

**City of Cannon Beach  
Endangered Species Act (ESA)  
Action Plan Elements**

**Introduction**

This section of the ESA Response Plan outlines the specific actions that city will undertake to comply with the provisions of the Endangered Species Act (ESA) Section 4(d) rule. Implementing these actions will help the city reduce the affects of human activities on salmon and salmon habitat and thus assist in the recovery of the coastal coho salmon in the Ecola Creek watershed.

The action plan was developed based on the following: the Potential Remedies and Solutions element of the plan, National Marine Fisheries Service comments on the Potential Remedies and Solutions document, the city's SHED study and the Ecola Creek Watershed Council's Action Plan.

Each element of the action plan follows the same format. The first section summarizes the issue as it was identified in the Potential Remedies and Solutions document, or the equivalent source. The ensuing discussion, in bold type, provides an overview of how the city will address the issue, in what fiscal year the work will be done, and the cost of implementing the task.

The action plan was adopted by the City Council on July 1, 2003.



## Action Plan Elements

### I. Comprehensive Plan and Land Use Regulations

#### A. Comprehensive Plan

1. Develop specific policy statements that address water quality and fish habitat.
2. Consider lower densities for undeveloped areas that are located within the Ecola Creek drainage basin.
3. In selecting areas for the expansion of the UGB, give higher priority to areas located outside of the Ecola Creek drainage basin.

**Discussion:** The next City review of the urban growth boundary provides a process for considering expansion of the urban growth boundary in areas outside of the Ecola Creek drainage basin. Consideration of appropriate development densities can also be part of such a review process.

Development of specific policy statements that address water quality and fish habitat issues can constitute a specific post acknowledgment plan amendment process. This plan amendment process can be coordinated with the consideration of zoning ordinance text amendments regarding the estuarine zone, wetlands overlay zone, stream corridor protection standards, and erosion and sedimentation control standards.

**Timing:** The City's review of the urban growth boundary is scheduled to occur in FY 05-06.

Plan policy statements that address water quality and fish habitat issues is scheduled for FY 04-05.

**Cost:** Staff time. Consideration of ESA related factors will constitute a small part of the overall urban growth boundary review process.

#### B. Zoning Ordinance

##### 1. Estuarine Zone

- a. Establish an appropriate setback/buffer from the estuarine zone boundary.

**Discussion:** The City's estuarine zone does not contain an adequate setback/buffer requirement to protect riparian resources associated with Ecola Creek. For example, the Department of Land Conservation and Development's Goal #5 Administrative Rule establishes a "safe harbor" setback of 75 feet for a stream the size of Ecola Creek. The National Marine Fisheries Service's recommended width is that of the height of a mature spruce tree. The setback currently in the zoning code is five feet. The City is proposing to conduct a site specific analysis of the riparian areas adjacent to Ecola Creek and its tributaries to establish a riparian corridor width that is consistent with

the character of Ecola Creek and the existing adjacent land uses.

**Timing:** FY 03-04.

**Cost:** \$5,000 - \$15,000 depending on the depth of the analysis required to document the riparian corridor standard that is established. This task will also involve an indeterminate amount of staff time.

- b. Review permitted uses and activities.
- c. Ensure that standards for review of permitted/conditional uses includes the potential impact on salmonid species.
- d. Review standards for fill/dredging associated with permitted/conditional uses.
- e. Review standards for required mitigation when fill/dredging permitted.

**Discussion:** The City's estuarine zone was developed to comply with State-wide Planning Goal #16, Estuarine Resources. Generally, the standards of the estuarine zone meet concerns that may arise with regard to the potential impact of estuarine zone uses on coastal coho salmon. However, a number of minor revisions to the existing standards may be required.

**Timing:** FY 04-05.

**Cost:** A moderate amount of staff time.

## 2. Wetland Overlay Zone

- a. Establish wider buffer areas adjacent to selected wetlands.

