



Chapter Four
Development and Mitigation

DEVELOPMENT AND MITIGATION

INTRODUCTION

This element of the Plan acknowledges conditions where the community's need for economic development outweighs the benefits to protect certain wetland sites by making them available for development according to the mitigation provisions of this Plan. The Plan views the mitigation process as an opportunity to restore and enhance wetland functions and values of the Amazon Creek basin as a whole, while allowing limited development on isolated, lower quality wetlands and meeting the requirements of state and federal wetland law.

The 360 wetland acres proposed for development were determined through a process that evaluated each wetland against a set of criteria which had the effect of identifying those wetlands that are isolated, low quality and of limited functional value. The criteria used in evaluating sites for possible development are contained in Appendix B.

In addition to evaluation by local experts, resource agencies and community members, the relative quality of the west Eugene wetlands was determined by the Wetland Evaluation Technique (WET) program, designed by Paul Adamus of the Environmental Protection Agency. The results of this evaluation are contained in the Technical Report.

The Plan proposes to use the mitigation process to achieve compliance with federal and state wetland law, and to provide a vision and program for incorporating all of the elements of this plan with other related community objectives (flood control, water quality and wildlife habitat enhancement, recreation and education programs) so that a broader goal is achieved - the restoration of the Amazon Creek basin into a community asset.

The basic concepts of the mitigation program are:

- Avoid and minimize impact to all wetland sites that meet the protection criteria contained in Appendix B.
- Where impact is unavoidable, compensate for losses commensurate with the level of impact giving priority to establishing the basic physical wetland parameters (water, topography, connectedness) that eventually results in full functioning and diverse wetland habitats.
- Establish a management entity that will monitor, maintain and enforce the requirements of the mitigation program.
- Where full functioning wetlands are to be impacted, in-kind replacement of significant functions and values will be required. The overall mitigation

program, however, will be guided by the ecological characteristics of the regional landscape and not necessarily by specific case-by-case impacts. For disturbed agricultural wetlands, mitigation requirements will be determined using historic wetland types presumed to have existed prior to disturbance and the desired mix by the public. Incentives will be provided to mitigate in advance of impact in the form of replacement ratios which are less than the ratios for compensating at the time of impact.

- To increase the certainty of success and to achieve the goal of a connected system of wetlands and waterways, mitigation efforts are targeted for areas that once exhibited, or currently exhibit, proper wetland soils and moisture conditions. Within the WEWSAS boundary, the primary mitigation sites are "disturbed agricultural wetlands". These sites are missing at least one of the three wetland parameters (water, hydric soil, wetland vegetation) and due to non-wetland activities (agricultural uses) occurring on these sites, their existing wetland value is relatively low. As such, for mitigation credit purposes, the Plan gives more credit for the enhancement of these sites than for other "low" quality wetlands that exhibit all three wetland parameters.
- The primary means to achieve the Plan's mitigation goals is through the establishment of a regional wetland mitigation bank. These are areas where the most suitable lands for mitigation are identified, acquired, designed, constructed and managed in advance of wetland impact, and incentives are provided that encourage the use of the bank by those seeking a wetland impact permit. Because the Plan will enhance and restore more wetland acreage, functions and values than will be lost to development, the excess capacity will be available for mitigation credit to properties located outside the west Eugene study area and within the urban growth boundary, and to the Eugene Airport proper.

GOALS, POLICIES, RECOMMENDED ACTIONS

GOALS

- 4.1 Use the wetland mitigation process as an opportunity to achieve multiple community objectives, including wetland resource enhancement, increased flood control capacity, water quality enhancement and the establishment of educational and recreational programs.
- 4.2 Use the wetland mitigation process as an opportunity to reverse the trend of wetland losses and begin a positive trend of wetland gains by restoring and enhancing the historic wetland system of the Amazon Creek watershed.
- 4.3 Achieve compliance with federal and state wetland law, policies and guidelines.

- 4.4 Increase certainty in the development process.
- 4.5 Minimize reductions to the existing industrial and commercial buildable lands inventory as a result of wetland protection.
- 4.6 Provide for the overall wetland mitigation needs for the community of Eugene, including the territory within the urban growth boundary and Eugene Airport.

