ORDINANCE NO. 2230

AN ORDINANCE AMENDING THE TEXT OF CHAPTER 8 OF THE BEND AREA GENERAL PLAN, PUBLIC FACILITIES AND SERVICES, AND ADOPTING A GOAL 11 STORMWATER PUBLIC FACILITY PLAN FOR THE BEND AREA GENERAL PLAN.

Findings

A. On October 3, 2014, the City submitted a Notice of Proposed Amendment pursuant to ORS 197.610 to the Oregon Department of Land Conservation and Development. The City's Notice proposed amendments to the text of Chapter 8, Public Facilities and Services, of the Bend Area General Plan and adoption of a Goal 11 Stormwater Public Facility Plan.

B. On November 10, 2014, the Bend Planning Commission conducted a public hearing on the Stormwater Public Facility Plan, and the related amendments to Chapter 8 of the Bend Area General Plan. This hearing was continued until November 24, 2014 to provide additional time for public comment. At the close of the hearing held on November 24, 2014, the Planning Commission unanimously voted to forward the proposed Stormwater PFP and Chapter 8 amendments on to the City Council with a recommendation to approve.

D. The City Council held a public hearing on December 3, 2014 on the Stormwater Public Facility Plan and related amendments to Chapter 8 of the Bend Area General Plan. Notice of the hearing before the City Council was published in the Bend Bulletin on November 13, 2014. The City Council has considered the evidence in the record, including the evidence and the testimony submitted at the public hearings.

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. Chapter 8 of the Bend Area General Plan, Public Facilities, dated February 2013 is amended with the December 2014 version attached as Exhibit "A."

Section 2. The Goal 11 Stormwater Public Facility Plan, attached as Exhibit "B" and dated November 2014, is adopted and incorporated by reference in the Bend Area General Plan.

Section 3. The City Council adopts the following as findings:

1. Findings in Support of the Adoption of the Goal 11 Stormwater Public Facility Plan and amendments to Chapter 8 of the Bend Area General Plan dated August 2014, File PZ14-0856.

First Reading: December 3, 2014

Second Reading: December 17, 2014

Adopted by roll call vote by the City Council on December 17, 2014.

YES:	Mayor Jim Clinton	NO:	none
	Councilor Jodie Barram		
	Councilor Mark Capell		
	Councilor Scott Ramsay		
	Councilor Victor Chudowsky		
	Councilor Doug Knight		
	Councilor Sally Russell		

Jim Clinton, Mayor

Attest:

Robyn Christie, City Recorder

Mary Winters, City Attorney

EXHIBIT A

Bend Area General Plan

Chapter 8: Public Facilities and Services

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NOVEMBER 1998

Amended January 5, 2009; Ordinance NS-2112
Amended April 3, 2013 – Ordinance NS-2194
Amended December 19, 2014 – Ordinance NS-XXXX
Amendments subject to acknowledgment by the State

PREAMBLE

Consideration of the public and private facilities and services within the Bend Urban Growth Boundary is an important focus of the Plan. Several of these services — water, sanitary sewers, energy supplies, and communications — are the backbone needed to support and encourage urban level development. Other urban services such as refuse disposal, emergency services, and storm water disposal are also necessary parts of the mix of urban services. Although most of these facilities and services have a planning horizon greater than 20-years, they are still driven by the population and land use needs forecast in the General Plan.

GOALS

Adequate public facilities are the key to efficient and stable urban development. The goals below provide general guidance for maintaining and improving the level and quality of urban services as growth occurs in Bend. The citizens and elected officials strive:

To have public and private utility systems provide adequate levels of service to the public at reasonable cost;

For the city, county, and special districts to coordinate the provision of adequate urban services in an efficient and timely manner to support urban development;

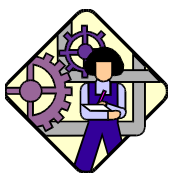
For new development to pay its fair share of the cost of major facilities needed to support development;

To ensure that public services will not negatively impact the environment or the community; and

To locate and operate public buildings and other public facilities to best serve the needs of the residents.

OVERVIEW

The Public Facilities and Services chapter describes existing facilities and utilities in Bend and also describes what city facilities are needed to meet projected growth. The listing of city water and sewer projects planned for and expected over the next twenty years provides a framework for decisions on when, where, and how public facilities will be provided to support the projected growth. The city will use the listing of projects as a basis for its annual capital improvement budget.



SEWER COLLECTION SYSTEMS FACILITIES

The City adopted a public facility plan for sewer collection by Ordinance No. 2111 in 2009. The plan was based on the city's 2007 Collection System Master Plan and identifies future improvements to the sewerage collection facilities required to serve long range growth in Bend. However, the city's 2009 Public Facility Plan adopted by the City Council was never acknowledged by the state.

In response to the 2008 UGB Expansion Remand, the City began a comprehensive planning process to update the previous Collection System Master Plan developed in 2007. This planning effort has built on information from the previous master plan, leveraged improvement concepts and utilized system information collected and analyzed in that report. The adopted 2014 Collection System Public Facility Plan replaces the 2009 Public Facility Plan and provides guidance and sound stewardship of the City's sewer collection system for the 2013 – 2033 planning period.

Service Area

The collection system service area includes all areas within the city limits of Bend and the Urban Growth Boundary that are either currently served by the City's wastewater collection system or will be served by the system within the 20-year planning period. To determine the future development projections within the UGB, the City relied upon and applied the adopted General Plan designations.

The City's Collection System Public Facility Plan separates the primary collection system into nine major sewer basins covering the approximate 35 square miles of the UGB. These nine major sewer basins are further sub-divided into several smaller sewer sub-basins for the purpose of determining flow capacity. The wastewater analysis and future forecasts consider existing customers, future customers and the conversion of septic to sewer connections within the UGB. There are currently 3,103 residential units and 158 non-residential acres that are served by a County permitted septic system within the UGB. Within the 20-year planning period it is assumed that these residential units and non-residential acres will redevelop and/or connect to the city's collection system.

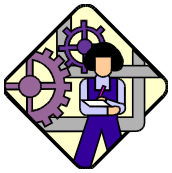
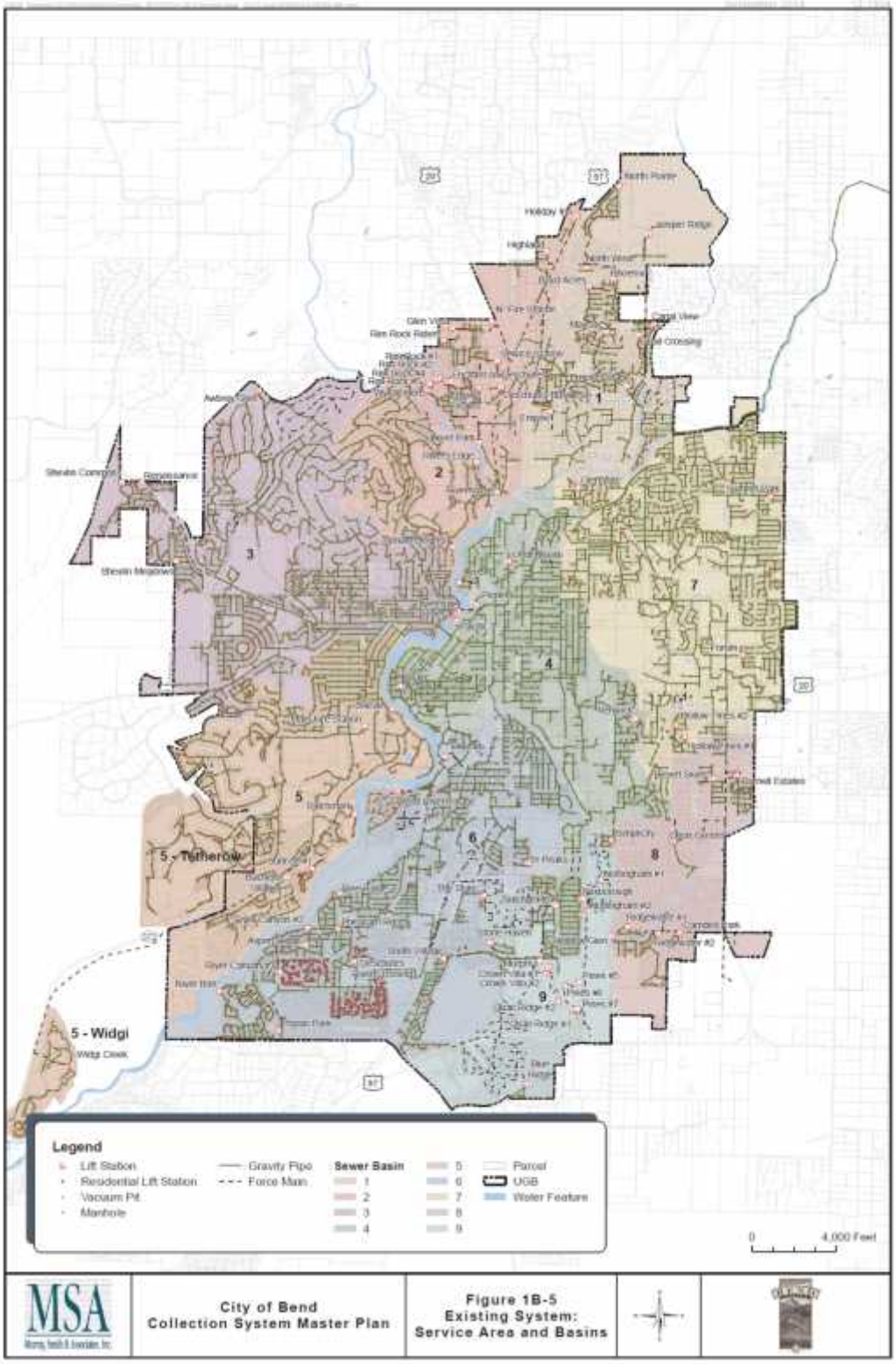


Figure 8-1
Existing System Service Are and Basins



Municipal System

The City's primary wastewater collection system is generally comprised of manholes, gravity pipelines, City-owned lift stations and force mains that convey sewage to the wasterwater reclamation facility through 249 miles of gravity pipe and 69 miles of force main and pressure sewer pipeline. Most of the gravity collection system was constructed in the late 1970's, when the City received federal funding to construct a centralized wastewater treatment plant. The City completed its sewerage collection system and treatment plant in 1983. Since that time a number of upgrades have occurred in both the plant and collection system. The wastewater treatment plant has capacity for an average flow of approximately seven million gallons a day. Figure 8-1 charts the average daily flows at the wastewater treatment plant and shows a gradual increase of the average daily flow. The flow data includes seasonal wet weather events.

Table 8-1
Annual Average Flow from Historical Records at the WRF

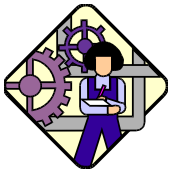
Year Average Daily Flow	Year Average Daily Flow
2007	5.4[1]
2008	7.2[2]
2009	5.6
2010	5.5
2011	5.3
2012	5.4
2013	5.9[1]

1) 2007 and 2013 average calculated from flow meter data (2-month period).
2) Suspected error in inflow data at the WWTP. Inflow meter was recalibrated after 7/20/2009.

The master plan for the wastewater reclamation facility (WRF) was completed in 2008 by Carollo Engineering. The plan for the WRF was submitted to the Department of Land Conservation and Development in 2009. The Land Conservation and Development Commission (LCDC) acknowledged the 2008 plan for the WRF through Order 001795 in November 2010. The WRF Master Plan identifies short term and long term capacity improvements that will enable the City of Bend to minimize expansion costs by fully utilizing the existing facilities. The 2014 Collection System Public Facilities Plan proposes improvements to increase the capacity of the collection system to 11.9 MGD within the 20-year planning period. The design of the WRF was completed in 2012, with construction beginning in the summer 2013. The City expects the WRF expansion to be completed by 2016.

Optimization

The City utilized an optimization process to determine the combination of system improvements that would satisfy hydraulic performance criteria and minimize overall life-cycle costs. The optimization model enables an exhaustive and objective evaluation of feasible collection system improvement alternatives. The optimization software, Optimizer WCS™, is a decision-support software program that integrates improvement alternatives, comprehensive life-cycle costs, design criteria and the calibrated hydraulic model of the



collection system. In a single optimization analysis, the software evaluates over 100,000 possible solution configurations and assesses life-cycle cost and hydraulic performance simultaneously while sizing system improvements. Over the course of this project, over one hundred individual optimization runs were completed, representing a total analysis of more than 10 million trial solutions.

The optimization process identified short-term and long-term capacity upgrade projects to be phased over the 20-year planning period.

Capital Improvement Program

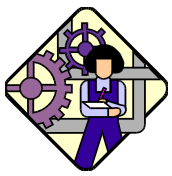
The Capital Improvement Program (CIP) describes proposed improvements that are required in both the short-term (1-5 year) and long-term (6 to 10 years and 11 to 20 years) to provide reliable sewer collection throughout the City's current UGB.

In response to existing and future hydraulic deficiencies, condition deficiencies and other operational issues identified by O&M staff, there are several major projects that the City should undertake in the short-term (1 to 5 years). Below is the list of short-term projects and estimated project cost in 2013 dollars.

1. Southeast Interceptor (SEI) Phase 1 - $19,681,000.
2. Colorado Lift Station - $4,208,000.
3. North Area Improvements - $1,370,000.
4. Plant Interceptor Rehabilitation - $5,400,000.
5. Valhalla Sewer Relocation and Odor Control - $1,616,000.
6. Condition-Related Lift Station Improvements - $5,667,000.

There are also a number of recommended long-term (year 6 through build-out) improvement projects required to support anticipated increases in collection system flow within the existing UGB, provide service to unsewered areas, and to plan for ongoing system repair and replacement. Below are the primary long-term projects and the estimated project costs in 2013 dollars.

Southeast Interceptor, Phase 2 - $8,379,000.
Northeast Interceptor - $15,086,000.
Decommissioning of Lift Stations - $700,000.
Long-Term Repair and Replacement Program $27,070,000.
Local Area Improvements – $5,000,000.
Ongoing Sewer Flow Monitoring, Modeling, and Planning Projects - $1,500,000.



The actual project costs will likely vary from the estimates presented. In addition, the project estimates will change over time due to fluctuations in actual labor and material costs, competitive market conditions, site conditions, final project scope, implementation schedule, continuity of personnel, and other unforeseeable factors. Because of these factors, project feasibility, benefit-to-cost ratios, risks and funding must be carefully reviewed prior to making specific financial decisions or establishing project specific budgets.

Sewer Collection System Financial Strategy

The City's financial strategy for the collection system considers the current and future financial obligations of the utility, operation and maintenance needs, fiscal policy achievement and the ability to support the completion of the capital projects identified in this CSMP update.

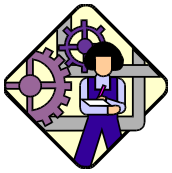
The overall goal of the financial plan is to have the annual water reclamation utility total resources (rates and fees) set at a sufficient level to meet annual uses (operations, maintenance, debt service, capital costs and fiscal policy achievement) to ensure a self-supported utility. The primary source of funding for the utility is derived from ongoing monthly charges for service, with additional revenue coming from miscellaneous fees/charges, interest income and system development charges (SDCs). The City Council controls and approves the level of user charges as needed to meet financial objectives.

The financial plan considers the total system costs of providing water reclamation services, both operating and capital. The following elements were completed as part of the financial plan:

Capital Funding Plan. Identifies the total Capital Improvement Plan (CIP) funding obligations of the planning period. The plan defines a strategy for funding the CIP including an analysis of available resources from rate revenues, existing reserves, system development charges, debt financing, and any special resources that may be readily available (e.g., grants, developer contributions, etc.). The capital funding plan impacts the financial plan through the use of debt financing (resulting in annual debt service) and the assumed rate revenue available for capital funding.

Operating Forecast. Identifies future annual non-capital costs associated with the operating, maintenance, and administration of the water reclamation system. Included in the financial plan is a reserve analysis that forecasts cash flow and fund balance activity along with testing for satisfaction of actual or recommended minimum fund balance policies. The financial plan ultimately evaluates the sufficiency of utility revenues in meeting all obligations, including cash uses such as operating expenses, debt service, capital outlays, and reserve contributions, as well as any coverage requirements associated with long-term debt. The plan also identifies the future adjustments required to fully fund all utility obligations in the projection period.

The City Council approved a nine percent rate increase effective on October 1, 2014. All monthly rates (monthly rate and volume rate) will increase uniformly by nine percent.



Residential customers inside the city will pay a monthly rate of $48.36 per dwelling unit, and residential customers outside the city will pay a monthly rate of $49.82 per dwelling unit. The financial plan indicates that an additional 3.1 percent per year increase will be needed to meet the water reclamation utility rate revenue requirement within the 10-year financial planning horizon.

System Development Charges

SDCs are one-time fees imposed on new and increased development to recover the cost of system facilities needed to serve that growth. An SDC can include two major components:

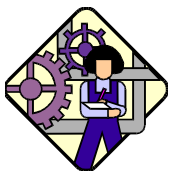
- A reimbursement fee that reflects the cost of existing infrastructure with capacity that is available to serve growth
- An improvement fee that reflects the portion of the cost of future projects that is attributable to providing capacity for growth.

The financial plan above assumes that the city's sewer SDC remains at its current level of $2,986 per equivalent dwelling unit. The City has recently initiated an SDC study, which will have a separate public process. That process is expected to begin late 2014 and be complete by June of 2015 and will incorporate all new information contained in this plan to determine the appropriate SDC and its implementation.

WATER FACILITIES AND SYSTEMS

The quality of water in the Bend urban area is a matter of major importance. Not only is water necessary for the needs of residential, commercial, and industrial users, but it supports many of the recreational and scenic opportunities that make the Bend area a desirable place to live.

In 2006, the city engaged in an update to the water system master plan to serve the existing urban growth boundary, the urban reserve area identified in this plan, and potential areas for future expansion of the UGB. This 2006 master plan followed the development and approval of a water management and conservation plan (WMCP) in 2004. The City relied on these documents, water planning documents from the Avion Water Company and Roats Water Company, and reports from the City Engineer updating information from the 2007 Water Master Plan to develop an updated Goal 11 water public facility plan (PFP) for the existing Bend UGB. This 2013 Water PFP is incorporated as the Goal 11 public facility plan for water and identifies the capital improvements needed to serve the existing and future development within Bend's UGB.



Municipal System

The City of Bend is one of three water suppliers within the UGB. The city's water system in 2006 included about 22,000 service connections. Since 1926, the City of Bend's main source of water has been from Bridge Creek in the Tumalo Creek watershed. Tumalo Creek originates on the eastern slopes of Ball Butte and Broken Top Mountain about 20 miles west of Bend in a protected watershed area, which lies within the Deschutes National Forest. Figure 8-2 shows the annual water use from 1998-2005 in acre feet. Figure 8-3 shows the annual water use pattern, using daily use data from 2005.

The Deschutes Watershed has excellent water quality, considering both chemical and bacteriological quality with only chlorination treatment. The water is a consistent 48 F. winter and summer, and is clear with the exception of slightly turbidity during periods of high runoff from the watershed. These periods occur only occasionally, and last only a few days. The 1986 Safe Drinking Water Act required that all surface water systems in the nation provide filtration unless stringent watershed control, raw water quality and disinfection systems were met. In 1992 the city demonstrated sufficient evidence to meet the criteria, and obtained an exemption from the Surface Water Treatment Rules contained in the 1986 Act. The Bridge Creek source can deliver up to 13.5 million gallons per day. The City supplements the Bridge Creek source with deep groundwater wells. In 2006 the city had 21 wells on line to supplement the Bridge Creek source. These wells increase the delivery capacity of the city system to approximately 36 million gallons per day. In addition, the city has 28.0 million gallons of reservoir storage. The city's 475 miles of water distribution system is primarily composed of ductile iron pipe.

The city water system historically provided metered service for industrial, commercial, and multifamily developments. However, the city was one of the last major water systems in the state to use flat rate (non-metered) billing for residential service connections. As of December 2004, the City has become fully metered for all customers. This included conversion to automated meter reading technology, as well as installation of premise isolation cross connection protection at every service connection as part of our Safe Drinking Water Program. In 2004, the City updated its required Water Management and Conservation Plan which outlines various conservation related benchmarks, in order to meet conditions by the Oregon Water Resources Department as part of obtaining new water rights to meet the needs of growth.
The city's 2007 Water System Master Plan Update identifies water supply, transmission, and storage needs throughout the city's service territory within the UGB. Additional wells, reservoirs, main transmission lines, and smaller distribution lines will be needed to meet the projected urban area growth.

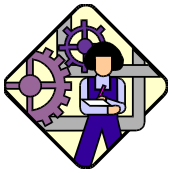


Figure 8-2

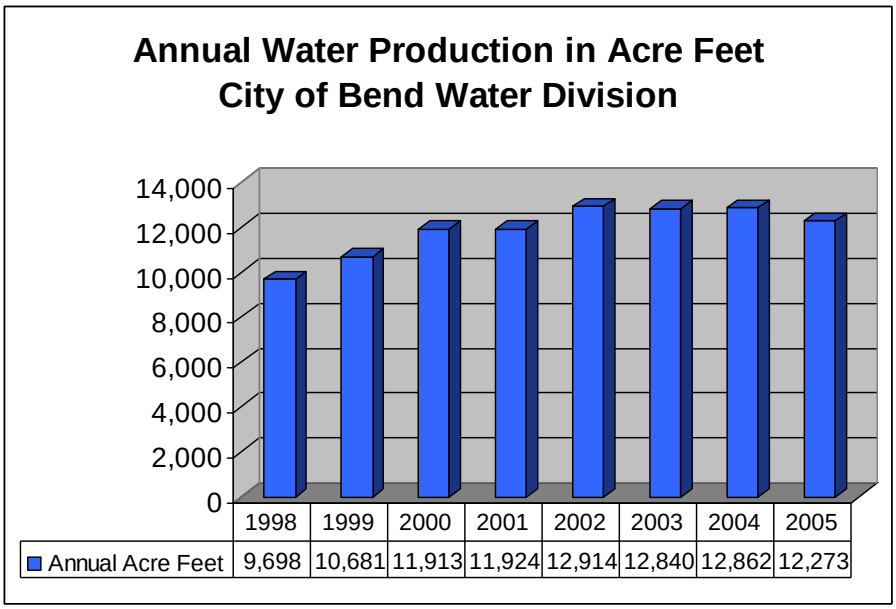


Figure 8-3

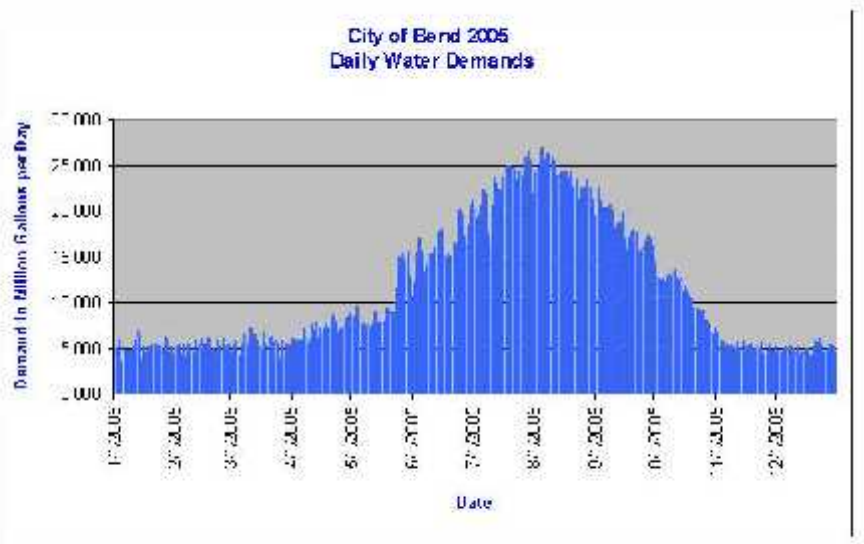
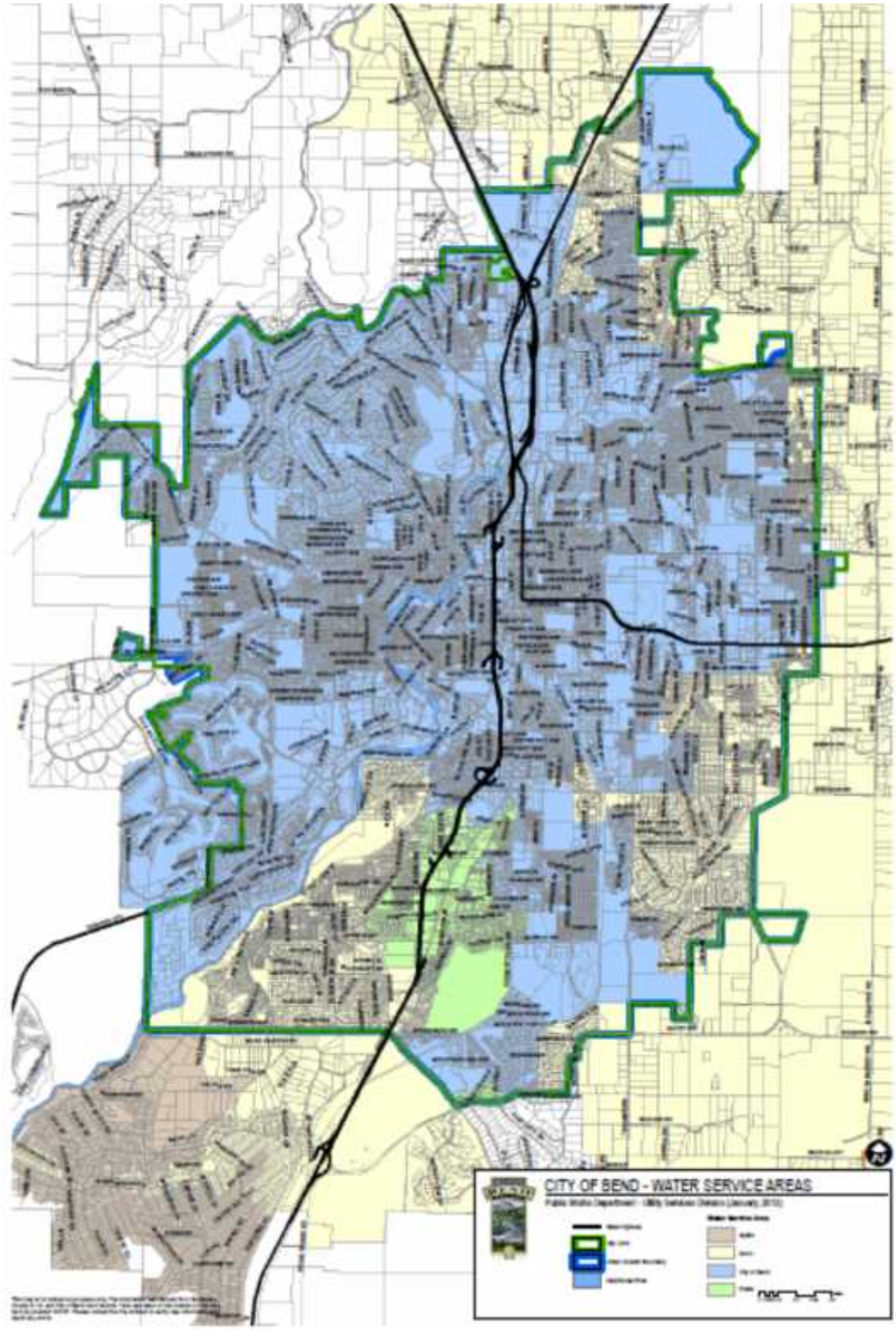


Figure 8-4
Water Utilities in the Bend Urban Growth Boundary



Private Providers

Currently, the City of Bend serves water to approximately 70% of the customers within the UGB. There are two private utilities supplying domestic water to the majority of the remaining customers. Approximately 9,200 service connections within the UGB are furnished domestic water through private water systems. Figure 8-4 shows the extent of both the city's service area (blue) and the private providers; Avion (light yellow or tan) and Roats (green). The City has entered into franchise agreements with Avian Water (See Ordinance NS-1514, as amended) and Roats Water Company (See Ordinance NS-1747) through which the City has agreed to Avion Water Company and Roats Water Company providing water to its customers in the city's boundary. Both franchise agreements have been incorporated into the City Code under Chapter 11, Franchises. In addition, the City's water system has inter-ties with both Avion and Roats, which also have inter-ties between their respective systems.

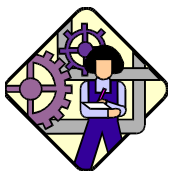
Water System Financing

Table 8-2 lists the various water improvement projects the city plans to construct through the year 2028 to support the projected growth and land uses in the Bend urban area. The description, location, timing and estimated cost of listed facilities may change as a result of subsequent design studies, capital improvement programs, environmental studies, and changes in funding sources. City facilities may be constructed earlier than planned by an owner/developer choosing to develop an area prior to the scheduled extension or expansion of facilities by the city.

The city has adopted System Development Charges (SDCs), as allowed under state law, to help pay for new facilities. SDCs are levied against all new uses at the time of development. These fees are earmarked for major system improvements identified in the city's 2007 Water System Master Plan Update such as reservoirs, wells, transmission lines, and treatment facilities. As of fiscal year 2006-07, the water System Development Charge is 100 percent of the allowable maximum charge. The City Council determined that this rate reflects the proportionate share of system improvement costs that can be attributed to new growth. The remaining share of system improvement costs benefit the whole community and are collected as a part of the monthly user fees. For more information about short and long term projects for the City's water system please see the 2013 Water Public Facilities Plan.

STORM DRAINAGE FACILITIES AND SYSTEMS

For many years, the City of Bend's drainage system has depended primarily on underground injection (dry wells and drill holes) to discharge stormwater into the fractured volcanic rock that underlies much of the City. Dry wells do not work well in areas underlain by layers of impermeable material unless those layers are penetrated. Drill holes are an



alternative to dry wells, intended to penetrate impermeable layers to reach more permeable material beneath them.

Bend does not have a city-wide system of pipes collecting and transporting stormwater for treatment. The lack of defined drainage ways, the expense of digging in rock, and the difficult topography have limited the installation of piping. The existing piped system to the Deschutes River is limited to about 14 miles of pipe and 28 river outfalls. There are approximately 4,600 dry wells and 1,000 drill holes on public property in the City and an unknown number on private property. Including interconnections between inlets and UICs, there are 47 miles of pipe total throughout the City.

Water Quality and Stormwater Management

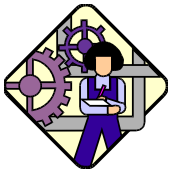
A large part of Bend's drinking water comes from a deep, very high-quality and abundant aquifer beneath the City that is fed by snow melt high in the Cascade Mountains. The City and its residents are committed to protecting this valuable resource along with protecting surface water quality. Protection of all groundwater including perched water and seasonal high groundwater is required by the State of Oregon. To comply with the regulations for both stormwater and groundwater, the City prepared an Integrated Stormwater Management Plan (ISWMP). The ISWMP is a living document that is updated as necessary to meet requirements of the permits and the needs of the City.

The ISWMP outlines a comprehensive program to protect the quality of the Deschutes River and the City's groundwater. The ISWMP identifies a number of BMPs for preventing pollutants from entering stormwater or removing them before the water is discharged to the river or underground. The following BMPs are required elements of the Phase II (surface water) program:

- Public Education and Outreach
- Public Involvement and Participation
- llicit Discharge Detection and Elimination
- Construction Site Stormwater Management Activities
- Post-Construction Stormwater Management in New Development and Redeveloped Areas
- Pollution Prevention/Good Housekeeping for Municipal Operations

Bend's ISWMP also addresses monitoring and protecting drinking water sources provisions to meet UIC requirements.

In August 2014 the City adopted its first Stormwater Master Plan (SMP). The City relied on these documents and prior planning documents to develop a Goal 11 stormwater public facility plan (PFP) for the existing Bend UGB. This 2014 Stormwater PFP is incorporated as the Goal 11 public facility plan for stormwater and provides a stormwater management strategy and identifies the capital improvements needed to serve the existing and future development within Bend's UGB.



Stormwater Funding Strategy

In 2007 the City Council established a Stormwater Utility Fee for the sole purpose of funding Stormwater infrastructure projects and programs. The SMP provides a cost strategy. The proposed stormwater public improvements have a 20-year capital cost of $25.2 Million. Utility operating revenue needs were modeled to range from $2.5 Million/year at present to $5.4-$5.6 Million/year by FY2032-33 depending on the rate assessment approach taken. Monthly stormwater utility rate increases were estimated in two ways: a gradual rate increase and an accelerated rate increase. The immediate calculated monthly stormwater utility rates were modeled to be between $4.36 and $5.80 per ERU and the FY 2032-33 monthly stormwater utility rates would be anticipated between $6.53 and $6.80 per ERU depending on the rate adjustment approach taken. Below is the City's 2013-2014 Stormwater Budget.

Table 8.2
Stormwater Management Budget for Fiscal Year 2013-2014

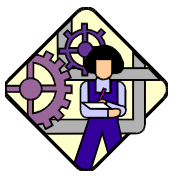
Stormwater Management Budget (Fiscal Year 2013-2014):	
Operation and Maintenance	$1,240,000
Engineering and Project Management	$580,700
Capital Improvement Projects	$2,750,000(1)
Water Quality Management	$378,000
Utility Administration & Public Response	$576,000
Total	**$5,524,700**

Note:
(1) Current Capital Improvement Budget is $2,750,000, based on carryover from previous years and an annual budget currently averaging $300,000

SOLID WASTE DISPOSAL

Solid waste disposal for the urban area occurs at one county facility, the Knott Landfill, just outside of the Urban Growth Boundary on the east side of 27th Street. Deschutes County studies estimate that Knott Landfill will reach capacity by the year 2025. However, the recent trend of 10 to 18 percent annual increases in municipal solid waste flows may shorten that lifespan.

A second landfill intended for construction debris and demolition material located adjacent to Simpson Avenue within the Urban Growth Boundary was in operation prior to 1997. This demolition landfill site owned by Deschutes County is about 80 acres in size, and abuts residential lands on the north, and west, and commercial development along its east and south sides.



Collection of solid waste is done by private providers under City and County franchises. In 2005, it was estimated that about 92 percent of the households in the Bend Urban Growth Boundary had signed up for a weekly collection service. The two garbage haulers in the Bend urban area, Bend Garbage and Cascade Disposal, provide weekly curb-side pickup of municipal solid waste and recyclable materials. Recyclables picked up at curb-side include aluminum, corrugated cardboard, paper bags, magazines and catalogs, newspaper, glass, plastic bottles, tin cans, mixed waste paper (junk mail and cereal boxes) and used motor oil.

The Department of Environmental Quality's 2005 Waste Diversion Report indicated that 160,707 tons of waste were deposited in Knott Landfill and 62,523 tons of waste were "diverted" (recycled by households and businesses either through curb-side service, or dropped off at the county's yard debris mulch program, as well as recycling occurring out of the solid waste system such as bottle bill returns and the scrap metal industry). When backyard composting and efforts in waste prevention and reuse are considered, the percentage of solid waste material being recycled increases from approximately 28 percent to approximately 34 percent.

OTHER URBAN UTILITIES

Electricity within the urban area is provided by Pacific Power and Central Electric Cooperative. Cascade Natural Gas Company provides natural gas service to most parts of the urban area. Adequate electric and natural gas resources exist to serve the Bend urban area through the planning period.

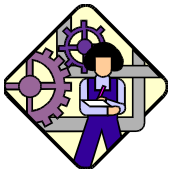
Local (land-line) telecommunication services are provided by Qwest. Many private companies compete to provide long distance and cellular phone services. Cable television service within the urban area is provided by Bendbroadband, which also provides phone and high-speed internet service. Private utility providers within the city limits operate under non-exclusive franchise agreements with the city.

PUBLIC BUILDINGS AND FACILITIES

Downtown Facilities

The Bend City Hall at the south end of downtown was built in 1989 and expanded in 1992. City Hall comprises an area of approximately 26,000 square feet. Also located at the south end of downtown are the Bend-La Pine School District Administrative offices, the Deschutes County historical museum, the Bend Public library, and other public buildings.

The County courthouse and various County offices are located in several buildings at the north end of the downtown area. A new 80,000 square foot administration building was constructed in 2004. Half of this facility is leased to the State Department of Human Services and Department of Justice.



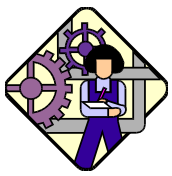
The Bend Metro Parks and Recreation District offices are located between the Old Mill District and the Deschutes River.

Fire Department Facilities

The Bend Fire Department serves the city, the urban area, and some areas beyond the Urban Growth Boundary through the Rural Fire District service contract. The Bend Fire Department covers approximately 164 square miles for fire protection and 1,450 square miles for ambulance operations. The "Main Station" (Old Station 301) was built in 1920 and was located downtown at 5 NW Minnesota Avenue. After serving the Bend Fire Department as the main station and the administrative office for 80 years, the department moved out of the station in 2000 to its new location at 1212 SW Simpson Avenue in order to provide better, faster coverage for the community. Old Station 301 was remodeled and became a mixed-use facility including dining, retail, office and residential spaces. The Fire Administration Building at 1212 SW Simpson Avenue was constructed in 2000. It houses the department administrative, prevention and support staff. The "West Station" (Station 301) is also located at 1212 SW Simpson Avenue, on the west side of Bend near Century Drive. The station is 12,000 square feet in size and was built for a cost of $1.6 million in 2000. The "Tumalo Station" (Station 302) is located at 19850 4th Street in the unincorporated community of Tumalo, between Bend and Sisters. The station was built in the early 1970s. The "South Station" (Station 303) at 61080 County Club Drive was also built in 2000. The "East Station" (Station 304) at 62420 Hamby Road was built in 2003 and is the newest station. The "North Station" (Station 305) at 63377 Jamison Street was built in 2000 and is located on a seven-acre parcel next to the Deschutes County Sheriff's Office. Located behind Station 305, the department Training Center includes a five-story tower with attached garage, numerous training props, and a driver training area. The Training Center also features a classroom and training office building located near the tower. The Fire Department is planning on building a "Central Station" on the Pilot Butte City Campus within the next ten years in order to better serve the rapidly growing central-east section of Bend.

Law Enforcement Facilities

Law Enforcement services in the urban area are provided by the City of Bend Police Department and the Deschutes County Sheriff's Department. The Oregon State Police regional headquarters is also located in Bend. The City of Bend Police Department was located in City Hall until 2002, when a new 27,000 square foot building was constructed at the intersection of 15th Street and US Highway 20 to better accommodate and headquarter all police business. As with all other departments at the City, faster than anticipated growth has created a need for additional staff to serve the community and this has, in turn, created the need for additional space. As a result, the Police Building was expanded to include another 19,000 square feet, and now also houses the Bend Municipal Court. .



In 1997, Deschutes County constructed a new public safety complex off of Highway 20. Within this complex there is a 228-bed adult jail, the Sheriff's Office, the Adult Parole and Probation offices and transitional housing. The County also constructed the Health and Human Services building off 27th Street on the east side of Bend. This building provides space for the County's Mental Health and Health Departments.

Public Works Facilities

The City's Public Works Facilities are located in three primary areas: The Pilot Butte Campus Site, which is located west of 15th Street between Highway 20 and Bear Creek Road, the Boyd Acres offices, and the Water Reclamation site, which is located northwest of the Bend Airport on McGrath Road. Numerous additional satellite facilities that house vehicles, utility equipment or materials are located throughout the service area.

The Pilot Butte City Campus site houses Public Works administration and all departmental divisions except Water Reclamation. City Council authorized a substantial master planning effort for this site in 2006 in order to determine space needs for the next twenty years for the Public Works, Police, Community Development and Fire Departments, all of whom will have facilities on the site.

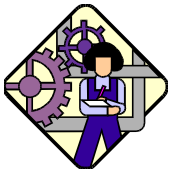
The existing main Public Works building houses Public Works administration and provides crew spaces for the Street and Water Divisions. This 41,000 square foot building will likely undergo significant, phased-in changes in the next seven years in order to bring the building into Code and ADA compliance as well as provide for the anticipated 20 year needs of the department.

A new facility to house Public Transportation operations was recently constructed, at the southwest corner of the Pilot Butte Campus site. The construction was largely funded through a $4 million *ConnectOregon* grant, and includes a 5,500 square foot transit operations office, five vehicle maintenance bays and space for transit vehicle parking. The City's public transit program is operated by Cascade East Transit through Central Oregon Intergovernmental Council. The transfer of this program to COIC began in 2010 and was completed in 2011.