**Discussion:** The City's wetland overlay zone does not contain a buffer that meets the Department of Land Conservation and Development's Goal #5 Administrative Rule "safe harbor" wetland buffer width of 50 feet. The results of the riparian corridor analysis described in Task I-B-1-a above may result in proposed modifications to wetland buffers for wetlands associated with Ecola Creek.

**Timing:** FY 03-04.

**Cost:** This task will involve an indeterminate amount of staff time based on the analysis conducted in Task I-B-1-a

- b. Review permitted uses and activities.
- c. Review standards applicable to uses and activities that are permitted.
- d. Consider more a restrictive review process for some uses, i.e. conditional use rather than development permit or outright use.

**Discussion:** The City's wetland overlay zone will be reviewed and amended to incorporate changes identified as part of the ESA Response Plan analysis.

**Timing:** FY 04-05.

**Cost: A moderate amount of staff time.**

3. Stream Corridor Protection

- a. Review permitted uses and activities.
- b. Review standards applicable to uses and activities that are permitted.
- c. Consider more a restrictive review process for some uses, i.e. conditional use rather than development permit or outright use.
- d. Review standards for when a variance from the stream buffer requirement is permitted.

**Discussion: The City’s stream corridor protection standards will be reviewed and amended to incorporate changes identified as part of the ESA Response Plan analysis. This work will also be coordinated with the outcome of the riparian corridor task.**

**Timing: FY 04-05.**

**Cost: A moderate amount of staff time.**

4. Grading, Erosion and Sedimentation Control

- a. Review required standards for erosion and sedimentation control measures in conjunction with forest management.
- b. Review required standards for erosion and sedimentation control measures on steeply sloped areas.
- c. Review procedures for implementing erosion and sedimentation control measures in conjunction with development.

**Discussion: The City adopted its grading and erosion control standards in 1998. These standards will be reviewed and amended to incorporate changes identified as part of the ESA Response Plan analysis. This task may also include work shops for local contractors and the development of a “checklist” that can be used in the review and monitoring of erosion control plans that are developed for specific projects.**

**Timing: FY 03-04 & 04-05.**

**Cost: A moderate amount of staff time.**

5. Lot Coverage

- a. Review the City’s lot coverage standard.

**Discussion: The City’s lot coverage standard limits the total amount of impervious surface area that a development may create. The percentage of impervious surface in a watershed is a development pathway that effects the health of salmon bearing streams.**

**Timing: FY 04-05.**

**Cost: A limited amount of staff time.**

C. Subdivision Ordinance

1. Incorporate standards for storm drainage improvements that minimize adverse impacts on streams. Develop these standards and best management practices in conjunction with the update of the City's storm water master plan.

**Discussion: To the extent possible, based on existing language in the subdivision ordinance, as the City develops new standards for storm drainage improvements they will be applied to new subdivision proposals.**

**The City will be updating its storm drainage master plan. That plan update will include consideration of the impact of the City's storm drainage system on fish habitat for all areas located within the Ecola Creek drainage basin. The update of the plan will include the development of storm drainage design standards, and system operation and maintenance standards which take into account potential impacts on fish habitat. These standards will then be incorporated into the City's subdivision ordinance.**

**Timing: FY 05-06.**

**Cost: A moderate amount of staff time.**

2. Review street improvement standards.

**Discussion: Roads represent a significant portion of the impervious surface area of subdivisions. The percentage of impervious surface in a watershed is a development pathway that effects the health of salmon bearing streams.**

**Timing: FY 05-06.**

**Cost: A limited amount of staff time.**

II. Public Facilities

A. Sanitary Sewer System

1. Wastewater Treatment Facility

- a. Relocate "winter outfall" to eliminate the adverse impacts of an inadequate mixing zone on juvenile salmonid rearing habitat and monitor the impact of its relocation on the use of the area by juvenile salmonids.
- b. Address chlorine and ammonia toxicity issues.
- c. Address other wastewater discharge issues, temperature and velocity, that may affect salmonid habitat.

d. Integrate fish passage considerations into any design modifications to the “wetland treatment” portion of the wastewater facility.

