow slow filtration of stormwater runoff. For example, stormwater scuppers (which are openings at the side of a building for the drainage of water from the roof) can effectively drain a rooftop into stormwater gardens or planter boxes. Note that the use of the eco-roof option may be more appropriate for larger scale development, such as commercial, industrial and multi-family residential structures. Single family dwellings however, can also disconnect roof drains in order to reduce the effect of their impervious roof surfaces.

Administration: While there are clearly habitat benefits to the proposed program's LID component (particularly with regard to the use of native plantings and incentives to preserve tree canopy), the EIA reduction aspect helps implement the stormwater management element of Clean Water Services' Healthy Streams Plan and NPDES MS4 permit. The dispersion and detention of runoff on-site effectively mitigates concentrated flows and non-point source

pollution loads, which result in cleaner, more stable stream conditions. In addition, EIA reduction approaches result in increased volume and duration of summertime flows. In other words, reducing the volume and rate at which stormwater enters the surface management system more closely simulates the runoff performance of a less urbanized area, which in turn reduces impacts on basin fish and wildlife habitat areas.

As proposed in the HSP, the District's surface water management program will update the Design & Construction standards to include specifics on impervious area management and the LID approaches as described above, which can be used to achieve required EIA targets throughout the urban area. Local jurisdictions would adopt these standards by reference. In addition, the District is developing a template to facilitate and standardize data input for applicants to utilize in calculating increases in EIA. EIA targets would be determined by the District, and engineers with local jurisdictions would review for compliance.

Best Management Practices

Washington County's Best Management Practices for Roadway Operations (BMPRO) 2003 is the result of an analysis of roadway management activities and the integration of public works engineering with environmental sciences, and has been designed to for submittal to provide guidance to county employees in the effective operation of the roadway system. These practices are designed to maintain the functional integrity of the roadway system, to provide for public safety, to preserve critical habitat and to meet the specific requirements outlined by NOAA Fisheries for coverage under the Endangered Species Act (ESA) Section 4(d) rules for threatened salmon and steelhead species. BMPRO 2003 includes a description of roadway management activities along with a description of techniques to minimize or avoid actions that may cause harm to endangered fish species, resource waters or wildlife habitats.

The BMPRO 2003 program includes several goals that relate to the management of vegetation along county roadways. An important part of this Best Management Practices program is the research, development and implementation of an Integrated Vegetation Management Program (IVMP) that will provide for an appropriate balance between conflicting uses such as maintenance practices and the basin's diverse natural environments. The IVMP incorporates multiple methods of vegetation management to achieve goals for public safety, cooperation with neighbors, environmental protection, and operational effectiveness.

Administration and Procedures

Because of the overlapping nature of Goal 5 resource areas with those managed by Clean Water Services, the program concepts outlined in this report will require District-jurisdictional coordination of proposed development activities. It is logical to accomplish this through the expansion of existing procedures. Although the details of program administration cannot be well articulated until after the program is more fully developed, below are some preliminary thoughts about how they might operate.

The aim of this expanded review process would be to provide technical assistance to property owners and developers regarding the implementation of special development provisions and site design techniques for minimizing impacts to habitat resources. The intention would be to explore site design alternatives and regulatory flexibility to achieve balanced results. Local

government and development interests would be best addressed through a process that involves District participation and technical assistance at an early stage in the development review process, such as through the service provider letter process, when site designs are typically in a preliminary phase. Current review practices require applicants for development proposals on property near WQSAs to obtain a service provider letter from the District.

For development sites that also include ML Goal 5 overlays, the proposed program provides for technical assistance to explore potential site design solutions that would conserve and/or protect sensitive habitat areas. However, this represents an expansion of District responsibilities and would likely require funding for the District to support additional staffing, or a fee assessment for the service provided that could cover added staffing costs. Alternatively, the cities and the county may wish to collectively subsidize a shared staff person who has land use planning and ecological expertise. Ideally, Goal 5 technical review staff would be housed within the District and would be familiar with the Design & Construction standards, but funded by the local jurisdictions. This would allow for the most efficient, simultaneous provision of resource area design assistance and vegetated corridor review.

Inventory Maintenance

Development activities in the basin will result in adjustments to inventoried resource areas. For instance, some areas that are set aside in tracts or easements via the development review process may be re-assigned with a SL program determination, while resource areas that are encroached upon through the development review process may garner a reduced inventory score or removal from the inventory. In addition, newly mitigated or enhanced areas will create fish and wildlife habitat where it may not have existed previously. To adjust for these modifications over time, the program will include the development of an inventory maintenance process, to be coordinated with Metro. Metro staff have noted the logic in having a centralized venue for processing these adjustments, particularly because of the regional nature of the inventory. Further, having Metro oversee the adjustments is appropriate because they developed the inventory scoring methodology and, therefore, can continue to apply it consistently to areas that require re-evaluation. As the details of the basin's program are developed, consideration will be given to a notice procedure that would keep Metro informed of inventory adjustments as they occur as a result of development, mitigation and enhancement activities. The TBNRCC may also be periodically apprised of basin-wide inventory adjustments resulting from development and enhancement activities.

Proposed Tualatin Basin Goal 5 Program Overview

DRAFT

MAJOR PROGRAM COMPONENTS

REVENUE	SOURCES	SWM fee portion	- coordinate with CWS HSP - $95M over 20 years - implementation of targeted tasks - adaptive management plan	CAPITAL IMPROVEMENTS	- focus on SL and ML areas - culvert replacements - outfall retrofits - riparian enhancement - tree planting challenge (partnerships)		
					some SWM funding also applicable to VOLUNTARY efforts		
		Metro bond measure	- anticipated for November 2006 vote - potential funding for regionally significant acquisitions				
		Future Considerations	- other local revenue options - grants				
REGULATORY	APPLICABILITY	BASIN-WIDE	Road Projects	Best Management Practices for ESA compliance	- Washington County BMPRO 2003, adopted September 2004 - opportunities for additional local programs (cities)		
			CWS stormwater management program	- program to be updated for spring 2006 - incentive to implement green development approaches			
		RURAL	Within inventoried areas (one-mile UGB buffer)	- will coordinate with Metro to re-evaluate these areas as future UGB expansions occur - comply with Title 11 of Metro UGMFP - concept planning for new urban land			
			Beyond inventoried area	- existing county Goal 5 program continues to apply			
		URBAN	ALP LIMIT LEVEL DETERMINATION: STRICTLY LIMIT: protection, conservation, enhancement and mitigation required	Consistent with CWS existing Design & Construction Standards for WQSAs and Vegetated Corridors (clear and objective standards)	STANDARDS: - includes measures that extend beyond Metro's existing Title 3 UGMFP requirements - no development of WQSAs, including wetlands and stream corridors (with exceptions) - riparian buffers required (i.e., Vegetated Corridors) - nearby development triggers enhancement of degraded vegetated buffer areas (average 50' widths) - limited development of floodplain areas - 125-ft. buffers for Tualatin River	EXCEPTIONS: - DSL-approved projects are permitted - local programs may be more restrictive about development of wetland and floodplain areas - downtown Tualatin and central Beaverton Title 3 exempt areas	
VOLUNTARY	CATEGORIES	DEVELOPMENT RELATED	ALP LIMIT LEVEL DETERMINATION: MODERATELY LIMIT: conservation and restoration encouraged	RIPARIAN	- target areas for restoration and enhancement projects - allow flexibility in development approaches - includes remainder of Metro Class I/II inventory areas - CWS standards still apply within Vegetated Corridor areas - existing local Goal 5 programs will continue to apply	DEVELOPMENT OPTIONS to MINIMIZE IMPACTS	- decreased density, provided conserved resource area is permanently protected - clustering/reduced setbacks - on-site density transfers - guidelines for LID/green design approaches - technical assistance
			LIGHTLY LIMIT: focus on education and incentives	UPLANDS	- possible future ML designation of significant resources, to be determined - possible future acquisition of significant sites, to be determined	DEVELOPMENT OPTIONS to MINIMIZE IMPACTS	- technical assistance - guidelines for LID/green design approaches - local tree ordinance may apply - some areas already protected as parks and open space - CWS standards still apply within Vegetated Corridor areas - existing local Goal 5 programs will continue to apply
				REMAINDER OF URBAN AREA	- includes balance of Metro resource inventory area		
		NON-DEVELOPMENT RELATED	PRIVATELY-OWNED PROPERTY and BASIN-WIDE EFFORTS	- education and outreach - stewardship recognition - explore local implementation of available tax incentive programs - partnering with environmental community - promote and support volunteer activities - CWS property owner partnerships to support riparian corridor conservation			
ADMINISTRATION and MONITORING	LEVEL	REGIONAL: METRO	- coordination to provide data for regional monitoring activities and updates to regional resource inventory				
		LOCAL: TBNRCC	- extend Formation Agreement (which includes ex-officio Metro membership) - coordinate with CWS on implementing HSP program objectives - continued involvement in decision-making and project coordination				
		LOCAL: CWS	- continuous monitoring activities in place for DEQ permit purposes - planned re-sampling of Watersheds 2000 stream data (every 5 years)				

acronyms:

BMPRO: Best Management Practices for Roadway Operations
CWS: Clean Water Services
DEQ: Department of Environmental Quality
DSL: Division of State Lands
HSP: Healthy Streams Plan
LID: low impact development
ML: Moderately Limit
SL: Strictly Limit
SWM: surface water management
TBNRCC: Tualatin Basin Natural Resources Coordinating Committee
UGB: Urban Growth Boundary
UGMFP: Urban Growth Management Functional Plan
WQSA: Water Quality Sensitive Area

3/23/05

CHAPTER 4 RURAL PROGRAM ELEMENTS

A. Applicability

The program elements described in this chapter apply to that portion of the Tualatin Basin in rural Washington County, outside of existing UGB. This includes the Non-Urban (NU) conflicting use category addressed in the Basin ESEE Analysis (basically consisting of the Metro study area extending approximately one mile beyond their jurisdictional boundary) and the remainder of the county that extends beyond the study area. The Basin study area includes new Goal 5 resource inventory data provided by Metro. While there is no new inventory data for the outlying rural portion of the county, the county will continue to implement its existing, acknowledged Goal 5 program in that area. In addition, the Basin program proposes to augment the existing program as described below.

B. Rural Elements of the Proposed Basin Goal 5 Program

The rural element of the proposed Basin program is addressed in two parts based upon the geographic area covered. Each of these is described in general terms below.