POLICIES

Mitigation

- 4.1 Mitigation efforts shall help to reestablish a connected system of wetlands, waterways and upland resources.
- 4.2 To insure long-term success, mitigation efforts shall give priority to establishing or reestablishing the basic hydrologic conditions necessary to meet the stated mitigation objectives.
- 4.3 Mitigation efforts shall concentrate on restoring wetland type, habitat, functions and values that represent the historic, ecological landscape of the Amazon Creek basin.
- 4.4 Mitigation efforts shall use local, native plant species.
- 4.5 Mitigation efforts shall be designed and constructed to minimize the level of ongoing maintenance.
- 4.6 Develop, adopt and implement a comprehensive wetland mitigation program.
- 4.7 Mitigation efforts shall occur in the priority areas as depicted on the Wetlands Recommendation Map #3.
- 4.8 Develop a wetland mitigation overlay zone where mitigation is a permitted use, and apply it to areas targeted as future mitigation sites as shown on Map #3.
- 4.9 Establish, develop and maintain a regional wetland mitigation bank that will provide mitigation credit capacity for the West Eugene Wetlands Study Area, the balance of the Eugene urban growth boundary and the Eugene Airport proper.
- 4.10 To be eligible for participation in the mitigation bank, wetland impact requests must be consistent with the goals, policies and provisions of this Plan.
- 4.11 Require all mitigation efforts to participate in a comprehensive monitoring and maintenance program.

- 4.12 Develop a system that provides security against unsuccessful mitigation efforts, such as a bond or other financial guarantee.
- 4.13 Amend applicable City codes, policies and maintenance operation procedures to comply with the provisions of the this Plan and implementation measures.
- 4.14 All mitigation must be completed in advance or concurrent with development.
- 4.15 Unless on-site mitigation would better meet the goals and policies of this Plan, mitigation efforts shall occur according to the provisions of the regional mitigation bank provisions.
- 4.16 Mitigation efforts shall use the following replacement standards:

MITIGATION REPLACEMENT SCHEDULE					
WETLAND TYPE	ACRES IMPACTED	REPLACEMENT RATIOS*			
		ENHANCEMENT		RESTORATION/CREATION	
		AG/WL**	OTHER		
Wet Prairie	75	2.0:1	2.5:1	2.0:1	
Ash Forest	10	1.5:1	2.0:1	1.5:1	
Emergent Marsh/ Open Water Mix	0	1.5:1	2.0:1	1.5:1	
Scrub/Shrub	65	1.5:1	2.0:1	1.5:1	
Disturbed/Agric.	210	***	***	***	

* Replacement ratios may be reduced by .50 acres if mitigation occurs in advance of impact.

** Agricultural Wetlands

*** Disturbed-Agricultural Wetlands represent a variety of historic wetland types. Mitigation replacement of these wetlands will result in the following mix of wetland types:

Wet Prairie	30%	Emergent Marsh/Open Water Mix	23%
Ash Forest	22%	Scrub-Shrub	25%

- 4.17 Either on a regional or case-by-case mitigations basis, develop better information as to existing wildlife habitat values and a mechanism, such as the modified

Habitat Evaluation Program (HEP), to measure future wildlife gains on mitigation sites.

Development

- 4.18 Allow development of wetlands that meet the criteria for wetland development contained in Appendix B of this Plan as illustrated on Map #3.
- 4.19 Adopt the protection and development criteria, contained in Appendix B, as the basis for the classification of the wetland sites shown on WEWSAS Map #3 and, for any new sites, apply these criteria to determine status.
- 4.20 Use the WEWSAS wetland delineation map, the Functions and Values detailed in the WEWSAS Technical Report and those sites recommended for development on Map #3, as the basic inventory for acres, functions and values to be developed and replaced.
- 4.21 Provide flexibility in the provisions of the mitigation program so that conditions unique to certain properties can be resolved at the administrative level provided the proposal meets the basic intent, purpose, and criteria of WEWSAS.
- 4.22 Provide technical wetland assistance to the public.
- 4.23 Unless designated as a mitigation site in this Plan or as part of on-site mitigation requirements, buildable lands that are within the UGB and designated for commercial or industrial use shall not be used for mitigation.
- 4.24 For application with future mitigation efforts, encourage wetland impact sites to be utilized (prior to development) as a source for wetland vegetation and soils.