The Water Reclamation facility is located outside of the UGB on 1,600 acres northeast of Bend and includes eight main structures. A new Headworks building was constructed in 2008. This facility will be heated by hot water that is heated by methane gas captured from the waste products entering the facility. New facilities completed within the last five years include a new training building, a Level IV filtration facility and a new digester. The new facilities plan for the plant was completed in 2008, and acknowledged by the Land Conservation and Development in 2010. This plan provides for an expansion and upgrade plan for water reclamation to serve the City up to the year 2030.

The Bend Airport

The Bend Municipal Airport is located on 415 acres situated five miles east of the city limits of Bend. Owned by the City of Bend, the airport is located in Deschutes County and is



currently outside the Bend Urban Growth Boundary. Airport facilities consist of a single instrument capable runway, 5005 feet in length, a full parallel taxiway, more than 60 hangar and industrial buildings, and parking facilities for aircraft and vehicles. The Bend Municipal Airport is identified by the Oregon Department of Aviation as a Category 2, High Activity Business/General Aviation airport, with approximately 200 based aircraft and an estimated 42,000 operations in 2005.

Over the past few years, demand at the Bend Airport has increased significantly. Continued business expansion by the existing tenants, the addition of Epic Aircraft in 2005, and continued growth and demand has wrought a dramatic increase in activity at the Airport. The corresponding demand for new services and facilities provides challenges to current funding levels.

Current improvements to the Airport infrastructure include the relocation of the single runway at the Airport to meet federal design standards and provide an adequate surface for the existing aircraft fleet mix. This project, beginning in 2007, is scheduled for completion in 2008. Following the runway relocation project, development of an eastside parallel taxiway will be planned for construction in 2009, with completion scheduled for the same year. At this time, it is anticipated that a new Airport Master Plan to clarify the future direction of the Airport and to meet future user needs will be initiated.

POLICIES

Sewer Collection Facilities

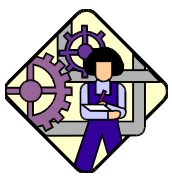
1. All new development within the Urban Growth Boundary should be connected to City sewer.

2. The city is the primary provider of sewage collection and treatment services for the City's service area under Statewide Planning Goal 11.

3. To reduce the reliance on individual sewage disposal systems within the Urban Growth Boundary the city will work with unsewered neighborhoods to find solutions for sewer service.

4. The city shall collect a sufficient amount of revenue to allow the creation of capital project reserves and to replace aging infrastructure in addition to operational needs of the utility.

5. Staff shall report to Council on an annual basis regarding the status of the Collection System Master Plan, Capital Improvement Projects and capacity issues within the collection system.



6. The City will annually update its financial model as part of the review of sewer rates and report to Council on any changes in the 20-year financial outlook and subsequent rate impacts.

7. The master plan shall be updated at least every 5 years with official review and adoption by Council.

8. The preference of the City is to serve development through gravity conveyance and use of the Water Reclamation Facility.

9. If lift stations are required to serve new development, regional pump stations shall be relied upon to the extent practicable versus individual or smaller lift stations.

10. These policies will be implemented through the City of Bend Public Improvement Construction Procedure Standards & Specifications.

11. The City should look for reasonable opportunities to decommission energy- and maintenance-intensive lift stations as part of new development or other City infrastructure projects.

12. The City will consider the conservation and water reuse measures in the Water Management and Conservation Plan in infrastructure planning to reduce overall impacts to the sewer collection and treatment system.

Water Facilities and Systems

13. The City of Bend is the provider of water service for the City's service area under Statewide Planning Goal 11.

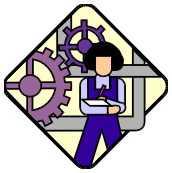
14. Avion Water Company is the provider of water service for its franchise area under Statewide Planning Goal 11 and pursuant to the franchise agreement between the City and Avion adopted under Ordinance NS 1514, as amended.

15. Roats Water Company is the provider of water service for its franchise area under Statewide Planning Goal 11 and pursuant to the franchise agreement between the City and Roats adopted under Ordinance NS 1747.

16. Within the urban planning area, public and private water systems shall be consistent with City Standards and Specifications for construction and service capabilities.

17. The City shall continue to coordinate with private providers and irrigation districts in matters of water concerns within the Urban Growth Boundary.

18. The City shall continue to implement a water conservation program that emphasizes education, enforcement, metering, and other methods to use water efficiently.



Storm Drainage Facilities and Systems

19. The City of Bend is the stormwater utility for the city limits and urban growth boundary. As the utility, the City shall review its Stormwater Master Plan and Integrated Stormwater Management Plan as needed for compliance with changes in state or federal requirements and at least every five years.

20. The City will initiate funding options (e.g., SDCs, grants, low-income loans) for stormwater capital projects in accordance with applicable laws.

21. Due to the lack of a defined drainage pattern for most of the urban area, development shall, to the extent practicable, contain and treat storm drainage on-site. In instances where containing storm drainage on-site would not be safe or practicable, the developer shall enter into a formal and recorded arrangement with the City or a private party to adequately address the storm drainage off site such as a regional control.

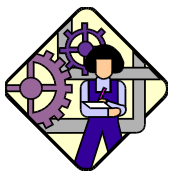
22. The use of stormwater disposal systems shall be coordinated with the Oregon Department of Environmental Quality and Water Resources Department to protect ground water and surface water.

23. The City shall work to minimize the discharge of untreated stormwater run-off from streets directly into the Deschutes River and Tumalo Creek.

24. All public and private stormwater facilities shall be designed and operated in accordance with the City's Stormwater Master Plan and shall meet appropriate drainage quantity and quality requirements, including, but not limited to, the requirements of the City's National Pollutant Discharge Elimination System (NPDES) MS4 Stormwater Permit, Integrated Stormwater Management Plan, WPCF UIC Permit and any applicable Total Maximum Daily Load requirements (TDML) requirements. Underground injection and surface discharges to the Deschutes River or Tumalo Creek shall only be approved when other alternatives, such as retention basins or bioinfiltration swales, are not reasonably available. Low impact site designs shall be a required part of all new development and redevelopment projects.

25. The ability to provide stormwater facilities for developments proposed for annexation into the City shall be a consideration for annexation approval.

26. The City shall reduce the quantity of runoff and discharge of pollutants to the maximum extent practicable by integrating stormwater runoff controls into new development and redevelopment land use decisions. Controls may be required to minimize illicit discharges or pollutants of concern.



27. The City shall implement and enforce requirements for an erosion and sediment control program for public and private construction and post-construction activities.

28. All developments shall evaluate the potential of a land parcel to detain excess stormwater runoff and require incorporation of appropriate controls, for example through the use of detention facilities to address quantity, flow, and quality concerns.

29. The City shall seek efficiencies and consistency by working with other municipalities and stakeholders within Central Oregon on land use issues to address flood control, watershed health and stormwater pollution prevention.

30. Hazard and resource areas with the following characteristics shall be considered unsuitable for urban development:
    - flood zones;
    - water supply watersheds; and
    - riparian corridors and natural drainageways.

31. Development on slopes in excess of 10 percent shall require special consideration to prevent construction-related and post-construction erosion.

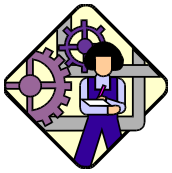
32. The City shall regulate development near water courses to reduce erosion and pollution and to provide open, natural areas.

33. Land uses that pose a major threat to water quality, including commercial and industrial uses such as automobile dismantlers, waste transfer disposal facilities, light industries, and other uses that have a significant potential for pollution, shall not be located within the vicinity of stream, percolation facilities, reservoirs, drill holes or where pollutants could easily come in contact with flood waters, high groundwater, flowing rivers, or reservoirs. Such uses shall be required to reduce any threat of pollution to an insignificant level as a condition of approval.

34. As part of site approval, or as a condition on tentative maps, as necessary, the City shall require permanent stormwater pollution control site design or treatment measures or systems and an ongoing method of maintenance over the life of the project.

35. The City shall minimize particulate matter pollution through controls over new and redevelopment (including erosion and sediment controls on grading, quarrying, vegetation removal, construction, and demolition), industrial processes, parking lots and other activities that pose a threat to water quality.

36. The City shall require the following stormwater protection measures for all new development and redevelopment proposals during the planning, project review, and permitting processes:
    - Submit geotechnical site assessments when dry wells or other infiltration or injection systems are proposed.



- Avoid conversion of areas particularly susceptible to erosion and sediment loss (e.g., steep slopes) or establish development guidance that identifies these areas and protects them from erosion and sediment loss.
- Retain natural drainage channels in their natural state to prevent undue erosion of banks or beds, and preserve or restore areas that provide water quality or quantity benefits and/or are necessary to maintain riparian and aquatic biota.
- Promote site development that limits impacts on, and protects the natural integrity of topography, drainage systems, and water bodies.
- Promote integration of stormwater quality protection into construction and post-construction activities at all development and redevelopment sites.

37. The City shall work to reduce transportation-related sources of water pollution, particularly in stormwater pollution. Any means and actions that result in a reduction in vehicle-miles-traveled would benefit congestion and reduce both air and water pollution.

38. The City shall recognize and publicize the relationship between air pollution and water pollution in the deposition of airborne contaminants, including metals and fine particulate matter onto streets and other surfaces.

39. To minimize illicit discharge to stormwater and groundwater from septic systems, the City shall require lots with onsite sewage disposal to connect to the city sanitary sewer whenever state rules governing connection are met.

Solid Waste Disposal

40. The City and County shall encourage recycling beyond the level required by state law as an alternative to landfill disposal.

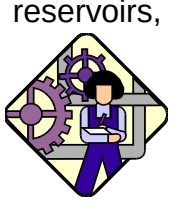
41. The County shall reduce dust and blowing refuse at the landfills in order to ensure as few adverse impacts as possible from these facilities.

42. The City shall explore methods, including mandatory garbage service, to gain 100 percent disposal of waste at designated landfill sites and discourage the dumping of wastes on public and private lands.

43. The City shall coordinate with Deschutes County on the creation of a new solid waste management plan.

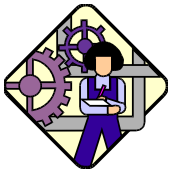
Public Buildings and Facilities

44. Public buildings and facilities shall be located so as to provide convenient public use and to provide maximum service for the greatest economy. Governmental offices shall locate downtown when practicable. Other governmental facilities, reservoirs, landfills and correctional facilities shall be located in areas with good



public access to principal streets.

45. The County Public Works facility shall be planned and zoned with a Public Facilities designation. The uses allowed at the site from among those uses listed in a Public Facility zone shall be limited to public works and transportation facilities and yards and public service uses in existing facilities as such facilities may be expanded and accessory uses thereto. Commercial or manufacturing uses shall not be allowed at this site.



PUBLIC FACILITIES PLAN
City of Bend Municipal Stormwater

Municipal Separate Storm Sewer System
Municipal Underground Injection Control Systems

Growth Management Department

November 2014

Prepared by:

City of Bend
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In conjunction with:

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541-317-3000

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Appendix C. Pipe Assessment Example (2010)

Appendix D. CIP Prioritization Plan, CH2M Hill, 2010 (April 2011)

Appendix E. Short Term Projects: Five Year CIP Plan (June 2014)

Acronyms and Abbreviations

CIP	Capital Improvement Project
ERU	Equivalent Residential Unit
LID	Low Impact Development
OAR	Oregon Administrative Rules
NRCS	Natural Resources Conservation Service
PFP	Public Facilities Plan
UICs	Underground Injection Controls
UGB	Urban Growth Boundary

Section 1. **Introduction**

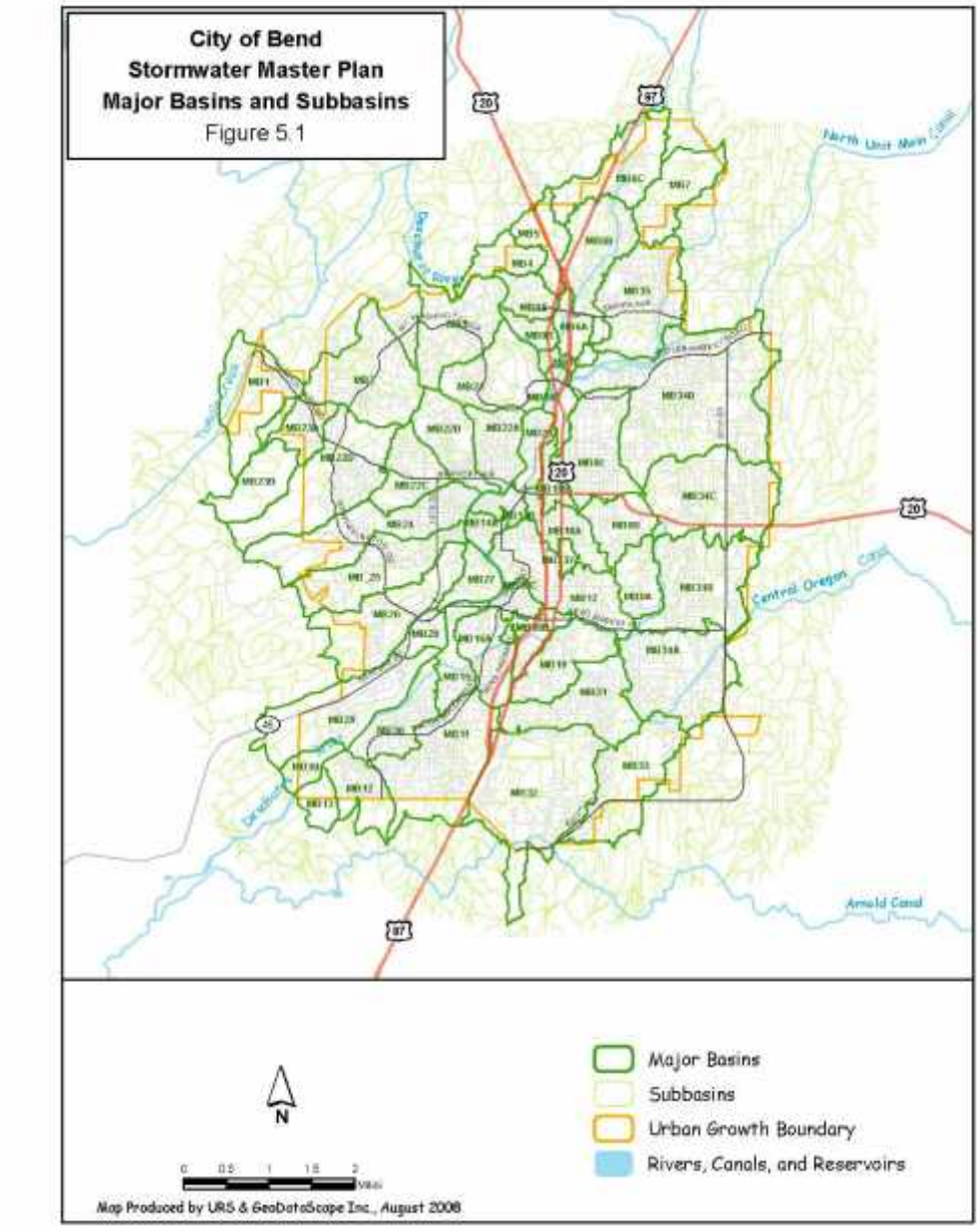
This Stormwater Public Facilities Plan (Stormwater PFP) describes the City's existing stormwater facilities and plans for future facilities needed over a 20 year planning period. This Stormwater PFP relies on information from and incorporates portions of the City's first formal Stormwater Master Plan, adopted on August 6, 2014 by the Bend City Council through Resolution # 2957. This Stormwater PFP describes existing City facilities in plans for service within the Bend Urban Growth Boundary and is consistent with Statewide Planning Goal 11, Public Facilities and Services, and its implementing administrative rule at OAR 660-011.

Section 2. **Stormwater Public Facilities Plan**

The City of Bend Stormwater Master Plan was prepared by URS Corporation and released for public review first in December 2008. The study area of the Stormwater Master Plan includes the area within the UGB as it existed before 2008 at a time when the current City limits and the UGB matched, and does not include any areas outside the UGB. The Master Plan was then placed on hold until additional regulatory clarity emerged regarding the requirements of using underground injection control systems (UICs) as they provide the majority of the City's stormwater system, handling stormwater at the source. After obtaining public input on infrastructure improvement approaches in April and May 2014, a full revised draft Stormwater Master Plan was released for public review in May 2014 and a final draft was considered for adoption by the City Council in August 2014. The final Stormwater Master Plan is included as Appendix A to this Stormwater PFP.

There is one major drainage within the City of Bend—the Deschutes River. Tumalo Creek runs along the westernmost border of the City limits through mainly natural parklands in Shevlin Park. The Stormwater Master Plan outlines subbasins throughout Bend (see Figure 1); for drainages that flow through City outfalls to the Deschutes River, see Figure 2). For volumes of the drainage subbasins, see Appendix C of the Stormwater Master Plan (Appendix A). A separate drainage, Tumalo Creek, skirts the City's western border and in the small area where it enters the City is surrounded by natural Shevlin Park lands.

Figure 1. Stormwater Drainage Major Basins and Subbasins (Stormwater Master Plan Figure 5.1)



Section 3. **Existing Inventory – Major Drainageways**

The City relies mainly on a dispersed drainage system, relying on infiltrating and injecting stormwater close to the source of its creation using low impact development practices. This approach has the benefit of more closely mimicking the natural hydrograph and infiltration rates that might be expected in a natural condition than those systems that merely pipe all runoff directly to a surface waterbody(ies). The City's stormwater facility system is composed mainly of dry wells and drill holes, both of which are underground injection controls (UICs) (see Figures 3 and 4). The City completed a Systemwide Assessment of its UIC system in December 2012 (Appendix B). The City also operates and maintains infiltration facilities such as bioretention facilities and extended detention and retention basins.

In the central portion of the City, the City owns and maintains a municipal separate storm sewer system, which is a piped system that carries stormwater to the Deschutes River. The City has 47 miles of storm pipe, 13 miles of which drain to the river from an area that covers the west hills to downtown. The remainder of the pipes serves as connectors to UIC or surface facility disposal. In some areas, the City has upbasins that daylight stormwater back onto the street for overland flow, as shown in Figure 5, which shows the existing piped system to the river.

The City conducted a closed-circuit television survey of the main piped system that outfalls to the Deschutes River from 2009 to 2010. The condition of most of the pipes was noted, alignments were corrected where necessary, and the City collect widths, diameters, pipe types and conditions (See Tables 1 through 4 for information on the significant Newport Lines; Tables 5-7 for the Galveston Lines; Table 8 for Columbia Line and Table 9 for Saginaw Line). This information was included to ensure the Stormwater PFP satisfied OAR 660-011-0010(1)(a). The line surveys are maintained in electronic format by the City. The pipe segments have been named and incorporated into the City's Infor information system. Line segments in need of repair have been prioritized as part of CIP planning (see Appendix D) and will be addressed as part of the line repair/replacement program planned for in the Stormwater Master Plan. The prioritization document in Appendix D was used to develop and prioritize the infrastructure improvement projects incorporated into the Stormwater Master Plan (Appendix A) and this Stormwater PFP.

Figure 2. Drainage Basins within Bend that Flow to City Outfalls

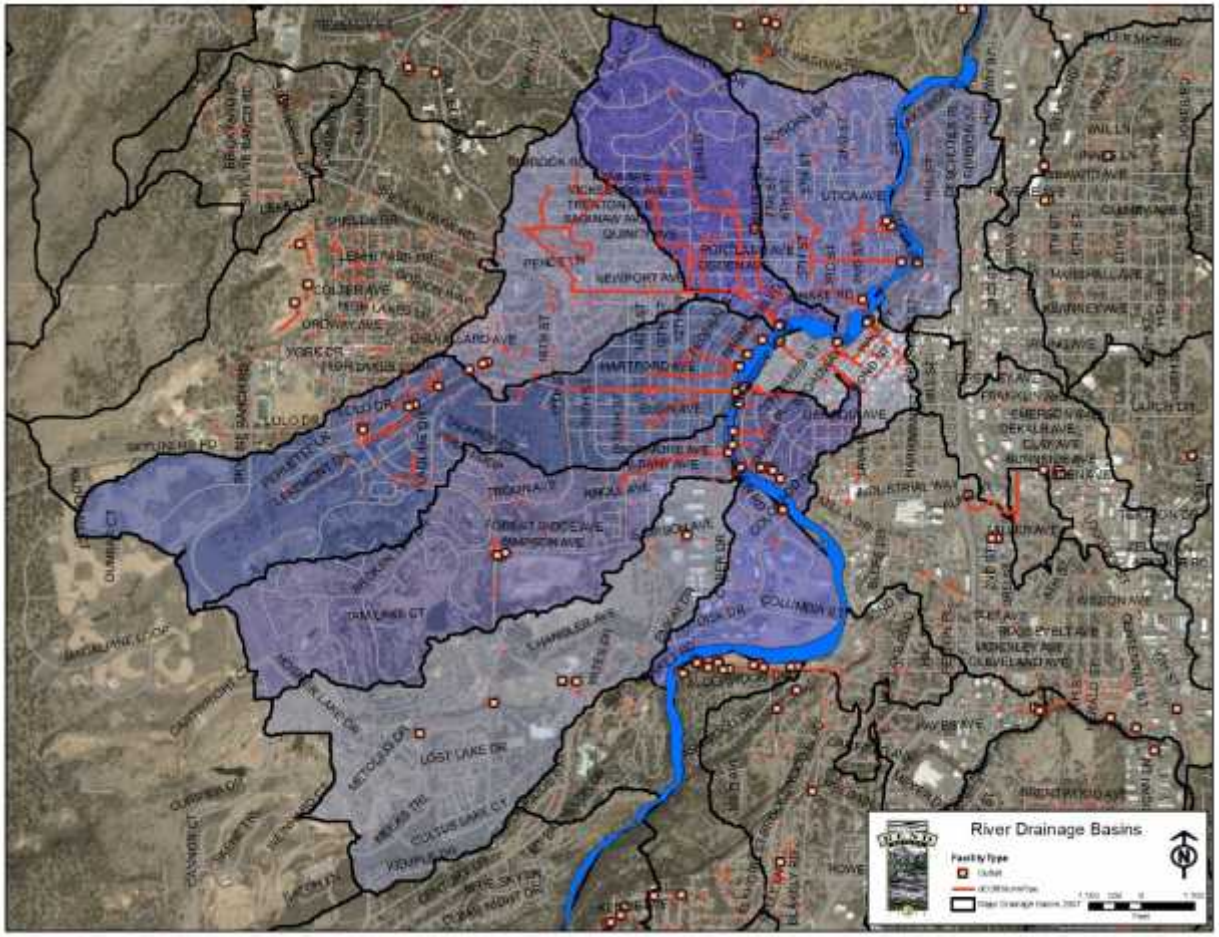


Figure 3. City of Bend Stormwater Dry Wells

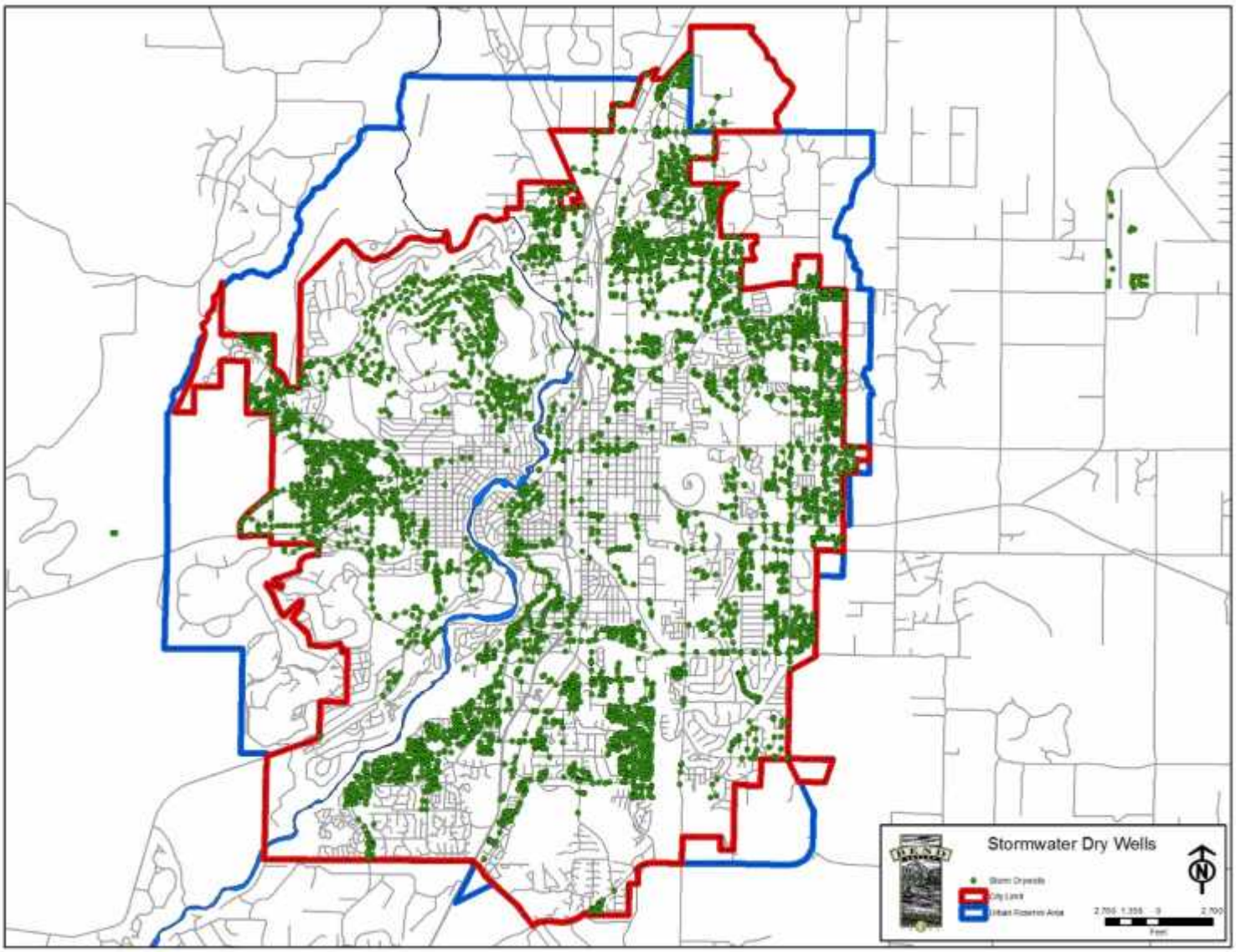


Figure 4. City of Bend Stormwater Drill Holes

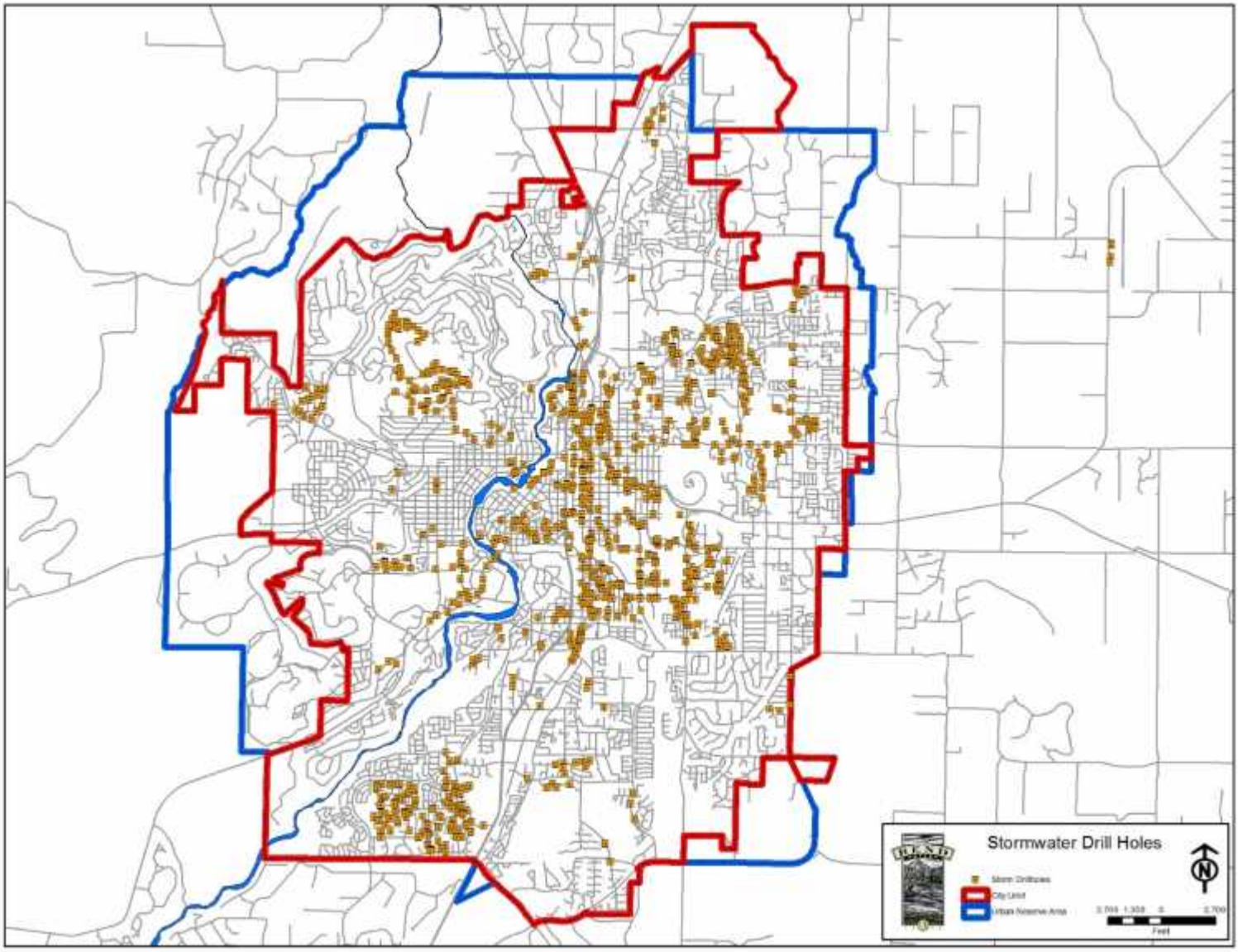


Figure 5. Stormwater Piped System to River Drainage
(Stormwater Master Plan Figure 4.1)

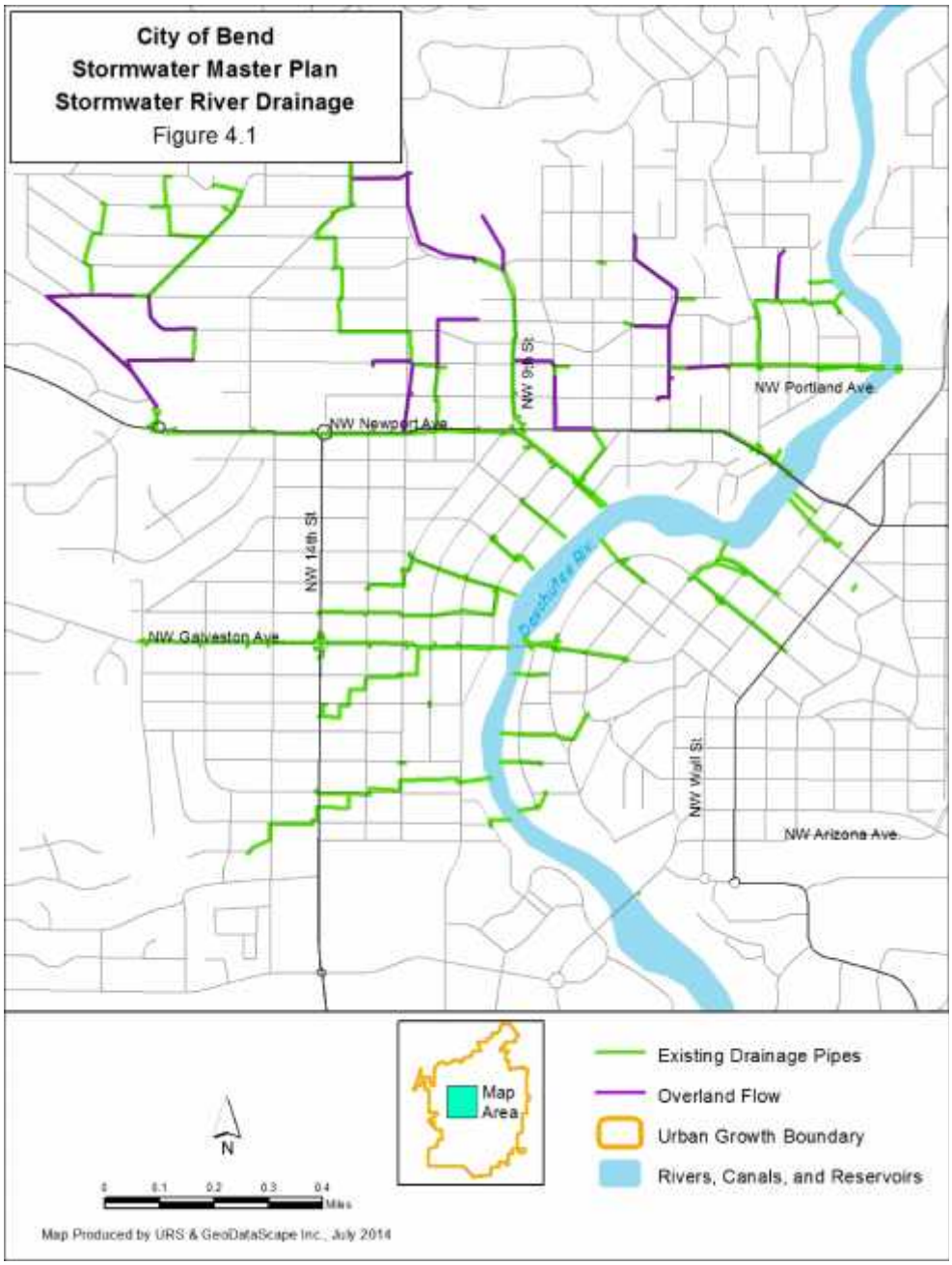


Table 1. Newport Stormwater Main Line

Newport Stormwater Main Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Top of Line	DSP008099	Round	24	PVC	72.32
	DSP008100	Round	24	PVC	59.79
	DSP008101	Round	24	PVC	83.32
	DSP008102	Round	24	PVC	81.68
	DSP008103	Elliptical	15 X 24	Corrugated Steel	93.88
	DSP008093	Elliptical	24 X 36	Corrugated Steel	752.84
	DSP008094	Elliptical	24 X 36	Corrugated Steel	393.47
	DSP008095	Elliptical	29 X 42	Corrugated Steel	80.75
	DSP008096	Elliptical	24 X 36	Corrugated Steel	106.35
	DSP008480	Elliptical	29 X 42	Corrugated Steel	157.69
	DSP008481	Elliptical	24 X 36	Corrugated Steel	416.71
	DSP002451	Elliptical	24 X 36	Corrugated Steel	296.53
	DSP003480	Elliptical	28 X 36	Corrugated Steel	350.89
	DSP003481	Elliptical	24 X 36	Corrugated Steel	378.1
	DSP000191	Elliptical	28 X 48	Corrugated Steel	345.1
	DSP008485	Elliptical	36 X 48	Corrugated Steel	56.16
	DSP002328	Elliptical	27 X 46	Corrugated Steel	53.96
	DSP000429	Elliptical	27 X 46	Corrugated Steel	120.05
	DSP001800	Elliptical	27 X 46	Corrugated Steel	296.1
	DSP001801	Elliptical	27 X 46	Corrugated Steel	240.05
	DSP000189	Elliptical	18 X 24	Corrugated Steel	182.37
	DSP000424	Elliptical	18 X 24	Corrugated Steel	79.53
River	DSP000425	Elliptical	18 X 24	Corrugated Steel	107.05
				Total Length:	4,804.69

Table 2. Newport Stormwater Overflow Line

Newport Stormwater Overflow Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Newport Main Line	DSP000183	Elliptical	24X36	Corrugated Steel	74.64
	DSP008067	Elliptical	21X36	Corrugated Steel	27.28
	DSP000184	Round	32	Corrugated Steel	109.45
	DSP000187	Round	30	Corrugated Steel	77.11
River	DSP000188	Round	30	Corrugated Steel	91.21
				Total Length:	379.69

Table 3. Newport/11th Stormwater Secondary Line

Newport / 11th Stormwater Secondary Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Top of Line	DSP002963	Round	12	Corrugated Steel	174.58
	DSP002965	Round	12	Corrugated Steel	257.45
	DSP002968	Round	12	Corrugated Steel	193.55
	DSP003039	Round	12	Corrugated Steel	38.18
	DSP003040	Round	12	Corrugated Steel	192.35
	DSP003041	Round	12	Corrugated Steel	84.65
	DSP003042	Round	12	Corrugated Steel	192.83
	DSP003104	Round	12	Corrugated Steel	272.24
	DSP003105	Round	12	Corrugated Steel	69.18
	DSP003107	Round	12	Corrugated Steel	272.34
	DSP003168	Round	12	Corrugated Steel	16.64
	DSP003306	Round	12	Corrugated Steel	26.59
	DSP003307	Round	12	Corrugated Steel	19.84
	DSP003308	Round	12	Corrugated Steel	180.27
	DSP008489	Elliptical	15 x 24	Corrugated Metal	119.13
	DSP003309	Round	12	Corrugated Steel	75.91
	DSP003354	Elliptical	18X24	Corrugated Steel	149.09
	DSP003355	Round	12	Corrugated Steel	414.37
	DSP003483	Elliptical	13 X 17	Corrugated Steel	481.14
	DSP003484	Round	12	Corrugated Steel	283.19
	DSP003485	Round	12	Corrugated Steel	36.57
	DSP003715	Round	18	Corrugated Steel	209.33
No pipe connection	(DH / Up Basin)	-	-	-	-
	DSP004290	Round	12	Corrugated Steel	30.75
	DSP005887	Round	20	Corrugated Steel	216.07
	DSP005885	Round	20	Corrugated Steel	73.12
	DSP004286	Round	18	Corrugated Steel	255.44
	DSP005883	Round	15	Corrugated Steel	22.74
Newport Main Line	DSP005884	Elliptical	16 X 20	Corrugated Steel	36.87
				Total Length:	4,357.54

Table 4. Newport/9th Stormwater Secondary Lines

Newport / 9th Stormwater Secondary Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Top of Line	DSP008430	Round	12	Corrugated Steel	351.57
	DSP008086	Round	8	PVC	28.86
	DSP008088	-	-	-	-
	DSP008090	-	-	-	-
		-	-	-	-
	DSP002449	Round	12	Corrugated Steel	89.28
	DSP002450	Round	12	Corrugated Steel	64.7
Newport Main Line	DSP002329	Round	12	Corrugated Steel	111.98
				Total Length:	646.39

Table 5. Galveston Stormwater Main Line

Galveston Stormwater Main Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Top of Line	DSP007909	Round	16	Corrugated Steel	64.17
	DSP007910	Round	16	Corrugated Steel	536.96
	DSP007904	Round	16	Corrugated Steel	70.61
	DSP007905	Round	16	Corrugated Steel	388.2
	DSP008467	Round	18	Corrugated Steel	194.88
	DSP007906	Round	18	Corrugated Steel	78.56
	DSP007907	Round	18	Corrugated Steel	312.26
	DSP008474	Round	18	Corrugated Steel	98.73
	DSP007908	Elliptical	24 X 36	Corrugated Steel	31.83
	DSP008475	Elliptical	24 X 36	Corrugated Steel	25.5
	DSP008477	Elliptical	24 X 36	Corrugated Steel	437.14
	DSP007896	Elliptical	24 X 36	Corrugated Steel	357.13
	DSP007897	Elliptical	24 X 36	Corrugated Steel	57.55
	DSP007898	Elliptical	24 X 36	Corrugated Steel	64.29
	DSP002337	Elliptical	24 X 36	Corrugated Steel	297.69
	DSP008502	Elliptical	35 x 48	Corrugated Steel	90.45
	DSP002341	Elliptical	30 X36	Corrugated Steel	334.39
	DSP007892	Elliptical	36 X 48	Corrugated Steel	21.56
	DSP008503	Elliptical	36 X 48	Corrugated Steel	115.75
River	DSP007893	Elliptical	36 X 48	Corrugated Steel	22.6
				Total Length:	3,600.25

Table 6. Galveston Stormwater Secondary Line

Galveston Stormwater Secondary Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Top of Line	DSP002339	Round	18	Corrugated Steel	37.87
	DSP007894	Elliptical	17 X 26	Corrugated Steel	134.27
	DSP007895	Elliptical	17 X 26	Corrugated Steel	94.48
Gal. Main Line	DSP008501	Elliptical	17 X 26	Corrugated Steel	355.77
				Total Length:	622.39

Table 7. Galveston/14th Stormwater Secondary Line

Galveston/14th Stormwater Secondary Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Top of Line	DSP007851	Round	18	Corrugated Steel	38.61
	DSP008472	Round	18	Corrugated Steel	148.78
	DSP000047	Round	18	Corrugated Steel	112.18
	DSP008470	Round	18	Corrugated Steel	87.42
	DSP000048	Round	18	Corrugated Steel	25.43
	DSP000049	Round	18	Corrugated Steel	133.21
	DSP000050	Round	20	Corrugated Steel	103.6
	DSP008473	Round	20	Corrugated Steel	39.23
	DSP000051	Round	18	Corrugated Steel	100.57
	DSP000052	Round	24	Corrugated Steel	48.2
	DSP000259	Round	18	Corrugated Steel	265.87
	DSP000397	Round	18	Corrugated Steel	68.94
	DSP000398	Round	18	Corrugated Steel	118.95
Gal. Main Line	DSP002344	Round	18	Corrugated Steel	265.21
				Total Length:	1,556.20

Table 8. Columbia Stormwater Main Line

Columbia Stormwater Main Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Top of Line	DSP000393	Round	12	Corrugated Steel	73.29
	DSP000394	Round	12	Corrugated Steel	179.16
	DSP000395	Round	12	Corrugated Steel	141.77
	DSP000396	Round	12	Corrugated Steel	17.24
	DSP007826	Round	12	Corrugated Steel	413.94
	DSP007827	Round	12	Corrugated Steel	30.06
	DSP007828	Round	12	Corrugated Steel	40.02
	DSP000336	Round	12	Corrugated Steel	125.67
	DSP000337	Round	12	Corrugated Steel	50.14
	DSP000338	Round	12	Corrugated Steel	257.19
	DSP007821	Round	12	Corrugated Steel	132.15
	DSP007822	Round	12	Corrugated Steel	201.44
	DSP007823	Round	12	Corrugated Steel	32.74
	DSP008462	Round	18	Corrugated Steel	19.68
	DSP007824	Round	18	Corrugated Steel	269.53
	DSP007825	Round	18	Corrugated Steel	90.04
	DSP007815	Round	18	Corrugated Steel	32.56
	DSP007816	Round	18	Corrugated Steel	528.71
	DSP007817	Round	18	Corrugated Steel	37.7
	DSP007818	Round	18	Concrete	22.09
	DSP007819	Round	12	Corrugated Steel	27.7
River	DSP007820	Elliptical	18 x 24	Corrugated Steel	287.68
				Total Length:	3,010.50

Table 9. NW Saginaw Stormwater Main Line

NW Saginaw Stormwater Main Line					
	ID Number	**Pipe Shape**	**Pipe Size (IN)**	**Material**	**Length (FT)**
Top of Line	DSP008497	Round	20	Corrugated Metal	31
	DSP008496	Round	32	Corrugated Metal	132.78
	DSP008495	Round	32	Corrugated Metal	256.85
	DSP002171	Round	32	Corrugated Metal	242.75
	DSP002385	Round	32	Corrugated Metal	63.32
	DSP002386	Round	32	Corrugated Metal	229.82
River	DSP002168	Round	32	Corrugated Metal	123.96
				Total Length:	1080.48

Section 4. **Needed Drainage Improvements to Support Growth**

Future storm drainage projects are listed in Appendix D. As these projects are addressed, they will be brought up to today's design standards of designing to the 25-year storm with safe passage for the 100-year 24-hour NRCS Type 1 design storm, as outlined in the City's Standards and Specifications and Bend Code Title 16, both of which refer to the Central Oregon Stormwater Manual (2010).

