080802c-02

NATURAL RESOURCES COMMITTEE REPORT

CONSIDERATION OF RESOLUTION NO. 02-3177A, FOR THE PURPOSE OF ESTABLISHING CRITERIA TO DEFINE AND IDENTIFY REGIONALLY SIGNIFICANT WILDLIFE HABITAT AND ADOPTING A DRAFT MAP OF REGIONALLY SIGNIFICANT WILDLIFE HABITAT AREAS

Date: August 1, 2002 Presented by: Councilor McLain

Committee Action: At its July 31 meeting, the Natural Resources Committee voted 5-0 to recommend Council adoption of Resolution 02-3177A. Voting in favor: Councilors Atherton, Bragdon, Hosticka, Park and McLain.

Background: Resolution 02-3177A and a companion resolution, 02-3176, help complete the inventory phase of Metro's Fish and Wildlife Habitat Protection program. 02-3176 identifies and maps regionally significant riparian corridor inventory, and 02-3177A identifies and maps the regionally significant wildlife habitat inventory. The inventory phase will be complete, for the purposes of beginning the ESEE phase, when these inventories are combined into a single map, and when Metro addresses local Goal 5 plan analyses in Resolution 02-3218, as required by Metro Title 3.

Criteria used to create the regional wildlife habitat map, identify features such as trees, vegetation, wetlands, streams and floodplains. These features in turn are related to habitat functions for fish and other wildlife. The criteria are:

1. Patch size.
2. Interior habitat size.
3. Connectivity and proximity to water.
4. Connectivity and proximity to other patches.

These criteria were independently mapped for the entire region, then combined in a single map that ranks the quality of the habitat on a scale from 1 (lowest) to 9 (highest). In addition, Habitats of Concern identify a limited number of sites deemed to be important habitat types by the state (ODF&W), but were not rated on the 1-9 scale.

The Metro Executive has recommended adoption of inventoried sites receiving scores of from 2-9, and including Habitats of Concern. That recommended has been paralleled by the Goal 5 TAC, MTAC and MPAC, with additional comments. WRPAC recommended adoption of all sites 1-9.

The Natural Resources Committee provided significant opportunity for public input by holding hearings on June 26, July 3, July 17 and July 31.

Committee Issues/Discussion: Paul Ketcham opened the July 31st meeting with a background of activities that led to criteria and mapping of wildlife habitat. A public

hearing was opened with about 50 people testifying. Most speakers encouraged the passage of resolution 02-3177.

The Committee accepted the chair's "A" version of the resolution as its starting point for discussion. The "A" version identifies regionally significant wildlife habitat as the areas receiving a score of 2-9, including Habitats of Concern. The "A" version also corrects language in order to be parallel with previously adopted resolutions 01-3141C and 02-3176. A modified Resolved # 11 clarifies that the map amendment process has been an ongoing one, and directs that a post-adoption correction process be developed by staff for Council consideration.

Councilor Atherton suggested that the committee add sites with a 1 rating to the regionally significant list. He agreed with prior testimony that it would be better to be more inclusive at the inventory stage, and let ESEE sort things out. Staff clarified that the sites rated 1 amount to about 2,100 acres, and tend to be disconnected from larger resource sites. Several committee members were not comfortable with this proposal, but were interested in tracking #1 related sites, or asking local jurisdictions to review them. Councilor Bragdon accepted as a friendly amendment language that paralleled a companion resolution on riparian corridors, 02-3176. This language, placed in resolved # 7, asks local jurisdiction to consider these (#1) sites during their local Goal 5 processes.

Known Opposition: In the past several months a group of homeowners in the Portland area has expressed concerns, mostly by mail, about the effects of the program in possibly limiting the use and value of their property. Their concerns are carried over from criticism of the City of Portland's proposed program, which included a completed ESEE analysis and proposed regulatory program.

The Homebuilders Association of Metropolitan Portland has critiqued Metro's work as not being consistent with state Goal 5 relative to the actual presence of species in mapped resource sites.

Some individuals and local jurisdictions have called attention to disagreements to the presence or absence of resource sites. Many of these disagreements have been resolved through a map correction process, though some disagreements remain. Metro has made clear that the map correction process will be an ongoing one.

See staff report for a more detailed discussion of criticism of the material contained in this resolution.

Legal Antecedents: Metro has undertaken the Fish and Wildlife Habitat Protection Plan, as recommended by MPAC in the adoption of Title 3 of the Urban Growth Management Functional Plan and the Goal 5 Vision Statement. It follows requirements in Metro's Regional Framework Plan. It also completes Title 3 of the Urban Growth Management Functional Plan, and is consistent with statewide planning Goal 5. Resolution 02-3177A

and the entire Fish and Wildlife Habitat Protection Plan also must comply with federal law in the form of the Clean Water and Endangered Species Acts.

Budget Impact: There is no impact to the budget.

081802c-03

METRO NATURAL RESOURCES COMMITTEE REPORT

CONSIDERATION OF RESOLUTION NO. 02-3176, FOR THE PURPOSE OF ADOPTING A DRAFT MAP OF REGIONALLY SIGNIFICANT FISH HABITAT PURSUANT TO RESOLUTION #01-3141C

Date: June 7, 2002 Presented by: Councilor McLain

Committee Action: At its June 5, 2002 meeting, the Metro Natural Resources Committee voted 4-0 to recommend Council adoption of Resolution 02-3176. Voting in favor: Councilors Atherton, Hosticka, Park and McLain

Background: Resolution 02-3176 represents a step towards completion of Metro's Fish and Wildlife Habitat Protection Plan, which itself completes Title 3 of Metro's Urban Growth Management Functional Plan. This step concludes draft mapping of the riparian/fish portion of the plan, following-up on council approval of criteria for the mapping in the fall of 2001. The follow-up included finalizing issues concerning developed floodplains, waters of the state, mapping related to organic materials and map corrections. When companion legislation concerning mapping wildlife habitat is concluded, the activities related to the next step in the plan, ESEE analysis can begin in earnest.

- Existing Law: State Planning Goal 5, and OAR chapter 660; Metro Framework Plan and Urban Growth Management Functional Plan; Resolution 01-3141C, establishing criteria to define regionally significant fish habitat.
- Budget Impact: There is no budget impact related to adoption of this resolution.

Committee Issues/Discussion: Mark Turpel made the staff presentation and reminded the committee of prior actions and testimony. Chair McLain affirmed that the committee is very up to speed with the history of this resolution, and is ready to move on. The committee requested some additional information tabulating acres covered in the inventory by title 3 status, acres in public or private ownership, etc.

The Audubon Society praised the staff work reflected in this resolution and urged adoption.

There was no adverse testimony or committee discussion.

080802c-04

COFIELD LAW OFFICE

Dorothy S. Cofield, Attorney at Law

August 2, 2002

Chris Billington
Metro Clerk of the Council
600 NE Grand
Portland, Oregon 97232

Re: Resolution No. 02-3177A; 02-3218
Metro's Draft Inventory Maps of Regionally Significant Riparian Corridors and Wildlife Habitat for the Goal 5 ESEE Analysis and Approving Metro's Local Plan Analysis

Dear Ms. Billington,

Please place the following RIPARIAN ASSESSMENT HAWKINS-KIMMEL PROPERTY ON RIGERT ROAD into the above record.

Very truly yours,

Dorothy S. Cofield

DSC:das
Enclosure: As Stated

cc: June and Richard Hawkins-Kimmel *(w/o enclosure)*

Kruse Mercantile Professional Offices • 4248 Galewood, Suite 9 • Lake Oswego, Oregon 97035
(503) 675-4320 • Fax: (503) 675-4321 • Email: cofield@hevanet.com

RIPARIAN ASSESSMENT
HAWKINS-KIMMEL PROPERTY
ON RIGERT ROAD

Prepared for:
RICHARD HAWKINS-KIMMEL
17535 SW RIGERT ROAD
BEAVERTON, OR 97007

JULY 2002

3980 SW 170th Avenue Aloha, OR 97007 (503) 642-3739 Fax 642-4158

INTRODUCTION

Mr. and Mrs. Richard Hawkins-Kimmel contracted with Rita Mroczek, Professional Wetland Scientist (PWS), to perform a Riparian Assessment on a property located at 17535 SW Rigert Road in Beaverton, Washington County, Oregon. This report is prepared in response to a proposed change in the Metro Goal 5 Riparian Corridor Program.

SITE DESCRIPTION

The property, which is approximately 6 acres in size, is located at 17535 SW Rigert Road in Beaverton, Washington County, Oregon. The legal description locates it in the SW ¼ of Section 19, T 1S, R 1W. It is further described as Tax Lot 100, Map # 1S1 19CD. The applicable USGS quadrangle is Beaverton, OR (Figures 1and 2).

The site currently contains one residence and an abandoned pasture. It is completely surrounded by residential development. The eastern portion is the pasture; the southern part has a residence with a landscaped yard. A small creek lies within well-defined banks across the northwest corner (Figure 3). There are no associated wetlands.

Residential development surrounds the site, and three roads dead-end at the property boundaries, one to the north, one to the east and one to the southwest.

The abandoned pasture contains orchard grass (*Dactylis glomerata)* and other pasture grasses. Vegetation in the northwest corner of the site consists primarily of Douglas-fir (*Pseudotsuga menziesii*), hazelnut (*Corylus cornuta*) and bigleaf maple (*Acer macrophyllum*) with an understory of salal (*Gaultheria shallon*) and western sword fern (*Polystichum munitum*). There is some encroachment by non-native species such as English ivy (*Hedera helix)* and Himalayan blackberry *(Rubus discolor).* Vegetation in the residence area is typical of a suburban yard, with a small apple orchard.

METHODS

Preliminary studies included the National Wetland Inventory (NWI) map, which indicates no wetlands on this site, the Aloha-Reedville-Cooper Mtn. Community Plan map, and the Washington County soil maps prepared by the Soil Conservation Service (SCS). Soils mapped on the site are Cornelius and Kinton and Verboort silty clay loam.

Professional Wetland Scientist Rita N. Mroczek conducted a site visit in early July 2002. The forested area was traversed to identify riparian values.

RESULTS AND DISCUSSION

Vegetation in the residence area is typical of a suburban yard, the abandoned field contains orchard grass other pasture grasses, and the treed area in the northwest is vegetated by Douglas-fir, bigleaf maple, hazelnut, salal and western sword fern. There is some encroachment by English ivy and Himalayan blackberry.

A row of Douglas-fir, planted in the last 50 years, separates the farm field from this forested area, and primarily native vegetation lies to the north and west. Slopes approaching the stream in the extreme northwest corner are as steep as 20%. The stream describes an arc across the corner of the site, entering at the western property boundary and exiting at the northern boundary (Figure 3). Its watershed is quite small, less than 200 acres. Approximately 80% of the watershed is developed, therefore probably more than 10% of the entire watershed is in impervious surfaces such as driveways, roofs, roads, etc. Prior to development of the surrounding properties, this stream was intermittent, but it now receives excess water from neighboring developments, and flows year-round in most years.

A riparian area is technically defined as 'the area alongside a stream which is hydrologically influenced by the stream.' This can be demarcated on the ground by geomorphic features or by the vegetation. 'Goal 5 defines the riparian corridor to include the stream and its associated riparian area.'[1] The methodology used here to establish the riparian area is that listed above.

1) Paul A. Fishman, M.S., CEP 'Technical Review: Metro Goal 5 Riparian Corridor Program' Nov. 2001

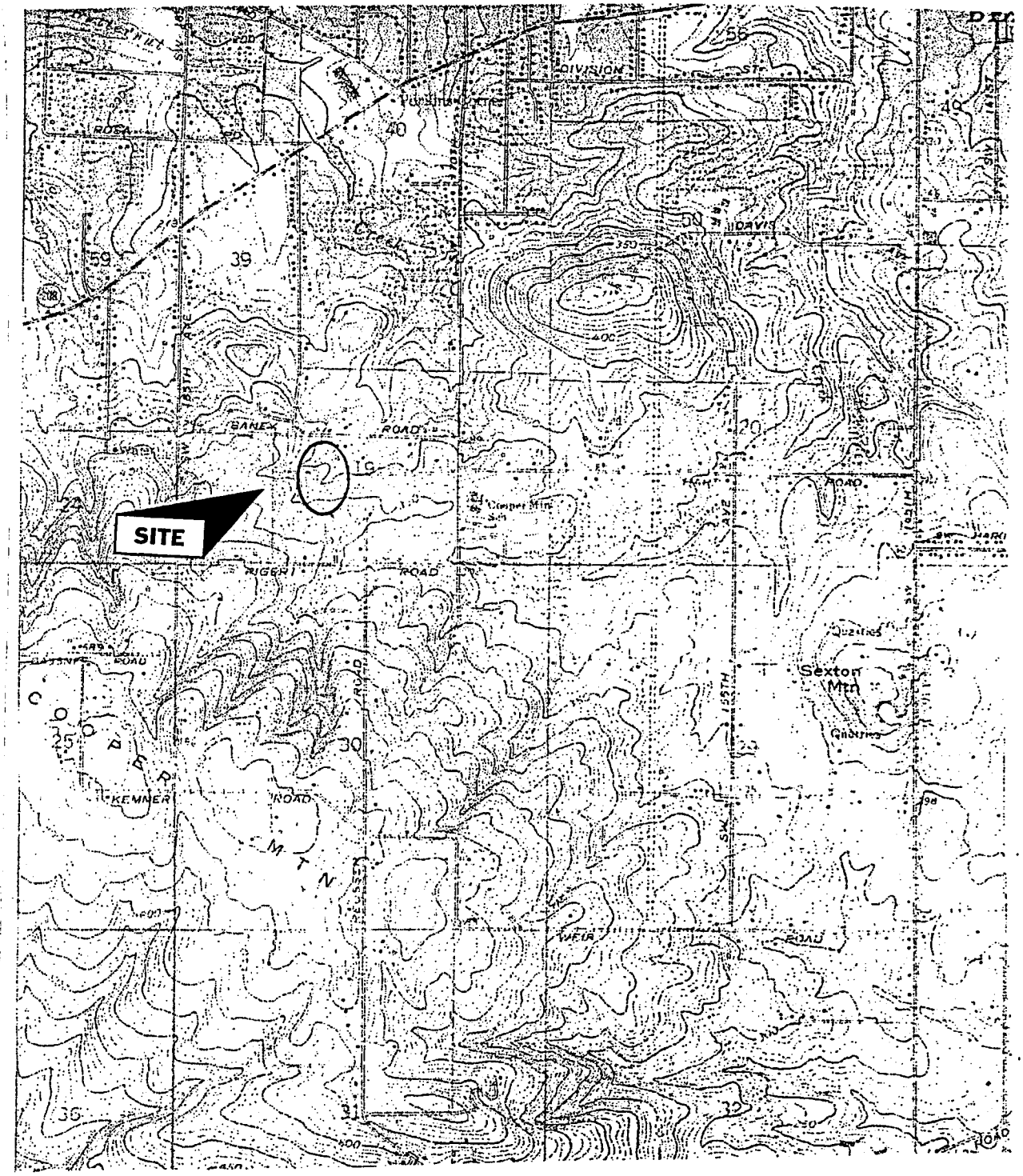
The subject stream is about 2' wide inside its banks. The adjacent riparian area is only 8' to 10' wide, due to the small size of the stream. Vegetation along the banks is sword fern, salal and hazelnut, not necessarily riparian vegetation. The side slopes immediately above the stream are greater than 5%, increasing up the bank for more than 30' at a rate of up to 20% slope. There is little opportunity for water from the stream to affect the groundwater.

SUMMARY

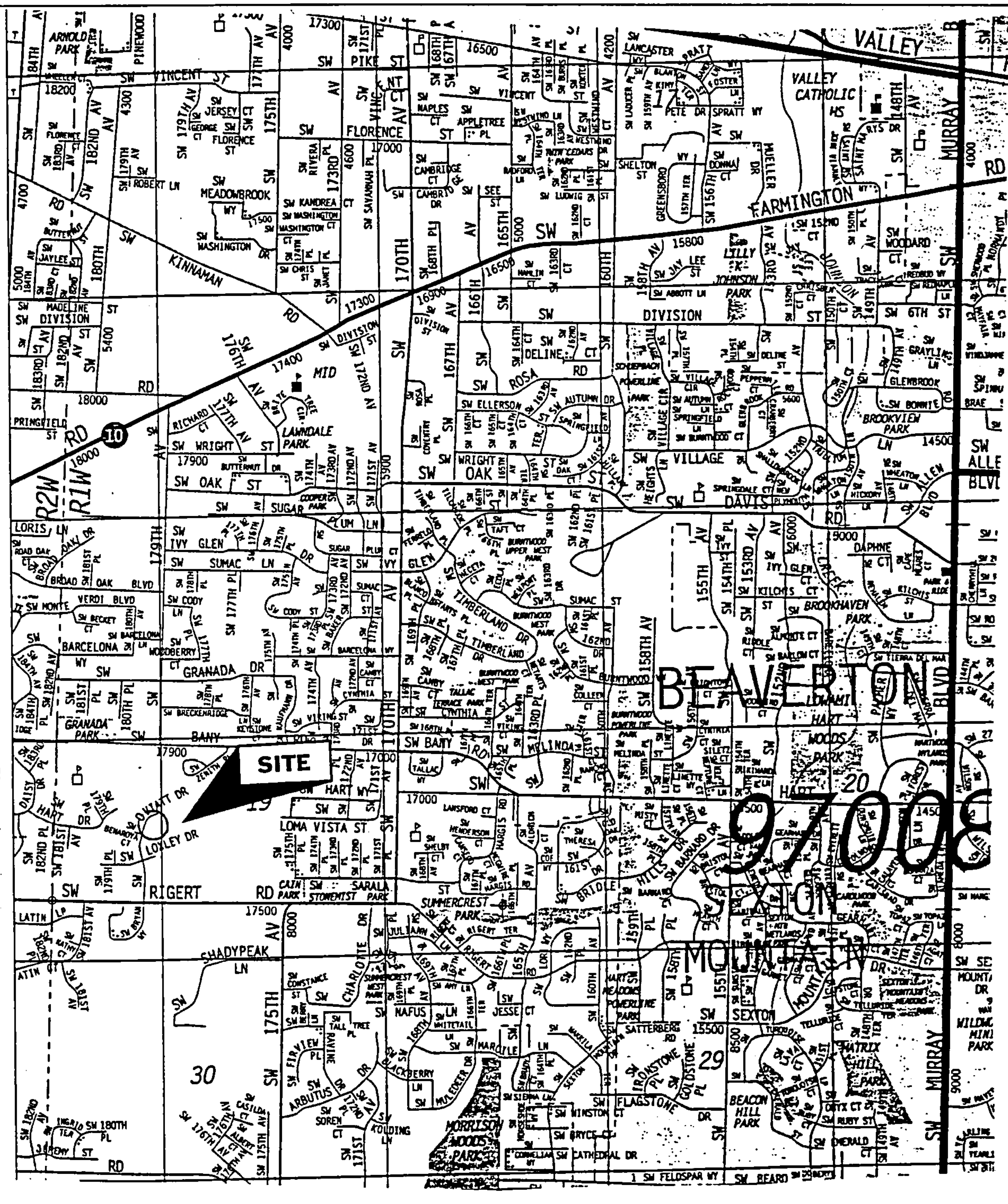
A study was conducted on a site located at 17535 SW Rigert Road, relative to a proposed change in the Metro Goal 5 Riparian Corridor Program. The purpose of the study was to establish the width of the riparian corridor. The 20% side slopes, a more than 5% stream gradient, and a lack of riparian vegetation along the stream all indicate that this stream has a very narrow riparian area.

Rita Mroczek
Professional Wetland Scientist

3980 SW 170th Avenue Aloha, OR 97007 (503) 642-3739 Fax 642-4158



RITA MROCZEK, PWS **3980 SW 170TH AVE.** **ALOHA, OR 97007**	**FIGURE 1.** **USGS QUADRANGLE MAP – BEAVERTON, OR QUADRANGLE**	PROJECT: RIGERT RD. RIPARIAN ASSESSMENT PREPARED FOR: RICHARD HAWKINS-KIMMEL JULY 2002 N



RITA MROCZEK, PWS **3980 SW 170TH AVE.** **ALOHA, OR 97007**	**FIGURE 2.** **VICINITY MAP**	PROJECT: RIGERT RD. RIPARIAN ASSESSMENT PREPARED FOR: RICHARD HAWKINS-KIMMEL JULY 2002 N

FIGURE 3.
RIGERT ROAD RIPARIAN ASSESSMENT
Rita N. Mroczek, PWS for
Richard Hawkins-Kimmel
July 1998 Air Photo
Scale: 1" = 150' (approx.)
July 2002

600 NORTHEAST GRAND AVENUE | PORTLAND, OREGON 97232 2736
TEL 503 797 1700 | FAX 503 797 1797

080802c-05

METRO

To: Metro Councilors

From: John Houser, Senior Council Analyst

Re: Regional Environmental Management Audit

Date: August 1, 2002

The Metro Auditor is scheduled to present the results of her audit entitled "Regional Environmental Management Department" at the Council's August 8 meeting. The following memo addresses potential questions that the Council may wish to explore related to the audit. I should note that I was interviewed with regard to the preparation of the audit and was asked to review and offer comments on three separate drafts prior to the finalization of the audit. I also was asked to "sign-off" that I agreed with the sole recommendation contained in the report. I do, in fact, agree with the recommendation. However, I do believe that there may be issues associated with the preparation of the report that the Council may wish to question.

Potential Questions

1) The scope and focus of the audit report appears to be somewhat different and more limited than the original goals outlined in auditors audit plan. The plan report dated September 2001, it was indicated that the auditor would be doing a "survey of Regional Environmental Management (REM) department activities." The audit plan noted "many voiced comments on the number of employees and cost of this department, questioning if it operates efficiently." The specific issues to be addressed by the survey were further defined to include:

*How the REM management has organized the department to accomplish policy goals

*How it measures its performance and how it has determined the level of resources devoted to specific activities, and

*What actions it has taken to streamline operations due to change in how excise taxes are assessed.

The plan also notes that based on the survey results, other potential areas for audit may be identified.

The focus of the survey appears to have shifted to being an overview of the solid waste system management framework. The report does address how the department is organized and how it measures its performance but this is done primarily within the context of its role in the overall management framework. The report does not address how the department allocates resources to specific activities or any changes to streamline departmental operations. Given that the genesis of the survey appears to have been the "cost:" and "efficiency" of the department it would that these issues should have been addressed.

The Council may wish to ask the Auditor:

1) **Did the scope/focus of the report change and, if so, how and why?**
2) **How were the original issues outlined in the audit plan addressed?**
3) **Why were the issues related to cost, efficiency, resource allocation and streamlining operations apparently not addressed?**
4) **Were any additional subjects for future work identified?**

2) The recommendation for documentation and updating of the current management framework appears to be based on the need of a variety of groups for such information. On page 2 of the report these groups were identified to include: Councilors, new Metro employees, local government officials, industry members, the media, interested citizens and auditor and consultants. As I noted earlier, this recommendation appears to be supportable largely because the management framework has been effectively compiled in the report so that it would now be easily maintained and updated. However, the auditor may have overestimated the internal and external need for this information.

For example:

*Councilors generally utilize fellow Councilors, Council staff, stakeholders and senior REM staff to learn about the system management framework
*New Metro employees, other than those in the REM department would appear to have little need for the in-depth type of knowledge outlined in the auditor's report
*The general public generally interacts with the REM staff on a specific need basis such as using the information hotline or buying recycled paint. Knowledge of the management framework is generally not needed for such interaction.

The Council may wish to ask the Auditor:

1) **What was the basis for her conclusion that there is a broad based need for a documented description of the regional solid waste management framework?**

3) The report is one of the first by the Auditor to be initiated and completed since the implementation of the budget note attached to the FY 01-02 Adopted Budget. This note specifically provides that:

- A system will be set up to track the cost of each audit initiated after July 1, 2002
- The annual audit review report will be expanded to include a statement of need for each audit or report; a comparison of the actual

to the estimated cost and timeline for each audit or report initiated after July 1, 2001: and a status report on audits or reports in progress

In earlier appearances before the Council, the Auditor has indicated that the audit review report will be completed by September. Therefore, it would appear that Auditor would probably have an idea as to the types of information that has been gathered in response to the budget note and how this information will be presented in the review report.

The Council may wish to ask the Auditor:

1) **Could you please describe the basic elements of the cost tracking system that you established in response to the budget note?**
2) **What types of cost information do you intend to include in your upcoming audit review report?**
3) **How many audits will have been completed using the new tracking system prior to the preparation of the review report?**
4) **Do you anticipate that the results from the new tracking system will affect the preparation of the annual budget for your office?**
5) **Can you give us an estimate today of the total cost of preparing the report that you have just presented?**

080802c-06

Metro Council System Accounts - Metro Council Agenda Item 6.3

From: "Fitzgeralds" <fitzs4@attbi.com>
To: <burtonm@metro.dst.or.us>, <metrocouncil@metro.dst.or.us>, <burkholderr@metro.dst.or.us>, <bragdond@metro.dst.or.us>, <monroer@metro.dst.or.us>, <mclains@metro.dst.or.us>, <hostickac@metro.dst.or.us>, <athertonb@metro.dst.or.us>, <parkr@metro.dst.or.us>
Date: 8/7/02 9:30 PM
Subject: Metro Council Agenda Item 6.3
CC: <healthystreams@ci.portland.or.us>

Re: Resolution 02-3218, Recommendation to Council regarding Inventory Maps of Regionally Significant Riparian Corridors and Wildlife Habitat for the Goal 5 ESEE Analysis

I am a homeowner that enjoys having a beautiful stream in my backyard (Fanno Creek Watershed, Resource Site 130, South Ash Creek Tributary). My property contains an environmental conservation overlay zone designation. I have followed recent proposals related to providing additional protections to our local natural resources. And I try to follow best practices (such as naturescaping and organic gardening) that will contribute to their protection.

I just wanted to let you know that I fully support the efforts of Metro and the City of Portland to further protect and enhance the watersheds and riparian and wildlife habitats in our community. It will help ensure that these precious resources are available for my children and children's children to enjoy. These protective measures will enhance my property values and preserve the quality of life in Portland that we currently enjoy.

Please vote in favor of the resolution.

I'm sorry that this testimony is late, but I hope it is not too late, for your consideration.

Sincerely,

Marianne E. Fitzgerald
10537 S.W. 64th Drive
Portland, OR 97219
home phone (503) 246-1847
home email fitzs4@attbi.com

080802c-07

METRO COUNCIL
TESTIMONY
RESOLUTION 02-3177

My name is Phil Forker and I live on Prindle Road in Tualatin, Oregon. I am unable to attend the Metro Council meeting of 8/8/02 to consider Resolution 02-3177 and I would like this statement to be entered into the Public Record.

