CITY OF TOLEDO

LEWIS COUNTY **WASHINGTON**

SHORELINE INVENTORY AND CHARACTERIZATION REPORT

ECOLOGY GRANT G1200045
G&O #11254
APRIL 2013

Gray & Osborne, Inc.
CONSULTING ENGINEERS

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CHAPTER 1

INTRODUCTION

BACKGROUND

The City of Toledo (City) obtained a grant (G1200045) from the Washington State Department of Ecology (Ecology) to conduct a comprehensive Shoreline Master Program (SMP) update. The 2003 Washington State legislature established a schedule (see RCW 90.58.080) for all Washington State cities and counties to update their local SMPs consistent with the Shoreline Management Act (SMA), Revised Code of Washington (RCW) 90.58 and the Washington Administrative Code (WAC) 173-26. The State guidelines establish general procedures, goals, and standards that are tailored by each jurisdiction as they amend their individual SMPs. This inventory was conducted in accordance with the Shoreline Master Program Guidelines (Guidelines, Chapter 173-26 WAC) and the project scope of work promulgated by Ecology, and includes all shoreline and associated wetland areas within the current City limits. Under these Guidelines the City must identify and assemble the most current, accurate and complete scientific and technical information available that is applicable to the City's shorelines. This shoreline inventory and analysis will describe existing conditions and characterize ecological functions in the shoreline jurisdiction. This will serve as a baseline against which the impacts of future development action within the shoreline jurisdiction will be measured. The Guidelines require that the City demonstrate that its updated SMP yields "no net loss" in shoreline ecological functions relative to the baseline due to its implementation.

The first step in the process was a scoping task that identified relevant inventory data and information and preparing a public participation plan that ensures information, procedures and regulations would be developed through a public process. The second step is this Shoreline Inventory and Characterization Report. The inventory and characterization of the shoreline lead to a better understanding of the relationship between shoreline process and functions of the built environment. The resulting report provides a basis for creating the City's SMP goals, policies and regulations.

Collected information was supplemented with other resources such as City documents, scientific literature, personal communications, aerial photographs, internet data and a physical assessment of the City's shoreline.

SHORELINE JURISDICTION

As defined by the Shoreline Management Act of 1971, shorelines include certain waters of the state plus their associated "shorelands." At a minimum, the waterbodies designated as shorelines of the state are streams whose mean annual flow is 20 cubic feet per seconds(cfs) or greater, lakes whose area is greater than 20 acres, and all marine waters. Shorelands are defined as:

> "those lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward 200 feet from such floodways; and all wetlands and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter…Any county or city may determine that portion of a one-hundred-year floodplain to be included in its master program as long as portion includes, as a minimum, the floodway and the adjacent land extending landward two hundred feet therefrom…Any city or county may also include in its master program land necessary for buffers for critical areas (RCW 90.58.030)"

Then entirety of the Cowlitz River within City limits and the urban growth area (UGA) exceeds the minimal flow requirement of 20 cfs mean annual flow.

Figure 1 illustrates the location of the 200′ buffer from the ordinary high water (OHW) line, the current effective FEMA floodway (1980) and the preliminary FEMA floodway (2010). Figure 1A illustrates the location of a 200 foot buffer from the 1980 FEMA floodway. The location of the 100-year FEMA floodplain (1980) and adjacent wetlands are also included on Figure 1A.

Figure 2 illustrates the proposed shoreline jurisdiction area which includes properties that intersect the 200 foot floodway buffer, the 200 foot OHW buffer and the 100 year floodplain. These properties will be the basis of evaluation for the proposed shoreline jurisdiction and characterized in Chapter 3 of this report. Due to the high river bank and elevated plateau that most of the City is located on, the City may request reducing the shoreline jurisdiction to the current floodway line in these areas. When flooding occurs the river floods the lowlands south of the City and flood waters back up into the properties on the lower, southwest side of the City.

No other waterbodies within the City were identified as meeting the definition of a shoreline. The proposed shoreline jurisdiction for this initial characterization is shown on Map 1 of the map folio in Appendix B.

STUDY AREA

The City of Toledo is located within Lewis County in southwestern Washington. The City is located approximately 2 miles east of Interstate 5 along the west bank of the Cowlitz River and approximately 20 miles southeast of the City of Chehalis. The current City limits constitute an area of approximately 234 acres. The topography of Toledo and the Urban Growth Area (UGA) slopes from the northwestern boundary of the City southeast to the Cowlitz River.

The economy for the City of Toledo has been traditionally based on agriculture and timber. The City serves as a focal point for schools, commerce, and governmental services for the surrounding rural area. The City also benefits from its vicinity to Mount St. Helens and Interstate Highway 5. In addition, the Cowlitz River is an important

fishery with a salmon hatchery located near the Mayfield Dam. The City also has an elementary school, middle school, high school, and provides a Head Start Program for Winlock, Toledo, and Vader.

The City of Toledo has a marine climate with dry, cool summers and mild, wet winters. Based on data from the Western Regional Climate Center, the City receives an average of 45.67 inches of rain per year. January is historically the wettest month, and July the driest.

GEOLOGY

Loamy soils are the most common soil-type within and around the City of Toledo. These soils are made up of differing amounts of clay, silt, and sand particles. They are typical of the soils found on the flat terraces and bottomlands along rivers like the Cowlitz. All of the loamy soils found in Toledo are rated as potentially prime farmland by the U.S. Soil Conservation Service.

Cloquato silt loam makes up the single largest soil-type in this class and it covers nearly the entire area of the City generally south of Augustus Street. This is a very deep, well-drained soil that has slow run-off and very little erosion potential. It is considered a highly permeable soil. Flooding is its primary building limitation.

Winston gravely loam is the second largest soil group. This soil is found in large pockets approximately north of Augustus Street and south of Hemlock. Similar to Cloquato, it, too, is very deep, well drained, highly permeable, with a slow run-off, and slight erosion potential. Of all the soils in Toledo, Winston gravely loam has the fewest building limitations.

Lacamas silt-loam, makes up the third largest soils group. These soils are found mostly in a wide band surrounding 6th and 7th Streets, along 5th Street and Pacific Road north of Hemlock, and out along Highway 505 past the City limits. Lacamas soils are subject to seasonal high water at or near the surface, slow run-off and slight erosion potential. Their wetness, shrink-swell potential, and low strength presents building problems for structures and streets.

Another loamy soil found in Toledo is Galvin silt loam. This soil is common in the northeast section of the City next to the river. It has similar properties to Lacamas silt loam with much of the same building limitations.

Bands of Xerorthents soils are located in the City where there are steep drop-offs. Such areas typically run in narrow bands where heavy drainage patterns occur or along the steep slopes of the west bank of the Cowlitz River. These soils are also found in similar bands to the north and east of the City. Xerorthents soils differ from loamy soils in that they consist of outwash sands, pebbles, cobbles, and sandstone. Run-off is very rapid and erosion potential is high. The soil also is highly permeable. Steep slopes (greater than

15 percent) with Xerorthents soils present severe building limitations and may be geologically hazardous areas. Most of these areas in and around the city have historically been avoided as development sites and remain today as open space.

Below its soils, Toledo's geologic foundation consists of a layer of sedimentary deposits over a substantially thicker bedrock. These sedimentary deposits, known as Quarternary Glacial Deposits, are generally of sand and gravel within a mix of clay and silt. Geologists believe that this layer in the Toledo area is at its thickest in Lewis County, although its exact depth is unknown. Glaciers advancing and retreating from Mt. Rainier, Mt. Adams, and Mt. St. Helens left these deposits 10,000 years ago during the last ice age. Below the sedimentary deposit is a bedrock thought to consist mostly of shale, siltstone, conglomerate, pyroclastic, and lava rock. This layer is estimated to be more than 10,000-feet thick and created around 60 million years ago.

There are no known mineral resource lands of long-term commercial significance within the Toledo Urban Growth Area. However, immediately across the Cowlitz River to the east of Toledo is a large commercial gravel mining operation.

TOPOGRAPHY

The City of Toledo slopes gently from the northeast to the southwest. The easterly part is steeper and the westerly part is flatter. The highest point in the City is over 290 feet above mean sea level (MSL) and the lowest point within City limits is at 92 feet above MSL.

The predominant topographical feature in the study area is the Cowlitz River. The City of Toledo is located at River Mile 34 as measured in miles above the river mouth. The river, together with its tributaries upstream of Toledo, drains an area of 1,461 square miles. Through Toledo, the river bed elevation drops from 88 to 85 for an average gradient of 2.5 feet per mile.

SURFACE WATERS AND DRAINAGE BASINS

Lakes and streams are classified as sensitive areas due to the variety of plants and animals they support. The primary surface water feature within or near the City of Toledo sewer service area is the Cowlitz River. The Cowlitz River, a tributary of the Columbia River, defines the eastern edge of the City.

GROUNDWATER AND RECHARGE AREAS

Most of the area within the City limits falls under Category I - Severe Aquifer Sensitivity. "Category I - Severe aquifer sensitivity" are those areas which provide rapid recharge with little protection, having highly permeable soils. Category II and Category III are also present within the Urban Growth Area. Category II - Moderate aquifer sensitivity areas are those areas with aquifers present, but which have a surface soil material that

encourages runoff and slows water entry into the ground. Category III - Slight aquifer sensitivity areas are those areas of low ground water availability and whose soil series are derived from basaltic, andesitic, or sedimentary rock or ancient glacial till which are parent material for soils with more clays at the surface. These geological formations do not provide abundant ground water.

FISH AND WILDLIFE HABITAT

Fish and wildlife habitat is defined as areas essential for maintaining specifically listed species in suitable habitats. This definition was provided in "Fish and Wildlife Habitat Critical Area" section of WAC 365-190-080(5). The WAC further states that any proposed activity within 300 feet of these areas requires the preparation of a habitat assessment. This assessment is circulated to all the appropriate agencies for review. After agency review, a Habitat Management Plan may be required that would address the impacts the project would have on habitat, provide background information of specific species, and recommend protection and mitigation measures for those species.

After any project implementation, an assessment and evaluation of the success of the identified measures is required. This plan is again circulated to the appropriate agencies for review. Minimum buffers from the critical habitat are typically required as part of this process.

VEGETATION

Much of the land within the City has been cleared for residential purposes. Lands to the southwest and northwest of the City have been cleared for farming purposes. Native vegetation remains in the northeastern portion of the service area and in other locations such as steep hillsides and adjacent to the river where farming was impractical.

The dominant tree species in the Toledo service area includes conifers such as Douglas fir, Western Red Cedar, and Western Hemlock. Pacific Red Alder, Big Leaf Maple, and other deciduous trees make up a significant portion of the second and third growth forests along with native conifer species. Dense brush grows on both unstable and stable areas and consists predominantly of blackberries, huckleberries, salal, and various fern species. The dense forest and brush cover mediates runoff and provides for uptake of water. On individual residential lots, the vegetation varies from dense forest on larger lots to grassed lawns and landscaping with shrubs and ornamental trees.

CHAPTER 2

CURRENT REGULATORY OVERVIEW

CITY OF TOLEDO

The Shoreline Management Act of 1971 brought about many changes for local jurisdictions, including the City of Toleo. The legislative findings and policy intent of SMA states:

> "There is, therefore, a clear and urgent demand for a planned, rational, and concerted effort, jointly performed by federal, state, and local goverments, to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines (RCW 90.58.020)."

While protecting shoreline resources by regulating development, the SMA is also intended to provide balance by encouraging water-dependent or water-oriented uses while also conserving or enhancing shoreline ecological functions and values. The SMP will be based on state guidelines, but tailored to the specific conditions and needs of individual communities.