**Discussion:** In conjunction with the renewal of the City’s NPDES permit for the wastewater treatment facility, the City entered into a Mutual Agreement and Order (MAO) with the Oregon Department of Environmental Quality (DEQ). The MAO requires that the City evaluate the long-term wastewater improvements required for it to be in compliance with the NPDES permit and water quality standards and then to make the appropriate improvements to the treatment system. The issues identified in the MAO that will need to be addressed include chlorine and ammonia toxicity, dissolved oxygen levels and the temperature of discharge water. Thus the process that has been established by the DEQ for meeting the requirements of the City’s NPDES permit, will also provide a mechanism for addressing issues concerning the impact of the existing wastewater treatment facility on salmon habitat.

**Timing:** The “facilities planning” phase will be completed in the summer of 2003. The necessary engineering design work will be completed by the winter of 2003-04. The required improvements to the wastewater treatment facility will be programmed for fiscal year 2004-05 and 2005-06.

**Cost:** The exact cost of upgrading the wastewater treatment facility will not be known until the completion of the engineering design work. However, it is estimated that the cost of facility improvements will be on the order of two million dollars. Implementation of the ESA Response Plan will not result in the expenditure of additional resources over and above what the City committed to when it signed the MAO with the DEQ.

## 2. Pump stations

a. Review and document City procedures associated with pump station overflows.

**Discussion:** The City has three pump stations located within the Ecola Creek drainage basin, Main, Ecola Creek, RV Park. Failure of these pump stations can result in the discharge of overflow sewage into Ecola Creek and its tributary waters, which in turn can have adverse temporary impacts on salmon and salmon habitat. The Main pump station has an emergency backup power source, the other two pump stations do not. Consideration will be given to providing emergency backup power to the Ecola Creek and RV Park pump stations as a means of minimizing sewage overflow into Ecola Creek and its tributaries during an emergency.

**Timing:** 1). Review and document City procedures associated with pump station overflows. This review will be conducted in FY 2003-04  
2). Implementation of the provision of an emergency backup power source for the Ecola Creek and RV park pump stations will be determined as part of

the review of existing City procedures associated with the operation of the pump stations. Implementation of an emergency back-up generator for the Ecola Creek pump station would occur in FY 03-04 and that for the RV Park pump station would occur in the FY 04-05.

**Cost:** Reviewing and documenting existing procedures requires an allocation of a limited amount of staff time. Providing emergency backup power to the Ecola Creek and RV Park pump stations is estimated to cost in the range of \$30,000.

## B. Stormwater System

1. Update the City's Stormwater Master Plan to include consideration of the impact of the City's storm drainage system on fish habitat for all areas located within the Ecola Creek drainage basin. The main elements of the update of the stormwater master plan which should include consideration of potential impacts on fish habitat are:

- a. Selection of improvement projects;
- b. Storm water system improvement design standards, including standards that can be incorporated into the subdivision ordinance;
- c. Storm water system operation and maintenance standards; and
- d. Program to reduce storm water quantity & pollutant load from existing developed areas.

**Discussion:** The City's Storm Drainage System Master Plan was completed in 1993 and needs to be updated. The City completed the "City of Cannon Beach Surface Water Management Plans for the Downtown and Logan Creek Basins" (SHED Study) in 2000. The results of this study need to be incorporated into the overall storm drainage system master plan.

**Timing:** The City is proposing to update the storm drainage system master plan in two phases. The first phase will consist of a refinement and update of the existing inventory of storm system improvements. This phase is scheduled for FY 2003-04. The second phase will consist of the identification of potential improvement projects, storm drainage design standards, and system operation and maintenance standards. This phase is scheduled for FY 2004-05.

**Cost:** The first phase of the update of the storm drainage master plan is estimated to cost \$40,000. The second phase is estimated to cost \$7,500, plus some staff time. Because the master plan needs updating, it is anticipated that issues concerning fish habitat will add approximately \$5,000 over and above what an update would cost without the incorporation of fish habitat considerations.

2. Culvert inventory and replacement. The identification and modification of culverts that pose barriers to fish passage within the Ecola Creek drainage basin.