I oppose 02-3177 on these grounds: First, I believe it is an unnecessary and extreme step, along with steps two and three of Metro's Goal 5 plan, to protect fish and wildlife. Our existing system, including an urban growth boundary, timber and farm tax deferrals and LUBA work well. In the 14 years that I have lived in my area of rural Clackamas County, little has changed or developed and wildlife flourishes. The biggest impediments to fish on Viola Creek and Saum Creek (Prosperity Park) are the state-installed culverts at I-205 and Borland Road. Given funding levels for transportation, this barrier would not be removed regardless of the sacrifices and burdens imposed on private property owners in the neighborhoods.

I also oppose 02-3177 for being an unnecessary, overly-broad and not particularly targeted approach which I am philosophically against. It is wrong for Metro to classify and covet individual property holders' land without any intention of compensation. Testimony to date has included a number of senior citizens, whose land is their single biggest asset and who face uncertain financial futures and significant stress. Even if an argument of greater public good is to be made and, as previously stated in objection one, this program is not necessary; condemnation and purchase should be the sole option. Naturally, for the people who have testified in favor, voluntary participation is and always has been an option through various means. The bottom line is taking from 73,000 acres to 90,000 acres from its citizens through rules and environmental overlays are an extreme step and government oppression our forefathers could never have contemplated. Oregon was built on homesteading and now Metro is setting in motion a reversal of our culture, western heritage and constitutional rights.

My final concern with 02-3177 has developed as a result of participating in two public sessions on 7/31/02 and 8/7/02 of the Metro Resources Committee meetings. It is quite evident that these meetings have been a sham and that public participation has been willfully stifled. Metro has kept this issue off the public radar and regional government is not open to healthy public participation, nor any checks and balances such as having two chambers and any loyal opposition. The environmental special interest groups control this process, along with Metro and it was evident to me the moment I walked into the building. At the 8/7/02 meeting Metro staff set a 3 minute clock on testimony only when land opponents began to speak, not previously having this limitation on others. When Mike Houck's (of the Audubon Society) testimonial card came up and he was not in the chamber, the council sent staff into the building to find him (I suspect he has an office), holding the session up until he had arrived. Minutes later, the council would not yield 15 seconds of additional time to hear opposing critical views. Metro has grown arrogant and is not in touch with the political wishes of the general public. Raw power is being

displayed and the veneer of public involvement is very transparent. The council knows where it wants to go on this issue and I have no doubt that no testimony individually or in the aggregate will dissuade you. The unfortunate part of this is that by engineering the outcome, you have sowed the seeds for your own undoing. 02-3177 and all that follows will most likely be in court at great expense to those being threatened by it. But the sad part is you've missed an opportunity to work with the public and build trust. The disingenuous dialog known as "Partners For Protection" will cost Metro considerable political capital.. Unfortunately, it will cost those of us who are against it twice; once to fund it and then again to fight it. In the end, you will have just wasted a lot of tax payer revenue in an unsuccessful over-reaching land grab.

ANCHOR INSURANCE & SURETY, INC.
500 Century Tower
1201 S.W. 12th Avenue
Portland, Oregon 97205-2030
(503) 224-2500

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FACSIMILE COVER MEMORANDUM

TOTAL PAGES TRANSMITTED 3
(including this cover memo)

503-797-1793

DATE: 8-8-02

TO: CHRIS BILLINGTON METRO COUNCIL

FROM: PHIL FORKER

RE: 02-3177

CHRIS;
SINCE I AM UNABLE TO TESTIFY TODAY I WISH THE COUNCIL TO HAVE THIS WRITEN TESTIMONY AND THAT THIS BE PART OF THE PUBLIC RECORD.

THANK YOU

Phil Forker

030802c-08

Metro

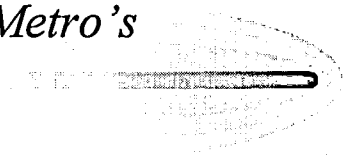
Regional Environmental Management Department:

Solid Waste Management Framework is Sound

July 2002

Alexis Dow, CPA, Metro Auditor
James McMullin, CPA, Senior Auditor

Surveyed to understand Metro's



- Solid Waste responsibilities
- Programs and activities
- Management and evaluation processes

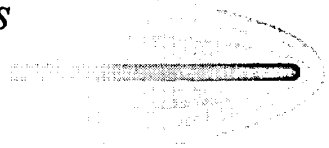
2

Metro is responsible for

- Solid waste planning
- Two million tons of solid waste –
  would fill Rose Garden Arena 15 times

3

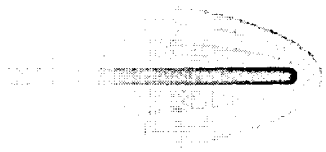
Metro has four basic roles



- Promoting waste reduction
- Providing waste disposal services
- Regulating private facilities
- Providing environmental stewardship

4

Revenue



- $50 million in fees
- $6 million in excise taxes to General Fund
- $1.2 million in excise taxes for parks

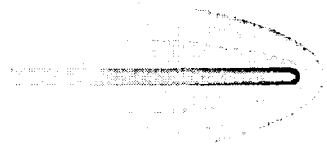
5

Metro Management Framework

- Has elements of sound management system
- Involves complex array of
  - Participants
  - Laws
  - Plans
  - Programs
- Not previously documented

6

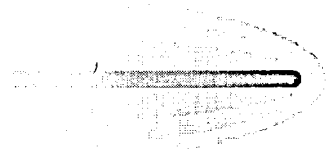
Our report, for example



- Identifies participating committees
- Outlines their roles and responsibilities
- Shows reporting relationships

7

Report describes



- Oregon solid waste management framework
- Factors shaping Metro's solid waste roles
- Metro's four roles
- Roles at other local governments
- RSWMP

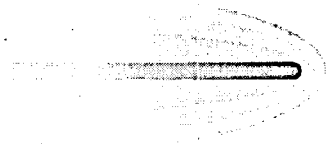
8

Management framework is sound

- Organizational structure
  - Participants
  - Roles
  - Relationships
- Mission and strategic plan
- Evaluation and reporting

9

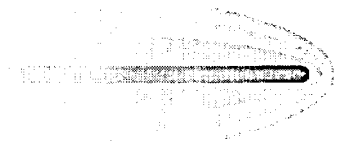
Framework is dynamic



- Participants actively engaged
- Plans and programs updated
- Emerging issues anticipated

10

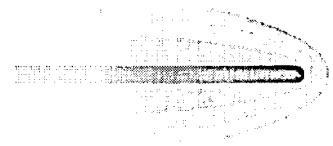
Recommendation



- Keep framework description up-to-date
- Executive officer agreed

11

Audit Report



- Metro Auditor website

12

Metro Solid Waste Participant Relationships

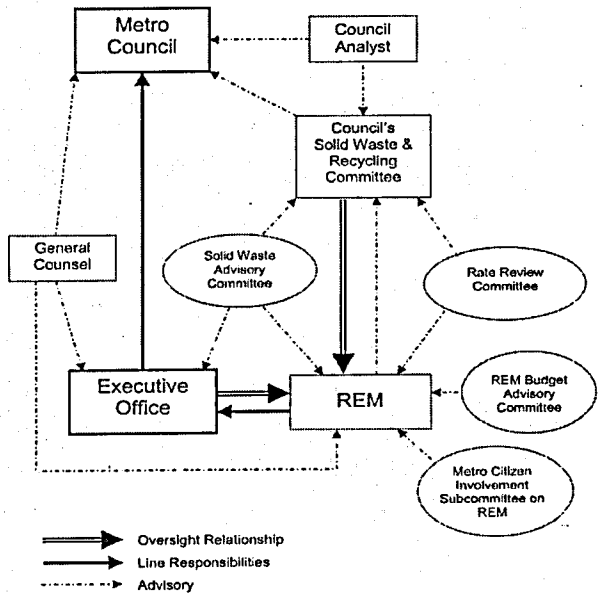
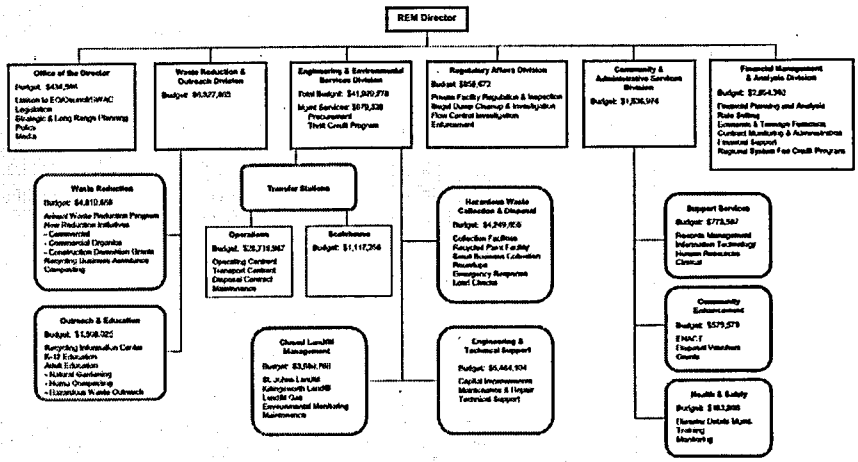


CHART 2

Metro Regional Environmental Management Department
(Adopted Budget Fiscal Year 2003)



Summary of Fiscal Year 2002 Adopted Budget

Total Revenues	$54,864,848
Total Expenditures	$41,747,795
Total FTE	108.19

CHART 3

TWO PRIMARY GOALS AND "FIT" WITH CORE BUSINESS SERVICES

1. Reduce toxicity and amount of solid waste

2. Efficient, economical, environmentally sound disposal

- Administer Regional Solid Waste Management Plan
- Own and regulate solid waste facilities
- Manage fiscal resources
- Collect hazardous waste
- Lead, coordinate and support waste reduction programs
- Administer transport and landfill contracts
- Maintain closed landfill
- Clean up illegal dumps

080802c-09

SOLID WASTE AND RECYCLING COMMITTEE REPORT

CONSIDERATION OF **RESOLUTION NO. 02-3209,** FOR THE PURPOSE OF ISSUING A FINAL ORDER IN THE MATTER OF THE IMPOSITION OF A CIVIL PENALTY AGAINST SPEYFLY, INC., DBA ROOFGONE AND THE REVOCATION OF ROOFGONE'S SOLID WASTE FACILITY LICENSE

Date: August 8, 2002 Presented by: Councilor Bragdon

Committee Recommendation: At its August 7, meeting, the Solid Waste and Recycling Committee voted 5-0 to recommend Council adoption of Resolution No. 02-3209. Voting in favor: Councilors Bragdon, Monroe, Park, McLain and Chair Atherton. Voting against: None. Absent: None.

Background: Roy Brower, REM Regulatory Affairs Manager, presented the staff report. He explained that the proposed resolution would result in the issuance of a final order that would assess a civil penalty of $3,875 against Speyfly, Inc, dba Roofgone, and revoke the company license to operate a roofing recycling facility on N. Columbia Blvd. in Portland. He noted that this action was different from two recent REM enforcement actions, in that it is not a contested case and the action was being taken under Metro Code Chapter 5.01 related to facility license regulation.

Brower indicated that this is first license enforcement action taken under the code amendments adopted in 1998. While the code is silent as to whether the proposed enforcement is subject to Council approval, the REM staff and the Office of General Counsel agreed that the proposed final order should be brought forward for Council action.

Brower noted that the licensee began initially began operating a roofing recycling on Suttle Rd. in 1999 and had accumulated about 12,000 tons of material at this site. The operation then shifted to the Columbia Blvd. site in April 2000. When the REM enforcement staff became aware of the site, it contacted the owner and advised him of the need to obtain a Metro facility license to continue operating.

The Council approved a facility license in April 2001. The license contained provisions requiring the licensee to submit an operations plan and financial assurance that was acceptable to Metro within 90 days. The license also required the operator to clean up to former site on Suttle Rd. within 90 days. When the licensee failed to meet any of these requirements, the staff issued a series of notices of non-compliance (NON's), which were ignored by the licensee. In addition, a fire broke out at the site on September 26, which burned for 10 days. As a result, REM lowered the amount of material that could be stockpiled on the site from 10,000 to 7,000 tons. This had the effect of closing the site because the operator was no longer processing the material that was being delivered.

The facility license was suspended in late January 2002 and revoked on May 15, 2002.

Brower noted that since the abandonment of the site by Speyfly, Metro has been approached by two potential new operators. Staff is currently processing a license application from an adjacent landowner and S&H Logging which currently has Metro licenses to operate yard debris facilities in Clackamas and Washington Counties. Brower indicated that a staff recommendation on the application would likely come to the Council in September.

Committee Issues/Discussion: Committee discussion focused on the licensing and enforcement process. Councilor McLain, Monroe and Park expressed concern that the facility had been licensed without having to submit an acceptable operations plan or adequate financial assurance documents. Councilors Monroe and Park suggested that some form of bonding might be appropriate. Brower responded that, in the past, the type of financial assurance required was based on the types of assurance required by the state DEQ for its licensing program and included self-insurance, a letter of credit or bonding.

Councilor Monroe also questioned the financial viability of the license applicants, noting that many appear to operating on a "shoestring". He observed that Metro should also look at the financial status of the proposed operators.

The committee received assurance from Mr. Brower that the proposed new operator at the site would be required to submit an operations plan and financial assurance documents prior to completion of the licensing process.

Key Public Testimony: None.

080802c-p

SOLID WASTE AND RECYCLING COMMITTEE REPORT

CONSIDERATION OF **RESOLUTION NO. 02-3217,** FOR THE PURPOSE OF AUTHORIZING RELEASE OF RFB #03-1028-REM FOR THE CONSTRUCTION OF A MAINTENANCE BUILDING AT THE ST. JOHNS LANDFILL, AND AUTHORIZING THE EXECUTIVE OFFICER TO EXECUTE A CONTRACT WITH THE LOWEST RESPONSIVE BIDDER

Date: August 8, 2002 Presented by: Councilor Monroe

Committee Recommendation: At its August 7, meeting, the Solid Waste and Recycling Committee voted 5-0 to recommend Council adoption of Resolution No. 02-3217. Voting in favor: Councilors Bragdon, Monroe, Park, McLain and Chair Atherton. Voting against: None. Absent: None.

Background: Paul Ehinger, REM Engineering Supervisor, presented the staff report. Ehinger explained that the purpose of the proposed resolution was to authorize the release of a Request for Bids (RFB) for the construction of a maintenance building on a site adjacent to the St. Johns Landfill. He noted that construction of such a building had been originally proposed in 1997. While some design work was completed, obtaining a lease for the proposed building from the City of Portland was not completed until earlier this year. During the period of lease negotiation, the proposed budget and design of the building were also revised. The current projected cost is $400,000, down from the original estimate of $536,000.

Ehinger outlined several goals that would be achieved through construction of the proposed building. These include:

- -Providing a covered space for storage and maintenance of equipment
- -Providing office and meeting space for the permanent on-site staff
- -Improving security for equipment (about $50,000 in equipment has been stolen from the site)
- -Better control of access to the landfill site, and
- -Consolidation of landfill operations into a single building

The proposed building will be about 3,250 square feet, divided about equally between equipment storage and office/lab equipment/maintenance.

Ehinger reviewed the major cost components related to the project. He noted that the actual building itself would cost about $250,000, while site and utility work will cost an additional $150,000. He focused on the need to bring water-related utilities from the far side of Columbia Blvd., which increased utility costs significantly.

Committee Issues/Discussion: Councilor Bragdon asked about the life expectancy of the building, particularly as it related to the length of the land lease with the city of Portland. Ehinger responded that the current land lease in for a period of 20 years. The proposed building would likely have a life expectancy longer than the period of the lease. In response to additional questions, Ehinger noted that under the terms of the lease, any improvements, such as the proposed building, would revert to the city of Portland unless the lease was extended. While expressing optimism that a lease extension could be negotiated, several Councilors were concerned about the potential of losing a valuable improvement that had been paid for by Metro.

Chair Atherton expressed concern about the cost of the building, noting that the specifications appeared to be fancy and expensive. He noted that he had been involved in the construction of aircraft hangers at a far lower cost than was being proposed for this building. Ehinger responded that per square foot cost of the proposed building compared very favorably to other recent REM construction projects.

Key Public Testimony: None

080802c-11

600 NORTHEAST GRAND AVENUE | PORTLAND, OREGON 97232 2736
TEL 503 797 1700 | FAX 503 797 1797

METRO

Metro: Partners for Natural Places

June 10, 2002

Dear neighbor,

The natural environment is key to our region's livability. However, natural areas and fish and wildlife species have declined greatly in our region. There are many causes for these declines including culverts or underground piping of streams, losses of effective wetlands and native tree and plants along streamsides, and greatly altered stormwater runoff patterns. Metro is working with the communities throughout the region to avoid further decline of our water, streams, fish, habitat, and greenspaces.

As you may recall, Metro first communicated with you about protection of our natural places back in 1998. Since then the fish and wildlife vision statement, . . . *to conserve, protect and restore streams and waterways to support healthy fish and wildlife habitat in an urban environment*, has been the guiding principle for carefully moving towards developing a regional protection plan.

With the help and involvement of citizens and our local jurisdictional partners, Metro has initiated a science-based, step-by-step approach to first completing an inventory and mapping of environmental features that support healthy streams and fish and wildlife habitat. Once this work is completed, we will then analyze the economic, social, environmental and energy (ESEE) consequences and trade-offs of protecting or not protecting natural areas. Ultimately, with your help, we will develop a protection plan that will include recommendations for incentives, acquisition, public education, stewardship opportunities and regulations. It is anticipated that program elements will be developed and presented for public review, tentatively in late 2003.

The purpose of this letter is to update you on our progress. We are moving towards completion of the first step: an inventory of regionally significant fish and wildlife habitat. Last December we took comments on the streamside or riparian inventory. We are now reviewing the early mapping of habitat inventory.

As an interested citizen or a property owner with land that may be located within a potential wildlife habitat resource area, we invite you to review the inventory maps, speak with staff, and make comments at meetings of the Metro Natural Resource Committee and Council.

If you have questions or would like to make comments, please call (503) 797-1839 to speak with a staff member or plan on providing comments at the **Wednesday, June 26, 2002**, meeting of the Metro Natural Resource Committee. This meeting will be held at Metro, 600 NE Grand Avenue, Portland, at 3:30 p.m. in Conference Room 370. Planning staff will be available the hour preceding the meeting to assist you in viewing the mapped habitat and streamside areas.

The Metro Council will take formal comments and will take action on both streamside corridor and wildlife habitat mapping and inventory in July. Please check Metro's 24-hour hotline, (503) 797-1888 option 2, or the Web site at www.metro-region.org for future meeting dates.

Natural habitat is important because parks, greenspaces and natural areas contribute to a vibrant economy, clean and healthy waterways, and habitat for fish, wildlife and people.

Sincerely,

Susan McLain

Councilor Susan McLain
Metro Natural Resource Committee Chair

Carl Hosticka

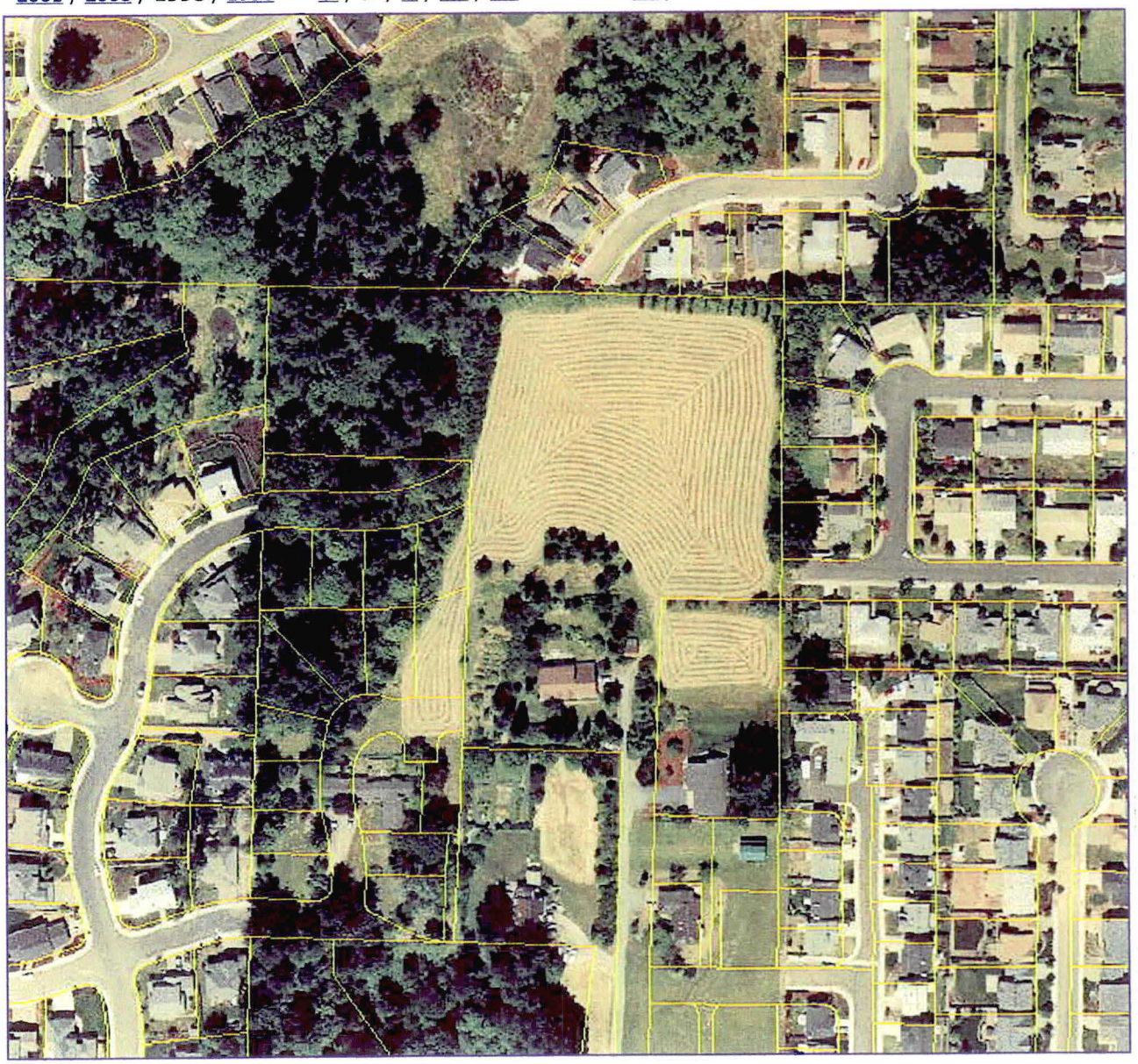
Council Presiding Officer Carl Hosticka

PortlandMaps

17535 SW RIGERT RD - CPO 6 COOPER MTN-ALOHA S - WASHINGTON COUNTY

Aerial Photo

2001 / 2000 / **1998** / 1996 6" / **2'** / 4' / 10' / 20' Streets: On / **Off** Taxlots: **On** / Off Location: On / **Off**



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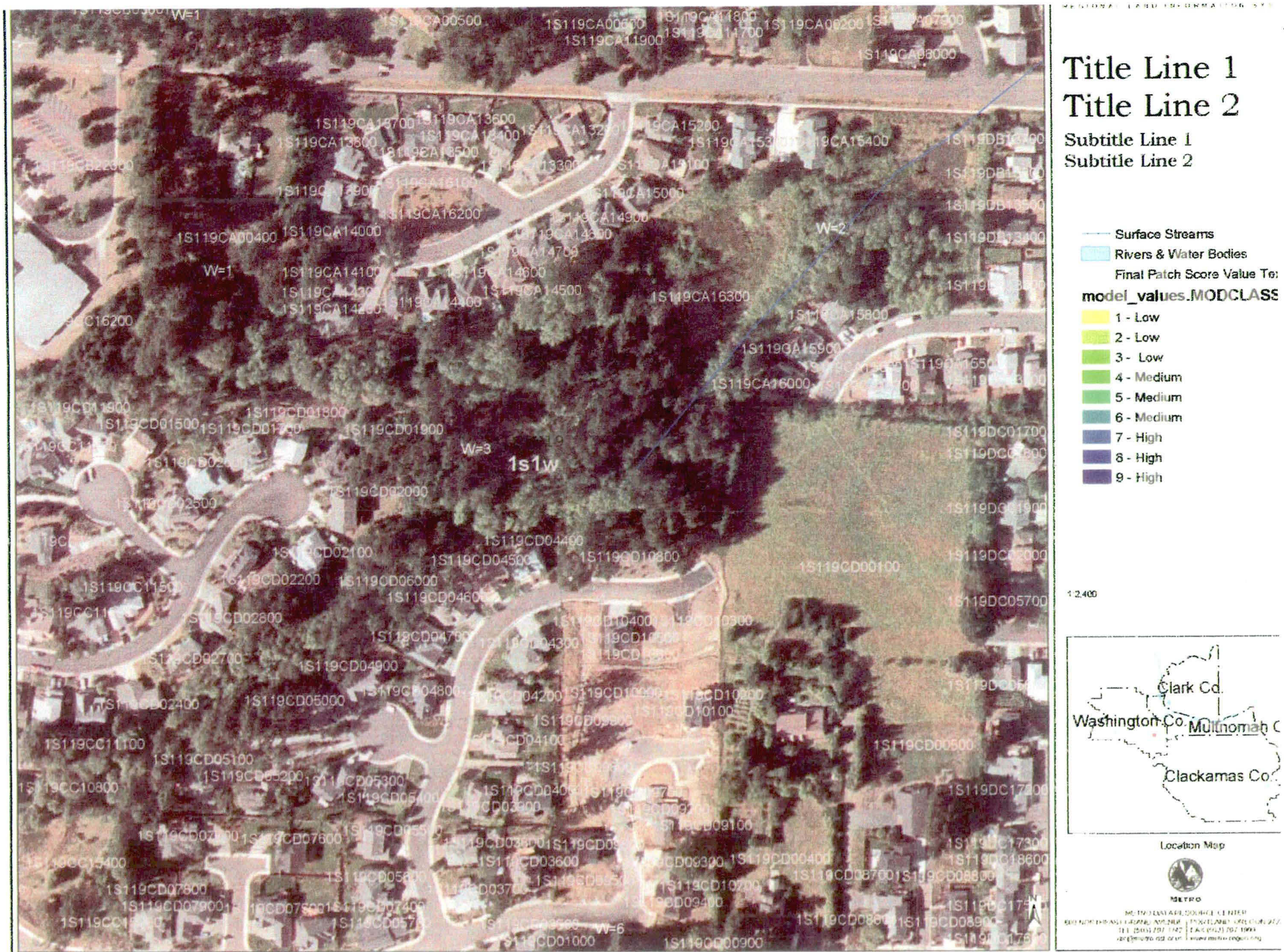
City of Portland, Corporate GIS 8/2/2002



Please recycle with mixed paper

Subject: Resolution 02-3177A/Goal 5 Inventory
From: "Dorothy S. Cofield" <cofield@hevanet.com>
Date: Wed, 07 Aug 2002 16:05:46 -0700
To: helmk@metro.dst.or.us
CC: gainesrc@aol.com, Houk@metro.dst.or.us, seantrews@attbi.com, BragdonD@metro.dst.or.us

Ken,

We have been trying with no success to get the individual scoring for the wildlife and riparian inventory on my clients' property located at 17535 SW Rigert Rd. as well as the methodology for assigning these scores. I would like the inventory scores and methodology put into the record. If this cannot be accomplished by the Council's hearing tomorrow, I would like to request the record remain open for two weeks in order to review the scoring. Our wildlife consultant met with Justin Houk on July 23, 2002 and requested this information. I made a second request on August 2, 2002 via e-mail and in my testimony on July 31, 2002. Our wildlife consultant, Ron Gaines, sent me an e-mail today that Justin still has no given him this data. Please let me know what the difficulty is and when this request will be processed. Please confirm my record request.