The City has been utilizing the Lewis County Shoreline Master Program (SMP) and Shoreline Management Regulations since their adoption in 1974. The last update of the Program was in 1998 and the last update of Chapter 17.25 (Shoreline Management) of the Lewis County Code was in 2000. Under the existing County SMP, the Cowlitz River shoreline within the City of may have some areas that should be designated as a Conservancy Environment (see description below) but the majority of the shoreline property has been developed as residential property and would be classified as an Urban Environment designation as described below:

> **Conservancy Environment** (The conservancy environment is intended to provide for multiple use activities, although the intensity of uses will be limited because of extensive commercial forest areas, steep slopes, flooding, desirability for low-intensity recreational use and wildlife habitat values.)
>
> *The Conservancy Environment is for those areas which are intended to maintain their existing character. The preferred uses are those which are non-consumptive of the physical and biological resources of the area. Non-consumptive uses are those uses which can utilize sources on a sustained basis while minimally reducing opportunities for other future uses of resources in the area. Activities and uses of a non-permanent nature which do not substantially degrade the existing character of an area are appropriate uses for a conservancy environment. Examples of uses that might be predominant in a conservancy*

environment include diffuse outdoor recreational activities, passive agricultural uses such as pasture and range lands, and other related uses and activities. Specific regulations in the existing Lewis County SMP state the following with regard to buffers from shorelines in Conservancy Environment designations:

Only selective tree cutting is permitted within 200 feet of the high water mark in shorelines of statewide significance unless a variance is obtained.

No commercial or industrial developments shall be allowed if they are not water oriented or water dependent for operations and existence.

All developments shall have buffer zones of at least 50-feet wide between any structure and the ordinary high water mark.

Urban Environment (The urban environments are those areas of intensive residential, commercial, or industrial use, or which are anticipating such intensive development in the near future.)

The Urban Environment is an area of high intensity land use including residential, commercial, and industrial development. It is particularly suitable to those areas presently subjected to extremely intensive use pressure, as well as areas planned to accommodate urban expansion. Shorelines planned for future urban expansion should present few biological limitations for urban activities and not have a high priority for designation as an alternative environment.

The City also adopted the City of Toledo Land Development Code in 2008 which contains Chapter IV Critical Areas Protection. This chapter states the following activities that are exempt in Critical Areas:

1. Conservation, enhancement, restoration, or preservative measures or projects;

2. Low intensity, passive recreational uses;

3. Short-term scientific studies and educational uses;

4. Repair and maintenance of existing public roads, bridges, and storm water facilities;

5. Walkways without structures;

6. Public Parks;

7. Site investigation work necessary for land use applications; and,

8. Forest practices governed by RCW 76.09.

Chapter IV also allows for emergency work in critical areas (if authorized by the Mayor and determined to be an eminent threat to public health and safety) and outlines the technical assessments that are required for any land use proposed within 200 feet of a critical area. This Chapter then defines areas that constitute a critical area, adopting State documents for delineating wetlands, setting buffer requirements (200 feet from Category I, 100 feet from Category II, 50 feet from Category III and 25 feet from Category IV), describing regulations for activities near geologically hazardous areas, aquifer recharge areas, wellhead protection areas, and fish and wildlife habitat conservation areas.

SECTION 13.05

Section 13.05 of this chapter (Fish and Wildlife Habitat Conservation Areas Delineation and Protection) identifies and adopts WSFW priority habitat maps, the Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan and describes the technical assessment required for development of parcels located within 200 feet of a fish and wildlife habitat conservation area.

Most of the uses, developments, and activities regulated under the City's Land Development Code are also subject to the International Building Code, and various other provisions of city, county, state and federal laws. Any applicant must comply with all applicable laws prior to commencing any use, development, or activity. The City will ensure consistency between the SMP and the City codes, plans and programs by reviewing each for consistency during periodic updates of the City's Comprehensive Plan as required by State statute.

STATE AND FEDERAL REGULATIONS

State and federal regulations most pertinent to development in the City's shorelines include the Federal Endangered Species Act, the Federal Clean Water Act, the state Shoreline Management Act, and the State Hydraulic Code. Other relevant Federal laws include the National Environmental Policy Act, Anadromous Fish Conservation Act, Clean Air Act, and the Migratory Bird Treaty Act. State laws which address shoreline issues include the Growth Management Act, State Environmental Policy Act, tribal agreements and case law, Watershed Planning Act, Water Resources Act, Salmon Recovery Act, and the Water Quality Protection Act.

A variety of agencies (e.g., U.S. Army Corps of Engineers, National Marine Fisheries Service, U.S. Fish and Wildlife Service, Washington Department of Ecology, Washington Department of Fish and Wildlife) are involved in implementing these regulations, but review by these agencies of shoreline development in most cases would be triggered by in- or over-water work, discharges of fill or pollutants into the water, or substantial land clearing. Depending on the nature of the proposed development, State

and Federal regulations can play an important role in the design and implementation of a shoreline project, ensuring that impacts to shoreline functions and values are avoided, minimized and/or mitigated.

With the comprehensive SMP update, the City will strive to ensure that Toledo's SMP regulations are consistent with other state and federal requirements and explore ways to streamline the shoreline permitting process. A summary of some of the key regulations and agency responsibilities follows.

SECTION 404

Section 404 of the federal Clean Water Act provides the Corps, under the oversight of the U. S. Environmental Protection Agency, with authority to regulate "discharge of dredged or fill material into waters of the United States, including wetlands" (http://www.epa.gov/owow/wetlands/pdf/reg_authority_pr.pdf). The extent of the Corps' authority and the definition of fill have been the subject of considerable legal activity. As applicable to the City of Napavine's shoreline jurisdiction; however, it generally means that the Corps must review and approve most activities in streams, rivers or wetlands. These activities may include river, or wetland fill, river and wetland restoration, and culvert installation or replacement, among others. Similar to SEPA requirements, the Corps in interested in avoidance, minimization, restoration, and compensation of impacts.

FEDERAL ENDANGERED SPECIES ACT (ESA)

Section 9 of the ESA prohibits "take" of listed species. Take has been defined in Section 3 as: "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The take prohibitions of the ESA apply to everyone, so any action of the City that results in a take of listed fish or wildlife would be a violation of the ESA and exposes the City to risk of lawsuit. Per Section 7 of the ESA, activities with potential to affect federally listed or proposed species and that either require Federal approval, receive Federal funding, or occur on Federal land must be reviewed by the National Marine Fisheries Service (NOAA Fisheries) and/or U.S. Fish and Wildlife Service (USFWS) via a process called "consultation." Currently, the Cowlitz River has a known presence of ESA-listed species, including Puget Sound Chinook (Oncorhynchus tshawytscha), Puget Sound Steelhead (O. mykiss), Puget Sound/Strait of Georgia Coho (O. kisutch), Chum Salmon (O. keta), Coast Resident Cutthroat Trout (O. clarki) and Rainbow trout (O. mykiss).

SECTION 401 WATER QUALITY CERTIFICATION

Section 401 of the Federal Clean Water Act allows States to review, condition, and approve or deny certain Federal permitted actions that result in discharges to State waters, including wetlands. In Washington, the Department of Ecology is the state agency responsible for conducting that review, with their primary review criteria of ensuring that state water quality standards are met. Actions within streams or wetlands within the

shoreline zone that require a Section 404 permit (see above), will also need to be reviewed by Ecology.

HYDRAULIC CODE

Chapter 77.55 RCW (the Hydraulic Code) gives the Washington Department of Fish and Wildlife (WDFW) the authority to review, condition, and approve or deny "any construction activity that will use, divert, obstruct, or change the bed or flow of state waters." As applicable to the City of Toledo's shoreline jurisdiction, however, it generally means the WDFW must review and approve most activities in or over the Cowlitz River. These activities may include river alteration/bank stabilization, bridge repair/expansion, and culvert installation or replacement, among others. WDFW can condition projects to avoid, minimize, restore, and compensate adverse impacts.

(Installation of LWD during Front Street Boat Launch construction)

CHAPTER 3

CITY OF TOLEDO SHORELINE INVENTORY

INTRODUCTION

Development of a shoreline inventory is intended to record the existing or baseline conditions upon which development of shoreline master program provisions will be examined to ensure the adopted regulations provide no net loss of shoreline ecological functions. At a minimum, local jurisdictions shall gather inventory elements listed in the Guidelines, to the extent information is relevant and readily available. Table 3-1 lists those relevant inventory elements in which data is available for the City's shoreline. Areas of data gaps are listed in the following section. The table also describes the information collected for each of the required inventory elements. Figures depicting the various inventory pieces listed in Table 3-1 are provided in Appendix B (Maps 1 – 14).

TABLE 3-1

Shoreline Inventory Elements and Information Sources

Inventory Element	Information Gathered	Data Source	Appendix B Map
Proposed Shoreline	Buffers/boundaries	County/City/FEMA	Map 1
Land Use Patterns	Current Zoning	County GIS	Map 2
Impervious Surfaces	Impervious Surfaces	Ecology	Map 3
Vegetation	Vegetation type and land cover	Ecology	Map 4
Public Access Areas	Parks and open spaces	County	Map 5
Soils	Soil types	USDA NRCS	Map 6
Wetlands	National and County wetland inventories	WDFW	Map 7
Floodplains	Floodplains	County/FEMA	Map 8
Priority Habitats and Species (PHS)	WDFW PHS	WDFW	Map 9
Water Quality Impairment	305(b) waters and regulated sites	Ecology	None present, not mapped
Transportation	Highways, streets	County	Map 10
Utilities	Water and sewer mains	City	Map 11
Critical Areas	Streams, geohazards, wetlands	County/City	Map 12

TABLE 3-1 – (continued)

Shoreline Inventory Elements and Information Sources

Inventory Element	Information Gathered	Data Source	Appendix B Map
Channel Migration Zones	See text below in Data Gaps section	See text below in Data Gaps section	Not Mapped
Degraded areas/potential restoration sites	Site reconnaissance	Field inventory	Not mapped
Toxic Sites or Cleanup Areas	Permitted Sites	Ecology	Map 13
Arch. & Historical Resources	Historic Register Properties	Washington Information System for Architectural and Archaeological Records Data	None present, not mapped
Overwater Structures	Bridges	County	Map 14

DATA GAPS

Information was not located or incomplete for the following parameters:

- Shoreline Armoring
- Channel Migration

Based on the SR 506 bridge crossing, the high river banks through most of the City and the armored dikes around the wastewater treatment facility in the lower (southerly) section of town, this report assumes channel migration will be minimal through the City's shoreline jurisdiction.

SHORELINE CONDITIONS

The City of Toledo's shoreline includes the west bank of the Cowlitz River as it flows along the City's eastern corporate limits in a southerly and southwesterly direction. Only 2 of the 44 parcels in the shoreline area are large tracts of land (8 acres total, located in the northeast corner of town). Twenty-nine of the 44 parcels (located partially or fully within the shoreline area) are smaller residential lots. The other 13 parcels include 11 public parcels (City, County and State owned), the City's boat launch directly adjacent to the SR 506 bridge, a small corner of the City's wastewater treatment facility property in the southeast corner of town, a church, and part of a parcel containing a commercial garage. A majority of the homes fronting the Cowlitz River were built between 1930 and 1950 with the newest being built in 1996 and the oldest originally constructed in 1900.

The majority of these homes have a 100 foot or greater separation from the OHW of the Cowlitz River. The closest house was built in 1933 and is located approximately 40 feet away from the OHW line.

Table 3-2 contains inventory elements that expand upon those listed in table 3-1 by providing specific detail and data for this assessment unit.

(Cowlitz River looking South on SR 506 bridge)

TABLE 3-2

Cowlitz River -Shoreline Inventory Elements

Inventory Element	
Shoreline Dimensions	4,300 feet of shoreline frontage, 24 acres in shoreline designation (includes public ROW)
Zoning/Parcels	3 parcels zoned Commercial in shoreline jurisdiction (1.3 acres), remaining 41 parcels are residential and public
Potential for Development	Some potential in northwest corner of town, other areas are nearly at build out.
Undeveloped Land	1.4 acres privately owned, 7 acres publically owned (excludes public ROW)
Setbacks	200 feet from OHW unless technical evaluation provides variance.