Administration

- 4.25 Encourage use of regional or local nonprofit agencies to assist in managing and monitoring wetland mitigation and protection efforts.

RECOMMENDED ACTIONS

- 4.1 Adopt mitigation review provisions as follows:

Type I - Administrative review, no public review

- Fully Complies with WEWSAS
- No rare, threatened or endangered plant or animal species
- Utilizes mitigation bank

Type II - Local Public Review

- Does not fully comply with WEWSAS, such as a minor variance to a protection measure standard (i.e., buffer width).
- Involves amendment of wetland boundary where subsequent scientific data clearly refutes the location, size or shape of the original, adopted boundary.

Type III - Local, State, Federal Public Review

- Involves amendment of a wetland site from protection or restoration status to development status.
- Involves amendments to policies and standards of WEWSAS.
- Does not utilize mitigation bank or on-site mitigation option.
- Involves amendment of wetland boundary when there is unresolvable conflict between existing boundary data and subsequent data.
- Involves amendment of wetland boundary map to include a new site.
- Involves development of a site with rare, threatened or endangered plant or animal species.

4.2 Develop and adopt a Comprehensive Wetland Mitigation Program to include:

1. Maps #3 and #4, showing where wetland sites may be developed and where mitigation shall occur.
2. An inventory of resources located in sites identified for development, including wetland site reference number, wetland type, habitat, function, value, and acreage.
3. Show overall areas where wetlands are to be created, restored and enhanced.
4. Replacement ratios and mitigation credit showing number of acres to be developed compared with number of acres mitigated.
5. The location and more detailed concept design (see Map #4) of the wetland mitigation bank site(s).
6. Options for complying with mitigation requirements:
 - Mitigation bank
 - Individual permit - complies with WEWSAS
 - Individual Permit - does not comply with WEWSAS (Section 404 Permit Process)

7. Permit Process for Mitigation Bank Option

- Preapplication conference
- Application Submittal
- Review Process: Local (Type I)
- Criteria for approval: complies with WEWSAS
- Determination of credit/debit and payback
- Execution of banking agreement
- Issuance of permit

8. Permit Process for Individual Permit

- Preapplication conference
- Application submittal
- Review process:
 - 1) Complies with WEWSAS: local (Type I)
 - 2) Does not comply with WEWSAS: standard section 404 permit process (Type III)
- Criteria for Approval:
 - 1) Local: complies with WEWSAS
 - 2) Federal and State:
 - (a) Complies with Section 401(a) and 404(b)(1) Guidelines, Clean Water Act
 - (b) Complies with Memorandum of Agreement between Environmental Protection Agency and Army Corps of Engineers, February 7, 1990
 - (c) State of Oregon Fill/Removal Law (ORS 196.800-196.990)
 - (d) Ability to redesignate site to a natural resource category
- Construction and security guarantee
- Inspection
- Monitoring
- Adjustments (if any)
- Final inspection
- Certificate of completion
- Submittal requirements:
 - (1) Statement of objectives
 - (2) Statement of compliance with criteria

- (3) Concept site plan
- (4) Specifications:
 - (a) Hydrology
 - (b) Soils analysis
 - (c) Topography and elevations
 - (d) Planting materials and techniques
 - (e) Pesticide, herbicide, or fertilizer applications
 - (f) Source of plants and seeds stock
 - (g) Irrigation
 - (h) Monitoring plan
 - (i) Schedule

10. Mitigation Bank Provisions and Process:

- Identify an entity to establish, develop and maintain the mitigation bank
- Identify suitable sites for bank location
- Select bank sites
- Develop concept design based on expected impact replacement needs and community preferences
- Obtain approval from regulatory and resource agencies
- Determine bank credit and debit accounting procedures
- Establish a formal banking agreement to document and track the obligations and responsibilities of the users bank
- Complete Phase I construction by 1995