Within Metro Study Area

As mentioned above, the NU conflicting use category lands fall within the study area for the Metro resource inventory and generally extend approximately one mile beyond the Metro jurisdictional boundary. The program recommendations for this area focus on targeting high-value, regionally significant resources for restoration, enhancement and/or acquisition. The following program directions will apply to rural lands within the Metro inventory area:

For all areas within the one-mile buffer, including those with Moderately Limit and Lightly Limit ALP designations, the urban program applications proposed for resource areas will be applied as appropriate for rural development. These include the following:

- continued application of regulatory requirements of the Rural/Natural Resources element of the Washington County Comprehensive Plan, including Significant Natural Resources overlays and related standards;
- potential re-evaluation of resources in areas subject to future UGB expansions (coordination with Metro through Title 11 concept planning provisions);
- support of CWS Enhanced CREP (Conservation Reserve Enhancement Program) efforts;
- continued state oversight of standards applicable under the Oregon Forest Practices Act;
- continued state oversight of standards applicable under regulations administered by the Oregon Department of Agriculture;
- continued state oversight of water quality standards administered by the Oregon Department of Environmental Quality; and
- the implementation of the county's Best Management Practices for Roadway Operations and associated Integrated Vegetation Management Program for ESA compliance (described in chapter 3 of this report).

In the working landscapes of rural Washington County, agricultural and forestry practices near streams may have a much greater impact on water resources than rural residential development activities. However, the county does not have land use authority over farm and forest practices,

which fall under the auspices of the state departments of Agriculture and Forestry, respectively. Thus, the existing land use regulatory program (and any proposed program) will continue to be limited in applicability to non-farm and non-forest activities only.

For those areas within the one-mile buffer portion of the study area that are identified as regionally significant Class I & II Riparian resources (and thus feature a Moderately Limit ALP designation), the following additional program activities are proposed:

- identification of target areas for restoration and enhancement projects; and
- identification of target areas for future acquisition opportunities (willing seller).

The combined effect of these efforts will contribute to the improvement of basin environmental health by targeting concerns in key urban fringe areas.

Beyond Metro Study Area

The proposed Basin program also includes measures to enhance the county's existing rural Goal 5 program beyond the basin study area. In this area, the County has identified significant Goal 5 resource areas on the Rural/Natural Resources Map Element of its Comprehensive Plan. The following program directions will apply to rural lands in this area:

- continued application of regulatory requirements of the Rural/Natural Resources element of the Washington County Comprehensive Plan, including Significant Natural Resources overlays and related standards;
- support of CWS Enhanced CREP (Conservation Reserve Enhancement Program) efforts;
- continued state oversight of standards applicable under the Oregon Forest Practices Act;
- continued state oversight of standards applicable under regulations administered by the Oregon Department of Agriculture; and
- the implementation of the county's Best Management Practices for Roadway operations and associated Integrated Vegetation Management Program for ESA compliance (described in chapter 3 of this report).

C. Enhancement of Existing Rural Goal 5 Program

Washington County regulates development activity in all rural areas within its jurisdiction and has had a Goal 5 program in place for areas outside the Urban Growth Boundary since 1986. Currently, for lands outside the UGB pursuant to Community Development Code (CDC) Section 421 (Floodplain and Drainage Hazard Areas) and CDC Section 422 (Significant Natural Resources), Washington County regulates the area within 125 feet of a stream. In order to develop within this area, applicants must submit the following:

- Peak volume/velocity hydrology report for designated drainage hazard areas; and
- Habitat report for significant natural resource areas.

The standards of Section 422 allow for resource encroachment with a finding that the development "will not seriously interfere with preservation" of habitat. These standards, while not as rigorous as the Clean Water Services' Vegetated Corridor standards, do provide water resource and habitat benefits to rural stream corridors. Section 421 outlines standards that generally regulate development within 125 feet of a stream where they are applicable. However, these standards only regulate from a flood or drainage hazard perspective, and thus do not apply to all rural stream corridors.

Other Program Opportunities

In the working landscapes of rural Washington County, agricultural and forestry practices near streams can, and often do, have a much greater impact on water resources than rural residential development activities. Proper management of streamside vegetation and channel morphology can lead to significant improvements in both water and biological quality of streams (Johnson and Ryba, 1992). Working with the Department of Forestry on a process for review and input into forestry practices could help reduce problems caused by streamside logging activities. Working in partnership with the agricultural community to fund and implement streamside management agreements that support improvements such as livestock fencing and revegetation could also help improve stream health. Cooperative agreements and funding for improvement of stream health in farm and forestry areas would likely have a very positive impact on resource quality and quantity.

Clean Water Services is currently engaged in program efforts to work cooperatively with willing rural land owners on critical water quality issues such as livestock in streams and the clear-cutting of headwaters. There are additional positive, incentive-based efforts being made by the Soil and Water Conservation Districts and non-profit organizations to encourage more water and wildlife friendly land management practices.

Recognizing the limitations imposed by state-assumed regulation of farm and forest practices and in lieu of adopting new regulatory standards, it is recommended that the county, consider a process to identify the following:

- opportunities to work with the state departments of Agriculture and Forestry to reduce impacts to potentially sensitive habitat areas located on agricultural and forest lands; and
- other program elements that will serve to protect riparian and wildlife resources indirectly.

Minimum Stream Buffer Areas

It is well documented that vegetated stream buffers offer a variety of ecosystem benefits including: stream bank stability, erosion management, pollutant filtering, microclimate moderation, fish and wildlife habitat, and storm water attenuation (Johnson and Ryba, 1992). The ecosystem benefits of stream buffers occur both inside and outside the urban growth boundary; data from Watersheds 2000 study of Tualatin Basin streams generally suggests overall stream health rankings improve with increasing streamside buffer width and decreasing presence of non-native vegetation (Figures 5-1 a-b). Ecological investigations of riparian corridors have demonstrated they are a key landscape feature with substantial influence on environmental vitality (Naiman et al., 1993). The issue of how best to protect riparian corridors in the rural area should therefore be addressed as recommended above during Program implementation.

Additional program efforts that may be considered include:

- Opting back into the Wildlife Habitat Conservation and Management Program (supported by the Department of Agriculture and Department of Forestry). In addition to the political concerns, there are economic considerations associated with increasing regulatory buffers for rural residential owners. If the property owner chooses to dedicate a conservation easement over certain portions of its property for water and wildlife habitat, any existing regulation will diminish the value of the conservation easement. This

will negatively impact the property owner in terms of income and property tax benefits of a conservation easement donation; the buffer regulation thus becomes a disincentive to a long-term protection strategy.

Washington County has chosen to opt out of the Wildlife Habitat Conservation and Management program that allows conservation easement areas on farm and forestry parcels to still be taxed as farm and forestry use. This implementing legislation has since been revised. The County may reconsider its position regarding the revised tax program in order to remove the disincentive surrounding farm and forestry use land tax conversion that results when a conservation easement is put in place. For rural residential owners, the implementation and expansion of the Riparian Tax Credit program could provide the incentive needed for enhanced near stream resource management, without regulation.

- Coordination with Clean Water Services and the Department of Forestry to develop and implement a memorandum of understanding designed to minimize pre-emptive clear cutting of near stream areas on the urban fringe and in headwater areas.

- Continued implementation and enforcement of current floodplain balance cut and fill and drainage hazard area regulations.

- Coordination with local partners to provide necessary funding to acquire and maintain conservation easements on critical habitat lands.

- Support for the implementation of the Riparian Tax Credit program throughout the County.

CHAPTER 5 NON-REGULATORY PROGRAM OPTIONS

A. Overview

The Tualatin Basin Goal 5 Program is built upon three pillars: **revenue** for capital improvements, **regulations** to protect the health of riparian corridors (Clean Water Services' Vegetated Corridors) and **voluntary efforts;** together these components will improve the environmental health of the Basin. This chapter explains the voluntary aspects of the Basin Program, which will be further developed during the program implementation phase. It notes the potential effectiveness of these efforts, their costs, and the partners who will help implement them. These efforts will educate Tualatin Basin commercial interests and residents to a higher level of awareness of the environmental effects of their actions. The efforts will be coordinated Basin-wide in order to make the most of each partners' resources.

Partners will be chosen that have already established trusted local reputations in the field of environmental enhancement and protection. Costs will be rated high if they include granting funds; medium if they include dedicated staff; and low if they include materials only with some staff time. (A summary is provided at the end of this chapter in Table 5-2.) Funding for public awareness and educational purposes will come from a variety of sources including, but not limited to, Metro's forthcoming Nature in the Neighborhoods bond measure, Clean Water Services educational programs and resources from local jurisdictions.

In order to understand these voluntary efforts, it is first important to understand the term "**limit**" as it is used in various ways throughout the Basin program. The programmatic requirement in **Strictly Limit (SL)** areas is for protection and conservation of resources. These areas are predominantly consistent with the limits of Clean Water Services Water Quality Sensitive Areas and associated Vegetated Corridors (generally 50' buffers along streams and 125' buffers along the Tualatin River). With few exceptions, development is not allowed in SL areas. For the most part, the non-regulatory program measures described in this chapter are not targeted at SL areas, which are the focus of the proposed program's regulatory component.

The **Moderately Limit (ML)** designation generally applies to Class I and II Riparian Resource areas beyond the Vegetated Corridor boundaries. In areas identified as ML, conservation and restoration is encouraged, and the revenue tools the Basin has at its disposal will be directed to help make such conservation and restoration happen. The **Lightly Limit (LL)** designation applies to the remainder of the Tualatin Basin. The term does NOT mean that new regulations are in place in these areas. It does mean that the Basin Partners recognize that the health of our environment should not rest solely on streamside property owners. Thus education and incentives will be offered to everyone.

With these definitions in mind, voluntary efforts are divided into two categories: development-related and non-development related. These are described below.

B. Development-Related Options

Development-related efforts for riparian areas with ML designations include targeting revenue to extend **restoration and enhancement** projects into these areas. The agents will be governmental or private, and the properties could be public or private. Such restoration grants will come with provisos that mandate future protection. They will go to developers in return for habitat restoration in concert with habitat-friendly development. Such grants will encourage innovative practices and increase the effectiveness of regulations. Tree planting and preservation will be especially encouraged. Grants will also go to public works agencies to help build and maintain better wildlife crossings and culverts.

Effective restoration work will require a trained and experienced staff with monitoring capability. Maintenance and monitoring of restoration sites over time will be needed for effective long-term restoration. Possible partners will be Clean Water Services, the Tualatin River Watershed Council, Wetlands Conservancy and Cities.