**Discussion:** A number of culverts that pose barriers to fish passage have

already been identified. These are, the Logan Creek crossing of Ecola Park Road, the tide-gated culverts at Second Street connecting Little Pompey Wetland to Ecola Creek, a culvert at the confluence of an unnamed Creek and Ecola Creek (Swigart property), the “West Fork” of Logan Creek downstream from 6<sup>th</sup> and Larch, and culverts on the east side of the waste water treatment plant, west of US Highway 101. Others may be identified in the inventory phase of the updated stormwater master plan. Improvements to culverts on private property, such as the culvert of the Swigart property are probably best addressed by the watershed council, as they are not considered part of the City’s storm drainage system.

**Timing:** The first phase of the update of the stormwater master plan is scheduled for FY 2003 -04. Specific improvements to culverts identified as fish passage barriers would be incorporated into the proposed stormwater improvement program, which is scheduled as part of the second phase of the update of the stormwater master plan in FY 2004-05. Actual implementation would occur some time thereafter, in conformance with the adopted improvement program. Work on a number of the culverts that have already been identified as fish barriers has already commenced. The Ecola Creek Watershed Council is developing a program to improve the culvert across Logan Creek; that culvert replacement is scheduled for FY 2003-04. An analysis of a improved culvert and tide gate at Little Pompey Wetland is part of an overall restoration plan and design that is being developed as part of the Habitat Restoration Plan being developed for the lower Ecola Creek estuary area. Replacement of the culvert and tidegate depends on obtaining funding, but could occur in FY 2004-05 or FY 2005-06.

**Cost:** It is estimated that including culverts that represent a fish passage problem in the inventory phase of the storm drainage master plan update will cost less than \$1,500. The cost of replacing all culverts that represent a fish passage problem will not be known until the completion of the inventory work and the development of the implementation program.

The following is a summary of culvert replacement projects that have been identified to date. It is estimated that the replacement of the culvert under Ecola Park Road will cost \$12, 500. Because the culvert is under a State Highway, the cost to the City of the culvert replacement is anticipated to be minimal. The Watershed Council is pursuing grant funds to complete this project. They anticipate that most of the project cost can be secured from grant funding sources. No cost estimate on the cost of replacing the culvert and tidegate at Little Pompey wetland is yet available. However, it is anticipated that non-City funding sources will be pursued to implement the majority of the cost to implement the plan. The SHED Study estimated the cost of replacing the culverts on the West Fork of Logan Creek at \$95,000.

3. Downtown storm drainage system improvements:

- a. Establish an appropriate design standard for catch basins and implement a



- program for replacement of existing catch basins;
- c. Review the interval for catch basin cleaning and street sweeping ; and
  - d. Explore options for the treatment of storm water before its discharge into Little Pompey Wetland.

**Discussion:** The study, “City of Cannon Beach Surface Water Management Plans for the Downtown and Logan Creek Basins” (SHED Study), identified a number of actions that the City should examine in order to improve the water quality of storm water entering Little Pompey Wetland. Improvements to storm water entering Little Pompey will enhance Little Pompey Wetland for fish habitat.

**Timing:** The City has selected a new catch basin design for use in the downtown drainage basin. Initially, the new catch basin will be installed as part of the Hemlock Street paving project between First Street and Third Street; this project is scheduled for FY 03-04. Other catch basin replacement will occur in subsequent fiscal years.

The City is reviewing its existing schedule for street sweeping and catch basin cleaning. If it is determined that additional catch basin cleaning is warranted, the new schedule will be implemented in FY 04-05. Based on existing evidence, the City does not anticipate increasing the interval of street sweeping. The City is presently sweeping the downtown corridor and 5<sup>th</sup> Street on a two week schedule.

The City is studying the most effective types of storm water treatment systems, as well as treatment locations in the downtown drainage basin. It is anticipated this work will be completed in FY 04-05. Implementation will occur in subsequent years.