Dorothy S. Cofield, Attorney at Law
Cofield Law Office
Kruse Mercantile Professional Offices
4248 Galewood, Suite 9
Lake Oswego, Oregon 97035
(503) 675-4320

Subject: Site #10/17535 SW Rigert Road
From: Dorothy Cofield <cofield@hevanet.com>
Date: Fri, 02 Aug 2002 15:10:12 -0700
To: houk@metro.dst.or.us
CC: gainesrc@aol.com, ritanancy@juno.com, seantrews@attbi.com, helmk@metro.dst.or.us

Justin,

I represent June and Richard Hawkins-Kimmel. Their wildlife consultant, Ron Gaines, met with you a few weeks ago to discuss the wildlife habitat ratings for the property. At that time you were unable to give Mr. Gaines a copy of Metro's methodology and individual scores for the property. In order to proceed with the mapping correction process, I am requesting copies of Metro's methodology and individual riparian and wildlife habitat scores for the property.
I would also like this information submitted into the record prior to August 8, 2002. Please let me know when this information is ready to be picked up. We need it as soon as possible since the request was made several weeks ago.

Dorothy S. Cofield, Attorney at Law
Cofield Law Office
Kruse Mercantile Professional Offices
4248 Galewood, Suite 9
Lake Oswego, Oregon 97035
(503) 675-4320

080802c - A

Metro Council
Testimony of Charlotte Lehan, Mayor of Wilsonville
August 8, 2002

I am submitting testimony in support of Metro proceeding with the integrated Goal 5, fish and wildlife habitat mapping process which will give us the most complete picture in order to begin the ESEE process. I would respectfully make the following key points:

100% ground-truthing is impossible. The City of Wilsonville spent more than three years refining our Goal 5 significant resource mapping, but we recognize that the relative value of resource lands is a dynamic part of the landscape. It is more important to allow within local codes the ability to make future adjustments than it is to delay decisions indefinitely in search of the perfect map.

You have excellent, scientifically defensible work. Your data includes the work of the Goal 5 TAC, many citizen groups, as well as natural resource scientists over more than two years. Metro's inventory was based on very sound science, which was reviewed by the State's Independent Multidisciplinary Science Team. Their recommendations for scoring criteria should be adopted. This scientific guidance provides a solid foundation to proceed with adoption of inventory mapping and then on to the ESEE process.

Proceed to ESEE. As you know, Wilsonville has a completed and acknowledged ESEE analysis as a part of our Goal 5 and Title 3 Natural Resource Plan. It is in the ESEE process that decisions are made about the merits of specific sites and to what level they warrant protection. In our experience, a number of sites were downgraded during the ESEE process to allow conflicting or limited conflicting uses. This is the step that will enable you to make those determinations. It is unnecessary at the mapping stage.

Flexible and reasonable regulation of development is important. Metro should adopt a balanced program that may include incentives, acquisition, public education, stewardship opportunities, and regulations. Wilsonville's Goal 5 regulations exempt certain uses such as minor expansions for existing single-family residences. It is not our intent to prevent development where the impacts to significant resources can be minimized or mitigated.

Metro's commitment to the Goal 5 process is critical. Especially for those of us who have already been down this road, it is important to have Metro's commitment to the program. Metro was pushing the City of Wilsonville to complete our work on Title 3, which was delayed because of our decision to integrate it with the Goal 5 work. Also, with so many individual jurisdictions that cross and impact each other's watersheds, a regional or at least basin-wide approach to resource identification and planning, that takes into account both riparian and wildlife values, is the only scientifically valid way to approach the issue.

In conclusion, the City of Wilsonville supports the Metro Goal 5 Program and encourages you to proceed to the ESEE analysis for further refinement.

080802c - 13

COMMUNITY DEVELOPMENT DEPARTMENT

August 8, 2002

Hon. Carl Hosticka, Presiding Officer and Members of the Metro Council
Metro
600 NE Grand Ave.
Portland, OR 97232

Dear Mr. Hosticka and Council Members,

Thank you for the opportunity to comment on the Goal 5 inventories and the Goal 5 process. We recognize the hard work that has gone into the Goal 5 approach and the mapping and we respect the innovative and thorough research that has been conducted. We do, however, have concerns about the Goal 5 approach and the prospect of creating unnecessary animosity and resistance to the Metro planning program from affected property owners.

The City of Lake Oswego has compared our current site-specific Goal 5 inventory with Metro's landscape scale inventory. Our analysis shows that there is a tendency for older lower density forested residential lots to show up as having significant wildlife habitat regardless of their connectivity to water or larger resource areas.

In our review of the Metro inventory maps, there are numerous instances where fully developed single-family lots with dense tree cover have been given wildlife habitat scores as high as five. These are residential properties where trees provide an amenity to the existing homes and, in general, are not threatened by further development. Because the inventory process relied on aerial photography to identify forested areas, developed lots under the tree canopy often were identified as resource areas. The City of Lake Oswego has made a commitment to protecting trees in the urban setting through our "tree grove" designation under our existing Goal 5 program and through our tree protection ordinance. We are concerned that by identifying these properties as having regionally significant Goal 5 resources and running them through an ESEE process, we will risk creating negative public sentiment for the entire Goal 5 program and our own efforts to protect urban trees. The City of Lake Oswego recognizes that there are a variety of reasons for protecting the urban tree canopy, but we would like to see these small developed properties in isolated patches, addressed through educational programs rather than through the Goal 5 process and its potential regulatory controls.

380 A Avenue • Post Office Box 369 • Lake Oswego, Oregon 97034
Planning Division: (503) 635-0290 • Building Division: (503) 635-0390 • Engineering Division: (503) 635-0270 • FAX (503) 635-0269

The statewide Goal 5 process provides a great deal of latitude in how significance is determined. The Metro Council has the discretion of removing these developed sites from the final inventory. This would avoid involving these property owners in the ESEE process and reduce the risk of antagonizing citizens who otherwise support natural resource protection, as demonstrated by the retention of forested land on their property.

It has been recommended that those areas with a score of "one" on the wildlife habitat inventory maps be dropped from further consideration. We support this recommendation but it alone does not address the issue of small developed lots. We urge the Metro Council to take the inventory refinement process one step further by directing staff to remove the lower-rated isolated patches that lie in fully developed residential neighborhoods. This should occur prior to the start of the ESEE analysis. If these properties are not eliminated from the final inventory, it is recommended that the first step of the ESEE process be to find a systematic method to screen out these properties in order to protect the success of the program.

The City of Lake Oswego has a long history of protecting environmental resources and continues to support regional efforts for riparian area and wildlife habitat protection. We would specifically like to express our support for the identification of stream headwaters and groundwater recharge areas as significant resources throughout the region. These resources have historically been undervalued and under-protected.

In conclusion, the City of Lake Oswego is concerned about the final Goal 5 inventory and how it drives the ESEE analysis. We fear that the incremental environmental benefit gained through any protection of the small-lot developed properties will be at the expense of upsetting and potentially antagonizing the owners of these properties. Removing these properties from the inventory at this stage eliminates this potential problem.

Again, we appreciate the opportunity to comment.

Sincerely,

Stephan Lashbrook, AICP, Community Development Director

Cc: Doug Schmitz, Lake Oswego City Manager
Judie Hammerstad, Lake Oswego Mayor
Jack Hoffman, Lake Oswego City Council member
Dennis Egner, AICP, Lake Oswego Long Range Planning Manager
Lisa Hamerlynck, Lake Oswego Natural Resources Coordinator

080802c-14

Metro Natural Resource Committee
Testimony of Angela Harris, on behalf of Oregon Community Protection Coalition
August 8, 2002

Chair McLain, Members of the Committee, my name is Angela Harris and I am the director of the Oregon Community Protection Coalition. I am here today to testify in support of Metro's Goal 5 program.

OCPC is a coalition of community organizations and conservation groups who came together to support basic community protections for Oregon's quality of life. The Goal 5 program is one of those. It is designed to protect our most sensitive natural areas and waterways, which cross numerous property lines and multiple political jurisdictions. In a complex urban environment, a community-wide approach to protection of these resources is the only practical or scientifically valid way to address the issue.

We understand and support the need to have a balanced, fair approach that considers the impact of regulations and protections on individual properties. However, stalling the process at this stage will not make for a fair, balanced approach. The need to balance our desire for clean water, protection of species significant to our region and a healthy economy is not served by limiting the field before the question of how to balance these desires is entertained.

The recommendations of the Technical Advisory Committee should be adopted so that the process can move on to the ESEE (Economic, Social, Environmental, Energy) level where determinations about the appropriate level of protection can be made.

OCPC supports Metro's commitment to the wildlife and riparian values of the Goal 5 program, we support the two resolutions before you today and encourage you to move it forward to the ESEE level for more detailed analysis.

Thank you for your time.

GOAL 5 PROPOSED MAP CHANGES AND STAFF RECOMMENDATIONS (as of 8/8/02)

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
001-01 No change	Frank Oulman 9775 SW Denney Rd. Beaverton, OR 97008 (503) 641-7816	1n1w28 Realignment of stream	Goal 5 map (2/00 version)	Yes		Recommend no change be made to the stream alignment based on verification of aerial photo. The stream line on Metro's Goal 5 map is close enough to the actual location.
002-01 No change Letter sent 2/20/02	Darrel & Debbie Grant 9745 SW Denney Road Beaverton, OR 97008 (503) 646-7600	1s1w23 The creek is not placed properly on the map.	Goal 5 map (1/01 version)	No	The stream they're referring to shows up on the 2001 version of the Goal 5 map as a stream link. Actually looks like there could be a stream there among the trees, but can't tell from the aerial photo. Don't know exactly what kind of change they're requesting.	Recommend not making the change but should look into whether or not a surface stream exists. 1/10/02 – wrote letter and sent new map which shows that the stream in question is a stream link on the 2/01 version. Asked them to provide additional comments if there is still a question about this area.
003-01 Changes made – see exception noted in staff recommend-ation.	David Reid Johnson Creek Watershed Council P.O. Box 82584 Portland, OR 97282-0584	1s2e19 Add spring fed tributary, which flows into Johnson Creek just above Tidemen-Johnson Park	Map	No	Go over this with Justin – changes could probably be made. Note the large coverage of wetland – is this accurate?	Recommend adding stream segments that can be verified by aerial photo; add two ponds. 4/4/02 4/10/02 – most changes made except for one stream segment and some open water. These will have to be done in the next round of changes.
004-01 Change made Letter sent 4/30/02	Brian K. Bowen 756 SE 27th Street Gresham, OR 97080 (503) 669-1578	1s3e15 Add missing stream segment	Goal 5 map	Yes		Recommend adding stream segment based on verification of aerial photo. 01/ 02 – Letter send acknowledging agreement with proposal and that change was or will be made.

080802c-15

From: Mark Turpel, Planning Dept.
To: Metro Council
Date: 8/8/02

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
005-01 No change Letter sent 2/20/02	Martin D. Crunican 1710 S. 10th Street Cornelius, OR 97113 (503) 357-9583	1s3w04 Remove area showing stream; manmade drainage ditch, dry 9 months of the year	Goal 5 map (2/00 version)	Yes		Recommend no change at this point – stream in question is outside Metro's jurisdiction. 1/9/02 – Reviewed a second time – the line that Mr. Crunican thought was a stream is actually the Metro boundary – no change is needed. Letter will be sent explaining confusion.
006-01 Change made Letter sent 2/20/02	Kent Seida 17501 S.E. Forest Hill Dr. Clackamas, OR 97015	2s1e26 Remove stream from property – doesn't exist	Maps, survey, pictures	Yes		Recommend that the portion of the stream on Seida's property be removed from the map based on information provided and verification of aerial photo. 01/ 02 – Letter send acknowledging agreement with proposal and that change was or will be made.
007-01 Change made Letter sent 4/30/02	Marty Sevier MLS & Associates 2607 S.W. 28th Drive Portland, OR 97219-4588 (503) 246-4588	1s1w02 Remove some canopy cover from our maps – no longer there; make boundary adjustments to other areas.	Map showing areas to remove	No	According to our 2000 aerial photos, canopy exists where Marty Sevier wants it removed. Will need to check our 2001 aerial photos or request more information from Marty.	Recommend no change at this time. 9/7/01 4/4/02 – make some small changes to canopy cover boundary (verified using 2001 aerial photos)
008-01 Change made Letter sent 2/20/02	Southshore Corporate Park Jennifer Snyder WRG Design Inc. 10450 SW Nimbus Ave. Portland, OR 97223 (503) 603-9933	1n3e19 & 20 Incorrectly mapped flood areas, floodplain streams and rivers, and mid-section and headwater streams	Map of Southshore Corp. Park	No	The floodplain changes are covered by the Columbia Corridor Association changes requested and mapped by Group McKenzie.	Floodplain changes made by DRC, water feature in question has been changed to stream link. 9/26/01 NOTE (2/11/02): Although change has been made, there are a couple small areas that remain on the map. Justin will take a closer looks at CCA changes – apparently not all the changes weren't made correctly.
009-01 Change made Letter sent 2/20/02	D. W. Blasen, Mgr. Blasen Family LLC 1122 N.E. 107th Place Portland, OR 97220 (503) 252-4874	1n1e09 Remove floodplain from property	FEMA letter, map	Yes		Recommend removing portion of the property from the FEMA floodplain and the 1996 area of inundation. 9/10/01 1/9/02 – reviewed change DRC made; resubmit change request - there is still an adjustment that needs to be made to the "floodarea" GIS layer

Project No./ Location	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions/ Documentation needed	Staff Recommendation
010-01 Change made	Riverhouse at Commons Harbor Richard A. Baranzano P.O. Box 505 Tualatin, OR 97062 (503) 638-6951	2s1w24 Remove property from floodplain	Background information re: project, fill, etc.	No	Don't know what portion of TL #1400 to remove from the floodplain. Need map that clearly shows that area and a letter certifying the fill from FEMA. According to 1996 flood inundation, TL #1400 was partially inundated.	No changed at this time, need more information. 4/4/02 – Justin is making small change to floodplain.
011-01 Change made Letter sent 4/30/02	Perkins Coie LLP Roger A. Alfred 1211 S.W. 5th Ave., Suite 1500 Portland, OR 97204-3715 (503) 727-2000	1n2w23 Realign stream	Goal 5 map, aerial photo	No		9/17/01 1/10/02 – map change request reviewed again, the stream relocation should be made.
011-01a Change made Letter sent 4/30/02	Perkins Coie LLP Frank W. Flynn 1211 S.W. 5th Ave., Suite 1500 Portland, OR 97204-3715 (503) 727-2000	1n2w23 Remove low-structure vegetation from property owned by Majestic Realty – grading has occurred for development	Letter	Yes	Verified using 2001 aerial photos.	Recommend removing low-structure vegetation from graded area. 4/5/02
012-01 Change made Letter sent 4/30/02	Columbia Steel Casting Co., Inc. L. Guy Marshall Director, Corporate Policy 10425 North Bloss Ave. P.O. Box 83095 Portland, OR 97283 (503) 286-1685 ext. 242	Remove a portion of the property from the 100-year FEMA floodplain	Surveys, FEMA letter of map amendment	Yes		Recommend amending the floodplain. This change was made as part of the Columbia Corridor Associate floodplain amendments. 9/26/01
013-01 – 013-24	City of Beaverton Veronica Smith P.O. Box 4755 Beaverton, OR 97076 (503) 526-2222	SEE SEPARATE TABLE FOR BEAVERTON				

Project No./ Location	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
014-01 No change	City of Cornelius Richard Meyer P.O. Box 608 Cornelius, OR 97113-0608	1n3w33 – extend floodplain area	Goal 5 map (02/01 version)	No		Recommend no change be made – the area drawn on the map is larger than both the 1996 and 100-year floodplain; area is outside Metro jurisdiction
014-02 No change	City of Cornelius	1n3w34 – remove forest canopy in three areas; extend floodplain; change stream to stream link; add culverts	Goal 5 map (02/01 version)	No	2000 aerials still show forest cover – need to contact planning director – have these trees been cut down? Floodplain and canopy change – outside Metro's boundary Streamlink – looks like there could be a stream but outside Metro's boundary *(Have Justin take a look at this)*	Recommendations: No change to forest canopy (need more info.) No change to floodplain – outside Metro boundary No change to add forest canopy – outside Metro No change from stream to streamlink – outside Metro ADD two culverts
014-03a 014-03b Made change	City of Cornelius	1n3w35 – remove part of a wetland, west of SW 334th 1n3w35, 1e3w02 – no evidence of culverts; change part of wetland and stream to stream link	Goal 5 map (02/01 version)	Yes	Can't tell from aerial if there's wetland on both sides of 334th. However, based on planning director's recommendation, change should be made.	Recommend making changes – delete portion of wetland, change stream to stream link, based on city's expertise
014-04 Made change	City of Cornelius	1s3w02 – part of stream should be denoted as stream link, other portion of stream needs to be added	Goal 5 map (02/01 version)	Yes		Recommend making the city's changes based on city's recommendation and aerial photo verification.
014-05 No change	City of Cornelius	1s3w03 – add forest canopy and wetland, change part of stream to stream link	Goal 5 map (02/01 version)	Yes		No changes – this area is outside the UGB and Metro boundary
014-06 Change being made	City of Cornelius	1s3w04 – add forest canopy; realign river and change part of it to stream link; add wetland	Goal 5 map (02/01 version)	Yes	The forest canopy is outside Metro's jurisdiction. Work is being done in DRC to add forest canopy outside Metro's jurisdiction.	Recommend making changes based on city's recommendation and aerial photo verification.
015-01 No change	City of Durham Roel C. Lundquist City Administrator P.O. Box 23483 Durham, OR 97281 (503) 639-6851	Realign the portion of Fanno Creek that runs through the city, based on a flood insurance restudy of the area	Map of flood insurance restudy area	Yes	I compared the city's map with high-lighted change with the aerial photo – looks like city's interpretation (and the flood insurance restudy) is accurate; however, the stream line is close enough for our purposes.	Recommend no change.

Project No./ Location	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
016-01a,b,c Recommended changes being made	City of Forest Grove Jon Holan Community Director P.O. Box 326 Forest Grove, OR 97116 (503) 359-3200	Forest patch where new road alignment is – forest canopy has been modified	Goal 5 maps and aerial photos	Yes	Photo 1: **016-01a** – Acres=0.935 City wants us to change the boundary to correspond with a road that has been developed. 2001 photos show road....however, change too small to be made. **016-01b** – 016-01b northern patch is 0.769 acres – recommend forest patch removal. -southern patch is 1.382 acres ¼ patch contains portion of house and road...change too small so ok to leave as is. **016-01c** – patch is over an acre Photo 4: **016-01d** – Patch is dissected by a road; however, it is over an acre and should remain on the map Photo 2 & 3: **016-01e,f,g,h,i,j,k** – Patches are at least 0.9 acres and above and should remain on the map Photo 5: **016-01l,m,n,o** – l is okay; m & n, which are circled on the photo, are not patches that we've identified; o is definitely not a patch as should be removed Photo 6: **016-01p,q,r** – I don't see that there's a problem with any of these Photo 7: **016-01t,u** – u is fine but t is less than an acre – should be removed Photos 8 & 9: **016-01v,w,x,y**– v is an orchard – do not remove (would be inconsistent in our methodology if we removed); w,x,y are okay Photo 11: **016-01aa** – looks okay Photo 10: **016-01ab** – looks okay Photo 12: **016-01ac** – looks okay	**016-01b** – 016-01b northern patch is 0.769 acres – recommend forest patch removal. Remove two small patches in 1N4W35 **(016-01t)** – both are less than an acre and not close to a stream Remove a patch in 1n3w32 **(016-01o)** – forest cover doesn't exist – recommend removal. **016-01s** Tail of polygon is along road and includes one big tree at end. Area is approximately = .51acres of a total 9.4 acres. Recommend removal of tail of the polygon. **016-01z** Northern polygon is <0.9 acres and includes development – recommend removal. **NOTE:** Someone should contact Jon Holan and explain how the mapping was done – see his letter

Project No./ Location	Party	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
016-02 No change	City of Forest Grove	1n4w35 Take area circled on map out of the floodplain – it has been filled	Goal 5 map, aerial photos	No	Need more information regarding fill permit.	Floodplain includes 4 lots with houses.... However, they should be removed with the developed floodplains; so no change at this time.
016-03 No change	City of Forest Grove	1n4w36 Take area circled on map out of the floodplain – it has been filled	Goal 5 map, aerial photos	No	Need more information regarding fill permit.	Floodplain includes 4 lots with houses.... However, they should be removed with the developed floodplains; so no change at this time.
017-01 – 017-13	City of Gresham John Pettis Community Planner Community Development Dept. 1333 N.W. Eastman Parkway Gresham, OR 97030-3813	SEE SEPARATE TABLE FOR THE CITY OF GRESHAM				
018-01 – 018-10	City of Lake Oswego Stephen Lashbrook Long Range Planning Mgr. P.O. Box 369 Lake Oswego, OR 97034	SEE SEPARATE TABLE FOR THE CITY OF LAKE OSWEGO				
019-01 – 019-20	City of Hillsboro Valerie Counts Planning Supervisor 123 West Main Street Hillsboro, OR 97123-3999	SEE SEPARATE TABLE FOR THE CITY OF HILLSBORO				

Project No./ Location	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
020-01 √	City of Sherwood Gary G. Pierce Associate Planner 20 NW Washington Sherwood, OR 97140 (503) 625-5522	2s1w30 add open water, wetlands & and one culvert	Goal 5 map LWI maps	Yes	The City sent their local wetland inventory as transparencies overlaid on our Goal 5 maps to show where we're missing wetlands. These changes will be made later; however, "open water" and "culvert" changes will be given to DRC to do now.	Make recommended changes (open water, culverts) based on city's field check and aerial photo interpretation (8/22) 3/18 – Open water added -all Sherwood local wetlands added to LWI coverage
020-02 **	City of Sherwood	2s1w29 add missing wetlands	Goal 5 map LWI maps	Yes		Wait on changes to wetlands (8/22) 3/18-all Sherwood local wetlands added to LWI coverage
020-03 √	City of Sherwood	2s1w28 add missing wetlands, except those highlighted in yellow; add open water and culverts	Goal 5 map LWI maps	Yes		Recommend making changes – add open water and culverts. Hold off on adding wetland until later. (8/22) 3/18 open water added, -all Sherwood local wetlands added to LWI coverage
020-04 √	City of Sherwood	2s1w33 add missing wetlands, except the one highlighted in yellow; add open water and culvert	Goal 5 map LWI maps	Yes		Recommend making changes – add open water and culvert; also add open water on same tax lot, not requested by city but observed on aerial photo -all Sherwood local wetlands added to LWI coverage
020-05 n/c	City of Sherwood	2s1w32 add missing wetlands, made change to existing wetland (in our coverage); add culvert	Goal 5 map LWI maps	Yes		Recommend making culvert change – hold off on adding wetland until later (8/22) 3/18 -all Sherwood local wetlands added to LWI coverage - one open water polygon to be added
020-06 √	City of Sherwood	2s1w31 add missing wetlands, except those highlighted in yellow	Goal 5 map LWI maps	Yes		Recommend making changes – add open water and culvert; hold off on adding wetlands until later (8/22) 3/18 -all Sherwood local wetlands added to LWI coverage - add additional open water polygons

Project No./ Location	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
021-01 – 021-10	City of Troutdale Elizabeth McCallum Community Devel. Dept. 104 SE Kibling Ave. Troutdale, OR 97060-2099	SEE SEPARATE TABLE FOR CITY OF TROUTDALE CHANGES				
022-01 n/c to culvert inventory	Tualatin Hills Parks & Recreation 15707 S.W. Walker Road Beaverton, OR 97006	1s1w08; 1s1w20; 1s1w22; 1s1w30 add culverts		Yes		Recommend making change. 8/27/01 Note: Culverts changes will go to the transportation dept. for review.
022-02 √	Tualatin Hills Parks & Recreation	1s2w01 – remove wetlands filled for development		Partially	One of the wetlands in the area now has development; will need more information to take off the larger wetland, if that's the one THRPD is indicating to remove	Recommend removing one wetland based on aerial photo verification. 8/27/01
022-03 -	Tualatin Hills Parks & Recreation Sarah Cleek 15707 SW Walker Road Beaverton, Oregon 97006	1s1w27, 1s1w33, 1s1w23,		Yes	022-03a (1s1w27) add two open water polygons. 022-03b (1s1w33) add open water polygons and extend wetland boundaries. 022-03c (1s1w23) add open water polygon and extend wetland boundary 022-03d (1s2w01) add open water and extend wetland boundary 022-03e Add open water polygons 022-03f (1n1w32) Add open water polygons and add wetland boundaries 022-03g (1s1w19) Add wetland boundary and open water polygons 022-03h (1n1w34, 1s1w03) Add open water polygons	3/25 Recommended adding open water polygons, extending wetland polygons, and adding some new wetland boundaries.
023-01 – 023-20	City of Tualatin Jim Jacks, Planning Dir. Planning Department 18880 S.W. Martinazzi Ave. Tualatin, OR 97062-7092 (503) 692-0574	SEE SEPARATE TABLE FOR THE CITY OF TUALATIN				

Project No./ Location	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
024-01a Culvert changes submitted to Transporta-tion Dept.	City of Milwaukie Lindsey Nesbitt Community Devel. Dept. 6101 SE Johnson Creek Blvd. Milwaukie, OR 97206 (503) 786-7600	1s1e25 add one culvert and delete one	Goal 5 map	Yes	City recommended deleting a culvert from the map – looks like it has already been done in the culvert inventory.	Recommend adding culvert on McLoughlin Blvd. 8/28/01
024-01b No change	City of Milwaukie	1s1e25 add stream link	Goal 5 map	Yes	Not adding stream links to data base.	Recommend no change. 8/28/01
024-02 Culvert changes submitted to Transporta-tion Dept.	City of Milwaukie	1s1e26 Add five culverts, delete one	Goal 5 map	Yes	City recommended deleting a culvert from the map – looks like it has already been done in the culvert inventory.	Recommend adding culverts 8/28/01
024-03a No change	City of Milwaukie	1s1e35 Change shape of forest canopy	Goal 5 map	Yes	The forest canopy is delineated correctly, as verified on aerial photos, although it is difficult to determine that on the small maps.	Recommend no change to forest canopy. 8/28/01
024-03b Culvert changes submitted to Transporta-tion Dept	City of Milwaukie	1s1e35 Add culvert	Goal 5 map	Yes		Recommend adding culvert. 8/28/01
024-04a No change	City of Milwaukie	1s1e36 Change a wetland	Goal 5 map; wetland inventory map	No	The wetland inventory map (site #7) doesn't clearly show the shape and size of the wetland and without that information, don't know what kind of change to make.	Recommend no change. The current wetland designation shows general area of wetland. 8/28/01
024-04b No change	City of Milwaukie	1s1e36 Add two stream links	Goal 5 map	Yes	Not adding stream links to the data base.	Recommend no change. 8/28/01
024-04c No change	City of Milwaukie	1s1e36 Delete a culvert	Goal 5 map	Yes	The culvert in question no longer shows up in our culvert inventory.	Recommend no change. 8/28/01
024-04d Change made	City of Milwaukie	1s1e36 Add a spring	Goal 5 map	Yes		Recommend adding spring based on city's request and review of aerial photo. 8/28/01