11. Monitoring and Maintenance

- Performance Standards
 - (1) Vegetation
 - (2) Hydrology
 - (3) Water quality
- Duration of Monitoring Period
 - (1) Mandatory 10 years
 - (2) Research 20 years
- Adjustments and corrections

12. Incentives for Mitigation Bank

- Type I procedure
 - Financial assistance
- 4.3 Develop wetland mitigation provisions that require a wetland impact permit and mitigation plan to be approved and obtained from the responsible regulatory agencies prior to any activity that may further degrade wetland resources, including drainage modifications, landform alterations, storage of materials, vegetation removal and construction related activities.
- 4.4 Seek funding from the Army Corps of Engineers to work with the Soil Conservation Service to determine the feasibility of restoring the hydrologic regime of the "B" Assessment Area (see SRI Wetland Map in the WEWSAS Technical Report and sites with "B" prefix on Map #3) by modifying the design of the Amazon, A-3 and A Channels to provide for the hydrologic requirements of the various wetland habitats, flood control and water quality enhancement facilities.
- 4.5 Establish a local wetland assistance team to provide technical assistance to the public.
- 4.6 Require a preapplication conference with the wetland assistance team to provide an information exchange concerning the objectives of the applicant and the requirements of the wetland provisions.
- 4.7 Monitor ground water elevations along Amazon Channel, A Channel, Willow Creek, A-3 Channel and match hydrologic requirements of mitigation projects with the findings of the monitoring system.
- 4.8 Develop a permit processing system in which the level of review is matched with the proposed magnitude of wetland impact and degree of consistency with the goals, policies and standards of WEWSAS.



Chapter Five
Operating, Maintaining and Monitoring

OPERATING, MAINTAINING AND MONITORING

INTRODUCTION

This section describes goals, policies, and recommended actions for the operations, maintenance, and monitoring elements of WEWSAS. The establishment and implementation of a program that maintains and monitors the efforts of wetland protection, restoration and mitigation is important to the success of a wetland management plan.

The Plan proposes to create a Comprehensive Monitoring and Maintenance Program (CMMMP) for all wetland areas recommended for protection, and mitigation. The Public Works Department will assume the lead responsibility for implementation and administration of the CMMMP. A key element of the CMMMP is enhancement and utilization of the multiple use aspects of the resource.

While one of the purposes of the program is to insure successful mitigation efforts, the primary purpose is to insure the health and sustainability of the system as a whole. Traditionally, the Public Works Department has maintained the stormwater drainage system in west Eugene to meet flood control objectives using standards established by the U.S. Army Corps of Engineers and the Soil Conservation Service to protect the health and safety of the community. By maintaining the inherent functions and values of a wetlands system many positive benefits can be realized. These include stormwater conveyance and flood control, water quality improvements, increased aesthetic and recreational values, educational and scientific opportunities, and wildlife habitat improvements.

For mitigation efforts, participation in the CMMMP will be mandatory. Maintenance requirements will be addressed during the design and construction phases of mitigation in order to best anticipate the scope and cost of future maintenance activities. The CMMMP will contain provisions that require each mitigation project to develop specific standards by which to measure the progress and success of the project as well as a monitoring schedule, annual progress reports and contingency recommendations. A performance guarantee will be required in the form of a bond or other acceptable method to pay costs for future repairs or corrections.

Monitoring for permit compliance and research purposes will aid in determining how to best meet stated goals and performance standards. Vegetation, hydrology, inundation, wildlife, and water quality are the most common indicators of concern. The CMMMP will be responsive to monitoring data in order to make necessary adjustments in the field.

Routine maintenance of wetland sites will include vegetation management such as selective plant removal and replacement, dredging, water level manipulation, erosion control, debris and litter removal, and annual inspections to ensure that sites are

operating as intended. Non-routine maintenance tasks will include structural repairs and replacement of parts, and sediment removal. Individual sites will be maintained and monitored in accordance with established performance standards.

Finally, the development and implementation of a CMMP is an opportunity to revise the traditional stormwater operations and maintenance practices of the Public Works Department. The incorporation of watershed management principles will advance multiple use objectives while successfully maintaining the resource.

