

City of Albany, Oregon

Willamette Basin TMDL Implementation Plan



July 1, 2013 - June 30, 2018

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ATTACHMENT A – MANAGEMENT STRATEGY MATRIXA1

Submitted to Oregon DEQ on June 30, 2013

BACKGROUND

The Oregon Department of Environmental Quality (DEQ) established a Total Maximum Daily Load (TMDL) for the Willamette Basin in an order signed on September 21, 2006. The TMDL requires designated agencies and municipalities to implement actions to improve water quality. The pollutants addressed in the 2006 Willamette Basin TMDL that specifically affect Albany are mercury, bacteria, and temperature. The TMDL requires Designated Management Agencies (DMAs) to implement the TMDL through both permitted and non-permitted programs.

Albany is required to comply with National Pollutant Discharge Elimination System (NPDES) permits for discharge of wastewater and some stormwater discharges, and must develop strategies to reduce TMDL pollutants associated with these permitted discharges. The City operates a single wastewater treatment plant that releases treated effluent into the Willamette River at river mile 118.4 under an NPDES permit issued by DEQ. The City also has one site that is covered under a NPDES 1200-Z stormwater permit. At this time, Albany does not have an NPDES permit for municipal stormwater management.

Under the TMDL, the City is also responsible for limiting the effects of other activities within the City’s jurisdictional boundaries that may impact the Willamette River and its tributaries. These activities include the discharge of municipal stormwater runoff, thermal warming within the city limits, and introduction of regulated pollutants by other means. The City of Albany is required to develop management strategies to reduce TMDL pollutant loads associated with these activities.

DEQ approved Albany’s initial five-year TMDL Implementation Plan on June 4, 2008. The Plan consisted of a written plan and a matrix of scheduled activities. This report modifies and updates the written Plan and matrix for the next five-year period, 2013-2018.

LOCATION IN THE WATERSHED

The City of Albany occupies almost 17 square miles along the Willamette River from river mile 118.4 to 119.5 (see Figure 1). Albany falls into two sub-basins as defined by DEQ in the TMDL, the Upper Willamette and the Calapooia. The Calapooia River flows through the southwestern portion of the city and enters the Willamette River within the Albany city limits. Other waterbodies within the City’s jurisdiction include the lower portions of Oak, Periwinkle, Cox, Burkhart, and Truax Creeks as well as Thornton Lake in North Albany. All of these smaller waterbodies are considered part of the Upper Willamette sub-basin for the purposes of this Plan. The streams and rivers within the city limits are receiving waters from stormwater runoff.

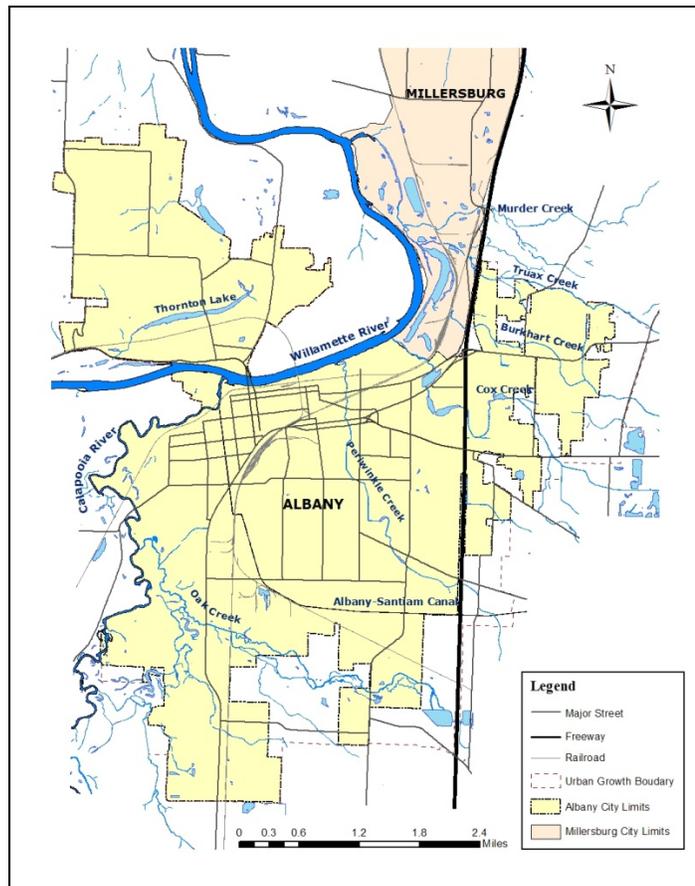


Figure 1. Map of Albany including local waterways.