Cost of restoration varies based on type and quality of habitat. Current Metro projects range from $1,800-3,500 per acre; removal of one small dam, for example, would cost approximately $80,000. The cost of restoration grants/activities will be medium to high. For example, $100,000 will fund:

- ten small restoration grants for residential or business owners, OR
- two habitat friendly development/redevelopment grants, OR
- one grant for a wildlife crossing/culvert replacement project

Clean Water Services reports that costs for tree planting are highly variable depending on the condition of the site, the availability of plant stock and water to irrigate, whether contract laborers, staff or volunteers do the work, etc. However, a rule of thumb might be drawn from their recently adopted rates for mitigation of vegetated corridors. An excerpt from the R&O is provided below:

Table 5-1: Vegetated Corridor Payment

Square Footage to be Mitigated	Cost Per Square Foot
1 – 5,000 sq. ft.	$8.66
5,001 – 10,000 sq. ft	$4.33
10,001 – 20,000 sq. ft.	$2.22
20,001 – 40,000 sq. ft.	$1.11
Over 40,000 sq. ft.	$0.55

The Basin partners will also work to allow much more **flexibility in development approaches** on these lands, including options for decreased density, for clustering development and/or reducing setbacks, and for making on-site density transfers. Most importantly, Washington County will work to create a **model Low-Impact Development (LID) ordinance** which local governments can adopt to streamline regulations to encourage environmentally friendly "green" building practices. The county and the Basin Partners will also work together to remove barriers in existing codes that represent barriers to the

implementation of LID practices. An example will be removing the obligation to construct a storm water piping system where a developer alternatively opts to build a storm water management system that utilizes vegetated swales and other biofiltration techniques to slow the flow of runoff and increase site permeability. Educational efforts will not be sufficient to implement Low-Impact Development to its greatest practical extent; removing regulatory barriers to LID is key. Clean Water Services has agreed to support this effort and, in fact, CWS is currently funding a study to improve hydrologic modeling that could encourage the more effective use of LID techniques.

What about **upland habitat** (significant stands of trees)? Such natural resources treasures are not covered by the SL/Vegetated Corridor regulations. However, they are mapped as areas for possible future acquisition. This approach stresses that in ML areas, revenue sources (including possible use of park district SDC's) are most important. Some of the inventoried upland habitat areas are already protected as parks and open space. In addition, local tree ordinances (where applicable) and local Goal 5 programs that exceed the Basin's proposed program will continue to apply.

Beyond the ML resource lands, in areas with a LL designation, the proposed Basin Approach provides that a program of education and incentives will guide **all** development throughout our urban areas. Besides offering guidelines for LID and green design approaches, this will include a **technical assistance** program. Technical Assistance entails dedicating staff to give direct help to property owners, businesses and developers, one-on-one or in groups with workshops, seminars, etc. Such staff will be particularly useful during preliminary development stages by helping applicants understand the range of flexible site design measures and how they can be implemented to effectively conserve the most valuable resource areas on site. In many cases an applicant will be able to receive "credit" toward stormwater management requirements through the appropriate use of vegetation on site. Technical assistance staff will also develop and distribute habitat restoration/protection/ enhancement literature, including habitat-friendly development and green business practice manuals, web sites, etc. They will help make native plants more widely valued and available.

An example of a program effort that will reduce costs and that will benefit private property owners is supplying free or low-cost native plants and trees for planting during habitat restoration/reforestation, protection and enhancement. The nature of much of this technical assistance work is a natural extension of Clean Water Services' development review process for Water Quality Sensitive Areas. Accordingly, it seems logical that technical assistance will be provided through the addition of personnel at CWS (as described in Chapter 3 of this report). This technical assistance staff would be available to help city and county staffs assist property owners, including help in compliance with the Vegetated Corridor regulations. They could help private landowners develop a Habitat Protection Plan for their individual properties. The success of this option will depend on the level of partner commitment and the longevity of the program. It will be helpful in supporting many of the other options, such as the stewardship and grants programs. It will increase the effectiveness of the regulatory program. Partners might be a consortium of local governments and agencies, including the Wetlands Conservancy. This option will be staff intensive; the staff will have to be technically proficient, and a high staff-to-client ratio will be desirable. Thus the cost will be medium.

C. Non-Development-Related Options

With regard to non-development related voluntary efforts, some will apply on a case-by-case basis to **private property owners**. These will include **education and outreach**, **stewardship recognition** and exploring local implementation of available **tax incentive** programs.

Education and outreach for property owners to help them properly manage the habitat land they own could include brochures, newsletters, web sites, even a telephone hot line to help owners maintain and enhance natural resource lands on their property. Developers will be further enlightened as to the economic benefits of sustainable site design and low-impact development (LID). Education will also include helping schools develop and implement curricula. This will have to be a long-term effort, as a long-term commitment is required to change behaviors and practices. Over time, a well-crafted education program can reach a large number of people and have a significant social effect (examples: campaigns against litter and for recycling).

Possible partners include organizations that provide habitat-oriented classes, such as naturescaping and natural gardening. Clean Water Services, the Tualatin River Watershed Council, the Tualatin Basin Public Awareness Committee (TB PAC), the Audubon Society of Portland and the Tualatin Riverkeepers (TRK) are prime examples. Working together with many natural resource partners will provide a consistent message and economy of scale throughout the Basin. Costs will be low to medium.

TB PAC is presently drawing up a proposal for Naturescaping classes that will be a paradigm for this option. CWS reports that its most recent venture at bringing naturescaping to the Tualatin Basin priced out at $900 per class, which assumes free meeting rooms, reproduction of materials, and snacks to be provided by a host jurisdiction. A good target attendance is thirty-five persons per class. Metro's existing environmental education program in the Parks & Greenspaces Department costs $245,000 per year.

Stewardship recognition will involve voluntary agreements set up with property owners or even entire neighborhoods that agree to restore, protect, and maintain their habitat according to best management practices. Stewards will be private landowners, or developers or businesses acting in a habitat-friendly manner. They will be recognized publicly for their achievements, culminating in annual awards and special ceremonies.

This option relies on willing participants. It will be more effective with long-term monitoring, and when coupled with grants and technical assistance to encourage more successful projects. Possible partners might be Clean Water Services, the Tualatin River Watershed Council, the Tualatin Basin PAC, the Audubon Society of Portland and the Tualatin Riverkeepers. Cost will be low to medium.

Tax incentive programs already exist under Oregon state law: the Riparian Lands Tax Incentive Program and the Wildlife Habitat Conservation Management Program. These

programs reduce property taxes or provide a credit to streamside property owners who sign management agreements or easements that result in preservation of enhancement of healthy riparian areas. Thus far there is a limited landowner enrollment in these programs, which may be due to the lack of enabling local ordinances. This issue needs more study. We will make options available for property owners to sign up for programs that reduce their property taxes or provide credit to streamside property owners. These do require ongoing management with the Oregon Department of Fish and Wildlife, and landowners can opt out of the program simply by paying the withheld taxes.

As counties are the agents of these state programs, a possible partner will be Washington County. The cost will be low to medium. Costs include lost property taxes, administrative costs, potential restoration costs, approval of habitat management plans. A related option might be for fee reductions on the part of Clean Water Services and the other jurisdictions in Washington County in return for a property owner providing certain benefits to the stream system. Note that Clean Water services already is engaging in effective property owner partnerships (i.e. the Enhanced CREP program) to support riparian corridor conservation in agricultural areas outside the UGB.

Other non-development related voluntary efforts will be applied **Basin-wide**. These will include similar education and outreach as described above. Public works agencies are already gearing up to educate staff in environmental **best management practices**. Washington County has recently appointed a Senior Environmental Resource Specialist, heading up their recently formed Environmental Services section, whose job is making sure road maintenance activities protect the environment. Her first goal is to make sure all road workers are trained in the county's Best Management Practices (BMPs) for Routine Road Maintenance that were adopted by the Board of County Commissioners in September 2004. She is developing a training program and field manual to increase workers' awareness of the impact of their activities. She also plans to implement a monitoring program to ensure the BMPs are effective. A fish passage barrier assessment is one of her longer-term goals. She intends to identify opportunities to partner with other agencies and find funding to remove fish barriers associated with the county's roadway system. Being a more proactive voice for the transportation industry in setting state environmental policy is also on her list of things to do. The county's BMPs are available online: www.co.washington.or.us/limit10.

Basin-wide voluntary efforts will also mean extensive partnering with the environmental community, promoting and supporting their **volunteer activities**, focused on restoration of significant habitat areas. Substantial restoration work is already being conducted in the Basin with volunteer efforts; the program will augment them with new financial resources, volunteer training, etc. For example, more "Watershed Wagons" will be purchased and outfitted with naturescaping tools.

This option will be more successful on public than private land. Partners will include SOLV, various Friends groups, the Tualatin River Watershed Council, the Audubon Society of Portland, Tualatin Riverkeepers and the Tualatin Basin PAC. More "Friends" groups will be encouraged and supported to form. The cost will be low to medium. One example is SOLV's

"Team Up for Watershed Health" program. Metro's existing volunteer coordination program (Greenspaces) costs $136,000 per year.

For more than 15 years, Clean Water Services has made a priority of public education and has developed and shared numerous and diverse, award-winning public information, awareness and outreach programs, including:

- Facility Tours open to the public at the Durham Facility and available on request throughout the year to students, visiting dignitaries, etc. Tours are advertised in local newspapers and invitations are mailed to facility neighbors, community groups and elected officials.
- Facility Brochures describe the Durham and Rock Creek Facilities, the wastewater treatment process, and technical details.
- Tualatin River Rangers Classroom Presentations teach children the wastewater treatment process and how they can protect water resources; employees present classes to up to 5,000 fourth graders annually and the program is marketed to other facilities throughout the U. S.
- Videos/DVDs have been produced by the District on several topics, with the most recent being the award-winning Tualatin: *A Watershed Restored and Wild by Design: Restoring Urban Steams & Wetlands.*
- Exhibitor at Community Events including Washington County Fair, Tualatin Crawfish Festival, Earth Day at the Nature Park, Public Works Fair, Tigard Balloon Festival, Tualatin Riverkeepers Discovery Day, Hillsboro Fourth of July Parade, Beaverton Summerfest and more creates an opportunity for staff to share information with thousands of residents, informing them of about the facilities and how to protecting water resources.
- Regional Coalition for Clean Rivers and Streams is one of many partnerships by which Clean Water Services has leveraged public education resources to develop and distribute information more effectively. A charter member of the Coalition (Portland, Gresham, Clackamas County, Clean Water Services, Metro, City of Vancouver, Clark County, and other metropolitan governments), Clean Water Services' contribution to a $60,000 transit and print advertising campaign in 2004 was $17,000. The 2004 Campaign was "*Is Your Lawn Chemical Free?"*
- *Go Native* Campaign provides a link to the District's web site and native plant line to request a free Gardening with Native Plants poster. In one year, there were nearly 7500 requests for the posters.
- Stream and River Clean Up and Restoration Events on the Tualatin River and its tributaries regularly benefit from District financial support and technical expertise. In 2004, 2,180 volunteers planted 8,290 native trees and shrubs at District stream and wetland sites; 90,000 pounds of invasive plants were removed, and volunteers clocked 6,540 hours on planting restoration.
- Community Based Restoration Projects receive funding, technical assistance, plants and other support. Last year, the Division coordinated six Home Owners Association volunteer projects, two school enhancement projects, two church/Eagle Scout projects, and eight stream enhancements at over 20 sites.