As new areas develop, the City will continue its dispersed system of handling the design storm on site as part of the project through the use of surface, regional or UIC disposal. New outfalls to the River are not consistent with the City's General Plan and are not anticipated.

Section 5. **Short and Long-Term Capital Improvements Projects**

This section lists short- and long-term stormwater projects. The amount of detail available for each project varies, with more details available about short-term projects. For the purpose of this PFP, short term project include those scheduled between 2014 and 2019; long term projects are scheduled for 2020 to 2034. All projects may be amended based on site-specific information, new technologies, and availability of resources. The City may change priorities of projects, depending on development demand or other factors. The City may construct other stormwater projects not included in

these lists based on demand, resource availability, failure or problems of existing facilities, or other reasons.

Short Term Capital Improvement Projects. Appendix E. contains the current five-year CIP Plan for stormwater, summarizing the short term capital improvement projects. The Third Street Underpass project, initially planned for as part of the Stormwater Master Plan, underwent construction in 2013-14 and is fully operational and nearly complete as of this writing. Table 10 lists the short (five year) term projects and provides rough cost estimates for each project. Rough costs estimates are defined under OAR 660-011-0005(2) as approximate costs expressed in current-year (year closest to the period of public facility plan development) dollars.

Additionally, as a short term and continuing item, the City includes a continuing pipe rehabilitation program for existing services. The piped system is not anticipated to be used to support growth beyond existing capacities, and is located in an area that is mostly built out.

Table 10. Short-Term Stormwater Infrastructure Improvement Projects (0-5 years) (Includes Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
Stormwater Master Plan	*Note: This project was completed in August 2014 using stormwater utility funds*. This project provides a plan for urban drainage services by identifying stormwater issues, evaluating the needs, and identifying potential solutions in a manner that informs the City for planning and budgetary purposes.	Provides a 20-year comprehensive integrated plan for addressing storm water, incorporating public input.	$3,500
MB37 - Drainage Improvement Project 1 /	*Note: With existing utility funding, the City has completed the main construction phase and is currently moving towards*	Minimizes the number of times the Third Street railroad undercrossing, a	$1,809,000

[1] **Working Names are informal and may be modified**
[2] **Class V cost estimate, not adjusted for inflation**

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
Third Street Underpass Project	*final completion/approval.* This project acts to protect underground drinking water quality by improving drainage infiltration in the ~55 acre basin and replacing deep drill holes in a high spill risk area with a vault, pump station and pipe to a regional retention basin at the Colorado interchange. Additional health and safety benefits are realized by minimizing the number of times the Third Street railroad undercrossing, a major north-south thoroughfare is closed due to flooding.	major north-south thoroughfare is closed due to flooding.	
MB22A - Pump Station Project / Drake-Dohema Project	*Note: The City is in the construction phase of this utility-funded project.* This is the final phase of a 13-acre sub-drainage basin improvement that included development of an infiltration swale to protect water quality of the Deschutes River as part of a flooding control drainage improvement project for an area that was experiencing structure damage. This phase involves installing a pump station in a storm drainage vault.	Reduces localized flooding.	$165,000
Hillside/Butte Drainage Improvement Plan	This project would develop a plan to improve stormwater management by considering strategies such as Low Impact Development, regional detention, dry wells, and	Improves drainage, reduced flooding, enhanced water quality, drinking water protection, increased efficiency with	$250,000

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
	stormwater piping based on site specific details such as topography, geology, groundwater information, and existing stormwater facilities.	operations and maintenance, and regulatory compliance.	
MB18A - Drainage Improvement Project 1 (Initial Planning and Design)/ Franklin Street Underpass Project	This project seeks to improve drainage in a mainly commercial 257-acre drainage basin wherein flooding problems typically present in the Franklin Street underpass. The project involves a new pump station and a solution that integrates with that for the Greenwood underpass project (MB18B #1).	Reduces the number of times this east-west undercrossing is closed due to flooding, providing improved access to the downtown and Third Street commercial areas along with residential access; and improve an antiquated drainage structure that poses safety problems for maintenance personnel.	$550,000
UIC Facility Upgrade Program (ongoing)	The UIC water quality upgrade program seeks to provide enhancements to existing underground injection controls (UICs) to protect underground drinking water sources for all citizens from spill threats and stormwater pollutants. The UIC upgrade program will first focus on drill holes and then dry wells, and will focus on those located in wellhead protection areas as the highest priority. *The initial focus in the first five years will be on upgrading drill holes due to their deeper depths and narrow diameters*	Protects underground drinking water sources for all citizens from spill threats and stormwater pollutants.	$50,000-$75,000/year

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
	that lend to a tendency to clog.		
Storm Drain Line Replacement Program (ongoing)	This project would upgrade existing storm drain lines throughout the City that are in various states of disrepair. Initial work will focus on the piped municipal separate storm system that drains to the river. *During the first five years, projects will focus on upgrades to DSP001401 (Tumalo and Riverside); DSP004352 (NW Hixon at NW Riverside and NW Riverfront); DSP005885 (NW11th at NW Ogden); DSP007810 and DSP008431 (NW Allen at NW Albany to river); DSP007823, DSP007824, DSP000398 (area of NW Baltimore, 12th and 13th streets), DSP003355 (NW Quincy Ave near NW 12th); DSP0051 (NW 13th); DSP008093, DSP008485, DSP03480, DSP03481; DSP001889 (Newport lines); DSP0047 and DSP000049, and DSP008472 (areas of NW Elgin); DSP001399 and DSP001400 NW Tumalo at Drake Park; DSP003484 (12th near Quincy and Portland); DSP008276 (Portland near NW Steidl).*	Reduces flooding and improves stormwater drainage.	$944,800

Long-Term Capital Improvement Projects. The City's list of long-term capital improvement projects. Including cost estimates, is shown in Table 11. As projects are constructed they will be brought up to current design standards required by the City's Standards and Specifications and the Central Oregon Stormwater Manual (2010).

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
Stormwater Master Plan Updates	*Entails updates to the original plan.* This project provides a plan for urban drainage services by identifying stormwater issues, evaluating the needs, and identifying potential solutions in a manner that informs the City for planning and budgetary purposes.	Refined comprehensive, integrated, publically renewed plan.	$250,000
MB18A - Drainage Improvement Project 1 / Franklin Underpass Project (Note: Continued—Project bridges short and long term categories.)	This project seeks to improve drainage in a mainly commercial 257-acre drainage basin wherein flooding problems typically present in the Franklin Street underpass. The project involves a new pump station and a solution that integrates with that for the Greenwood underpass project (MB18B #1).	Health and safety, and access benefits by reducing the number of times this east-west undercrossing is closed due to flooding, providing improved access to the downtown and Third Street commercial areas along with residential; and improved an antiquated drainage structure that poses safety	$3,725,000

[1] **Working Names are informal and may be modified**
[2] **Class V cost estimate, not adjusted for inflation**

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
		problems for maintenance personnel.	
MB18B - Drainage Improvement Project 1/ Greenwood Underpass Project	This project seeks to improve drainage in a 133-acre drainage basin wherein flooding problems typically present in the Greenwood Avenue railroad underpass.	Health and safety, and access benefits by reducing the number of times this east-west undercrossing is closed due to flooding.	$3,725,000
UIC Facility Upgrade Program (Note: Ongoing)	The UIC water quality upgrade program seeks to provide enhancements to existing underground injection controls (UICs). The UIC upgrade program will first focus on drill holes and then dry wells, and will focus on those located in wellhead protection areas as the highest priority.	Protects underground drinking water sources for all citizens from spill threats and stormwater pollutants.	$50,000-$75,000/year
Storm Drain Line Replacement Program (Note: Ongoing)	This project would upgrade existing storm drain lines throughout the City that are in various states of disrepair. Initial work will focus on the piped municipal separate storm system that drains to the river.	Reduced flooding and improved stormwater drainage.	Averages $100,000/year
MB23A - Drainage Improvement Project 1 / Shevlin Meadows Project	This project would improve the stormwater drainage within the 208 acre drainage basin where problems present in the residential Shevlin Meadows subdivision by installing new drainage	Reduced flooding, and reduced property damage risk.	$210,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
	facilities in the underserved area.		
MB16C - Drainage Improvement Project 1 / Roosevelt and McKinley Project	This project would design and construct two stormwater retention basins on City owned properties at SW Roosevelt Ave and SW McKinley Ave located within a 114-acre drainage basin to alleviate flooding that is exacerbated by the locate of the wall shielding the parkway that obstructs the normal north-west flow of the stormwater runoff in the residential neighborhoods.	Reduced flooding that results in property structure damage of multiple residences, enhanced water quality, and potentially neighborhood aesthetics/ safety.	$575,000
MB14B - Drainage Improvement Project 1 / Wall and Minnesota Project	This project would involve a new piped system including sedimentation manholes and catch basins. The project would help address flooding problems near the downtown business district near Wall Street and Minnesota in the 120 acre drainage basin.	Reduced flooding and resulting property damage, improving access to businesses during precipitation events, and enhanced water quality protection improvements.	$1,620,000
MB18C - Drainage Improvement Project 1 / Thurston and Second St. Project	This project would include new drainage improvements to a mainly commercial/industrial basin with new drywells and with stormwater treatment along NE Thurston Ave near	Reduced flooding, enhanced water quality, and drinking water protection (pre-treatment for UICs), along with operation and maintenance	$474,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
	Second St. where problems present at a low point. The project would improve drainage in an impervious area where current drill holes do not properly function.	efficiency within the 146 acre drainage basin.	
MB8C - Drainage Improvement Project 1 / Seward Ave. Improvement Project	The project would involve regional stormwater drainage and treatment enhancements on NE Seward Ave. within a large mainly residential drainage area that is currently underserved.	Reduced flooding, reduced property damage, and increased efficiency of operations and maintenance.	$338,000
MB18A - Drainage Improvement Project 2 / SE Textron Project	This project, located in an industrial commercial area within a drinking water protection area would place a new culvert under SE Textron Drive to improve drainage in the 257 acre drainage basin.	Reduces flood risk in a manner that helps protect drinking water quality.	$2,500
MB14B - Drainage Improvement Project 2 / Mirror Pond Parking Lot Source Control Project	This source control project would install a new roof structure over existing dumpsters at a public facility on NW Brooks Ave to prevent runoff from coming into contact with pollutants in an area adjacent to the Deschutes River.	Water quality.	$8,000
MB8C - Drainage Improvement Project 2 / NE Revere Drywell	This project would install a new drywell along the 400 block of NE Revere Ave. where water currently partially blocks a busy road.	Improved drainage and water quality, while protecting public safety.	$14,000
MB22D - Drainage	This project would construct a new	Stormwater drainage,	$20,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
Improvement Project 1 / York Sag LID Improvement Project	stormwater swale along the 500 block of NW York Drive to address problems that present at a sag in the 859 acre drainage.	enhanced water quality, and aesthetics (roadway landscaping).	
MB18B - Drainage Improvement Project 2 / 1st Street Improvements Project	This project would replace an existing drill hole in an industrial/commercial area along 1st Street and include treatment to address a problem that presents in the 1400 block of 1st St.	Stormwater drainage in the 133 acre basin, drinking water protection, and increased operation and maintenance efficiency.	$42,000
MB18A - Drainage Improvement Project 3/ 2nd Street LID Upgrade Project	This project, located within a commercial/ industrial area, would replace an existing drill hole along the 700 block of 2nd Street and include treatment.	Stormwater drainage, drinking water protection, regulatory compliance, and increased operation and maintenance efficiency.	$21,000
MB14A - Drainage Improvement Project 1 / NW Georgia LID Upgrade Project	This project would construct a new drywell with treatment along the 700 block of NW Georgia Ave. where problems present in a 106 acre drainage basin.	Enhanced water quality and regulatory compliance as well as improved drainage and reduced flooding.	$14,000
Drill Hole Conversion Projects (MB18B, MB18A, MB11, MB16A, MB8B, MB8C, MB32, MB34D, MB22B, MB33) / UIC Facility Upgrade Project	This collection of projects would replace several drill holes that have reached end of life with more reliable drainage facilities, and provide treatment along the following streets: 1st Street, 2nd Street, SW Granite Drive, Woodriver Drive, NE 3rd Street, NE	Stormwater drainage, drinking water protection, regulatory compliance, and increased operation and maintenance efficiency.	$280,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
	12th Street, Parr Lane, NE Waller Drive, NW Trenton Ave, NE Lotno Drive, NE Cordata Drive, Brosterhous Road, and SW McMullin Drive.		
MB33 - Drainage Improvement Project 1 / Newcastle Drive Swale	This project would construct a new stormwater swale along the 60600 block of Newcastle Drive where drainage problems present.	Stormwater drainage improvements to protect public health and safety, enhanced water quality, and aesthetics (roadway landscaping) in the 666-acre basin.	$20,000
MB26 - Drainage Improvement Project 1 / Yates Drainage Repair Project	This project would repair existing drywells along Yates Road.	Drinking water protection and drainage improvements.	$17,000
MB11 - Drainage Improvement Project 1 / Nugget Ave. Drainage Conveyance Project	This project, located in an 866-acre drainage basin, would install new curbing along the 19800 block Nugget Ave. to improve conveyance and prevent public runoff-related property damage.	Improved drainage conveyance and aesthetics (street improvements).	$13,000
MB31 - Drainage Improvement Project 1/ Parrell LID Upgrade Project	This project would construct new sedimentation manholes and new drywells along the 61100 block of Parrell Road where drainage problems present within a 574 acre drainage basin.	Reduced flooding and improved operations and maintenance efficiency.	$28,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
MB34D - Drainage Improvement Project 1 / Madison and Taylor Improvement Project	This project would construct a new sedimentation manhole and new drywell at the intersection of NE Madison and NE Taylor Ct. to help address drainage issues within this 1,724-acre drainage basin.	Reduced flooding and enhanced water quality.	$28,000
MB35 - Drainage Improvement Project 1 / Eastview Drainage Improvement Project	This project would construct a new drywell with pretreatment along Eastview Drive to help alleviate flooding issues that present in the 63200 block within the 705-acre drainage basin.	Improved drainage.	$14,000
MB22B - Drainage Improvement Project 1 / Awbrey Butte Bank Stabilization Project	This project would stabilize banks at Awbrey Butte and install new catch basins in this residential area. Stabilizing banks will help prevent erosion, which has been plugging drill holes, causing flooding problems; and the catch basins will help improve conveyance and help protect against property damage.	Reduced erosion, improved drainage, and reduced flooding	$21,000
MB16C - Drainage Improvement Project 2 / Hill Street Conveyance Project	This project would install new curbs and grade SW Hill Street in the 900 block to improve conveyance and help prevent flooding.	Improved street drainage and conveyance within a 114-acre drainage basin.	$20,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
MB34A - Drainage Improvement Project 1 / Twin Lakes Loop Conveyance Project	This project located within a 799-acre drainage would incorporate conveyance improvements to protect against property damage and repair an existing drywell along Twin Lakes Loop where problems present in the 61500 block.	Improved drainage and enhanced water quality.	$15,000
MC8C - Drainage Improvement Project 3 / NE Jones LID Improvement Project	This project would construct a new stormwater swale along NE Jones Road where problems present in the 2600 block.	Stormwater drainage, enhanced water quality, and improved aesthetics (roadway landscaping).	$20,000
MB25 - Drainage Improvement Project 1 Forest Ridge Drainage Improvement Project	This project would construct a new catch basin and drainage facilities along the 1700 block of SW Forest Ridge Road where problems present in the 606 acre drainage.	Improved drainage, enhanced water quality, and regulatory compliance.	$57,000
MB06A - Drainage Improvement Project 1 / Nels Anderson LID Improvement Project	This project would construct a new catch basin and stormwater swale along Nels Anderson Road where problems present in the 3200 block of the 149-acre drainage basin.	Improved drainage, enhanced water quality, aesthetics (landscaping), and regulatory requirements.	$23,000
MB18B - Drainage Improvement Project 3 / UIC Installation Drainage	This project would install new dry wells with appropriate pretreatment in various locations including the area north of US 20 in between US 97 and US Business 97.	Improved stormwater drainage and water quality.	$210,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
Improvement Projects	These projects are designed to help alleviate problem areas that present in the 61600 block of Summer Shade Drive, the alley behind the 1200 block of NE 3rd, the 1100 block of NE Paula Drive, the 1500 block of NE Revere, the 300 block of SW Maricopa Drive and the 900 block of NE 11th.		
MB18B - Drainage Improvement Project 4 / Olney Ave. LID Improvement Project	This project would construct a new stormwater swale along Olney Ave.	Improved stormwater drainage, enhanced water quality, reduced flooding, and aesthetics (roadway landscaping).	$62,000
MB22B - Drainage Improvement Project 2 / NW Iowa Collection and Conveyance Improvement Project	This project, located within a 375-acre drainage basin, would construct a new asphalt curb, expand the existing collection system along NW Iowa Ave. and improve connections to the existing system.	Improved drainage and conveyance.	$47,000
MB14A - Drainage Improvement Project 2 / Congress Street Drainage Improvement Project	This project located in a106 acre drainage would construct a new catch basin and facility improvements to contain drainage and minimize impacts to the river along NW Congress Street for problems that present in the 100 block.	Improved stormwater drainage and regulatory compliance.	$61,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
MB34D - Drainage Improvement Project 2 / Neff Avenue Drainage Improvement Project	Located within a 1.24-acre drainage basin approximate to Pilot Butte, this project takes measures to improve stormwater conveyance and drainage issues in the drainage area along Neff Road between Juniper Middle School and the sag east of Purcell.	Conveyance and flooding relief.	$85,000
MB11 - Drainage Improvement Project 2 / Driftwood Lane LID Drainage Improvements	This project, located within an 866-acre drainage basin, would construct a new catch basin and stormwater swale along Driftwood Lane where problems present.	Stormwater drainage, enhanced water quality, regulatory compliance, and aesthetics (roadway landscaping).	$65,000
MB17 - Drainage Improvement Project 1 / Colorado and Staats Drainage Improvement Project	This project would improve stormwater drainage in the 500 block of NW Colorado Avenue in a currently underserved area within a 653-acre drainage basin where problems present at Colorado Avenue and Staats.	Stormwater drainage and conveyance improvements.	$85,000
MB34B - Drainage Improvement Project 1 / Arborwood LID Drainage Improvement Project	This project located within a 773-acre drainage basin would construct new catch basins and new drywells or bioswales with treatment where problems present in the 1800 block of SE Arborwood, a residential area.	Reduced flooding, improved drainage, and enhanced water quality.	$81,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
MB24 - Drainage Improvement Project 1 / Davenport and 14th Conveyance Improvement Project	This project would connect the area around NW 14th and NW Davenport to an existing stormwater system.	Improved stormwater drainage and improved conveyance within a 773-acre drainage basin.	$85,000
MB16B - Drainage Improvement Project 1 / Hayes Ave Drainage Improvement Project	This project, located within 190-acre drainage basin, would construct new drainage controls along SW Hayes Ave. where problems present in the 0-100 block.	Improved stormwater drainage.	$64,000
MB10 - Drainage Improvement Project 1 Murray and Boyd Acres Drainage Improvement Project	This project, located within a 910-acre drainage basin, would construct new drainage controls near the intersection of Murray Road and Boyd Acres Road where problems present in an industrial area.	Improved stormwater drainage conveyance and management, and reduced flooding.	$271,000
MB11 - Drainage Improvement Project 3 Platinum Drive LID Drainage Improvement Project.	This project, located within an 866-acre drainage would construct a new catch basin and an infiltration swale with treatment in the 60900 block of Platinum Drive to help ensure the prevention of drainage from the public road from causing flooding on private property.	Improved stormwater drainage, enhanced water quality, and regulatory compliance.	$117,000
MB34A - Drainage	This project located within a 799-acre drainage basin, would	Improved stormwater	$66,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
Improvement Project 2 / King Kezekiah Way LID Drainage Improvement Project	construct a new drywell and roadside bioswales along King Hezekiah Way.	drainage and conveyance.	
MB22A - Drainage Improvement Project 1 / NW 1st Street Conveyance Improvement Project	This project, located within a 319-acre drainage basin, seeks to improve drainage within the 2400 block of NW 1st Street where drainage problems present in an underserved area.	Improved conveyance and flow control to prevent downhill erosion and property impacts.	$85,000
MB22D - Drainage Improvement Project 2 / Shields LID Drainage Improvement Project	This project, located within an 859-acre drainage basin, would construct a stormwater swale along NW Shields Drive in the 200 block where drainage problems present.	Improved drainage, reduced flooding, and enhanced water quality.	$62,000
MB34D - Drainage Improvement Project 3 / Broken Bow Drainage Improvement Project	This project would replace an existing drill hole and provide treatment and additional drainage along NE Broken Bow Drive where problems present in the 2700 block.	Improved drainage and enhanced water quality.	$117,000
MB34A - Drywell/Treatment Project 1 / West View Drive Drainage	This project, located within a 799-acre drainage basin would construct a new driveway apron, sedimentation manhole, and drywell along West View Drive	Improved stormwater drainage and enhanced drinking water quality protection.	$40,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
Improvement Project	where drainage problems present in the 20900 block.		
MB06C - Drainage Improvement Project 1 / Boyd Acres Road Drainage Improvement Project	This project, located within a 518-acre drainage basin, would construct new drainage improvements along Boyd Acres Road where problems present in the 63600 block.	Improved stormwater drainage and reduced flooding.	$64,000
MB34D - Drainage Improvement Project 4 / NE Revere Storm Drainage Replacement Project	Within this 1,724-acre drainage basin, the project seeks to replace end-of-life facilities and improve drainage capacity where problems present in the 1200 block of NE Revere Ave.	Reduced flooding, property protection, and conveyance improvements.	$85,000
MB14A - Drainage Improvement Project 3 / Hixon and Riverfront Drainage Improvement Project	This project, located within an 106-acre drainage basin, would improve drainage facilities through either construction of proper infiltration or drywell facilities with appropriate pretreatment or construct a new pump station with treatment vault near NW Hixon and NW Riverfront Street.	Improved stormwater drainage, enhanced water quality, and regulatory compliance.	$177,000
MB16A - Drainage Improvement Project 1 / SW Bond LID Drainage	This project, located within a 359-acre drainage basin, would construct new drainage controls and bank stabilization measures along SW Bond St.	Improved stormwater drainage, enhanced water quality, and erosion prevention.	$148,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
Improvement Project	where problems present in the 800 block.		
MB34B - Drainage Improvement Project 2 / Waco Drive LID Drainage Improvement Project	This project would construct new curbs, catch basins, and drywells with treatment along SE Waco Drive where the problem presents in the 1900 block.	Improved drainage, conveyance, and enhanced water quality.	$90,000
MB24 - Drainage Improvement Project 2 / 12th and Davenport Conveyance Improvement Project	This project would install new catch basins to drain the area near NW 12th and NW Davenport and drain to an existing storm drain system.	Improved stormwater drainage and regulatory compliance.	$183,000
MB20 - Drainage Improvement Project 1 / Vermont Street LID Drainage Improvement Project	This project located within a 176-acre drainage basin will improve drainage issues that present in the 300 block of NW Vermont Street.	Improved conveyance and drinking water quality protection.	$85,000
MB03 - Drainage Improvement Project 1 / Awbrey Butte Conveyance and Treatment Improvement Project	This project, located in a 602-acre residential and recreational drainage basin, would improve the drainage around Awbrey Butte by improving conveyance and pretreatment (e.g. the pipe size) in accordance with recommendations to be refined in the Hillside Drainage Plan.	Reduced flooding and improved stormwater drainage and water quality benefits.	$780,000

Table 11. Long-Term Stormwater Infrastructure Improvement Projects (6-20 years) (Excerpts from Stormwater Master Plan Table 10.2)

Project Name / Working Name[1]	Description	Project Benefit(s)	Cost Estimate[2]
MB26 - Drainage Improvement Project 2 / Century Drive Stormwater Collection System Project	Located within a 694-acre drainage basin, this project would construct a new gravity stormwater collection system with treatment along SW Century Drive where problems present in the 200 block.	Reduced flooding, improved stormwater drainage, and enhanced water quality, and regulatory compliance.	$2,343,000
MB8A - Drainage Improvement Project 1 / Windance Collection and Conveyance Improvement Project	Located within a 253-acre drainage basin, this project will improve drainage conveyance and collection issues within the 100 block of Windance Ct. to ensure public stormwater is handled onsite within this residential area.	Conveyance and drainage control improvements, and property protection.	$34,000

Section 6. Costs and Funding Mechanisms

The City of Bend's Stormwater Utility was created in April 2007. Based on a $4 per equivalent residential unit (ERU) of impervious surface coverage per month, the stormwater utility provides about $2.5 million per year for stormwater management activities. The City stormwater utility is funded by this service charge and sometimes grant moneys for special projects. As an enterprise fund, the service charge funding can only be spent to address stormwater. The City limits actual construction of projects to those for which there is funding from the Stormwater Utility fund. The service charge pays for a comprehensive stormwater program including: operation and maintenance of stormwater facilities, engineering and project management, water quality management, utility administration and public response, as well as capital improvement projects.

Since the formation of the Stormwater Utility in 2007, the City conducted a 20-year stormwater utility rate study considering three varying levels of effort for

infrastructure improvement for the Stormwater Master Plan project. Based on this information, in Spring 2014 public input was gathered on the preferred approach through two public meetings, and discussion at both the Stormwater Quality Public Advisory Group and the Infrastructure Advisory Committee. Comments were taken to the City Council to select a preferred infrastructure improvement alternative. The chosen alternative has a 20-year capital cost of $25.2 Million. Utility operating revenue needs were modeled to range from $2.5 Million at present to $5.4-$5.6 Million/year by FY2032-33, depending on the rate modification approach taken. Monthly stormwater utility rate increases were estimated in two ways: a gradual rate increase and an accelerated rate increase. Based on the chosen accelerated rate increase, the immediate calculated monthly stormwater utility rates are anticipated to be $5.80 per ERU and the FY 2032-33 monthly stormwater utility rates would be between $6.53 per ERU. Tables 10 and 11 provide Class V level cost estimates for each of the public facilities projects, not accounting for inflation. Table 12 provides the City's 2013-14 budget. The City anticipates rates that will achieve the revenue to build the planned projects. To the extent that rates do not provide sufficient funding, projects will be delayed until funds are available.

Table 12. Stormwater Management Budget for Fiscal Year 2013-2014

Stormwater Management Budget **(Fiscal Year 2013-2014):**	
Operation and Maintenance	$1,240,000
Engineering and Project Management	$580,700
Capital Improvement Projects	$2,750,000[1]
Water Quality Management	$378,000
Utility Administration & Public Response	$576,000
Total	**$5,524,700**
Note: [1]Current Capital Improvement Budget is $2,750,000, based on carryover from previous years and an annual budget of $300,000	

Section 7. **Facilities for Future Development**

Stormwater facilities for future projects will be planned and developed on a per-project basis based on the following development rules:

- Bend Code Title 16 (2012)
- City of Bend Standards and Specifications (2010, as updated)
- Central Oregon Stormwater Manual (2010).

Because the City's stormwater system is dispersed and private development is required per Bend Code Title 16 to keep stormwater on site for the 25 year Type I NRCS storm event and responsible for ensuring safe passage for the 100 year event, specific drainage facility projects (such as piped systems) are not needed.

The City's approach for public facilities as described in the City's Standards and Specifications is to design to the 25-year 24-hour Type I NRCS storm event and provide safe passage for the 100 year event, and provide stormwater treatment and drainage near the source of accrual via surface infiltration and sub-surface injection systems. Thus the locations needed to do this have been captured in the calculations for right of way.

This low-impact-development approach allows stormwater to be handled at or near the source, maintaining more natural recharge rates and minimizing hydromodification impacts to the Deschutes River. It also allows development to be planned in an efficient manner and helps reduce pollutant loads from reaching the Deschutes River.

Appendix A Stormwater Master Plan (August 2014)

Appendix B UIC Systemwide Assessment

Appendix C Pipe Assessment Inventory Example

Appendix D—CIP Prioritization Plan (CH2M Hill, 2011)

Appendix E—Five Year CIP Plan

SYSTEMWIDE ASSESSMENT
City of Bend Class V Stormwater
Underground Injection Control Systems

Public Works Department

Stormwater
December 2012

City of Bend
Public Works Department
575 NE 15th Street
Bend, OR 97701
541-317-3000

The City of Bend would like to thank the City of Portland for the use of its Systemwide Assessment, which was used as a model for this document; and to GSI Water Solutions, Inc. for their technical assistance.

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Appendices

Executive Summary

The purpose of the Systemwide Assessment is to identify, evaluate, track, and report on spatial and physical characteristics of existing and new City of Bend Class V underground injection control systems (UICs) and to identify UICs that may impact groundwater through the discharge of surface drainage to the subsurface. The Systemwide Assessment is a requirement of the Oregon Department of Environmental Quality (DEQ) as part of the City's Water Pollution Control Facility (WPCF)-UIC permit. In accordance with the WPCF-UIC permit, the Systemwide Assessment evaluates every City-owned or operated UIC relative to certain factors that may potentially create adverse impacts to groundwater. It includes:

- Goals and objectives for the Systemwide Assessment, as well as the City's overall watershed goals.
- Description of the **database** used, including the existing UIC Registration Database and the additional data that were generated for the assessment.
- The process used to assess all UICs in terms of each **assessment factor,** and the results of that assessment, as summarized in the table below.
- **Follow-up actions** the City will conduct for UICs that need additional analysis in order to make conclusive determinations about drainage and facility characteristics. The City will provide the results of the additional analysis as part of its first annual report under the WPCF permit section.

Table E-1

Assessment Factor	Results (No. of UICs)
UICs in areas that may receive drainage from greater than 1,000 trips per day roads.	1,520
UICs that directly discharge to groundwater. And UICs in areas of high groundwater that may have inadequate separation distance between the bottom of the UIC and groundwater.	0
UICs estimated to be located within 500 feet of a domestic well; two-year time of travel of a public water well; or 500 feet of a public water well that does not have a time of travel delineation.	531

Table E-1 Cont.

Assessment Factor	Results (No. of UICs)
UICs that may receive drainage from motor vehicle or other maintenance floor drains, or fire station bay drains.	0
UICs that may receive drainage from industrial and commercial properties that have site activities that would be expected to result in a direct or indirect discharge to a UIC that may cause a violation of permit conditions.	19

This table will be updated in the City's annual report if any follow-up actions result in modification to the findings herein.

Section 1

Background and Approach

1.1 Introduction

The purpose of the Systemwide Assessment is to identify, evaluate, track, and report on spatial and physical characteristics of existing and new City of Bend underground injection control systems (UICs) and to provide an ongoing mechanism to identify UICs that may impact groundwater through the discharge of surface drainage to the subsurface. The Systemwide Assessment is a requirement of the Oregon Department of Environmental Quality (DEQ).

The City currently has a total of 5,616 known UICs that collect stormwater from public rights-of-way and discharge it to the subsurface. The City operates 4,640 drywells and 976 drill holes. A drywell is a perforated concrete cylinder generally 10-20 feet deep from the ground surface and 4 feet in diameter. A drill hole, is comprised of a 6" diameter cased hole that vary in depth from 10 ft to over 100 ft deep. The population of drill holes are older as they have not been allowed in the City's Standards and Specifications for several years. In most areas of the City UICs are the main form of stormwater disposal, except in the small areas of downtown and from the west hills to the Deschutes River where a pipe system was constructed to the River, in which case both types of drainage facilities are used. UICs are also an essential element of a comprehensive watershed strategy to use stormwater as a resource by infiltrating it back into the ground near the source, thereby reducing effects to surface water such as hydromodification. UICs quickly and efficiently reintroduce stormwater into subsurface soils, which filter and cool the runoff before it finds its way to groundwater and eventually helps recharge the aquifer or daylights to the River via springs. A very conservative estimate of groundwater recharge from private and public UICs within the City of Bend at full build-out is 9,687 ac-ft/year or 1.8% of the recharge that occurs within the City of Bend limits (GSI, 2011). Other sources include groundwater inflow (61.1%) and canal leakage (35.1%), among others (Ibid).

In the Bend area, groundwater serves as a drinking water supply. The WPCF permit establishes the UIC construction, operation, and maintenance requirements the City must implement to protect groundwater for use as a drinking water resource. The permit calls for a comprehensive stormwater management strategy that will prevent, minimize, and control pollutants at the surface before they are discharged to the ground. The Systemwide Assessment is an essential element of that strategy, providing the fundamental characterization of the system needed to administer the UIC Program.

As used in this document, **UIC** means any Class 5D underground injection control system owned or operated by the City of Bend.

1.2 Regulatory Background

Congress enacted UIC rules in 1974 under the federal Safe Drinking Water Act and modified the rules in 1999. The U.S. Environmental Protection Agency (EPA) administers these rules under Title 40 of the Code of Federal Regulations (CFR) Parts 144 -148. In Oregon, EPA has delegated the regulation of UICs to DEQ. Oregon Administrative Rules (OAR) 340-044 regulate all groundwater as a potential source of drinking water and require municipalities with more than 50 UICs to operate under a permit. The City of Bend applied for a WPCF permit in 2003 and has prepared this updated Systemwide Assessment for consideration in advance of permit issuance by DEQ.

1.3 Relationship to Other Permit Requirements and Documents

The anticipated WPCF permit requires the City to prepare a variety of documents that together describe the programmatic actions and management practices the City will implement to protect groundwater and meet the requirements of the permit. In addition to the Systemwide Assessment, the following documents are required:

- UIC Registration Database
- UIC System Management Plan (UICMP)
- UIC Monitoring Plan.

The City plans to incorporate both its UICMP and its National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System (MS4) permit-required Stormwater Management Plan for surface water discharges into one comprehensive Integrated Stormwater Management Plan (ISWMP) given the overlap. The ISWMP 2022, which will serve as the City's UICMP, describes the relationship between the two plans in the overall context of the City's UIC program. It describes the actions and Best Management Practices the City will implement to prevent and control pollutants prior to discharge; procedures and criteria for determining UIC compliance (e.g., defining what non-compliance is); and how UICs will be prioritized for further evaluation and corrective actions if needed. The monitoring plan describes how the City will conduct compliance monitoring for the WPCF-UIC permit.

1.4 Systemwide Assessment Approach

The WPCF permit requires the City to inventory all public UICs within the City of Bend, assess them relative to the spatial and physical factors identified in Table 1-1, and evaluate whether drainage entering each UIC would be likely to contribute to groundwater pollution. Table 1-1 describes these assessment factors as required under permit Schedule B.1, and identifies the section of the Systemwide Assessment that addresses each factor.

Table 1-1 UIC Systemwide Assessment Factors

Assessment Factors	Relevant Permit Template Schedule	Systemwide Assessment Section
Inventory of all UICs by their locations.	B-1-a	Section 3, Appendix A
An estimate of vehicle trips per day for the area(s) drained by the injection systems.	B-1-b	Section 4
An inventory of all injection systems that discharge directly into groundwater.	B-1-c	Section 5 Appendix D
An inventory of all injection systems that do not meet the setback distances.	B-1-d	Section 6 Appendix C
An inventory of all injection systems that are prohibited.	B-1-e	Section 7
An inventory of all industrial facilities and commercial properties that pose a risk of pollutant discharge to injection systems that you own or operate.	B-1-f	Section 8 Appendix C

1.5 Limitations on Use of the System Assessment

The Systemwide Assessment provides an evaluation of the factors listed in Table 1-1. It also identifies UICs that require further information and evaluation before a determination can be made regarding facility characteristics, compliance status, or the potential for adverse impacts from drainage entering the UIC. Portions of the assessment are based on estimated and modeled information that is intended to focus additional evaluation on a prioritized subset of the UIC system. Results presented in this Systemwide Assessment are not intended to be used as a definitive source for determination of compliance status. The City will use the Systemwide Assessment results to identify follow-up actions to obtain additional information necessary to further evaluate identified UICs. Follow-up actions will be specific to each assessment factor and/or UIC as appropriate. Those actions may include site inspections, verification of UIC drainage catchments, and actions to address site activities. The general process used to conduct the Systemwide Assessment and necessary follow-up actions is summarized below. Detailed information about each Systemwide Assessment task is discussed in subsequent sections of the document.

1.5.1 General Process for the Systemwide Assessment and Follow-up Actions

1. Evaluate the entire City-owned and operated UIC system. Develop an inventory of UICs and assess those based on the criteria described in Table 1-1.

2. From the lists in the Systemwide Assessment, describe any follow-up actions the City will take to make conclusive determinations about drainage and facility characteristics. Provide updates through the annual report.