TABLE 3-2 – (continued)

Cowlitz River -Shoreline Inventory Elements

Inventory Element	
Utilities	Water, sewer and storm drains provided by City for most properties.
Impervious Surface	25%
Terrestrial Vegetation	Low intensity/developed 38% Grassland 9% Mixed Forest 25% Palustrine forested wetland 18% Palustrine aquatic bed 10%
Overwater Cover	SR 506 bridge
Public Access	Front Street boat launch and undeveloped right of ways
Critical Areas	Floodplain 45%* Severe aquifer recharge area 19% Moderate aquifer recharge area 17% Slight aquifer recharge area 64% Wetlands 18%*
Channel Migration Zones	Minor channel migration zones are present in this unit.
PHS Listed Species	• Chinook Salmon • Chum Salmon • Coast Resident Cutthroat • Coho Salmon • Steelhead • Rainbow Trout • Northern spotted Owl
Impaired Waters 303(d)/305(b)	none
Ecology Permitted Sites	none
Historic Register Properties	none

*****Wetlands and Floodplain includes 3 acres of City's wastewater lagoon. Subtracting this acreage reduces the wetlands to 5 percent and floodplain to 32 percent of shoreline area.

(Front Street Boat Launch ADA ramp to observation deck)

OPPORTUNITY AREAS

Ecology's *Shoreline Master Program Guidelines* (173-26 WAC) include the following definition:

> "Restore," "Restoration" or "ecological restoration" means the reestablishment or upgrading of impaired ecological shoreline processes or functions. This may be accomplished through measures including but not limited to revegetation, removal of intrusive shoreline structures and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the shoreline area to aboriginal or pre-European settlement conditions.

Consistent with Ecology's definition, use of the word "restore," or any variations, in this document is not intended to encompass actions that re-establish historic conditions. Instead, it encompasses a suite of strategies that can be approximately delineated into four categories: creation (of a new resource), restoration (of a converted or substantially degraded resource), enhancement (of an existing degraded resource), and protection (of an existing high-quality resource).

There is a critical distinction between restoration and mitigation. Mitigation will require applicants whose shoreline proposals will have adverse impacts to complete actions to mitigate those impacts or provide compensation in other ways for losses of ecological function. Impacted wetland buffers are required to be restored under the City's Wetlands Protection regulations. The City can encourage applicants to implement restoration

actions that will improve ecological functions relative to the applicant's pre-project condition. As stated in WAC 173-26-201(2)(c):

> It is intended that local government, through the master program, along with other regulatory and nonregulatory programs, contribute to restoration by planning for and fostering restoration and that such restoration occur through a combination of public and private programs and actions. Local government should identify restoration opportunities through the shoreline inventory process and authorize, coordinate and facilitate appropriate publicly and privately initiated restoration projects within their master programs. The goal of this effort is master programs which include planning elements that, when implemented, serve to improve the overall condition of habitat and resources within the shoreline area of each city and county."

The City currently owns two parcels and several areas of undeveloped right of ways on and adjacent to the west bank of the Cowlitz River. A trail system linking these properties and right of way areas with the newly constructed boat launch facility and the Washington State owned property located between City Hall and the River has been included in the City's trail plan and would provide opportunity to develop additional public access, protect/restore habitat and provide better control over this important section of shoreline.

(Front Street Boat Launch observation deck)

CHAPTER 4

ANALYSIS OF ECOLOGICAL FUNCTIONS

GEOGRAPHY AND ECOSYSTEM

The City of Toledo is located in Lewis County and contains freshwater shorelines associated with Washington State's Water Resource Inventory Area (WRIA) 26-Cowlitz Watershed. The Cowlitz Watershed, includes the Cowlitz River and numerous tributary creeks and streams, several of which originate in the Cascade Mountains and Willapa Hills. The annual precipitation in the Cowlitz Watershed ranges from 40 inches in the lower Cowlitz Valley to over 120 inches in the Cascade Mountains. Most of the precipitation falls during the winter months when water demands are lowest. During the summer, the snowpack is gone, there is little rain and naturally low stream flows are dependent on groundwater inflow.

This watershed is one of the most intensely farmed basins in western Washington, and much of the water in this watershed is already spoken for. Additionally, Tacoma Power has senior water rights to maintain reservoir levels in Riffe and Mayfield lakes. There is limited water for new uses, especially given that river levels need to be maintained to ensure adequate water quality and fish migration.

The Cowlitz River flows from its origin at Cowlitz Park at the south side of Mount Rainier and converges with the Ohanapecosh River southwest of Grant Purcell Falls in the Gifford Pinchot National Forest. From this point the Cowlitz River flows through the Town of Packwood and along Highway 12 in a southwesterly and westerly direction into Riffe Lake, Mayfield Lake and through Mayfield Dam. After flowing by the Cowlitz Salmon and Trout Hatcheries the Cowlitz flows through the City of Toledo then turns south through Longview, to its discharge into the Columbia River.

The City of Toledo's shoreline along the Cowlitz River contains approximately 21 acres. The shoreline and adjacent areas support habitat for Elk, Bald Eagle and Northern Spotted Owl, along with Chinook, Coho and Chum Salmon, Coastal Cutthroat Trout, Rainbow Trout and Steelhead Trout which are all listed by the State on the WDFW Priority Habitats and Species Report.

LAND USE AND CURRENT SHORELINE CONDITIONS

The City of Toledo UGA is currently comprised of approximately 470 acres, of which 234 acres are within the City limits. The City of Toledo has a variety of land uses representative of most small, rural cities. An inventory of these uses show residential, commercial, public, and non-urban activities. Two-thirds of the land used in the community is for residential purposes, most of which are single-family homes, although there are a small number of duplexes and apartments as well. The Comprehensive Land

Use Plan indicates single-family housing densities generally range from 7.3 dwellings per acre in the southern half of the community to 4.4 dwellings per acre in the northern half. Future residential densities for the Toledo UGA are 5.5 dwellings per acre for single family residences, 11 dwellings per acre for duplex residences and 25 dwellings per acre for apartments.

Developed and unimproved public right-of-ways account for the next largest use of land. Public uses, such as government offices, public facilities, churches, schools, cemetery, and the City park, are scattered throughout the community. Most commercial activities are concentrated in the downtown area, along Kellogg Way, Cowlitz Street, and North 5th Street. A few home-based businesses are also located in the residential areas. Non-urban uses in the City primarily consist of small tracts for pasture and farming. Only a small portion of land within the City is vacant, most of which consists of steep slopes, drainage areas, creek bed, and wetlands.

City of Toledo's shoreline includes the west bank of the Cowlitz River as it flows along the City's eastern corporate limits in a southerly and southwesterly direction. A few large tracts of land reside on the higher river bank in the northeast corner of town but the majority of the properties containing river shoreline is residential in nature and has been improved with the construction of single family homes. Eleven public parcels (City, County and State owned), the City's boat launch (directly adjacent to the SR 506 bridge), a small corner of the City's wastewater treatment facility property in the southeast corner of town, a church, and part of a parcel containing a commercial garage are the only properties in the shoreline area that are not residential.

Most of the homes fronting the Cowlitz River were built between 1930 and 1950 with the newest being built in 1996 and the oldest originally constructed in 1900. The majority of these homes have a 100 foot or greater separation from the OHW of the Cowlitz River. The home closest to the river was built in 1933 and is located approximately 40 feet away from the OHW line.

ANALYSIS OF ECOLOGICAL FUNCTIONS

Ecological processes and functions of the City of Toledo's shoreline areas are summarized in Table 4-1. These tables are organized around Ecology's list of processes and functions for freshwater streams. The list includes evaluation of four major processes for streams: (1) hydrologic; (2) vegetation; (3) hyporheic; and (4) habitat. These are further broken down into the following functions which are in turn used to evaluate assessment unit performance:

HYDROLOGIC FUNCTIONS

- Storing water and sediment;
- Transport of water and sediment;
- Attenuating flow energy;
- Developing pools, riffles, and gravel bars;

- Removing excess nutrients and toxic compounds; and
- Recruitment of LWD and other organic material.

VEGETATIVE FUNCTIONS

- Temperature regulation;
- Water quality improvement;
- Slowing riverbank erosion; bank stabilization;
- Attenuating of flow energy;
- Sediment removal; and
- Provision of LWD and organic matter.

HYPORHEIC FUNCTIONS

- Removing excess nutrients and toxic compounds;
- Water storage and maintenance of base flows;
- Support of vegetation; and
- Sediment storage.

HABITAT FUNCTIONS

- Physical space and conditions for life history;
- Food production and delivery.

Assessment of each function is based upon both quantitative data results derived from the inventory information described in Chapter 3; a qualitative assessment based on aerial photography, field inventory; and existing assessment information. In the ensuing table, the shoreline unit has been given an overall "rating" for ecological functions based on the available and relevant inventory information and the corresponding quantitative and qualitative evaluation. Rating was completed using a "low" to "high" function scale. The level categories are:

- Low;
- Low/Moderate;
- Moderate;
- Moderate/High; and
- High.

CITY OF TOLEDO SHORELINE ASSESSMENT – COWLITZ RIVER

This Assessment Unit contains the west bank of the Cowlitz River located within the City of Toledo corporate limits. This unit contains 4,300 feet of river shoreline.

Land use is currently residential with a few commercial and publicly owned parcels. The total shoreline area for this unit is 24 acres with only 1.4 acres of privately owned property that has not been developed.

TABLE 4-1

Function Summary of City of Toledo/Cowlitz River Shoreline Assessment

Shoreline Processes and Functions	Alterations and Assessment of Functions
Hydrologic	
Storage of water and sediment	MODERATE: Low to medium banks and adjacent wetlands contribute to the river's ability to store water and sediment during high flow events. The lower elevations to the south and on the east side of the river are more prone to flooding during high flow events.
Transport of water and sediment	MODERATE: The ability of this unit to transport sediment and water is generally unimpaired except during the extreme high flows discussed above.
Attenuating flow energy	MODERATE: Low to medium banks, adjacent wetlands and braided channels contribute to the river's ability to store water and sediment. During high flow events flooding occurs on the east side of the river with several old gravel pit sites providing storage**.**
Developing pools, riffles, and gravel bars	MODERATE/HIGH: The flat topography to the east and south of the shoreline area, braided channels and gravel soils in the northern and southern portions of the shoreline area provide good development of pools, riffles and gravel bars.
Removing excess nutrients and toxic compounds	MODERATE/HIGH: The floodplain and wetlands within this reach provide a competent biofiltration function.
Recruitment and transport of LWD and other organic material	MODERATE: The river sections above this reach have large forested areas that provide LWD into this reach during high flow events. Areas directly east, north and south of the City's shoreline area have extensive forested areas with some mixed forest located within the unit.

TABLE 4-1 – (continued)

Function Summary of City of Toledo/Cowlitz River Shoreline Assessment

Shoreline Processes and Functions	Alterations and Assessment of Functions
Vegetation	
Temperature regulation	MODERATE: Although there is some shading provided by fir and alder groves on the south and north ends of this reach, additional plantings would be beneficial to this unit.
Water quality improvement	MODERATE: This area has a moderately vegetated buffer and well-functioning floodplain to promote water quality improvement. The floodplain area is vegetated with riparian vegetation which provides effective biofiltration.
Slowing riverbank erosion; bank stabilization	MODERATE: The vegetated buffer, flat topography to the east and south, and adjacent areas of mature forest communities helps stabilize soils and slow the rate of bank erosion.
Attenuation of flow energy	MODERATE/HIGH: Riparian vegetation, LWD and large floodplain areas to the east and south provide energy attenuation during high flows.
Sediment removal	MODERATE/HIGH: As stated above this area has wetlands and floodplain with riparian vegetation that provides biofiltration and sediment removal.
Provision of LWD and organic matter	MODERATE: Due to early residential development, this area has less forestation than upstream and downstream reaches and would benefit from additional shoreline planting.
Hyporheic	
Remove excess nutrients and toxic compounds	MODERATE: Soils in this area readily promote hyporheic flow; there are large areas of gravel deposits and upstream reaches have an abundance of gravel that transports to this reach during high flow events. The vegetated buffer and large floodplain areas to the south and east increase the potential for removal of excess nutrients and toxic compounds.
Water storage and maintenance of base flow	MODERATE/HIGH: The soils in this unit contain gravel deposits with additional gravel being provided by upstream reaches, creating a riverbed that provides moderate to high storage and hyporheic flow.