- Tualatin Basin Public Awareness Committee (TB PAC) is comprised of partner cities and stakeholder groups to do public education and outreach as a combined effort. In the past ten years, they have installed more than 800 signs on stream crossings, developed brochures and informational materials, sponsored a movie theater ad campaign, festivals, and a bilingual project to promote water quality awareness. In the past year they gave monetary support for Tualatin River Discovery Day, watershed education performances and *Naturescaping for Clean Rivers* classes.
- *Watershed Wagon* is a 14-foot enclosed trailer equipped with tools and equipment for stream restorations that has helped staff and volunteers focus on projects rather than gathering equipment and supplies. Since March 2001 it has aided community groups in over 88 stream restoration projects.
- Community Best Management Practices Cooperative Funding program established in 1996 by the District's Public Affairs and Watershed Management programs provides technical and organizational support for community water quality projects. In 2004, key support included $1,500 for the Children's Clean Water Festival; $1,000 for the Tualatin Riverkeepers annual Discovery Day, $2,500 for Jackson Bottom Wetlands Preserve *Tweet of Dreams* fund-raiser; $100 to the River Network; $1,100 for the Audubon Society annual dinner; funding to sustain a native plant nursery at Fernhill Wetlands, and support for stream enhancement projects by providing drop boxes for debris and invasive nonnative plants removed by volunteers.
- *Fats, Oils and Grease Campaign: Gravy, cooking oil, shortening, and sauces, oh my!* The battle of the bulge isn't just at our waistline; it's in our sewers causing clogs and messy overflows. To combat the fatty enemies, the *Freeze the Grease, Save the Drain!* campaign was jointly developed in November 2004 by the City of Portland Bureau of Environmental Services, Clackamas County Water Environment Services, City of Gresham and Clean Water Services. Radio and newspaper ads ran over a three-week period that encouraged residents to call and request a free kit which included a pan scraper, can lid, and a step-by-step informational bookmark in Spanish and English. More than 1,500 callers have responded to date, ready to take part in the fat-free sewer regime.

Other District ongoing public education activities include:

- Information Brochures and Booklets
- "Clean Water Starts at Home" Website
- Billing Inserts, Bookmarks, Door hangers
- Leaf Pick Up Program
- Household Hazardous Waste Disposal Events
- Eco-Logical Business Certification
- Clean Water Action Day
- "Dump No Waste, Drains to Stream" storm drain stenciling
- Customer Awareness and Satisfaction Survey
- Stream Friends Support
- Tualatin Watershed Enhancement Coalition
- Streamside Owner Direct Mail
- Mercury Awareness Campaign

Under the Basin's proposed Goal 5 program and with the on-going guidance of the Tualatin Basin Natural Resources Coordinating Committee, such efforts will gather force and continue. All these voluntary paths, taken together, will help achieve the goal of improving the environmental health of the Tualatin Basin.

Table 5-2: Summary of Non-Regulatory Measures

Option	Cost	Partners
1) Acquisition	High	Governments at the local, regional, state or federal level; nonprofit agencies such as the Wetlands Conservancy
2) Education	Low to medium	District, TRWC, TB PAC, Audubon Portland, TRK
3) Recognition	Low to medium	District, TRWC, TB PAC, Audubon Portland, TRK
4) Restoration grants	Medium to high	District, TRWC, TRK, Wetlands Conservancy
5) Reduction in property taxes	Low to medium	Washington County
6) Technical assistance	Medium	Consortium of local governments and agencies such as the Wetlands Conservancy
7) Volunteer support	Low to medium	SOLV, Friends groups, TRWC, Audubon Portland, TRK, TB PAC.

CHAPTER 6 PROGRAM RESPONSE TO ENVIRONMENTAL HEALTH

A. Introduction

The Intergovernmental Agreement (IGA) between the Tualatin Basin Natural Resources Coordinating Committee (TBNRCC) and Metro describes the goals the Basin must strive to achieve. The overriding goal of the Basin Approach is taken from Metro's Streamside CPR Program Outline "Vision Statement," which states:

> *The overall goal is to conserve, protect and restore a continuous ecologically viable stream-side corridor system, from the stream's headwaters to their confluence with other streams and rivers, and with their floodplains in a manner that is integrated with the surrounding urban landscape. This system will be achieved through conservation, protection and appropriate restoration of stream-side corridors through time.*

In order to achieve this goal (and to provide further definition), the IGA also identifies improvement of the environmental health of each of the eleven regional sites and the entire Tualatin Basin as a primary objective. This chapter describes how the following program components function to achieve this goal relative to the current condition of the Basin.

B. Summary of Key Elements of Proposed Program Components

As described in Chapter 3, the overarching structure of the proposed program consists of four major components: revenue, regulations, voluntary or non-regulatory, and monitoring. The following key elements of program components are described in more detail elsewhere in this report.

Revenue Component:

1. $95 Million in Healthy Streams Plan recommended capital improvements (ranging from $3.5-$6.5 million per year over the next twenty years) will be focused in areas of highest resource quality. Typical projects will include:
    - community tree planting
    - riparian corridor restoration and enhancements
    - culvert replacements
    - stormwater outfall retrofits
    - flow restoration;
2. Regional Bond Measure providing funding for site acquisition and preservation; and
3. Other potential funding alternatives (including grants, local bond measures, opportunities for park SDCs, etc.) – may be utilized for education, restoration and enhancement or acquisition.

Regulatory Component:

1. Existing Clean Water Services Design & Construction Standards:
    - development related activity restrictions in Water Quality Sensitive Areas (wetlands, springs, streams, and the Tualatin River) and their associated Vegetated Corridor areas. (Vegetated Corridors average approximately 50 feet and range up to 200 feet depending on resource type and size, drainage area, slope, and site conditions.)
    - required enhancement of degraded or marginal condition vegetated corridors;

2. Existing local Goal 5 program requirements;
3. Existing local tree protection standards; and
4. Other existing standards which result in local habitat protection (including but not limited to: local, state and federal wetland regulations, floodplain regulations, ESA, Clean Water Act, etc.).

Non-Regulatory (Voluntary and Incentives) Component:

1. Educational programs;
2. Guidelines for low-impact-development & green design;
3. Flexible development standards;
4. Technical assistance programs;
5. Local, state, federal and non-profit grant programs; and
6. Potential implementation of tax incentive programs

Ongoing Monitoring and Administration Component:

1. Adaptive management process;
2. Regional data coordination;
3. Continued TBNRCC functions:
    - Project coordination
    - Funding coordination;
4. CWS monitoring activities for NPDES permit compliance and stream health; and
5. HSP commitments to re-sample Watersheds 2000 RSAT inventory

The following sections elaborate on the above program components to explain their contribution to improvement of the environmental health of the Tualatin River Basin.

C. Revenue Program Component

CWS Capital Improvement Program (outlined in the Healthy Streams Plan)

The estimated overall cost of implementing all the elements of the Healthy Streams Plan is $95 million over the next twenty years. It is important to note that the community tree planting and the riparian corridor restoration and enhancement activities alone (representing less than 42% of the $95 million total program costs), are estimated to produce a total net environmental benefit valued at over twice the entire cost of the program. The implementation of the Healthy Streams Plan will be funded predominately by Surface Water Management (SWM) fees. Culvert upgrades and repairs may qualify for system development charge (SDC) and/or transportation funds use. Capital improvements will directly benefit in-stream, riparian corridor or upland habitat throughout the urban portion of the basin.

The SWM fees currently collected together with funds on hand are expected to cover program costs for several years. However, it is anticipated that a future SWM fee increase may be necessary to complete the twenty-year Plan. The surface water management program is currently funded at a very modest level relative to similar jurisdictions throughout the region and the state. Clean Water Services conducted a public values survey in which over ninety percent of respondents were willing to support a modest fee increase of $1 to $2 per month. Based upon recent estimates, implementation of a $1 per month per ESU (equivalent service unit) increase could generate more than $63 Million over twenty years.

All of the capital improvements identified in the HSP are projects designed to enhance riparian corridor conditions and/or improve stream health. These projects generate ongoing, appreciating benefits to water quality and aquatic habitat. The community tree planting projects will provide multiple benefits including water quality, in-stream and near stream habitat improvements, and community education and awareness.

To identify projects, policies and programs that will achieve the goals and objectives identified in this Goal 5 Program, the Partners relied upon the Healthy Streams watershed planning process. The GIS-based modeling tool RESTORE (OSU, 2004)—a spatially explicit decision support tool designed to assist watershed planners in restoration decision-making—was adapted to the Tualatin Basin by Clean Water Services and Oregon State University to identify multi-objective stream enhancement opportunities. The RESTORE model generated the locations of various project elements (preservation, flow restoration, etc.) based on a set of rules that governed which practices would be most effective under various site conditions. The model identified project elements totaling approximately 675[1] miles over the 338 miles studied (see **Table 8-1a**). (Note that many stream reaches have multiple project elements along the same mileage). From that initial opportunity list, the District used the guiding principles established by the Healthy Streams Project Advisory Committee to identify 45 miles of priority enhancement activities and six flow restoration projects over ten years. Additional enhancement activities will be identified as part of the five-year capital improvements programming process, as RESTORE is regularly updated. In addition, yearly performance targets were established for community based tree planting in each jurisdiction, with a goal of planting a total of a million trees over twenty years. At that rate, approximately 20 percent of the 338 miles of stream will be improved within the first ten years.