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
024-05a Culvert changes submitted to Transporta-tion Dept	City of Milwaukie	1s2e19; Add culvert	Goal 5 map	Yes		Recommend adding culverts. 8/29/01
024-05b Culvert changes submitted to Transporta-tion Dept	City of Milwaukie	1s2e29 Add culvert	Goal 5 map	Yes		Recommend adding culverts. 8/29/01
024-06 No change	City of Milwaukie	1s2e20 Add stream link	Goal 5 map	Yes	We will change streams to stream link if they are no longer there, but we are not adding stream links.	Recommend no change. 8/29/01
024-07a No change	City of Milwaukie	1s2e31 add stream link	Goal 5 map	Yes	Not adding stream links to data base.	Recommend no change. 8/29/01
024-07b Changes will be submitted to Transpor-tation Dept.	City of Milwaukie	1s2e31 two culverts	Goal 5 map	Yes		Recommend adding culverts. 8/29/01
024-08a Changes will be submitted to Transpor-tation Dept.	City of Milwaukie	1s2e32; add culvert	Goal 5 map	Yes		Recommend adding culverts. 8/29/01
024-08b No change	City of Milwaukie	1s2e32 add stream link	Goal 5 map	Yes	Not adding stream links.	Recommend no change. 8/29/01
024-09 Change will be made	City of Milwaukie	2s1e01 Change location and size of wetland	Goal 5 map; wetland survey	Yes	The Goal 5 map sent to us with the change indicated is inaccurate. The wetland survey covers tax lots 700, 900, 1000, 1100 and 1200 NOT 1300, 1400 and 1500. The city is showing that the entire wetland be removed on all these lots, and that the wetland is on lot 1500. According to the survey, the wetland is on tax lot 1200.	Recommend removing the wetland from lots 700 and part of 1200. Also should removed the wetland designation from a portion of tax lots 1400 and 1500. The wetland designation will not change on the remainder of tax lots 1400 and 1500, as well as tax lot 1300 unless the city wants it removed and has documentation.
024-10 Changes will be submitted to Transpor-tation Dept	City of Milwaukie	2s2e06 Add culverts	Goal 5 map	Yes		Recommend adding culverts. 8/29/01

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
025-01 Change made Letter sent 4/30/02	City of Wood Village Carl P. Malone Public Works Director 2055 N.E. 238th Drive Wood Village, OR 97060-1095 (503) 667-6211	1n3e34 add wetlands	Goal 5 map; Wetlands delineation	Yes		Recommend adding wetlands even though some of them will probably be filled due to development. 8/30/01 Note: This change was not made; DRC needs clarification. 9/27/01 DRC had added some wetlands/water to Justin's LakeHydro coverage. 2001 photos show that development has occurred. Hence, some wetlands should be removed while others are recommended for addition; see attached map.
026-01 info	City of West Linn Kathy Aha GIS Coordinator 22500 Salamo Road #1000 West Linn, OR 97068	2s1e13, 2s1e14, 2s1e15, 2s1e22, 2s1e23, 2s1e24, 2s1e25, 2s1e26, 2s1e27, 2s1e34, 2s1e35, 2s1e36, 2s2e19, 2s2e30, 2s2e31, 3s1e01, 3s1e02, 3s1e03 Floodplain boundary changes	Floodplain map showing the comparison of our 100yr-96 flood boundaries with their 96 floodplain boundaries.	Partially	We require a letter from the city stating that they believe that the 100 yr floodplain boundary should be replaced by their 96 floodplain boundary data. Once we receive that letter we would be able to make changes to the floodplain boundary.	We need to contact the city and request the former mentioned letter to make changes to the floodplain boundary. We need to also request a copy of their data. 03-20 Phone call was made to West Linn requesting a copy of their data and additional information regarding the requested changes.
026-02	City of West Linn	2s1e13, 2s1e14, 2s1e15, 2s1e22, 2s1e23, 2s1e24, 2s1e25, 2s1e26, 2s1e27, 2s1e34, 2s1e35, 2s1e36, 2s2e19, 2s2e30, 2s2e31, 3s1e01, 3s1e02, 3s1e03 Culvert changes	Many maps were sent in comparing West Linn's culvert data to our culvert data.regarding changes to culverts.	Partially	The culvert changes will be sent to transportation, since we are not using culvert data in the Goal 5 process.	Send culvert data to transportation.
026-03 n/c	City of West Linn	2s1e13, 2s1e14, 2s1e15, 2s1e22, 2s1e23, 2s1e24, 2s1e25, 2s1e26, 2s1e27, 2s1e34, 2s1e35, 2s1e36, 2s2e19, 2s2e30, 2s2e31, 3s1e01, 3s1e02, 3s1e03 Forest canopy boundary changes	Orthophoto of forest canopy with the metro forest canopy boundaries plotted	Yes	Metro's forest canopy data are consistant with the forest cover on the West Linn orthophoto. There are only a few locations where the boundaries are not consistant. In these locations the differences are very minor.	Recommend no changes.

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
026-04 info	City of West Linn	2s1e13, 2s1e14, 2s1e23, 2s1e24, 2s2e30 Steep slope additions	A comparison map with Metro's steep slope layer and West Linn's contours was provided.	Partially	026-04a – Addiion of steep slopes were requested. 026-04b - Addiion of steep slopes were requested. 026-04c - Addiion of steep slopes were requested. 026-04d - Addiion of steep slopes were requested. 026-04e - Addiion of steep slopes were requested. These steep slopes additions could be made if we receive a letter from West Linn stating that they believe their data is correct based on their professional knowledge of the city or any surveying that they have completed. Our data Note: Steep slope polys and contours do not show these areas as being steeply sloped. There are forest patches along most of these stream sections.	We need to contact the city and request the former mentioned letter to add the additional steep slopes. We need to also request a copy of their data. 03-20 Phone call was made to West Linn requesting a copy of their data and additional information regarding the requested changes.
026-05 info	City of West Linn	2s1e13, 2s1e14, 2s1e23, 2s1e24, 2s1e25, 2s1e35, 2s1e36, 2s2e30 Stream alignment changes	A comparison map with Metro's surface stream layer and West Linn's storm drainage and ditches contours was provided.	Partially	026-05a – Realignment of streams were requested. 026-05b– Realignment of streams were requested. 026-05c– Realignment of streams were requested. 026-05d– Realignment of streams were requested. 026-05e– Realignment of streams were requested. 026-05f– Realignment of streams were requested. 026-05g– Realignment of streams were requested. 026-05h– Realignment of streams were requested.	We need to contact the city and request the former mentioned letter to make changes to stream alignment. We need to also request a copy of their data. 03-20 Phone call was made to West Linn requesting a copy of their data and additional information regarding the requested changes.

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
026-05 (cont.) info	City of West Linn	2s1e13, 2s1e14, 2s1e23, 2s1e24, 2s1e25, 2s1e35, 2s1e36, 2s2e30 Stream alignment changes	A comparison map with Metro's surface stream layer and West Linn's storm drainage and ditches contours was provided.	Partially	Several of the requested stream realignments were within forested areas and it was not possible to tell whether or not there had been a change to surface stream drainage due to canals or ditches. Some of the requested changes were within developed areas and you could somewhat tell where the stream change was. Since it was not possible to tell via photos whether or not the streams should be realigned, we would need to receive a letter from West Linn stating that they believe their data is correct based on their local records and any surveys they have completed.	
027-01 √	City of Wilsonville Chris Neamtzu 30000 SW Town Center Loop E Wilsonville, OR 97070	3s1w23 & 24 Floodplain changes	FEMA map for Wilsonville	Partially		Recommend that floodplain be changed to reflect FEMA map for Wilsonville. 9-8 Floodplain corrected.
027-02	City of Wilsonville	3s1w23;3s1w24; 3s1w25 change "wetlands" to open water; add culvert change area of steep slope in subdivision	Goal 5 map	Partially	The waterbodies designated as "wetlands" are part of the NWI; we will address wetlands by integrating Wilsonville's LWI and making a comparison to our current wetlands layer. The waterbodies look like golf course ponds rather than wetlands. Change will be made later. Area of steep slope looks like it may have changed in our GIS, when adding aerial photos, slope indicator does not cover housing—3/25 slopes are in the same area as trees as the City recommended. 3/25 Removal of flood area has already happened…where city noted there was not a floodplain.	Recommend adding culvert; hold off on decision about wetlands, no change regarding steep slopes. 03-25 Added all of Wilsonville's local wetland inventory to LWI coverage.

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
027-03 √	City of Wilsonville	3s1w22 remove stream; change stream segment to stream link	Goal 5 map	Yes		Recommend making changes to stream based on aerial photography. 8/31/01 3/25 Changes made.
027-04 √	City of Wilsonville	3s1w14 change stream segment to stream link	Goal 5 map	Yes		Recommend making the change based on aerial photography. 8/31/01 3/25 Changes made.
027-05 √	City of Wilsonville	3s1w12 remove filled wetlands	Goal 5 map	Yes		Recommend removing wetlands based on aerial photography. 8/31/01 3/25 Changes made. 03-25 Added all of Wilsonville's local wetland inventory to LWI coverage.
027-06 n/c	City of Wilsonville	3s1w11 add forest canopy; add culverts	Goal 5 map	Yes	This area is outside the UGB and Metro boundary. Delineation of these areas will occur in the near future.	Recommend no changes at this time. 8/31/01
027-07 √	City of Wilsonville	3s1w02 removed filled wetland	Goal 5 map	Yes	City also questioned accuracy of forest cover patches on several tax lots. 2001 photos show forest within these patches. Hence, no change is needed.	Recommend removing wetland based on aerial photography. 8/31/01 3/25 Wetland removed. 03-25 Added all of Wilsonville's local wetland inventory to LWI coverage.

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
027-08 √	City of Wilsonville	3s1w01 remove wetland – it's a detention pond, not a wetland	Goal 5 map	Yes		Recommend removing wetland based on city's recommendation and aerial photo verification. 8/31/01. 3/25 Changes made on Metro wetland layer. In LWI layer, wetland still included but it is marked as not significant. 03-25 Added all of Wilsonville's local wetland inventory to LWI coverage.
027-09	City of Wilsonville	3s1w03	Goal 5 map	Yes	Requested that a road be added that dissects a forest patch. Road is approximate 1.5 acres of a 13 acre forest patch.	3-25 Recommend removal of portion of forest patch that is actually a road.
028-01 √	City of Fairview John Andersen Community Development Director P.O. Box 337 Fairview, OR 97024	1n3e21 expand wetland; a portion of a wetland is questionable – seems dry; add a wetland; large wetlands are "open water"; two parts of wetlands areas are not wetlands; several areas – floodplain "moved by grading"	Goal 5 map	Partially	No need to expand wetland, close enough. The wetland in question (that seems dry) is a NWI wetland – there are also hydric soils; no change for this wetland. Not enough information to add a wetland where indicated on Goal 5 map. The large wetlands on the map are also designated "open water" – no need for change. Not enough information to change the floodplain in this area.	Recommend removing portions of wetlands that have been filled for development or never existed – based on city recommendation and verification of aerial photos. No other changes at this time – need more information. 9/5/01 12/04/01 – Met with John Andersen in November to clarify map changes. Changes can now be made.
028-02 √	City of Fairview	1n3e20 change portion of stream segment to stream link	Goal 5 map	Yes		Recommend changing portion of stream to stream link based on aerial photos. 9/5/01
028-03 √	City of Fairview	1n3e22 change name of stream from Arata Creek to Salmon Creek; remove wetlands that have been filled;	Goal 5 map	Yes/no		Recommend changing name based on city's recommendation. Remove one wetland on TL 500; need more info. from city to remove larger wetland. 9/6/01

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
028-04 √	City of Fairview	1n3e27 change stream segment to stream link; change shape of wetland (on TL 1608); remove forest cover; add wetland mitigation area on TL 802; add stream segment, change location of stream	Goal 5 map	Partially	Need more information to change shape of wetland on TL 1608 – can't tell from aerial photo. Need more information to remove forest canopy – the city gives no explanation for removal, just scratches it off the map.	Recommend changing portion of stream segment to stream link based on aerial photo. Recommend adding wetland mitigation site on TL 802. Recommend adding stream segment where indicated on map, but not relocating the other portion of stream – close enough. 9/6/01
028-05 √	City of Fairview	1n3e28 remove three wetlands; add ODOT retention pond and wetland; add culverts in various places; add wetland on TL 400; remove tree grove from TL 1900; remove part of canopy cover and wetland from TL 205	Goal 5 map	Partially	Need more information to remove one of the three wetlands – from aerial photo, looks like there are wetlands remaining. Not enough information to remove tree grove – has there been development? Was all of it removed? Not enough information to remove canopy cover and wetland – how much, where exactly?	Recommend removing one wetland that is located on I-84; change shape of wetlands on the side of I-84. Recommend adding wetland next to ODOT retention pond based on aerial photo and city's recommendation. Recommend adding wetland on TL 400 – looks like there could be one there; based on city's recommendation. 9/6/01
028-06 √	City of Fairview	1n3e33 add wetland areas; delete stream segment	Goal 5 map	Partially	Not enough information to add all wetlands requested – very small, can't tell from aerial photos.	Recommend adding wetland to TL 210 based on city's recommendation and aerial photo verification. Recommend deleting stream segment. 9/6/01

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
029-01 √	Columbia Corridor Assoc. Group McKenzie & Multnomah County Drainage District P.O. Box 69039 Portland, OR 97201-0039	1n1e11 delete stream segment	CCA map	Yes		Recommend removing stream segment based on aerial photo. Also noticed a waterbody to add (CCA did not request this change). 9/6/01
029-02 **√ - northern stream segment** ****-southern stream segment**	CCA	1n1e02 delete portions of two streams	CCA map	Partially	Okay to delete northern most stream segment, southern most request – hard to tell. Looks like there could be a stream there. 10/11/01 – Shawn Wood said he talked to Dave Hendricks – stream segment was piped in the 40s.	Recommend changing northern most stream segment to stream link based on aerial photos. 9/6/01 Recommend changing southern stream segment to stream link. 10/11/01
029-03 √	CCA	1n1e03 delete stream segment	CCA map	Yes		Recommend changing stream segment to stream link. 9/6/01
029-04 √	CCA	1n2e23 delete stream segment	CCA map	Yes		Recommend changing stream segment to stream link. 9/6/01
029-05 √	CCA	1n2e24 delete stream segment	CCA map	Yes		Recommend changing stream segment to stream link. Also added open water (CCA did not request this change).9/6/01
029-06 √	CCA	1n3e20 delete stream segment; remove 175' corridor	CCA map	Yes		Recommend making the changes based on based on aerial photo 9/6/01
029-07 √	CCA	1n3e22 delete stream segment	CCA map	Yes		Recommend changing stream segment to stream link based on aerial photo. 9/6/01

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
029-08 √	CCA	1n3e23 delete stream segment	CCA map	No	Need more information in order to change the whole stream to stream link.	Recommend changing part of the stream in the NE section to stream link, but not the whole area requested. Looks like there is a stream just south of the Reynolds plant. 9/06/01 10/10/01 – talked to Shawn Wood about area south of the Reynolds plant– he agreed there is a stream there.
029-09 √	CCA	1n2e15 delete stream segment	CCA map	Yes		Recommend changing stream segment to stream link based on aerial photo. 9/7
029-10 √ ** - TL 1200 and 1300	CCA	1n3e26 delete stream segment from TL 600; delete stream segment from TL 1200 and 1300	CCA map	Yes	Part of the segment should be changed to stream link, but another portion should remain and be moved to reflect actual location based on aerial photo (TL 600). Difficult to verify if stream exists on TL 1200 and 1300 .	Recommend changing a portion of a stream to stream link and moving another portion to reflect actual location on TL 600, based on aerial photo. Recommend changing stream segment on TL 1200 and1300 to stream link based on aerial photo and CCA recommendation 10/10/01.
029-11 √	CCA	FEMA flood plain and 1996 flood inundation area changes – approx. 1600 acres	CCA map, other background info.	Yes		Recommend floodplain corrections be made.
029-12	CCA	1n2e23 (west of NE 13th Avenue) remove constructed water quality ponds and drainage ditch	Goal 5 map, letter from Mult.. Co. Drainage District	Yes	According to Multnomah County Drainage District (MCDD), the areas in question are manmade stormwater detention ponds and ditches. MCDD asserts that the entire system functions to receive and convey stormwater flows from the adjacent properties.	Recommend removing this stream and water quality facilities from the map (change to stream link). 01/15/02
029-13	CCA	1n1e12 properties east of NE 33rd Dr. have been develop or filled to elevations above the base flood elevation properties east of NE Sunderland Ave. – area has been filled and paved to above the Base Flood Elevation	Goal 5 map, letter from Mult.. Co. Drainage District	?	According to Multnomah County Drainage District (MCDD), the area in question (east of NE 33rd) has be filled to elevations above the base flood elevation. There area two existing industrial buildings located in the area. The area east of NE Sunderland is the location of the prison (CRCI). The 1996 flood did not affect either areas in question.	Recommend removing from the "floodarea" layer based on aerial photo interpretation and recommendation from MCDD. 01/15/02

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
030-01 Change made Letter sent 2/20/02	Steve Berliner Leatherman Tool Group P.O. Box 22229 Milwaukie, OR 97269	1n2e15 Remove parking lot from floodplain	E-mail explaining the change	Yes		Recommend making the floodplain change. 1/2/02 – change wasn't made correctly by DRC; requesting change again.
031-01 – 031-10	Port of Portland Brian Campbell, Planning Manager Box 3529 Portland, OR 97208 503-944-7000	SEE SEPARATE TABLE FOR PORT OF PORTLAND MAP CHANGES				
032-01 n/c	Jill Tellez 9280 S.W. 80th Ave. Portland, OR 97223 (503) 245-8389	1s1w35 vegetation different from Tigard's map for the Washington Square Regional Center	Goal 5 map; Wash. Sq. Regional Ctr. Map w/vegetative communities	Yes	Don't see a problem that the city's maps aren't exactly like ours. Contact Jill and let her know I looked at the maps and there's really nothing to do.	No changes required. 9/14/01
033-01 No change Letter sent 2/20/02	Pat Russell 16308 S.W. Estuary Dr. Beaverton, OR 97006 (503) 533-8887	Marked on maps where he believes expanded tree stands can occur both on public and private properties (potential "enhancement" sites)	Goal 5 maps, quadrangle maps		Suggesting areas where expanded tree stands would be appropriate to provide more shade and habitat in the future. This information may be useful at some time when trying to identify restoration and enhancement opportunities.	No changes required. 9/17/01 1/11/02 – drafted letter to send acknowledging the information he sent.
034-01 **	Clackamas County Karen L. Streeter 9101 SE Sunnybrook Blvd., Suite 441 Clackamas, OR 97015	Use the county's more detailed stream hydrology GIS layer for Metro's Goal 5 inventory project.	Clackamas County's stream hydrology GIS layer	Yes	Need to decide how to incorporate the county's GIS layer with Metro's GIS layer.	Recommend holding off on this change until a decision is made about how to incorporate the county's data.
035 Change made Letter sent 4/30/02	Darren Pennington	3s1w03 Change stream segment to stream link.	E-mail communi-dation, phone communication, e-mail from city of Wilsonville	Yes	Verified using aerial photos. Also talked to Chris Neamtzu from Wilsonville.	Recommend changing stream segment on prison site and on Pennington's property to stream link. 4/5/02

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
036-01 Change made Letter sent 4/30/02	John Maring WRG Design Inc. Jennifer A. Snyder 5415 S.W. Westgate Dr. Suite 100 Portland, OR	1n2w28 Remove forest canopy where trees have been removed for future development.	Letter of explanation, pictures of property, maps	Yes	Verified from 2001 aerial photos that trees have been removed. The area has now been seeded with grass for erosion control. This area still provides ecological function such as streamflow moderation and water storage.	Recommend changing the landcover designation on the property. Remove canopy cover within 300' where it no longer exists but change to low structure vegetation/undeveloped soils. For the area beyond 300' where trees have been removed, delete the forest canopy cover. 3/7/02
037-01 Change made Letter sent 4/30/02	Arnold & Karen L. Petersen 9201 S.E. 132 Portland, OR 97236 (503) 761-3827 (503) 256-0890 (office)	1s2e26 Remove forest canopy where trees have been removed.	Map	Yes	Verified removal of trees from 2001 aerial photo.	Recommend changing the landcover designation on the property. Remove canopy cover within 300' where it no longer exists but change to low structure vegetation/undeveloped soils. For the area beyond 300' where trees have been removed, delete the forest canopy cover. 3/7/02
038-01 Change made Letter sent (?)	David Sudtell P.O. Box 1660 Ocean Park, WA 98640	1n3w36 Remove portion of owner's property from floodplain.	Copy of fill permit and other info.	Yes		Recommend removing a portion of the property from the flood area.
039-01 Change made Letter sent (?)	Kummer (get letter & info from Mark)	1s3w01 Remove portion of owner's property from floodplain.	Copy of fill permit and other info.	Yes		Recommend removing a portion of the property from the flood area.
040-01 Change made Letter sent 4/30/02	Robert Evans Robert Evans Company 1200 NE 48th Avenue Suite 1250 Hillsboro, OR 97124	1n2w22 Change segment on property to stream link; wetland has been filled				Recommend changing segment to stream link. 4/3/02
041-01	Kemp	1n2e24 Change a small segment of the Columbia Slough to stream link that no longer exists since the cross dike was built	Map	Yes	Verified through aerial photo interpretation.	Recommend changing small segment of slough to stream link where it crosses Airport Way. 3/8/02

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
042	City of Tigard 13125 S.W. Hall Blvd. Tigard, OR 97223 Duane Roberts 639-4171 x347 Joel (GIS Specialist) 639-4174 x321	Need to add after changes are made by DRC				
043	Gary Olson 4306 SW Galeburn Portland, OR 97219	1s1e29 Remove tree cover from tax lot – not located on 4306 SW Galeburn, not contiguous	Map change request		Met with Gary Olson – looked at his property on Arcview with aerial photo. The trees don't appear to be on his property and are not contiguous to the other patches. 7/17/02	Recommend removing trees – amending the shape of the forest canopy to be more accurate. 7/18/02
044	Kenneth E. Itel 12155 SW Tualatin-Sherwood Rd. Tualatin, OR 97062 (503) 635-00289	2s1w27 Remove stream from properties – a surface stream has not been present on this property for at least 70 years. Also, Mr. Itel disagrees with the inclusion area on the northwest corner of 12155 SW Tualatin-Sherwood Rd. of property included in a habitat of concern.	Map, aerial photos	Yes	HOC is currently under review for potential correction. Lori talked to Ken Itel about the HOC designation and its potential for correction.	Recommend changing stream to stream link. 7/19/02
045	George I. Hansen 17107 S. Cliffview Oregon City, OR 97045	1s3e04 1832 NW Birdsdale (West of Fairview Creek) Remove portion of the tax lot from floodplain where fill has occurred. Change size of wetland (current coverage is too large).	Fill permits	No	7/25/02 – George Hansen came in to talk about his property – brought fill permits. City of Gresham deepened and widened Fairview Creek. The materials from that work were piled on Mr. Hansen's property and evening used as fill. The floodplain coverage is no longer as extensive. He will get a map to show where the elevation and location of the floodplain, as well as a wetland delineation report.	No change at this time – additional information is needed. 7/26/02
045	Havlin G. Kemp VLMK Consulting Engineers 3933 SW Kelly Avenue Portland, OR 97201-4393 (503) 222-4453	1n2w26 Modify the current Goal 5 map at his site to more correctly show the limits of the 100 year floodplain	FEMA flood map, site plan, topographic survey	Yes		Recommend making the modification to the floodplain based on elevation map. 7/26/02

Project No./ Location/ Status	Party/Contact/Address	Type of change(s)	Documentation provided	Adequate?	Questions / Documentation needed	Staff Recommendation
046	King City c/o Keith S. Liden Parsons Brinckerhoff Quade & Douglas, Inc. 400 S.W. 6th Ave. Portland, OR 97204 (503) 274-8772	2s1w16 Change alignment of stream to reflect findings of the "West King City Study Area Goal 5 Safe Harbor Report" (May 2002)				
047	Mr. & Mrs. Alec Karty 18205 S.E. Troge Road Boring, OR	1s3e31 There is no stream located on their property – the stream is south of the Troge Road			8/6/02 – talked to Marlene Karty re: her property and location of stream. It's clear that the tax lots and aerial photos don't line up, and therefore the stream doesn't appear in the correct position (which is south of SE Troge). Talked to JO in DRC about it – he said that Clackamas Co. is re-digitizing their tax lots because they are inaccurate. It's a huge effort and right now they're concentrating on the urban area. As areas are completed, the county furnishes them to Metro. I explained this to Mrs. Karty and she just wanted a letter acknowledging the problem.	No change at this time. Need to get updated tax lot information from Clackamas County. Once that is received, the stream will be accurately located on tax lots south of Troge Rd. 8/7/02

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080802c-16

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF COMBINING METRO'S DRAFT INVENTORY MAPS OF REGIONALLY SIGNIFICANT RIPARIAN CORRIDORS AND WILDLIFE HABITAT FOR THE GOAL 5 ESEE ANALYSIS, AND APPROVING METRO'S LOCAL PLAN ANALYSIS	))))))	RESOLUTION NO 02-3218A Introduced by Councilor McLain

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, the Title 3, Section 5 of the UGMFP sets forth actions that the Metro Council anticipated that Metro would take in identifying, considering and protecting regionally significant fish and wildlife habitat conservation areas; and

WHEREAS, Metro is applying the state Goal 5 administrative rule as the framework for identifying regionally significant fish and wildlife habitat areas; and

WHEREAS, the Metro Council adopted a draft inventory and map of regionally significant riparian corridors in Resolution No. 02-3176 on August 8, 2002; and

WHEREAS, the Metro Council adopted a draft inventory and map of regionally significant wildlife habitat in Resolution No. 02-3177A on August 8, 2002; and

WHEREAS, the Goal 5 administrative rule allows local governments to conduct a single economic, social, environment and energy ("ESEE") analysis for more than one significant Goal 5 resource; and

WHEREAS, the Metro Council desires to combine the two draft inventory maps for the purpose of conducting the ESEE analysis for both riparian corridors and wildlife habitat resources within the regionally significant resource sites identified by the Metro Council in Resolution No. 01-3141; and

WHEREAS, Title 3, Section 5 of the Urban Growth Management Functional Plan states that Metro must undertake an analysis to "identify inadequate or inconsistent data and protection in existing Goal 5 data, reports and regulations on fish and wildlife habitat" and "shall complete Goal 5 ESEE analyses ... only for those areas where inadequate or inconsistent data or protection have been identified."; and

WHEREAS, a draft analysis of "inadequate or inconsistent data and protection" ("Local Plan Analysis") among local governments within Metro's jurisdiction is attached as Exhibit B; and

BE IT RESOLVED:

1. The Metro Council adopts the draft map in Exhibit A, as the map of combined riparian corridor and wildlife habitat Goal 5 resources that shall be used for the purpose of identifying conflicting uses and impact areas in the ESEE analysis.