Section 2

Goals and Objectives

2.1 Introduction

For many areas located in Bend, UICs are the only form of stormwater disposal available and serve as an important pretreatment system for overall watershed health that helps approximate more natural infiltration, reducing the amount of runoff and hydromodification impacts of piping stormwater directly to the Deschutes River. In this way, UICs are an essential element of a comprehensive watershed strategy to use stormwater as a resource by infiltrating it back into the ground. This section discusses the role the Systemwide Assessment will play in ensuring that UICs continue to play an integral role in carrying out the City's mission to protect both our groundwater aquifer drinking water and surface water supplies.

2.2 Systemwide Assessment Goals

An inventory and assessment is important to identify all known UICs and to assess drainage to each UIC for potential impacts to groundwater. The primary goals of the Systemwide Assessment are to:

1. Provide a comprehensive inventory of City owned and operated UICs.
2. Identify UICs that may not meet permit requirements or that may pose a risk to groundwater as a result of their physical or spatial characteristics.
3. Maintain a data management system to track the location and physical characteristics of UICs.

2.3 Systemwide Assessment Objectives

The overall objective of the Systemwide Assessment is to identify, evaluate, track, and report on spatial and physical characteristics of existing and new UICs. The WPCF permit requires the City to evaluate every UIC relative to four factors that may create adverse impacts to groundwater. Accordingly, the specific objectives of the Systemwide Assessment are to identify and evaluate UICs that:

- Are in areas of high groundwater and may have inadequate separation distance between the bottom of the UIC and groundwater.
- Are within 500 feet or a two-year time of travel of a domestic or public water well.
- Are in areas that receive drainage from commercial/industrial properties having site activities that could be expected to result in violation of permit conditions (water quality limitations) including SARA Title III businesses.
- Require further investigation before a determination can be made about the potential for adverse impacts from drainage entering the UIC and the compliance status of the UIC.

Section 3

UIC Registration Database

3.1 Introduction

As part of the WPCF permit requirements, the City must maintain a UIC Registration Database that meets the conditions of Schedule D.4 of the permit. The database provides identification numbers, physical characteristics, and location information about UICs. The original database was submitted to DEQ in April of 2005. After an intensive quality assurance and quality control review based on field verification (see Section 3.2, below), the City worked with DEQ to update the database and improve communication between the City and DEQ databases with quarterly updates beginning in October 2009. Data from the UIC Registration Database were used, as relevant, for the Systemwide Assessment.

3.2 Data Sources

The primary source of data for the UIC Registration Database comes from the City's GIS Geo-database. Historically, this database was developed by City GIS staff over the course of many years with varying accuracy. During 2008 and 2009 the City completed an intensive UIC field verification project. Each UIC was inspected, mapped or remapped and all DEQ required parameters (excluding drywells depths which are known to be regularly between 10-20 feet deep) were measured and recorded. The refined data was collected using a survey grade GPS instrument and downloaded into the GIS system. The City has accurate drywell depth information for 2,864 of the 4,640 drywells. Starting in 2000 all new drywell installation required a data sheet to be completed and submitted to the City. That data was incorporated into the database.

3.2.1 Asset Management

The Infor system is the City of Bend's primary asset management system for City infrastructure. The system records and schedules preventative maintenance for all UICs and associated facilities. The Infor system is linked to the GIS system and tracks abandoned UIC locations as well as active locations and maintenance history records. The Infor system went live in December of 2011; previously maintenance data was stored in the City's HTE system.

3.2.2 GIS Data

GIS is used for tracking UIC locations, identification numbers and associated data. All stormwater facilities information was collected using survey grade GPS. The data was uploaded into a GIS geo-database. Any new UIC features will be located using survey grade GPS equipment and uploaded into the database as part of the City's standard record drawing program.

3.3 Currency of Data Used for Systemwide Assessment Tasks

The GIS system data used for the Systemwide Assessment spatial analysis evaluations are from a January 17, 2012 data extraction and compilation. Because of the dynamic nature of the system, this snapshot was created to provide a stable basis for analysis and reporting. At the time of that extraction, 5,616 known City-owned UICs were reported in the GIS system. Any City owned UICs identified after January 17, 2012 have been and will be evaluated and reported as part of the required registration database update submittals. The completed database is available in Appendix A at the back of this document.

3.4 Follow-up Actions

For the Systemwide Assessment, field crews completed measurements on all working drill holes, but 38 of the 976 drill holes are packed with sediment and 4 have accessibility issues that are being addressed. Cleaning drill holes can be a difficult process. City equipment can only remove sediment from drill holes down to a depth of 30'. City crews will continue to attempt to clean out the plugged drill holes and modify existing structures to gain access and collect additional measurements as they do so. The results of this effort will be included in the first annual report.

All City owned drywells are 4' in diameter and are generally very consistent in depth ranging from 10 to 20 feet. Given the depth to groundwater aquifers in Bend even the deepest known drywells have been determined to be protective (GSI, September 2011). Likewise, drill holes have also been found protective given their depths and locations. Stormwater field crews will work to complete measurements for the 1,776 drywells for which the City does not have specific depth information. The results of this effort will be included in the first annual report.

Section 4

Inventory of estimated vehicle trips per day for the area(s) drained by the injection systems.

The WPCF permit requires that UICs receiving drainage from roads with greater than 1,000 trips per day projected daily traffic (PDT) be identified because they are at greater risk of having pollutants that may exceed regulatory requirements. This section describes the process that the City used to identify UICs that could potentially receive drainage from areas with greater than 1,000 vehicle trips per day.

4.1 Projected Daily Traffic (PDT)

The City collects traffic counts from multiple sources including traffic studies, private development projects and City-collected data. This information is compiled and entered into a GIS database. The data is based on specific locations, travel direction and intersections. To link the traffic count database directly to the appropriate UIC drainage areas would be very difficult and cost prohibitive. The City developed an alternative approach of linking the UICs to a road classification. As outlined in the Bend Urban Transportation Plan Section 6.6.9, City roads are divided into classifications. The most common classifications include: Alleys, Local, Major Collector, Minor Arterial and Major Arterial. These classifications are based on several factors including design speed, road width and traffic volumes. See Attachment B for the complete Street Function Classification System summary table. The City does not have any designated Industrial streets. Frontage roads are generally low-speed, low-volume. UICs were linked to the adjoining street classifications using standard GIS processes. The table below represents a breakdown of trips per day compared to the street classification.

Table 4-1

Street Classification	Projected Daily Traffic (PDT)
Alleys	< 400
Local	Evaluated on a case-by-case basis
Major Collector	> 1,500
Minor Arterial	> 5,000
Major Arterials, Principal Arterials, and Expressway	> 10,000

As defined in the Bend Urban Transportation Plan local roads have less than 1,500 PDT. The majority of local roads in Bend have less than 1,000 PDT. Therefore local roads were evaluated on a case-by-case basis to determine which sections of local roads exceed the 1,000 PDT threshold. City staff manually reviewed the local road traffic count database and identified 28 local roads segments with greater than 1,000 PDT. These road sections were then added to the data set. Using this approach the City identified 1,531 UICs likely to receive drainage from roads with greater than 1,000 PDT.

The results of this evaluation were added to the City's UIC Database (See Appendix A, Column AI).

4.2 Limitations of Analysis

GIS staff placed a 100 foot buffer along each road segment with a PDT greater than 1,000 trips. The buffer tool selects all UICs within that area. That selection is then used to populate the City's UIC Database. Buffer selection tools are commonly used in GIS for this size of dataset. This analysis did not take into account road grades and runoff flow direction but the results are the most accurate available given our present resources and are considered conservative.

Section 5

UICs Located in Areas of High Groundwater

The WPCF permit requires that UICs discharging directly into groundwater are identified. The approach to identify such UICs includes evaluating the UIC depths relative to either 1) the regional groundwater table's seasonal highs, or 2) possible perched water systems within the City. The City established a seasonal high groundwater surface and identified possible perched water using the following data sources:

Municipal water supply well water level data**:**

- USGS Groundwater Hydrology of the Upper Deschutes Basin Report (USGS WRI Report 00-4162);
- Monitoring Well Report dataset (OWRD Well Log Database);
- Consulting reports;
- DEQ Cleanup Program historic and ongoing cleanup site ECSI records;
- City field inspections.

5.1 Regional Groundwater Table

The regional water table beneath the City of Bend is several hundred feet below the ground surface (ranging from 163 to 855 feet below ground surface (bgs) and is generally considered to be unconfined. In an unconfined aquifer the elevation of the water table surface represents the head in that aquifer. Due to the highly permeable characteristics of the aquifer, the seasonal fluctuations of water levels tend to be relatively small in magnitude (GSI, January 2012; see Figure 3 for the regional water table contour elevations). See Appendix D for additional information on the ground water table.

5.2 Regional Seasonal High Water Table

The seasonal high regional groundwater level is comprised of the overall regional water table coupled with the seasonal changes to the water table. The USGS Groundwater Hydrology of the Upper Deschutes Basin Report (USGS WRI Report 00-4162) indicated that although these fluctuations can be large (up to 20 feet) within the Cascades, the magnitude of the fluctuations decreases rapidly as the distance from the Cascades increases. Therefore a conservative estimate of the total potential seasonal fluctuations to the regional water table beneath Bend is approximately 5.5 feet (2.5 feet of regional-scale and 3 feet of possible local-scale of fluctuation) (GSI, 2012). See Appendix D for additional information on the regional water table.

5.3 UIC Separation Distance from Regional Seasonal

The depth to the top of the regional water table varies across the City of Bend with the minimum depth being greater than 163 feet in the southern part of town and the depth to water deepening to the north.

The potential seasonal fluctuations were then compared through GIS to the depth of the City's UICs to evaluate the vertical separation distance between the City's UICs and the seasonally high groundwater table. The location and elevation of the base of each of the drywells and drill holes were then compared to the elevation of the seasonal high water table surface at the location of each of the UICs.

Based on the technical memorandum completed by GSI (September 2011) (see Appendix D) and subsequent analysis, no City UICs have an inadequate vertical separation distance from the regional seasonal high water table. None are in the groundwater aquifer.

5.4 Potentially Perched Water Evaluation

Potentially perched water zones may create areas within the City where inadequate vertical separation distance may have the potential to impact groundwater. Figure 7 of the technical memorandum completed by GSI (2012) identifies two possibly perched water systems within the City (see Appendix D). This analysis included the evaluation of Oregon Water Resources Department (OWRD) water and monitoring well data, the U.S. Geological Survey (USGS) and local cleanup reports, and UICs adjacent to open surface water bodies (rivers and open canals). The USGS and local hydrogeology reports suggest there are two main areas of potential concern warranting further investigation: 1) perched water possibly near the Old Mill area and 2) the existence of a shallow water table in the northern most area of the City. These are discussed next.

5.4.1 Perched Water in Northernmost Area

City staff evaluated 21 drill holes located in the northern possibly perched water area. The deepest drill hole identified was 64.4 feet in depth. Based on the GSI (2012) report the estimated perched water depth in this area is 100 feet below the surface. City staff reviewed drill hole depth versus estimated perched water depth in these areas and found no drill holes that have an inadequate vertical separation distance with the northern perched water area.

5.4.1 Perched Water in Old Mill Area

The City operates 2 drywells and potentially 2 drill holes within the Old Mill area. City staff visually inspected all of the facilities. The first drill hole is located on the north end of the Colorado Bridge and is plugged with sediment. The second identified drill hole is located on the South side of the bridge. This drill hole looked very similar to a drilled casing from the surface but during the inspection field crews identified that the vertical pipe was connect to a 90° elbow at a depth of 4'. City staff speculates that the two

potential drill holes in the Old Mill area may drain to the Deschutes River and are likely not UICs.

In Fall 2012, staff also inspected the two identified drywells for standing water. During the site inspection staff found no evidence of standing water. Based on the results of the groundwater protectiveness analysis, the City believes the drywells at their current depth are protective of groundwater.

5.5 Follow-up Actions

City crews will clean and use CCTV equipment to further inspect the two potentially misidentified drill holes in the Old Mill Perched Water Area. The findings of this inspection will be included in the first annual report. City staff are not aware of any drywells in the City deeper than 20 feet, especially given the precipitation amounts and the geology of the area. Nevertheless, the City will analyze specific depths of the remaining drywells needing specific measurement to ensure adequate separation distance from regional seasonal high groundwater, and provide an update in the next annual report.

Section 6

UICs Within Horizontal Setbacks

The WPCF permit requires that UICs that are located less than 500 feet from a domestic well, are within a two-year time of travel of a public water well, or are located less than 500 feet from a public water well without a delineated time of travel must meet water quality requirements specified in the permit. This section describes the process the City used to identify domestic and public water wells and UICs located within 500 feet or a two-year time of travel of those wells. Information generated in this analysis will be used to help evaluate compliance with water quality requirements established in the permit for UICs near domestic or public water wells.

6.1 Well Identification Process

A list of potential existing well locations was developed using readily available data sources. The water well search area includes the land within the City UGB plus one quarter section beyond the UGB. This additional quarter section was included in the water well search to account for possible wells just outside of the UGB boundary but potentially within 500 of a City UIC. The data sources used to create a comprehensive list of water well locations includes:

- *Oregon Water Resources Department (OWRD) Water Supply Reports, 2011.*
- *City of Bend Water Department Records.*
- *Oregon Health Authority (OHA) Services Drinking Water Program data.*

For additional information on the well identification process see Appendix B, Section 2.

6.2 Information Consolidation

Well location information collected from the data sources described in Section 6.1 was reviewed and sorted to provide a comprehensive consolidated list of possible well locations and to facilitate a field investigation. For complete descriptions of this process see Appendix B Section 2.2.

6.2.1 Dataset Processing

The following well logs were removed for the data-set because they are not designed or used for supplying water:

- Monitoring and Geotechnical Well Logs;
- Alteration Well Logs;
- Well Logs Indicating New Construction and Abandonment;
- Abandonment Well Logs;
- Abandonment Well Log Evaluation;
- Temporary Abandonment Log Evaluation.

(Several logs present in the dataset were identified as being temporarily abandoned. These logs were reviewed to determine the current status of these wells. Four of these logs were removed based on the data presented on the well log, such as no water, the depth of the boring being not nearly deep enough to reach the regional water table, or drilling tools stuck or lost in boring at a location well above the regional water table.)

6.2.2 Potential Well Locations

The results of the initial analysis found 253 wells with accurate locations (by latitude-longitude or from site plans) and 130 wells with general locations (tax lot). City staff performed a desktop review for the 130 generally located wells. During this process City staff, reviewed the well log for additional data including owner name, street address, lot and block description or any other identifying notes. During this process the City was able to locate 49 additional well locations.

253 Accurately located wells
130 Generally located wells resolved
383 Well locations identified.

6.2.3 Private Well Surveys

The City took a two-prong approach to identify wells that may have not been located as part of the database search effort described in Section 6.1. In of January 2009 the City sent out a note to every property owner as part of their utility bill. The City utility bills stated:

> To prevent water pollution State law requires the City to keep its stormwater drywells and drillholes (facilities that drain stormwater into the ground) at least 500 feet away from water wells. However, the State's location database is incomplete. If you are concerned that a city drywell or drillhole is within 500 feet of your water well, call the City stormwater division at 317-3018.

No responses where received from this effort.

Separately, the City also used GIS to compare the water billing database with City tax lot information. This process identified 59 tax lots within the City of Bend water service area that are not currently served. A letter along with a map was mailed to each of the property owners. The letter asked the property owner if they have a private well and if so to mark the location on the attached map. The letter also included a return envelope for the owners to return the map. The City received 30 responses and located 5 additional well sites. Those well sites were then compared to the private well database.

The City contacted the two other water service providers within the City limits (Roats and Avion) to see if they could provide similar data for their service area. The

information was not available from Avion. Roats staff indicated that they are not aware of any private wells located in their service area.

6.3 Systemwide Assessment Dataset

Using the Well Location Dataset developed by GSI, City staff incorporated the data into the GIS layer. All wells with a valid latitude and longitude were converted into the correct projection and added into GIS (109 well locations). Then Staff manually entered the locations of the 49 that were generally located. Staff also imported 75 tax lots that contain wells.

The dataset used for this Systemwide Assessment includes all wells that could be located by the City through the methodology outlined above. The City along with the assistance of its consultant, GSI Water Solutions, was able to accurately map 158 wells within the City of Bend boundaries and an additional 75 tax lots that potentially have water wells (GSI, August 2011). Figure 6-1 shows the locations of all located wells along with a 500' buffer. For locations for which only a tax lot was known, the 500' buffer was conservatively placed around the entire tax lot.

6.3 ArcGIS Process Determination of Two-Year Time of Travel Boundaries

In August 2011 the City of Bend completed a comprehensive update of its Well Head Protection Areas (WHPAs) for all City owned wells. The City's WHPAs are based on a local-scale numerical groundwater flow model that can simulate regional groundwater conditions while simultaneously providing local-scale simulation capabilities of the City's water supply wells. See Appendix E for a complete report summarizing the City's WHPAs update process that was adopted by Oregon Health Authority on August 3, 2011. Figure 6-2 shows the City of Bend WHPAs along with other local water purveyor's WHPAs.

6.4 ArcGIS Process for Determining Distance Between UICs and Wells

This section describes the process the City used to identify UICs located less than 500 feet from a domestic well, within a two-year time of travel of a public water well, or less than 500 feet from a public water well without a delineated time of travel. Two primary ArcGIS analyses were used, as discussed below.

6.4.1 UICs Within 500 feet of a Well

Using ArcGIS a 500-foot buffer was applied to all known public and private wells that do not have a two-year time of travel delineation. For well locations for which only the tax lot was known the City placed the 500 foot buffer around the tax lot boundary to be conservative. This process identified 222 City-owned UICs within 500 feet of a well.

6.4.2 UICs Within Two Year Time of Travel

Using ArcGIS and the State of Oregon Drinking Water Protection Areas Time of Travel layer, the City located 309 City-owned UICs within the two year time of travel.

6.5 Limitations of Analysis

The analysis and results presented within this chapter have the following limitations.

- Well log datasets discussed in Section 6.1 were limited by the following issues:
    - Many well logs do not give a street address for the well, but rather have various alternate location formats. An attempt was made to identify a well location or a general area that could be followed up as part of the field survey.
    - Well drillers were not required to complete well logs before 1955, so data before that time are less reliable. For many of the wells dug before 1955, well logs were filled out many years later, so there is less information and often duplication. An attempt was made to identify well locations from the provided information if possible.
- Datasets discussed in Section 6.2.2 were limited by the following issues:
    - Well location was sometimes difficult to confirm because owner information from the well log was often incorrect, and the property may have been sold or the owner may actually live elsewhere.
    - Address changes and well logs are not updated once the logs have been filed. Therefore, the address on the well log may not exist anymore, limiting the ability to locate the well.
- The spatial analysis for UICs within the horizontal setback areas conducted in Sections 6.4 and 6.5 included only wells that could be located by City staff and their consultants using the best available data.

6.6 Follow-up Actions

With regards to well locations, the Oregon Water Resources Department is ultimately responsible for maintaining accurate well logs with locations. Additionally the City has an approved groundwater protectiveness study that shows protectiveness even for its UICs within horizontal setback areas. Therefore, the City will periodically review the State's database or capture new wells during local development actions for improved well location or installation information and include the information in future updates of the Systemwide Assessment submitted per permit requirements.

Section 7

Prohibited UICs

The WPCF permit requires an inventory of UICs that may receive drainage from motor vehicle maintenance floor drains, fire station bay drains, indoor parking facilities, or 1200-Z permitted facilities. This section describes the process the City used to identify these facilities within the City's UGB.

7.1 Motor Vehicle Maintenance Floor Drain Investigation

The City currently operates two public works facilities. The inventory of these buildings was conducted in two phases:

- In phase one, all site plans on file with the City were collected and reviewed. Information was gathered from both paper and electronic copies on file with the building safety division.

- In phase two, site visits of both sites were conducted to confirm identified building plan information.

The City does not currently have any motor vehicle maintenance floor drains that discharge to a UIC.

7.2 Fire Station Bay Drain Investigation

The City currently manages three fire station facilities, and one training tower and administration building within Bend City limits. The inventory of these facilities was conducted in two phases:

- In phase one, all building plans on file with the City were collected and reviewed. Information was gathered from both paper and electronic copies on file with the building safety division.

- In phase two, site visits of all Fire buildings were conducted to confirm identified building plan information.

The City does not currently have any known fire station bay drains that discharge to a UIC.

7.3 Bend Airport

The City currently operates 94 hangers, 1 office building and manages 63 ground leases (City owned land with a private building constructed on it) at the Bend airport. The inventory of these buildings was conducted in two phases:

- In phase one, all available building plans on file with the City were collected and reviewed. Information was gathered from both paper and electronic copies on file with the building safety division.

- In phase two, a site visit was conducted to confirm that identified building plan information. Given the total number of buildings and issues with coordinating access not all building where inspected. The inspections focused on sites with known floor drains. The inspections located only one floor drain inside a hanger facility. City staff inspected surrounding drywells and found no evidence that the floor drain was connect to a UIC. City staff used CCTV technology to inspect the drain and confirmed that it was plumbed to the sanitary sewer and not a UIC.

There are no known floor drains that discharge to a UIC at the Bend Airport.

7.4 1200Z Permitted Sites

According Oregon Department of Environmental Quality there are no permitted 1200Z sites within the City limits.

Section 8

UICs That May Receive Drainage from Industrial and Commercial Properties That May Result in a Permit Violation

The WPCF permit requires an inventory of all UICs that receive drainage from industrial and commercial properties with site activities that may result in a discharge of pollutants to a UIC that may cause a violation of permit conditions. This section describes the process the City used to identify UICs that potentially meet these conditions. It also identifies UICs where follow-up actions are recommended to refine data generated in the Systemwide Assessment and to minimize the potential for adverse impacts from drainage entering the UICs.

In Bend, private properties have been required to keep all stormwater on site for many years. On January 4, 2012 the Bend City Council adopted Bend Code Title 16 that defines all stormwater as the 25-year, 24-hour, Type I storm event with safe passage for the 100-year event. If private sites are built and maintained to Code, City owned UICs should not be receiving drainage from commercial and industrial sites. In reality not all drainage is being captured on private sites.

8.1 Identifying Businesses for Field Assessment

The City first conducted a desk-top analysis by examining various existing databases. City of Bend Business Licenses Directory (containing 5,536 businesses located within the City) along with the Oregon State Fire Marshal (OSFM) Hazardous Substance Database, DEQ's Environmental Cleanup Site Information (ECSI) database, wellhead protection areas, and the City's pretreatment permit database. The City then identified the following North American Industry Classification System (NAICS) codes of business types that are most likely to create site drainage that could potentially contribute to a violation of the water quality requirements established in the WPCF permit (see Table 8-1).

Table 8-1

Classification	NAICS CODE	Total # of Businesses	OSFM Haz. Businesses	ECSI Businesses
New Car Dealers:	441110	15	8	3
Used Car Dealers:	441120	11	2	0
Gasoline Stations with Convenience Stores:	447110	8	3	0
Gasoline Stations:	447190, 447190	16	15	2
Auto Repair:	811111, 811118, 811121, 811198	93	42	0

Classification	NAICS CODE	Total # of Businesses	OSFM Haz. Businesses	ECSI Businesses
Automotive Parts And Accessories Stores:	441310	22	8	0
Recreational Vehicle Dealers:	441210	6	4	1
Motorcycle Dealers:	441221	3	1	1
Tire Dealers:	441320	6	4	0
Dry Cleaning & Laundry Service:	812320	7	3	2
Manufacturing:	311813 - 339999	234	34	3

City staff focused its field inspection effort on the 124 businesses identified by their NAICS codes that were also listed in the Oregon State Fire Marshals Hazardous Substance Information Database. Each of the 124 business (four additional sited were added in the field) were mapped and a field inspection was performed. The field inspection process identified 19 businesses that have the potential to drain to a City UIC. See Appendix F for a complete list of these businesses.

8.1.2 Hazardous Substance Information Database - Gaseous Substances

Any business that reports under OSFM Hazardous Substance Information Database for only gaseous substances was removed from the initial assessment and grouping because gaseous substances would not be expected to impact stormwater or other drainage that may discharge to a UIC.

8.1.3 Field Assessment

The field assessments of 124 businesses were performed to determine the following information:

- If stormwater drainage from a business could actually reach a UIC.
- If site activities at a business that drains to a public UIC have the potential to violate water quality limits established in the permit.

Field assessments included windshield assessment and on-the ground observations of the following characteristics:

- Topography;
- Location of physical barriers (including curbs);
- Layout of impervious and pervious areas;
- Location of stormwater and combined system inlets and catch basins; and
- Site activities conducted within areas that may drain to a UIC.

8.2 UICs That May Receive Drainage from Industrial and Commercial Businesses

Of the 127 businesses assessed, there are 19 businesses that have site activities that may impact drainage to one of 19 City-owned/operated UICs (see Appendix F). The table located in Appendix F identifies each UIC, the business that may drain to it, and the site activities that may impact the offsite drainage.

8.3 Indoor Parking Garage Investigation

The City currently has one parking garage, and while the City owns this facility it is managed by the Downtown Bend Business Association.

Assessment of these facilities was conducted in two phases:

- In phase one, plans on file with the City were reviewed. Information was gathered from the City's electronic planning files.
- In phase two, site visits of the parking facilities were conducted to confirm identified building plan information.

The City identified two drywells located on the bottom floor of the parking garage. Both drywells are connected to a cartridge filter system and receive drainage from a series of catch basins. No known vehicle maintenance occurs within the parking garage, which serves mainly as a multi-story parking lot.

8.4 Limitations of Analysis

The analysis described above has the following limitations:

- The City of Bend Business Licenses directory contains only business names and addresses and one NAICS code (many businesses have several for activities onsite). The process of determining specific locations (geo-coding) is limited to the accuracy of the provided dataset. If business location information cannot be linked to City tax lots or other appropriate information, it is not possible to conduct spatial analysis.
- The analysis is limited to the identified classifications.
- All assessments reflect the ability of field staff to determine the direction and nature of the drainage. This information is intended to direct future efforts, rather than be used as a definitive assessment of site drainage and/or current or past site activities.
- The Oregon State Fire Marshall (OSFM) database that contains Sara Title III information does not contain GIS information. It provides only business names and addresses, which may not be accurate. The process of linking property addresses to mapped information (Geo-coding) is limited to the accuracy of the provided dataset. If business location information cannot be linked to City tax lots or other appropriate information, it is not possible to perform any type of spatial analysis on the data. The result is that there may have been some businesses that were not analyzed and may have been missed as part of the investigation.

8.5 Follow-up Actions

The City has received a grant to update the Potential Contaminant Source (PCS) Database as part of the OHA's separate Drinking Water Program. In addition to the PCS update this project will tasks to evaluate potential drainage issues or sources of pollution, verify site activities, verify the drainage catchment of the UIC, and identify actions to minimize the potential impact of site activities as necessary. The City anticipates starting work on this project in 2013. Additionally the City will provide educational outreach to all 19 identified businesses that could potentially impact a City UIC. The results of these efforts will be included in the annual report(s).

Section 9

References

Technical Memorandums

GSI Water Solutions, Inc., “Fate & Transport Model Results,” Brody-Heine, B., Bend, OR, September 21, 2011.

GSI Water Solutions, Inc., “Wellhead Protection Area Delineation,” Brody-Heine, B., Bend, OR, June 29, 2011

GSI Water Solutions, Inc., “Water Well Database/ Possibly Perched Water Areas” Brody-Heine, B., Bend, OR, January 27, 2012.

Reports

Bend Urban Area Transportation Plan, March 2011.

Databases

Oregon State Fire Marshal
Community Right to Know (CR2K) Hazardous Substance Information Database, 2011.

Oregon Department of Environmental Quality ECSI records, 2012.

Figure 6-1: Private/Non-Delineated Well Buffers (500-foot)

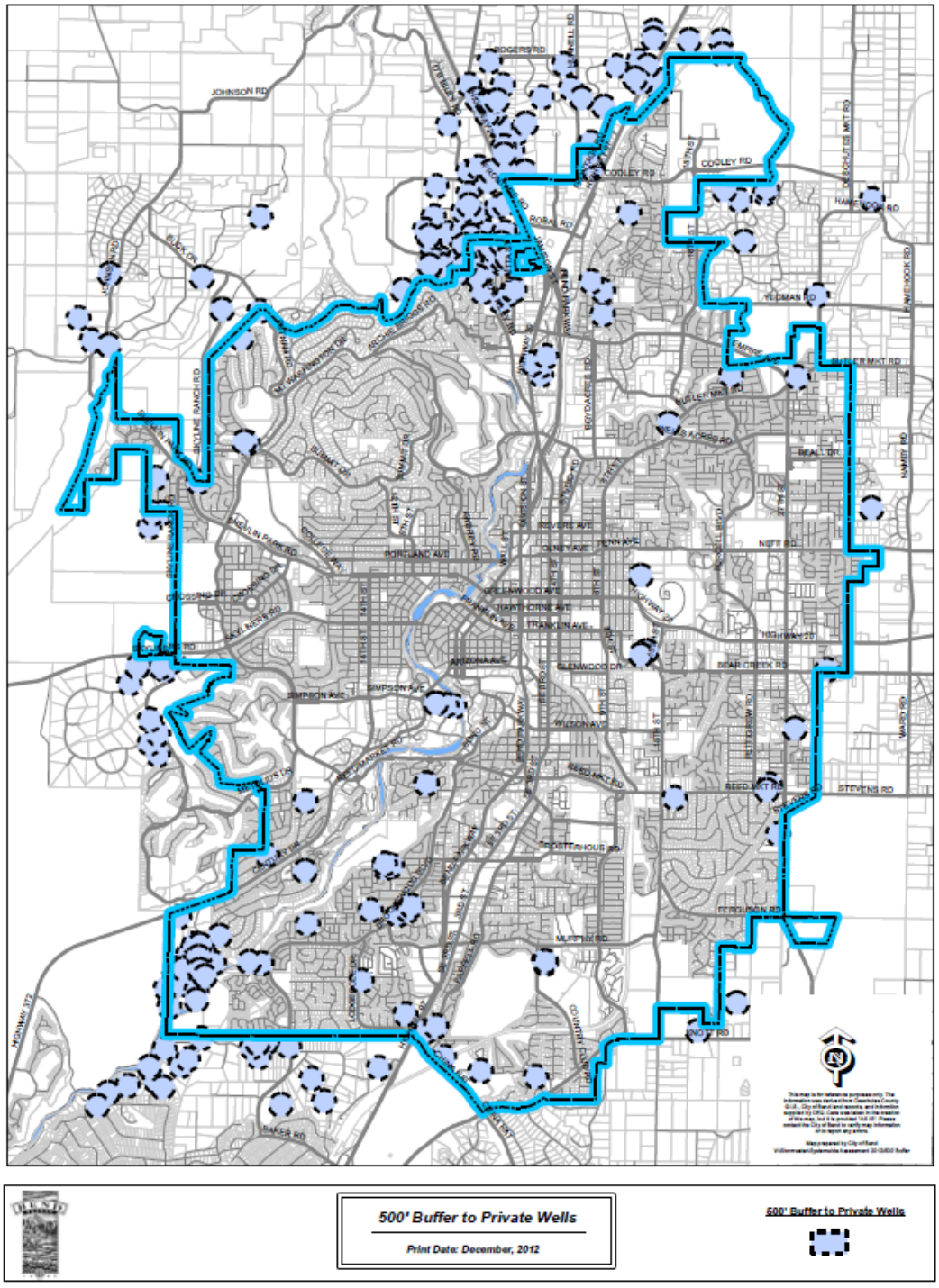
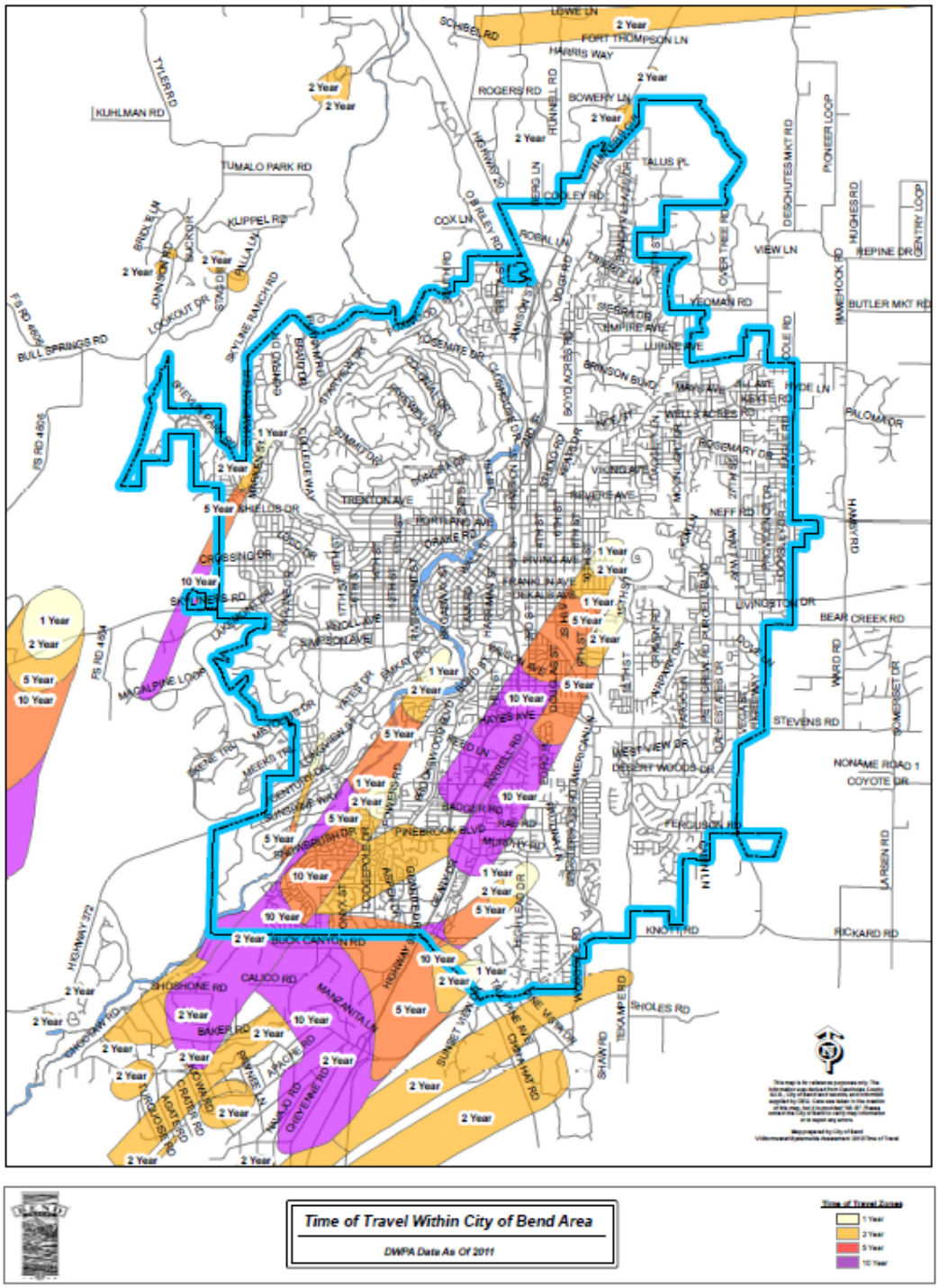


Figure 6-2: Wellhead Protection Area Delineated Time of Travel Zones



CUES, Inc.
3600 Rio Vista Avenue
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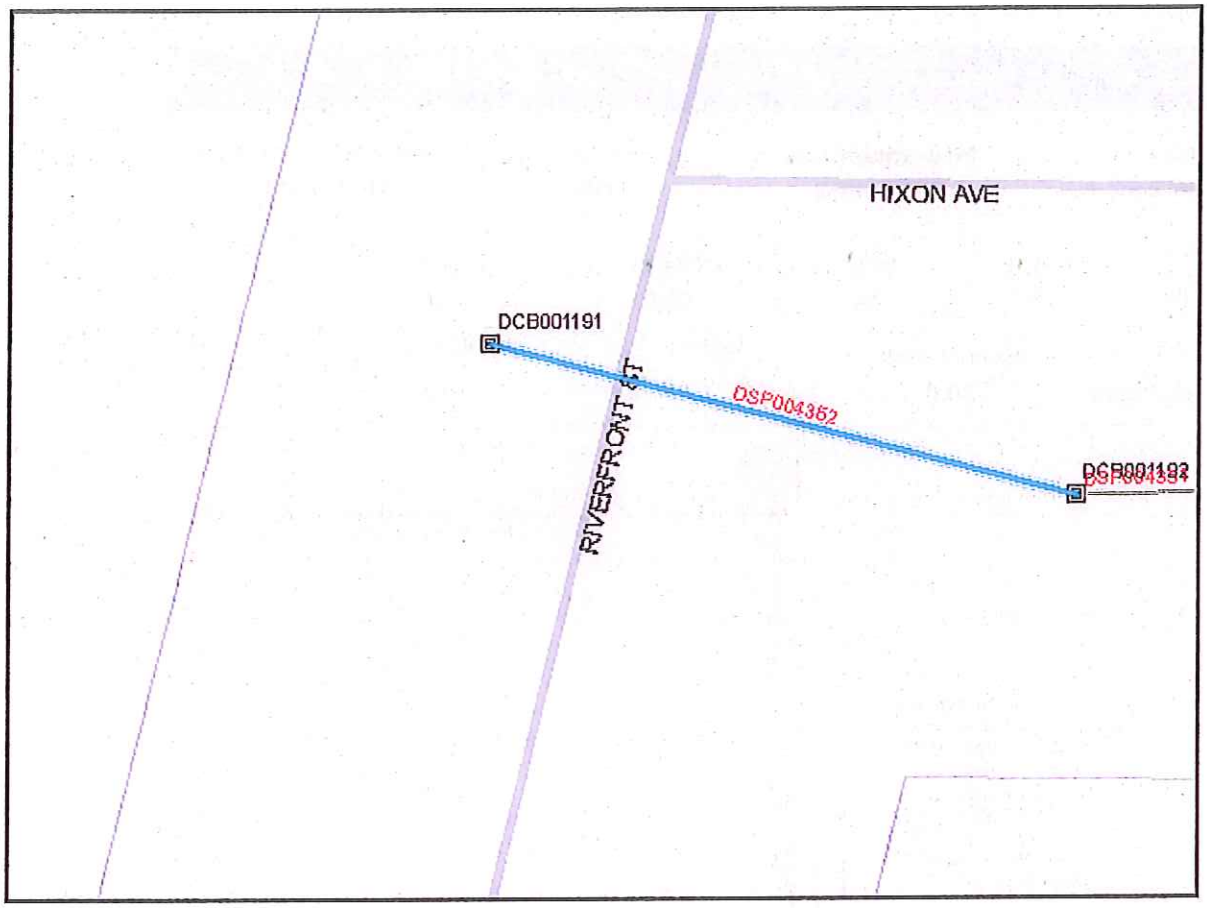