Table 8-1a: Potential Health Improvement Opportunities

Project Element	Approximate Number
Preservation (200' width / side of stream)	50 Miles
Flow Restoration	170 Miles
Re-vegetation (50' width / side of stream)	140 Miles
Large Wood Placement	230 Miles
Channel and Wetland Enhancements	40 Miles
In-Stream Pond Adjustments	5 Miles
Streamside Property Owner Education & Tree Planting	40 Miles
Total Project Element Miles	**675 Miles**

For the single objective projects of culvert upgrades/repair and stormwater outfall retrofit, Clean Water Services completed prioritization based on location, stream conditions, contributing land use, and other factors. There were 106 pre-1990 outfalls identified as part of the initial NPDES Stormwater permitting process; the 68 draining commercial, industrial, multifamily residential, and transportation areas were identified as a priority to retrofit. Yearly performance targets for the jurisdictions will generate a total of three to nine retrofits per year, with all 68 being treated by 2015. There were a total of 581 culverts identified as deficient for either conveyance, fish

[1] Represents total linear miles of stream corridor improvements.

passage, or both; a total of 383 were identified as priorities to address. Yearly performance targets for the jurisdictions will generate improvements of 20-24 culverts per year by 2015, with the remaining being completed by 2025. **Table 8-1b** identifies the structural improvement opportunities.

Table 8-1b: Potential Structural Improvement Opportunities

Project Element	Number of Facilities
Stormwater Pretreatment Retrofit	106 Facilities
Culvert Repair	581 Facilities
Total Project Facilities	**687 Facilities**

The scope of the projects identified for this program is very broad and covers all of the Regional Sites in the basin (refer to **Figure 8-1**, below). The projects generally target some form of stream corridor work for the majority of the riparian resource areas within the urban portion of the basin. The RESTORE model will be adjusted and updated over time to respond to new information on watershed conditions. This adaptive management approach allows the Partners to meet the needs of the basin by adjusting the project priorities to address changes in environmental conditions, while retaining the underlying goals and objectives of the planning process.

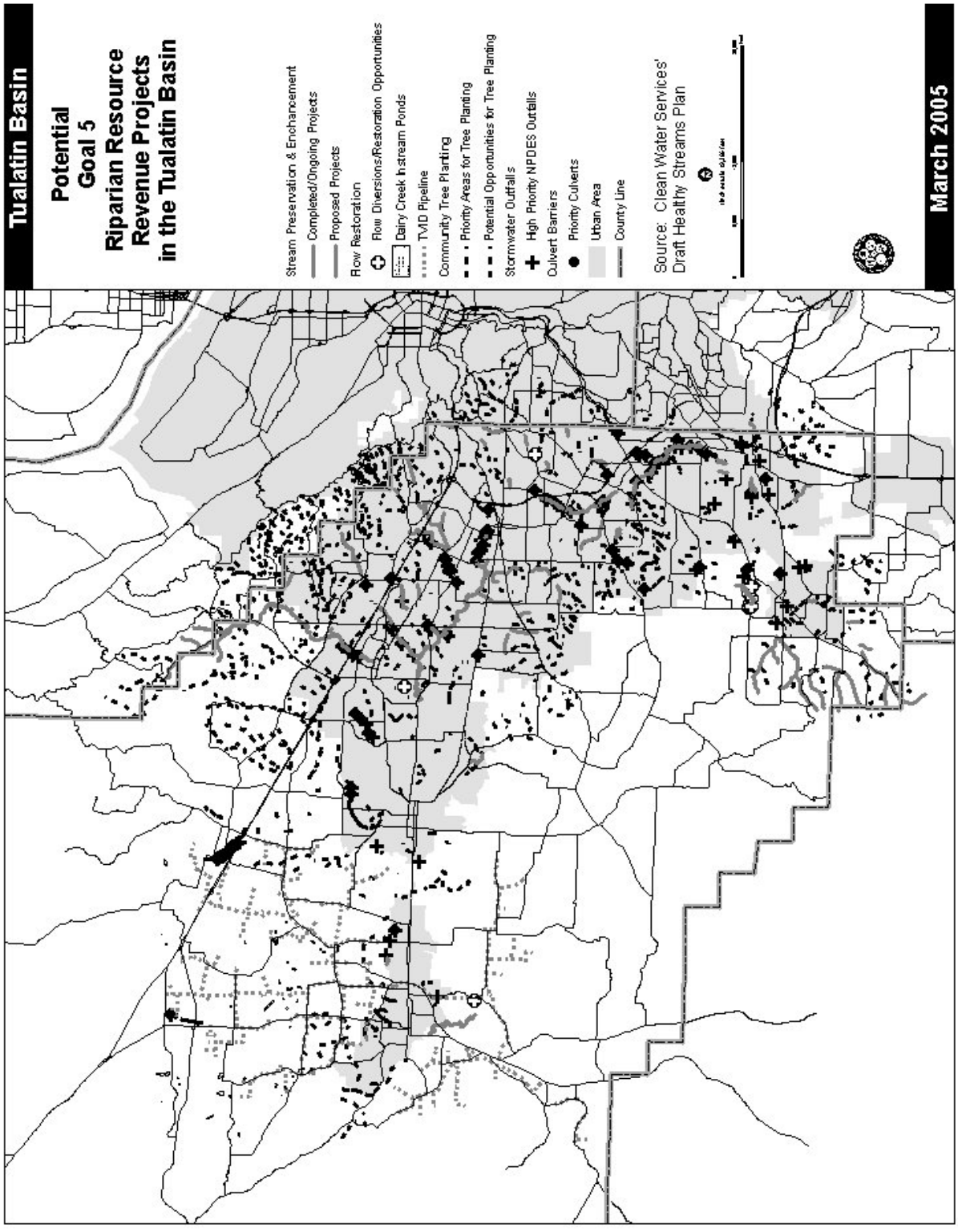


Figure 8-1: Stream Corridor Projects (identified by RESTORE model)

1

Healthy Streams Plan – Program Refinements

A strong impetus for creating the Tualatin Basin Approach was to coordinate the Goal 5 effort with Clean Water Services' (CWS) Healthy Streams Plan (HSP). The HSP is an updated watershed plan for the urban and urban fringe portions of the Tualatin Basin designed to meet the goals and requirements of the federal Clean Water Act and the Endangered Species Act. A major component of the HSP went into effect early in 2004, incorporating updated vegetated corridor requirements into the CWS Design and Construction Standards. Further refinements to Clean Water Services standards and practices related to stormwater management are currently being reviewed as an element of an update of the District's Stormwater Management Plan due to DEQ in May 2006. A broad array of policy and program refinements have also been incorporated in the draft HSP plan. These refinements are broken down into ten unique categories as shown below in **Table 8-2**. There are an average of 6 unique refinements in each of the categories and many of these have either direct or indirect benefits to environmental health in the basin, while others will benefit the administration and monitoring efforts.

Table 8-2: CWS Policy and Program Refinements

	Category / Description:
1	Stormwater Regulations
2	Local Land Use and Building Codes
3	Sensitive Areas and Vegetated Corridors Regulations
4	Operations and Maintenance of the Storm System
5	Inspection and Code Enforcement
6	Incentives
7	Public Education and Awareness
8	Monitoring Effectiveness and Implementation Progress
9	SWM Funding
10	Capital Project Implementation

Metro – Regional Bond Measure

The Partners support Metro's commitment to a regional bond measure designed to fund acquisition or protection of key habitat areas throughout the region. The Partners have locations for potential preservation identified as part of RESTORE and will refine the recommendations as part of the bond measure preparation process. Following successful passage of this measure, the Partners are prepared to assist in the acquisition process for important sites in the Tualatin River Basin. In combination with established park and open space sites, wetland and wildlife preserves, conservation easements, and other public and even privately held open space in the Basin, important habitat will be preserved and many species will be protected.

Other Funding Alternatives

A variety of grant and funding assistance opportunities are available to support habitat and water quality related improvements. In Oregon, these include (but are not limited to) the following:

- Federal Timber Safety Net Program – Title II
- DEQ – Non-point Source Pollution 319 grants
- The Nature Conservancy / PGE / Pacific Power – Salmon Habitat Fund
- Oregon Fish & Wildlife Office (U.S. FWS) – Greenspaces Program (w/ Metro)

- Oregon Fish & Wildlife Office (U.S. FWS) – Habitat Restoration and Conservation
- Oregon Watershed Enhancement Board (OWEB) – General Grant Program
- Oregon Watershed Enhancement Board (OWEB) – Small Grant Program
- Oregon Watershed Enhancement Board (OWEB) – Flexible Incentives Program (see ORS 541.381)
- Bureau of Land Management (BLM) – Local Watershed Projects
- USDA Conservation Reserve Enhancement Program (CREP)
- US EPA – Targeted Watershed Grant Awards

In addition to grant opportunities, the Basin Partners may choose to seek local bond funding for acquisition and/or protection of local sites that may not qualify for other funds.

D. Regulatory Program Components

CWS Design & Construction Standards

In order to meet stringent requirements of the Clean Water Act, as implemented by the state Department of Environmental Quality, Clean Water Services currently manages activities within and near all water resources (streams, wetlands, etc.) located in their service area. Generally, new development is "strictly limited" within Water Quality Sensitive Areas and Vegetated Corridors. The corridors along all sensitive areas average approximately 50 feet and may extend up to 200 feet depending on the resource type, drainage area, slope, and site conditions. Over 60 percent of identified Class I and Class II Riparian Habitat in the Tualatin River Basin are located within the vegetated corridor areas. Implementation of CWS' Design & Construction Standards provides for protection and/or enhancement of a high percentage of all riparian corridors in urban Washington County.

Existing Goal 5 Programs

Most jurisdictions in the basin have acknowledged Goal 5 Programs currently in place that provide resource protection. Many jurisdictions require protection of resources beyond those identified by Metro as regionally significant.

Existing Tree Protection Standards

Many jurisdictions in the basin include tree protection standards in their local development codes. Jurisdictions in the Basin that currently have some form of tree protection regulations include the cities of Beaverton, Durham, Forest Grove, Hillsboro, Lake Oswego, North Plains, Portland, Sherwood, Tigard, Tualatin and Washington County. Although the protection standards vary greatly among these jurisdictions, the cumulative effect of the regulations will play a positive role in maintaining overall environmental health in the Basin.

Other Relevant Standards and Regulations

Other federal, state and/or local programs that provide protection to Metro designated resources and/or function to meet the Basin goal of improving environmental health include: local wetland inventories and related protection standards, floodplain regulations that restrict development within the 100-year floodplain, Forest Practices Act – stream buffer requirements, USDA's Conservation Reserve Enhancement Program (CREP), and CWS Water Quality easements. As with the tree protection standards, the cumulative effects of these programs have a significant positive impact on environmental health in the Basin.