**Cost:** The cost of installing the new catch basins and a portion of the storm drainage in conjunction with the Hemlock Street paving project is estimated to be \$40,000. The cost of replacing all the remaining culverts in the downtown drainage basin is estimated to be an additional \$30,000. An increased interval of catch basin cleaning is estimated to cost an additional \$1,000 per year. The cost of implementing a storm water treatment system for the downtown drainage basin is unknown at this time.

#### 4. Logan Creek Drainage Basin

- a. Identify sedimentation sources associated with the upstream portion of Logan Creek and develop a strategy for minimizing identified sources.

**Discussion:** Both the SHED Study and the Baseline Habitat Conditions Element of the ESA Response Plan identified sedimentation deposition on the Logan Creek streambed as a limiting factor adversely affecting Logan Creek as salmon habitat. The study would attempt to identify the sources of the sedimentation and develop a means for minimizing those sources. Both

reports indicate that the potential sources of the sedimentation are outside of the City's urban growth boundary, or areas that may be included in the urban growth boundary in the future. Therefore, this issue may best be addressed by the Ecola Creek Watershed Council.

**Timing:** Should be determined by the Ecola Creek Watershed Council.

**Cost:** The cost of the study and the cost of implementing its recommendations are unknown at this time.

b. 6<sup>th</sup> Street drainage ditch between Larch and Hemlock Street - establish a means to minimize the impact of the roadway on habitat values associated with this portion of the West Fork of Logan Creek.

**Discussion:** This project can be considered for prioritization as an improvement project in the updated storm water master plan.

**Timing:** The improvement project element of the update of the storm water master plan is scheduled for FY 03-04. The date for the project implementation will depend on the priorities in the storm water master plan.

**Cost:** Consideration of this project, within the context of the updated storm water master plan, will be minimal. The cost of implementing a recommended action is unknown at this time. The SHED report estimated the cost at \$95,000.

c. Identify opportunities to increase flood storage capacity, including on-going program of land acquisition.

**Discussion:** The lower portion of the Logan Creek drainage basin is located in the City's urban growth boundary. Continued development will reduce the flood storage capacity of the lower basin. This in turn can have a negative impact on the utility of the area for salmon habitat. The Baseline Habitat Conditions Element of the ESA Response Plan identified Logan Creek as At Risk with regard to the National Marine Fisheries Service Pathway/Indicator for Flow/Hydrology. As a means of minimizing the impact of future development on flood storage capacity in the subbasin the City has begun a program of land acquisition of key parcels that will provide flood storage capacity. To date, one parcel has been purchased. The City has identified several other parcels that are important for maintaining flood storage capacity. The City can attempt to purchase these parcels when they come on the market. In addition, a site specific study will identify opportunities for and the feasibility of creating increased flood storage capacity in the Logan Creek drainage basin.

**Timing:** Land purchases are an on-going activity that is budgeted for through the open space acquisition line item in the budget. A feasibility study for increasing the flood storage capacity in the Logan Creek drainage basin is

scheduled for FY 05-06.

**Cost:** It is unknown what the cost of future parcels of land will be. The City purchased a 1.38 acre parcel of land for \$120,000. The cost of the feasibility study is estimated to be in the range of \$5,000 to \$10,000.

C. Water System

1. Establish in-stream standards, e.g., flow, temperature, depth, for Ecola Creek in the vicinity of the City's water intake. Develop a phased water conservation program triggered by a series of designated critical in-stream standard thresholds.

**Discussion:** Peak demand for water in Cannon Beach occurs during the summer months when stream flows in the West Fork of Ecola Creek are near their seasonal lows. It is during the summer months that the City makes direct water withdrawals from the West Fork of Ecola Creek. The City wishes to ensure that these water withdrawals have a minimum of impact on fish and fish habitat associated with Ecola Creek and the West Fork of Ecola Creek. In addition, Oregon Revised Statute requires the development of a Water Management and Conservation Plan within three years of an approved water rights extension application. Such a plan includes the establishment of site specific in-stream standards for key stream characteristics such as flow, temperature and water depth and the development of a water conservation program that is keyed to the stream standards that have been developed.