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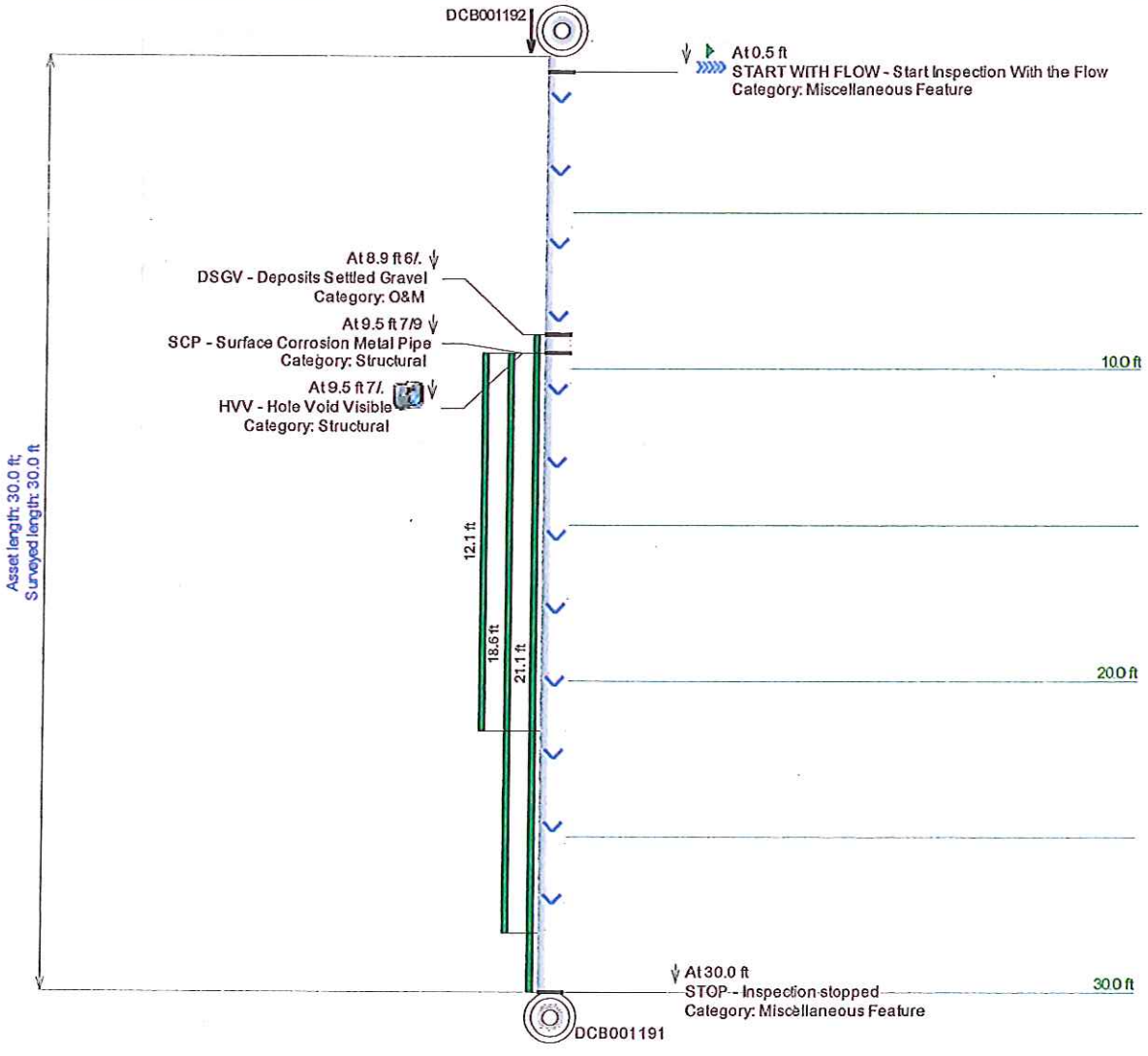
GRANITE XP
Pipeline Inspection and Integration Software

TV Inspection with Pipe-Run Graph

Project Name:	Pipeline Segment Ref:	Locality:	Location(Street Name and Number):
Storm Water Zone 2	DSP004352	COB	HIXON AVE

Start date/time:	Width:	Height:	Material:	Location Code:
11/19/2009	5	14	CMP	C

Direction:	Length surveyed:	Weather:	Media Label:
Towards Downstream	30.0	1	gxp



CUES, Inc.
3600 Rio Vista Avenue
Orlando, FL 32805
Phone: 407-849-0190
Fax: 407-425-1569

GraniteXP Observation Report with Still Images

Pipeline Segment Ref:	Project Name:	Start date/time:	Weather:	Surveyor's Name:
DSP004352	Storm Water Zone 2	11/19/2009 1:49:26 PM	1	Kelly Ristoff

Upstream manhole No:	Downstream manhole No:	Total length:
DCB001192	DCB001191	

Additional Info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
9.5		HVV	No	7 /		

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GraniteXP Observation Report with Still Images

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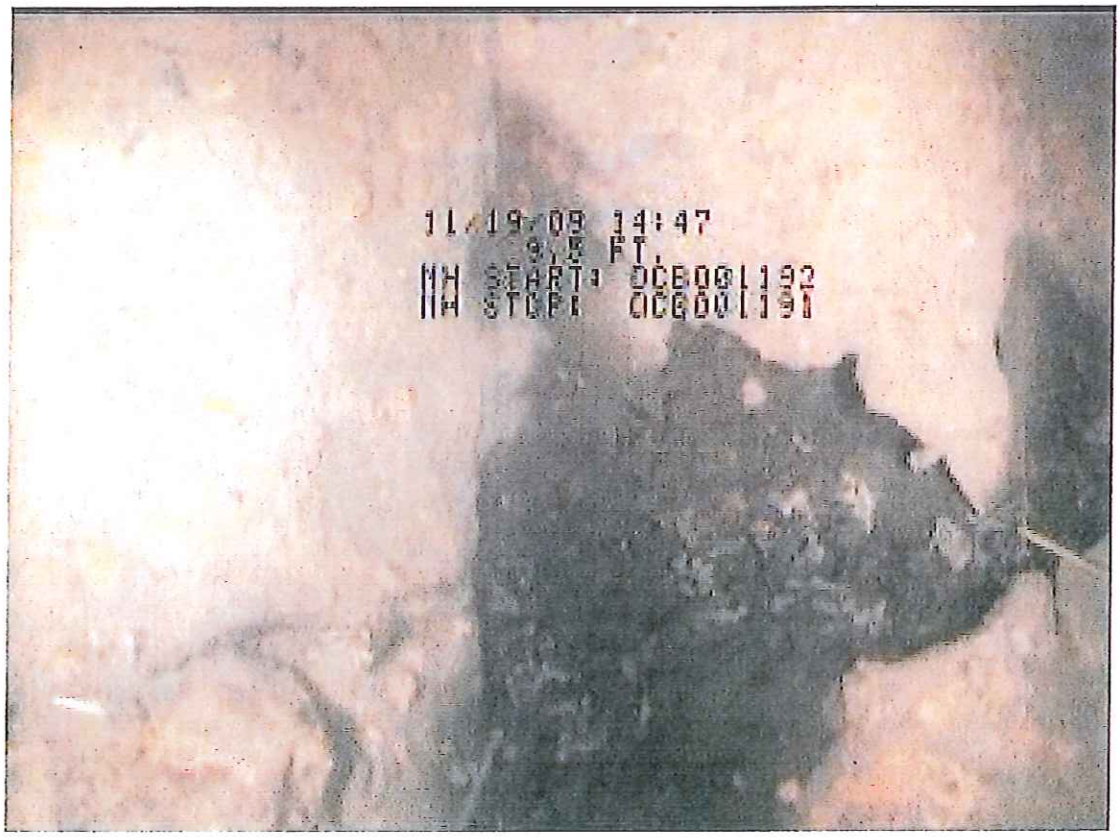

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DSP004352	Storm Water Zone 2	11/19/2009 1:49:26 PM	1	Kelly Ristoff

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DCB001192	DCB001191	

Additional Info:

Observations

Distance	Length	Code	Reversed	Clock Pos.	Severity	Comment
9.5		HVV	No	7 /		

MEMORANDUM CH2MHILL

City of Bend Public Works Utilities Division: Sewer and Stormwater Capital Improvement Plan Prioritization Final Documentation Memorandum

TO: Jim Wodrich/City of Bend

COPIES: File

FROM: Brady Fuller/CH2M HILL
Kasey Hurlbutt/CH2M HILL

DATE: April 11, 2011

Introduction

This memorandum describes the prioritization process and recommended implementation plan for projects identified in the City of Bend's (City's) sanitary sewer and stormwater collection system Capital Improvement Plan (CIP). The prioritization of sewer projects began by using the list of projects resulting from the City's wastewater *Collection System Master Plan Final Report* (CSMP), (MWH Americas, Inc., 2007) as subsequently modified through work by CH2M HILL and MSA in 2007 and 2008 and documented in *Collection System CIP Analysis and Report* (Murray Smith and Associates, 2008). Additional capital projects were also identified based upon recent condition assessment and operations and maintenance (O&M) needs. Prioritization of stormwater projects began by using a list of projects from the draft *Stormwater Master Plan – Public Draft* (URS, 2008), supplemented with anecdotal accounts of drainage and local stormwater flooding issues from City staff and citizen complaints. For each proposed project, capital cost estimates, weighted criteria, and scores for each project against those weighted criteria were input into the *Multi-attribute Utility Prioritization Analysis and Capital Model*. This model is an Microsoft Excel-based tool that enables decision-making by ranking relative importance of capital projects based on objective and subjective factors. The model calculates the total benefit and benefit/cost ratio for each project allowing the City to prepare an implementation plan wherein the projects with the most value are implemented in a coordinated manner. This memorandum describes the approach used for project prioritization and presents the recommended implementation plan.

Prioritization Approach

CH2M HILL's proprietary *Multi-attribute Utility Prioritization Analysis and Capital Planning Model* tool was used to generate the draft list of prioritized projects; the attachments included in the appendices are taken from this tool. A licensing agreement has been previously negotiated with the City for ongoing use of this tool and has been executed by the City and CH2M HILL.

The tool uses a blend of objective and subjective inputs to calculate project benefit and benefit/cost values, which are then sorted by magnitude to determine project priority. The City reviewed the list of prioritized projects and provided feedback on the results, and indicated special relationships between projects and preferences for order of implementation. Revisions and these subjective insights from the City will be used to develop the implementation plan.

Tool Input

1. **CIPs used for Prioritization.** The list of sewer projects used for the prioritization effort were derived from the 2007 CSMP, updated modeling performed by CH2M HILL and MSA (documented in an amendment to the CSMP), and anecdotal accounts from O&M staff regarding more recent issues. Project inputs for stormwater prioritization came from the Stormwater Master Plan, O&M staff experiences, and stormwater flooding and erosion complaints. Attachment 1 of Appendixes A and B provides a complete list of the CIP projects for sewer and stormwater, respectively.

2. **Capital Cost Estimates.** Cost estimates for the sewer projects were originally estimated based on the 2007 CSMP. Previous prioritization efforts had updated these costs to October 2007 dollars. A CH2M HILL professional cost estimator prepared newly identified projects for both sewer and stormwater using a combination of sources including industry standard estimating data, and previous unit cost data from the CSMP. The prices were adjusted to 2010 dollars using an escalation factor comparing the December 2010 and October 2007 *Engineering News-Record* Construction Cost Index (ENR CCI) 20-Year Average (Table 1). The cost estimates also include a 30 percent allowance for contingency, administration, and engineering applied to the construction cost. CSMP, TM 3.6 Cost Criteria, describes other details of the cost estimating approach and assumptions.

TABLE 1
Sewer Prioritization Criteria Weighting
Bend Sewer and Stormwater Prioritization

Date	ENR CCI 20-Year Average
December 2010	8,952
October 2007	8,045
Escalation Factor	***1.1127***

3. **Weighting Criteria.** Tables 2 and 3 show prioritization criteria and weightings used for the sewer and stormwater analyses, respectively. The same seven criteria were used to score both sewer and stormwater projects. However, each criterion is defined differently for the two prioritization efforts because each is interpreted differently for the sewer and stormwater utilities. Descriptions that are more detailed follow Tables 2 and 3.

TABLE 2
Sewer Prioritization Criteria Weighting
Bend Sewer and Stormwater Prioritization

Criterion	Relative Importance Weight*	Description
Public Health and Safety	100	Relative risk to public health and employee safety
Regulatory Compliance	96	Relative risk of violating permits due to system overflows
System Reliability	87	Relative risk of existing system failure due to limitations on system's operational flexibility/reliability or exceeding functional capacity of existing system
Environmental Impacts	83	Relative risk of system failure related to water quality and system impacts on environmental indicators such as energy use
O&M Efficiency/Cost Savings/Hot Spots	74	Relative impact on O&M hotspots per O&M knowledge (and present worth costs of O&M cost savings)
Customer Satisfaction/ Public Perception	65	Relative impact on backup and SSO incidents; customer satisfaction with their collection system
Future Growth	48	Relative impact on system's ability to service future properties and be expanded to meet future growth

* 100 is maximum possible value.

SSO = sanitary sewer overflow

TABLE 3
Stormwater Prioritization Criteria Weighting
Bend Sewer and Stormwater Prioritization

Criterion	Relative Importance Weight*	Description
Public Health and Safety	100	Relative risk to public health and employee safety based on degree of structural damage and impacts on road closures/ traffic impacts
Environmental Impacts	70	Relative impact on environmental indicators based on degree of environmental benefits (e.g. water quality, noise reduction, open space, habitat benefits for sensitive species, tree protection, urban heat island effect reduction, energy savings, air quality)
System Reliability	65	Relative risk of existing system failure due to flooding and impacts on flooding frequency
Regulatory Compliance	65	Relative risk of violating permits, namely TMDL, UIC, pollutants of concern

TABLE 3
Stormwater Prioritization Criteria Weighting
Bend Sewer and Stormwater Prioritization

Criterion	Relative Importance Weight*	Description
O&M Efficiency/Cost Savings/Hot Spots	63	Relative impact on O&M. Potential cost savings and low-hanging fruit
Customer Satisfaction/ Public Perception	56	Relative impact on traffic and thus public perception
Future Growth	38	Relative adaptability to future public right-of-way projects

* 100 is maximum possible value.

TMDL = Total Maximum Daily Load

UIC = Underground Injection Control

4. **Scoring.** Scoring guidance was required for each criterion to establish a common and repeatable understanding of the how each project is evaluated against each criterion. The City selected members of the sewer and stormwater utility divisions to score the respective projects. Each scorer used the criteria scoring guides shown in Tables 3 and 4 to assign projects a score of 0 to 10, with 10 representing the maximum contribution a project could receive. Scores from all participants were averaged (for each criteria, for each project) and entered into the prioritization model. Then the model weights each score based upon the appropriate criteria factor, and summed to determine a total benefit for each project. Attachment 3 of Appendixes A and B provides the input scores for sewer and stormwater projects, respectively.

Tool Output

The tool uses user-defined criteria weights, criteria scoring guidance, and criteria scoring inputs to calculate project benefits and benefit/cost scores, and then presents results in tabular and graphical form.

Projects are sorted by total benefit and benefit/cost factors for the total list, as well as by type of improvement. Appendix A, Attachments 1 through 5 and 6 through 8 show sewer and stormwater model inputs and outputs, respectively. The total benefit value is a unitless representing the sum of the weighted scores for each project. The benefit/cost value is derived from dividing the unitless benefit value by the project capital cost in dollars and multiplying by a factor of 1,000,000 (to avoid presentation of decimal values less than 1.0).

TABLE 4
Bend Sewer Evaluation Criteria and Scoring Guidance
Bend Sewer and Stormwater Prioritization

Scoring Guide	Regulatory Compliance	System Reliability	Public Health and Safety	O&M Efficiency/Cost Savings/Hot Spots	Environmental Impacts	Future Growth	Customer Satisfaction/ Public Perception
10	Project addresses SSOs. System freeboard less than 1.5 foot	Project significantly increases operational flexibility/reliability OR Substantially reduces system vulnerability OR System's functional capacity is already exceeded	Project eliminates immediate existing risk to public health and safety	Project addresses top of City O&M Hot Spot List AND Highest cost savings	Consequences of system failure significantly affect water quality AND Significantly reduces energy use	Project provides service to areas with most significant new development potential OR Provides sewer service to many unsewered properties	Project increases customer satisfaction levels AND Has significant positive community impacts
9	Project addresses SSOs. System freeboard 1.5 to 2.5 feet	Project reduces risk of a major system failure OR System's operational capacity exceeded in 1 year	Project eliminates known, latent risks to employee health and safety	Project addresses top of City O&M Hot Spot List OR Highest cost savings	Consequences of system failure significantly affect water quality OR Significantly reduces energy use		
8	Project addresses SSOs. System freeboard 2.5 to 3.5 feet	Project reduces risk of a major system failure	Project eliminates anticipated risks to public health and safety				Project addresses multiple customer issues OR Has significant positive community impacts
7				Project addresses top 10 percent of O&M cost savings			
6		Project decreases operational needs OR System's operational capacity expires in 5 years			Consequences of system failure moderately affect water quality AND Moderately reduces energy use	Project provides service to areas with moderate new development potential OR Provides sewer service to moderate number of unsewered properties	
5	Project addresses SSOs. System freeboard greater than 3.5 feet	Project decreases operational needs OR System's operational capacity expires in 10 years	Project eliminates some risks (less frequent risks)	Project addresses median of City's O&M Hot Spot List OR Top 25 percent of City's O&M cost savings			
4				Project addresses issues low on City's O&M Hot Spot List	Consequences of system failure moderately affect water quality OR Moderately reduces energy use		Project addresses some customer issues OR Has limited positive community impacts
3							
2		Expiration timeline for system's operational capacity is unknown or uncertain AND/OR Project does not affect operational needs	Project eliminates unlikely risks to public health and safety	Project addresses bottom 25 percent of City's O&M cost savings		Project provides service to areas with low development potential OR Provides sewer service to few unsewered properties	
1		Project does not reduce the risk of a system failure					
0	Project involves a sealed manhole or force main	Project increases the operational needs	Project does not address health or safety considerations	Project does not address issues on City's O&M Hot Spot List AND/OR O&M Cost Savings unknown	Consequences of system failure do not affect water quality AND/OR Does not significantly reduce energy use	Project does not address future growth potential OR Provides sewer service to many unsewered properties	Project does not address customer issues or recognized service area problems OR Has negative community impacts

TABLE 5
Bend Stormwater Evaluation Criteria and Scoring Guidance
Bend Sewer and Stormwater Prioritization

Score Guide	Regulatory Compliance	System Reliability	Public Health and Safety	O&M Efficiency/Cost Savings/Hot Spots	Environmental Impacts	Future Growth	Customer Satisfaction/ Public Perception
10	Project substantially addresses multiple regulatory concerns (e.g. TMDL, UIC treatment requirements, pollutants of concern)	Project provides improved service to areas that experience frequent flooding	Project eliminates risk of events causing severe structural damage OR Project eliminates risk of events that cause extended road closures	Project addresses most significant O&M cost savings AND Most frequent O&M response needs	Project provides significant environmental benefits (e.g. noise reduction, open space, habitat benefits for sensitive species, water quality, tree protection, urban heat island effect reduction, energy savings, air quality)	Project is adaptable to future public right-of-way projects (large projects)	Project provides service to city arterial streets
9	Project satisfies regulatory order OR Substantially addresses multiple regulatory concerns						
8			Project eliminates risk of events causing moderate structural damages	Project addresses O&M issues that require a moderate level of response (not the highest or lowest frequency)			Project provides service to city collector streets
7			Project eliminates risk of events causing minor structural damages				
6			Project eliminates risk of events causing partial road closures (up to 1 lane of traffic or bike lanes)		Project provides environmental benefits		Project provides service to city local streets
5	Project moderately satisfies regulatory order OR Moderately addresses regulatory concerns	Project provides improved service to areas that experience occasional flooding				Project is adaptable to future public right-of-way projects (small projects)	
4				Project addresses issues requiring occasional O&M attention (drive by, but usually no response needed)			Project provides traffic benefits to areas with consistently validated complaints
3	Project satisfies potential future regulatory concerns.						Project provides service to alleys
2		Project provides improved service to areas that experience rare flooding					
1		Project provides improved service to private roads that experience flooding			Project has a few environmental impacts (e.g. vector problems like West Nile Virus/mosquitoes, increased noise, reduced open space/habitat, removal of heritage or other trees)		
0	Project does not satisfy regulatory order OR Does not substantially address multiple regulatory concerns.	Project does not provide improved service addressing flooding frequency	Project does not address health or safety considerations	O&M Cost Savings unknown	Project has many environmental impacts	Project is not adaptable to future public right-of-way projects	Project does not provide improved traffic benefits

Prioritization Conclusions

Sewer Implementation Plan

The projects were placed into an implementation plan (Appendix A, Attachment 7) as follows:

- Group A – Implement Immediately
- Group B – Implement in 5-year CIP
- Group C – Implement in 6- to 10-year CIP
- Group D – Implement beyond 10-year CIP

The InfoSWMM model identified several existing deficiencies. These CIP projects should be implemented immediately for public health benefit and the reduction of environmental risks. Following correction of existing deficiencies, the Southeast Interceptor and related projects comprise the next prioritized group of projects in the implementation plan. Three other projects are identified as high priorities including Cornell pump station upgrades, Enchantment at Deschutes Pump Station, and the Ravenswood Area 20-inch clay line. These three projects seemed to provide substantial O&M benefits, and should be realized soon as practical.

Projects in the 6- to 10-year CIP include the North Interceptor and Parallel Plant Interceptor, and related pump station projects. The Brooks Alley and Old Mill Sewers are included due to significant O&M benefits.

Beyond the 10-year CIP period, the remaining projects with lesser benefit are scheduled. Some of these projects might benefit from coordination with local improvement district (LID) sewer construction such as The Shire pump station elimination in southeast Bend. Others may be coordinated with future road improvement and repaving projects. CH2M HILL recommends ongoing coordination with roadway resurfacing and reconstruction projects regularly with the proposed CIP list to avoid multiple project excavation and disruption in the same corridor.

Stormwater Implementation Plan

After reviewing total benefit and benefit/cost scores, City stormwater staff decided that an implementation plan based on considering both Total Benefit and Benefit/Cost scores most accurately reflected the City's programmatic goals. The Stormwater CIP Implementation Plan, provided in Appendix B, Attachment 7, indicates the order in which the projects should be implemented, as well as the capital cost of the project and cumulative cost of the Stormwater CIP. The first ten projects listed reflect a combination of the projects with the highest Total Benefit Score and the City comments. The remaining projects are ranked by Total Benefit/Cost score.

The City has committed $500,000 in annual capital expenditures for stormwater projects. The City should consider this when determining the timeline for CIP implementation. Additionally, implementation plan users should note that as of April 2011 three CIP projects are currently underway. Two of those projects were part of the CIP prioritization effort (2984 NW Bordeaux Ln Drainage and 197 NE 3rd Street Pump Station). They are projected to be constructed by 2012. Improvements at Drake Dohema were not included in the

prioritization modeling and thus do not appear in the implementation plan. Projects that are geographically near each other (such as stormwater projects 118 and 119 in Newport Avenue) should be considered for design and construction in a single package.

Projects requiring pipe rehabilitation due to poor asset condition could consider utilizing trenchless technologies such as slip lining, or cured in place pipe. City staff indicated that rehabilitation projects could be shifted from the CIP prioritization list and budget to a maintenance and repair budget. Projects related to hydraulic capacity issues should remain in the Stormwater CIP Implementation Plan.

References

1. *Multi-attribute Utility Prioritization Analysis and Capital Model*
2. MWH Americas, Inc. 2007. *Collection System Master Plan Final Report.*
3. Murray Smith and Associations. 2008. *Collection System CIP Analysis and Report.* July.
4. URS. 2008. *Stormwater Master Plan – Public Draft.* December.

Appendix A

Sewer CIP Prioritization Tool Inputs and Outputs

APPENDIX A
Sewer CIP Prioritization Tool Inputs and Outputs

Attachment	Description
	Prioritization Model Inputs
1	Project Inputs
2	Criteria Inputs
3	Scoring Inputs (project scores for each criteria, provided by the City)
4	Scoring Guidance
	Prioritization Model Outputs
5	All Projects Ranked by Total Benefit
6	All Projects Ranked by Benefit/Cost
7	Final Implementation Plan

Attachment 1
Bend Sewer CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
1	CIP Project 2.1a1 ,Shields North to Shevlin, CMH004188, CMH004178	$119,512	$119,512
2	CIP Project 2.1a2 ,Freemont North of Shields, CMH004189, CMH004188	$83,957	$203,469
3	CIP Project 2.1a3 ,Freemont North of Shields, CMH005427, CMH004189	$72,827	$276,296
4	CIP Project 2.1a4 - NI ,Shields and Freemont, CMH004190, CMH005427	$0	$276,296
5	CIP Project 2.1b1 ,Freemont South of Shields, CMH004190, CMH004192	$273,317	$549,613
6	CIP Project 2.1c1 ,2 sections, CMH004193, CMH004192	$241,591	$791,204
7	CIP Project 2.1c1 ,see above, CMH4179, CMH004181		$791,204
8	CIP Project 2.1c2 - NI ,2 sections, CMH004147, CMH004181	$0	$791,204
9	CIP Project 2.1c2 - NI ,see above, CMH004193, CMH004179		$791,204
10	CIP Project 2.1c3 ,Lehmi Pass, CMH004192, CMH004193	$114,228	$905,432
11	CIP Project 2.2a1 ,Shevlin Park East, CMH008748, CMH003915	$95,583	$1,001,016
12	CIP Project 2.2b1 ,Shevlin Park West, CMH008748, CMH008750	$140,897	$1,141,913
13	CIP Project 2.3a1 ,Newport at College, CMH008742, CMH008741	$116,442	$1,258,355
14	CIP Project 2.4a1 ,Stannium and 18th, CMH003495, CMH003493	$65,327	$1,323,682
15	CIP Project 2.5a1 ,Stannium, CMH000359, CMH00358	$66,220	$1,389,901
16	CIP Project 2.5b1 ,Milwaukee and Stannium, CMH000358, CMH008698	$62,500	$1,452,401
17	CIP Project 2.5c1 ,Milwaukee and 15th, CMH008698, CMH008697	$12,264	$1,464,665
18	CIP Project 2.5d1 ,Milwaukee 15th to 12th, CMH008697, CMH008694	$319,055	$1,783,719
19	CIP Project 2.5e1 ,Milwaukee 12th to Union, CMH008694, CMH008719	$205,599	$1,989,319
20	CIP Project 2.5f1 ,Union to Newport, CMH008719, CMH008732	$160,567	$2,149,886
21	CIP Project 2.6a1 - NI ,12th Iowa to Vicksburg, CMH009265, CMH009286	$0	$2,149,886
22	CIP Project 2.6a2 - NI ,12th Vicksburg to Trenton, CMH009286, CMH009285	$0	$2,149,886
23	CIP Project 2.6b1 - NI ,12th Saginaw to Quincy, CMH009284, CMH009283	$0	$2,149,886
24	CIP Project 2.6c1 - NI ,Quincy 12th to 11th South, CMH009282, CMH000642	$0	$2,149,886
25	CIP Project 2.6d1 - NI ,11th south to Portland, CMH000642, CMH009280	$0	$2,149,886
26	CIP Project 2.6e1 - NI ,Ogden 11th to 10th, CMH009275, CMH009264	$0	$2,149,886
27	CIP Project 2.6e2 - NI ,11th Portland to Ogden, CMH009280, CMH009275	$0	$2,149,886
28	CIP Project 2.6f1 - NI ,11th Ogden to Newport, CMH009264, CMH008733	$0	$2,149,886
29	CIP Project 2.7a1 ,Newport Harmon to 5th, CMH008729, CMH008728	$476,067	$2,625,954
30	CIP Project 2.7a2 ,Newport 5th to 3rd, CMH008728, CMH008758	$375,462	$3,001,416
31	CIP Project 2.8a1 - NI ,Hartford to Harmon, CMH008588, CMH008679	$0	$3,001,416
32	CIP Project 2.8b1 ,Harmon Hartford to Jacksonville, CMH008587, CMH008586	$55,055	$3,056,470
33	CIP Project 2.8b2 ,Harmon - 2 sections, CMH008587, CMH008588	$199,874	$3,256,345
34	CIP Project 2.8b2 ,see above, CMH008586, CMH008585		$3,256,345
35	CIP Project 2.8b3 - NI ,Harmon Galveston to Hartford, CMH008588, CMH008589	$0	$3,256,345
36	CIP Project 2.8c1 ,Harmon Kingston to Nashville, CMH008585, CMH008589	$415,612	$3,671,957

Attachment 1
Bend Sewer CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
37	CIP Project 2.8c2 ,Harmon Nashville North, CMH008579, CMH008568	$176,523	$3,848,480
38	CIP Project 2.8c3 ,Harmon to Newport, CMH008568, CMH008729	$265,391	$4,113,871
39	CIP Project 2.9a1 ,Columbia Harmon south, CMH008569, CMH008560	$130,863	$4,244,734
40	CIP Project 2.10a1 ,Portland Awbrey to 1st, CMH008749, CMH008738	$452,463	$4,697,197
41	CIP Project 2.10a2 ,Awbrey Rd 1st to Newport, CMH008754, CMH008755	$108,790	$4,805,987
42	CIP Project 2.10a3 - NI ,Awbrey to Newport, CMH008755, CMH008756	$0	$4,805,987
43	CIP Project 2.11a1 ,Steidl Gordon to Portland, CMH008979, CMH008727	$83,822	$4,889,809
44	CIP Project 2.12a1 - NI ,Scenic Heights Washington south, CMH002891, CMH002877	$0	$4,889,809
45	CIP Project 2.12a2 - NI ,see above, ,	$0	$4,889,809
46	CIP Project 2.12a3 - NI ,see above, ,	$0	$4,889,809
47	CIP Project 2.12a4 ,Scenic Heights east of Todds Crest, CMH002877, CMH002878	$28,316	$4,918,125
48	CIP Project 2.13a1 - NI ,Mt Washington south of Links, CMH002875, CMH002886	$0	$4,918,125
49	CIP Project 2.14a1 ,PS south, Awbrey PS, CMH001205	$0	$4,918,125
50	,Putnam Kirkaldy south 1, CMH001208, CMH001196		$4,918,125
51	CIP Project 2.14a2 ,Putnam Kirkaldy south 2, CMH001196, CMH001198	$0	$4,918,125
52	CIP Project 2.14a3 ,Putnam Kirkaldy north, CMH001206, CMH001208	$0	$4,918,125
53	CIP Project 2.14a4 ,Putnam South of PS, CMH001205, CMH001206	$0	$4,918,125
54	,Putnam Fernie north, CMH001181, CMH001194		$4,918,125
55	CIP Project 2.15a1 ,Marken Scandia south, CMH002697, CMH002698	$0	$4,918,125
56	CIP Project 2.15a2 ,Marken Nordeen to Scandia, CMH000341, CMH002697	$0	$4,918,125
57	CIP Project 2.15b1 ,Marken Roberts Way north, CMH002698, CMH002693	$0	$4,918,125
58	CIP Project 2.15c1 ,Marken Roberts Way south, CMH002693, CMH002682	$0	$4,918,125
59	CIP Project 2.15d1 ,Marken Shevlin north, CMH002682, CMH002683	$0	$4,918,125
60	CIP Project 2.16a1 - NC ,No info, ,	$77,793	$4,995,918
61	CIP Project 2.17a1 - NC ,No info, ,	$136,614	$5,132,532
62	CIP Project 3.1a1 ,Blue Lake to Metolius, CMH000900, CMH000899	$297,560	$5,430,092
63	CIP Project 3.1a2 ,Metolius northern edge, CMH000900, CMH000901	$133,142	$5,563,234
64	CIP Project 3.2a1 ,Brookside west of Sleepy Ct., CMH004381, CMH004378	$49,183	$5,612,417
65	CIP Project 3.2a2 ,Brookside by Sleepy Ct., CMH004381, CMH004383	$196,423	$5,808,841
66	CIP Project 3.2b1 ,Mammoth east to Brookside, CMH000016, CMH000045	$39,903	$5,848,744
67	CIP Project 3.2c1 ,Mammoth August to Sunrise PS, CMH008454, Sunrise PS	$155,808	$6,004,552
68	CIP Project 3.3a1 ,Athletic Club south 1, CMH000373, CMH000374	$116,318	$6,120,869
69	CIP Project 3.3a2 - NI ,Athletic Club south 2, CMH000374, CMH000375	$0	$6,120,869
70	CIP Project 3.3a3 ,Athletic Club south 3, CMH000375, CMH009209	$101,694	$6,222,564
71	CIP Project 3.3a4 ,Athletic Club south 4, CMH009209, CMH009211	$199,015	$6,421,579
72	CIP Project 3.3a5 ,Athletic Club south 5, CMH009211, CMH009214	$82,783	$6,504,362

Attachment 1
Bend Sewer CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
73	CIP Project 3.3a6 - NI ,Athletic Club south 6, CMH009214, South to Pressure	$0	$6,504,362
74	CIP Project 3.3a7 - NI ,Combined with 3.3a6 - 151 feet, ,	$0	$6,504,362
75	CIP Project 3.3b1 ,Athletic Club north to roundabout, CMH00371, CMH004754	$202,310	$6,706,671
76	CIP Project 3.3c1 ,Colorado Emkay north, CMH000400, CMH000415	$95,871	$6,802,543
77	CIP Project 3.3d1 ,Mt. Bachelor roundabout north, CMH000405, CMH000404	$81,845	$6,884,388
78	CIP Project 3.3d2 ,Reed Mkt / Mt. Bachelor roundabout, CMH004753, CMH000405	$24,871	$6,909,259
79	CIP Project 3.3e1 ,Colorado Emkay south, CMH000400, CMH000402	$276,193	$7,185,452
80	CIP Project 3.3e2 ,Mt. Bachelor near Century north, CMH000402, CMH000404	$297,852	$7,483,304
81	CIP Project 3.3f1 ,Colorado near Emkay north, CMH000415, CMH000416	$204,625	$7,687,929
82	CIP Project 3.3g1 ,Columbia Emkay north 1, CMH000411, CMH000409	$151,281	$7,839,211
83	CIP Project 3.3g2 ,Columbia Colorado to Emkay, CMH000413, CMH000411	$197,911	$8,037,122
84	CIP Project 3.3g2 ,Columbia Emkay north 2, CMH000409, CMH000408		$8,037,122
85	CIP Project 3.3h1 - NI ,Columbia south of Simpson, CMH000408, CMH000407	$0	$8,037,122
86	CIP Project 3.3h1 - NI ,Columbia Simpson north, CMH000399, CMH008026		$8,037,122
87	CIP Project 3.3h2 ,Simpson Columbia south, CMH000407, CMH000399	$93,138	$8,130,260
88	CIP Project 3.4a1 - NI ,Century north of Simpson, CMH008501, CMH008581	$0	$8,130,260
89	CIP Project 3.5a1 - NI ,Discharge to Shevlin Park PS, CMH000214, CMH000271	$0	$8,130,260
90	CIP Project 3.5b1 - NI ,Commerce Columbia to Allen, CMH008600, CMH008574	$0	$8,130,260
91	CIP Project 3.6a1 - NI ,Skyliners at Mt Washington roundabout, CMH004453, CMH004447	$0	$8,130,260
92	CIP Project 3.6a2 ,Skyliners south Mt. Wash roundabout 1, CMH000995, CMH000994	$57,215	$8,187,475
93	CIP Project 3.6a3 - NI ,Skyliners south Mt. Wash roundabout 2, CMH004447, CMH000995	$0	$8,187,475
94	CIP Project 3.6a4 - NI ,Skyliners Mt Washingto north, CMH004453, CMH004454	$0	$8,187,475
95	CIP Project 3.7a1 - NI ,Stannium 18th east, CMH003557, CMH003496	$0	$8,187,475
96	CIP Project 3.8a1 - NI ,Golf Vil Loop south of Widgi Creek PS, CMH000821, CMH000863	$0	$8,187,475
97	CIP Project 3.9a1 - NC ,Not considered, ,	$59,698	$8,247,172
98	CIP Project 3.10a1 - NC ,Not considered, ,	$402,267	$8,649,439
99	CIP Project 5.1a1 - NI ,Butler Mkt Boyd to Studio, CMH000327, CMH000328	$0	$8,649,439
100	CIP Project 5.2a1 - NI ,3rd at Mt Washingto, CMH006524, CMH006525	$0	$8,649,439
101	CIP Project 5.2a2 - NI ,Mt Washingto at 3rd, CMH007896, CMH006524	$0	$8,649,439
102	CIP Project 5.2a3 - NI ,3rd at Riverhouse, CMH006525, CMH006526	$0	$8,649,439
103	CIP Project 5.2a4 ,3rd Riverhouse to OB Riley, CMH006526, CMH006529	$691,160	$9,340,599
104	CIP Project 5.2a5 ,OB Riley 3rd north, CMH006529, CMH006530	$208,915	$9,549,514
105	CIP Project 5.2b1 ,OB Riley south of Sawyer PS, CMH006519, CMH006521	$215,929	$9,765,443
106	CIP Project 5.2b2 ,OB Riley at Sawyer PS, CMH006521, CMH006522	$92,050	$9,857,492
107	CIP Project 5.3a1 ,3rd Mervin Samples to Hwy 20, CMH000002, CMH003158	$1,040,894	$10,898,386
108	Existing Deficiency 5.4a1 ,Nels Anderson from Fred Meyers north to pressure, CMH005864, CMH003153	$244,611	$11,142,997

Attachment 1
Bend Sewer CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
109	Existing Deficiency 5.4b1 ,Fred Meyers Vogt to April Ann, CMH005864, CMH003148	$68,013	$11,211,010
110	Existing Deficiency 5.4c1 - NI ,Town Logan east, CMH005494, CMH003162	$0	$11,211,010
111	CIP Project 5.5a1 - NC ,Town west of Wishing Well, CMH003159, CMH009222	$0	$11,211,010
112	CIP Project 5.6a1 - NC ,Purcell at Spinnaker, CMH002344, CMH002349	$0	$11,211,010
113	CIP Project 5.7a1 - NC ,Not considered, ,	$774,381	$11,985,391
114	Existing Deficiency 5.8a1 - NC ,Not considered, ,	$146,120	$12,131,511
115	Existing Deficiency 5.8a2 - NC ,Not considered, ,	$106,284	$12,237,795
116	CIP Project 5.9a1 - NC ,Not considered, ,	$351,992	$12,589,787
117	Existing Deficiency 6.1a1 ,Tumalo Broadway to Idaho, CMH008319, CMH008318	$56,829	$12,646,616
118	Existing Deficiency 6.2a1 ,Brooks Alley Wall to Vermont, CMH001308, CMH001296	$261,502	$12,908,118
119	Existing Deficiency 6.2a2 ,Wall Brooks Alley to Norton, CMH001306, CMH008452	$205,279	$13,113,397
120	Existing Deficiency 6.2a3 ,Olney Wall to Hwy 97, CMH001295, CMH003481	$391,868	$13,505,266
121	Existing Deficiency 6.2a3 ,Olney Hwy 97 to 1st, CMH001294, CMH006510		$13,505,266
122	Existing Deficiency 6.2a4 ,Wall Norton to Olney, CMH008452, CMH001295	$86,810	$13,592,075
123	Existing Deficiency 6.2a5 ,Olney at Hwy 97, CMH003481, CMH001294	$163,837	$13,755,912
124	Existing Deficiency 6.2b1 ,Olney 1st east, CMH006510, CMH007905	$88,453	$13,844,365
125	Existing Deficiency 6.3a1 - NC ,Not considered, ,	$188,373	$14,032,738
126	Existing Deficiency 6.3a2 - NC ,Not considered, ,	$153,743	$14,186,481
127	CIP Project 6.4a1 - NC ,Not considered, ,	$140,231	$14,326,712
128	CIP Project 6.5a1 - NC ,Not considered, ,	$117,876	$14,444,588
129	CIP Project 8.1a1 ,Amethyst Brookswood to Zircon, CMH001646, CMH001644	$148,044	$14,592,632
130	CIP Project 8.1a2 ,Amethyst Zircon east, CMH001644, CMH001643	$110,662	$14,703,294
131	CIP Project 8.1b1 ,Amethyst Platinum to Garnet, CMH001642, CMH001641	$145,132	$14,848,426
132	CIP Project 8.1b2 ,Amethyst Platinum west, CMH001642, CMH001643	$143,886	$14,992,312
133	CIP Project 8.1c1 ,Mahogany Garnet to Springcrest, CMH001655, CMH001654	$142,544	$15,134,856
134	CIP Project 8.1c2 - NC ,Mahogany Springcrest east, CMH001654, CMH001652	$469,652	$15,604,508
135	CIP Project 8.1c2 - NC ,Mahogany Honkers east, CMH005014, CMH001649		$15,604,508
136	CIP Project 8.2a1 ,Crystal Lane, CMH001637, CMH001638	$113,031	$15,717,539
137	CIP Project 8.2a2 ,Mahogany to Crystal Lane, CMH001631, CMH001638	$311,211	$16,028,750
138	CIP Project 8.2a3 ,Crystal Lane east, CMH001637, CMH001634	$345,226	$16,373,977
139	CIP Project 8.2a4 ,Mahogany Granite west, CMH001640, CMH001648	$98,670	$16,472,646
140	CIP Project 8.2b1 - NI ,3rd at Hwy 97 near Geary, CMH001629, CMH001798	$0	$16,472,646
141	CIP Project 8.2c1 ,3rd near Geary to Pinebrook, CMH001629, CMH003638	$500,796	$16,973,442
142	CIP Project 8.2d1 ,Hwy 97 to Romaine 2, CMH001632, CMH001633	$192,568	$17,166,010
143	CIP Project 8.2d2 ,Hwy 97 to Romaine 3, CMH001633, CMH001634	$305,848	$17,471,858
144	CIP Project 8.2e1 - NI ,Hwy 97 to Romaine 1, CMH001801, CMH001632	$0	$17,471,858