TABLE 4-1 – (continued)

Function Summary of City of Toledo/Cowlitz River Shoreline Assessment

Shoreline Processes and Functions	Alterations and Assessment of Functions
Support of Vegetation	MODERATE/HIGH: The hyporheic flow occurring in areas of this reach support riparian vegetation.
Sediment storage	MODERATE/HIGH: The soils in this area have large gravel deposits and provide good sediment storage.
Habitat	
Physical space and conditions for life history	MODERATE: Habitat in this unit has been altered by early residential development but still contains some forested areas with the vegetative community in the north and south portions of the shoreline largely intact. LWD and downed wood supplied by the wooded areas, together with the dense shoreline vegetation located in some buffer areas provide places for various wildlife species to find cover or suitable nesting and rearing sites.
Food production and delivery	MODERATE/HIGH: Food production from upland areas primarily originates from seed and fruit bearing vegetation in the adjacent properties, mixed forest, and forested wetland areas. These sources provide food directly to terrestrial wildlife and promote insects and organic matter that provide nutrients to fish and other aquatic life.

SUMMARY

Accounting for the existing hydrologic, vegetative, hyporheic, and habitat conditions within this Assessment Unit, the overall shoreline ecological function is considered moderate.

(Looking northeast from high bank on north end)

(Looking south from low bank on south end)

CHAPTER 5

LAND USE ANALYSIS AND IMPLICATIONS

INTRODUCTION

Land use patterns are an important consideration in shoreline analysis to identify opportunities for "preferred uses," especially water-dependent, water related and water enjoyment uses. Land uses adjacent to water can also be a determinate in assigning environmental designations to specific sections of the shoreline. An analysis of land use conditions is necessary to determine potential land use changes and their effect on the shorelines with respect to SMA objectives. The existing land uses and proposed environment designation boundaries and provisions must be mutually consistent with the City's Comprehensive Plan.

As part of SMA development, the shoreline is to be classified into specific shoreline environmental designations based on existing land use patterns, baseline inventory results, goals stipulated in the City's Comprehensive Plan, and Ecology criteria. Ecology guidelines include six recommendations for shoreline for shoreline environment designations (listed below). However, each jurisdiction may use alternate or parallel environment designations, as appropriate, as long as they provide equal or better protection than the standard. The five new standard designations which could be applied to the City's shoreline jurisdiction, and should be considered, have the following titles and characteristics:

ECOLOGY RECOMMENDATIONS

- Natural: "shoreline is ecologically intact…currently performing an important, irreplaceable function or ecosystem-wide process that would be damaged by human activity;" "considered to represent ecosystems and geologic types that are of particular scientific and educational interest;" "unable to support new development or uses without significant adverse impacts to ecological functions or risk to human safety."

- Urban Conservancy (UC): "suitable for water-related or water-enjoyment uses;" "open space, flood plain or other sensitive areas that should not be more intensively developed;" "potential for ecological restoration;" "retain important ecological functions, even though partially developed;" "have the potential for development that is compatible with ecological restoration."

- High Intensity (HI): "shoreline areas within incorporated municipalities, urban growth areas, and industrial or commercial "rural areas of more intense development," as described by RCW 36.70A.070 if they currently

support high-intensity uses related to commerce, transportation or navigation; or are suitable and planned for high-intensity water-oriented uses."

- Shoreline Residential (SR): "shoreline areas inside urban growth areas, as defined in RCW 36.70A.110, incorporated municipalities, "rural areas of more intense development," or "master planned resorts," as described in RCW 36.70A.360, if they are predominantly single-family or multi-family residential development or are planned and platted for residential development."

- Aquatic: "lands waterward of the ordinary high-water mark."

Rural Conservancy is the sixth environment designation, and is not applicable in incorporated municipalities.

SHORELINE CONDITIONS

The areas in this Assessment Unit are largely residential with a small component of commercial and public designations. This area is located in the heart of the City's residential area and is located in one of the older neighborhoods in town, with several structures dating back to the early 1900s.

As discussed in Chapter 2, the City's Land Development Code restricted development within 200 feet from the fish habitat areas without a technical assessment review and approval. A designation of High Intensity (HI) would appear to be appropriate for the area within the new shoreline designation.

(Picnic area at Front Street Boat Launch with SR 506 bridge in the background)

CHAPTER 6

PUBLIC ACCESS ANALYSIS

EXISTING PUBLIC ACCESS

There are currently several publicly owned sites within the City's shoreline jurisdiction beyond the public road rights-of-way that pass through and over the shoreline area. The City has 9 parcels partially or fully within the shoreline area which include over 1.5 acres of property directly adjacent to the River and the City Hall complex, the Front Street Boat launch, a 0.75 acre parcel between the River and South First Street and the wastewater treatment plant site (these last two properties are both at the south end of town). There are also six separate locations of undeveloped City street right-of-way that are directly adjacent to the river between the treatment plant and City property to the south and City Hall to the north, with the Front Street Boat Launch located in between on the south side of the SR 506 bridge.

PUBLIC ACCESS NEEDS AND OPPORTUNITIES

Additional access to the Cowlitz River would provide a unique opportunity for residents and visitors to enjoy the natural beauty of this river as it flows through town. Every street right-of-way running in an east/west direction between the wastewater treatment plant and the City owned property east of City Hall ends adjacent to the bank of the Cowlitz

River. By securing easements from property owners along the river, properly designed trail systems, fencing and re-vegetation plantings would provide protection, mitigation and public access to a shoreline area that has largely been under private ownership. The construction of a trail from City Hall to the wastewater treatment plant property approximately 2,000 feet downstream would be a costly project but may be possible with the help of RCO funding. A trailhead, located at the Front Street Boat Launch, adjacent to the SR 506 bridge, with proper signage, would significantly increase the potential for motorists passing through town to stop, enjoy the trail and spend more time visiting the City's commercial establishments.

(Looking east near wastewater treatment plant outfall)

CHAPTER 7

SHORELINE MANAGEMENT RECOMMENDATIONS

GENERAL POLICIES AND RECOMMENDATIONS

The following are recommended actions for translating inventory and characterization findings into the draft SMP policies, regulations, environment designations, and restoration strategies for areas within shoreline jurisdiction.

- Recommendations for environment designations for specific shoreline areas are discussed in Chapter 5. These designations should be finalized and incorporated into the City's critical areas ordinance and land development regulations with specific direction describing what level of analysis and permitting will be required prior to developing properties within these designations.

- Determine how the City's critical areas ordinance will be modified to incorporate SMP goals for accommodating water oriented uses consistent with no net loss of ecological functions.

- Consider how to incorporate the various options developed by FEMA and others during development of the strategy for responding to the National Marine Fisheries Service Biological Opinion evaluating FEMA's National Flood Insurance Program.

- Consistent with the WAC provisions in the Guidelines, provide maximum flexibility for developing and maintaining flood hazard reduction measures as needed to continue protection of existing developed areas.

- Work to identify and secure easements or acquire property to provide new public access to the shoreline.

- Encourage through policies and regulation the control of invasive or noxious vegetation and the revegetation of certain shoreline areas.

- Include policies or regulations that incorporate recommendations of the City's or County's water quality related studies.

- Consider whether special stormwater management provisions may be necessary beyond the standards adopted by the City.

- Ensure "replacement" and "repair" definitions and standards are consistent with WAC 173-26-231(3)(a). Repair activities should be defined to include a replacement threshold so that applicants and staff will know when "replacement" requirements need to be met.

- Consider prohibiting new overwater structures across the Cowlitz River except for public bridge crossings (both vehicular and pedestrian).

- Include policies or regulations to encourage improvements to shoreline habitat, material to anchor LWD placements, and as needed to implement shoreline restoration.

- Consider prohibiting the placement of groins and weirs except as required to protect currently existing bridges and utilities in the shoreline area.

- Consider prohibiting aquaculture and boating facilities.

- Consider prohibiting agricultural activities.

- Coordinate policies and regulations for commercial development with the Comprehensive Plan, while ensuring the new commercial developments will achieve no net loss of shoreline ecological functions.

- Include a policy to educate landowners about the use of fertilizers and chemicals and encourage natural landscaping and lawn care for properties in and adjacent to shoreline areas.

- Encourage low impact development techniques that reduce impervious surface areas and use ecologically responsible stormwater management.

- Include provisions for public transportation and utilities development in the shoreline jurisdiction. There are river crossings and some roadways in the SMA jurisdiction. Goals, policies and regulations for these activity types should require careful consideration of short term and long term impacts on shoreline functions and processes.

RESTORATION PLAN

A Restoration Plan document will be prepared as a later phase of the Shoreline Master Program update process, consistent with WAC 173-26-201(2)(f). The Shoreline Restoration Plan must address the following six subjects (WAC 173-26-201(2)(f)(i-vi)) and incorporated findings from this analysis report:

(i) Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration;

(ii) Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions;

(iii) Identify existing and ongoing projects and programs that are currently being implemented, or are reasonably assured of being implemented (based on an evaluation of funding likely in the foreseeable future), which are designed to contribute to local restoration goals;

(iv) Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs;

(v) Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals; and

(vi) Provide for mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals.

The Restoration Plan will "include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program." The Restoration Plan will mesh potential projects identified in this report with additional projects; regional, county or City-wide efforts; and programs of the City, watershed groups, and environmental organizations that contribute or could potentially contribute or could potentially contribute to improved ecological functions of the shoreline.

(LWD installed at Front Street Boat Launch)

CHAPTER 8

REFERENCES, ACRONYMS AND ABBREVIATIONS

REFERENCES

Revised Shoreline Master Program, Lewis County, WA Amended June 1998

City of Toledo 2010 Water System Plan

City of Toledo 2008 General Sewer and Wastewater Facility Plan

City of Toledo 2008 Land Development Code

Lewis County GIS: http://maps.lewiscountywa.gov/maps/maplib_index.html

Lewis County Assessor's Office: http://lewiscountywa.gov/assessor

Washington State Dept. of Natural Resources:
http://fortress.wa.gov/dnr/app1/dataweb/metadata/WA_Hydro_Data_Dic.htm#WBHydro

U.S. Fish & Wildlife Service, National Wetlands Inventory:
http://www.fws.gov/wetlands/

FEMA DFIRM Data: http://www.msc.fema.gov/

U.S. Dept. of Agriculture, Natural Resources: http://datagateway.nrcs.usda.gov/
http://soildatamart.nrcs.usda.gov

Puget Sound LIDAR Consortium: http://pugetsoundlidar.ess.washington.edu/

Washington State Dept. of Ecology (in cooperation w/ USGS), 2012
http://www.ecy.wa.gov/services/gis/data/data.htm#m

Washington State Dept. of Ecology
http://www.ecy.wa.gov/programs/wq/grndwtr/cara/index.html
http://www.ecy.wa.gov/services/gis/data/data.htm

ACRONYMS AND ABBREVIATIONS

CORPS ..... U.S. ARMY CORPS OF ENGINEERS

ECOLOGY ..... WASHINGTON DEPARTMENT OF ECOLOGY

GMA ..... GROWTH MANAGEMENT ACT

HPA ..... HYDRAULIC PROJECT APPROVAL

LOMR ..... FEMA LETTER OF MAP REVISION

LWD ..... LARGE WOODY DEBRIS

NCAO ..... NAPAVINE CRITICAL AREAS ORDINANCE

PHS ..... PRIORITY HABITAT AND SPECIES

RCW ..... REVISED CODE OF WASHINGTON

SEPA ..... STATE ENVIRONMENTAL POLICY ACT

SMA ..... SHORELINE MANAGEMENT ACT

UGA ..... URBAN GROWTH AREA

USFWS ..... U.S. FISH AND WILDLIFE SERVICE

WAC ..... WASHINGTON ADMINISTRATIVE CODE

WDFW ..... WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

APPENDIX A

INFORMATION REQUEST LETTER AND DISTRIBUTION LIST

March 20, 2012

SUBJECT: REQUEST FOR EXISTING INFORMATION FOR SHORELINE INVENTORY AND ASSESSMENT; SHORELINE MASTER PROGRAM UPDATE, CITIES OF TOLEDO AND VADER, LEWIS COUNTY, WASHINGTON
G&O #11253.00 AND #11254.00

Dear Stakeholders:

The Cities of Toledo and Vader are in the early stages of examining the properties adjacent to the Cowlitz River (for Toledo) and Olequa Creek (for Vader) for the purposes of updating their Shoreline Master Program per requirements of the Washington State Department of Ecology. Toledo and Vader have recently hired Gray & Osborne, Inc. to assist with Shoreline characterization, analysis, and regulatory review. A Shoreline inventory will be the first step. The products of the inventory include a map portfolio and a report characterizing ecological functions and ecosystem-wide processes, among other things.