I:\trans\transadmin\staff\castilla\resolutions\02-3218
OGC/KDH/kvw/rc (08/08/02)

2. The Metro Council reserves the opportunity to minimally or substantially alter the draft map prior to adoption of a final map of regionally significant fish and wildlife habitat areas and Program to Achieve Goal 5, after public comment and review.

3. The Metro Council adopts the Local Plan Analysis in Exhibit B, as required by Title 3, Section 5 of the Urban Growth Management Functional Plan. The Metro Council concludes, based on the evidence in Exhibit B, that Goal 5 data and protection among local governments within Metro's jurisdiction is inconsistent, and that Metro conduct a regional ESEE analysis for all Goal 5 resource sites containing regionally significant riparian corridors and wildlife habitat is identified by the Metro Council in Resolution No. 02-3176 and No. 02-3177A.

4. The Metro Council's action in this resolution is not a final action designating regionally significant fish and wildlife habitat areas, final action on an ESEE analysis, or a final action to protect those areas through a Program to Achieve Goal 5.

ADOPTED by the Metro Council this ____ day of _____ 2002.

_____
Carl Hosticka, Presiding Officer

Approved as to Form:

_____
Daniel B. Cooper, General Counsel

080802c-A7

Atherton Amendment
Resolution 02-3177A
August 8, 2002

Amendment: Whereas, areas with a score of 1 in exhibit B, while not regionally significant Goal 5 resources as individual sites, are significant resource sites, and in the aggregate have multiple values that provide important elements of wildlife habitat, stormwater protection, urban forestry canopy and livability; and

Rationale: State Goal 5 requirements at the inventory stage require Metro's identification of resource sites that are significant and those that are regionally significant. In the case of riparian sites identified in resolution 02-3176, all mapped and scored sites are identified as both significant, and regionally significant.

Resolution 02-3177A identifies all mapped as scored sites as significant in Exhibit B. However, the recommendation of the Natural Resources Committee in recommending Council adoption is that only sites scoring 2-9 receive a regionally significant designation and proceed to the ESEE analysis stage. A previous amendment recommends that areas receiving a score of 1 be considered by local governments in their local Goal 5 process.

This amendment provides a rationale for that amendment, and gives some indication of the value of these areas in relation to the areas that are designated as regionally significant.

080802c-08

OREGON COMMUNITY PROTECTION COALITION

PO Box 14842, Portland, OR 97293
Phone (503) 232-3211 Fax (503) 232-3849

Metro Council – August 8, 2002

Testimony of Mari Margil, on behalf of the Oregon Community Protection Coalition

Presiding Officer Hosticka, Members of the Council, my name is Mari Margil and I am a member of the Board of Directors of the Oregon Community Protection Coalition. We are a coalition of organizations working to protect Oregon's neighborhoods, farmland, environment, and quality of life. I am here today in support of Metro's Goal 5 program and **Resolution 02-3218.**

I strongly urge you to vote in favor of Resolution 02-3218, which combines Metro's Draft Inventory Maps of Regionally Significant Riparian Corridors and Wildlife Habitat for the Goal 5 ESEE Analysis and approves of Metro's Local Plan Analysis. In approving of this resolution, we can move on to the critically important ESEE (Economic, Social, Environmental, Energy) stage where determinations about the appropriate level of protection can be made.

We can not allow the rhetoric of property rights to interfere with the important work of protecting wildlife habitat and creating livable communities for all who reside in the region. These goals are not mutually exclusive, contrary to those who might say otherwise – they are integral to one another and we must do both.

The Oregon Community Protection Coalition supports Metro's commitment to the wildlife and riparian values of the Goal 5 program and encourages you to pass Resolution 02-3218 so we may move forward to the ESEE level for more detailed analysis.

Thank you for the opportunity to speak with you today.

080802c-19

Metro Councilors
600 NE Grand
Portland, OR 97232

August 8, 2002

Dear Chair McLain and Councilors,

I am here today representing twenty-three individuals from around the entire region, five of which are homeowners within the regional fish and wildlife habitat. We support an expeditious adoption of a comprehensive inventory of regionally significant fish and wildlife habitat. With the adoption of the inventory, we will have the necessary information to make informed decisions about future growth- how to balance the need for jobs, housing, transportation, and environmental protection. The inventory is a foundation for integrating the built and natural environment as envisioned by the 2040 Growth Concept. Decisions about how and how much habitat to protect await the ESEE process, but the fish and wildlife habitat inventory you adopt today provides a benchmark by which future generations will judge today's growth management decisions.

Res. 02-3218
Res. 02-3177A
Res. 02-3218A

Thank you for considering our testimony.

Sincerely,
Jim Labbe

Signing in support of this testimony:

David King
4805 N. Borthwick
Portland, OR 97217

David Cipriano & Meredith Hamm
4805 N. Borthwick
Portland, OR 97217

Eli Spevak
4748 NE Commercial
Portland, OR 97217

Melissa Medieros & Jim Waigand
6216 NE 11th
Portland, OR 97211

Keith Hadley PhD.
5114 SW Viewpoint Terrace
Portland, OR 97212

Tess Jordan
5035 NE 19th Ave
Portland, OR 97211

Jason Buch
5244 NE 32nd
Portland, OR 97211

Amy Stork
5715 NE 39th
Portland, OR 97211

Sharon Stanton
111 NE Graham St.
Portland, OR 97212

Matt Chambers
338 SE Deswell St.
Milwaukie, OR 97267

Brian Comb &
Juniper Murray
4814 N. Borthwick
Portland, OR 97217

Bill Schrier
P.O.B. 1343
Beaverton, OR 97075

Celine Fitzmaurice
5429 NE 28th Ave
Portland, OR 97211

John and Christine Perala Gardiner
34969 Skogan Road
Sandy, OR 97055

Nancy and Bill Rosenfeld*
1400 SW 61st Dr.
Portland, OR 97201

Leslie and Randy Labbe*
4935 SW Barnes Rd.
Portland, OR 97221

Peter Bray*
3169 NE Irving
Portland, OR97232

* Homeowners within the inventory.

The Oregonian

Guest Commentary

J. Labbe, L. Labbe: Streamflow debate

04/08/02

Jim Labbe and Leslie Labbe

We agree with the Oregonian's editorial ("Stream Plan Flowing Right Way," March 11) on the proposed Healthy Portland Streams program and are dedicated to helping make the city's draft program workable for ordinary homeowners.

Unfortunately, claims by some opponents have done more to evoke people's worst fears and demonize city staff, than to enhance understanding of the proposal. Ben Langlotz's assertions that the city wants "complete control of YOUR property" is simply false and does a disservice to the homeowners he claims to represent. These claims have obscured real benefits of environmental zoning to streamside homeowners and the costs to the larger public of continuing to develop these lands.

It is true that the proposed program would remove some sensitive streamside lands from the market of developable land and will certainly cost some landowners the future return on developing these areas. We believe the city should target the proposed acquisitions and property tax deferrals to landowners who are the most negatively impacted by the proposed zoning.

However, increased flooding, excessive erosion, and the spread of exotic plant

species resulting from such developments represent cumulative impacts and costs that spread to other landowners and the public at large. State and local governments, non-profits and many private landowners are currently investing considerable resources towards restoring streams and watersheds. Inadequate standards for streamside development exacerbate the problems of flooding, erosion, and exotic species invasion. The lack of standards also compromises the efficacy and the incentive for future restoration investments, both public and private. Regulation is a necessary complement to voluntary and incentive-based programs also included in the city's proposed program.

The benefits of owning property near urban natural areas would seem self-evident to many Portlanders. A paper published in the recent issue of Contemporary Economic Policy (July 2001) actually documented their contribution to property values in the City of Portland. Accounting for numerous factors affecting property values, Noelwah Netusil (Reed College) and Margot Lutzenhiser (Public Power Council) found a positive and significant relationship between proximity to natural areas and home sale prices between 1990 and 1992. Natural areas, as opposed to other types of open space (e.g. golf courses, cemeteries, developed parks, etc.), led to the largest increase in sale price.

A recent analysis conducted by graduate students at Portland State University supports these findings in relationship to the city's proposed program. They found that median total value of residential properties within proposed environmental zones is $201,175, compared to $144,400 for residential properties city-wide (excluding taxlots owned by government and non-profits). The difference of $56,775 partially reflects the proximity of these properties to intact stream habitat.

It is entirely likely that the cumulative loss of streamside corridors to development over time will diminish this value and with it the livability of many neighborhoods. The beneficiaries will be those poised to first develop streamside properties and hence cash in on the value of adjacent undeveloped areas. The losers will be other streamside homeowners, those who live downstream and the fish and wildlife that depend on unfragmented stream habitat.

Avoiding this outcome will require each of us to take responsibility for our community's future. What do we want our neighborhoods to look like in 20 to 50 years? As Portland continues to grow up and out, can we leave space for nature, for our children and for the wildlife with which we share this region? In answering these questions, we encourage Portlanders to consider the value of healthy urban streams to themselves, their neighborhoods, and Portland's posterity.

Leslie Labbe is a Southwest Portland homeowner within a proposed environmental zone. Jim Labbe of North Portland is a graduate student in Geography at Portland State University.

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503-988-5275

- I grew up on NW Skyline Blvd.

* - 4935 S.W. Barnes Rd. - Since 27 years - 1975

- 1400 SW 61st Dr. Since 1950 - 52 years

- ~~Peter Bray 3464 NE~~ Irving

* Support

* Inventory Science - Earth Sciences
  - Stream & River systems

  - Keep saying "Junk Science"
  - Excellent job -
  - ~~Adecdotal evidence about "insignificant headwater streams"~~
  - ~~Bob Naiman at University of Washington~~

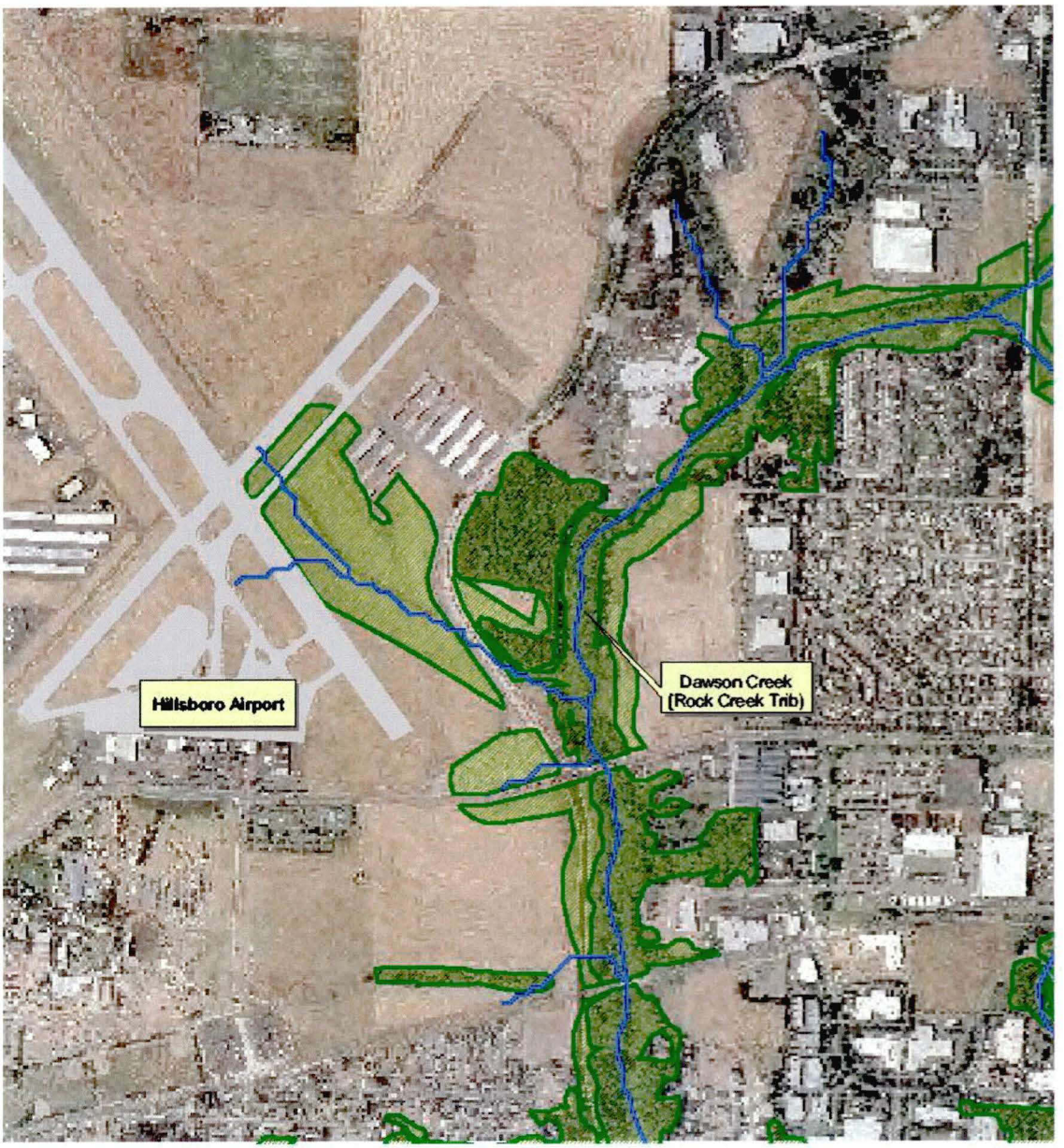
* Land Grab - Incentives & Voluntary Already in place

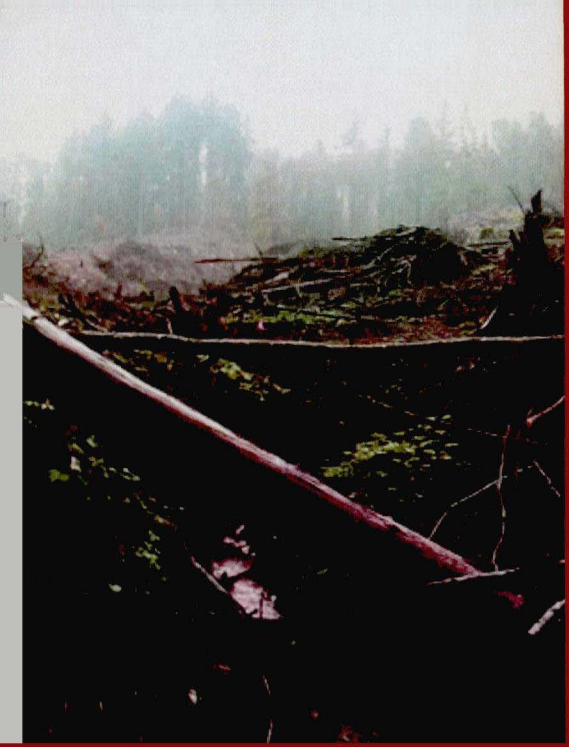
  - Rock Creek Headwaters -
  - state, local, federal governments & landowners
  - It is true that.

science into Japanese by using existing Chinese words or by borrowing them from Chinese dictionaries and lexicons, often of an ancient vintage" (p 228).

Montgomery's book is an excellent fusion of storytelling and careful analysis. As ideas travel through the vehicle of books, they gather bits and pieces of the cultures that translate, read, discuss, and distribute them. We can learn a great deal about different cultures' attitudes and priorities by closely examining why and how they translated certain books.

Montgomery, Scott. 2000. *Science in Translation: Movements of Knowledge Through Culture and Time*. Chicago: University of Chicago Press.


Hillsboro Airport
Dawson Creek
(Rock Creek Trib)



A recent subdivision clearing in the Rock Creek Headwaters near NW Skyline Blvd. The clearing dramatically increases the magnitude of runoff and sediment to this tributary of the Tualatin River, and impacts wildlife corridors to Forest Park. It takes decades to grow a healthy, functioning streamside forest, but minutes to destroy one.

www.pdxstreams.org

23¢

Metro Council

600 NE Grand

Portland, OR

9 7 2 3 2

name

address

zip

Support stronger standards for streamside development in the Portland - Metro region.

080802c-20

AUDUBON SOCIETY OF PORTLAND
1902-2002
Celebrating 100 years of inspiring people to love and protect nature

August 8, 2002

Carl Hosticka, Presiding Officer
Metro Council
600 NE Grand
Portland, OR 97232

Dear Presiding Officer Hosticka and Councilors,

I am testifying on behalf of the Audubon Society of Portland, our 10,000 members who reside in the Portland metropolitan region and on behalf of the Coalition for a Livable Future's Natural Resources Working Group.

I am testifying today to urge you to do the following:

1). Adopt the riparian and wildlife inventories as recommended by Metro's Natural Resource Committee

2). Adopt Resolution 02-3218 that was adopted by the Natural Resources Committee yesterday, which combines the riparian and wildlife inventories and adopts the Local Plan Analysis.

We also urge you to adopt, by Resolution or amendment to an existing Resolution (most logically 02-3177A) a statement that refers to those wildlife sites that scored 1 under your regional wildlife habitat inventory as "cumulatively constituting a Regional Resource warranting additional consideration as part of a regional Urban Forest Canopy, stormwater, and watershed management strategy, to be developed."

We urge Metro to move forward as expeditiously as possible, to implement regional stormwater management and watershed planning that will complement its Goal 5/Natural Resource work. We feel an Urban Forestry program, whether or not it's a regulatory program, is desperately needed for the Portland metropolitan region. The urban forest canopy is viewed as the "first line of defense" by stormwater managers. Metro's Regional Parks and Greenspaces program has conducted an urban forest canopy inventory. Dr. Joe Poracsky, PSU Geography Department, is conducting an urban forest canopy inventory for the City of Portland. A recent gathering of Urban Forestry program directors and experts from across the U. S. in Wilsonville discussed the importance of linking urban forestry programs to urban environmental issues. It's time that Metro put the urban forest canopy on the regional agenda. Those sites scoring 1 on the Metro wildlife inventory is the place to start that process, along with Metro's Regional Parks and Greenspaces urban forest canopy

5151 NW Cornell Road • Portland, Oregon 97210 • (503) 292-6855 • FAX (503) 292-1021
www.audubonportland.org

inventory. We are hopeful that you will formally adopt an amendment to Resolution 02-3177 that will set that action into motion.

The Science: The United We Stand Foundation has testified before you questioning the science behind your work, saying in its letters that it's "junk science." Any suggestion that Metro's inventory methodology is flawed flies in the face of reality. Every Metro technical and policy committee has recommended that you adopt the riparian and wildlife inventories. The methodology was developed with continuous input from U. S. Fish and Wildlife Service, National Marine Fisheries Service, Oregon Department of Fish and Wildlife, Natural Resources Conservation Service, Oregon Department of Environmental Quality, and the U. S. Environmental Protection Agency. Each of these agencies has testified on several occasions in support of the inventory methodology. A blanket accusation that Metro's inventory is "junk science", with no recommendations regarding making the inventory better, as some critics have done, does not deserve serious Council consideration.

Private Property Rights and Regulations: You are acting on an inventory, not a program decision whether to fully or partially protect sites; not on how to protect sites. Critics who make assumptions about the ESEE analysis or program are doing just that, making assumptions and assertions, not providing useful input into the process. In fact, property values, both those of the affected and adjacent properties are more likely to increase than decrease. Certainly, you have ample research evidence to conclude that property values region wide will increase as a function of increased environmental quality and quality of life.

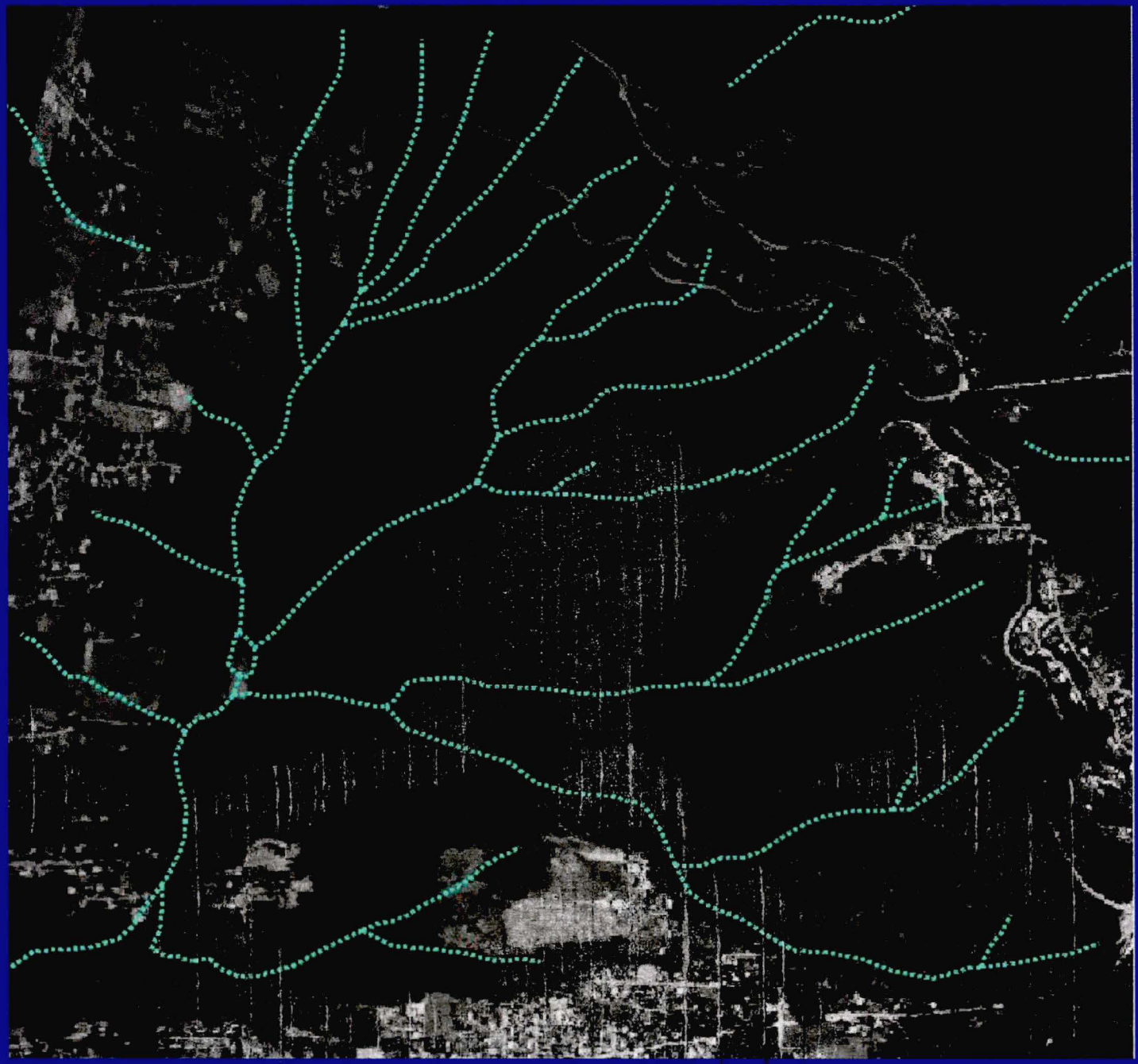
Notification and Public Involvement: The 2040 planning process has been ongoing since 1994. Over 17,000 people responded, in writing, to Metro during the development of the Region 2040 Concept and many hundreds of people took the time to attend numerous Title 3 and Goal 5 workshops over the past five years. Assertions that this process is closed and has not consulted with property owners and other citizens is preposterous. Over 60% of the region's voters indicated in Metro's polls that they favor restricting development on private property to afford better protection of streams and fish and wildlife habitat.

The fact that some critics have failed to participate in the process is their own fault, not Metro's. They have had numerous opportunities to participate but have chosen, instead, to engage in generic negative rhetoric, fear mongering, and demagoguery. Such tactics are no substitute for the hard work that other citizens, agencies, property owners, Metro staff, and Council has devoted to the process to ensure a scientifically based, credible program is adopted by the full Council.