Attachment 1
Bend Sewer CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
145	CIP Project 8.3a1 ,Angel Ct west to Brosterhous, CMH001745, CMH002311	$156,425	$17,628,283
146	CIP Project 8.3a1 ,Angel Ct west, CMH006366, CMH006364		$17,628,283
147	CIP Project 8.3a2 - NI ,Angel Ct north, CMH006364, CMH001745	$0	$17,628,283
148	CIP Project 8.4a1 ,Cleveland Pelton to Hwy 97, CMH001562, CMH001781	$39,271	$17,667,554
149	CIP Project 8.4a2 ,Cleveland across Hwy 97, CMH001781, CMH001785	$84,636	$17,752,190
150	CIP Project 8.4a3 - NI ,Division Hwy 97 south, CMH001785, CMH002496	$0	$17,752,190
151	CIP Project 8.4b1 ,Pelton McKinley south, CMH001569, CMH001561	$44,941	$17,797,131
152	CIP Project 8.5a1 - NI ,Old Mill PS west, CLS000026, CMH000071	$0	$17,797,131
153	CIP Project 8.6a1 - NI ,Wilson 6th east, CMH002499, CMH002593	$0	$17,797,131
154	CIP Project 8.6a2 - NI ,Wilson Douglas to 6th, CMH002502, CMH002499	$0	$17,797,131
155	Existing Deficiency 8.7a1 ,Alden east to Glenwood, CMH008199, CMH008201	$135,997	$17,933,128
156	CIP Project 8.8a1 - NC ,Not considered, ,	$91,648	$18,024,776
157	CIP Project 8.9a1 - NC ,Not considered, ,	$106,725	$18,131,501
158	CIP Project 8.10a1 - NC ,Not considered, ,	$24,005	$18,155,505
159	CIP Project 9.1a1 - NI ,Bronzewood north at Valleywood 1, CMH002339, CMH002340	$0	$18,155,505
160	CIP Project 9.1a2 - NI ,Bronzewood north at Valleywood 2, CMH002340, CMH002341	$0	$18,155,505
161	CIP Project 9.1a3 - NI ,Bronzewood at Airpark, CMH002337, CMH002336	$0	$18,155,505
162	CIP Project 9.1b1 ,Wildcat south end to east, CMH002761, CMH002342	$77,037	$18,232,542
163	CIP Project 9.2a1 ,15th Ramsay south, CMH002763, CMH002764	$32,496	$18,265,038
164	CIP Project 9.3a1 ,Burnside Alden east, CMH002785, CMH002786	$180,473	$18,445,511
165	CIP Project 9.3a2 ,Burnside 13th west, CMH002787, CMH002786	$118,383	$18,563,894
166	CIP Project 9.3a3 ,13th Bear Creek south, CMH002788, CMH002787	$69,936	$18,633,830
167	CIP Project 9.3b1 ,Alden at Burnside, CMH002785, CMH002989	$11,009	$18,644,839
168	CIP Project 9.3c1 ,Hawthorned and 9th south, CMH002988, CMH002996	$197,364	$18,842,203
169	CIP Project 9.3c2 ,Franklin east then south, CMH002995, CMH002993	$824,418	$19,666,621
170	CIP Project 9.3c3 ,9th Franklin north, CMH002995, CMH002996	$547,832	$20,214,453
171	CIP Project 9.3c3 ,Dekalb east end of street, CMH002992, CMH002993		$20,214,453
172	CIP Project 9.3c4 ,10th Bear Creek to Alden, CMH002992, CMH002989	$277,552	$20,492,005
173	CIP Project 9.4a1 ,Purcell Paula to Hwy 20, CMH002466, CMH002678	$773,631	$21,265,636
174	CIP Project 9.4a1 ,Hwy 20 Dean Swift west, CMH001391, CMH001394		$21,265,636
175	CIP Project 9.4a1 ,South of Hwy 20 at Azure, CMH003129, CMH003131		$21,265,636
176	CIP Project 9.4a2 ,Hwy 20 Dean Swift east, CMH001391, CMH002678	$537,105	$21,802,741
177	CIP Project 9.4a2 ,Hwy 20 south at Azure, CMH001394, CMH001391		$21,802,741
178	CIP Project 9.4a2 ,South of Hwy 20 near Nates, CMH003137, CMH003133		$21,802,741
179	CIP Project 9.4a3 - NI ,Cessna at Bear Creek to Pitts, CMH003209, CMH003213	$0	$21,802,741
180	CIP Project 9.4a3 - NI ,North of Bear Creek at Teliman, CMH003130, CMH003133		$21,802,741

Attachment 1
Bend Sewer CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
181	CIP Project 9.4a4 - NI ,South of Hwy 20 near Nates, CMH003129, CMH003137	$0	$21,802,741
182	CIP Project 9.4a4 - NI ,North of Bear Creek at Teliman, CMH003209, CMH003130		$21,802,741
183	CIP Project 9.4b1 ,Paula Purcell north, CMH002466, CMH002468	$83,927	$21,886,669
184	CIP Project 9.4c1 - NI ,Purcell Donegon south, CMH002469, CMH002468	$0	$21,886,669
185	CIP Project 9.4d1 - NI ,Paula Sharkey south, CMH002589, CMH002470	$0	$21,886,669
186	CIP Project 9.5a1 - NI ,Moody Park near Cliff 1, CMH002071, CMH002072	$0	$21,886,669
187	CIP Project 9.5a2 - NI ,Moody Park near Cliff 2, CMH002072, CMH002093	$0	$21,886,669
188	CIP Project 9.5b1 - NI ,Moody Park east of Blueberry, CMH009320, CMH002068	$0	$21,886,669
189	CIP Project 9.6a1 ,Neil north, CMH008004, CMH008002	$147,582	$22,034,251
190	CIP Project 9.7a1 - NI ,Rosemary Buckwheat to Iris, CMH003560, CMH002921	$0	$22,034,251
191	CIP Project 9.8a1 - NI ,Jackson Shadow Brook to Moonlight, CMH000696, CMH003056	$0	$22,034,251
192	CIP Project 9.8a2 ,Jackson Moonlight east, CMH003056, CMH007998	$19,824	$22,054,074
193	CIP Project 9.8b1 ,Jackson Moonlight to Community, CMH000696, CMH003483	$168,133	$22,222,207
194	CIP Project 9.8c1 ,Jackson Community to Daggett, CMH003483, CMH008021	$103,088	$22,325,295
195	PS Elimination - Shevlin Commons 1.PS03 „ ,	$78,888	$22,404,183
196	PS Elimination - Shevlin Commons 1.PS04 „ ,	$27,203	$22,431,386
197	PS Improvements - Shevlin Meadows 2.PS04 „ ,	$63,110	$22,494,496
198	PS Improvements - Shevlin Meadows 2.PS05 „ ,	$23,938	$22,518,435
199	PS Elimination - Awbrey Glen 2.PS06 „ ,	$1,559,264	$24,077,698
200	PS Elimination - Awbrey Glen 2.PS07 „ ,	$54,406	$24,132,104
201	PS Improvements - Sunrise Village #1 3.PS01 „ ,	$79,976	$24,212,080
202	PS Improvements - Widgi Creek 3.PS02 „ ,	$16,322	$24,228,402
203	PS Elimination - Boyd Acres 4.PS01 „ ,	$78,344	$24,306,746
204	PS Elimination - Boyd Acres 4.PS02 „ ,	$27,203	$24,333,948
205	PS Elimination - Highlands 4.PS03 „ ,	$427,628	$24,761,576
206	PS Elimination - Highlands 4.PS04 „ ,	$27,203	$24,788,779
207	PS Elimination - Holiday Inn 4.PS05 „ ,	$65,287	$24,854,066
208	PS Elimination - Holiday Inn 4.PS06 „ ,	$10,881	$24,864,947
209	PS Elimination - Northpointe 4.PS07 „ ,	$59,846	$24,924,793
210	PS Elimination - Northpointe 4.PS08 „ ,	$27,203	$24,951,996
211	PS Elimination - North Wind 4.PS09 „ ,	$68,551	$25,020,547
212	PS Elimination - North Wind 4.PS10 „ ,	$27,203	$25,047,749
213	PS Elimination - Phoenix 4.PS11 „ ,	$44,613	$25,092,362
214	PS Elimination - Summer Meadows 4.PS12 - Removed „ ,	$76,168	$25,168,530
215	PS Elimination - Summer Meadows 4.PS13 - Removed „ ,	$27,203	$25,195,732
216	PS Improvements - Empire 5.PS02 „ ,	$20,674	$25,216,407

Attachment 1
Bend Sewer CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
217	PS Elimination - Deschutes County Jail 5.PS03 - Removed „ ,	$0	$25,216,407
218	PS Elimination - Majestic 5.PS04 „ ,	$305,759	$25,522,166
219	PS Elimination - Majestic 5.PS05 „ ,	$27,203	$25,549,369
220	PS Elimination - North Fire Station 5.PS06 „ ,	$0	$25,549,369
221	PS Improvements - Drake Pump Station 6.PS01 „ ,	$410,218	$25,959,587
222	PS Improvements - Addison Pump Station 6.PS02 „ ,	$1,504,858	$27,464,445
223	PS Improvements - Nottingham #2 7.PS02 „ ,	$33,187	$27,497,632
224	PS Elimination - Blue Ridge 7.PS03 „ ,	$17,410	$27,515,042
225	PS Elimination - Blue Ridge 7.PS04 „ ,	$27,203	$27,542,245
226	PS Elimination - Darnell Estates 7.PS05 „ ,	$53,317	$27,595,562
227	PS Elimination - Darnell Estates 7.PS06 „ ,	$27,203	$27,622,765
228	PS Elimination - Desert Skies 7.PS07 „ ,	$93,578	$27,716,342
229	PS Elimination - Desert Skies 7.PS08 „ ,	$27,203	$27,743,545
230	PS Elimination - Ridgewater #1 7.PS09 „ ,	$42,436	$27,785,981
231	PS Elimination - Ridgewater #1 7.PS10 „ ,	$27,203	$27,813,184
232	PS Elimination - Sun Meadows 7.PS11 „ ,	$221,975	$28,035,159
233	PS Elimination - Sun Meadows 7.PS12 „ ,	$27,203	$28,062,362
234	PS Improvements - Deschutes River X-ing 8.PS01 „ ,	$0	$28,062,362
235	PS Improvements - Old Mill 8.PS02 „ ,	$74,536	$28,136,897
236	PS Improvements - River Rim 8.PS03 „ ,	$46,789	$28,183,686
237	PS Improvements - Tri-Peaks 8.PS05 „ ,	$27,203	$28,210,889
238	PS Elimination - South Village 8.PS06 „ ,	$68,551	$28,279,440
239	PS Elimination - South Village 8.PS07 „ ,	$27,203	$28,306,643
240	PS Improvements - Parrell (new 8.PS08) - Removed „ ,	$54,406	$28,361,048
241	PS Elimination - Summit Park 9.PS01 „ ,	$85,417	$28,446,465
242	PS Elimination - Summit Park 9.PS02 „ ,	$16,322	$28,462,787
243	PS Improvements - Westside „ ,	$5,079,848	$33,542,634
244	PS Improvements - Wyndemere - New „ ,	$0	$33,542,634
245	Plant Interceptor WWTP Siphon „ ,	$2,938,272	$36,480,906
246	Plant Interceptor North Trunk Junction to Siphon „ ,	$4,638,324	$41,119,230
247	North Interceptor Plant Interceptor to Hwy 97 „ ,	$7,185,976	$48,305,206
248	North Interceptor Juniper Ridge to Hwy 97 „ ,	$2,163,572	$50,468,778
249	North Interceptor Hwy 97 to Deschutes River „ ,	$7,862,650	$58,331,428
250	North Interceptor Deshhutes River to Shevlin Park „ ,	$5,831,076	$64,162,504
251	North Interceptor Deschutes River Force main „ ,	$255,970	$64,418,474
252	North Interceptor Pump Station2 „ ,	$1,254,494	$65,672,968

Attachment 1
Bend Sewer CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
253	SE Interceptor NUID to Wells Acres „ ,	$6,480,000	$72,152,968
254	SE Interceptor Wells Acres to Hwy 20 „ ,	$8,620,000	$80,772,968
255	SE Interceptor Hwy 20 to Reed Market Rd (15-20' depth) „ ,	$7,840,000	$88,612,968
256	SE Interceptor Reed Market Rd to Ferguson „ ,	$9,720,000	$98,332,968
257	SE Interceptor Ferguson to Brosterhous „ ,	$7,040,000	$105,372,968
258	SE Interceptor Parrell to 3rd Street „ ,	$1,250,000	$106,622,968
259	Westside Interceptor Westside Force main „ ,	$2,501,131	$109,124,100
260	Westside Interceptor Gravity Interceptor „ ,	$9,093,295	$118,217,394
261	AIR - Airport line - Replace/Rehab Gravity System „ ,	$1,051,180	$119,268,574
262	AIR - Airport PS and FM - Review Pump Station & Discharge Line Capacity „ ,	$1,419,600	$120,688,174
263	FM - Phoenix P.S - Relocate Boyd Acres Pump Station Discharge „ ,	$434,330	$121,122,504
264	,	$1,215,110	$122,337,614
265	GM - Old Mill Sewer -SW Mill A - Replace Gravity Main „ ,	$1,542,970	$123,880,584
266	GM - Brooks Alley Sewer -North of Newport - Replace/Relocate Gravity Main „ ,	$316,030	$124,196,614
267	PS Improvements - Enchantment @ Deschutes P.S. -Wetwell Modification „ ,	$270,400	$124,467,014
268	PS Improvements - Awbrey Glen P.S. -Upgrade Pump Station „ ,	$5,560,100	$130,027,114
269	PS Elimination - Pioneer Pump Station -Relocate Fairfield Inn Gravity Sewer; Downsize Pump Station „ ,	$321,100	$130,348,214
270	PS Improvements - Cornell Four -Updgrade Pump Stations „ ,	$1,723,800	$132,072,014
271	PS Elimination - Sunrise P.S -Relocate Discharge; New Gravity Solution - Duplicate „ ,	$204,490	$132,276,504
272	SE Interceptor - The Shire -Abandon Wetwell; Gravity Solution „ ,	$735,150	$133,011,654
273	SE Interceptor - The Pines 5, 6 & 7 P.S. -SE Interceptor Supplemental Project „ ,	$544,180	$133,555,834
274	SE Interceptor - Quail Ridge 1&2 P.S. -SE Interceptor Supplemental Project „ ,	$363,350	$133,919,184
275	SE Interceptor - Stone Haven P.S -SE Interceptor Supplemental Project „ ,	$288,990	$134,208,174
276	SE Interceptor - South Village P.S -SE Interceptor Supplemental Project - Duplicate „ ,	$55,770	$134,263,944
277	SE Interceptor - Sun Meadow P.S. -SE Interceptor Supplemental Project - Duplicate „ ,	$845	$134,264,789
278	SE Interceptor - Fox borough P.S. -SE Interceptor Supplemental Project „ ,	$267,020	$134,531,809
279	Westside PS REDUNDANT, DON'T SCORE „ ,	$0	$134,531,809

Attachment 2
Bend Sewer CIP Prioritization
Criteria Inputs

Criteria No.	Evaluation Criteria Name	Criteria Weight (0 - 100 Scale)	Criteria Performance Measure Description
1	Regulatory Compliance	96.0	-Sanitary sewer overflows, by volume and frequency.
2	System Reliability --Reduced Risk of Failure	87.0	-Impacts on system's operational flexibility/reliability -Remaining functional capacity of existing system
3	Public Health & Safety	100.0	-Impacts on employee safety -Impacts on public safety
4	O&M Efficiency/Cost Savings/Hot Spots	74.0	-Impact on O&M hotspots per O&M knowledge (and present worth costs of O&M cost savings)
5	Future Growth	48.0	-Impact on service to future properties -Ability of project to be expanded to meet future growth
6	Environmental Impacts	83.0	-Consequences of system failure related to water quality -Impact on energy use
7	Community/Customer Satisfaction	65.0	-Impacts on backup and SSO incidents -Customer satisfaction with their collection system

Attachment 3
Bend Sewer CIP
Scoring Inputs

Project Number	Project Name	Evaluation Criteria						
		Regulatory Compliance	System Reliability -- Reduced Risk of Failure	Public Health & Safety	O&M Efficiency/Cost Savings/Hot Spots	Future Growth	Environmental Impacts	Community/Customer Satisfaction
1	CIP Project 2.1a1 ,Shields North to Shevlin, CMH004188, CMH004178	10.0	2.0	2.0	0.0	1.0	0.0	0.0
2	CIP Project 2.1a2 ,Freemont North of Shields, CMH004189, CMH004188	5.0	2.0	2.0	0.0	1.0	0.0	0.0
3	CIP Project 2.1a3 ,Freemont North of Shields, CMH005427, CMH004189	5.0	2.0	2.0	0.0	1.0	0.0	0.0
4	CIP Project 2.1a4 - NI ,Shields and Freemont, CMH004190, CMH005427	5.0						
5	CIP Project 2.1b1 ,Freemont South of Shields, CMH004190, CMH004192	5.0	2.0	2.0	0.0	1.0	0.0	0.0
6	CIP Project 2.1c1 ,2 sections, CMH004193, CMH004192	5.0	2.0	2.0	0.0	1.0	0.0	0.0
7	CIP Project 2.1c1 ,see above, CMH4179, CMH004181							
8	CIP Project 2.1c2 - NI ,2 sections, CMH004147, CMH004181	9.0						
9	CIP Project 2.1c2 - NI ,see above, CMH004193, CMH004179							
10	CIP Project 2.1c3 ,Lehmi Pass, CMH004192, CMH004193	5.0	2.0	2.0	0.0	1.0	0.0	0.0
11	CIP Project 2.2a1 ,Shevlin Park East, CMH008748, CMH003915	5.0	2.0	2.0	0.0	1.0	0.0	0.0
12	CIP Project 2.2b1 ,Shevlin Park West, CMH008748, CMH008750	5.0	2.0	2.0	0.0	1.0	0.0	0.0
13	CIP Project 2.3a1 ,Newport at College, CMH008742, CMH008741	5.0	2.0	2.0	0.0	1.0	0.0	0.0
14	CIP Project 2.4a1 ,Stannium and 18th, CMH003495, CMH003493	5.0	2.0	2.0	0.0	1.0	0.0	0.0
15	CIP Project 2.5a1 ,Stannium, CMH000359, CMH00358	5.0	2.0	2.0	0.0	1.0	0.0	0.0
16	CIP Project 2.5b1 ,Milwaukee and Stannium, CMH000358, CMH008698	8.0	2.0	2.0	0.0	1.0	0.0	0.0
17	CIP Project 2.5c1 ,Milwaukee and 15th, CMH008698, CMH008697	5.0	2.0	2.0	0.0	1.0	0.0	0.0
18	CIP Project 2.5d1 ,Milwaukee 15th to 12th, CMH008697, CMH008694	5.0	2.0	2.0	0.0	1.0	0.0	0.0
19	CIP Project 2.5e1 ,Milwaukee 12th to Union, CMH008694, CMH008719	5.0	2.0	2.0	0.0	1.0	0.0	0.0
20	CIP Project 2.5f1 ,Union to Newport, CMH008719, CMH008732	5.0	2.0	2.0	0.0	1.0	0.0	0.0
21	CIP Project 2.6a1 - NI ,12th Iowa to Vicksburg, CMH009265, CMH009286	5.0						
22	CIP Project 2.6a2 - NI ,12th Vicksburg to Trenton, CMH009286, CMH009285	5.0						
23	CIP Project 2.6b1 - NI ,12th Saginaw to Quincy, CMH009284, CMH009283	5.0						
24	CIP Project 2.6c1 - NI ,Quincy 12th to 11th South, CMH009282, CMH000642	5.0						
25	CIP Project 2.6d1 - NI ,11th south to Portland, CMH000642, CMH009280	5.0						
26	CIP Project 2.6e1 - NI ,Ogden 11th to 10th, CMH009275, CMH009264	5.0						
27	CIP Project 2.6e2 - NI ,11th Portland to Ogden, CMH009280, CMH009275	8.0						
28	CIP Project 2.6f1 - NI ,11th Ogden to Newport, CMH009264, CMH008733	5.0						
29	CIP Project 2.7a1 ,Newport Harmon to 5th, CMH008729, CMH008728	5.0	2.0	5.0	0.0	8.0	0.0	0.0
30	CIP Project 2.7a2 ,Newport 5th to 3rd, CMH008728, CMH008758	5.0	2.0	5.0	0.0	8.0	0.0	0.0
31	CIP Project 2.8a1 - NI ,Hartford to Harmon, CMH008588, CMH008679	5.0						
32	CIP Project 2.8b1 ,Harmon Hartford to Jacksonville, CMH008587, CMH008586	5.0	2.0	6.0	0.0	9.0	0.0	0.0
33	CIP Project 2.8b2 ,Harmon - 2 sections, CMH008587, CMH008588	5.0	2.0	6.0	0.0	9.0	0.0	0.0
34	CIP Project 2.8b2 ,see above, CMH008586, CMH008585							
35	CIP Project 2.8b3 - NI ,Harmon Galveston to Hartford, CMH008588, CMH008589	5.0						
36	CIP Project 2.8c1 ,Harmon Kingston to Nashville, CMH008585, CMH008589	5.0	2.0	6.0	0.0	9.0	0.0	0.0
37	CIP Project 2.8c2 ,Harmon Nashville North, CMH008579, CMH008568	5.0	2.0	6.0	0.0	9.0	0.0	0.0
38	CIP Project 2.8c3 ,Harmon to Newport, CMH008568, CMH008729	5.0	2.0	6.0	0.0	9.0	0.0	0.0
39	CIP Project 2.9a1 ,Columbia Harmon south, CMH008569, CMH008560	5.0	2.0	6.0	0.0	9.0	0.0	0.0
40	CIP Project 2.10a1 ,Portland Awbrey to 1st, CMH008749, CMH008738	5.0	2.0	6.0	0.0	9.0	0.0	0.0
41	CIP Project 2.10a2 ,Awbrey Rd 1st to Newport, CMH008754, CMH008755	5.0	2.0	6.0	0.0	9.0	0.0	0.0
42	CIP Project 2.10a3 - NI ,Awbrey to Newport, CMH008755, CMH008756	5.0						
43	CIP Project 2.11a1 ,Steidl Gordon to Portland, CMH008979, CMH008727	8.0	2.0	6.0	0.0	9.0	0.0	0.0
44	CIP Project 2.12a1 - NI ,Scenic Heights Washington south, CMH002891, CMH002877	5.0						
45	CIP Project 2.12a2 - NI ,see above, ,	5.0						

Attachment 3
Bend Sewer CIP
Scoring Inputs

Project Number	Project Name	Evaluation Criteria						
		Regulatory Compliance	System Reliability -- Reduced Risk of Failure	Public Health & Safety	O&M Efficiency/Cost Savings/Hot Spots	Future Growth	Environmental Impacts	Community/Customer Satisfaction
46	CIP Project 2.12a3 - NI ,see above, ,	5.0						
47	CIP Project 2.12a4 ,Scenic Heights east of Todds Crest, CMH002877, CMH002878	5.0	2.0	2.0	2.0	0.0	0.0	2.0
48	CIP Project 2.13a1 - NI ,Mt Washington south of Links, CMH002875, CMH002886	8.0						
49	CIP Project 2.14a1 ,PS south, Awbrey PS, CMH001205	0.0	1.0	0.0	2.0	1.0	0.0	0.0
50	,Putnam Kirkaldy south 1, CMH001208, CMH001196							
51	CIP Project 2.14a2 ,Putnam Kirkaldy south 2, CMH001196, CMH001198	0.0	1.0	0.0	2.0	1.0	0.0	0.0
52	CIP Project 2.14a3 ,Putnam Kirkaldy north, CMH001206, CMH001208	0.0	1.0	0.0	2.0	1.0	0.0	0.0
53	CIP Project 2.14a4 ,Putnam South of PS, CMH001205, CMH001206	0.0	1.0	0.0	2.0	1.0	0.0	0.0
54	,Putnam Fernie north, CMH001181, CMH001194							
55	CIP Project 2.15a1 ,Marken Scandia south, CMH002697, CMH002698	0.0	5.0	10.0	7.0	0.0	0.0	10.0
56	CIP Project 2.15a2 ,Marken Nordeen to Scandia, CMH000341, CMH002697	0.0	5.0	10.0	7.0	0.0	0.0	10.0
57	CIP Project 2.15b1 ,Marken Roberts Way north, CMH002698, CMH002693	0.0	5.0	10.0	7.0	0.0	0.0	10.0
58	CIP Project 2.15c1 ,Marken Roberts Way south, CMH002693, CMH002682	0.0	5.0	10.0	7.0	0.0	0.0	10.0
59	CIP Project 2.15d1 ,Marken Shevlin north, CMH002682, CMH002683	0.0	5.0	10.0	7.0	0.0	0.0	10.0
60	CIP Project 2.16a1 - NC ,No info, ,	0.0						
61	CIP Project 2.17a1 - NC ,No info, ,	0.0						
62	CIP Project 3.1a1 ,Blue Lake to Metolius, CMH000900, CMH000899	5.0	0.0	1.0	0.0	0.0	5.0	0.0
63	CIP Project 3.1a2 ,Metolius northern edge, CMH000900, CMH000901	5.0	0.0	1.0	0.0	0.0	5.0	0.0
64	CIP Project 3.2a1 ,Brookside west of Sleepy Ct., CMH004381, CMH004378	5.0	0.0	2.0	0.0	0.0	0.0	0.0
65	CIP Project 3.2a2 ,Brookside by Sleepy Ct., CMH004381, CMH004383	5.0	0.0	2.0	0.0	0.0	0.0	0.0
66	CIP Project 3.2b1 ,Mammoth east to Brookside, CMH000016, CMH000045	5.0	0.0	2.0	0.0	0.0	0.0	0.0
67	CIP Project 3.2c1 ,Mammoth August to Sunrise PS, CMH008454, Sunrise PS	8.0	0.0	2.0	0.0	0.0	0.0	0.0
68	CIP Project 3.3a1 ,Athletic Club south 1, CMH000373, CMH000374	5.0	0.0	4.0	0.0	6.0	0.0	0.0
69	CIP Project 3.3a2 - NI ,Athletic Club south 2, CMH000374, CMH000375	5.0						
70	CIP Project 3.3a3 ,Athletic Club south 3, CMH000375, CMH009209	5.0	0.0	4.0	0.0	6.0	0.0	0.0
71	CIP Project 3.3a4 ,Athletic Club south 4, CMH009209, CMH009211	5.0	0.0	4.0	0.0	6.0	0.0	0.0
72	CIP Project 3.3a5 ,Athletic Club south 5, CMH009211, CMH009214	5.0	0.0	4.0	0.0	6.0	0.0	0.0
73	CIP Project 3.3a6 - NI ,Athletic Club south 6, CMH009214, South to Pressure	5.0						
74	CIP Project 3.3a7 - NI ,Combined with 3.3a6 - 151 feet, ,	5.0						
75	CIP Project 3.3b1 ,Athletic Club north to roundabout, CMH00371, CMH004754	9.0	0.0	4.0	0.0	6.0	0.0	0.0
76	CIP Project 3.3c1 ,Colorado Emkay north, CMH000400, CMH000415	5.0	0.0	4.0	0.0	6.0	0.0	0.0
77	CIP Project 3.3d1 ,Mt. Bachelor roundabout north, CMH000405, CMH000404	8.0	0.0	4.0	0.0	6.0	0.0	0.0
78	CIP Project 3.3d2 ,Reed Mkt / Mt. Bachelor roundabout, CMH004753, CMH000405	8.0	0.0	4.0	0.0	6.0	0.0	0.0
79	CIP Project 3.3e1 ,Colorado Emkay south, CMH000400, CMH000402	5.0	0.0	4.0	0.0	6.0	0.0	0.0
80	CIP Project 3.3e2 ,Mt. Bachelor near Century north, CMH000402, CMH000404	5.0	0.0	4.0	0.0	6.0	0.0	0.0
81	CIP Project 3.3f1 ,Colorado near Emkay north, CMH000415, CMH000416	9.0	0.0	4.0	0.0	6.0	0.0	0.0
82	CIP Project 3.3g1 ,Columbia Emkay north 1, CMH000411, CMH000409	5.0	0.0	4.0	0.0	6.0	0.0	0.0
83	CIP Project 3.3g2 ,Columbia Colorado to Emkay, CMH000413, CMH000411	9.0	0.0	4.0	0.0	6.0	0.0	0.0
84	CIP Project 3.3g2 ,Columbia Emkay north 2, CMH000409, CMH000408							
85	CIP Project 3.3h1 - NI ,Columbia south of Simpson, CMH000408, CMH000407	5.0						
86	CIP Project 3.3h1 - NI ,Columbia Simpson north, CMH000399, CMH008026							
87	CIP Project 3.3h2 ,Simpson Columbia south, CMH000407, CMH000399	5.0	0.0	4.0	0.0	6.0	0.0	0.0
88	CIP Project 3.4a1 - NI ,Century north of Simpson, CMH008501, CMH008581	5.0						
89	CIP Project 3.5a1 - NI ,Discharge to Shevlin Park PS, CMH000214, CMH000271	5.0						

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		Regulatory Compliance	System Reliability -- Reduced Risk of Failure	Public Health & Safety	O&M Efficiency/Cost Savings/Hot Spots	Future Growth	Environmental Impacts	Community/Customer Satisfaction
90	CIP Project 3.5b1 - NI ,Commerce Columbia to Allen, CMH008600, CMH008574	5.0						
91	CIP Project 3.6a1 - NI ,Skyliners at Mt Washington roundabout, CMH004453, CMH004447	5.0						
92	CIP Project 3.6a2 ,Skyliners south Mt. Wash roundabout 1, CMH000995, CMH000994	5.0	0.0	4.0	0.0	6.0	0.0	0.0
93	CIP Project 3.6a3 - NI ,Skyliners south Mt. Wash roundabout 2, CMH004447, CMH000995	5.0						
94	CIP Project 3.6a4 - NI ,Skyliners Mt Washingto north, CMH004453, CMH004454	5.0						
95	CIP Project 3.7a1 - NI ,Stannium 18th east, CMH003557, CMH003496	5.0						
96	CIP Project 3.8a1 - NI ,Golf Vil Loop south of Widgi Creek PS, CMH000821, CMH000863	5.0						
97	CIP Project 3.9a1 - NC ,Not considered, ,	0.0						
98	CIP Project 3.10a1 - NC ,Not considered, ,	0.0						
99	CIP Project 5.1a1 - NI ,Butler Mkt Boyd to Studio, CMH000327, CMH000328	5.0						
100	CIP Project 5.2a1 - NI ,3rd at Mt Washingto, CMH006524, CMH006525	5.0						
101	CIP Project 5.2a2 - NI ,Mt Washingto at 3rd, CMH007896, CMH006524	5.0						
102	CIP Project 5.2a3 - NI ,3rd at Riverhouse, CMH006525, CMH006526	5.0						
103	CIP Project 5.2a4 ,3rd Riverhouse to OB Riley, CMH006526, CMH006529	5.0	0.0	8.0	0.0	5.0	0.0	0.0
104	CIP Project 5.2a5 ,OB Riley 3rd north, CMH006529, CMH006530	5.0	0.0	8.0	0.0	5.0	0.0	0.0
105	CIP Project 5.2b1 ,OB Riley south of Sawyer PS, CMH006519, CMH006521	5.0	0.0	8.0	0.0	5.0	0.0	0.0
106	CIP Project 5.2b2 ,OB Riley at Sawyer PS, CMH006521, CMH006522	5.0	0.0	8.0	0.0	5.0	0.0	0.0
107	CIP Project 5.3a1 ,3rd Mervin Samples to Hwy 20, CMH000002, CMH003158	0.0	0.0	8.0	0.0	5.0	0.0	0.0
108	Existing Deficiency 5.4a1 ,Nels Anderson from Fred Meyers north to pressure, CMH005864, CMH003153	8.0	7.0	8.0	7.0	9.0	5.0	0.0
109	Existing Deficiency 5.4b1 ,Fred Meyers Vogt to April Ann, CMH005864, CMH003148	5.0	7.0	8.0	7.0	9.0	5.0	0.0
110	Existing Deficiency 5.4c1 - NI ,Town Logan east, CMH005494, CMH003162	5.0						
111	CIP Project 5.5a1 - NC ,Town west of Wishing Well, CMH003159, CMH009222	5.0						
112	CIP Project 5.6a1 - NC ,Purcell at Spinnaker, CMH002344, CMH002349	5.0						
113	CIP Project 5.7a1 - NC ,Not considered, ,	0.0						
114	Existing Deficiency 5.8a1 - NC ,Not considered, ,	8.0						
115	Existing Deficiency 5.8a2 - NC ,Not considered, ,	5.0						
116	CIP Project 5.9a1 - NC ,Not considered, ,	0.0						
117	Existing Deficiency 6.1a1 ,Tumalo Broadway to Idaho, CMH008319, CMH008318	5.0	2.0	5.0	0.0	0.0	0.0	0.0
118	Existing Deficiency 6.2a1 ,Brooks Alley Wall to Vermont, CMH001308, CMH001296	9.0	5.0	8.0	8.0	9.0	0.0	0.0
119	Existing Deficiency 6.2a2 ,Wall Brooks Alley to Norton, CMH001306, CMH008452	5.0	5.0	8.0	8.0	9.0	0.0	0.0
120	Existing Deficiency 6.2a3 ,Olney Wall to Hwy 97, CMH001295, CMH003481	5.0	5.0	8.0	8.0	9.0	0.0	0.0
121	Existing Deficiency 6.2a3 ,Olney Hwy 97 to 1st, CMH001294, CMH006510							
122	Existing Deficiency 6.2a4 ,Wall Norton to Olney, CMH008452, CMH001295	5.0	5.0	8.0	8.0	9.0	0.0	0.0
123	Existing Deficiency 6.2a5 ,Olney at Hwy 97, CMH003481, CMH001294	5.0	5.0	8.0	8.0	9.0	0.0	0.0
124	Existing Deficiency 6.2b1 ,Olney 1st east, CMH006510, CMH007905	5.0	5.0	8.0	8.0	9.0	0.0	0.0
125	Existing Deficiency 6.3a1 - NC ,Not considered, ,	5.0						
126	Existing Deficiency 6.3a2 - NC ,Not considered, ,	5.0						
127	CIP Project 6.4a1 - NC ,Not considered, ,	5.0						
128	CIP Project 6.5a1 - NC ,Not considered, ,	0.0						
129	CIP Project 8.1a1 ,Amethyst Brookswood to Zircon, CMH001646, CMH001644	9.0	0.0	7.0	7.0	0.0	0.0	10.0
130	CIP Project 8.1a2 ,Amethyst Zircon east, CMH001644, CMH001643	5.0	0.0	7.0	7.0	0.0	0.0	10.0
131	CIP Project 8.1b1 ,Amethyst Platinum to Garnet, CMH001642, CMH001641	5.0	0.0	7.0	7.0	0.0	0.0	10.0
132	CIP Project 8.1b2 ,Amethyst Platinum west, CMH001642, CMH001643	5.0	0.0	7.0	7.0	0.0	0.0	10.0

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		Regulatory Compliance	System Reliability -- Reduced Risk of Failure	Public Health & Safety	O&M Efficiency/Cost Savings/Hot Spots	Future Growth	Environmental Impacts	Community/Customer Satisfaction
133	CIP Project 8.1c1 ,Mahogany Garnet to Springcrest, CMH001655, CMH001654	5.0	0.0	7.0	7.0	0.0	0.0	10.0
134	CIP Project 8.1c2 - NC ,Mahogany Springcrest east, CMH001654, CMH001652	8.0						
135	CIP Project 8.1c2 - NC ,Mahogany Honkers east, CMH005014, CMH001649							
136	CIP Project 8.2a1 ,Crystal Lane, CMH001637, CMH001638	5.0	0.0	7.0	7.0	0.0	0.0	10.0
137	CIP Project 8.2a2 ,Mahogany to Crystal Lane, CMH001631, CMH001638	8.0	0.0	7.0	7.0	0.0	0.0	10.0
138	CIP Project 8.2a3 ,Crystal Lane east, CMH001637, CMH001634	5.0	0.0	7.0	7.0	0.0	0.0	10.0
139	CIP Project 8.2a4 ,Mahogany Granite west, CMH001640, CMH001648	9.0	0.0	7.0	7.0	0.0	0.0	10.0
140	CIP Project 8.2b1 - NI ,3rd at Hwy 97 near Geary, CMH001629, CMH001798	5.0						
141	CIP Project 8.2c1 ,3rd near Geary to Pinebrook, CMH001629, CMH003638	9.0	0.0	7.0	7.0	0.0	0.0	10.0
142	CIP Project 8.2d1 ,Hwy 97 to Romaine 2, CMH001632, CMH001633	5.0	0.0	7.0	7.0	0.0	0.0	10.0
143	CIP Project 8.2d2 ,Hwy 97 to Romaine 3, CMH001633, CMH001634	5.0	0.0	7.0	7.0	0.0	0.0	10.0
144	CIP Project 8.2e1 - NI ,Hwy 97 to Romaine 1, CMH001801, CMH001632	5.0						
145	CIP Project 8.3a1 ,Angel Ct west to Brosterhous, CMH001745, CMH002311	5.0	0.0	2.0	2.0	4.0	0.0	0.0
146	CIP Project 8.3a1 ,Angel Ct west, CMH006366, CMH006364							
147	CIP Project 8.3a2 - NI ,Angel Ct north, CMH006364, CMH001745	5.0						
148	CIP Project 8.4a1 ,Cleveland Pelton to Hwy 97, CMH001562, CMH001781	5.0	0.0	2.0	2.0	0.0	0.0	0.0
149	CIP Project 8.4a2 ,Cleveland across Hwy 97, CMH001781, CMH001785	5.0	0.0	2.0	2.0	0.0	0.0	0.0
150	CIP Project 8.4a3 - NI ,Division Hwy 97 south, CMH001785, CMH002496	5.0						
151	CIP Project 8.4b1 ,Pelton McKinley south, CMH001569, CMH001561	5.0	0.0	2.0	2.0	0.0	0.0	0.0
152	CIP Project 8.5a1 - NI ,Old Mill PS west, CLS000026, CMH000071	5.0						
153	CIP Project 8.6a1 - NI ,Wilson 6th east, CMH002499, CMH002593	5.0						
154	CIP Project 8.6a2 - NI ,Wilson Douglas to 6th, CMH002502, CMH002499	5.0						
155	Existing Deficiency 8.7a1 ,Alden east to Glenwood, CMH008199, CMH008201	5.0	0.0	2.0	2.0	0.0	0.0	0.0
156	CIP Project 8.8a1 - NC ,Not considered, ,	8.0						
157	CIP Project 8.9a1 - NC ,Not considered, ,	5.0						
158	CIP Project 8.10a1 - NC ,Not considered, ,	5.0						
159	CIP Project 9.1a1 - NI ,Bronzewood north at Valleywood 1, CMH002339, CMH002340	5.0						
160	CIP Project 9.1a2 - NI ,Bronzewood north at Valleywood 2, CMH002340, CMH002341	5.0						
161	CIP Project 9.1a3 - NI ,Bronzewood at Airpark, CMH002337, CMH002336	5.0						
162	CIP Project 9.1b1 ,Wildcat south end to east, CMH002761, CMH002342	5.0	0.0	3.0	0.0	0.0	0.0	0.0
163	CIP Project 9.2a1 ,15th Ramsay south, CMH002763, CMH002764	5.0	0.0	4.0	0.0	0.0	0.0	0.0
164	CIP Project 9.3a1 ,Burnside Alden east, CMH002785, CMH002786	5.0	4.0	5.0	8.0	0.0	0.0	0.0
165	CIP Project 9.3a2 ,Burnside 13th west, CMH002787, CMH002786	5.0	4.0	5.0	8.0	0.0	0.0	0.0
166	CIP Project 9.3a3 ,13th Bear Creek south, CMH002788, CMH002787	5.0	4.0	5.0	8.0	0.0	0.0	0.0
167	CIP Project 9.3b1 ,Alden at Burnside, CMH002785, CMH002989	5.0	4.0	5.0	8.0	0.0	0.0	0.0
168	CIP Project 9.3c1 ,Hawthorned and 9th south, CMH002988, CMH002996	9.0	4.0	5.0	8.0	0.0	0.0	0.0
169	CIP Project 9.3c2 ,Franklin east then south, CMH002995, CMH002993	5.0	4.0	5.0	8.0	0.0	0.0	0.0
170	CIP Project 9.3c3 ,9th Franklin north, CMH002995, CMH002996	5.0	4.0	5.0	8.0	0.0	0.0	0.0
171	CIP Project 9.3c3 ,Dekalb east end of street, CMH002992, CMH002993							
172	CIP Project 9.3c4 ,10th Bear Creek to Alden, CMH002992, CMH002989	5.0	4.0	5.0	8.0	0.0	0.0	0.0
173	CIP Project 9.4a1 ,Purcell Paula to Hwy 20, CMH002466, CMH002678	8.0	4.0	7.0	6.0	0.0	0.0	0.0
174	CIP Project 9.4a1 ,Hwy 20 Dean Swift west, CMH001391, CMH001394							