E. NON-REGULATORY (VOLUNTARY and INCENTIVE) COMPONENT

Educational Programs

The Partners have begun to identify a variety of educational tools that could be utilized to assist property owners and developers in understanding habitat values, protecting ecological functions and enhancing habitat. These tools may include publishing of newsletters or brochures, development of web sites or establishing partnerships with non-profit organizations (such as the National Arbor Day Foundation and Wetlands Conservancy), state and federal programs (such as those administered by ODFW and NMFS) education service districts, schools, park districts, libraries and community centers to provide classes on any of a number of key topics important to improving environmental health in the basin. These topics could include:

- design and construction of Low Impact Development projects
- the importance and value of trees and native vegetation
- drainage-reducing effective impervious area
- watershed ecology / environmentally friendly landscaping practices
- enhancing degraded stream corridors
- homeowners guide to the environment

Education is a fundamental element of all aspects of life, but only to the degree that learned skills are put into practice. Oregonians have a strong history of showing concern for the environment and it would be reasonable to expect that many (if not most) residents in the Tualatin Basin would be receptive to the education tools and programs if offered. In turn, it would be reasonable to expect that they would put the resulting knowledge to effective use with actions designed to improve environmental health.

Development of Low Impact Development & Green Design Guidelines

Land use planning in Oregon requires urban areas to maximize densities in order to preserve resource land and to provide for efficient use of infrastructure. Analyses conducted by Clean Water Services indicate that (unless mitigated), at current planned densities, the percentages of effective impervious area (EIA) within the UGB will be high enough to significantly alter basin hydrology and degrade in-stream habitat. While an overall decrease in EIA cannot practically be achieved, it can be mitigated, particularly through the application of environmentally sensitive development approaches categorized as LID. With the proposed basin program, LID techniques would be developed and encouraged in order to reduce the impacts of future development on stream health. The threshold for achieving this would be based on a performance standard set for each sub-watershed based on current and proposed future watershed conditions. New development may be required to manage storm water quantity as well as quality on site; this requirement would be established in Clean Water Services stormwater management program. Ongoing coordination activities with CWS will assure local implementation of the techniques incorporated in this program. The low-impact development standards discussed in Chapter 3 will assist in managing EIA throughout the basin. Use of LID/habitat sensitive approaches to development will be encouraged and supported throughout the basin, which in turn will support improvements to environmental health.

Best Management Practices

In addition to the Washington County BMPRO 2003 program described in Chapter 3, Clean Water Services and the cities implement an extensive program of stormwater management BMPs that include street sweeping, catch-basin and line cleaning, leaf pickup, stormwater facility maintenance, public education and awareness, erosion control, and source control. These program elements are part of the requirements of the NPDES Stormwater Permit under the Clean Water Act. By minimizing impacts to Goal 5 resources, these practices contribute to improving the environmental health of the Basin.

Technical Assistance

For property owners wanting to improve local wildlife habitat or just reduce total environmental impacts from buildings or other improvements on their land, partnerships with local non-profit organizations could be established to provide an array of free or low-cost services. Examples of potential services could include:

- landscaping and site design services;
- native plant sales (e.g. Tualatin Hills Park & Recreation District sales);
- team leadership for volunteer programs; and
- CWS Stream Makeover program – working with streamside property owners to plant trees and improve their creeks.

Every property owner taking advantage of these services would be directly contributing to improving both the environmental health for the sub-watershed in which they are located as well as the overall basin.

Tax Incentives

Existing state tax law supports two programs that could help to encourage landowners to protect important riparian areas and wildlife habitat. These include the Riparian Lands Tax Incentive Program and the Wildlife Habitat Conservation Management Program. These programs could be accommodated and promoted by Washington County. Education activities supported by the Healthy Streams Plan could be utilized to inform property owners of these programs and to encourage them to take advantage of the tax incentives.

In order to qualify for the tax reduction, a property owner must demonstrate that they meet the qualifications prescribed under the state program. Meeting those qualifications serves to demonstrate that steps have been taken which will lead to improvement of environmental conditions in the basin.

F. ADMINISTRATION, MONITORING AND ADAPTIVE MANAGEMENT

Administration

Continuation of the Goal 5 Steering Committee: As a key program element, the Steering Committee is proposing to continue to be involved in ongoing program management activities. These activities include continued coordination among the basin partners for all basin level environmental issues that may benefit from such involvement. The Steering Committee will continue to effectively frame and seek guidance on these issues from the TBNRCC.

Continuation of the TBNRCC: The Program includes a recommendation for continuing Tualatin Basin Natural Resources Coordinating Committee functions. A primary responsibility of the TBNRCC would be to review and recommend priorities for the capital improvements needed to improve environmental health in the basin. The TBNRCC would also be involved in coordination of funding for multi-jurisdictional projects in the basin as well as making policy decisions related to those projects.

Monitoring: In order to reasonably adapt to changing environmental conditions in the basin and to ultimately demonstrate that conditions are improving, it is important to document changes to site specific as well as overall basin-wide indicators over time.

Regional Data Coordination: As the coordinator for primary regional GIS data, Metro would be expected to continue historic practices of acquiring, developing and distributing data for lands that fall under the purview of the Regional Functional Plan. For Goal 5 resources and related Functional Plan Compliance standards, it is reasonable to expect that Metro will monitor vegetated land cover data as an important indicator in determining local environmental health. The Basin Partners will be coordinating acquisition of this data with Metro as part of their ongoing monitoring activities. As well, basin jurisdictions will continue to share local GIS data with Metro and others throughout the region.

CWS Monitoring Activities: Monitoring of watershed conditions within urban areas of the basin for water quality and stream health is an important element of the District's Integrated Water Resources Management Program (IWRM). The District monitors various combinations of water quality, flow, fish and macroinvertibrates, and physical stream channel conditions at numerous sites throughout the basin. This data is utilized today to monitor effectiveness of the District's programs and projects. It is expected that these monitoring activities will continue and that resulting data will be shared with all of the Basin Partners to assist with tracking environmental conditions both regionally and locally.

Future Stream Data Sampling: The District has indicated in the Healthy Streams Plan that re-sampling of the Watersheds 2000 inventory data should occur at reasonably regular intervals beginning in 2010. This data will be very valuable in determining the overall effectiveness of the Basin Goal 5 Program.

Adaptive Management: As discussed in Chapter 7 of this report, adaptive management will be incorporated into the program implementation process to determine where project funds can be most effectively spent in order to attain the goals to improve environmental health. Monitoring of environmental conditions will be utilized in an iterative process to test and adjust actions over time. Decisions to adjust program actions will be based upon inputs from the monitoring process which reveal changes in local or basin-wide conditions that may warrant adjustments. It is this ongoing monitoring and adjustment process that will assure that program funds and efforts are targeted to areas where they will be most effectively utilized. As well, the adaptive management process will help to assure that resources are targeted in a manner which yields the highest possible gains in environmental improvement.

G. Conclusion

The difference between the Tualatin Basin's Goal 5 Program and current regulations and plans is definable and clearly shows that this program will provide a significant improvement for the environment over the status quo. Committing to over $95 million in capital projects, policy and program refinements tied directly to environmental improvements, preserving up to 7,000 acres inside Vegetated Corridors, strictly limiting activities within water resource areas, developing low impact development guidelines and removing barriers to their utilization as well as educating property owners and developers in the utilization of these (and other) tools will greatly increase the level of natural resource protection and conservation over the standards in place when this process began. This program will result in measurable improvements to the environmental health of the eleven regional sites in the basin as well as the basin as a whole.

CHAPTER 7 PROGRAM IMPLEMENTATION, ADMINISTRATION & MONITORING

A. Introduction

As discussed in Chapter 1 and addressed in other parts of this report, the Basin Partners' Intergovernmental Agreement (IGA) with Metro both enables and commits them to the development of a Goal 5 Program designed to address the Metro inventory of regionally significant fish & wildlife habitat and to demonstrate that this Program will achieve a primary objective. This objective is to improve the environmental health in the eleven regional sites and the entire basin. Additionally, Metro Code requires that performance measures be used to evaluate the success and effectiveness of its functional plan to realize regional policies. As well, the National Marine Fisheries Service 4(d) rule calls for monitoring and evaluation. Chapters 1 through 6 of this report describe the structure and function of the proposed program. This chapter will describe how the Basin Partners propose to carry out this program in a manner designed to achieve it's primary objective and to fulfill future requirements related to monitoring and related activities designed to determine the effectiveness of the program's implementation.

The proposed program consists of four major components: revenue, regulation, a voluntary or non-regulatory component, and monitoring. The sections below describe the overall program implementation process, provide a general overview of the program administration process, and describe the development of a continuous monitoring process and adaptive management approach designed to assure program success.

B. Program Implementation

Following final TBNRCC adoption of the proposed program, the following four subsequent steps are anticipated. First, Metro is expected to incorporate the Basin Program into the regional fish & wildlife program. Second, Metro will send public notice of the intent to adopt this regional program and carry-out a public review process. Third, the final regional program will be adopted by the Metro Council, submitted to the state Department of Land Conservation and Development (DLCD) for state Goal 5 compliance review, and presented to the Land Conservation and Development Commission for Acknowledgement. Finally, for the fourth step, once Metro has adopted the Basin Program as an element of its Regional Functional Plan, the Basin Partners have agreed to begin amending local comprehensive plans and land use regulations and to complete implementation of the Basin Program within one year of Metro's action (or as otherwise described in the Basin-Metro IGA). [In the event that the Regional Program is remanded to Metro (LCDC Continuance Order) for amendment, the Basin Partners will work with Metro to resolve any issues related to the Basin element of the Regional Program.]

The general steps anticipated for implementation of the Basin Program include:

1. Development and adoption of local ordinances implementing the provisions of the Basin Program as incorporated in the Metro Urban Growth Management Functional Plan. This step includes provision of public notice(s) and holding public hearings and other public involvement activities as appropriate.

2. Development of a model Low Impact-Development (LID) ordinance for the basin providing tools designed to reduce environmental impacts of new development and removing barriers to their utilization. This step includes local adoption of LID guidelines.
3. Coordination with Clean Water Services for activities necessary for implementation of the Healthy Streams Action Plan (including all related capital projects as needed), as well as for local actions needed to support the updated Stormwater Management Plan.
4. Coordination with Metro on development of a regional bond measure supporting protection of regionally significant fish & wildlife habitat.
5. Coordination with CWS, Metro and others as necessary to develop and support the voluntary and educational components of the Basin Program.
6. Coordination with CWS, Metro and others as necessary to develop and support the monitoring and adaptive management components of the Basin Program.