**Timing:** A Water Management and Conservation Plan is scheduled for FY 04-05.

**Cost:** The plan is estimated to cost approximately \$20,000. There is no added cost associated with the ESA for this project because the City is required to complete such a study as part of its water rights extension application.

2. Identify potential new water sources outside the Ecola Creek drainage.

**Discussion:** A water source that is not associated with Ecola Creek would reduce the impact of the City's water withdrawals on fish and fish habitat associated with Ecola Creek. The possibility of such a source appears to be remote. However, this could be a task in a future update of the City's water system master plan.

**Timing:** The water system master plan was last updated in 1991 and 2000. The next update is scheduled for FY 04-05.

**Cost:** The water system master plan update is estimated to cost \$30,000. Analyzing potential alternative water sources would probably represent a small fraction of the total project cost.

3. Confirm lack of fish entrapment associated with water intake structure on the West Fork of Ecola Creek.

**Discussion:** The City's diversion of water from the West Fork of Ecola Creek has the potential to draw in juvenile salmonids into the intake and in the process injure or kill them. The NMFS has developed water intake screening criteria to ensure that the water diversion does not adversely affect juvenile fish. The City will review its intake structure to ensure it meets these screening criteria.

**Timing:** The City is undertaking this review now

**Cost:** The cost of any required modifications to the City's water intake structure are not known at this time.

4. Review treatment system flushing and cleaning activities.

**Discussion:** The operation of the City's water filtration plant involves annual flushing and cleaning operations. These have the potential to temporarily affect fish in the West Fork of Ecola Creek. The City will review its annual water treatment system flushing and cleaning operations to ensure that they are conducted in a manner that minimizes impact on fish.

**Timing:** FY 03-04

**Cost:** Likely to be staff time and possibly improving the drainage setup. It is estimated that required improvement costs will be less than \$2,500.

### III. Parks

- A. Review management operations within parks, e.g. application of fertilizers, lawn maintenance.

**Discussion:** The application of fertilizer and other soil amendments can have an impact on water quality and fish habitat if those soil amendments enter waterways. The City will review its park maintenance procedures to ensure that any impacts on water quality are avoided.

**Timing:** FY 03-04

**Cost:** Staff time

- B. Review location of uses and activities provided for in Les Shirley Park, Ecola Creek Park

**Discussion:** Les Shirley Park and Ecola Creek Park are located adjacent to Ecola Creek. These parks contain a range of park improvements, as well as designated activity areas. Some of these uses or activity areas may not be compatible with maintaining an appropriate riparian corridor adjacent to Ecola Creek. The proposed riparian corridor study will identify a recommended riparian setback for Ecola Creek.

**Park uses and activities provided for within this recommended riparian setback will be evaluated and recommendations for changes may be made.**

**Timing: FY 04-05**

**Cost: The extent of the riparian setback at Les Shirley Park and Ecola Creek Park will be established as part of the riparian corridor study. The cost of implementing any changes in the location of park improvements or activity area will not be known until the completion of the study.**

- IV. Habitat Restoration - Develop a plan to restore natural aquatic and riparian habitat processes or conditions that have been altered by past land disturbing activities.

**Discussion: The Baseline Habitat Conditions Element of the ESA Response Plan identified a number National Marine Fisheries Service Pathway/Indicators for the Ecola Creek which were At Risk or Not Properly Functioning. In order to bring these indicators back to Properly Functioning, specific habitat restoration actions may be required. The City is developing a habitat restoration plan for the Ecola Creek Estuary that will identify habitat restoration opportunities. Areas that will be examined are: 1). reestablishment of riparian vegetation; 2). reestablishment of side channel habitat and increased flood plain connectivity, including Little Pompey Wetland and the confluence of Logan Creek/Ecola Creek; 3). opportunities for the placement of Large Woody Debris; 4). vegetative streambank stabilization; and 5). fill removal.**

**Timing: The City has received a grant to complete this study. It will be completed in FY 02-03, or early FY 03-04. Implementation of the recommended restoration activities will begin in FY 03-04 and is dependent on funding opportunities. Restoration actions at Little Pompey Wetland and the confluence of Logan Creek and Ecola Creek will be the first priorities for action.**

**Cost: The City received a \$24,000 grant for the preparation of the plan. Implementation of the recommended restoration actions in the plan will depend primarily on grant programs.**

- V. Land Owner Education

A. Inform citizens about the role their activities have on water quality, stormwater runoff and other elements critical to habitat conservation. Develop a public education program of actions individuals can take to minimize the impact of their activities on water quality.