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175	CIP Project 9.4a1 ,South of Hwy 20 at Azure, CMH003129, CMH003131							
176	CIP Project 9.4a2 ,Hwy 20 Dean Swift east, CMH001391, CMH002678	5.0	4.0	7.0	6.0	0.0	0.0	0.0
177	CIP Project 9.4a2 ,Hwy 20 south at Azure, CMH001394, CMH001391							
178	CIP Project 9.4a2 ,South of Hwy 20 near Nates, CMH003137, CMH003133							
179	CIP Project 9.4a3 - NI ,Cessna at Bear Creek to Pitts, CMH003209, CMH003213	5.0						
180	CIP Project 9.4a3 - NI ,North of Bear Creek at Teliman, CMH003130, CMH003133							
181	CIP Project 9.4a4 - NI ,South of Hwy 20 near Nates, CMH003129, CMH003137	5.0						
182	CIP Project 9.4a4 - NI ,North of Bear Creek at Teliman, CMH003209, CMH003130							
183	CIP Project 9.4b1 ,Paula Purcell north, CMH002466, CMH002468	8.0	4.0	7.0	6.0	0.0	0.0	0.0
184	CIP Project 9.4c1 - NI ,Purcell Donegon south, CMH002469, CMH002468	8.0						
185	CIP Project 9.4d1 - NI ,Paula Sharkey south, CMH002589, CMH002470	8.0						
186	CIP Project 9.5a1 - NI ,Moody Park near Cliff 1, CMH002071, CMH002072	5.0						
187	CIP Project 9.5a2 - NI ,Moody Park near Cliff 2, CMH002072, CMH002093	5.0						
188	CIP Project 9.5b1 - NI ,Moody Park east of Blueberry, CMH009320, CMH002068	8.0						
189	CIP Project 9.6a1 ,Neil north, CMH008004, CMH008002	5.0	0.0	2.0	0.0	0.0	0.0	2.0
190	CIP Project 9.7a1 - NI ,Rosemary Buckwheat to Iris, CMH003560, CMH002921	8.0						
191	CIP Project 9.8a1 - NI ,Jackson Shadow Brook to Moonlight, CMH000696, CMH003056	5.0						
192	CIP Project 9.8a2 ,Jackson Moonlight east, CMH003056, CMH007998	5.0	5.0	5.0	6.0	0.0	0.0	5.0
193	CIP Project 9.8b1 ,Jackson Moonlight to Community, CMH000696, CMH003483	8.0	5.0	5.0	6.0	0.0	0.0	5.0
194	CIP Project 9.8c1 ,Jackson Community to Daggett, CMH003483, CMH008021	5.0	5.0	5.0	6.0	0.0	0.0	5.0
195	PS Elimination - Shevlin Commons 1.PS03 ,, ,	0.0	3.0	0.0	2.0	0.0	0.0	3.0
196	PS Elimination - Shevlin Commons 1.PS04 ,, ,	0.0	3.0	0.0	2.0	0.0	0.0	3.0
197	PS Improvements - Shevlin Meadows 2.PS04 ,, ,	0.0	5.0	5.0	5.0	2.0	1.0	3.0
198	PS Improvements - Shevlin Meadows 2.PS05 ,, ,	0.0	5.0	5.0	5.0	2.0	1.0	3.0
199	PS Elimination - Awbrey Glen 2.PS06 ,, ,	0.0	8.0	10.0	7.0	5.0	0.0	10.0
200	PS Elimination - Awbrey Glen 2.PS07 ,, ,	0.0	8.0	10.0	7.0	5.0	0.0	10.0
201	PS Improvements - Sunrise Village #1 3.PS01 ,, ,	0.0	3.0	3.0	5.0	0.0	2.0	0.0
202	PS Improvements - Widgi Creek 3.PS02 ,, ,	0.0	9.0	5.0	7.0	2.0	0.0	3.0
203	PS Elimination - Boyd Acres 4.PS01 ,, ,	0.0	3.0	5.0	5.0	0.0	0.0	0.0
204	PS Elimination - Boyd Acres 4.PS02 ,, ,	0.0	3.0	5.0	5.0	0.0	0.0	0.0
205	PS Elimination - Highlands 4.PS03 ,, ,	0.0	5.0	7.0	7.0	0.0	5.0	0.0
206	PS Elimination - Highlands 4.PS04 ,, ,	0.0	5.0	7.0	7.0	0.0	5.0	0.0
207	PS Elimination - Holiday Inn 4.PS05 ,, ,	0.0	3.0	7.0	4.0	0.0	5.0	0.0
208	PS Elimination - Holiday Inn 4.PS06 ,, ,	0.0	3.0	7.0	4.0	0.0	5.0	0.0
209	PS Elimination - Northpointe 4.PS07 ,, ,	0.0	2.0	5.0	2.0	0.0	10.0	0.0
210	PS Elimination - Northpointe 4.PS08 ,, ,	0.0	2.0	5.0	2.0	0.0	10.0	0.0
211	PS Elimination - North Wind 4.PS09 ,, ,	0.0	1.0	5.0	1.0	0.0	5.0	0.0
212	PS Elimination - North Wind 4.PS10 ,, ,	0.0	1.0	5.0	1.0	0.0	5.0	0.0
213	PS Elimination - Phoenix 4.PS11 ,, ,	0.0	7.0	8.0	7.0	0.0	0.0	2.0
214	PS Elimination - Summer Meadows 4.PS12 - Removed ,, ,	0.0						
215	PS Elimination - Summer Meadows 4.PS13 - Removed ,, ,	0.0						
216	PS Improvements - Empire 5.PS02 ,, ,	0.0	3.0	3.0	1.0	0.0	8.0	0.0

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217	PS Elimination - Deschutes County Jail 5.PS03 - Removed ,, ,	0.0						
218	PS Elimination - Majestic 5.PS04 ,, ,	0.0	6.0	4.0	7.0	0.0	2.0	8.0
219	PS Elimination - Majestic 5.PS05 ,, ,	0.0	6.0	4.0	7.0	0.0	2.0	8.0
220	PS Elimination - North Fire Station 5.PS06 ,, ,	0.0	1.0	0.0	0.0	0.0	0.0	0.0
221	PS Improvements - Drake Pump Station 6.PS01 ,, ,	0.0	9.0	10.0	8.0	9.0	0.0	4.0
222	PS Improvements - Addison Pump Station 6.PS02 ,, ,	0.0	10.0	10.0	8.0	5.0	0.0	6.0
223	PS Improvements - Nottingham #2 7.PS02 ,, ,	0.0	7.0	7.0	8.0	3.0	0.0	8.0
224	PS Elimination - Blue Ridge 7.PS03 ,, ,	0.0	1.0	2.0	7.0	3.0	4.0	0.0
225	PS Elimination - Blue Ridge 7.PS04 ,, ,	0.0	1.0	2.0	7.0	3.0	4.0	0.0
226	PS Elimination - Darnell Estates 7.PS05 ,, ,	0.0	2.0	1.0	2.0	0.0	2.0	0.0
227	PS Elimination - Darnell Estates 7.PS06 ,, ,	0.0	2.0	1.0	2.0	0.0	2.0	0.0
228	PS Elimination - Desert Skies 7.PS07 ,, ,	0.0	3.0	10.0	3.0	0.0	5.0	10.0
229	PS Elimination - Desert Skies 7.PS08 ,, ,	0.0	3.0	10.0	3.0	0.0	5.0	10.0
230	PS Elimination - Ridgewater #1 7.PS09 ,, ,	0.0	2.0	3.0	3.0	0.0	0.0	0.0
231	PS Elimination - Ridgewater #1 7.PS10 ,, ,	0.0	2.0	3.0	3.0	0.0	0.0	0.0
232	PS Elimination - Sun Meadows 7.PS11 ,, ,	0.0	4.0	3.0	6.0	0.0	0.0	8.0
233	PS Elimination - Sun Meadows 7.PS12 ,, ,	0.0	4.0	3.0	6.0	0.0	0.0	8.0
234	PS Improvements - Deschutes River X-ing 8.PS01 ,, ,	0.0	2.0	1.0	2.0	0.0	0.0	2.0
235	PS Improvements - Old Mill 8.PS02 ,, ,	0.0	2.0	8.0	5.0	4.0	0.0	8.0
236	PS Improvements - River Rim 8.PS03 ,, ,	0.0	2.0	4.0	8.0	6.0	4.0	10.0
237	PS Improvements - Tri-Peaks 8.PS05 ,, ,	0.0	2.0	1.0	3.0	0.0	2.0	0.0
238	PS Elimination - South Village 8.PS06 ,, ,	0.0	2.0	5.0	3.0	0.0	0.0	0.0
239	PS Elimination - South Village 8.PS07 ,, ,	0.0	2.0	5.0	3.0	0.0	0.0	0.0
240	PS Improvements - Parrell (new 8.PS08) - Removed ,, ,	0.0						
241	PS Elimination - Summit Park 9.PS01 ,, ,	0.0	2.0	2.0	1.0	1.0	4.0	0.0
242	PS Elimination - Summit Park 9.PS02 ,, ,	0.0	2.0	2.0	1.0	1.0	4.0	0.0
243	PS Improvements - Westside ,, ,	0.0	4.0	10.0	6.0	10.0	8.0	9.0
244	PS Improvements - Wyndemere - New ,, ,	0.0						
245	Plant Interceptor WWTP Siphon ,, ,	0.0	7.0	5.0	9.0	10.0	10.0	4.0
246	Plant Interceptor North Trunk Junction to Siphon ,, ,	0.0	7.0	5.0	9.0	10.0	10.0	4.0
247	North Interceptor Plant Interceptor to Hwy 97 ,, ,	10.0	8.0	5.0	9.0	8.0	10.0	5.0
248	North Interceptor Juniper Ridge to Hwy 97 ,, ,	10.0	8.0	5.0	9.0	8.0	10.0	5.0
249	North Interceptor Hwy 97 to Deschutes River ,, ,	0.0	0.0	2.0	0.0	0.0	10.0	5.0
250	North Interceptor Deshhutes River to Shevlin Park ,, ,	0.0	0.0	2.0	0.0	0.0	10.0	5.0
251	North Interceptor Deschutes River Force main ,, ,	0.0	0.0	2.0	0.0	0.0	10.0	5.0
252	North Interceptor Pump Station2 ,, ,	0.0	0.0	2.0	0.0	0.0	10.0	5.0
253	SE Interceptor NUID to Wells Acres ,, ,	8.0	9.0	10.0	9.0	8.0	10.0	7.0
254	SE Interceptor Wells Acres to Hwy 20 ,, ,	8.0	9.0	10.0	9.0	8.0	10.0	7.0
255	SE Interceptor Hwy 20 to Reed Market Rd (15-20' depth) ,, ,	8.0	9.0	10.0	9.0	8.0	10.0	7.0
256	SE Interceptor Reed Market Rd to Ferguson ,, ,	8.0	9.0	10.0	9.0	8.0	10.0	7.0
257	SE Interceptor Ferguson to Brosterhous ,, ,	8.0	9.0	10.0	9.0	8.0	10.0	7.0
258	SE Interceptor Parrell to 3rd Street ,, ,	8.0	9.0	10.0	9.0	8.0	10.0	7.0

Attachment 3
Bend Sewer CIP
Scoring Inputs

Project Number	Project Name	Evaluation Criteria						
		Regulatory Compliance	System Reliability -- Reduced Risk of Failure	Public Health & Safety	O&M Efficiency/Cost Savings/Hot Spots	Future Growth	Environmental Impacts	Community/Customer Satisfaction
259	Westside Interceptor Westside Force main ,, ,	0.0	9.0	8.0	7.0	7.0	8.0	8.0
260	Westside Interceptor Gravity Interceptor ,, ,	5.0	9.0	8.0	7.0	7.0	8.0	8.0
261	AIR - Airport line - Replace/Rehab Gravity System ,, ,	0.0	5.0	3.0	6.0	0.0	2.0	0.0
262	AIR - Airport PS and FM - Review Pump Station & Discharge Line Capacity ,, ,	0.0	5.0	3.0	2.0	0.0	2.0	0.0
263	FM - Phoenix P.S - Relocate Boyd Acres Pump Station Discharge ,, ,	0.0	2.0	2.0	2.0	0.0	0.0	1.0
264	GM - 20"Clay Line -8th & Ravenwood to Al Moody Park - Relocate Sewer Services; Rehab Oversized Pipe ,, ,	0.0	6.0	6.0	9.0	0.0	0.0	7.0
265	GM - Old Mill Sewer -SW Mill A - Replace Gravity Main ,, ,	0.0	3.0	7.0	4.0	9.0	0.0	5.0
266	GM - Brooks Alley Sewer -North of Newport - Replace/Relocate Gravity Main ,, ,	0.0	4.0	4.0	8.0	10.0	3.0	5.0
267	PS Improvements - Enchantment @ Deschutes P.S. -Wetwell Modification ,, ,	0.0	0.0	8.0	9.0	7.0	2.0	8.0
268	PS Improvements - Awbrey Glen P.S. -Upgrade Pump Station ,, ,	0.0	8.0	10.0	7.0	5.0	0.0	10.0
269	PS Elimination - Pioneer Pump Station -Relocate Fairfield Inn Gravity Sewer; Downsize Pump Station ,, ,	0.0	8.0	10.0	8.0	8.0	0.0	9.0
270	PS Improvements - Cornell Four -Updgrade Pump Stations ,, ,	0.0	9.0	6.0	9.0	3.0	0.0	0.0
271	PS Elimination - Sunrise P.S -Relocate Discharge; New Gravity Solution - Duplicate ,, ,	0.0						
272	SE Interceptor - The Shire -Abandon Wetwell; Gravity Solution ,, ,	0.0	3.0	3.0	8.0	0.0	8.0	3.0
273	SE Interceptor - The Pines 5, 6 & 7 P.S. -SE Interceptor Supplemental Project ,, ,	0.0	10.0	10.0	8.0	0.0	0.0	7.0
274	SE Interceptor - Quail Ridge 1&2 P.S. -SE Interceptor Supplemental Project ,, ,	0.0	10.0	10.0	8.0	0.0	0.0	7.0
275	SE Interceptor - Stone Haven P.S -SE Interceptor Supplemental Project ,, ,	0.0	2.0	2.0	2.0	0.0	0.0	9.0
276	SE Interceptor - South Village P.S -SE Interceptor Supplemental Project - Duplicate ,, ,	0.0						
277	SE Interceptor - Sun Meadow P.S. -SE Interceptor Supplemental Project - Duplicate ,, ,	0.0						
278	SE Interceptor - Fox borough P.S. -SE Interceptor Supplemental Project ,, ,	0.0	4.0	7.0	5.0	0.0	0.0	9.0
279	Westside PS REDUNDANT, DON'T SCORE ,, ,							

Attachment 4
Bend Sewer CIP
Scoring Guide

Scoring Guide	Regulatory Compliance	System Reliability	Public Health & Safety	O&M Efficiency/Cost Savings/Hot Spots	Environmental Impacts	Future Growth	Customer Satisfaction/ Public Perception
10	Project addresses SSOs. System freeboard less than 1.5 foot	Project significantly increases operational flexibility/reliability **OR** Substantially reduces system vulnerability **OR** System's functional capacity is already exceeded	Project eliminates immediate existing risk to public health and safety	Project addresses top of City O&M *Hot Spot List* **AND** -Highest cost savings	Consequences of system failure significantly affect water quality **AND** Significantly reduces energy use	Project provides service to areas with most significant new development potential **OR** Provides sewer service to many unsewered properties	Project increases customer satisfaction levels **AND** -Has significant positive community impacts
9	Project addresses SSOs. System freeboard 1.5 to 2.5 feet	Project reduces risk of a major system failure **OR** System's operational capacity exceeded in 1 year	Project eliminates known, latent risks to employee health & safety	Project addresses top of City O&M *Hot Spot List* **OR** Highest cost savings	Consequences of system failure significantly affect water quality **OR** Significantly reduces energy use		
8	Project addresses SSOs. System freeboard 2.5 to 3.5 feet	Project reduces risk of a major system failure	Project eliminates anticipated risks to public health and safety				Project addresses multiple customer issues **OR** -Has significant positive community impacts
7				Project addresses top 10% of O&M cost savings			
6		Project decreases operational needs **OR** System's operational capacity expires in 5 years			Consequences of system failure moderately affect water quality **AND** Moderately reduces energy use	Project provides service to areas with moderate new development potential **OR** Provides sewer service to moderate number of unsewered properties	
5	Project addresses SSOs. System freeboard greater than 3.5 feet	Project decreases operational needs **OR** System's operational capacity expires in 10 years	Project eliminates some risks (less frequent risks)	Project addresses median of City's O&M *Hot Spot List* **OR** Top 25% of City's O&M cost savings			
4				Project addresses issues low on City's O&M *Hot Spot List*	Consequences of system failure moderately affect water quality **OR** Moderately reduces energy use		Project addresses some customer issues **OR** Has limited positive community impacts
3							
2		Expiration timeline for system's operational capacity is unknown or uncertain **AND/OR** Project does not affect operational needs	Project eliminates unlikely risks to public health and safety	Project addresses bottom 25% of City's O&M cost savings		Project provides service to areas with low development potential **OR** Provides sewer service to few unsewered properties	
1		Project does not reduce the risk of a system failure					
0	Project involves a sealed manhole or force main	Project increases the operational needs	Project does not address health or safety considerations	Project does not address issues on City's O&M *Hot Spot List* **AND/OR** O&M Cost Savings unknown	Consequences of system failure do not affect water quality **AND/OR** Does not significantly reduce energy use	Project does not address future growth potential **OR** Provides sewer service to many unsewered properties	Project does not address customer issues or recognized service area problems **OR** **H**as negative community impacts

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
253	SE Interceptor NUID to Wells Acres ,, ,	$6,480,000	$6,480,000	88
254	SE Interceptor Wells Acres to Hwy 20 ,, ,	$8,620,000	$15,100,000	88
255	SE Interceptor Hwy 20 to Reed Market Rd (15-20' depth) ,, ,	$7,840,000	$22,940,000	88
256	SE Interceptor Reed Market Rd to Ferguson ,, ,	$9,720,000	$32,660,000	88
257	SE Interceptor Ferguson to Brosterhous ,, ,	$7,040,000	$39,700,000	88
258	SE Interceptor Parrell to 3rd Street ,, ,	$1,250,000	$40,950,000	88
247	North Interceptor Plant Interceptor to Hwy 97 ,, ,	$7,185,976	$48,135,976	78
248	North Interceptor Juniper Ridge to Hwy 97 ,, ,	$2,163,572	$50,299,548	78
260	Westside Interceptor Gravity Interceptor ,, ,	$9,093,295	$59,392,843	74
259	Westside Interceptor Westside Force main ,, ,	$2,501,131	$61,893,974	65
108	Existing Deficiency 5.4a1 ,Nels Anderson from Fred Meyers north to pressure, CMH005864, CMH003153	$244,611	$62,138,585	64
243	PS Improvements - Westside ,, ,	$5,079,848	$67,218,433	63
245	Plant Interceptor WWTP Siphon ,, ,	$2,938,272	$70,156,705	60
246	Plant Interceptor North Trunk Junction to Siphon ,, ,	$4,638,324	$74,795,029	60
269	PS Elimination - Pioneer Pump Station -Relocate Fairfield Inn Gravity Sewer; Downsize Pump Station ,, ,	$321,100	$75,116,129	58
109	Existing Deficiency 5.4b1 ,Fred Meyers Vogt to April Ann, CMH005864, CMH003148	$68,013	$75,184,141	58
118	Existing Deficiency 6.2a1 ,Brooks Alley Wall to Vermont, CMH001308, CMH001296	$261,502	$75,445,643	56
199	PS Elimination - Awbrey Glen 2.PS06 ,, ,	$1,559,264	$77,004,907	56
200	PS Elimination - Awbrey Glen 2.PS07 ,, ,	$54,406	$77,059,313	56
268	PS Improvements - Awbrey Glen P.S. -Upgrade Pump Station ,, ,	$5,560,100	$82,619,413	56
222	PS Improvements - Addison Pump Station 6.PS02 ,, ,	$1,504,858	$84,124,271	55
221	PS Improvements - Drake Pump Station 6.PS01 ,, ,	$410,218	$84,534,488	55
273	SE Interceptor - The Pines 5, 6 & 7 P.S. -SE Interceptor Supplemental Project ,, ,	$544,180	$85,078,668	52
274	SE Interceptor - Quail Ridge 1&2 P.S. -SE Interceptor Supplemental Project ,, ,	$363,350	$85,442,018	52
119	Existing Deficiency 6.2a2 ,Wall Brooks Alley to Norton, CMH001306, CMH008452	$205,279	$85,647,298	49
120	Existing Deficiency 6.2a3 ,Olney Wall to Hwy 97, CMH001295, CMH003481	$391,868	$86,039,166	49
122	Existing Deficiency 6.2a4 ,Wall Norton to Olney, CMH008452, CMH001295	$86,810	$86,125,976	49
123	Existing Deficiency 6.2a5 ,Olney at Hwy 97, CMH003481, CMH001294	$163,837	$86,289,812	49
124	Existing Deficiency 6.2b1 ,Olney 1st east, CMH006510, CMH007905	$88,453	$86,378,265	49
129	CIP Project 8.1a1 ,Amethyst Brookswood to Zircon, CMH001646, CMH001644	$148,044	$86,526,310	49
139	CIP Project 8.2a4 ,Mahogany Granite west, CMH001640, CMH001648	$98,670	$86,624,979	49
141	CIP Project 8.2c1 ,3rd near Geary to Pinebrook, CMH001629, CMH003638	$500,796	$87,125,775	49

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
137	CIP Project 8.2a2 ,Mahogany to Crystal Lane, CMH001631, CMH001638	$311,211	$87,436,986	47
55	CIP Project 2.15a1 ,Marken Scandia south, CMH002697, CMH002698	$0	$87,436,986	47
56	CIP Project 2.15a2 ,Marken Nordeen to Scandia, CMH000341, CMH002697	$0	$87,436,986	47
57	CIP Project 2.15b1 ,Marken Roberts Way north, CMH002698, CMH002693	$0	$87,436,986	47
58	CIP Project 2.15c1 ,Marken Roberts Way south, CMH002693, CMH002682	$0	$87,436,986	47
59	CIP Project 2.15d1 ,Marken Shevlin north, CMH002682, CMH002683	$0	$87,436,986	47
223	PS Improvements - Nottingham #2 7.PS02 ,, ,	$33,187	$87,470,173	46
228	PS Elimination - Desert Skies 7.PS07 ,, ,	$93,578	$87,563,751	46
229	PS Elimination - Desert Skies 7.PS08 ,, ,	$27,203	$87,590,954	46
267	PS Improvements - Enchantment @ Deschutes P.S. -Wetwell Modification ,, ,	$270,400	$87,861,354	44
193	CIP Project 9.8b1 ,Jackson Moonlight to Community, CMH000696, CMH003483	$168,133	$88,029,486	44
236	PS Improvements - River Rim 8.PS03 ,, ,	$46,789	$88,076,275	44
266	GM - Brooks Alley Sewer -North of Newport - Replace/Relocate Gravity Main ,, ,	$316,030	$88,392,305	43
130	CIP Project 8.1a2 ,Amethyst Zircon east, CMH001644, CMH001643	$110,662	$88,502,967	42
131	CIP Project 8.1b1 ,Amethyst Platinum to Garnet, CMH001642, CMH001641	$145,132	$88,648,099	42
132	CIP Project 8.1b2 ,Amethyst Platinum west, CMH001642, CMH001643	$143,886	$88,791,985	42
133	CIP Project 8.1c1 ,Mahogany Garnet to Springcrest, CMH001655, CMH001654	$142,544	$88,934,529	42
136	CIP Project 8.2a1 ,Crystal Lane, CMH001637, CMH001638	$113,031	$89,047,560	42
138	CIP Project 8.2a3 ,Crystal Lane east, CMH001637, CMH001634	$345,226	$89,392,787	42
142	CIP Project 8.2d1 ,Hwy 97 to Romaine 2, CMH001632, CMH001633	$192,568	$89,585,354	42
143	CIP Project 8.2d2 ,Hwy 97 to Romaine 3, CMH001633, CMH001634	$305,848	$89,891,202	42
168	CIP Project 9.3c1 ,Hawthorned and 9th south, CMH002988, CMH002996	$197,364	$90,088,566	41
173	CIP Project 9.4a1 ,Purcell Paula to Hwy 20, CMH002466, CMH002678	$773,631	$90,862,196	40
183	CIP Project 9.4b1 ,Paula Purcell north, CMH002466, CMH002468	$83,927	$90,946,124	40
264	GM - 20"Clay Line -8th & Ravenwood to Al Moody Park - Relocate Sewer Services; Rehab Oversized Pipe ,, ,	$1,215,110	$92,161,234	40
270	PS Improvements - Cornell Four -Updgrade Pump Stations ,, ,	$1,723,800	$93,885,034	39
192	CIP Project 9.8a2 ,Jackson Moonlight east, CMH003056, CMH007998	$19,824	$93,904,857	39
194	CIP Project 9.8c1 ,Jackson Community to Daggett, CMH003483, CMH008021	$103,088	$94,007,945	39
218	PS Elimination - Majestic 5.PS04 ,, ,	$305,759	$94,313,704	38
219	PS Elimination - Majestic 5.PS05 ,, ,	$27,203	$94,340,907	38
202	PS Improvements - Widgi Creek 3.PS02 ,, ,	$16,322	$94,357,229	37

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
205	PS Elimination - Highlands 4.PS03 ,, ,	$427,628	$94,784,857	37
206	PS Elimination - Highlands 4.PS04 ,, ,	$27,203	$94,812,059	37
213	PS Elimination - Phoenix 4.PS11 ,, ,	$44,613	$94,856,672	37
235	PS Improvements - Old Mill 8.PS02 ,, ,	$74,536	$94,931,208	37
265	GM - Old Mill Sewer -SW Mill A - Replace Gravity Main ,, ,	$1,542,970	$96,474,178	36
272	SE Interceptor - The Shire -Abandon Wetwell; Gravity Solution ,, ,	$735,150	$97,209,328	36
278	SE Interceptor - Fox borough P.S. -SE Interceptor Supplemental Project ,, ,	$267,020	$97,476,348	36
43	CIP Project 2.11a1 ,Steidl Gordon to Portland, CMH008979, CMH008727	$83,822	$97,560,169	35
176	CIP Project 9.4a2 ,Hwy 20 Dean Swift east, CMH001391, CMH002678	$537,105	$98,097,275	35
164	CIP Project 9.3a1 ,Burnside Alden east, CMH002785, CMH002786	$180,473	$98,277,748	34
165	CIP Project 9.3a2 ,Burnside 13th west, CMH002787, CMH002786	$118,383	$98,396,131	34
166	CIP Project 9.3a3 ,13th Bear Creek south, CMH002788, CMH002787	$69,936	$98,466,067	34
167	CIP Project 9.3b1 ,Alden at Burnside, CMH002785, CMH002989	$11,009	$98,477,076	34
169	CIP Project 9.3c2 ,Franklin east then south, CMH002995, CMH002993	$824,418	$99,301,494	34
170	CIP Project 9.3c3 ,9th Franklin north, CMH002995, CMH002996	$547,832	$99,849,326	34
172	CIP Project 9.3c4 ,10th Bear Creek to Alden, CMH002992, CMH002989	$277,552	$100,126,879	34
32	CIP Project 2.8b1 ,Harmon Hartford to Jacksonville, CMH008587, CMH008586	$55,055	$100,181,933	30
33	CIP Project 2.8b2 ,Harmon - 2 sections, CMH008587, CMH008588	$199,874	$100,381,808	30
36	CIP Project 2.8c1 ,Harmon Kingston to Nashville, CMH008585, CMH008589	$415,612	$100,797,420	30
37	CIP Project 2.8c2 ,Harmon Nashville North, CMH008579, CMH008568	$176,523	$100,973,943	30
38	CIP Project 2.8c3 ,Harmon to Newport, CMH008568, CMH008729	$265,391	$101,239,334	30
39	CIP Project 2.9a1 ,Columbia Harmon south, CMH008569, CMH008560	$130,863	$101,370,197	30
40	CIP Project 2.10a1 ,Portland Awbrey to 1st, CMH008749, CMH008738	$452,463	$101,822,660	30
41	CIP Project 2.10a2 ,Awbrey Rd 1st to Newport, CMH008754, CMH008755	$108,790	$101,931,449	30
197	PS Improvements - Shevlin Meadows 2.PS04 ,, ,	$63,110	$101,994,560	30
198	PS Improvements - Shevlin Meadows 2.PS05 ,, ,	$23,938	$102,018,498	30
207	PS Elimination - Holiday Inn 4.PS05 ,, ,	$65,287	$102,083,785	30
208	PS Elimination - Holiday Inn 4.PS06 ,, ,	$10,881	$102,094,666	30
209	PS Elimination - Northpointe 4.PS07 ,, ,	$59,846	$102,154,512	29
210	PS Elimination - Northpointe 4.PS08 ,, ,	$27,203	$102,181,715	29
232	PS Elimination - Sun Meadows 7.PS11 ,, ,	$221,975	$102,403,690	29

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
233	PS Elimination - Sun Meadows 7.PS12 ,, ,	$27,203	$102,430,893	29
75	CIP Project 3.3b1 ,Athletic Club north to roundabout, CMH00371, CMH004754	$202,310	$102,633,202	28
81	CIP Project 3.3f1 ,Colorado near Emkay north, CMH000415, CMH000416	$204,625	$102,837,828	28
83	CIP Project 3.3g2 ,Columbia Colorado to Emkay, CMH000413, CMH000411	$197,911	$103,035,738	28
29	CIP Project 2.7a1 ,Newport Harmon to 5th, CMH008729, CMH008728	$476,067	$103,511,806	27
30	CIP Project 2.7a2 ,Newport 5th to 3rd, CMH008728, CMH008758	$375,462	$103,887,268	27
103	CIP Project 5.2a4 ,3rd Riverhouse to OB Riley, CMH006526, CMH006529	$691,160	$104,578,428	27
104	CIP Project 5.2a5 ,OB Riley 3rd north, CMH006529, CMH006530	$208,915	$104,787,343	27
105	CIP Project 5.2b1 ,OB Riley south of Sawyer PS, CMH006519, CMH006521	$215,929	$105,003,272	27
106	CIP Project 5.2b2 ,OB Riley at Sawyer PS, CMH006521, CMH006522	$92,050	$105,095,321	27
77	CIP Project 3.3d1 ,Mt. Bachelor roundabout north, CMH000405, CMH000404	$81,845	$105,177,167	26
78	CIP Project 3.3d2 ,Reed Mkt / Mt. Bachelor roundabout, CMH004753, CMH000405	$24,871	$105,202,038	26
1	CIP Project 2.1a1 ,Shields North to Shevlin, CMH004188, CMH004178	$119,512	$105,321,549	24
249	North Interceptor Hwy 97 to Deschutes River ,, ,	$7,862,650	$113,184,199	24
250	North Interceptor Deshhutes River to Shevlin Park ,, ,	$5,831,076	$119,015,275	24
251	North Interceptor Deschutes River Force main ,, ,	$255,970	$119,271,245	24
252	North Interceptor Pump Station2 ,, ,	$1,254,494	$120,525,740	24
261	AIR - Airport line - Replace/Rehab Gravity System ,, ,	$1,051,180	$121,576,920	24
216	PS Improvements - Empire 5.PS02 ,, ,	$20,674	$121,597,594	23
224	PS Elimination - Blue Ridge 7.PS03 ,, ,	$17,410	$121,615,003	23
225	PS Elimination - Blue Ridge 7.PS04 ,, ,	$27,203	$121,642,206	23
16	CIP Project 2.5b1 ,Milwaukee and Stannium, CMH000358, CMH008698	$62,500	$121,704,706	21
68	CIP Project 3.3a1 ,Athletic Club south 1, CMH000373, CMH000374	$116,318	$121,821,024	21
70	CIP Project 3.3a3 ,Athletic Club south 3, CMH000375, CMH009209	$101,694	$121,922,718	21
71	CIP Project 3.3a4 ,Athletic Club south 4, CMH009209, CMH009211	$199,015	$122,121,733	21
72	CIP Project 3.3a5 ,Athletic Club south 5, CMH009211, CMH009214	$82,783	$122,204,516	21
76	CIP Project 3.3c1 ,Colorado Emkay north, CMH000400, CMH000415	$95,871	$122,300,387	21
79	CIP Project 3.3e1 ,Colorado Emkay south, CMH000400, CMH000402	$276,193	$122,576,581	21
80	CIP Project 3.3e2 ,Mt. Bachelor near Century north, CMH000402, CMH000404	$297,852	$122,874,432	21
82	CIP Project 3.3g1 ,Columbia Emkay north 1, CMH000411, CMH000409	$151,281	$123,025,714	21
87	CIP Project 3.3h2 ,Simpson Columbia south, CMH000407, CMH000399	$93,138	$123,118,852	21

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
92	CIP Project 3.6a2 ,Skyliners south Mt. Wash roundabout 1, CMH000995, CMH000994	$57,215	$123,176,067	21
117	Existing Deficiency 6.1a1 ,Tumalo Broadway to Idaho, CMH008319, CMH008318	$56,829	$123,232,896	20
47	CIP Project 2.12a4 ,Scenic Heights east of Todds Crest, CMH002877, CMH002878	$28,316	$123,261,213	20
203	PS Elimination - Boyd Acres 4.PS01 ,, ,	$78,344	$123,339,557	20
204	PS Elimination - Boyd Acres 4.PS02 ,, ,	$27,203	$123,366,759	20
275	SE Interceptor - Stone Haven P.S -SE Interceptor Supplemental Project ,, ,	$288,990	$123,655,749	20
201	PS Improvements - Sunrise Village #1 3.PS01 ,, ,	$79,976	$123,735,726	19
211	PS Elimination - North Wind 4.PS09 ,, ,	$68,551	$123,804,277	19
212	PS Elimination - North Wind 4.PS10 ,, ,	$27,203	$123,831,479	19
262	AIR - Airport PS and FM - Review Pump Station & Discharge Line Capacity ,, ,	$1,419,600	$125,251,079	18
107	CIP Project 5.3a1 ,3rd Mervin Samples to Hwy 20, CMH000002, CMH003158	$1,040,894	$126,291,973	18
145	CIP Project 8.3a1 ,Angel Ct west to Brosterhous, CMH001745, CMH002311	$156,425	$126,448,398	18
62	CIP Project 3.1a1 ,Blue Lake to Metolius, CMH000900, CMH000899	$297,560	$126,745,959	17
63	CIP Project 3.1a2 ,Metolius northern edge, CMH000900, CMH000901	$133,142	$126,879,101	17
67	CIP Project 3.2c1 ,Mammoth August to Sunrise PS, CMH008454, Sunrise PS	$155,808	$127,034,909	17
2	CIP Project 2.1a2 ,Freemont North of Shields, CMH004189, CMH004188	$83,957	$127,118,866	16
3	CIP Project 2.1a3 ,Freemont North of Shields, CMH005427, CMH004189	$72,827	$127,191,693	16
5	CIP Project 2.1b1 ,Freemont South of Shields, CMH004190, CMH004192	$273,317	$127,465,010	16
6	CIP Project 2.1c1 ,2 sections, CMH004193, CMH004192	$241,591	$127,706,601	16
10	CIP Project 2.1c3 ,Lehmi Pass, CMH004192, CMH004193	$114,228	$127,820,829	16
11	CIP Project 2.2a1 ,Shevlin Park East, CMH008748, CMH003915	$95,583	$127,916,413	16
12	CIP Project 2.2b1 ,Shevlin Park West, CMH008748, CMH008750	$140,897	$128,057,310	16
13	CIP Project 2.3a1 ,Newport at College, CMH008742, CMH008741	$116,442	$128,173,752	16
14	CIP Project 2.4a1 ,Stannium and 18th, CMH003495, CMH003493	$65,327	$128,239,079	16
15	CIP Project 2.5a1 ,Stannium, CMH000359, CMH00358	$66,220	$128,305,298	16
17	CIP Project 2.5c1 ,Milwaukee and 15th, CMH008698, CMH008697	$12,264	$128,317,562	16
18	CIP Project 2.5d1 ,Milwaukee 15th to 12th, CMH008697, CMH008694	$319,055	$128,636,617	16
19	CIP Project 2.5e1 ,Milwaukee 12th to Union, CMH008694, CMH008719	$205,599	$128,842,216	16
20	CIP Project 2.5f1 ,Union to Newport, CMH008719, CMH008732	$160,567	$129,002,783	16
238	PS Elimination - South Village 8.PS06 ,, ,	$68,551	$129,071,334	16
239	PS Elimination - South Village 8.PS07 ,, ,	$27,203	$129,098,537	16

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
163	CIP Project 9.2a1 ,15th Ramsay south, CMH002763, CMH002764	$32,496	$129,131,033	15
8	CIP Project 2.1c2 - NI ,2 sections, CMH004147, CMH004181	$0	$129,131,033	15
148	CIP Project 8.4a1 ,Cleveland Pelton to Hwy 97, CMH001562, CMH001781	$39,271	$129,170,304	14
149	CIP Project 8.4a2 ,Cleveland across Hwy 97, CMH001781, CMH001785	$84,636	$129,254,940	14
151	CIP Project 8.4b1 ,Pelton McKinley south, CMH001569, CMH001561	$44,941	$129,299,880	14
155	Existing Deficiency 8.7a1 ,Alden east to Glenwood, CMH008199, CMH008201	$135,997	$129,435,878	14
241	PS Elimination - Summit Park 9.PS01 ,, ,	$85,417	$129,521,295	14
242	PS Elimination - Summit Park 9.PS02 ,, ,	$16,322	$129,537,616	14
189	CIP Project 9.6a1 ,Neil north, CMH008004, CMH008002	$147,582	$129,685,198	14
162	CIP Project 9.1b1 ,Wildcat south end to east, CMH002761, CMH002342	$77,037	$129,762,235	14
27	CIP Project 2.6e2 - NI ,11th Portland to Ogden, CMH009280, CMH009275	$0	$129,762,235	13
48	CIP Project 2.13a1 - NI ,Mt Washington south of Links, CMH002875, CMH002886	$0	$129,762,235	13
114	Existing Deficiency 5.8a1 - NC ,Not considered, ,	$146,120	$129,908,356	13
134	CIP Project 8.1c2 - NC ,Mahogany Springcrest east, CMH001654, CMH001652	$469,652	$130,378,008	13
156	CIP Project 8.8a1 - NC ,Not considered, ,	$91,648	$130,469,655	13
184	CIP Project 9.4c1 - NI ,Purcell Donegon south, CMH002469, CMH002468	$0	$130,469,655	13
185	CIP Project 9.4d1 - NI ,Paula Sharkey south, CMH002589, CMH002470	$0	$130,469,655	13
188	CIP Project 9.5b1 - NI ,Moody Park east of Blueberry, CMH009320, CMH002068	$0	$130,469,655	13
190	CIP Project 9.7a1 - NI ,Rosemary Buckwheat to Iris, CMH003560, CMH002921	$0	$130,469,655	13
230	PS Elimination - Ridgewater #1 7.PS09 ,, ,	$42,436	$130,512,092	12
231	PS Elimination - Ridgewater #1 7.PS10 ,, ,	$27,203	$130,539,295	12
64	CIP Project 3.2a1 ,Brookside west of Sleepy Ct., CMH004381, CMH004378	$49,183	$130,588,477	12
65	CIP Project 3.2a2 ,Brookside by Sleepy Ct., CMH004381, CMH004383	$196,423	$130,784,901	12
66	CIP Project 3.2b1 ,Mammoth east to Brookside, CMH000016, CMH000045	$39,903	$130,824,804	12
237	PS Improvements - Tri-Peaks 8.PS05 ,, ,	$27,203	$130,852,007	11
195	PS Elimination - Shevlin Commons 1.PS03 ,, ,	$78,888	$130,930,895	10
196	PS Elimination - Shevlin Commons 1.PS04 ,, ,	$27,203	$130,958,098	10
226	PS Elimination - Darnell Estates 7.PS05 ,, ,	$53,317	$131,011,415	10
227	PS Elimination - Darnell Estates 7.PS06 ,, ,	$27,203	$131,038,618	10
263	FM - Phoenix P.S - Relocate Boyd Acres Pump Station Discharge ,, ,	$434,330	$131,472,948	10
234	PS Improvements - Deschutes River X-ing 8.PS01 ,, ,	$0	$131,472,948	9.