C. Program Administration

Administration of the proposed basin program will involve continued coordination and cooperation among Partners to ensure the program objectives are achieved. This includes the following:

a) Cooperation in implementing the Healthy Streams and Stormwater Management Plan update

The primary elements of future activities to implement the Healthy Streams Action Plan and Stormwater Management Plan will be carried out among the Basin Partners under the guidance of Clean Water Services. It is anticipated that CWS staff (in cooperation with the other Basin Partners), will carry out the activities and projects incorporated in these plans and will assist in assuring that the goals of improving environmental health in the basin can be met.

b) Continuation of the Tualatin Basin Steering Committee

As a key program element, the Tualatin Basin Steering Committee is proposing to continue to be involved in ongoing program management activities. Project activities will be tracked and managed by SWM Teams developed as part of the HSP adaptive management process. These activities of the committee include continued coordination among the basin partners for all basin level environmental issues that may benefit from such involvement. The steering committee will continue to effectively frame and seek guidance on these issues from the TBNRCC.

c) Continuation of the TBNRCC

The Program includes a recommendation for continuing Tualatin Basin Natural Resources Coordinating Committee functions. A primary responsibility of the TBNRCC would be to review and recommend priorities for the capital improvements needed to improve environmental health in the basin. The TBNRCC would also be involved in coordination of funding for multi-jurisdictional projects in the basin as well as making policy decisions related to those projects.

D. Program Monitoring and Adaptive Management

Program monitoring and adaptive management are key activities necessary to assure that the commitments incorporated in the Basin Approach can be attained. Activities anticipated under this program element include:

The monitoring process: In order to monitor the effectiveness of the Basin Approach, the Partners are relying upon baseline conditions established and documented in 2000-2001 as part of the Watersheds 2000 planning activities. In addition to ongoing long-term monitoring activities for water quality and flow, it is anticipated that periodic monitoring of biological communities and physical habitat conditions will also be needed in order to provide adequate comparisons with baseline data and to determine the effectiveness of program activities. Clean Water Services commitments to continued monitoring of environmental conditions are incorporated in their Healthy Streams and Stormwater Management plans.

Adaptive Management: Adaptive management is generally described as the integration of design, management, and monitoring to systematically test assumptions in order learn and to adjust actions based on that learning until a set goal is attained. For purposes of the Basin Program, adaptive management will be incorporated into the program implementation process to determine where project funds can be most effectively spent in order to attain the goals to improve environmental health. The monitoring process described above will be utilized in an iterative process to test and adjust actions over time. Decisions to adjust program actions will be based upon inputs from the monitoring process which reveal changes in local or basin-wide conditions that warrant program adjustments.

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STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 05-3577 APPROVING THE TUALATIN BASIN NATURAL RESOURCES COORDINATING COMMITTEE'S FISH AND WILDLIFE HABITAT PROTECTION PROGRAM.

Date: April 14, 2005 Prepared by: Andy Cotugno and Chris Deffebach

CONTEXT AND BACKGROUND

In January 2002 Metro entered into an intergovernmental agreement ("IGA") with local governments and special districts in the Tualatin Basin (called the Tualatin Basin Natural Resources Coordinating Committee, TBNRCC) setting forth a cooperative planning process to address regional fish and wildlife habitat within the basin. The IGA provided that the Tualatin Basin partners would submit their program and analysis to Metro for review and, if it met standards for habitat protection described in the IGA, then Metro would include it as part of the regional habitat protection program. Approximately 16,650 acres of Metro's total habitat inventory of 80,000 acres are located within the jurisdiction of the local governments participating in the Tualatin Basin partnership. The regional fish and wildlife habitat protection program is part of Metro's Nature in Neighborhoods initiative (Resolution No. 05-3574).

The IGA describes the goals the TBNRCC must strive to achieve in the Tualatin Basin. The overriding goal of the Basin Approach is taken from Metro's Streamside CPR Program Outline "Vision Statement", which states:

> *The overall goal is to conserve, protect and restore a continuous ecologically viable streamside corridor system, from the stream's headwaters to their confluence with other streams and rivers, and with their floodplains in a manner that is integrated with the surrounding urban landscape. This system will be achieved through conservation, protection and appropriate restoration of streamside corridors through time.*

In order to achieve this goal (and to further define the scope), the IGA also identified improvement in the environmental health of each of the eleven subwatersheds in the basin and of the entire Tualatin Basin as a primary objective.

Consistent with the terms of the IGA, the TBNRCC accepted Metro's regionally significant fish and wildlife habitat inventory and undertook its own separate Environmental, Social, Economic and Energy (ESEE) analysis. The TBNRCC reviewed the ESEE analysis and a draft protection program with the public and with Metro's technical and policy advisory review committees, as per the IGA.

On April 4, 2005, the TBNRCC approved the Tualatin Basin Goal 5 Program Report and forwarded it to the Metro Council for consideration as part of the regional habitat protection plan on April 7, 2005. Per the IGA, Metro Council has agreed to determine if the Tualatin Basin Program meets the overall habitat goals and take action on the Tualatin Basin Program within

120 days. Metro is scheduling public hearings to provide additional public comment opportunity and will review the proposal with Metro's technical and policy advisory committees.

Current Action

Resolution No. 05-3577 presents the staff recommendation on the Tualatin Basin Program for Metro Council consideration. The Metro Council may take one of the following approaches when considering this Resolution:

- Approve the Basin Program and include in the regional program;
- Disapprove the Basin Program; or
- Approve the Basin Program with conditions for inclusion in the regional program.

If Metro Council approves this Resolution, the Tualatin Basin Program will be included as one of the compliance alternatives for cities and counties participating in the TBNRCC in proposed Title 13 of the Urban Growth Management Function Plan and presented for additional public review and comment. Two other pieces of legislation related to nature in neighborhoods and fish and wildlife habitat are currently under Metro Council consideration that relate to this Resolution.

- Resolution No. 05-3547 describing Metro's Nature in Neighborhoods initiative is also available for public review. This resolution is schedule for final consideration on May 12, 2005.
- Title 13: Nature in Neighborhoods, and accompanying amendments to Metro's Urban Growth Management Functional Plan and Framework Plan are available now for public comment in Ordinance No. 05-1077. This ordinance is scheduled for final consideration in Fall 2005.

Final action on the Tualatin Basin Program will occur when Ordinance No. 05-1077, amending the Regional Framework Plan and the urban growth management functional plan relating to Nature in Neighborhoods, is adopted. If Metro Council approves this resolution for inclusion of the Tualatin Basin Program as part of the regional program, Metro would carry out the required public notice process. Upon final program adoption by Metro Council, the Tualatin Basin Program would be submitted to the Land Conservation and Development Commission (LCDC) along with the regional program for acknowledgement under Statewide Planning Goal 5. Finally, upon Metro Council adoption of the Basin Program and its acknowledgement by LCDC, the TBNRCC has agreed, per the IGA, to begin amending local comprehensive plans and land use regulations to complete implementation within one year of Metro's action.

SUMMARY OF TUALATIN BASIN PROGRAM AND COMPARISON WITH METRO'S PROPOSED PROGRAM

In December 2004, the Metro Council approved Resolution No. 04-3506A, which directed staff to develop a fish and wildlife habitat protection program to reflect the following principles:

- Focus the regulatory element on the most valuable Class I and II Riparian habitat. About 9,600 acres of Class I and II Riparian habitat are located within the Tualatin Basin (inside the jurisdiction of the TBNRCC and within Metro's boundary).
- Develop a strong voluntary, incentive-based approach to protect and restore all regionally significant habitat.
- Apply regulations to limit development in Class A and B upland habitat in future urban growth boundary expansion areas.

As described in Exhibit A to this Resolution, the Basin Program relies on two major elements for protection of regionally significant fish and wildlife habitat.

- Clean Water Services' (CWS) basin-wide updated Vegetated Corridor standards. This is the regulatory element of the program.
- CWS Healthy Streams Plan. This describes the non-regulatory element of the program.

A brief summary of the Basin Program and comparison with Metro's proposed regional program is included below.

A. Vegetated Corridor Standards

The Vegetated Corridor standards implement the regional Title 3 standards. They were recently updated and now regulate significantly more stream miles than required by Metro's Title 3 water quality standards. The development standards include a requirement to avoid, minimize, and mitigate within the Vegetated Corridor. There is also an enhancement requirement for the Vegetated Corridor even if a proposed development on a site does not intrude into the corridor. They include protection of headwater streams and along the Tualatin River. The Vegetated Corridor standards generally protect and enhance riparian vegetation within:

- 15 feet of flat headwater streams, including streams that drain 10 acres,
- from 15-200 feet in other headwater streams depending on steep slopes,
- within 50 feet of other streams, and
- within 125 feet of the Tualatin River.

For undeveloped floodplains outside of the Vegetated Corridor, balanced cut and fill is the only requirement. Balanced cut and fill addresses water storage issues to prevent floods from damaging other property, but does not address other habitat functions.

The Basin Program does not propose additional regulation of areas outside the existing Vegetated Corridors. Local Goal 5, floodplain, tree protection and other standards protect habitat at varying levels outside of the Vegetated Corridors. The Basin Program also proposes a model low impact development ordinance to be developed for consideration by jurisdictions to promote habitat-friendly, low impact development practices.

B. Healthy Streams Plan

The TBNRCC proposes using the Clean Water Services Healthy Streams Plan (HSP) to direct revenue and voluntary efforts to their list of watershed enhancement priorities. The Healthy Streams Plan, which is in draft form and has not yet been adopted, recommends $95 million in capital improvements over the next 20 years, ranging from $3.5-$6.5 million per year. The plan focuses projects in areas of highest quality resources. Typical plan projects will include:

- community tree planting,
- riparian corridor restoration and enhancements,
- culvert replacements,
- storm water outfall retrofits, and
- flow restoration.

Some of the plan's project priorities lie outside of Metro's jurisdiction but would still improve overall watershed health. For example, a flow restoration project outside of Metro's jurisdiction can positively affect stream flow downstream, and restoration of headwaters outside the Metro jurisdiction can help to reduce stream temperature downstream. Exhibits to this Resolution include the current draft Healthy Streams Plan and a map of its recommended priority projects.

The Healthy Streams Plan will be implemented by Clean Water Services and is scheduled for its consideration in the next few months. The HSP was approved by the Healthy Streams Plan Advisory Committee, a technical committee comprised of staff from local jurisdictions and other agencies. The Basin Plan includes a proposal that the TBNRCC will recommend projects for implementation and CWS will make the final decision on which projects are chosen. The Healthy Streams Plan's restoration projects are guided by watershed assessment and a model developed by researchers at Oregon State University called the Restore model. The Restore model incorporates existing and anticipated conditions to identify priority restoration and enhancement projects designed to strategically enhance the Basin's watersheds.