The City oversees many activities that could potentially impact water quality in local streams. These activities include land use planning decisions, wastewater collection and treatment, street maintenance, utility maintenance, and parks maintenance activities. Consequently, implementation of TMDL management strategies will require cooperation across City departments and functional groups.

Linn County and Benton County are also designated management agencies (DMAs). Since Albany encompasses land in both counties, building cooperative working relationships with both counties is one key to successfully implementing the TMDL requirements.

SCOPE AND SUMMARY OF TMDL IMPLEMENTATION PLAN

There are two categories of three pollutants that Albany must address in order to comply with the TMDL. These categories are point source mercury, bacteria, and temperature and nonpoint source mercury, bacteria, and temperature. Point source discharges are generally defined as those that are carried by and emanate from a pipe or other similar structure. Nonpoint source (NPS) discharges are those that originate from diffuse areas with no well-defined source.

Point source discharges are generally regulated by NPDES permits issued to the City by DEQ. Albany holds NPDES permits for discharge of treated wastewater effluent to the Willamette River, and for stormwater runoff at the municipal airport. On February 2, 2010, a previously held NPDES 1200-Z stormwater permit for stormwater on the wastewater treatment plant property was terminated when stormwater was rerouted to the sanitary sewer waste stream at the wastewater treatment plant. All point source requirements regulated under existing NPDES permits which the City holds will be managed and reported through the NPDES process rather than through the TMDL.

NPDES Permit #	Type	Location
102024	Wastewater	Albany WWTP
1200-Z	Stormwater	Albany Municipal Airport

Table 1. Summary of Albany’s TMDL-related NPDES Permits.

Nonpoint source discharges are from diffuse sources that are not individually regulated or permitted. An example would be runoff from city parks that may contain bacteria from animal waste. Another example is Albany’s Municipal Separate Storm Sewer System (MS4). The stormwater system consists of pipes, ditches and associated appurtenances in delineated drainage basins, but the City is not currently required to have an MS4 NPDES permit. The City works to reduce the negative effects of nonpoint source discharges on water quality by implementing Best Management Practices (BMPs) such as design requirements, community outreach programs, and other methods.

IMPLEMENTATION PLAN COMPONENTS

In the 2008 TMDL Implementation Plan, the City explored many structural and nonstructural BMPs including constructed wetland and revegetation projects, new policy and education programs, and improved operational strategies. Accomplishments and lessons learned are described in detail in the “5th Year Review Report” and have helped refocus the City’s strategies in this 2013 TMDL Implementation Plan. Activities that were completed or ineffective have been removed from the matrix. The effective on-going activities and those activities that were incomplete or not yet started will be included in the 2013 Management Strategy Matrix (Attachment A).

Point Source

DEQ will include waste load allocations (WLA) for the TMDL pollutants in NPDES permits as they are renewed. Albany’s NPDES permit (#102024) for the WWTP has not been updated to include temperature but identifies activities associated with other TMDL pollutants. Activities currently covered by this permit will not be described in this TMDL Implementation Plan or matrix but may be found by

referencing the permit and associated reports submitted to DEQ in accordance with the respective permit requirements.

Point Source Bacteria

The limitation on point source contribution of bacteria is included in the City's NPDES permit for the WWTP that places specific limits on bacteria levels in treated effluent. The City plans to comply with the permit limit through routine operation of the WWTP and completed activities discussed in the "5th Year Review Report". Therefore management strategies to reduce point source bacteria are not addressed in this Implementation Plan.

Point Source Mercury

In the 2006 Willamette Basin TMDL, point source mercury is treated differently than bacteria or temperature. It was DEQs intent to use the initial TMDL period to gather more data on mercury in the basin and to provide a schedule to DMAs for additional mercury sampling and for developing a mercury reduction manual. The timeline and structure of the manual and the sampling program have yet to be established by DEQ, thus the implementation schedule for point source mercury is on hold until DEQ provides further notification. The City's completed activities discussed in the "5th Year Review Report" addressed effluent sampling using clean methods and implementation of a dental office BMP program. The 2013 Management Strategy Matrix includes reverification of the dental office BMP program and placeholders for the future DEQ activities. The Matrix will be updated as necessary when requirements from DEQ are provided.

Point Source Temperature

Although the renewed NPDES permit with TMDL pollutant loading for the WWTP has not been issued by DEQ, the TMDL contains a target temperature WLA for the Albany WWTP. In Section 3 of the October 2009 Settlement Agreement between DEQ and the City of Albany, Albany agreed "to reduce its thermal load through a system of constructed ponds and wetlands." The Settlement Agreement goes on to say that DEQ will require "no additional load reduction strategies" so long as the projects are constructed as proposed and in a timely manner. The work to construct and operate this natural treatment facility is complete and summarized in the "5th Year Review Report". Site maintenance including normal plant monitoring and care to ensure they reach maturity will be an on-going activity, and as such, is included in the 2013 Implementation Plan and matrix.