**Discussion: As part of implementing a recommendation in the SHED Study, the City is developing a brochure for distribution to property owners who own property that contains streams and wetlands or have property that is adjacent to streams and wetlands. The brochure provides information on actions the property owner can take that will result in stewardship of the stream and wetland resource.**

**Timing: The brochure will be distributed by the end of FY 02-03.**

**Cost: Not including staff time, the cost of preparing and distributing the brochure is estimated to be less than \$1,500.**

- VI. Land Acquisition - Acquire land that is determined to be essential for the maintenance or restoration of critical habitat

**Discussion: Discussions with Weyerhaeuser about the City's purchase of land adjacent to the City's watershed and Ecola Creek is an example of this action item.**

**Timing: On-going, as opportunities arise.**

**Cost: On an individual project by project basis.**

- VII. Monitoring

Establish a monitoring program to assess the effectiveness of the programs and processes to be implemented as part of the ESA Action Plan.

**Discussion: In consultation with the Ecola Creek Watershed Council, the City needs to establish a monitoring program that will create a means for assessing the effectiveness of the programs and processes to be implemented through the Action Plan.**

**Timing: FY 03-04**

**Cost: The cost of this item has not yet been determined.**

**Action Plan Elements  
By Year**

| FY 03-04   | FY 04-05   | FY 05-06  |
|--|--|---|
| Comp Plan Policy Statements - Fish Habitat & Water Quality     | Comp Plan Policy Statements - Fish Habitat & Water Quality         | Urban Growth Boundary Review  |
| Riparian Corridor Study  | Estuarine Zone Modifications                                       | Subdivision Ordinance Modifications: Storm Drainage Standards & Road Standards                  |
| Wastewater Treatment Facility Improvements- Engineering Design | Wetland Overlay Zone Modifications                                 | Wastewater Facility Improvements  |
| Ecola Creek Pump Station Upgrade                               | Stream Corridor Protection Standards Modifications                 | Little Pompey Wetland - Tidegate Improvements   |
| Update Storm Water Master Plan - Phase I                       | Erosion Control Review Procedures                                  | Downtown Drainage Basin - Ongoing Installation of New Catch Basins                              |
| Ecola Park Road - Culvert Replacement                          | Review of Lot Coverage Standard                                    | Feasibility Study - Options for Increasing Flood Storage Capacity in Logan Creek Drainage Basin |
| Downtown Drainage Basin - Installation of New Catch Basins     | Wastewater Facility Improvements                                   | Evaluation of Potential Modifications Park Uses & Activities                                    |
| Completion of Habitat Restoration Plan                         | RV Pump Station Upgrade  | Implementation of Habitat Restoration Plan Projects   |
| Implementation of Habitat Restoration Plan Projects            | Update Storm Water Master Plan - Phase II                          |   |
| Develop a Monitoring Program                                   | Downtown Drainage Basin - Ongoing Installation of New Catch Basins |   |
| FY 03-04   | FY 04-05   | FY 05-06  |
| Erosion Control Standards Modifications                        | Water System Master Plan Update                                    |   |
|  | Water Management & Conservation Plan                               |   |
|  | Water Treatment Plant - Review                                     |   |

|  |   |  |
|--|---|--|
|  | Operation Procedures  |  |
|  | Park Management Operations -<br>Review Procedures                                   |  |
|  | Implementation of Habitat<br>Restoration Plan Projects                              |  |
|  | Downtown Drainage Basin-<br>Evaluation of Potential<br>Stormwater Treatment Systems |  |