Clean Water Services estimates that the surface water management (SWM) fees currently collected, together with existing funds, are expected to cover program costs for several years. However, CWS anticipates that a future SWM fee increase may be necessary to complete the 20-year plan. The CWS surface water management program is currently funded at a very modest level relative to similar jurisdictions throughout the region and the state. Clean Water Services recently conducted a public values survey in which over ninety percent of respondents were willing to support a modest fee increase of $1 to $2 per month. Based upon recent estimates, a $1 per month per ESU (equivalent service unit) increase will generate more than $63 million over twenty years. The Basin Program indicates that CWS will consider increases over time, as necessary to implement the Healthy Streams Plan.

All of the capital improvements identified in the HSP are projects designed to enhance riparian corridor conditions and/or improve stream health. These projects generate ongoing, cumulative benefits to water quality and aquatic habitat. The community tree planting projects will provide multiple benefits including water quality, in-stream, and near stream habitat improvements, as well as community education and awareness.

Other potential funding alternatives (including grants, local bond measures, opportunities for parks Systems Development Charges, etc.) may be utilized for education, restoration and enhancement or acquisition within the Basin.

C. Comparison of Basin Program and Metro's proposed program

As summarized above, the Basin Program relies on current Clean Water Services regulations that implement Metro's water quality and flood management requirements for regulatory protection of streamside habitat in the Tualatin Basin. However, the Basin Program includes a strong voluntary, incentive-based restoration and enhancement component that is based on a reliable funding source – surface water management fees. Comparisons between the Basin Program and the regional program being recommended by Metro staff, which is still subject to review and amendment by the Metro Council, are described below.

Regulatory Protection

Both Metro and the TBNRCC have attempted to quantify the difference in regulated area between the Basin Program and the Metro program recommended by staff in Ordinance No. 05-1077. Since CWS does not map the Vegetated Corridor boundaries, an easy, direct comparison between the areas covered by CWS standards and those that may be covered by Metro's standards is not possible. One proxy developed by Washington County staff estimated that 65% to 75% of Metro Class I and II riparian habitat in the basin is located within areas subject to either CWS Vegetated Standards or its balanced cut and fill requirements.

Metro staff has made the following estimates of the amount of Metro's Class I and II riparian habitat in the Tualatin Basin that would be covered by Metro's Title 3 requirements, as adopted by Metro in 1998:

- ***Water Quality Resource Area (WQRA):*** 3,850 acres covered, or 40% of Metro's Class I and II riparian habitat;
- ***Flood Management Area (FMA):*** 2,020 additional acres covered, or 21% of Class I and II riparian habitat; and
- ***Outside Title 3:*** 3,720 acres outside Metro's Title 3, or 39% of Class I and II riparian habitat.

It should be noted, however, that CWS Vegetated Corridor standards apply to more streams than required by Title 3. For example, the Vegetated Corridor standards apply to headwater streams and additional stream miles added to the CWS stream database. Thus, although neither of these approaches is perfect, Metro staff believes that it is reasonable to conclude that the Vegetated Corridor standards apply to approximately 65% to 75% of Metro's Class I and II riparian habitat in the basin.

Metro staff's proposed program would apply the avoid-minimize-mitigate standard to all Class I and II riparian habitat. In the Tualatin Basin, a substantial portion of the Class I habitat is within the Vegetated Corridor, and subject to the same avoid-minimize-mitigate standard. However, less of the Class II habitat would fall within the Vegetated Corridor, since much of it is further

from streams. Any Class I or II riparian habitat outside of the Vegetated Corridor would not be covered with regulatory protection.

Another difference is the level of protection for undeveloped floodplains. In Ordinance No. 05-1077 staff recommends that undeveloped floodplains be subject to the same avoid-minimize-mitigate standard that is applied by CWS in the Vegetated Corridor. The Basin Program relies on a balanced cut and fill requirement for these areas, unless modified by local floodplain regulations, which have been adopted by some of the local jurisdictions in the basin.

Voluntary, Incentive-based Program

It is difficult to compare and contrast the voluntary component of the Basin Program with the program proposed by Metro staff. The program proposed by staff in Ordinance No. 05-1077 encourages cities and counties to develop a voluntary component to accomplish protection, restoration and enhancement. Metro's Council President has proposed consolidating and re-directing resources for habitat protection, restoration, and open spaces into a Nature in Neighborhoods initiative (Resolution No. 05-3574), which would include a regional bond measure for fish and wildlife habitat acquisition and restoration in November 2006.

The Basin Program contains a strong voluntary, incentive-based component that is founded on an existing funding source with the potential to raise additional dollars over time. However, there is no guarantee built into the Basin Program as written that the TBNRCC will commit to renew and extend its partnership to implement the projects described in the Healthy Streams Plan.

D. Implementation Plan for Basin Program

If Metro approves the Tualatin Basin Program and incorporates it into Title 13 of the Functional Plan, Chapter 7 of the Tualatin Basin Program: Program Implementation, Administration and Monitoring describes the general steps anticipated for implementation. They are:

1. Development and adoption of local ordinances implementing the provisions of the Basin Program, as incorporated in Metro's program and holding additional public notice and hearings as appropriate.
2. Development of a model low impact development ordinance for the basin, including local adoption of LID guidelines.
3. Coordination with CWS for activities necessary for implementation of the Healthy Streams Action Plan as well as for local actions needed to support the updated Stormwater Management Plan.
4. Coordination with Metro on development of a regional bond measure supporting protection of regionally significant fish and wildlife habitat.
5. Coordination with CWS, Metro and others as necessary to develop and support the voluntary and educational components of the Basin Program.
6. Coordination with CWS, Metro and others as necessary to develop and support that monitoring and adaptive management components of the Basin Program.

E. Summary and Conditions for Approval

The Tualatin Basin Program is similar in some ways to the staff recommendations in Ordinance No. 05-1077. The IGA does not require the Tualatin Basin Program to be the same as the regional program, but to achieve the same vision for ecological health. The staff analysis concludes that the Basin Program generally has the potential to improve regionally significant habitat conditions basin-wide and within each of the basin's subwatersheds, and that it substantially complies with the "overall goal" of the Vision Statement with a few exceptions as described in this Resolution. These exceptions relate to:

- Uncertainty of commitment to the Healthy Streams Plan;
- The need to continue to coordinate in the Nature in Neighborhood Initiative;
- Potential loss of habitat in Class I and II Riparian Habitat outside of Vegetated Corridors and especially in undeveloped floodplains;
- Use of habitat-friendly development practices in all Class I and II riparian habitat areas;
- Consistency with other cities and counties on implementing the program relating to lower minimum densities for habitat protection, monitoring and reporting; and
- Application of the program in upland wildlife habitat in future UGB expansion areas.

Based on these points, staff recommends conditions of approval relating to:

1. **Commitment to implement the Healthy streams plan.** Staff recommends that the TBNRCC demonstrate commitment to the Healthy Streams Plan by requiring CWS to approve the plan. In addition, staff recommends that the TBNRCC members agree to renew and extend their partnership to implement the projects on the Healthy Streams Project List.

2. **Metro Coordination**. In addition to the implementation points included in the Basin Program staff recommend that the TBNRCC agree to continue to coordinate its activities with Metro and cooperate with Metro on the development of regional public information about the Nature in Neighborhoods initiative.

3. **Target projects for protection of the Class I and II Riparian areas outside of the vegetated corridors**. According to one estimate, the CWS Vegetated Corridor Standards covers only approximately 65% to 75% of the Class I and II Riparian areas, and includes substantively less restrictive regulations for protection of habitat values in undeveloped floodplains than those proposed by staff in Ordinance No. 05-1077. This leaves approximately 25% to 35% for protection through capital projects in the Healthy Streams Plan, voluntary adoption of low impact development standards, and protection through existing local programs. Due to the importance of protecting habitat in Class I and II Riparian areas for achieving the overall goal for the Basin, staff recommends that the TBNRCC place the highest priority on HSP projects that protect and restore Class I and II Riparian Habitat, including habitat that extends beyond the Vegetated Corridors.

4. **Habitat-Friendly Development Standards for all of Class I and II Riparian Areas.** In Ordinance No. 05-1077, staff recommends that the use of Habitat Friendly Development Practices in Class I and II Riparian areas be required by cities and counties

where technically feasible, and be encouraged elsewhere in the watershed. Staff recommends that the TBNRCC require the use of these practices in Class I and II Riparian areas to help minimize loss of habitat outside of the Vegetated Corridors.

5. **Lower density standards to protect habitat and ongoing monitoring and reporting**. The TBNRCC has proposed to use lower density standards as a tool to protect habitat and has proposed to participate with Metro in ongoing monitoring and reporting of conditions in the Basin. Staff recommends that the TBNRCC agree to use the same protocol for establishing protection of habitat when reducing density and for monitoring and reporting as the other cities and counties, as proposed in Ordinance No. 05-1077.

6. **New Urban Area Planning**. In December 2004, Metro Council clarified its intent to establish higher expectations for habitat protection in future new urban areas, including protection of both Riparian and Upland Habitat Areas. In response, staff propose that the cities and counties within the Tualatin Basin comply with Title 13 as it applies to upland wildlife habitat in future urban areas by either (1) adopting Metro's Title 13 Model Ordinance, (2) substantially complying with the performance standards and best management practices in Section 4 of Title 13, or (3) by developing alternative approach comparable to the results that would be achieved by following option (1) or (2).

ANALYSIS/INFORMATION

1. **Known Opposition.** The Audubon Society of Portland, Tualatin Riverkeepers and others have raised concerns with the Tualatin Basin Program. Other opposition is included in the public comment report submitted to Metro from the Tualatin Basin.

2. **Legal Antecedents.** This Resolution carries out the IGA between Metro and the TBNRCC.

3. **Anticipated Effects.** Approval of this resolution will allow Metro to incorporate the Basin Program approach as a package, with conditions if needed, and complete the three-step process for complying with Statewide Land Use Planning Goal 5 by amending portions of the Regional Framework Plan and Urban Growth Management Functional Plan. This allows Metro to submit a complete package, including the Tualatin Basin's program within Metro's regional program, to the Department of Land Conservation and Development for review. in addition, basin cities and counties have voluntarily committed, in the IGA, to implement the program within one year of Metro approval of the Basin program, which is sooner than Metro may require cities and counties to comply with new functional plan requirements.

4. **Budget Impacts.** Additional staff work and coordination resulting from Council's acceptance of the Basin program would be considered part of the ongoing implementation of Metro's Nature in the Neighborhoods initiative.

RECOMMENDED ACTION

Staff requests that Council approve this Resolution and direct staff to incorporate the Tualatin Basin Program into Ordinance No. 05-1077, amending the Regional Framework Plan and Urban Growth Management Functional Plan relating to the Nature in Neighborhoods initiative.