Nonpoint Source

The City is required to develop management strategies to reduce TMDL pollutant loads and thermal loading associated with nonpoint source discharges originating within Albany's jurisdictional boundaries.

Nonpoint Source Bacteria

DEQ has established a TMDL for bacteria throughout the Willamette Basin. In the Calapooia and Upper Willamette sub-basins, the TMDL calls for an overall reduction in bacteria levels of 65%. The City of Albany is responsible for implementing management strategies to reduce bacteria levels in all rivers and streams within the city limits. This includes bacterial sources that are either publicly or privately owned, as well as bacteria in stormwater runoff from all property within the City.

Implementation of the stormwater control measures that will help address bacteria that are closely associated with erosion and stormwater runoff are described later in this document. Work completed in the past five years and summarized in the "5th Year Review Report" included

establishment of an on-going program to address failing private septic systems, a program to educate homeowners about septic system maintenance, and a program to prevent pet waste from reaching waterways. Completed activities have been removed and on-going activities are included in the 2013 Management Strategy Matrix.

Nonpoint Source Mercury

NPS mercury is primarily addressed by preventing the loss of sediment to rivers and lakes. Mercury that is naturally occurring and that which is deposited from atmospheric sources readily binds with soil particles. The most effective ways the City can reduce the addition of mercury to water from nonpoint sources are to implement effective erosion prevention and sediment control measures and to protect and enhance riparian areas. NPS mercury control is addressed through implementation of the stormwater control measures discussed later in this Plan.

Nonpoint Source Temperature

Radiant heating of local streams that have lost much of their natural riparian cover is one source of heat to the Willamette River system. DEQ has established a TMDL for temperature loading throughout the Willamette Basin. The temperature standard is designed to be protective of the beneficial use in the basin related to fish and aquatic life. Native cold-habitat fish and other aquatic species are sensitive to stream temperature to varying degrees throughout their life cycle. To address exceedances of the temperature standard, DEQ requires a reduction in nonpoint source heat loads throughout the basin.

The Calapooia River and Upper Willamette Subbasins are on the 303(d) list as water quality limited for temperature for various life stages of native salmon and steelhead trout. The City has the potential to impact the temperature of the Upper Willamette River, the Calapooia River, Oak Creek, and other small streams within city limits by regulating modifications to the riparian areas of these waterbodies. Modification of the riparian area of the Willamette River itself as it flows through Albany probably will not significantly influence the temperature of the river; however any riparian buffer zones and floodplain management strategies that the City enacts would apply to the Willamette as well as smaller creeks and rivers in Albany.

Because heat load is relatively difficult to determine, the TMDL uses a surrogate measure for temperature reduction. The surrogate is effective shade which is used to translate solar radiation loads into streamside vegetation objectives¹. Effective shade targets are established for each reach of a stream based on soil type and stream aspect. This means that, in general, effective shade targets are greater on the south and west banks of any particular stream than on the east or north banks.

The City implemented a management strategy in the initial five-year period to increase percent effective shade on both publicly and privately owned riparian areas. An assessment of current riparian conditions throughout the City was completed and stream reaches lacking in effective shade and with the potential to impact stream temperature were identified and highlighted. With a planting plan template in hand and several riparian projects completed, the City will continue to look for revegetation projects on City-owned properties and planting opportunities that might arise on privately owned land. Future planting and plant maintenance projects will continue on an on-going basis as funding is available and are included in the 2013 Management Strategy Matrix.

¹ September 2006 Willamette Basin TMDL, Chapter 4: Temperature-Mainstem TMDL and Subbasin Summary, p. 4-73.

Stormwater Control Measures

Depending on population size and density, municipal stormwater discharges may be regulated under the NPDES MS4 permit system. With some exceptions, cities with more than 100,000 residents are required to obtain a MS4 Phase I permit and smaller communities in a census-defined “urban area” must have a MS4 Phase II permit. The City of Albany became an “urban area” with the 2010 census and will apply for the MS4 stormwater system general permit once DEQ makes it available.

The Willamette Basin TMDL Water Quality Management Plan specifically requires Albany to implement the six minimum stormwater control measures similar to those required by MS4 Phase II permit holders.² The control measures are designed to reduce bacteria and mercury contamination of receiving waters. When the City is issued a NPDES MS4 Phase II stormwater permit, that permit will contain its own requirements and timelines. At that time the City may revise this TMDL Implementation Plan to separate MS4 Phase II permit requirements from the TMDL Implementation Plan requirements in order to simplify reporting and management requirements.