The Cities of Toledo and Vader are requesting your help in obtaining all existing physical and biological information regarding these shorelines, their associated riparian and wetland areas, and other water relevant watershed or basin information. We are interested in any inventories, assessments, water quality analyses, and/or fish and wildlife distribution and habitat information. Maps identifying these shorelines are attached. We have also attached the mailing list for this request. Please inform us if there are other entities not listed that may be able to provide information in these areas.

We are hoping to assemble our inventory by April 15, 2012 in order to complete the necessary characterization and analysis, and resultant recommendations, in a timely manner. Because we are hoping to reduce redundant data collection at the field level, a response would be appreciated by April 6, 2012. If possible, please provide hard copies or electronic files of any studies instead of a list of citations; contact us if a copy fee is required. If you believe that another individual within your organization would be a more appropriate contact for this solicitation, please forward this letter to that individual, and notify us of the change in contact.

If you have any questions or need additional information, please feel free to telephone me at (360) 292-7481, e-mail me at jhinton@g-o.com.

Very truly yours,

GRAY & OSBORNE, INC.

Jon Hinton, P.E.

JH/sp
Encl.

City of Toledo & City of Vader – Shoreline Management Plan Mailing List

Yakama Nation
Attn: Jerry Meninick
P.O. Box 151
Toppenish, WA 98948-0151

Confederated Tribes of the
Chehalis Reservation
Attn: David Burnett
P.O. Box 536
Oakville, WA 98568

Confederated Tribes of the
Chehalis Reservation
Attn: Elaine Sutterlict
P.O. Box 536
Oakville, WA 98568

Confederated Tribes of the Colville
Reservation
Attn: Michael Finley
P.O. Box 150
Nespelem, WA 99155

Confederated Tribes of the Colville
Reservation
History/Archaeology Program
Attn: Jacqueline Cook
P.O. Box 150
Nespelem, WA 99155-0150

Cowlitz Indian Tribe
Attn: William Iyall
P.O. Box 2547
Longview, WA 98632

Nez Perce Tribe
Attn: McCoy Oatman
P.O. Box 305
Lapwai, ID 83540-0305

Nisqually Indian Tribe
Attn: Cynthia Iyall
4820 She-Nah-Num Drive SE
Olympia, WA 98513

Trout Unlimited – Washington
Council
P.O. Box 2652
Issaquah, WA 98027

Department of Ecology
Environmental Review
P.O. Box 47703
Olympia, WA 98504-7703

SEPA Center
Department of Natural Resources
Aquatic Resources Division
P.O. Box 47027
Olympia, WA 98504-7027

U.S. Fish and Wildlife Service
Attn: Roger Tabor
510 Desmond Drive, Suite 102
Lacey, WA 98503-1263

Department of Fish and Wildlife
2108 Grand Blvd.
Vancouver, WA 98661

Adopt-A-Stream
600 128th Street SE
Everett, WA 98208

Forterra
615 Second Avenue, Suite 600
Seattle, WA 98104

National Marine Fisheries Service
Attn: Tom Sibley
7600 Sand Point Way NE
Seattle, WA 98115

U.S. Army Corps of Engineers
Seattle District
Attn: Jerry Gregory
P.O. Box 3755
Seattle, WA 98124-3755

University of Washington
School of Aquatic and Fishery
Sciences
Attn: Si Simenstad
Box 357980
Seattle, WA 98195

Lewis County Public Health
360 NW North Street
Chehalis, WA 98532

Lewis County Community
Development
2025 NE Kresky Ave
Chehalis, WA 98532

Lewis County Conservation
District
1554 Bishop Road
Chehalis, WA 98532

American Rivers
4005 20th Avenue West, Suite 221
Seattle, WA 98199

U.S. EPA, Region 10
1200 6th Avenue
Seattle, WA 98101

University of Washington
Center for Water and Watershed
Studies
P.O. Box 352100
Seattle, WA 98195

Washington Department of
Transportation
Attn: David Harjo
P.O. Box 1709
Vancouver, WA 98668-1709

Lower Columbia Fisheries Task
Force
12404 SE Evergreen Highway
Vancouver, WA 98683

Vancouver Audubon Society
PO Box 1966
Vancouver, WA 98668

Cowlitz County PUD
961 12th Avenue
Longview, WA 98632

Lewis County PUD#1
240 7th Street
P.O. Box 580
Morton, WA 98356

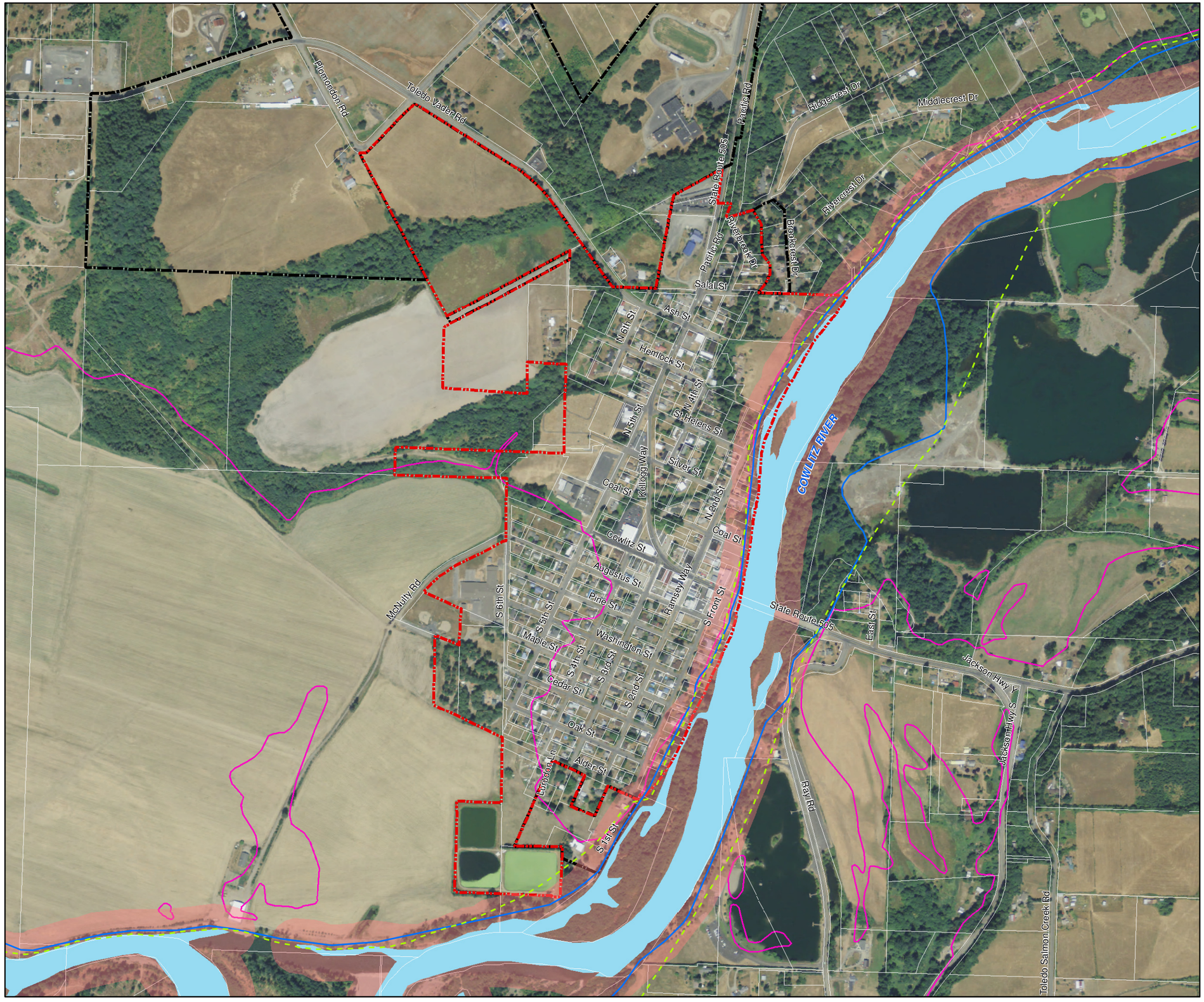
City of Toledo
130 North Second Street
P.O. Box 236
Toledo, WA 98591

City of Vader
317 8th Street
P.O. Box 189
Vader, WA 98593

Friends of the Cowlitz
P.O. Box 248
Salkum, WA 98582

APPENDIX B

MAP PORTFOLIO



N

0 750 1,500 Feet

Legend

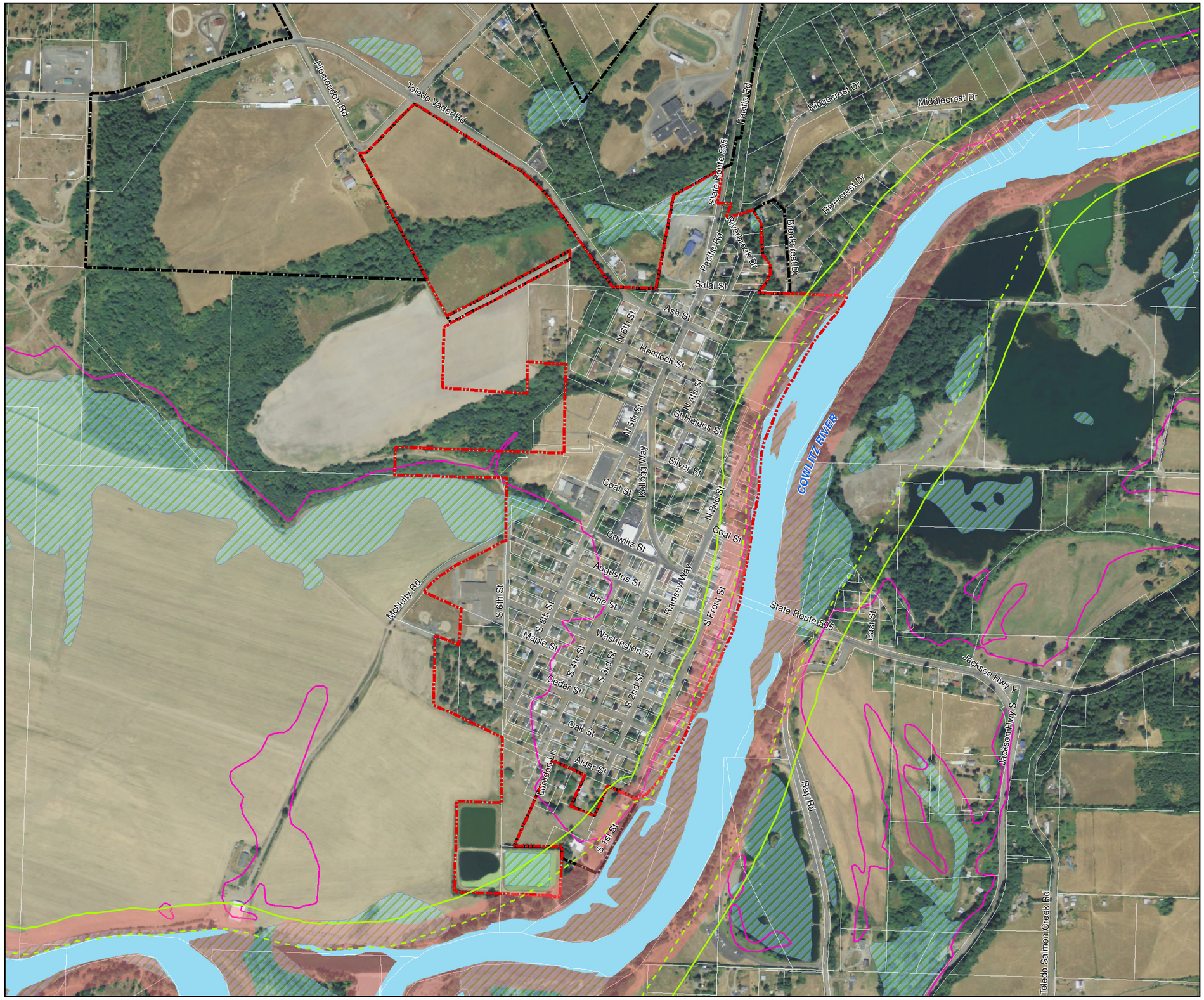
- CURRENT EFFECTIVE FLOODWAY (FEMA 1980)*
- PRELIMINARY FLOODWAY (FEMA 2010)*
- 200' OHW BUFFER
- 100 YEAR FLOODPLAIN (FEMA 1980)*
- CITY LIMITS
- UGA LIMITS