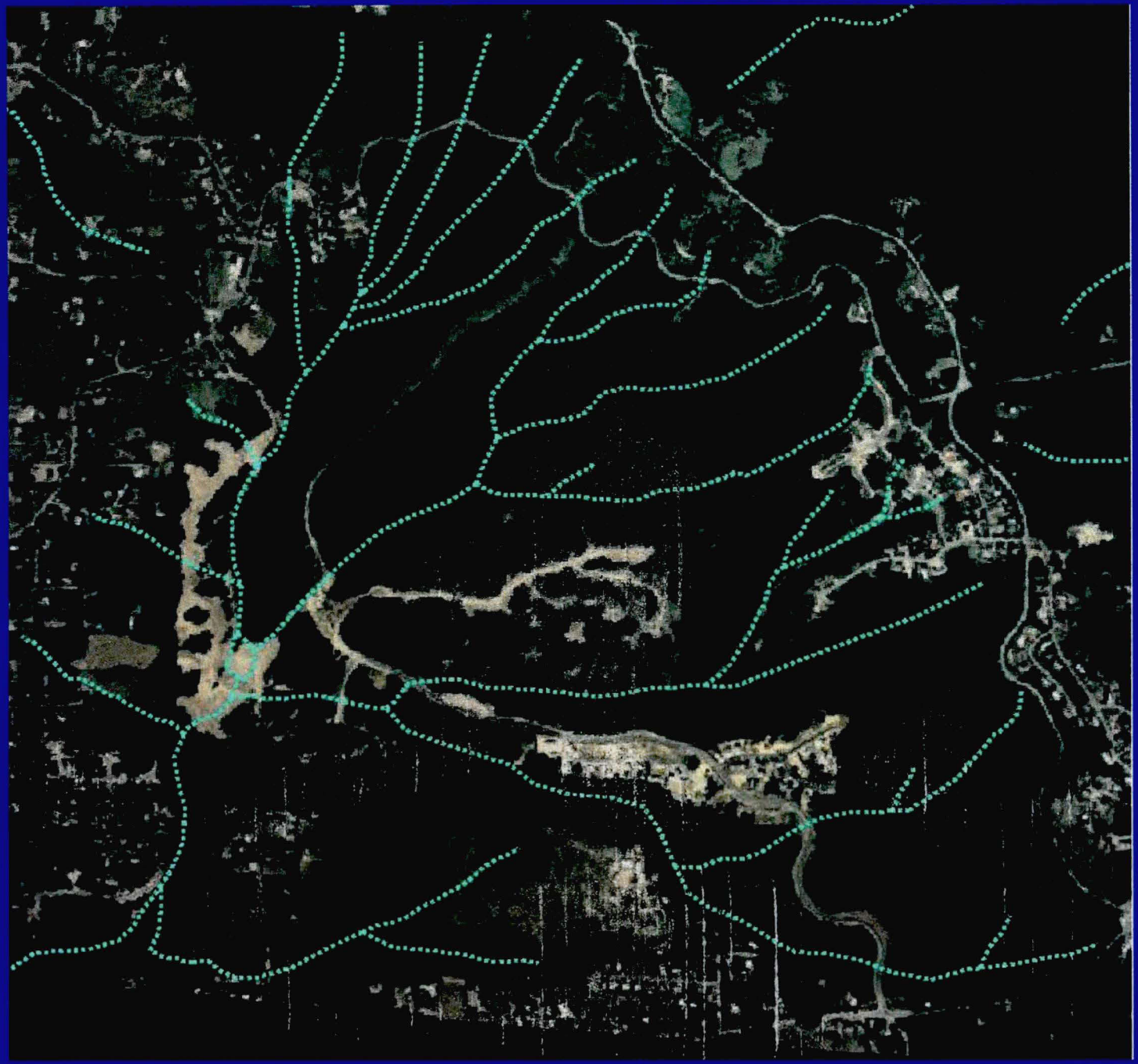
Respectfully,

Mike Houck,
Urban Naturalist and
Chair, Natural Resources Working Group
Coalition for a Livable Future

Ron Carley,
Urban Conservationist
Board of Trustees
Coalition for a Livable Future

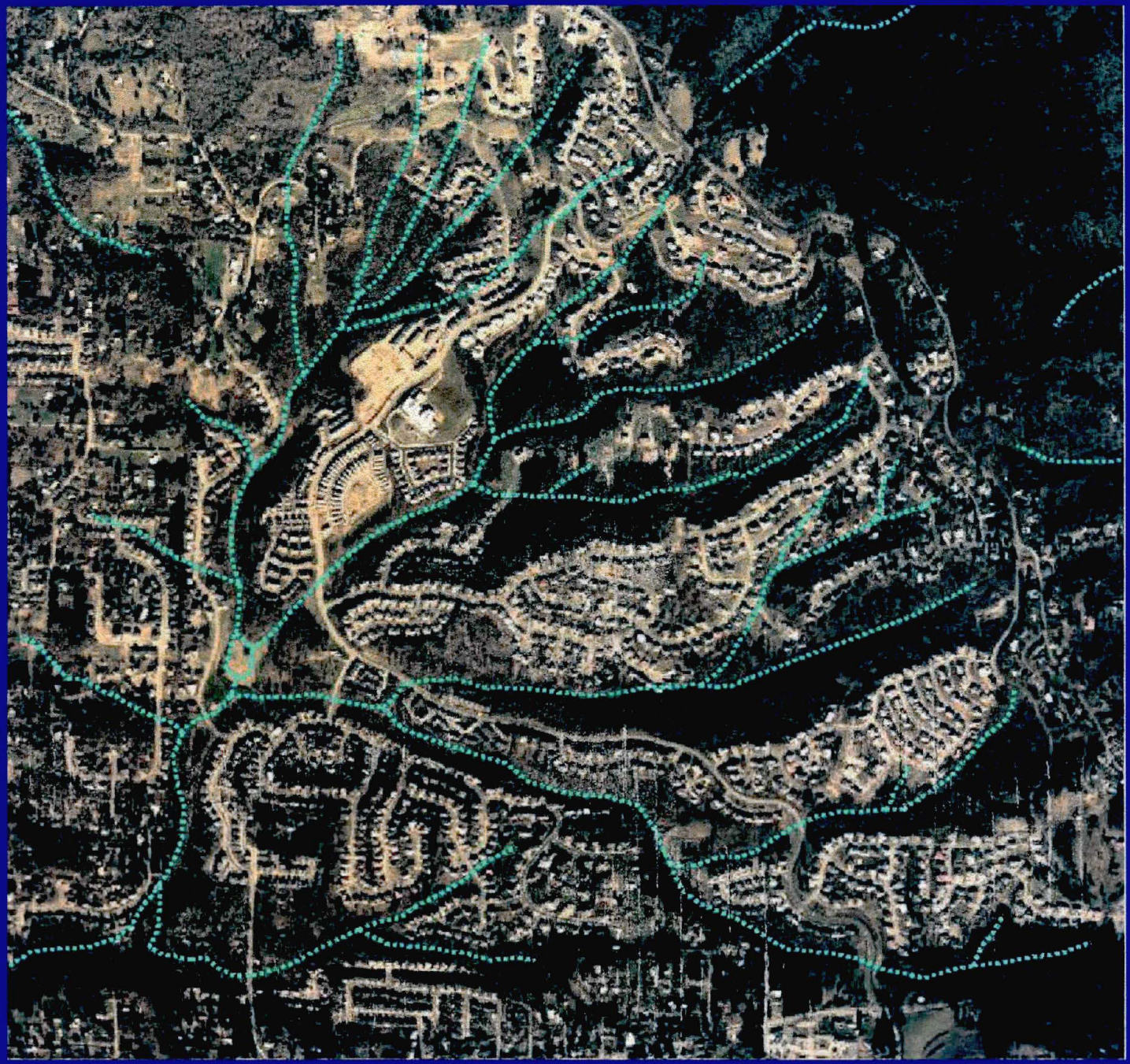


Cedar Mills Creek Watershed, 1984



Cedar Mills Creek Watershed, 1990

Cedar Mills Creek Watershed, 1994



Cedar Mills Creek Watershed, 2002

Subdivision clear-cut in Rock Creek Watershed, near NW Skyline Blvd, Portland, Oregon (4/9/02).

M E M O R A N D U M

080802c-Z/

METRO

TO: Mike Burton, Executive Officer
FROM: AC Andy Cotugno, Director, Planning Department
DATE: November 14, 2001
SUBJECT: IMST review of Metro's Science Paper

Attached please find a copy of the review of Metro's Scientific Literature Review completed by the State's Independent Multi-Disciplinary Science Team (IMST), appointed by Governor Kitzhaber to provide scientific guidance.

My basic conclusion is that the IMST have found our scientific base sound. They confirm that looking at natural resource functions in a comprehensive and interconnected way, as we have done, is needed. Nothing in their review suggests that we are heading in the wrong direction. Accordingly, I believe that we can move to the next steps confidant that our scientific foundation is firm.

Specifically, the IMST states: "In general, our congratulations on compiling a most impressive array of documents for guidance of policy development as it relates to Goal 5 and the Oregon Plan for Salmon and Watersheds. While there is always more that can be done, we are impressed with the thoughtfulness and thoroughness of what has been done. This document will not only be valuable to staff of Metro working on recovery of listed Pacific salmon, but it will also benefit those working on similar tasks in other urban centers throughout Oregon and the region."

They further state "Nonetheless, we do find that in general the information in Attachment 1 (Metro's Scientific Literature Review) is well organized, reasonably comprehensive but concise, and scientifically sound in the conclusions reached. We are impressed with the recognition of the importance of considering:

- Stream, riparian and upland condition and function individually and in aggregate,
- Individual sites, individual reaches and streams, whole watersheds and aggregations of adjacent watershed,
- Time scales that range from days to at least decades, or longer.

The IMST has called these three elements the 'landscape perspective', meaning it has crucial elements of space and time. The importance of connectivity, both longitudinal and lateral, of the streams system and the role that Metro as a regional planning agency can play in supporting protection and restoration of streams and uplands in order to provide healthy watershed function is particularly important."

There are several specific comments and Metro staff responses attached. These include the need to bolster some areas of our paper, IMST comments that have future Goal 5 program

implications as well as larger program implications that relate to stormwater management and healthy watersheds.

I would be happy to discuss any aspect of these materials at your convenience.

c: Carl Hosticka, Chair, Natural Resource Committee

INDEPENDENT MULTIDISCIPLINARY SCIENCE TEAM (IMST)

State of Oregon

John Buckhouse
Wayne Elmore
Stan Gregory
Kathleen Kavanagh
James Lichatowich
Logan Norris, Chair
William Pearcy

October 9, 2001

Andrew Cotugno
Planning Dept. Director
METRO
600 NE Grand Avenue
Portland, OR 97232-2736

Dear Mr. Cotugno,

The IMST has reviewed the documents that you provided us, as requested in your August 2 letter. Our review focused on

- Attachment 1, Metro's Scientific Literature Review for Goal 5, and
- Attachment 2, Functional Values and Landscape Features Identifying Significant Riparian Corridors and Rating Systems.

We did not review attachments 4, 5, 7 because these deal with policy. Attachment 6 served as a resource document, and was therefore not a focus of this review.

In general, our congratulations on compiling a most impressive array of documents for guidance of policy development as it relates to Goal 5 and the Oregon Plan for Salmon and Watersheds. While there is always more that can be done, we are impressed with the thoughtfulness and thoroughness of what has been done. This document will not only be valuable to staff of Metro working on recovery of listed Pacific salmon, but it will also benefit those working on similar tasks in other urban centers throughout Oregon and the region.

Comments on Attachment 1

We do suggest you consider retitling Attachment 1 (the "Literature Review"). A literature review should critically evaluate published literature and draw pertinent conclusions based on that literature (Day 1994). Attachment 1 draws heavily on the literature to provide perspective about a variety of topics important to Goal 5 and salmonid recovery, but it does little analysis of the literature in which clear distinctions are made between primary and secondary literature, or in which the quality or certainty of what is reported is determined. An example (there are many) is the citation to the Pacific Rivers Council (1996) on page 8. We believe this document draws conclusions but is not reporting original research or data. We think it is important to make distinctions between scientific findings that are based on specific data and the conclusions or opinions of knowledgeable people. This is not to say that the opinions or judgments are incorrect or inappropriate, only that in citing the literature it is important that the reader know whether the information or conclusions being reported is based on specific data or if it is more general conjecture. In addition, this attachment is not comprehensive in what is "reviewed". For instance, there are many more references on stream flow moderation (page 21) than the one cited (Marx et al. 1999).

Nonetheless, we do find that in general the information in Attachment 1 is well organized, reasonably comprehensive but concise, and scientifically sound in the conclusions reached. We are impressed with the recognition of the importance of considering:

- Stream, riparian and upland condition and function individually and in aggregate,
- Individual sites, individual reaches and streams, whole watersheds and aggregations of adjacent watersheds,
- Time scales that range from days to at least decades, or longer.

The IMST has called these three elements the "landscape perspective", meaning it has crucial elements of space and time. The importance of connectivity, both longitudinal and lateral, of the streams system and the role that Metro as a regional planning agency can play in supporting protection and restoration of streams and uplands in order to provide healthy watershed function is particularly important. We encourage METRO to find ways in which they can work collaboratively with entities outside their jurisdictional boundaries to towards this end.

We consider having and using the landscape perspective crucial to accomplishing the goals of the Oregon Plan, and we are sure it is equally important for achieving Goal 5. We are pleased to see it well represented in Attachment 1.

The section titled "Watershed Perspective" of Attachment 1 is generally well done, but we note the tendency to equate healthy with pristine, and further that it suggests that healthy means unchanged. This is most apparent in the bulleted list on page 7, but it appears in other places as well. The problem is that this approach fails to recognize the role of natural processes and the episodic nature of their intensity and frequency; it also does not reflect the resiliency of the systems in question. Additionally, it implies that anything less than pristine is not healthy. The reality is that (conceptually, at least) a gradient of health, and intensity, frequency, and extent of disturbance exist.

On page 31 of the document, Metro recognizes that urban ecology is a relatively new field and poses the question: Whether the use of scientific data from non-urban ecosystems is appropriate in an urban setting? For an answer to this question, Metro cited a report from a City of Portland peer review panel that it was appropriate until information from urban research is available (City of Portland 2000). We agree with your conclusion that the literature dealing with other types of ecosystems can (and needs to) be used in considering urban areas. As this is an important question it needs more attention in the body of the document; it is not always clear when scientific literature is from urban settings and when it is from other settings. Making a clear distinction would help the reader interpret the text and it would make it easier to identify areas where gaps in information exist and help to set research priorities. We also feel that you should define or describe what you mean by an urban area, and how urbanization as a process can be described. This will help in assessing the degree to which findings from non-urban settings can be extrapolated to urban settings or areas in which urbanization is occurring.

Our following specific comments on Attachment 1 are organized to focus on hydrology, fish passage, habitat and water quality, which the IMST considers of paramount importance in accomplishing the goals of the Oregon Plan for Salmon and Watersheds.

Hydrology

- The literature review does not quantify or describe (except in very general terms) the effect of increasing impervious area on key hydrologic parameters such as discharge volume, stream stage and hydrograph shape, in the various spatial and temporal scales in which this is important. We suggest study and analysis of the following primary data sources: Booth and Jackson (1997), Dinicola (1990), Schueler (1994), Beyerlein (1999), Booth (1991), Hollis (1975), Leopold (1968), Perret (1974), Harbor (1994), Law (1994), and Snodgrass et al. (1997).
- The relationship between total impervious area (TIA) and effective impervious area (EIA) is important and deserves more attention than it is given. This is particularly important because of the likelihood that, at least initially, TIA is likely to be the parameter of choice because it is relatively easily measured. EIA is a valid (and logical) concept, but there is limited research available showing its relationship with TIA. It seems likely that protection of both good quality sites and the restoration of degraded sites is likely to focus on management of EIA. For this reason more explanation and documentation is needed to help with the critical policy decisions that need to be made.
- It is important to distinguish between small streams that originate or are largely contained in the urban area and the larger streams that flow through urban areas. The reason is that urban decision makers have greater degrees of influence over the smaller streams within their jurisdictional boundaries.
- We appreciate the watershed level approach espoused in attachment 2 (for instance page 101), but urge that focus on site specific actions not be lost. Recall the popular bumper sticker of some years back to "Think Globally and Act Locally".
- The restoration section beginning on page 101 gives little attention to hydrology. In fact urban modified hydrology could well be the single most important factor influencing salmonid recovery in urban areas. Since the role of this document is to provide guidance for policy development, then it is important that it give more attention to reducing, minimizing or preventing increased total impervious area, and/or to other factors that will influence hydrology in urban streams. As examples – note the lack of a hydrologic perspective in figure 12, and the lack of provision for hydrologic monitoring on pages 111-112.

Fish Passage

- Fish passage is fundamental to the successful utilization of habitat by most species, but especially anadromous species. Attachment 1 notes (on page 31 and again on page 41) the remarkable degree to which habitat has been lost due to underground piping of streams or presence of impassable culverts. However it provides no guidance on the specific aspects that make these a problem. For instance, what characteristics make culverts impassable and what design characteristics can mitigate these effects?
- The text of the restoration chapter appears to give little attention to fish passage issues, although fish passage does appear in table 11 and figure 12. There are two aspects that deserve more attention.

- Guidance to literature on culvert and road crossing design that will help accomplish the strategy of "preserve the best". Doing it right initially will help the most.
- Guidance on restoration of specific sites where fish passage is a problem. This is in addition too the watershed level analysis of this problem. Extensive work has been done on fish passage through culverts, especially at road crossings. This information should be referenced in Attachment 1. Additionally, evaluation of opportunities for recovery in settings where underground piping has been done deserves attention. While there may only be a limited number of instances in which such recovery can be accomplished, dismissing this approach in total is not appropriate. Three broad strategies should be considered, and where appropriate made part of site-specific restoration actions.
  - Mitigate the factors that make underground piping not conducive to fish passage. What are these factors? Is it light? Is it gradient? Is it flow velocity? Likely it is some or all of these plus other factors. In some situations, some of these problems may be solvable.
  - Connect upstream reaches of piped streams to other streams where fish passage is not a problem. In some instances this "engineering" approach may potentially be used to reconnect quality upstream habitat to the larger elements of the watershed where fish passage is able to occur. While this may not be desirable in instances where significant downstream segments of piped streams reemerge, it may be a useful strategy in instances where the downstream segments are piped directly into larger streams.
  - Reconnect piped streams to the open environment, i.e. bring them back above ground (daylighting). There are likely instances where such a strategy could be used. For instance in parks, parking areas, and perhaps transportation rights-of-way it may be feasible to recreate an above ground stream. While initially it may not function effectively, with time it may be able to develop characteristics that will increase its use as habitat for some aquatic species.

Habitat

The discussion of fish habitat is found in several different sections of Attachment 1. While the habitat discussion cannot be considered a complete review of the literature, it is a good discussion of most of the relevant topics related to fish habitat.

- The document correctly states that watersheds are hierarchical (page 2). There is also a corresponding hierarchical organization of salmonid populations. Individual fish, populations and metapopulations are one way to describe levels in that hierarchy.
- References to fish habitat in the document refer almost exclusively to habitat requirements at the level of individual fish. There is a growing amount of literature addressing habitat requirements of populations and metapopulations. These areas include:
  - Habitat complexity and connectivity permit the expression of life history diversity at the population level, which in turn helps the population deal with environmental variation and natural disturbance.

  - Sustainable recovery of salmonids will require healthy habitat for individual fish, populations, and metapopulations.
  - The habitat requirements and effects of urbanization on those requirements for all three levels should be included in the document.
- The hierarchical organization of Pacific salmon should be incorporated into the recovery strategies. For example, the general strategy of protecting the best and restoring the rest (page. 106) is well accepted. However, the implementation of such a strategy could revert to a patch work of sites whose choice was opportunistic (for example, a willing land owner) rather than strategic (for example, the need to restore metapopulation connectivity). Many habitat restoration or protection projects need to take advantage of opportunity, but to be effective, those choices need to be embedded into a broader view of habitat and Pacific salmon ecology, a view that includes the population and metapopulation levels of organization.

Water Quality

- Attachment 1 and the riparian corridor assessment (Attachment 2) briefly address water chemistry, temperature, and toxic substances. The report clearly notes the emphasis on riparian vegetation and habitat functions.
- Many of the water quality issues have been addressed previously under Metro's *Policy Analysis and Scientific Literature Review for Title 3* (Metro 1997). While extensive analysis of water quality issues would be redundant, Metro needs to integrate the assessment of riparian conditions and management alternatives with the water quality requirements and management plans. That integration is addressed only in a table of published buffer widths required for different ecological functions (Table 5, page 68).
- The overall list of water quality issues is complete, and three water quality parameters (temperature, sediment, dissolved oxygen) are described in the overview. The overview and much of the literature review on water quality are derived from very general ecological literature (e.g., Naiman et al. 1992, Allan 1995, Gregory et al. 1991).
- Literature on water quality in urban areas and influences of riparian conditions is extensive but is only briefly addressed in Attachment 1 (pages 41–45). In addition, the extensive water quality information in the Metro area is only briefly mentioned and selected highlights are presented. Metro may want to consider incorporating more of the analysis that was addressed in the *Policy Analysis and Scientific Literature Review for Title 3* (Metro 1997) and in recent publications by USGS, DEQ (monitoring sites), and other environmental agencies.
- There is very little discussion of the links between water quality parameters and riparian area condition (pages 59–61).
- Toxic substances are not addressed except for brief acknowledgement of pesticides. Urban sources of toxic substances are not discussed at all.
- The role of the Clean Water Services (CWS) is noted under the section titled "Regional and Local Conservation, Assessment, and Restoration Efforts". Interaction between Metro and CWS, DEQ, and EPA could strengthen the literature review and the conceptual link between riparian management and riparian corridors. There is also no discussion of the recent designation of the Portland harbor as an EPA Super Fund site.

Nor does the document contain any discussion of the implementation team and possible issues related to riparian areas and management.

Comments on Attachment 2

- It is not clear how Attachment 2 is to be used. A narrative could be used to provide perspective about the document, including its organization and how it is to be used.
- We note that the rating system appears to focus on current condition to the exclusion of future potential condition. While current condition is critical to the policy approach of protecting the "best remaining" it does not provide guidance for restoration of situations or areas where some degradation has occurred. As an example of what we mean – the criteria for mapping landscape features specify that a landscape feature has primary functional value if it *is* in the specified condition, but gives no guidance on determining which sites could attain this condition with restoration efforts.

Thank you for the opportunity to review this material. We are encouraged to see the effort being taken by Metro, The City of Portland, Seattle and King County to address the urban related issues that are important in the recovery of depressed stocks of salmonids.

Sincerely yours,

Logan A. Norris, Chair
Independent Multidisciplinary Science Team

Cc: IMST plus others

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November 15, 2001

Independent Multidisciplinary Science Team (IMST) comments on Metro's Science Literature Review and staff response

IMST comment	Staff response	Address in science paper	Address in program element	Urban research priority
General Comments				
1. Metro should consider retitling the its "Scientific Literature Review for Goal 5" since it is more reporting on the science than a critical evaluation of published literature.	Agree, Metro will rename the report.	✓		
2. Metro should distinguish between primary research (scientific findings based on specific data) and secondary literature (opinions of knowledgeable people) in its citations of the literature.	Agree, will make this distinction in the revised paper.	✓		
3. The paper is not comprehensive in what is reviewed. For example, there are many more references on stream flow moderation.	Agree in part. Additional citations will be added as indicated; however, it was necessary for staff to limit the number of papers reviewed to those most relevant to our current work. In addition, some functions such as streamflow moderation, erosion, pollutant removal, etc., were covered in Metro's White Paper for Title 3 Water Quality and Flood Management. The IMST also stated that Metro's paper is "...scientifically sound in the conclusions reached."	✓		
4. Metro should work with entities outside its jurisdiction to support protection and restoration of streams and uplands in order to provide healthy watershed function. IMST supports Metro's landscape perspective in addressing both the Oregon Plan and Goal 5.	Agree. Metro is making it a priority to work with other entities in developing both its inventory and program elements.		✓	
5. The paper tends to equate healthy with pristine, and doesn't recognize the role of natural processes and resiliency of natural systems.	Agree, will revise paper to concentrate on a gradient of health and underscore the role of disturbance in this continuum.	✓		

IMST comment	Staff response	Address in science paper	Address in program element	Urban research priority
6. Regarding urban area science, IMST agrees with Metro's conclusion that literature dealing with other types of ecosystems can (and needs to) be used in considering urban areas. Metro should identify which papers cited are from rural areas and which from urban to help identify information gaps and set research priorities. Metro should define what is meant by "urban area."	Metro relied upon urban research findings where available, and will identify which literature is urban and which is not. However, Metro's focus is to establish what is the best available information/science (also what Goal 5 requires), not take on substantial primary research or set priorities for urban research. A definition of "urban area" will be included in the revised paper.	✓		✓
Hydrology				
7. Regarding hydrology - the paper does not quantify or describe, except in general terms the effect of increasing impervious area. There is not enough about total impervious surfaces and effective impervious surfaces.	Agree in part. Citations will be added t the report. Stormwater management on a watershed basis is a program yet to be initiated. While it is understood that this is vital to a comprehensive program, there are not enough resources or time to initiate such an effort at this time. When Goal 5 is completed, stormwater management has been identified as part of Metro's future work program.	✓	✓	
8. Metro should distinguish between small streams that originate or are largely contained within the urban area and the larger streams that flow through the urban area. Local governments, including Metro, have greater influence on the smaller streams.	Agree. The paper will be revised to reflect this.	✓		
9. Metro should not lose the site-specific actions even with a watershed level approach.	Agree. Some references will be added to the paper and site-specific actions will be addressed in the ESEE and program phases of this work.	✓	✓	
10. The restoration chapter gives little attention to hydrology, and the document needs to give more attention to reducing, minimizing, or preventing increased total impervious area.	Agree in part. The Aquatic and Riparian Habitat chapter contains a detailed review of the impacts of urbanization especially on hydrology. Relevant citations will be added to more fully describe total impervious surface and effective impervious surface issues. In addition, discussion of hydrologic monitoring will be added in the restoration chapter.	✓		

IMST comment	Staff response	Address in science paper	Address in program element	Urban research priority
Fish Passage				
11. Regarding fish passage. More information should be provided about obstacles to fish passage including culverts. What characteristics make culverts impassable and what design characteristics can mitigate these effects? Guidance to literature on culvert and road crossing design and guidance on restoration of specific sites where fish passage is a problem is needed. Examples include connecting upstream reaches of piped streams to lower sections, and "daylighting" of piped streams.	Metro has completed a culvert inventory characterizing most culverts in the region. In addition, Metro's inventory indicates piped sections of streams. Citations will be added to the science paper to clarify fish passage requirements. However, most of these issues will necessarily be addressed in the program phase where requirements for protection and restoration will be made clear. Also, the Greenstreets work effort and WRPAC Utility Crossings recommendations are available now as best management practices for local governments within the region.	✓	✓	
Habitat				
12. Metro should include literature and develop a management approach that addresses habitat requirements of populations and metapopulations, not just individual fish needs.	Agree. Will revise paper to note the hierarchical view of fish populations and corresponding factors important to protection and restoration of habitat. This issue will also be addressed in the program phase.	✓	✓	
13. While "protect the best and restore the rest" is a well-accepted strategy, an opportunistic program (for example, a willing landowner) may be less effective than a strategic one (for example, the need to restore metapopulation connectivity).	Agree in part - will explore this in the program phase when we get to that task. Identifying restoration priorities may also be an important task for an urban research group.		✓	✓
Water Quality				
14. Metro should integrate its white paper on water quality done for Title 3 with this paper.	Disagree in part. The Title 3 white paper is a stand-alone document that provides the science behind water quality and floodplain management regulations. However, staff does propose to include additional references on these topics in its revised science paper for Goal 5.	✓		

IMST comment	Staff response	Address in science paper	Address in program element	Urban research priority
15. Metro should expand the discussion of urban water quality parameters and riparian area condition and link them. Additional literature on water quality in the metro area should be added with reference to USGS and DEQ monitoring sites.	Agree in part. Metro will add more discussion and references to link riparian area condition and water quality. In addition, local data such as DEQ water quality limited streams, USGS studies, and additional references will be added to the inventory chapter, which will include watershed specific data where possible.	✓		
16. Metro should add material about toxic substances, especially urban sources of toxic substances.	Agree. The paper will be revised to reflect this.	✓		
17. Metro should encourage more interactions between CWS, DEQ and EPA as this could strengthen the literature review and the conceptual link between riparian management and riparian corridors. Include a discussion of the Portland harbor as an EPA Super Fund site and the implementation team.	Agree. Will revise the paper accordingly. In addition, data and studies from EPA, DEQ, USGS, and Clean Water Services will be added to the inventory element. At the program phase further interaction will be explored.	✓	✓	
Significance Matrix				
18. Regarding the "Significance Matrix" and mapping, a narrative explaining its organization and how it will be used should be done.	Agree. However, this is not to be included in the Science Literature Review but in the Inventory and Significance chapter.			
19. Metro's rating system appears to focus on current condition to the exclusion of future potential condition.	Agree in part. This is the approach of the State's Goal 5 - Identify existing resources. Identification of potential restoration sites as well as restoration program alternatives is part of the program phase. The Metro Council, after coordination with local governments and the public will then determine the best approach for the region.		✓	

METRO

TO: David Bragdon, Presiding Officer
FROM: Andy Cotugno, Director, Planning
DATE: December 13, 2001
SUBJECT: City of Hillsboro's December 5, 2001 Submittal Challenging Metro's Proposed Functional Criteria for Identifying Riparian Corridor Resources

During the December 5, 2001 Natural Resources Committee hearing on Resolution No. 01-3141 (establishing criteria to define and identify regionally significant fish habitat), the City of Hillsboro submitted a technical review of Metro's riparian corridor inventory methodology prepared by their consultants, Fishman Environmental Services. This technical review raises a number of concerns which, in the words of the consultant, "jeopardize the entire Metro riparian corridor program."