GOALS, POLICIES, RECOMMENDED ACTIONS

GOALS

- 5.1 Conserve and enhance wetland functions and values through operations, maintenance and monitoring practices.
- 5.2 Ensure the long-term health and survival of protected wetlands in west Eugene by incorporating watershed management principles in operations and maintenance practices.
- 5.3 Demonstrate responsible wetland stewardship by increasing the City's knowledge and understanding of wetland ecology and management and apply that knowledge to operations, maintenance and monitoring practices.

POLICIES

- 5.1 Accomplish multiple objectives through a stormwater management program designed to provide for storm and flood water conveyance, flood storage, water quality improvement, passive recreation, education, and wildlife habitat and biological support in an effective and cohesive way.
- 5.2 Ensure compliance with the WEWSAS goals and policies through an operations, maintenance and monitoring program that is responsive to the needs of an evolving ecological system.
- 5.3 Advance the success of wetland mitigation projects through a comprehensive long range monitoring effort and use the results in on-going operations and maintenance.
- 5.4 Develop performance standards corresponding to the stated mitigation goals of WEWSAS and utilize those standards in designing and evaluating an operations and maintenance program.

RECOMMENDED ACTIONS

- 5.1 Review all public works projects for opportunities to create, restore, and enhance wetland functions and values.
- 5.2 Establish a native wetland plant nursery and seed bank that relate to the biologic habitats of the area. Encourage the recovery of wetland plants within the study area for replanting in nurseries and mitigation projects prior to any construction or maintenance activity.
- 5.3 Produce an annual report documenting activity in the study area, e.g., mitigation sites, constructed water quality features, and buffer areas. The report may include:
 - a record of fill and removal activity
 - a description of enhancement, restoration, and mitigation projects
 - mitigation bank activity
 - maintenance and operations activities
 - monitoring data including photographic sampling: ground level (annually) and aerials (every three to five years)
 - evaluation of mitigation success in relation to performance standards
 - summary of any new technical information or regulatory changes relevant to the study area
 - assessments of annual and cumulative impacts and accomplishments
 - status of planning and construction of public projects
 - building permit activity
 - individual permit compliance
 - acquisition progress
 - financial summary

Present the above annual report to the Eugene Planning Commission and City Council, the WEWSAS Technical Advisory Committee, and the general public.

- 5.4 Review the channel maintenance program to determine which alternative technologies are appropriate in order to:
 - minimize impacts to wildlife
 - reduce bank erosion and sedimentation
 - utilize the pollutant removal benefits of channel vegetation

- 5.5 Restore more natural stream conditions where possible such as:
- establishment of a 'low flow' meander in the channel bottom
 - widening of channel width
 - terraced banks
 - re-sloping of steep channel banks
 - replanting of channel banks with native vegetation
 - creation of wetland 'bench' areas contiguous with the low flow channel
- 5.6 Utilize existing natural ditch systems instead of stormwater pipes, where practical, for the conveyance of stormwater, and in the design of new developments.
- 5.7 Seek support from non-profit organizations and private volunteers for selected maintenance and monitoring activities.
- 5.8 Create a public education program to inform the community of stormwater permit requirements, the opportunities that exist to achieve multiple use benefits, and how citizens can participate.
- 5.9 Develop pilot projects for the establishment of maintenance strategies to help determine methods compatible with multiple use objectives. Pursue grant monies to create these projects.
- 5.10 Evaluate implementation strategies to establish the best mix of organizational resources to manage the multiple use aspects of WEWSAS.
- 5.11 Establish a long term monitoring program designed to evaluate the success of wetland mitigation in relation to established performance standards. The program will apply to newly created, restored, and enhanced wetlands, as well as water quality sites and buffer areas. All sites will be monitored for a minimum period of five years, or longer if required for compliance purposes.
- collect data on pre-existing wetlands for comparative purposes
 - evaluate the success of wetland mitigation in relation to established performance standards
- Sampling may include:
- seasonal wildlife evaluation
 - annual quantitative monitoring of vegetation establishment, survival and coverage
 - hydrological measurement and observation
 - water quality analysis
 - overview and photographic sampling

Comment: The regulatory standard for monitoring requirements is currently five years. The above recommended action is consistent with this standard though it does not preclude a longer monitoring period requirement on a case-by-case basis in the study area.