*BASED ON LEWIS COUNTY GIS - DIGITIZED FROM FEMA FLOODWAY MAPS

CITY OF TOLEDO

FIGURE 1
SHORELINE MANAGEMENT PLAN
FLOODWAYS, FLOODPLAIN,
AND 200' OHW BUFFER

Gray & Osborne, Inc.
CONSULTING ENGINEERS



N

0 750 1,500 Feet

Legend

- CURRENT EFFECTIVE FLOODWAY (FEMA 1980)*
- 200' FLOODWAY BUFFER
- 200' OHW BUFFER
- 100 YEAR FLOODPLAIN (FEMA 1980)*
- WETLANDS
- CITY LIMITS
- UGA LIMITS

*BASED ON LEWIS COUNTY GIS - DIGITIZED FROM FEMA FLOODWAY MAPS

CITY OF TOLEDO

FIGURE 1A
SHORELINE MANAGEMENT PLAN
FLOODWAYS, 100 YEAR FLOODPLAIN
AND 200' OHW BUFFER

Gray & Osborne, Inc.
CONSULTING ENGINEERS

N

0 750 1,500 Feet

Legend

- PROPOSED SMP BOUNDARY*
- CITY LIMITS
- UGA LIMITS

*INCLUDES PROPERTIES THAT INTERSECT THE 200' FLOODWAY BUFFER, THE 100 YEAR FLOODPLAIN AND THE 200' OHW BUFFER

CITY OF TOLEDO

FIGURE 2
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS

SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- URBAN GROWTH AREA*
- CITY LIMITS*
- PARCELS*
- ROADS*
- COWLITZ RIVER*

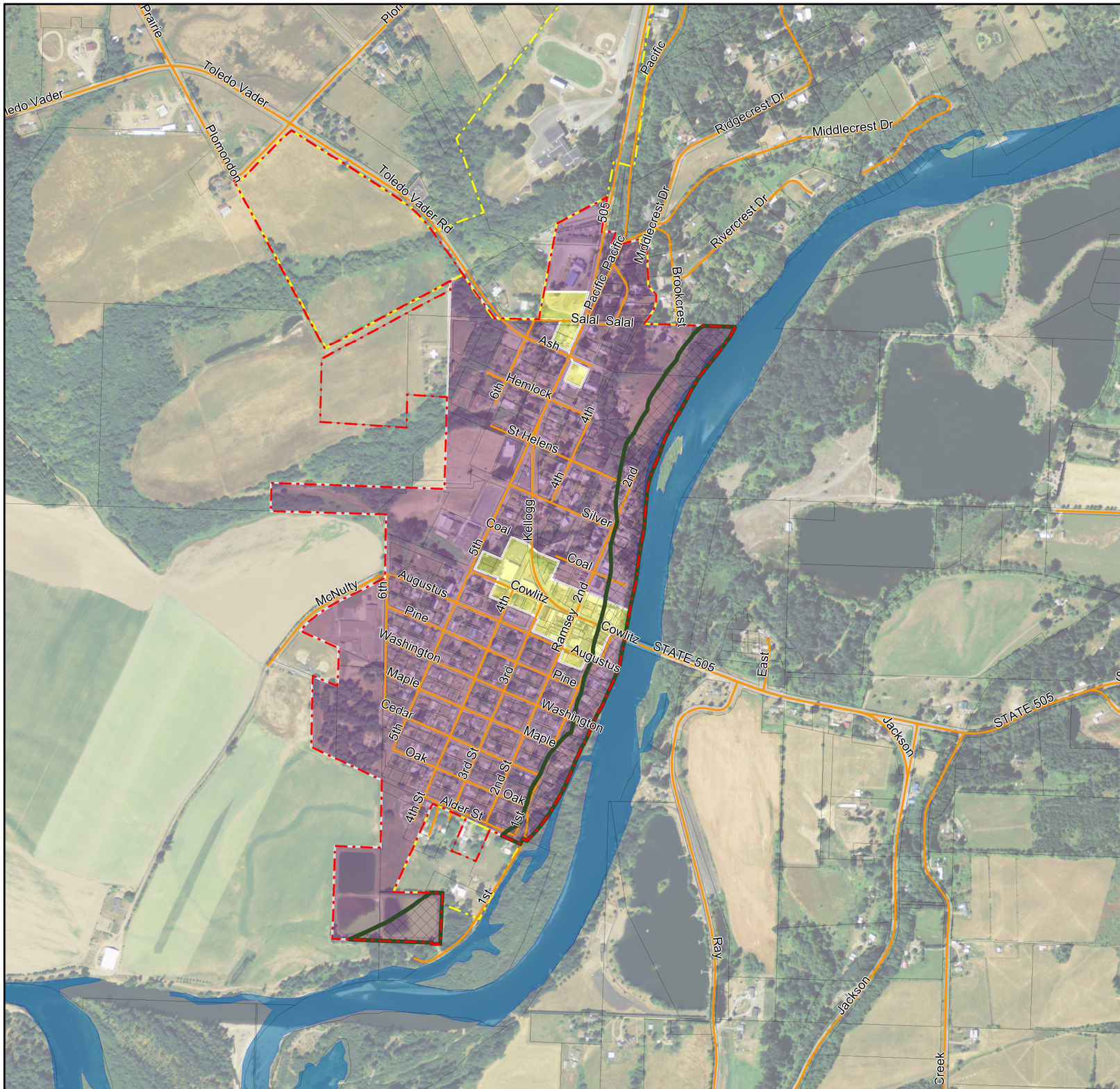
All features depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/ verify information shown on this map.

DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO

MAP 1
PROPOSED SMP BOUNDARY
INVENTORY & CHARACTERIZATION REPORT

Gray & Osborne, Inc.
CONSULTING ENGINEERS



SCALE: 1"=800'

TOTAL ACREAGE OF SMP - 23.7 ACRES
COMMERCIAL = 1.4 ACRES = 6%
RESIDENTIAL = 22.3 ACRES = 94%

LEGEND

- PROPOSED SMP BOUNDARY**
- TOLEDO ZONING*
  - ZONING COMMERCIAL
  - ZONING RESIDENTIAL
- URBAN GROWTH AREA*
- CITY LIMITS*
- PARCELS*
- COWLITZ RIVER*
- ROADS*

All features depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/ verify information shown on this map.

DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO
MAP 2
ZONING
INVENTORY & CHARACTERIZATION REPORT

Gray & Osborne, Inc.
CONSULTING ENGINEERS

SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- CITY LIMITS*
- COWLITZ RIVER*
- ROADS*

IMPERVIOUS SURFACE WITHIN**
SHORELINE JURISDICTION
6 ACRES
25.4% OF TOTAL SMP AREA

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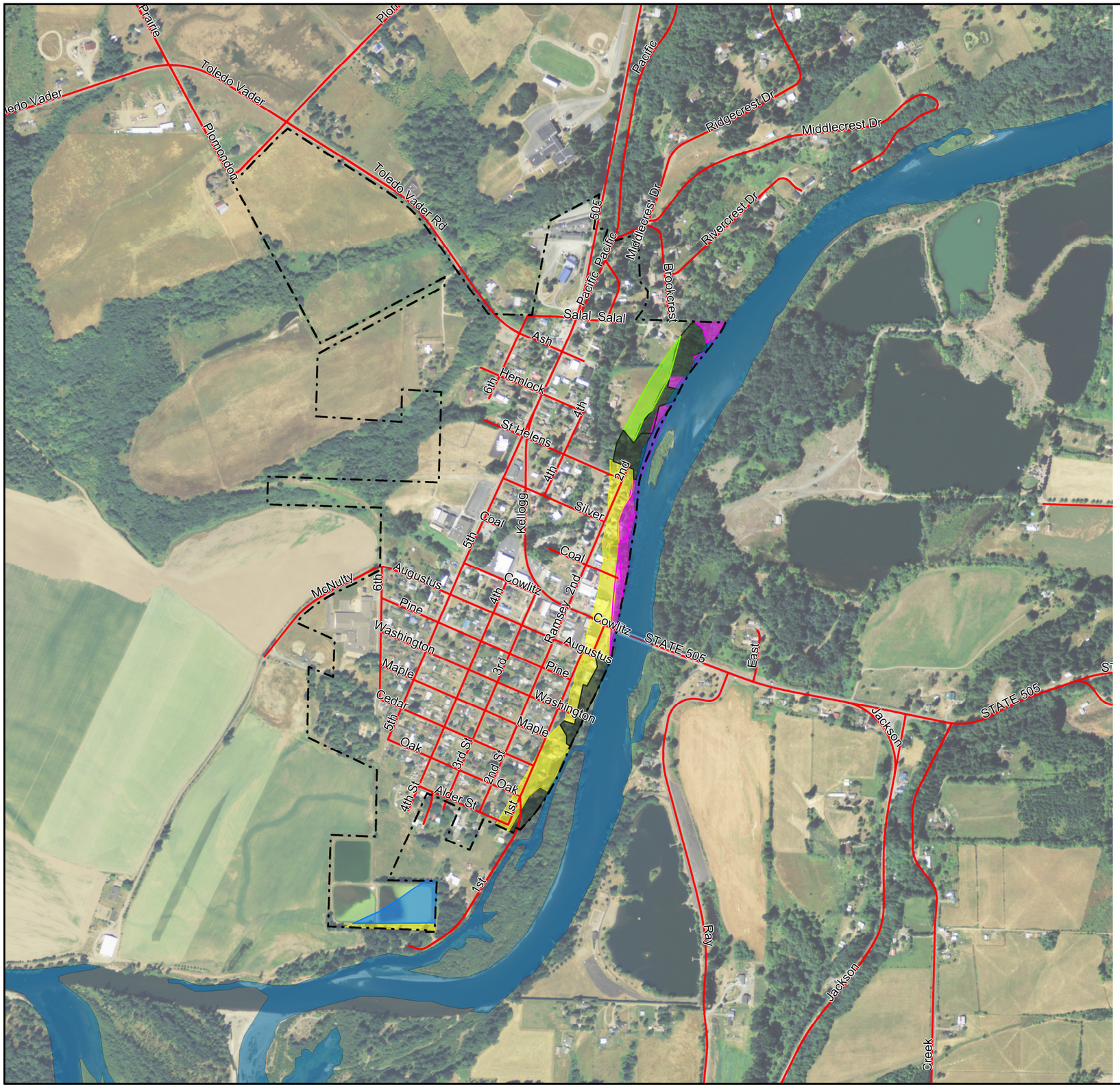
DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO

MAP 3
IMPERVIOUS AREAS
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS



LEGEND

- PROPOSED SMP BOUNDARY**
- CITY LIMITS*
- COWLITZ RIVER*
- ROADS*

LAND COVER***

- GRASSLAND
- LOW INTENSITY DEVELOPED
- MIXED FOREST
- PALUSTRINE FORESTED WETLAND
- PALUSTRINE AQUATIC BED OR OPEN WATER

DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE
***WASHINGTON DEPARTMENT OF FISH & WILDLIFE (DATA FROM (NOAA COASTAL SERVICES CENTER).