The City has already completed some management strategies that directly relate to the six stormwater control measures in the initial five-year period as detailed in the “5th Year Review Report”. Other activities such as education, good housekeeping practices, and the erosion prevention and sediment control program will be continued on an on-going basis. Activities such as establishment of an effective post-construction stormwater quality program are extremely complicated. Components of these types of activities, including design standards, construction specifications, and long-term maintenance and operation responsibilities of stormwater quality facilities have been initiated but are currently incomplete. On-going and incomplete activities are included in the Management Strategy Matrix.

Compliance with Land Use Activities

The Albany Public Works Department coordinated their efforts with the City’s Planning Division to ensure that the TMDL Implementation Plan is consistent with the City’s land use policies and regulations. A general assessment of TMDL Implementation Plan compatibility with the Albany Comprehensive Plan was included in the initial five-year Implementation Plan. The Implementation Plan was found to be consistent with the goals and policies in the City’s Comprehensive Plan related to water quality and stormwater management. Additional protection of significant natural resources, including wetlands, riparian corridors, and wildlife habitat were adopted December 2011 with Goal 5 amendments to the Comprehensive Plan and Albany Development Code during the initial five-year period.

Updating the existing Stormwater Master Plan was an important management strategy in the initial five-year plan that was not completed and is in the Management Strategy Matrix. The initial draft of the Stormwater Master Plan will be presented to the public during the next five-year period. Also in the matrix is a goal to develop and implement a stormwater System Development Charge (SDC). This goal contains very complicated underlying tasks, and will require significant commitment from the Albany City Council and residents.

MANAGEMENT STRATEGY MATRIX

The bulk of the City’s initial five-year Implementation Plan activities were completed or have been transitioned into standard on-going operating procedures as discussed in the “5th Year Review Report”. The effective on-going activities and those activities that were incomplete or not yet started have been included in the 2013 Management Strategy Matrix in Attachment A.

² September 2006 Willamette Basin TMDL Chapter 14: Water Quality Management Plan, p. 14-22.

This report and matrix are intended to provide a clear summary to DEQ of the accomplishments made and continued progress toward the water quality goals of the TMDL. Annual reports will highlight progress made by updating the “Status” column and providing any additional comments either in a text report or on the matrix itself. The annual reports will also highlight any new management strategies or interim goals the City develops either as part of adaptive management of the Implementation Plan or as a result of new or revised TMDL requirements from DEQ.

The City will complete a comprehensive review of TMDL Implementation activities and create a summary report every five years. The review will evaluate the effectiveness of the Implementation Plan in making progress toward the water quality goals of the TMDL. The review will provide the basis for revision of the Implementation Plan and will contribute to the adaptive management of TMDL-associated activities. Each “5th Year Review Report” will take the place of the annual report required for that year and will also summarize the TMDL implementation results from the previous four years. The next “5th Year Review Report” will be due to DEQ on June 30, 2018.

NPDES-permitted activities may operate on a separate schedule. NPDES permits are reviewed according to DEQ timetables which may or may not coincide with the scheduled review of the TMDL Implementation Plan. Any Adaptive Management strategies or other information associated with permitted activities may be found in the reports to DEQ associated with each of the NPDES permits.

PUBLIC INVOLVEMENT AND OUTREACH

The City is committed to an effective public involvement process. The initial Implementation Plan was presented to the Albany City Council on March 10, 2008 and approved by DEQ on June 4, 2008. This Plan and Matrix is a continuation of the initial Implementation Plan and Matrix. Activities will be implemented as part of the annual capital and operating budget process, which are open to comment from the public. Comments from the public will be recorded as input for the City’s adaptive management of the TMDL Implementation Plan.

The Management Strategy Matrix references several items related to public involvement. Implementation of the six stormwater control measures in particular will require input from the City Council. The City will continue to follow all public meeting rules where applicable, including providing public notice for City Council meetings where TMDL-related policies or programs will be discussed. Ongoing, significant public outreach has occurred and will continue for the post-construction stormwater management and stormwater master plan activities.

Many outreach activities are currently underway and will continue throughout the period of this Plan including educational information for school children, adults, and specific focus groups. For more information, see the Management Strategy Matrix.

RESOURCES

While many of the management strategies identified by the City in this Implementation Plan can be accomplished with existing staff, the City will have to make some allocation for additional resources. The resources necessary for each management strategy are listed in the matrix in Attachment A. Resource requirements included in the matrix are estimates based on the City’s current understanding of future tasks, requirements, staffing and funding levels. Because of this, the resource requirements for each step will be more fully defined as the City moves forward. Significant changes to resource requirements will be identified in the annual progress reports and the 2018 “5th Year Review Report” to DEQ.