Attached is the staff response. The bottom line is that the criticisms do not negate, but rather help to refine and substantiate, Metro's science literature review and criteria for mapping riparian corridor resources. Staff has prepared a point by point response to the City of Hillsboro's technical review and has identified minor changes to the scientific literature review. Staff recommends proceeding with the determination of significant regional resources based on our current functional criteria.

As you know, the State's Independent Multi-Disciplinary Science Team (IMST) appointed by Governor Kitzhaber to provide scientific guidance, recently reviewed Metro's Scientific Literature Review. The seven members of the IMST include Logan Norris, Chair, John Buckhouse, Wayne Elmore, Stan Gregory, Kathleen Kavanagh, James Lichatowich, and William Pearcy. They found our science document to be "well organized, reasonably comprehensive but concise, and scientifically sound in the conclusions reached." While the IMST makes several recommendations to bolster our science document, nothing in their review suggests we are heading in the wrong direction:

> "In general, our congratulations on compiling a most impressive array of documents for guidance of policy development as it relates to Goal 5 and the Oregon Plan for Salmon and Watersheds. While there is always more that can be done, we are impressed with the thoughtfulness and thoroughness of what has been done. This document will not only be valuable to staff of Metro working on recovery of listed Pacific salmon, but it will benefit those working on similar tasks in other urban centers throughout Oregon and the region."

I would be happy to discuss any aspect of these materials at your convenience.

STAFF RESPONSE TO

CITY OF HILLSBORO'S TECHNICAL REVIEW OF METRO GOAL 5 RIPARIAN CORRIDOR PROGRAM

December 12, 2001

Introduction

This report contains Metro's response to a critique of Metro's riparian corridor inventory prepared by Paul Fishman on behalf of the City of Hillsboro (Fishman 2001). Fishman and his staff reviewed Metro's Scientific Literature View, with special focus on Table 5; this table provides the foundation for the Riparian Corridors GIS model in Metro's Goal 5 inventory process.

Fishman's critique and Metro's analysis of that critique will help strengthen our scientific approach, and our legal standing, in the future. The criticisms he provides do not negate our literature review or our GIS model, but help refine and substantiate it.

In general, the comments and criticisms Fishman offer appear to be geared towards reducing the amount of land considered to be part of the riparian corridor. This has been an ongoing point of disagreement between Metro and certain entities within the Tualatin Basin. Some of the key issues include:

- Differences in ecological definitions and terminology. This is a common and ongoing difficulty in the ecological sciences.
- Local jurisdictions' interest in maintaining full control over land use decisions.
- Local jurisdictions' concern over the amount of developable land. Jurisdictions with extensive stream/floodplain systems, such as those in the Tualatin Basin, are potentially susceptible to reduction of the developable land base due to their extensive riparian resources.

Our response addresses the first of these three issues. In addition, we address a number of Key Points raised by Fishman, including:

1. Confusion of terminology between riparian science and land management.
2. Confusion between Goal 5 resource and Goal 5 impact area.
3. Inclusion of the 100-year floodplain as part of the riparian corridor resource.
4. Lack of incorporation of the effects of impervious surfaces into Metro's methods.
5. Minimum riparian corridor width recommendations (Metro's Table 5).
6. Metro's Functional Values and Landscape Features for identifying significant riparian corridors.

Key Point 1: Confusion of terminology between riparian science and land management

We found confusion between Key Points 1 and 2 in that both appeared to be addressing various aspects of the definition of riparian, riparian buffer zone, etc. However, Fishman does not disagree with Metro's definition of riparian corridor and agrees that it is consistent with Goal 5, thus we do not wish to argue semantics of various other terms here, beyond agreeing that there is disagreement. Here we address Fishman's statement regarding Metro's apparent confusion

between riparian science and land management. Fishman argues against Metro's methods on page 5 of his report:

> ...starting with Table 5 and continuing through the remaining 'building blocks' defines 'riparian corridor' and sometimes 'riparian area' as a distance from water features (streams and rivers) within which certain ecological functions may be provided. Metro is confusing an ecosystem type with a planning area (i.e. a buffer or management zone). The riparian corridor, as defined in Oregon Statewide Goal 5, and in science portions of the Metro Scientific Literature Review itself, can only be delineated by either: a) observation or measurement of field conditions that satisfy specific parameters; or, b) characterization of stream and landscape features, such as geomorphology, that allow approximations of the riparian corridor location.

Fishman states in the next paragraph that Goal 5 allows two choices to define riparian corridors – through an inventory process or a standard setback. We have conducted an inventory using high resolution aerial photography and GIS layers including topography, floodplains and wetlands, and land features including stands of trees, woody vegetation, meadows, and steep slope areas that are located along the region's streams and rivers. We believe there is a logical link between the ecological functions for riparian areas and the specific land and water features that are associated with those functions (note that land and water features are also what are measured in field surveys; the theoretical basis behind this approach is no different from conducting field surveys). Ecological functions provided by riparian areas are ultimately what Metro is trying to protect. The recommended widths in Table 5 estimate the distances needed to provide for critical riparian functions based on science. GIS provide a tool to approximate the region's riparian corridors from an ecological function approach. This is not land management, but science.

Goal 5 defines the riparian area as the "area of transition from aquatic to terrestrial ecosystems." See page 13 of Metro's Inventory Report for Metro's definition of riparian areas using an ecological functions mapping approach. This approach has been endorsed by Metro's advisory committees (Goal 5 TAC, WRPAC, MTAC) and by state and federal resource agencies (ODFW, DEQ, USFWS, NMFS, EPA). In addition, scientific literature supports an ecological functions approach to defining the riparian area (Kauffman et al. 2001):

> [Referring to Naiman and Decamps' (1997) definition:] "...these definitions describe the influences of hydrologic processes and increased availability of moisture on the streamside or floodplain biota, but do not include the multiple functional roles that encompass how the terrestrial biota influences the geomorphology, hydrology, or stream processes. Interactions between terrestrial and aquatic ecosystems include modifications of microclimate, alteration of nutrient inputs from hill slopes, contribution of organic matter to streams and floodplains, and retention of inputs."
>
> ...From an ecosystem perspective, riparian zones are defined in terms of their multiple functional roles as the interface between aquatic and terrestrial environments. Therefore, riparian zones are defined as the three-dimensional zones of direct physical and biotic interactions between terrestrial and aquatic ecosystems; boundaries of the riparian zone extend outward to the limits of flooding and upward into the canopy of streamside vegetation.

Key Point 2: Confusion between Goal 5 resource and Goal 5 impact area

Fishman's primary criticism in this portion of the critique seems to revolve around Metro's inclusion of the Zone of Influence within the riparian corridor, as described on Page 17 of Metro's Scientific Literature Review:

> Beyond the riparian area is the "zone of influence" – the transition area between the riparian area and the upland forest where vegetation is not directly influenced by hydrologic conditions (Naiman et al. 1992; Gregory et al. 1991). Vegetation in this zone still influences the stream by providing shade, microclimate, fine or large woody materials, nutrients, organic and inorganic debris, terrestrial insects, and habitat for riparian-associated wildlife...The zone of influence may be considered part of the riparian area (Gregory et al. 1991; Naiman et al. 1992; Naiman and Decamps 1997; Knutson and Naef 1997).

Fishman argues that the Zone of Influence is not part of the riparian corridor but instead, comprises part of the "impact area," a planning term defined in Goal 5. However, in ecological systems, a transition area (sometimes called an ecotone) is the *gradient* of change between two types of habitats, ecosystems, etc. This transition area is what defines the riparian area under Goal 5 (i.e., "the area of transition between the aquatic and terrestrial ecosystems"). By definition, this implies there is no clear demarcation between riparian and upland habitats within the Zone of Influence, and also implies that it is very difficult to ascertain where the influence of hydrologic conditions subsides completely. As the inset paragraph above indicates, a number of very reputable riparian ecologists consider the Zone of Influence to be part of the riparian zone. Metro is providing a well-established ecological definition of riparian corridors. "Impact areas" is a political term. From an ecological standpoint, the Zone of Influence should be considered part of the riparian corridor.

Key Point 3: Inclusion of the 100-year floodplain as part of the riparian corridor resource

On page 8 of his report Fishman states, "The 1-year floodplain (perhaps the 2 or 3-year) is appropriate to include in the riparian corridor, not the 100-year..." We disagree, and so does much of the scientific literature. As Metro's literature review indicates, the linkage between the stream and its floodplain is of critical importance to fish and wildlife. According to the scientific literature, the riparian zone of influence includes the extent of the 100-year floodplain because of the movement of the stream or river across the floodplain through time (Gregory and Ashkenas 1990; Schueler 1995; Spence et al. 1996). Chris May, whose literature is cited in Metro's Scientific Literature Review, concurs (May, personal communication 7 Dec. 01). As Fishman states, "The channel migration zone (CMZ), a concept discussed later in this report, might be a feature to use instead of the floodplain to determine the extent of the riparian corridor." The CMZ is the lateral extent of likely channel movement over the past 100-year period (May 2000), or where aquatic or wetland habitat could possibly exist at some time in the future (Pollock and Kennard 1998). The 100-year flood is often used for purposes of delineating the extent of the floodplain (May 2000), although the CMZ includes *lower terraces and hillslopes adjacent to the floodplain* where the stream is likely to meander (Pollock and Kennard 1998). Based on the definition of CMZ, Fishman appears to be arguing for widths that may actually be, in some cases, more extensive than the 100-year floodplain.

It is important to note that there has been general (although not complete) consensus on Metro's use of the 100-year floodplain in the Goal 5 context, as documented in public records from Goal 5 Technical Advisory Committee meetings and the Metro Natural Resources Committee. Metro's current methodologies have also been approved by the Water Resources Policy Advisory Committee, Metro Technical Advisory Committee, and the Scientific Literature Review has been peer-reviewed by the Independent Multidisciplinary Scientific Team (IMST). Input from these sources, including jurisdictions within the Tualatin Basin, resulted in Metro's excluding developed (impervious) areas from the 100-year floodplain in the GIS model criteria, but inclusion of undeveloped 100-year floodplains in the model. The 100-year floodplain was also included in the base-level protections provided by Title 3 and as such, has already been accepted as part of the riparian corridor based on extensive advisory committee and peer review. Metro should retain the 100-year undeveloped floodplain within its GIS model delineating riparian corridors.

Key Point 4: Lack of incorporation of the effects of impervious surfaces into Metro's methods

In his critique, regarding imperviousness Fishman states:

> This very important factor of stream health is all but ignored in the riparian corridor inventory method developed by Metro...This ignores the fact that a number of the stream health parameters they are trying to protect with "riparian areas" are not or will not be properly functioning because of the effects of imperviousness in the watersheds... (Fishman p. 8)

We agree that imperviousness is a critical factor that must be addressed in urban ecosystems (it is also something that will change over time). However, Fishman incorrectly states that Metro does not address this factor. Metro's model criteria[1] are designed to identify "forest, woody vegetation, or low structure vegetation/undeveloped soils landcover type" – in other words, the opposite of impervious surfaces. By carefully mapping these landcover types, Metro has identified existing *pervious* surfaces along the region's streams and wetlands and the remaining flood areas. Metro has also mapped remaining forest canopy within upland portions of the region.

Metro recognizes the adverse effects of land use and impervious surfaces on basin hydrology cannot be mitigated by riparian corridor protection efforts alone. However, identifying remaining pervious surfaces, which is part of Metro's GIS riparian model, is an essential step in addressing overall basin hydrology; additional planning efforts to address harmful effects of impervious surfaces are also necessary if overall ecological conditions of urban watersheds are to be improved. Imperviousness will be addressed in more detail after Goal 5 is complete, during the watershed and stormwater planning processes.

Fishman states that large areas of Washington County already contain high levels of imperviousness, and uses this as an argument against as much protection for streams in such

[1] Metro's Ecological Functional Values and Landscape Features (the table describing Metro's GIS riparian model variables).

areas (Fishman p. 8). To back up this argument he quotes Schueler (1994) (Fishman p. 9). Schueler advocates dividing urban streams into three *management categories* (our emphasis) based on imperviousness and stream quality. Fishman appears to be confusing management/policy issues with science, as he charges Metro of doing. Metro is in the inventory phase of the Goal 5 process; the type of protection to be administered is not part of this process, but is part of the policy process that will deal with implementation measures.

Metro's Green Streets Program and scientific literature indicate that the effects of imperviousness can be mitigated to an unknown extent in urbanized areas (i.e., Total Impervious Area versus Effective Impervious Area; see Metro's Scientific Literature Review). The Scientific Literature Review also addresses impervious surfaces beyond the riparian primary and secondary zones in the GIS model. How new developments are built, as well as the potential for retrofitting existing development, will be important issues to address in the *program* phase of Goal 5, when specific strategies are formed and implemented to deal with imperviousness and other key urban watershed issues. Because imperviousness can be mitigated, downgrading sites based on surrounding imperviousness is not appropriate during the inventory stage.

Key Point 5: Minimum riparian corridor width recommendations (Table 5)

Using an outdated version of the model and literature review, Fishman critiqued Metro's Table 5, "Range of recommended minimum riparian area widths for fish and wildlife habitat." Please note that the following categories are obsolete in Metro's current review due to the deferral of the "Riparian Wildlife Habitat and Connectivity" criterion:

- Wildlife needs
- Edge effect
- Movement corridors

This renders 8 out of 25 Literature Review Forms (specific criticisms) irrelevant to this assessment.

Fishman identified Table 5 as his primary concern and criticism, stating, "In all too many cases, the source literature has been mis-interpreted, mis-represented, incorrectly used, or used in ways that are misleading" (Fishman p. 1), and that "the basic problem with this set of building blocks is that the foundation block, Table 5 of the Scientific Literature Review, is seriously flawed" (Fishman p. 4). A very careful review of Fishman's comments versus the original literature demonstrates relatively minimal problems with Table 5. We address Fishman's concerns (where they are relevant to the current literature review and model) in Appendix 1, attached.

When we agreed that there might be a problem with a reference within Table 5, we assessed the potential impacts on Metro's GIS model criteria by calculating the average recommended widths for the remaining literature. When the literature suggested a range of values, we used the midpoint of the range for that reference's entry into the averaging. The primary question we asked was, would we reach a different conclusion for the model criterion without the reference in question? Fishman is clearly arguing for narrower widths, but careful review of the information

presented in Table 5 and the associated literature sometimes actually argue for more extensive widths. These are discussed in Appendix 1 and summarized in Key Point 6.

The IMST committee reviewed the Scientific Literature Review and returned very positive comments about the review in general, and Table 5 in particular. In addition, we are in receipt of a document authored by an interagency team of fisheries biologists convened in Portland, Oregon in March 2001 to draft criteria for protecting at-risk salmonids (USFWS 2001). Based primarily on four documents (FEMAT 1993; USDA 1995; Quigley et al. 1997; NMFS 1998), the team drew the following conclusions, based on a functional approach quite similar to Metro's, for distances from stream channels needed to provide for LWD recruitment, stream shading, and sediment filtering:

- LWD recruitment: 1 SPTH
- Shade: 1 SPTH
- Sediment filtering: 1 SPTH

Fishman's criticisms that Metro's widths are too extensive is based partially on riparian wildlife, a criterion that Metro has deferred. When we re-assessed the literature sources in Table 5 to ensure consistent application of average widths we found our model widths justifiable based on science and that if anything, several widths in the model should be increased.

Key Point 6: Metro's Functional Values and Landscape Features for Identifying Significant Riparian Corridors

On page 9 of Fishman's critique, he comments again on Metro's intermixing of riparian terms, then states, "This error in terminology is really not the problem, however. The problem is that Metro has misapplied or incorrectly used information from scientific literature in Table 5, and then uses the information in Table 5 as justification for defining the riparian resources region-wide."

The individual criticisms of the literature cited in Metro's Table 5 have been addressed in Appendix 1. Table 1 below summarizes, by GIS model criterion, the Metro staff recommendations contained within Appendix 1. Our findings suggest that the Microclimate and shade, Bank stabilization, sediment and pollution control, and Large wood and channel dynamics criteria should either remain as is or the widths increased. Streamflow moderation and water storage and Organic material sources should remain as is.

Table 1. Summary of Metro staff recommendations

GIS model criterion	Reference (from Appendix 1)	Metro staff recommendation
Microclimate and shade	Raleigh et al. 1986	Remove this and the three other Raleigh references from Table 5. No model changes recommended.
	May et al. 2000	No action or increase from 100 ft (30.5 m) to 113 ft. (34.4 m).
	Johnson and Ryba 1992	Remove the word "minimum" from Table 5 title caption.
	Spence et al. 1996	No action.
	FEMAT 1993	No action.
	FEMAT 1993	Remove FEMAT reference from Table 5 within this criterion.
	FEMAT 1993	No action or increase Primary Functional Value from 100 ft (30.5 m) to 292 ft (89 m).
Streamflow moderation and water storage	No criticisms received.	N/A
Bank stabilization, sediment and pollution control	May et al. 2000	No action or increase to Primary Functional Value from 100 ft (50 m) to 164 ft (50 m) in low-slope areas.
	May et al. 2000	No action or increase Primary Functional Value from 100 ft (30.5 m) to at least 164 ft (50 m) in low-slope areas.
	Johnson and Ryba 1992	No action.
	Johnson and Ryba 1992	Correct Table 5 to reflect correct metric conversion.
	Spence et al. 1996	No action.
Large wood and channel dynamics	May et al. 2000	No action or increase Primary Functional Value from 150 ft (45.7 m) to 164 ft (50 m).
	FEMAT 1993	No action.
	FEMAT 1993	Remove FEMAT reference from Table 5 within this criterion.
Organic material sources	Spence et al. 1996	No action.
	FEMAT 1993	No action.

Conclusion

Metro's vision statement states:

> Our region places a high priority on the protection of its streams, wetlands and floodplains to maintain access to nature; sustain and enhance native fish and wildlife species and their habitats; mitigate high storm flows and maintain adequate summer flows; provide clean water; and create communities that fully integrate the built and natural environment. As ribbons of green, stream and river corridors maintain connections with adjacent upland habitats, form an interconnected mosaic of urban forest and other fish and wildlife habitat, and contribute significantly to our region's livability...The overall goal is to conserve, protect and restore a continuous ecologically viable streamside corridor system, from the streams' headwaters to their confluence with others 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

The RUGGOs state:

> ...the region should "Manage watersheds to protect and ensure to the maximum extent practicable the integrity of streams, wetlands and floodplains, and their multiple biological, physical, and social values," as well as that "A region-wide system of linked significant wildlife habitats should be developed. This system should be preserved, restored where appropriate, and managed to maintain the region's biodiversity.

After careful review of Fishman's critique, we have identified several easily corrected problems within Metro's Scientific Literature Review. We have identified and responded to areas of disagreement between Metro and the City of Hillsboro's consultant. The scientific literature, as well as state and federal natural resource agencies, support Metro's Goal 5 inventory approach and specific criteria in their current form. After making the minor changes recommended above, staff recommends proceeding with the determination of Significant Riparian Resources based on our current guidelines and GIS model.

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Appendix 1. Staff response to riparian corridor width recommendation criticisms made by Paul Fishman on behalf of City of Hillsboro.

Reference	Table 5 criterion	GIS model criterion	Fishman's criticism(s)	Agree or disagree?	Comments and relevance to Metro's GIS model
Raleigh et al. 1986	Aquatic wildlife	Bank stabilization, sediment and pollution control	States that "riparian width" is not identified as a habitat suitability model variable, but instead reflects the paper's authors' opinion.	Agree in part. Fishman is correct that riparian width was not a model variable, but professional opinion of the experts who wrote the paper may be valid. However, because this is not based on empirical data and the authors' opinion has been called into question, we suggest removing this reference from Table 5, as well as the other Raleigh / Hickman and Raleigh references. To examine whether the criterion parameters should be changed we found the midpoint in each recommended range, then calculated the average of the five remaining literature references. Our analysis shows an average of 125 ft (38.1 m) without the Raleigh / Hickman and Raleigh references.	Reexamination of Table 5 without the first four references results in a potentially wider features mapped, on average, than retaining the references in the table. **No action recommended** on GIS model criterion based on this literature reference (although it could be justified that the Primary Functional Value width be increased).
May et al. 2000	Temperature regulation and shade	Microclimate and shade	Fishman has a problem with May's table and terminology. He will have to take up the terminology arguments with May. Fishman states that 7 out of 10 references have a low-end range of less than 30 m (98.4 ft; our analysis shows an *average* of 85.3 ft, or 26 m, calculated same as above).	Disagree. Although Fishman is correct in his assessment of different habitat types providing different amounts of shade (e.g., willow communities provide less shade than old growth forests), the scientific literature documents increases in water runoff temperature as it runs across exposed soils or impervious surfaces (Brosofske et al. 1997). In our opinion, 98.4 ft (30 m) is a bare minimum required to protect stream temperatures in our region, in which many streams are already temperature-limited. In addition, one of the narrowest recommendations in May's Table 2 provides for only 50-60% shade; removing the 50-60% reference from the average calculation for that table results in an average of 89.13 ft (26.74 m). We would like to further note that Chris May is a well-known and highly respected Pacific Northwest researcher and as such, his professional opinion is of value.	Water temperature is a critical factor for salmonids and other aquatic organisms. In an urban setting, where harmful thermal influences prevail, the mid-point of the literature values is unlikely to be sufficient. Metro's Table 5 citations currently average 110.9 ft (33.8 m); removing the May reference brings the average recommendation to 113.1 ft (34.5 m), higher than that in Metro's GIS model primary functional value of 100 ft. **Recommend increasing the GIS model's Primary Functional Criterion width, or leaving it as is.**
May et al. 2000	Sediment & erosion control	Bank stabilization, sediment and pollution control	Fishman's primary problem with this use of the citation in the context of sedimentation revolves around May's Table 4, which lists a number of citations with ranges lower than 30 m. Part of the second paragraph under Fishman's critique (beginning "May continues...") does not relate to sediment removal and appears to have been copied from the previous May evaluation.	Disagree. Fishman states that Metro fails to elucidate the "apparent arbitrary nature of [May's] recommendation..." We do not agree that May's recommendation was arbitrary, however, we agree our recommendation needs clarification, which we present here. Fishman is correct in commenting that May attributes (we believe, correctly) the high variability of the range of recommended widths to differences in soil type, slope, vegetation, and whether the studies are short term or long term (long-term studies recommend buffers $\geq$ 98.4 ft, or 30 m). May discusses this on pages B-23 through B-25. Most Vegetated Filter Strips (VFS) use grass as a filter medium and should not be directly compared to studies involving natural riparian vegetation. VFS appear to require a narrower buffer than riparian forests to trap the same amount of sediments. On page B-25 May comments that "The use of VFS to treat runoff has merit, but this treatment should be done outside the boundaries of the stream-riparian ecosystem." In other words, catch the sediments before they enter the riparian zone if possible (arguing for even wider widths). Metro's GIS model criterion addressing Primary Functional Value recommends "a forest, woody vegetation, or low structure vegetation/undeveloped soils landcover type within 100 ft (30.5 m) of a surface stream" (e.g., pervious surfaces), and goes out to 200 ft (61 m) in steep slope areas. Presumably, the desired future condition for most of the (to-be-protected) riparian areas will be riparian forest. We should focus on the literature addressing riparian forests. Accordingly, removing VFS/grass filter references, and the two references only resulting in 50% sediment removal (in our opinion insufficient), from May's Table 4 results in an average recommended width (calculated same as before) of 190.9 ft (58.2 m), about triple that currently recommended as a Primary Functional Criterion.	**Recommend increasing the GIS criterion's Primary Functional Value to at least 164 ft (50 m) or leaving it as is** (pervious surfaces). This may (but may not in heavily urbanized areas) provide sufficient sediment control in riparian forests. It also provides for sufficient riparian width as bare ground and non-woody vegetation areas are provided with sufficient protection and restoration to create the dominant natural streamside habitat in our region, riparian forest.
May et al. 2000	Pollutant removal	Bank stabilization, sediment and pollution control	Fishman's primary problems with this use of the citation in the context of general pollutant removal are similar to those in the Sediment Removal comments (above).	Disagree. Pollutants in urban systems are often bound to soil particles. Relating to this fact, on page B-27 May states: "Therefore, removal of fine sediment and organic matter often removes a large percentage of the pollutant load as well." This actually argues for wider widths within this GIS criterion because of the Sediment Removal portion, assessed above. Please see the discussion in the previous May critique for a discussion of VFS versus riparian forest buffers; grassy areas have different pollutant removal capacities than riparian forests. Removing the VFS references from May's Table 5 results in an average recommended width (calculated as before) of 147 ft (44.9 m). Again, however, sediments are a primary consideration in dealing with pollution.	Recommendation same as that in the previous entry (May 2000, Sediment and erosion control): **recommend increasing Primary Functional Value width to at least 164 ft (50 m) in low-slope areas or leaving it as is.** This is necessary but not sufficient, as pollutants and excess nutrients should also be controlled at their sources.
May et al. 2000	LWD	Large wood and channel dynamics	Similar to his other comments on May's 2000 paper. Says May's selection of 262 ft (79.9 m) is arbitrary.	Disagree in part. Metro's Primary Functional Criterion for Large Wood and Channel Dynamics is forested landcover or hydrologically connected wetland within 150 ft (45.7 m) of a stream, or within undeveloped floodplains (large wood is carried from the floodplain to the river during flood events as a natural process). Only the secondary function in the GIS model extends out to 262 ft (79.9 m). Calculating the mid-points for the ranges in May's Table 3 yields an average mid-point of 160 ft (48.75 m). Three out of five of Metro's Table 5 literature citations for LWD recommend one SPTH; of the other two, one is May (262 ft) and one recommends 150 ft (45.7 m). National Marine Fisheries Service (1998) defines Site Potential Tree Height as	**Recommend increasing primary criterion to 160-165 ft (50.0 – 50.3 m) or leaving it as is.**

Appendix 1. Staff response to riparian corridor width recommendation criticisms made by Paul Fishman on behalf of City of Hillsboro.