All features depicted on this map are approximate. They have not been formally delineated or surveyed and are intended for planning purposes only. Additional site-specific evaluation may be needed to confirm/ verify information shown on this map.

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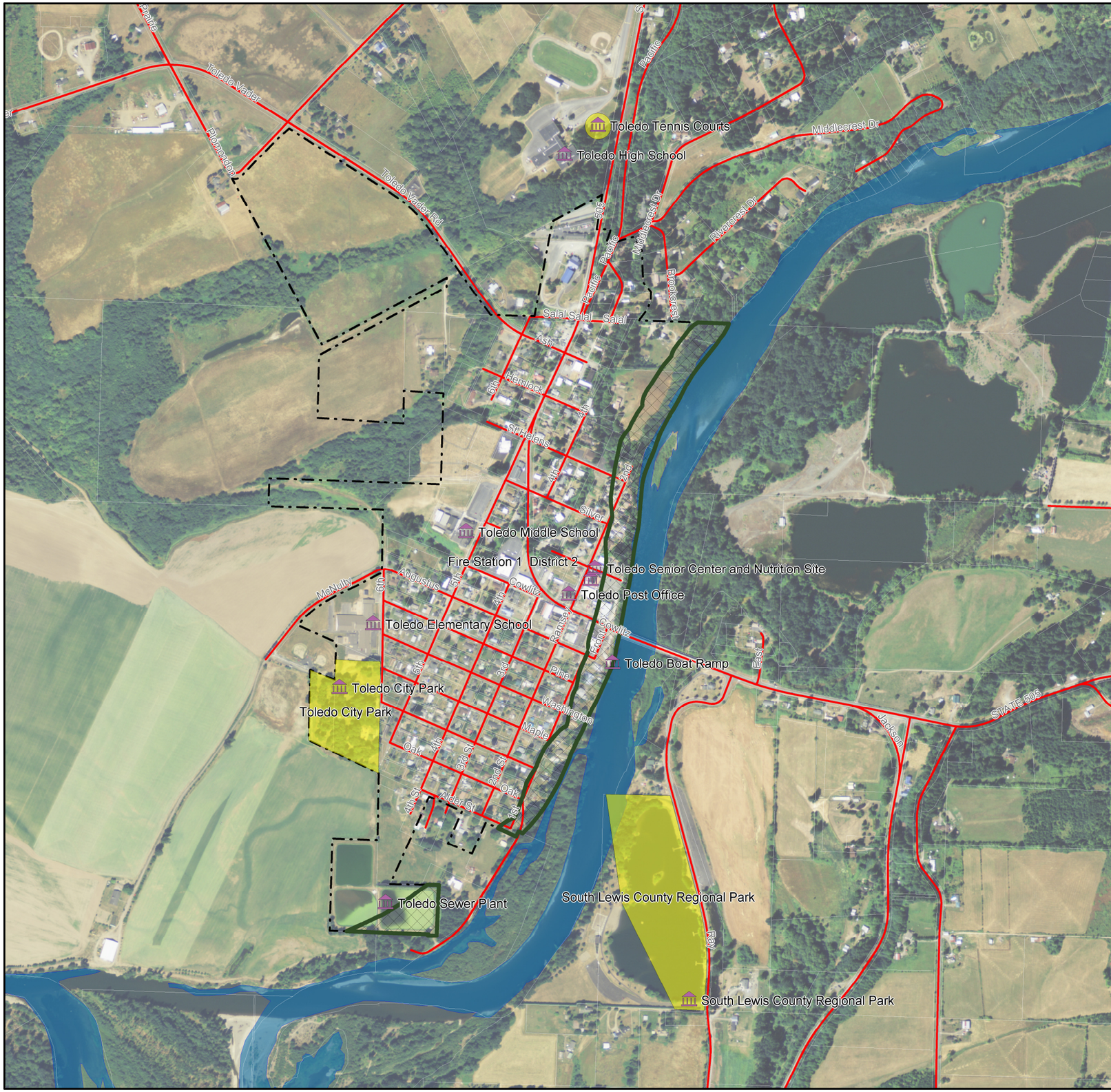
SCALE: 1"=800'

CITY OF TOLEDO

MAP 4

VEGATATION TYPE & LAND COVER
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS



SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- PUBLIC FACILITIES*
- PUBLIC PARKS*
- CITY LIMITS*
- PARCELS*
- COWLITZ RIVER*
- ROADS*

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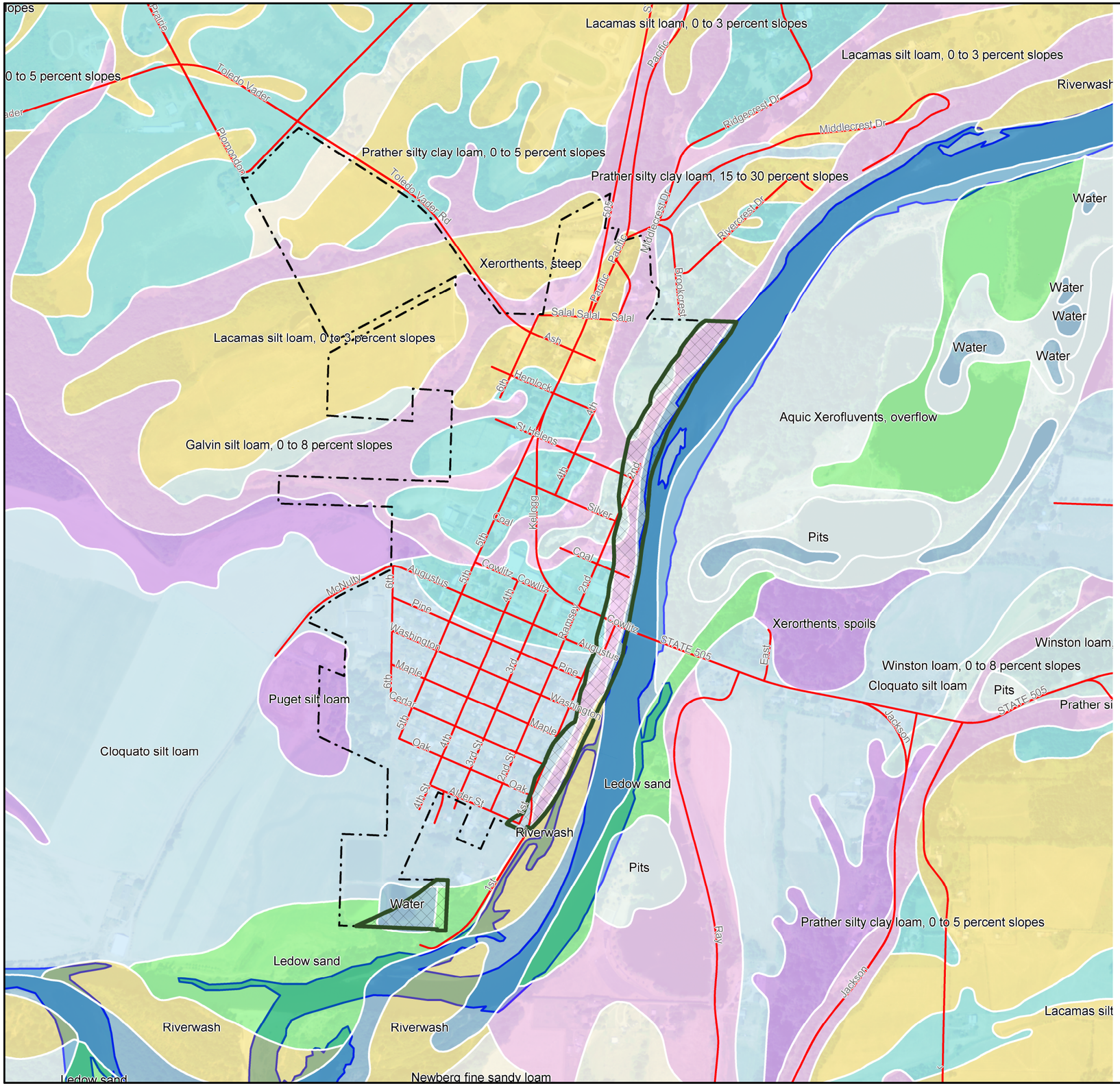
DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO

MAP 5
PUBLIC ACCESS AREAS
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS



SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- CITY LIMITS*
- ROADS*
- COWLITZ RIVER*

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DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO

MAP 6
SOILS
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS

SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- CITY LIMITS*
- ROADS*
- WATERWAYS*
- COWLITZ RIVER*
- DESIGNATED WETLANDS (SHOWN)***

DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE
***WASHINGTON DEPART. OF FISH & WILDLIFE

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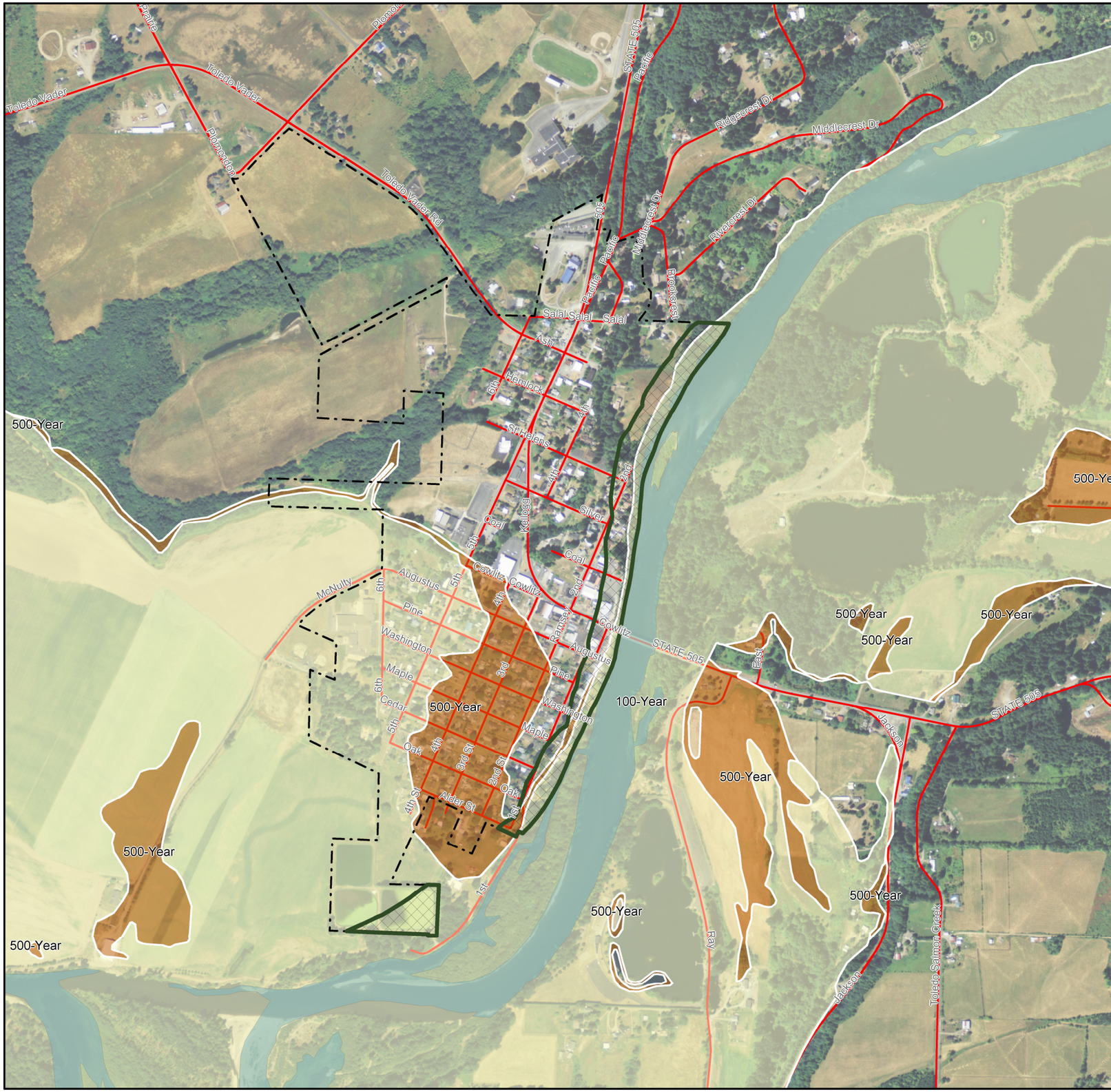
CITY OF TOLEDO

MAP 7
WETLANDS
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS



SCALE: 1"=800'

LEGEND

FEMA*

- 100-Year
- 500-Year
- PROPOSED SHORELINE BOUNDARY**
- CITY LIMITS*
- COWLITZ RIVER*
- ROADS*

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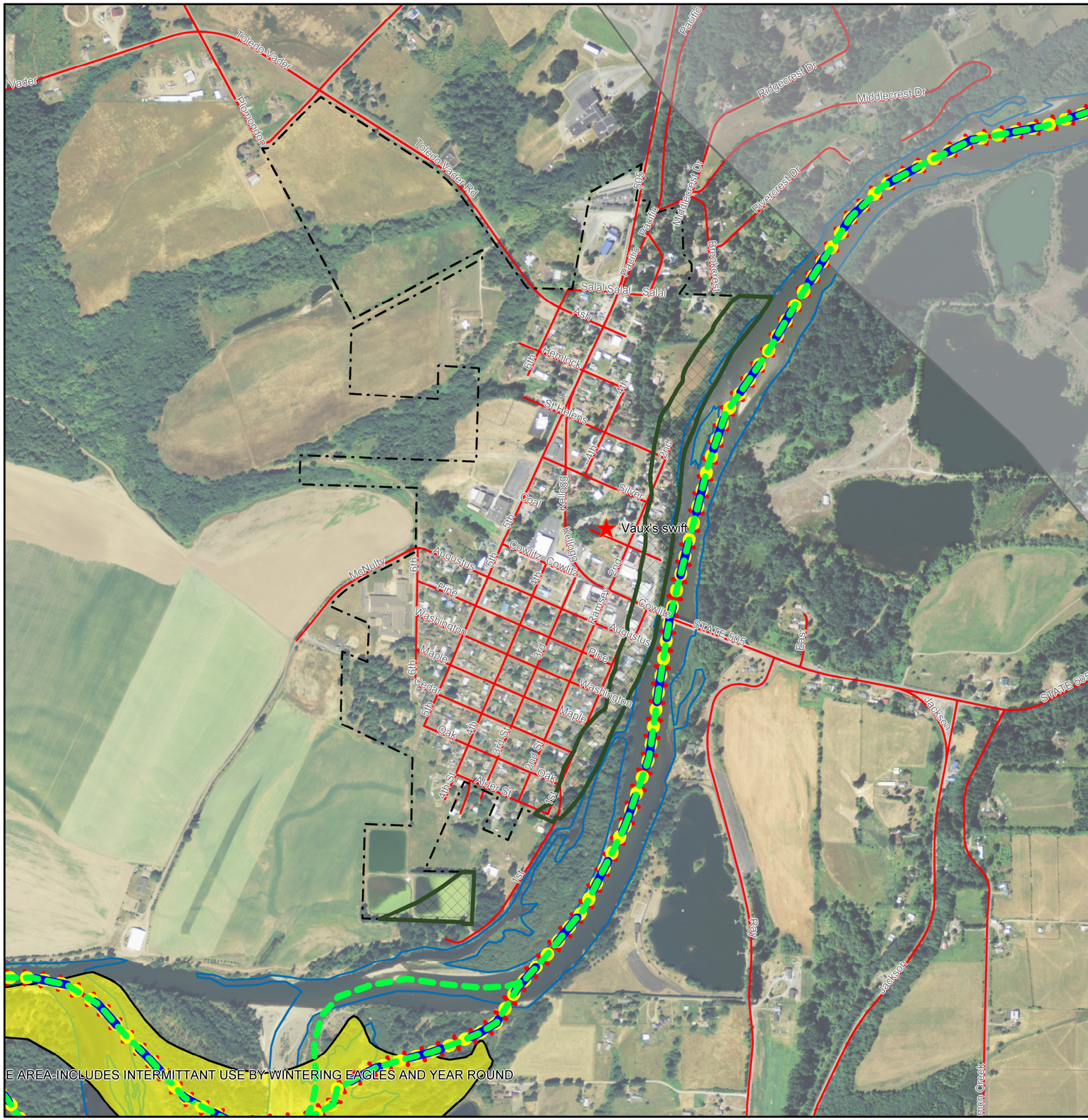
DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO

MAP 8
FLOODPLAINS
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS



SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- PROTECTED HABITAT***
  - Bald Eagle
  - Elk (Rocky Mt. & Roosevelt Elk Winter Range)
  - Spotted Owl Habitat Incorporates all of City Limits & Proposed SMP Boundary.
- BIOTIC DETECTION SITES***
- SASI (SALMON STOCK INVENTORY)***
  - Coho
  - Chinook
  - Cutthroat
  - Steelhead
- CITY LIMITS*
- COWLITZ RIVER*
- ROADS*

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DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE
***WASHINGTON STATE DEPARTMENT OF FISH & WILDLIFE

CITY OF TOLEDO
MAP 9
PROTECTED HABITAT & SPECIES
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS

SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- CITY LIMITS*
- PARCELS*
- COWLITZ RIVER*
- ROADS*

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DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO

MAP 10
TRANSPORTATION
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS

SCALE: 1"=800'

LEGEND

- PROPOSED SHORELINE BOUNDARY**
- URBAN GROWTH AREA*
- CITY LIMITS*
- COWLITZ RIVER*
- ROADS*
- WATER LINES**
- SEWER LINES**

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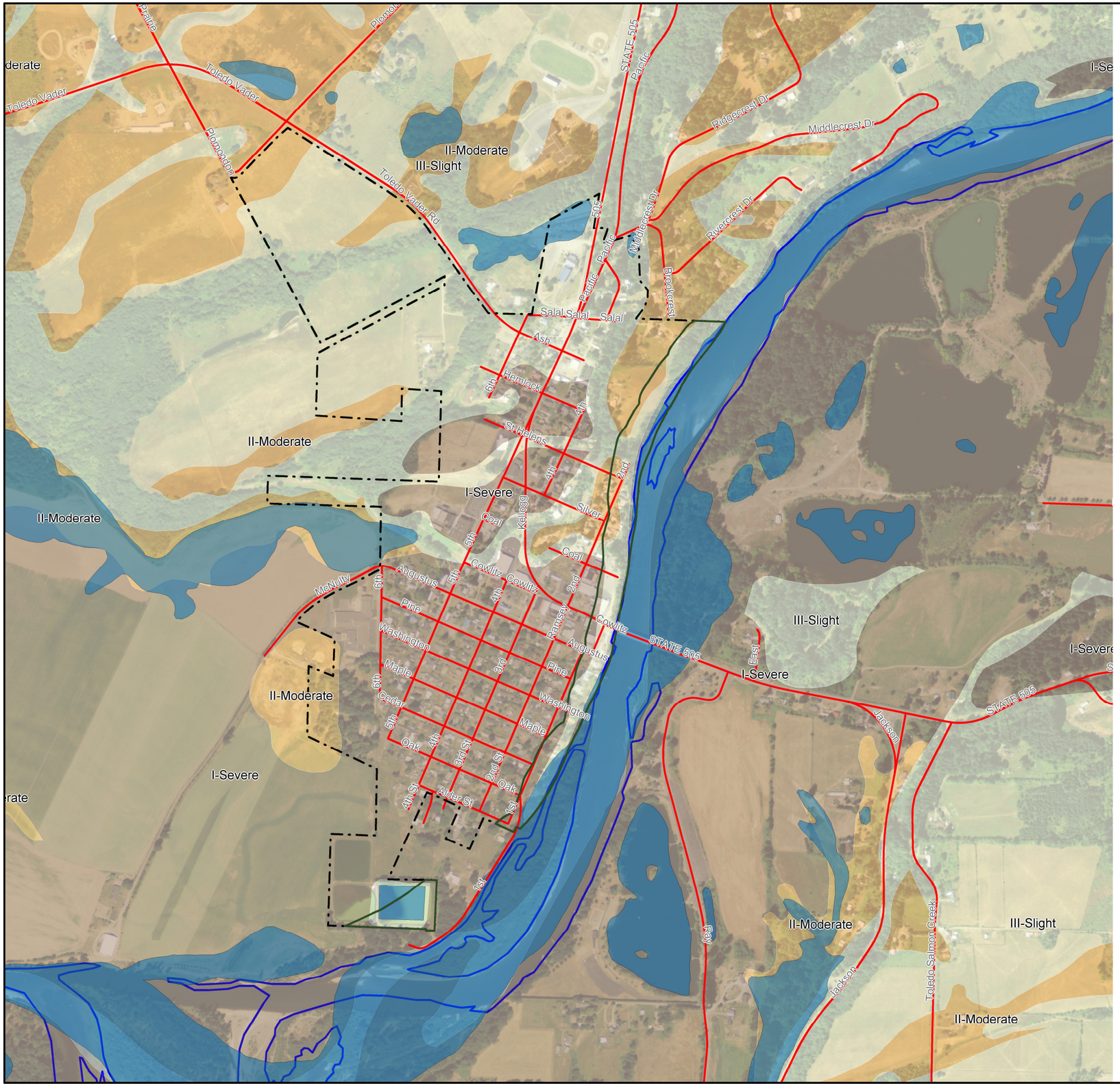
DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO

MAP 11
UTILITIES
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS



SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- WETLANDS*
- AQUIFER*
  - III-Slight = 49%
  - II-Moderate = 11%
  - I-Severe = 16%
- CITY LIMITS*
- COWLITZ RIVER*
- ROADS*

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DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE

CITY OF TOLEDO

MAP 12
CRITICAL AREAS
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS

SCALE: 1"=800'

LEGEND

- PROPOSED SMP BOUNDARY**
- CITY LIMITS*
- COWLITZ RIVER*
- ROADS*

DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE
***WASHINGTON DEPARTMENT OF HEALTH

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CITY OF TOLEDO

MAP 13

TOXIC SITES & CLEANUP AREAS
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS

SCALE: 1"=800'

LEGEND

- OVERWATER STRUCTURES***
- PROPOSED SMP BOUNDARY**
- CITY LIMITS*
- COWLITZ RIVER*
- ROADS*

DATA SOURCES:
*LEWIS COUNTY GIS
**GRAY & OSBORNE
***WASHINGTON DEPARTMENT OF NATURAL RESOURCES

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CITY OF TOLEDO

MAP 14
OVERWATER STRUCTURES
PROPOSED SMP BOUNDARY

Gray & Osborne, Inc.
CONSULTING ENGINEERS