Reference	Table 5 criterion	GIS model criterion	Fishman's criticism(s)	Agree or disagree?	Comments and relevance to Metro's GIS model
				tallest dominant trees at 100 years, given site conditions (there are definitions that range both higher and lower, but NMFS is probably a reliable reference). According to the NMFS definition, these heights range from about 130 ft (39.6 m) to over 200 ft (61.0 m) for second-growth conifers in riparian areas; second-growth conifers are commonly found in Portland area riparian forests (Hennings 2001). The mid-point of NMFS' SPTH range is 165 ft (50.3 m) (Spence et al assume 170 ft in westside forests), matching well with the mid-point calculations of May's Table 3. We believe that 150 ft (45.7 m) for the Primary Functional Criterion is not too wide, but may be too narrow. We will not be able to recover, or even preserve existing runs, of salmonids in the Metro region without sufficient LWD, as it is a key structural component vital to salmonid life history requirements. LWD also traps sediments, provides habitat for aquatic insects (a key salmonid food source), and helps retain salmon carcasses, a critical element of Pacific Northwest ecosystems (Cederholm et al. 2001). LWD is known to be sparse in urban habitats. Narrower forests in the Portland Metro region have, on average, lower percentages of canopy cover (Hennings 2001) and therefore have less potential for providing LWD. The selection range for the GIS model's secondary criterion (forested land cover within 150-262 ft (45.7 – 79.9 m) of a stream or developed floodplain) is in our opinion sound; erring on the side of caution for this criterion is a wise choice.	
Johnson & Ryba 1992	Temperature & shading	Microclimate and Shade	Problem with Metro calling a range of values a "minimum" recommendation. Fishman does not appear to disagree with the 98.4 ft (30 m) protection distance. Also, problem with exclusion of large rivers (i.e., Johnson and Ryba make specific comments regarding the value of riparian vegetation *in small and intermediate sized streams*).	Agree in part. Many of the riparian area widths listed in Metro's Table 5 reflect recommended ranges (including both a minimum and a maximum), thus the use of the word "minimum" may not accurately reflect the information provided. Fishman's comment regarding large rivers is a relatively minor one, given that the vast majority of waterways in our area are small- to medium-sized streams. However, developing different protection measures for large rivers may be appropriate, and certain entities in the region (e.g., City of Portland and the Willamette Restoration Initiative) have studied or are studying this issue. For the time being, however, it is far wiser to place protection on the Columbia and Willamette Rivers using the current criteria than not to protect them at all. See also our discussion under this criterion for May 2000 criticisms, as well as page 116 in Metro's Literature Review.	**Recommend changing Metro's Table 5 to remove the word "minimum." Consider developing separate programs later for the region's large rivers. In the meantime, afford large rivers the same protection as other waterways.**
Johnson & Ryba 1992	Sediment removal	Bank stabilization, sediment and pollution control	Problem with Metro calling it "minimum." Large versus small information was also re-addressed. Also, may have a problem with using the 10 ft (3.0 m; sand) to 400 ft (121.9 m; clay) range, although this is unclear.	Agree in part. See entry above this one to address "minimum" and small streams versus large rivers. The volcanic nature of our urban region produces an abundance of clay soils, so if Fishman is arguing about the range (10-400 ft, or 3.0-121.9 m), we would have to conclude that the higher end of the range (clay) given in the Johnson and Ryba reference would be most appropriate. A review of Metro's GIS model criterion indicates protection substantially less than 400 ft (121.9 m), unless a floodplain is present.	**No new recommendation.**
Johnson & Ryba 1992	Nutrient removal	Bank stabilization, sediment and pollution control	Same problems with Metro calling it "minimum" and large versus small rivers. Fishman also caught a metric conversion error (Metro's Table 5 minimum range number was lower than it should have been).	Agree in part. Thanks to Fishman for the correction. Amusingly, Fishman made an error correcting our incorrect conversion, quoting a range of 10-14 m rather than 10-40 m. We have already addressed Metro's use of the term "minimum" above.	**Correct Metro's Table 5 to reflect metric conversion correction (should read: 33-141 ft).**
Spence et al. 1996 (ManTech Report)	Bank stabilization	Bank stabilization, sediment and pollution control	Fishman states that they cannot find the specific 170-ft bank stabilization reference within the ManTech Report's text, but that Metro contradicts the references' authors and that we ignore the time perspective.	Agree in part. Metro located 170 ft (51.8 m) recommendation from the Stream Shading section in the ManTech report (page 217) or the SPTH recommendation in the conclusion, meant for overall protection of most key ecological functions. Regarding streambank stability, the ManTech Report (p. 225) states that "retention of riparian vegetation within 0.5 site-potential tree heights of the active stream channel appears necessary to maintain streambank stability." It further states that this may not be adequate in systems with large floodplains and steep slope sites and *that long-term protection may require wider buffers*. Protecting channels in urban ecosystems is critical, because sediments from stream channels are a major source of instream sedimentation; for example, sediments from stream channels in southern California provided approximately two-thirds of the total sediment yield (Trimble 1997). One-half of the authors' suggested westside SPTH of 170 ft (51.8 m) for protection would be 85 ft (25.9 m). However, this criterion also addresses sediment and pollution control, which Metro has addressed above and which fall well within the ranges set forth in the GIS model criterion.	This part of the GIS model criterion has the least influence on protection width or area; the criterion is driven more by sediment and pollution control, which have more extensive requirements. Thus this correction does not change the GIS model criterion. **Recommend no action** except that already outlined in other parts of this criterion above.

Appendix 1. Staff response to riparian corridor width recommendation criticisms made by Paul Fishman on behalf of City of Hillsboro.

Reference	Table 5 criterion	GIS model criterion	Fishman's criticism(s)	Agree or disagree?	Comments and relevance to Metro's GIS model
Spence et al. 1996	Organic litterfall	Organic material sources	Fishman states that they cannot find the specific 170-ft organic materials source reference within the ManTech Report's text, but that Metro contradicts the references' authors.	Agree in part. Metro located the 170 ft (51.8 m) recommendation (1 SPTH as defined by Spence et al for westside forests) from the Stream Shading section or elsewhere in the ManTech report (page 217). This does differ from ManTech's recommendations. On page 218, the ManTech Report states that although little research has been done, FEMAT assumes that most fine organic litter originates within 30 m from the channel. "In deciduous woodlands," Spence et al state, "windborne leaf litter may travel farther from source trees than needles or twigs from coniferous vegetation; consequently, riparian buffers may need to be wider than suggested above to protect natural levels of organic inputs." The predominant riparian forest type in the Metro region at this time is deciduous, suggesting that larger widths may be necessary to supply sufficient organic materials to stream systems. Organic matter comprises a major portion of the foundation of aquatic food webs; we believe the current criterion is more likely to protect adequate organic debris supplies than narrower widths, based on Spence et al.'s comments.	**Recommend no action.**
Spence et al. 1996	Shade	Microclimate and shade	Fishman's comments on time perspective and that he cannot locate reference within text are similar to those for already discussed for the ManTech Report.	Disagree. Spence et al's discussion of stream shading on page 217 includes this statement: "...several authors have concluded that buffers of 98.4 ft (30 m) or more provide adequate shade to stream systems...The generalized curves presented by FEMAT (1993) suggest that cumulative effectiveness for shading approaches 100% at a distance of approximately 0.75 tree heights from the stream channel." Assuming Spence et al.'s 170-ft (51.8 m) westside SPTH, this translates to 128 ft (39.0 m). Spence et al. frequently appear to go with FEMAT's recommendations, which were developed specifically for the Pacific Northwest and the Northwest Forest Plan. We see no problem, after reading the discussion on page 217, with using the 170-foot specification. Again, as discussed above, thermal impacts are a major problem in urban areas and as such, we should afford the best protection possible from such deleterious impacts.	**Recommend no action** (except that outlined in other parts of this criterion above).
FEMAT 1993	Shade	Microclimate and shade	Fishman states that Metro has cited the reference incorrectly, by using a general statement within the text that is not substantiated. Fishman further cites a statement from the reference: "No target management or threshold level for these habitat variables can be uniformly applied to all streams. While the approach is appealing in its simplicity, it does not allow for natural variation among streams." Fishman also states that the FEMAT report does not give "minimums."	Disagree. First, it is important to note that the team leader for authorship of this reference was Jack Ward Thomas, former chief of the U.S. Forest Service. Many others with vast professional experience and knowledge were members of the team that developed this Pacific Northwest-oriented reference. While it is true that the figure Fishman references (Figure V-12) is not directly derived from empirical data, it does represent the combined professional opinion of some of the premier wildlife biologists in the country. The reason Metro is using multiple ecological variables in the GIS model is to avoid a "one size fits all" (uniform) approach, and instead to use a *consistently applied* set of criteria based on science and what is on real features identified through high-resolution aerial photography and satellite imagery – which vary from site to site and represent existing variability within stream systems, thus we are not using a "one size fits all" approach. There is certainly a difference between "consistently applied" and "uniform," as the GIS model maps demonstrate (one does not see uniform buffers around streams except when the stream is impaired and defaults to the 50 ft minimum protection). The recommended GIS model widths represent a science-based, practical *cutoff* for mapping ecological functions that are likely to exist within the urban region, a reasonable approach for a regional model. Many functions probably extend further than the cutoffs we have proposed, thus perhaps Metro has set forth threshold levels; Metro could always remove the threshold and map each feature as far out as it can reasonably be assumed to extend. It is also worth noting that this approach, and the ecological criteria Metro has proposed, have been approved by the Goal 5 Technical Advisory Committee, which includes biologists from ODFW , NMFS and USFWS, among other wildlife, geomorphologic, and ecological specialists.	**Recommend no action other than removing "minimum" from Ecological Functional Values and Landscape Features table.**
FEMAT 1993	Bank stabilization and sediment control	Bank stabilization, sediment and pollution control	Fishman states that Metro is ignoring a discrepancy in source document, rendering our use of reference inapplicable. Also, same argument that FEMAT does not give "minimums."	Agree in part. Metro does not necessarily agree that there is a discrepancy in the source document, because there is a recognized relationship between crown width and three height (Silva Ecosystem Consultants 1996), although the reference authors do not expressly state so. However, the root strength concept discussed in the reference on page V-26 refers to both stream channel and upslope (steep) areas, thus is not necessarily riparian-specific. Use of this reference for the bank stabilization criterion is questionable enough to merit exclusion in Metro's Table 5. Metro's use of the term "minimum" has already been addressed.	**Recommend removing FEMAT reference from Metro's Table 5, Bank Stabilization and Sediment Control category.** This does not influence the GIS model because many references recommended wider distances.
FEMAT 1993	LWD	Large wood and channel dynamics	Problem with use of the word "minimum." Also, Fishman states that: "In fact, this simplification of the data for the purposes of suggesting management goals is a process against which the authors expressly warn."	Disagree. Metro's use of the term "minimum" has already been addressed, as has the second part of Fishman's criticism (see the first FEMAT reference in this table).	**Recommend no action.**

Appendix 1. Staff response to riparian corridor width recommendation criticisms made by Paul Fishman on behalf of City of Hillsboro.

Reference	Table 5 criterion	GIS model criterion	Fishman's criticism(s)	Agree or disagree?	Comments and relevance to Metro's GIS model
FEMAT 1993	Organic litterfall	Organic material sources	Problem with FEMAT's diagram and Metro's use of "minimum."	Disagree. Fishman will need to contact the FEMAT team of authors to address his problem with the discrepancy within the text of Figure V-12 (page V-26). The error does not render the graph irrelevant, nor does it confound the reader's understanding of the information if taken in context with the graph itself. Metro's use of the term "minimum" has already been addressed.	**Recommend no action.**
FEMAT 1993	LWD and structural complexity: snags and downed wood	Large wood and channel dynamics	Problem with FEMAT's diagram and Metro's use of "minimum."	Agree in part (but not for the same reasons). This FEMAT citation deals more directly with LWD and snag resources for terrestrial wildlife. Because Metro has removed the wildlife criterion from the GIS model (although not in the outdated version used by Fishman), the other FEMAT LWD citation (see above) is more appropriate for instream LWD. This reference, however, could be appropriately used when Metro addresses the terrestrial wildlife component of the region's watersheds. Calculating the average Table 5 recommendations as was done previously within this table, but omitting the FEMAT reference for 1 SPTH, results in an average width of 151 ft (46.0 m) (assuming SPTH of 170 ft). This is very close to the GIS model Primary Functional Value of 150 ft (45.7 m).	**Recommend removing this FEMAT reference from Metro's Table 5, Large Wood and Channel Dynamics category.** This does not influence the GIS model because many references recommended wider distances.
FEMAT 1993	Microclimate	Microclimate and shade	Fishman states that the FEMAT numbers illustrate the maximum distance effects from a clear-cut edge into upslope forests in the Cascades, whereas Metro claims this as a minimum width. Fishman notes that the FEMAT report estimated these widths because they lacked empirical data. Other confusion and minor comments.	Metro's use of the term "minimum" has already been addressed, as has the credibility of the FEMAT authors' professional opinions. Recalculating mid-point ranges on Table 5 without the FEMAT reference results in an average width of 292 ft (89.0 m), or approximately triple Metro's GIS model's Primary Functional Value of 100 ft (30.5 m), including a reference for 75 ft (22.9 m) that pertains solely to windthrow. Shade is not really the issue here (due to narrower protection width requirements) as much as temperature and relative humidity. Metro has located an additional reference (Ledwith 1996), conducted in Six Rivers National Forest of California, dealing specifically with the effects of buffer width on air temperature and relative humidity along riparian zones. This study only examined widths of up to 492 ft (150 m); mean air temperature was still declining towards the stream at the 150 m limit, and relative humidity was still increasing towards the stream at the 150 m limit. It is our opinion that Metro's Primary Functional Value for this criterion is insufficient to provide full protection of microclimate conditions within the riparian zone, although the curves in Figures 1 and 2 in the Ledwith paper suggest that 100 ft (30.5 m) represents a good cutoff, after which point temperature declines and humidity increases near the stream are less extreme.	**Recommend either increasing Primary Functional Value or leaving criterion as is.** Increasing the criterion would likely provide enhanced protection for microclimate and shade along streams.

M E M O R A N D U M

METRO

Date: July 23, 2002
To: Andy Cotugno, Paul Ketcham
From: Lori Hennings
Re: City of Hillsboro's Technical Review (Fishman report): Wildlife portion

You may recall that we received a critique of Metro's riparian corridor inventory prepared by Paul Fishman on behalf of the City of Hillsboro (report date November 2001, available online at http://www.fishenserv.com/metrog5/). Fishman and his staff reviewed Metro's Scientific Literature Review, now entitled "Metro's Technical Report for Goal 5," with special focus on Table 5 (now Table 7 in the January, 2002 science paper draft). At that time we opted to address only non-wildlife components of the critique, and did so in a document dated December 12, 2001 ("Staff Response to City of Hillsboro's Technical Review of Metro Goal 5 Riparian Corridor Program"). We focused on non-wildlife issues because the riparian corridor inventory significance decision was up before Council just a week after we received the critique, and the wildlife habitat component had been decoupled from the riparian inventory.

We are now approaching a final wildlife habitat model and have addressed the remaining criticisms. The attached table details staff response to these criticisms. Because Fishman's critique was riparian-focused, all of the criticisms relate to the Connectivity to Water criterion in our current Wildlife Habitat model. Although after careful review Fishman identified four errors (a relatively minor error rate, considering the volume of material staff covered), there is absolutely no evidence that we should alter any aspect of our existing Wildlife Habitat model. In fact, our 2001 field research validated all four of the criteria currently in the model, including the proximity to water criterion.

Thus I am recommending a few relatively minor changes to Table 7 and related textual information within the next draft of the science paper. As before, Fishman's critique and Metro's analysis of that critique will help strengthen our scientific approach, and our legal standing, in the future.

Please let me know if you have any questions.

cc: Mark Turpel

Staff response to wildlife-related riparian corridor width recommendation criticisms made by Paul Fishman on behalf of City of Hillsboro.

Reference	Table 7 (formerly Table 5) criterion	GIS model criterion	Fishman's criticism(s)	Metro Staff Response	Comments and relevance to GIS model
Environment Canada 1998	Recommended riparian widths for fish and wildlife; Terrestrial habitat; Movement Corridors function.	Connectivity to water	Metro cited this reference as a buffer width recommendation for wildlife movement on one side of the stream, when in fact the reference meant the recommendation as *total* corridor width.	Agree. Quoted from Environment Canada's report: "Corridors designed to facilitate species movement should be a minimum of 100 metres wide, and corridors designed for specialist species should be a minimum of 500 metres wide. Studies have demonstrated that wider corridors are more effective at facilitating species movement." Note that this is not riparian-specific, thus if a stream is sufficiently wide or deep to be impassable to certain species, it is functionally a one-sided corridor.	**Correct Technical Report, including Table 7 (formerly Table 5).**
May 2000	General wildlife habitat; terrestrial habitat	Connectivity to water	Fishman states: "The basis for May's choice of a 328 ft wildlife buffer is unsubstantiated in his paper. Metro has cited the original text correctly, but the source document is unsound." And also: "The main focus of this article is on in-stream habitat rather than the adjacent riparian habitat. The article only devotes one paragraph and one table to the discussion of wildlife use of the stream-riparian ecosystem and riparian buffer widths for wildlife habitat."	Disagree. First, note that taking the average (using the midpoint if a range of widths is provided) for all terrestrial vertebrates listed in Dr. May's literature review yields a width of 325.8 ft (99.3 m), a difference of less than 2-1/2 feet - less than one percent of Metro's recommendation of 328 feet. Second, consider Dr. May's professional credentials. Christopher May, Ph.D., is an environmental science/engineering researcher at the Applied Physics Laboratory, College of Oceanography and Fisheries at the University of Washington. He is also an adjunct professor at Western Washington University, UW-Tacoma, The Evergreen State College and Seattle University. He has taught courses in stream ecology, conservation biology, salmonid ecology, water pollution and stormwater best management practices (BMPs). He is currently researching the effectiveness of stormwater BMPs in mitigating the ecological effects of urbanization on stream ecosystems. Dr. May's conclusions are based on peer review of his Pacific Northwest based research and thorough literature reviews Third, though the May paper does not include a major discussion of the literature for terrestrial wildlife, it does not negate the importance of the buffer widths obtained from those references.	**No action recommended.**
Knutson and Naef 1997	Terrestrial habitat	Connectivity to water	Fishman: "The reference does not make any new recommendations as to what buffer widths may be appropriate for Pacific Northwest riparian habitats...In order to determine if the reference was cited correctly, it would be necessary to go back to the references used by Knutson and Naef to determine the context in which the buffer recommendations were made..." And also: "No mention of willow flycatcher or western pond turtle or recommended buffer widths for these species was found in the reference..."	Disagree with first part, agree in part with second part. This was a literature review, designed to consolidate information rather than necessarily making new recommendations. The references used in the Knutsen and Naef paper, which was prepared for the Washington Department of Fish and Wildlife and was extensively peer-reviewed. The necessity of revisiting each cited paper to check for citation accuracy seems excessive, as it could be applied to every research paper that cites any other paper. We agree in part with Fishman's second comment – we found numerous mention of Neotropical migrants (the Willow flycatcher is one), but no specific reference to the Willow Flycatcher. Taking the average recommended widths from the Knutson and Naef paper (using the midpoint if a range of widths is provided) for Neotropical migrant species yields a width of 358 ft (109 m), as compared to Willow flycatcher's 123 ft. This approach would increase the width recommendation. With regard to Western pond turtle requirements, these are outlined in the paper's Appendix D, under "Amphibians and Reptiles." This table recommends avoiding disturbance within 400-500 meters (1,312-1,640 feet) around all bodies of water inhabited by Western pond turtles. Thus, the actual recommendation was 1,312-1,640 ft, not the 330 feet cited by Metro.	**No action recommended.**
Prose 1985	Terrestrial habitat	Connectivity to water	Fishman: "...belted kingfishers do not utilize all streams equally, and the reference also states that 'Vegetation along the margins of feeding . waters has both positive and negative implications. Belted kingfishers are seldom seen on ponds or streams that are overgrown with thick vegetation that obscures vision...' " And: "...it seems obvious that it is not necessary to provide a 100 to 200 foot riparian buffer on all streams to allow for kingfisher roosting, since	Disagree. The statement that kingfishers do not utilize all streams equally is probably correct, but there is no scientific evidence cited in support. Metro is using the known scientific literature, most of it peer reviewed (e.g., Knutsen and Naef 1997; May 2000) as its foundation. In the Portland metropolitan region, Metro staff have routinely observed Belted kingfishers perched in very dense vegetation overhanging small streams, such as tributaries flowing into Fernhill Wetlands in Forest Grove, and look in such areas first to locate this species. With regard to the statement that "it seems obvious that it is not necessary to provide a 100 to 200 foot riparian buffer on all streams," Metro has not completed the program step which could include buffer regulations, but also will consider other options such as incentives; acquisition, education and stewardship programs. When Metro does address program choices it is likely that not all streams will receive that level of protection in our	**No action recommended.**

Staff response to wildlife-related riparian corridor width recommendation criticisms made by Paul Fishman on behalf of City of Hillsboro.

Reference	Table 7 (formerly Table 5) criterion	GIS model criterion	Fishman's criticism(s)	Metro Staff Response	Comments and relevance to GIS model
			smaller, densely vegetated streams may not provide the correct habitat for kingfisher."	region because the resource has been inventoried based on what currently exists. In some areas, development has already encroached well into that buffer distance and these structures are unlikely to be removed in the near future.	
Castelle et al. 1992	Terrestrial habitat	Connectivity to water	Fishman begins with the same argument given when criticizing use of the Knutsen and Naef (1997) reference, in that he would need to look up every reference used to validate its appropriate use. Minor arguments/dissuasions regarding many of the species' requirements in the reference.	Disagree. See comments under Knutsen and Naef reference, above, regarding revisiting source literature. Regarding Bald Eagles, the statement is made that: "Although bald eagles are found in the Metro region, most riparian areas do not provide habitat for this species." However, no documentation is provided. This documentation is critical because it controverts basic facts about Bald Eagles as being a riparian-dependent species. In fact, this species does utilize many riparian areas in the region for nesting, roosting and perching, as Metro's Species of Concern data layer indicates (primary data source from ongoing OSU Bald Eagle study data). Bald Eagles rely primarily on fish and waterfowl for food (Johnson and O'Neil 2001), and riparian areas provide vital habitat for such species.	**No action recommended.**
FEMAT 1993	Terrestrial habitat	Connectivity to water	Fishman states that Metro incorrectly inferred a riparian area width range of 100-600 ft when the correct inference would be 100-300. Further, Fishman states that "The riparian reserve buffer widths determined in the reference are based upon preserving habitat for species associated with late successional forests...Therefore, the riparian reserve buffer widths recommended in the reference are not directly applicable to the majority of streams in the Metro region."	Agree in part. Metro inadvertently picked up the upper limit of the buffer range to be 600 ft rather than 300 ft. There is a reference in the document for 600 ft (page V-35), but it refers to both sides of the stream. We will correct that error. However, buffers are intended to protect ecological functions in urban areas, where human impacts are much more severe than in old-growth forest, and therefore logically should be substantially wider than those in old growth forests if the same level of ecological function is to be provided. In any case, altering the recommended width from this reference in no way impacts Metro's current Wildlife Habitat GIS model, which considers connectivity to water within 300 ft of the water source.	**Correct the recommended range in Table 7 to read 100-300 ft rather than 100-600 ft.**
NRCS 1999	Terrestrial habitat	Connectivity to water	Fishman used a different reference than that used by Metro because he could not locate the reference "despite an extensive online search, phone calls to the NRCS and the Government bookstore." Fishman states that Metro used the recommended widths as one-sided when they should have been two-sided.	Agree in part. The 1995 reference used by Metro was a draft document and is not the same document as that reviewed by Fishman. To illustrate the differences in the document, the 1995 reference consisted of 14 pages, while the 1999 document has over 100 pages. The 1995 reference provides general buffer width guidance for selected wildlife species: "Widths below include the sum of buffer widths on one or both sides of water courses and may extend beyond riparian boundaries..." This statement is unclear , but Fishman is probably correct in his interpretation that it means *total* buffer width rather than one-sided width. In Knutsen and Naef's (1997) extensive literature review, the average one-sided buffer width recommendation for reptiles and amphibians is 153 ft (46.7 m); for deer it is 138 ft (42 m, including a much narrower recommendation for eastside deer); and for beaver it is 271 ft (82.6 m). These numbers apply to perpendicular distance from the stream, thus total width excludes the width of the stream. However, given that this document was a draft and not regionally-specific, staff recommends removing it from Table 7. Whether it is retained or not, this information does not change staff recommendations for the 300-ft proximity to water criterion, which is based on numerous other references with wider recommendations for a broad range of species and our own field data as cited.	**Remove this outdated reference from Table 7.**

080802-22

August 8, 2002

Carl Hosticka, Presiding Officer
Metro Council
600 NE Grand
Portland, OR 97232

Dear Presiding Officer Hosticka and Councilors,

Like Ron, I am testifying on behalf of the Audubon Society of Portland and our 10,000 members who reside in the Portland metropolitan region. I run the Wildlife Rehabilitation Facility for Audubon and my position gives me something of a firsthand view of the direct impacts on wildlife when we fail to protect habitat.

Each year our facility takes in between three and four thousand injured wild animals for treatment. The vast majority of these come from within the Metro Region. These numbers speak to a couple of issues:

They give a sense of what a diverse and vibrant ecosystem our urban landscape really is. As a society I think we still have a tendency to write off the urban landscape as a place where the presence of wildlife is accidental and to some degree unfortunate. We perceive wildlife as something that occurs "out there" beyond the arbitrary boundaries that we set for them. The fact is however that wild animals for the most part do not respect or recognize these boundaries. For many species there is a biological necessity to disperse, migrate and traverse the landscape. As urban areas continue to expand and develop, it is essential that we recognize that urban areas will play a larger and larger role in the long-term survival of many species.

The animals that we see passing through our doors at the rehabilitation center speak to the many perils that wild animals face on an urban landscape, impacts with cars, windows and power lines, predation by cats and dogs, poisons, pesticides and pollution, the list goes on. In the long term the biggest threat may be decreased societal tolerance for wildlife as habitat loss forces humans and wildlife into closer and closer proximity and conflicts become more and more prevalent.

While there is no way to ultimately completely eliminate these threats, the long term solution lies in creating an urban landscape that is habitable by humans and wildlife, the has habitat and connectivity such that our wildlife can safely live and move in our midst.

I too would like to urge you to

1) Adopt the riparian and wildlife inventories as recommended by Metro's Natural Resource Committee

2) Adopt Resolution 02-3128 that was adopted by the Natural Resources Committee yesterday, which combines the riparian and wildlife inventories and adopts the Local Plan Analysis.

Finally I would like to urge you to adopt a statement that refers to those wildlife sites that scored 1 under your regional wildlife habitat inventory as "cumulatively constituting a Regional Resource warranting additional consideration as part of a regional Urban Forest Canopy, stormwater, and watershed management strategy, to be developed."

I

Bob Sallinger
Audubon Society of Portland
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