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
4	CIP Project 2.1a4 - NI ,Shields and Freemont, CMH004190, CMH005427	$0	$131,472,948	8.
21	CIP Project 2.6a1 - NI ,12th Iowa to Vicksburg, CMH009265, CMH009286	$0	$131,472,948	8.
22	CIP Project 2.6a2 - NI ,12th Vicksburg to Trenton, CMH009286, CMH009285	$0	$131,472,948	8.
23	CIP Project 2.6b1 - NI ,12th Saginaw to Quincy, CMH009284, CMH009283	$0	$131,472,948	8.
24	CIP Project 2.6c1 - NI ,Quincy 12th to 11th South, CMH009282, CMH000642	$0	$131,472,948	8.
25	CIP Project 2.6d1 - NI ,11th south to Portland, CMH000642, CMH009280	$0	$131,472,948	8.
26	CIP Project 2.6e1 - NI ,Ogden 11th to 10th, CMH009275, CMH009264	$0	$131,472,948	8.
28	CIP Project 2.6f1 - NI ,11th Ogden to Newport, CMH009264, CMH008733	$0	$131,472,948	8.
31	CIP Project 2.8a1 - NI ,Hartford to Harmon, CMH008588, CMH008679	$0	$131,472,948	8.
35	CIP Project 2.8b3 - NI ,Harmon Galveston to Hartford, CMH008588, CMH008589	$0	$131,472,948	8.
42	CIP Project 2.10a3 - NI ,Awbrey to Newport, CMH008755, CMH008756	$0	$131,472,948	8.
44	CIP Project 2.12a1 - NI ,Scenic Heights Washington south, CMH002891, CMH002877	$0	$131,472,948	8.
45	CIP Project 2.12a2 - NI ,see above, ,	$0	$131,472,948	8.
46	CIP Project 2.12a3 - NI ,see above, ,	$0	$131,472,948	8.
69	CIP Project 3.3a2 - NI ,Athletic Club south 2, CMH000374, CMH000375	$0	$131,472,948	8.
73	CIP Project 3.3a6 - NI ,Athletic Club south 6, CMH009214, South to Pressure	$0	$131,472,948	8.
74	CIP Project 3.3a7 - NI ,Combined with 3.3a6 - 151 feet, ,	$0	$131,472,948	8.
85	CIP Project 3.3h1 - NI ,Columbia south of Simpson, CMH000408, CMH000407	$0	$131,472,948	8.
88	CIP Project 3.4a1 - NI ,Century north of Simpson, CMH008501, CMH008581	$0	$131,472,948	8.
89	CIP Project 3.5a1 - NI ,Discharge to Shevlin Park PS, CMH000214, CMH000271	$0	$131,472,948	8.
90	CIP Project 3.5b1 - NI ,Commerce Columbia to Allen, CMH008600, CMH008574	$0	$131,472,948	8.
91	CIP Project 3.6a1 - NI ,Skyliners at Mt Washington roundabout, CMH004453, CMH004447	$0	$131,472,948	8.
93	CIP Project 3.6a3 - NI ,Skyliners south Mt. Wash roundabout 2, CMH004447, CMH000995	$0	$131,472,948	8.
94	CIP Project 3.6a4 - NI ,Skyliners Mt Washingto north, CMH004453, CMH004454	$0	$131,472,948	8.
95	CIP Project 3.7a1 - NI ,Stannium 18th east, CMH003557, CMH003496	$0	$131,472,948	8.
96	CIP Project 3.8a1 - NI ,Golf Vil Loop south of Widgi Creek PS, CMH000821, CMH000863	$0	$131,472,948	8.
99	CIP Project 5.1a1 - NI ,Butler Mkt Boyd to Studio, CMH000327, CMH000328	$0	$131,472,948	8.
100	CIP Project 5.2a1 - NI ,3rd at Mt Washingto, CMH006524, CMH006525	$0	$131,472,948	8.
101	CIP Project 5.2a2 - NI ,Mt Washingto at 3rd, CMH007896, CMH006524	$0	$131,472,948	8.
102	CIP Project 5.2a3 - NI ,3rd at Riverhouse, CMH006525, CMH006526	$0	$131,472,948	8.
110	Existing Deficiency 5.4c1 - NI ,Town Logan east, CMH005494, CMH003162	$0	$131,472,948	8.

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
111	CIP Project 5.5a1 - NC ,Town west of Wishing Well, CMH003159, CMH009222	$0	$131,472,948	8.
112	CIP Project 5.6a1 - NC ,Purcell at Spinnaker, CMH002344, CMH002349	$0	$131,472,948	8.
115	Existing Deficiency 5.8a2 - NC ,Not considered, ,	$106,284	$131,579,231	8.
125	Existing Deficiency 6.3a1 - NC ,Not considered, ,	$188,373	$131,767,604	8.
126	Existing Deficiency 6.3a2 - NC ,Not considered, ,	$153,743	$131,921,348	8.
127	CIP Project 6.4a1 - NC ,Not considered, ,	$140,231	$132,061,578	8.
140	CIP Project 8.2b1 - NI ,3rd at Hwy 97 near Geary, CMH001629, CMH001798	$0	$132,061,578	8.
144	CIP Project 8.2e1 - NI ,Hwy 97 to Romaine 1, CMH001801, CMH001632	$0	$132,061,578	8.
147	CIP Project 8.3a2 - NI ,Angel Ct north, CMH006364, CMH001745	$0	$132,061,578	8.
150	CIP Project 8.4a3 - NI ,Division Hwy 97 south, CMH001785, CMH002496	$0	$132,061,578	8.
152	CIP Project 8.5a1 - NI ,Old Mill PS west, CLS000026, CMH000071	$0	$132,061,578	8.
153	CIP Project 8.6a1 - NI ,Wilson 6th east, CMH002499, CMH002593	$0	$132,061,578	8.
154	CIP Project 8.6a2 - NI ,Wilson Douglas to 6th, CMH002502, CMH002499	$0	$132,061,578	8.
157	CIP Project 8.9a1 - NC ,Not considered, ,	$106,725	$132,168,303	8.
158	CIP Project 8.10a1 - NC ,Not considered, ,	$24,005	$132,192,308	8.
159	CIP Project 9.1a1 - NI ,Bronzewood north at Valleywood 1, CMH002339, CMH002340	$0	$132,192,308	8.
160	CIP Project 9.1a2 - NI ,Bronzewood north at Valleywood 2, CMH002340, CMH002341	$0	$132,192,308	8.
161	CIP Project 9.1a3 - NI ,Bronzewood at Airpark, CMH002337, CMH002336	$0	$132,192,308	8.
179	CIP Project 9.4a3 - NI ,Cessna at Bear Creek to Pitts, CMH003209, CMH003213	$0	$132,192,308	8.
181	CIP Project 9.4a4 - NI ,South of Hwy 20 near Nates, CMH003129, CMH003137	$0	$132,192,308	8.
186	CIP Project 9.5a1 - NI ,Moody Park near Cliff 1, CMH002071, CMH002072	$0	$132,192,308	8.
187	CIP Project 9.5a2 - NI ,Moody Park near Cliff 2, CMH002072, CMH002093	$0	$132,192,308	8.
191	CIP Project 9.8a1 - NI ,Jackson Shadow Brook to Moonlight, CMH000696, CMH003056	$0	$132,192,308	8.
49	CIP Project 2.14a1 ,PS south, Awbrey PS, CMH001205	$0	$132,192,308	5.
51	CIP Project 2.14a2 ,Putnam Kirkaldy south 2, CMH001196, CMH001198	$0	$132,192,308	5.
52	CIP Project 2.14a3 ,Putnam Kirkaldy north, CMH001206, CMH001208	$0	$132,192,308	5.
53	CIP Project 2.14a4 ,Putnam South of PS, CMH001205, CMH001206	$0	$132,192,308	5.
220	PS Elimination - North Fire Station 5.PS06 ,, ,	$0	$132,192,308	1.
7	CIP Project 2.1c1 ,see above, CMH4179, CMH004181	$0	$132,192,308	0
9	CIP Project 2.1c2 - NI ,see above, CMH004193, CMH004179	$0	$132,192,308	0
34	CIP Project 2.8b2 ,see above, CMH008586, CMH008585	$0	$132,192,308	0

Attachment 5
Bend Sewer CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Total Benefit
50	,Putnam Kirkaldy south 1, CMH001208, CMH001196	$0	$132,192,308	0
54	,Putnam Fernie north, CMH001181, CMH001194	$0	$132,192,308	0
60	CIP Project 2.16a1 - NC ,No info, ,	$77,793	$132,270,101	0
61	CIP Project 2.17a1 - NC ,No info, ,	$136,614	$132,406,715	0
84	CIP Project 3.3g2 ,Columbia Emkay north 2, CMH000409, CMH000408	$0	$132,406,715	0
86	CIP Project 3.3h1 - NI ,Columbia Simpson north, CMH000399, CMH008026	$0	$132,406,715	0
97	CIP Project 3.9a1 - NC ,Not considered, ,	$59,698	$132,466,413	0
98	CIP Project 3.10a1 - NC ,Not considered, ,	$402,267	$132,868,679	0
113	CIP Project 5.7a1 - NC ,Not considered, ,	$774,381	$133,643,060	0
116	CIP Project 5.9a1 - NC ,Not considered, ,	$351,992	$133,995,052	0
121	Existing Deficiency 6.2a3 ,Olney Hwy 97 to 1st, CMH001294, CMH006510	$0	$133,995,052	0
128	CIP Project 6.5a1 - NC ,Not considered, ,	$117,876	$134,112,928	0
135	CIP Project 8.1c2 - NC ,Mahogany Honkers east, CMH005014, CMH001649	$0	$134,112,928	0
146	CIP Project 8.3a1 ,Angel Ct west, CMH006366, CMH006364	$0	$134,112,928	0
171	CIP Project 9.3c3 ,Dekalb east end of street, CMH002992, CMH002993	$0	$134,112,928	0
174	CIP Project 9.4a1 ,Hwy 20 Dean Swift west, CMH001391, CMH001394	$0	$134,112,928	0
175	CIP Project 9.4a1 ,South of Hwy 20 at Azure, CMH003129, CMH003131	$0	$134,112,928	0
177	CIP Project 9.4a2 ,Hwy 20 south at Azure, CMH001394, CMH001391	$0	$134,112,928	0
178	CIP Project 9.4a2 ,South of Hwy 20 near Nates, CMH003137, CMH003133	$0	$134,112,928	0
180	CIP Project 9.4a3 - NI ,North of Bear Creek at Teliman, CMH003130, CMH003133	$0	$134,112,928	0
182	CIP Project 9.4a4 - NI ,North of Bear Creek at Teliman, CMH003209, CMH003130	$0	$134,112,928	0
214	PS Elimination - Summer Meadows 4.PS12 - Removed ,, ,	$76,168	$134,189,096	0
215	PS Elimination - Summer Meadows 4.PS13 - Removed ,, ,	$27,203	$134,216,299	0
217	PS Elimination - Deschutes County Jail 5.PS03 - Removed ,, ,	$0	$134,216,299	0
240	PS Improvements - Parrell (new 8.PS08) - Removed ,, ,	$54,406	$134,270,704	0
244	PS Improvements - Wyndemere - New ,, ,	$0	$134,270,704	0
271	PS Elimination - Sunrise P.S -Relocate Discharge; New Gravity Solution - Duplicate ,, ,	$204,490	$134,475,194	0
276	SE Interceptor - South Village P.S -SE Interceptor Supplemental Project - Duplicate ,, ,	$55,770	$134,530,964	0
277	SE Interceptor - Sun Meadow P.S. -SE Interceptor Supplemental Project - Duplicate ,, ,	$845	$134,531,809	0
279	Westside PS REDUNDANT, DON'T SCORE ,, ,	$0	$134,531,809	0

Attachment 6
Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
167	CIP Project 9.3b1 ,Alden at Burnside, CMH002785, CMH002989	$11,009	$11,009	3153
208	PS Elimination - Holiday Inn 4.PS06 ,, ,	$10,881	$21,890	2778
202	PS Improvements - Widgi Creek 3.PS02 ,, ,	$16,322	$38,212	2317
192	CIP Project 9.8a2 ,Jackson Moonlight east, CMH003056, CMH007998	$19,824	$58,035	1991
229	PS Elimination - Desert Skies 7.PS08 ,, ,	$27,203	$85,238	1693
219	PS Elimination - Majestic 5.PS05 ,, ,	$27,203	$112,441	1413
223	PS Improvements - Nottingham #2 7.PS02 ,, ,	$33,187	$145,628	1397
206	PS Elimination - Highlands 4.PS04 ,, ,	$27,203	$172,831	1374
224	PS Elimination - Blue Ridge 7.PS03 ,, ,	$17,410	$190,241	1330
17	CIP Project 2.5c1 ,Milwaukee and 15th, CMH008698, CMH008697	$12,264	$202,505	1329
198	PS Improvements - Shevlin Meadows 2.PS05 ,, ,	$23,938	$226,443	1268
216	PS Improvements - Empire 5.PS02 ,, ,	$20,674	$247,117	1136
210	PS Elimination - Northpointe 4.PS08 ,, ,	$27,203	$274,320	1098
233	PS Elimination - Sun Meadows 7.PS12 ,, ,	$27,203	$301,523	1071
78	CIP Project 3.3d2 ,Reed Mkt / Mt. Bachelor roundabout, CMH004753, CMH000405	$24,871	$326,394	1058
200	PS Elimination - Awbrey Glen 2.PS07 ,, ,	$54,406	$380,800	1031
236	PS Improvements - River Rim 8.PS03 ,, ,	$46,789	$427,588	941
242	PS Elimination - Summit Park 9.PS02 ,, ,	$16,322	$443,910	917
109	Existing Deficiency 5.4b1 ,Fred Meyers Vogt to April Ann, CMH005864, CMH003148	$68,013	$511,923	865
225	PS Elimination - Blue Ridge 7.PS04 ,, ,	$27,203	$539,126	851
213	PS Elimination - Phoenix 4.PS11 ,, ,	$44,613	$583,738	833
204	PS Elimination - Boyd Acres 4.PS02 ,, ,	$27,203	$610,941	751
47	CIP Project 2.12a4 ,Scenic Heights east of Todds Crest, CMH002877, CMH002878	$28,316	$639,257	722
212	PS Elimination - North Wind 4.PS10 ,, ,	$27,203	$666,460	715
239	PS Elimination - South Village 8.PS07 ,, ,	$27,203	$693,663	595
122	Existing Deficiency 6.2a4 ,Wall Norton to Olney, CMH008452, CMH001295	$86,810	$780,473	570
124	Existing Deficiency 6.2b1 ,Olney 1st east, CMH006510, CMH007905	$88,453	$868,926	559
32	CIP Project 2.8b1 ,Harmon Hartford to Jacksonville, CMH008587, CMH008586	$55,055	$923,980	553
139	CIP Project 8.2a4 ,Mahogany Granite west, CMH001640, CMH001648	$98,670	$1,022,650	500
209	PS Elimination - Northpointe 4.PS07 ,, ,	$59,846	$1,082,496	499
235	PS Improvements - Old Mill 8.PS02 ,, ,	$74,536	$1,157,032	498
166	CIP Project 9.3a3 ,13th Bear Creek south, CMH002788, CMH002787	$69,936	$1,226,968	496
228	PS Elimination - Desert Skies 7.PS07 ,, ,	$93,578	$1,320,545	492
163	CIP Project 9.2a1 ,15th Ramsay south, CMH002763, CMH002764	$32,496	$1,353,041	489
183	CIP Project 9.4b1 ,Paula Purcell north, CMH002466, CMH002468	$83,927	$1,436,968	486
197	PS Improvements - Shevlin Meadows 2.PS04 ,, ,	$63,110	$1,500,079	481
207	PS Elimination - Holiday Inn 4.PS05 ,, ,	$65,287	$1,565,365	463
231	PS Elimination - Ridgewater #1 7.PS10 ,, ,	$27,203	$1,592,568	462
237	PS Improvements - Tri-Peaks 8.PS05 ,, ,	$27,203	$1,619,771	440

Attachment 6
Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
43	CIP Project 2.11a1 ,Steidl Gordon to Portland, CMH008979, CMH008727	$83,822	$1,703,593	425
196	PS Elimination - Shevlin Commons 1.PS04 ,, ,	$27,203	$1,730,796	401
227	PS Elimination - Darnell Estates 7.PS06 ,, ,	$27,203	$1,757,998	390
130	CIP Project 8.1a2 ,Amethyst Zircon east, CMH001644, CMH001643	$110,662	$1,868,660	383
194	CIP Project 9.8c1 ,Jackson Community to Daggett, CMH003483, CMH008021	$103,088	$1,971,748	383
148	CIP Project 8.4a1 ,Cleveland Pelton to Hwy 97, CMH001562, CMH001781	$39,271	$2,011,019	381
136	CIP Project 8.2a1 ,Crystal Lane, CMH001637, CMH001638	$113,031	$2,124,050	375
92	CIP Project 3.6a2 ,Skyliners south Mt. Wash roundabout 1, CMH000995, CMH000994	$57,215	$2,181,265	369
117	Existing Deficiency 6.1a1 ,Tumalo Broadway to Idaho, CMH008319, CMH008318	$56,829	$2,238,094	367
158	CIP Project 8.10a1 - NC ,Not considered, ,	$24,005	$2,262,099	361
16	CIP Project 2.5b1 ,Milwaukee and Stannium, CMH000358, CMH008698	$62,500	$2,324,599	344
129	CIP Project 8.1a1 ,Amethyst Brookswood to Zircon, CMH001646, CMH001644	$148,044	$2,472,643	333
151	CIP Project 8.4b1 ,Pelton McKinley south, CMH001569, CMH001561	$44,941	$2,517,584	333
77	CIP Project 3.3d1 ,Mt. Bachelor roundabout north, CMH000405, CMH000404	$81,845	$2,599,429	321
66	CIP Project 3.2b1 ,Mammoth east to Brookside, CMH000016, CMH000045	$39,903	$2,639,332	308
123	Existing Deficiency 6.2a5 ,Olney at Hwy 97, CMH003481, CMH001294	$163,837	$2,803,169	302
106	CIP Project 5.2b2 ,OB Riley at Sawyer PS, CMH006521, CMH006522	$92,050	$2,895,218	298
133	CIP Project 8.1c1 ,Mahogany Garnet to Springcrest, CMH001655, CMH001654	$142,544	$3,037,762	297
230	PS Elimination - Ridgewater #1 7.PS09 ,, ,	$42,436	$3,080,199	296
132	CIP Project 8.1b2 ,Amethyst Platinum west, CMH001642, CMH001643	$143,886	$3,224,085	295
165	CIP Project 9.3a2 ,Burnside 13th west, CMH002787, CMH002786	$118,383	$3,342,467	293
131	CIP Project 8.1b1 ,Amethyst Platinum to Garnet, CMH001642, CMH001641	$145,132	$3,487,599	292
211	PS Elimination - North Wind 4.PS09 ,, ,	$68,551	$3,556,150	283
41	CIP Project 2.10a2 ,Awbrey Rd 1st to Newport, CMH008754, CMH008755	$108,790	$3,664,940	280
193	CIP Project 9.8b1 ,Jackson Moonlight to Community, CMH000696, CMH003483	$168,133	$3,833,073	265
108	Existing Deficiency 5.4a1 ,Nels Anderson from Fred Meyers north to pressure, CMH005864, CMH003153	$244,611	$4,077,684	261
203	PS Elimination - Boyd Acres 4.PS01 ,, ,	$78,344	$4,156,028	261
72	CIP Project 3.3a5 ,Athletic Club south 5, CMH009211, CMH009214	$82,783	$4,238,811	255
64	CIP Project 3.2a1 ,Brookside west of Sleepy Ct., CMH004381, CMH004378	$49,183	$4,287,994	250
14	CIP Project 2.4a1 ,Stannium and 18th, CMH003495, CMH003493	$65,327	$4,353,321	249

Attachment 6
Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
201	PS Improvements - Sunrise Village #1 3.PS01 ,, ,	$79,976	$4,433,297	248
15	CIP Project 2.5a1 ,Stannium, CMH000359, CMH00358	$66,220	$4,499,517	246
119	Existing Deficiency 6.2a2 ,Wall Brooks Alley to Norton, CMH001306, CMH008452	$205,279	$4,704,796	241
238	PS Elimination - South Village 8.PS06 ,, ,	$68,551	$4,773,347	236
39	CIP Project 2.9a1 ,Columbia Harmon south, CMH008569, CMH008560	$130,863	$4,904,210	232
87	CIP Project 3.3h2 ,Simpson Columbia south, CMH000407, CMH000399	$93,138	$4,997,348	226
3	CIP Project 2.1a3 ,Freemont North of Shields, CMH005427, CMH004189	$72,827	$5,070,175	223
142	CIP Project 8.2d1 ,Hwy 97 to Romaine 2, CMH001632, CMH001633	$192,568	$5,262,743	220
76	CIP Project 3.3c1 ,Colorado Emkay north, CMH000400, CMH000415	$95,871	$5,358,614	220
118	Existing Deficiency 6.2a1 ,Brooks Alley Wall to Vermont, CMH001308, CMH001296	$261,502	$5,620,116	215
168	CIP Project 9.3c1 ,Hawthorned and 9th south, CMH002988, CMH002996	$197,364	$5,817,480	211
1	CIP Project 2.1a1 ,Shields North to Shevlin, CMH004188, CMH004178	$119,512	$5,936,992	209
70	CIP Project 3.3a3 ,Athletic Club south 3, CMH000375, CMH009209	$101,694	$6,038,686	207
226	PS Elimination - Darnell Estates 7.PS05 ,, ,	$53,317	$6,092,003	199
2	CIP Project 2.1a2 ,Freemont North of Shields, CMH004189, CMH004188	$83,957	$6,175,960	194
164	CIP Project 9.3a1 ,Burnside Alden east, CMH002785, CMH002786	$180,473	$6,356,434	192
269	PS Elimination - Pioneer Pump Station -Relocate Fairfield Inn Gravity Sewer; Downsize Pump Station ,, ,	$321,100	$6,677,534	183
162	CIP Project 9.1b1 ,Wildcat south end to east, CMH002761, CMH002342	$77,037	$6,754,571	183
68	CIP Project 3.3a1 ,Athletic Club south 1, CMH000373, CMH000374	$116,318	$6,870,888	181
149	CIP Project 8.4a2 ,Cleveland across Hwy 97, CMH001781, CMH001785	$84,636	$6,955,524	176
241	PS Elimination - Summit Park 9.PS01 ,, ,	$85,417	$7,040,941	175
37	CIP Project 2.8c2 ,Harmon Nashville North, CMH008579, CMH008568	$176,523	$7,217,464	172
11	CIP Project 2.2a1 ,Shevlin Park East, CMH008748, CMH003915	$95,583	$7,313,047	170
267	PS Improvements - Enchantment @ Deschutes P.S. -Wetwell Modification ,, ,	$270,400	$7,583,447	166
137	CIP Project 8.2a2 ,Mahogany to Crystal Lane, CMH001631, CMH001638	$311,211	$7,894,658	153
33	CIP Project 2.8b2 ,Harmon - 2 sections, CMH008587, CMH008588	$199,874	$8,094,533	152
156	CIP Project 8.8a1 - NC ,Not considered, ,	$91,648	$8,186,180	151
274	SE Interceptor - Quail Ridge 1&2 P.S. -SE Interceptor Supplemental Project ,, ,	$363,350	$8,549,530	145
10	CIP Project 2.1c3 ,Lehmi Pass, CMH004192, CMH004193	$114,228	$8,663,759	142
83	CIP Project 3.3g2 ,Columbia Colorado to Emkay, CMH000413, CMH000411	$197,911	$8,861,669	141
13	CIP Project 2.3a1 ,Newport at College, CMH008742, CMH008741	$116,442	$8,978,111	140

Attachment 6
Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
82	CIP Project 3.3g1 ,Columbia Emkay north 1, CMH000411, CMH000409	$151,281	$9,129,392	139
143	CIP Project 8.2d2 ,Hwy 97 to Romaine 3, CMH001633, CMH001634	$305,848	$9,435,240	138
75	CIP Project 3.3b1 ,Athletic Club north to roundabout, CMH00371, CMH004754	$202,310	$9,637,550	138
195	PS Elimination - Shevlin Commons 1.PS03 ,, ,	$78,888	$9,716,438	138
81	CIP Project 3.3f1 ,Colorado near Emkay north, CMH000415, CMH000416	$204,625	$9,921,063	137
266	GM - Brooks Alley Sewer -North of Newport - Replace/Relocate Gravity Main ,, ,	$316,030	$10,237,093	136
278	SE Interceptor - Fox borough P.S. -SE Interceptor Supplemental Project	$267,020	$10,504,113	135
221	PS Improvements - Drake Pump Station 6.PS01 ,, ,	$410,218	$10,914,331	135
63	CIP Project 3.1a2 ,Metolius northern edge, CMH000900, CMH000901	$133,142	$11,047,473	135
104	CIP Project 5.2a5 ,OB Riley 3rd north, CMH006529, CMH006530	$208,915	$11,256,388	131
232	PS Elimination - Sun Meadows 7.PS11 ,, ,	$221,975	$11,478,363	131
105	CIP Project 5.2b1 ,OB Riley south of Sawyer PS, CMH006519, CMH006521	$215,929	$11,694,291	127
120	Existing Deficiency 6.2a3 ,Olney Wall to Hwy 97, CMH001295, CMH003481	$391,868	$12,086,160	126
218	PS Elimination - Majestic 5.PS04 ,, ,	$305,759	$12,391,919	125
172	CIP Project 9.3c4 ,10th Bear Creek to Alden, CMH002992, CMH002989	$277,552	$12,669,471	125
138	CIP Project 8.2a3 ,Crystal Lane east, CMH001637, CMH001634	$345,226	$13,014,698	122
145	CIP Project 8.3a1 ,Angel Ct west to Brosterhous, CMH001745, CMH002311	$156,425	$13,171,123	117
12	CIP Project 2.2b1 ,Shevlin Park West, CMH008748, CMH008750	$140,897	$13,312,020	115
38	CIP Project 2.8c3 ,Harmon to Newport, CMH008568, CMH008729	$265,391	$13,577,411	114
67	CIP Project 3.2c1 ,Mammoth August to Sunrise PS, CMH008454, Sunrise PS	$155,808	$13,733,219	112
155	Existing Deficiency 8.7a1 ,Alden east to Glenwood, CMH008199, CMH008201	$135,997	$13,869,216	110
71	CIP Project 3.3a4 ,Athletic Club south 4, CMH009209, CMH009211	$199,015	$14,068,231	106
20	CIP Project 2.5f1 ,Union to Newport, CMH008719, CMH008732	$160,567	$14,228,799	101
189	CIP Project 9.6a1 ,Neil north, CMH008004, CMH008002	$147,582	$14,376,381	99
141	CIP Project 8.2c1 ,3rd near Geary to Pinebrook, CMH001629, CMH003638	$500,796	$14,877,177	98
273	SE Interceptor - The Pines 5, 6 & 7 P.S. -SE Interceptor Supplemental Project ,, ,	$544,180	$15,421,357	96
251	North Interceptor Deschutes River Force main ,, ,	$255,970	$15,677,327	95
114	Existing Deficiency 5.8a1 - NC ,Not considered, ,	$146,120	$15,823,447	95
205	PS Elimination - Highlands 4.PS03 ,, ,	$427,628	$16,251,075	87
115	Existing Deficiency 5.8a2 - NC ,Not considered, ,	$106,284	$16,357,359	81
157	CIP Project 8.9a1 - NC ,Not considered, ,	$106,725	$16,464,084	81
19	CIP Project 2.5e1 ,Milwaukee 12th to Union, CMH008694, CMH008719	$205,599	$16,669,683	79

Attachment 6
Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
79	CIP Project 3.3e1 ,Colorado Emkay south, CMH000400, CMH000402	$276,193	$16,945,876	76
30	CIP Project 2.7a2 ,Newport 5th to 3rd, CMH008728, CMH008758	$375,462	$17,321,339	74
36	CIP Project 2.8c1 ,Harmon Kingston to Nashville, CMH008585, CMH008589	$415,612	$17,736,951	73
80	CIP Project 3.3e2 ,Mt. Bachelor near Century north, CMH000402, CMH000404	$297,852	$18,034,803	70
258	SE Interceptor Parrell to 3rd Street ,, ,	$1,250,000	$19,284,803	70
275	SE Interceptor - Stone Haven P.S -SE Interceptor Supplemental Project ,, ,	$288,990	$19,573,793	69
6	CIP Project 2.1c1 ,2 sections, CMH004193, CMH004192	$241,591	$19,815,384	67
40	CIP Project 2.10a1 ,Portland Awbrey to 1st, CMH008749, CMH008738	$452,463	$20,267,847	67
176	CIP Project 9.4a2 ,Hwy 20 Dean Swift east, CMH001391, CMH002678	$537,105	$20,804,952	66
170	CIP Project 9.3c3 ,9th Franklin north, CMH002995, CMH002996	$547,832	$21,352,784	63
65	CIP Project 3.2a2 ,Brookside by Sleepy Ct., CMH004381, CMH004383	$196,423	$21,549,207	62
127	CIP Project 6.4a1 - NC ,Not considered, ,	$140,231	$21,689,438	61
62	CIP Project 3.1a1 ,Blue Lake to Metolius, CMH000900, CMH000899	$297,560	$21,986,998	60
5	CIP Project 2.1b1 ,Freemont South of Shields, CMH004190, CMH004192	$273,317	$22,260,315	59
29	CIP Project 2.7a1 ,Newport Harmon to 5th, CMH008729, CMH008728	$476,067	$22,736,383	58
126	Existing Deficiency 6.3a2 - NC ,Not considered, ,	$153,743	$22,890,126	56
173	CIP Project 9.4a1 ,Purcell Paula to Hwy 20, CMH002466, CMH002678	$773,631	$23,663,757	52
18	CIP Project 2.5d1 ,Milwaukee 15th to 12th, CMH008697, CMH008694	$319,055	$23,982,812	51
272	SE Interceptor - The Shire -Abandon Wetwell; Gravity Solution ,, ,	$735,150	$24,717,962	49
125	Existing Deficiency 6.3a1 - NC ,Not considered, ,	$188,373	$24,906,334	46
169	CIP Project 9.3c2 ,Franklin east then south, CMH002995, CMH002993	$824,418	$25,730,753	42
103	CIP Project 5.2a4 ,3rd Riverhouse to OB Riley, CMH006526, CMH006529	$691,160	$26,421,913	39
222	PS Improvements - Addison Pump Station 6.PS02 ,, ,	$1,504,858	$27,926,771	37
248	North Interceptor Juniper Ridge to Hwy 97 ,, ,	$2,163,572	$30,090,343	36
199	PS Elimination - Awbrey Glen 2.PS06 ,, ,	$1,559,264	$31,649,606	35
264	GM - 20"Clay Line -8th & Ravenwood to Al Moody Park - Relocate Sewer Services; Rehab Oversized Pipe ,, ,	$1,215,110	$32,864,716	33
134	CIP Project 8.1c2 - NC ,Mahogany Springcrest east, CMH001654, CMH001652	$469,652	$33,334,369	29
259	Westside Interceptor Westside Force main ,, ,	$2,501,131	$35,835,500	26
263	FM - Phoenix P.S - Relocate Boyd Acres Pump Station Discharge ,, ,	$434,330	$36,269,830	24
265	GM - Old Mill Sewer -SW Mill A - Replace Gravity Main ,, ,	$1,542,970	$37,812,800	23
261	AIR - Airport line - Replace/Rehab Gravity System ,, ,	$1,051,180	$38,863,980	23
270	PS Improvements - Cornell Four -Updgrade Pump Stations ,, ,	$1,723,800	$40,587,780	23
245	Plant Interceptor WWTP Siphon ,, ,	$2,938,272	$43,526,052	20

Attachment 6
Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
252	North Interceptor Pump Station2 ,, ,	$1,254,494	$44,780,546	19
107	CIP Project 5.3a1 ,3rd Mervin Samples to Hwy 20, CMH000002, CMH003158	$1,040,894	$45,821,440	18
253	SE Interceptor NUID to Wells Acres ,, ,	$6,480,000	$52,301,440	13
262	AIR - Airport PS and FM - Review Pump Station & Discharge Line Capacity ,, ,	$1,419,600	$53,721,040	13
246	Plant Interceptor North Trunk Junction to Siphon ,, ,	$4,638,324	$58,359,363	13
257	SE Interceptor Ferguson to Brosterhous ,, ,	$7,040,000	$65,399,363	12
243	PS Improvements - Westside ,, ,	$5,079,848	$70,479,211	12
255	SE Interceptor Hwy 20 to Reed Market Rd (15-20' depth) ,, ,	$7,840,000	$78,319,211	11
247	North Interceptor Plant Interceptor to Hwy 97 ,, ,	$7,185,976	$85,505,187	10
254	SE Interceptor Wells Acres to Hwy 20 ,, ,	$8,620,000	$94,125,187	10
268	PS Improvements - Awbrey Glen P.S. -Upgrade Pump Station ,, ,	$5,560,100	$99,685,287	10
256	SE Interceptor Reed Market Rd to Ferguson ,, ,	$9,720,000	$109,405,287	9
260	Westside Interceptor Gravity Interceptor ,, ,	$9,093,295	$118,498,582	8
250	North Interceptor Deshhutes River to Shevlin Park ,, ,	$5,831,076	$124,329,658	4
249	North Interceptor Hwy 97 to Deschutes River ,, ,	$7,862,650	$132,192,308	3
4	CIP Project 2.1a4 - NI ,Shields and Freemont, CMH004190, CMH005427	$0	$132,192,308	0
7	CIP Project 2.1c1 ,see above, CMH4179, CMH004181	$0	$132,192,308	0
8	CIP Project 2.1c2 - NI ,2 sections, CMH004147, CMH004181	$0	$132,192,308	0
9	CIP Project 2.1c2 - NI ,see above, CMH004193, CMH004179	$0	$132,192,308	0
21	CIP Project 2.6a1 - NI ,12th Iowa to Vicksburg, CMH009265, CMH009286	$0	$132,192,308	0
22	CIP Project 2.6a2 - NI ,12th Vicksburg to Trenton, CMH009286, CMH009285	$0	$132,192,308	0
23	CIP Project 2.6b1 - NI ,12th Saginaw to Quincy, CMH009284, CMH009283	$0	$132,192,308	0
24	CIP Project 2.6c1 - NI ,Quincy 12th to 11th South, CMH009282, CMH000642	$0	$132,192,308	0
25	CIP Project 2.6d1 - NI ,11th south to Portland, CMH000642, CMH009280	$0	$132,192,308	0
26	CIP Project 2.6e1 - NI ,Ogden 11th to 10th, CMH009275, CMH009264	$0	$132,192,308	0
27	CIP Project 2.6e2 - NI ,11th Portland to Ogden, CMH009280, CMH009275	$0	$132,192,308	0
28	CIP Project 2.6f1 - NI ,11th Ogden to Newport, CMH009264, CMH008733	$0	$132,192,308	0
31	CIP Project 2.8a1 - NI ,Hartford to Harmon, CMH008588, CMH008679	$0	$132,192,308	0
34	CIP Project 2.8b2 ,see above, CMH008586, CMH008585	$0	$132,192,308	0
35	CIP Project 2.8b3 - NI ,Harmon Galveston to Hartford, CMH008588, CMH008589	$0	$132,192,308	0
42	CIP Project 2.10a3 - NI ,Awbrey to Newport, CMH008755, CMH008756	$0	$132,192,308	0
44	CIP Project 2.12a1 - NI ,Scenic Heights Washington south, CMH002891, CMH002877	$0	$132,192,308	0

Attachment 6
Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
45	CIP Project 2.12a2 - NI ,see above, ,	$0	$132,192,308	0
46	CIP Project 2.12a3 - NI ,see above, ,	$0	$132,192,308	0
48	CIP Project 2.13a1 - NI ,Mt Washington south of Links, CMH002875, CMH002886	$0	$132,192,308	0
49	CIP Project 2.14a1 ,PS south, Awbrey PS, CMH001205	$0	$132,192,308	0
50	,Putnam Kirkaldy south 1, CMH001208, CMH001196	$0	$132,192,308	0
51	CIP Project 2.14a2 ,Putnam Kirkaldy south 2, CMH001196, CMH001198	$0	$132,192,308	0
52	CIP Project 2.14a3 ,Putnam Kirkaldy north, CMH001206, CMH001208	$0	$132,192,308	0
53	CIP Project 2.14a4 ,Putnam South of PS, CMH001205, CMH001206	$0	$132,192,308	0
54	,Putnam Fernie north, CMH001181, CMH001194	$0	$132,192,308	0
55	CIP Project 2.15a1 ,Marken Scandia south, CMH002697, CMH002698	$0	$132,192,308	0
56	CIP Project 2.15a2 ,Marken Nordeen to Scandia, CMH000341, CMH002697	$0	$132,192,308	0
57	CIP Project 2.15b1 ,Marken Roberts Way north, CMH002698, CMH002693	$0	$132,192,308	0
58	CIP Project 2.15c1 ,Marken Roberts Way south, CMH002693, CMH002682	$0	$132,192,308	0
59	CIP Project 2.15d1 ,Marken Shevlin north, CMH002682, CMH002683	$0	$132,192,308	0
60	CIP Project 2.16a1 - NC ,No info, ,	$77,793	$132,270,101	0
61	CIP Project 2.17a1 - NC ,No info, ,	$136,614	$132,406,715	0
69	CIP Project 3.3a2 - NI ,Athletic Club south 2, CMH000374, CMH000375	$0	$132,406,715	0
73	CIP Project 3.3a6 - NI ,Athletic Club south 6, CMH009214, South to Pressure	$0	$132,406,715	0
74	CIP Project 3.3a7 - NI ,Combined with 3.3a6 - 151 feet, ,	$0	$132,406,715	0
84	CIP Project 3.3g2 ,Columbia Emkay north 2, CMH000409, CMH000408	$0	$132,406,715	0
85	CIP Project 3.3h1 - NI ,Columbia south of Simpson, CMH000408, CMH000407	$0	$132,406,715	0
86	CIP Project 3.3h1 - NI ,Columbia Simpson north, CMH000399, CMH008026	$0	$132,406,715	0
88	CIP Project 3.4a1 - NI ,Century north of Simpson, CMH008501, CMH008581	$0	$132,406,715	0
89	CIP Project 3.5a1 - NI ,Discharge to Shevlin Park PS, CMH000214, CMH000271	$0	$132,406,715	0
90	CIP Project 3.5b1 - NI ,Commerce Columbia to Allen, CMH008600, CMH008574	$0	$132,406,715	0
91	CIP Project 3.6a1 - NI ,Skyliners at Mt Washington roundabout, CMH004453, CMH004447	$0	$132,406,715	0
93	CIP Project 3.6a3 - NI ,Skyliners south Mt. Wash roundabout 2, CMH004447, CMH000995	$0	$132,406,715	0
94	CIP Project 3.6a4 - NI ,Skyliners Mt Washingto north, CMH004453, CMH004454	$0	$132,406,715	0

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Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
95	CIP Project 3.7a1 - NI ,Stannium 18th east, CMH003557, CMH003496	$0	$132,406,715	0
96	CIP Project 3.8a1 - NI ,Golf Vil Loop south of Widgi Creek PS, CMH000821, CMH000863	$0	$132,406,715	0
97	CIP Project 3.9a1 - NC ,Not considered, ,	$59,698	$132,466,413	0
98	CIP Project 3.10a1 - NC ,Not considered, ,	$402,267	$132,868,679	0
99	CIP Project 5.1a1 - NI ,Butler Mkt Boyd to Studio, CMH000327, CMH000328	$0	$132,868,679	0
100	CIP Project 5.2a1 - NI ,3rd at Mt Washingto, CMH006524, CMH006525	$0	$132,868,679	0
101	CIP Project 5.2a2 - NI ,Mt Washingto at 3rd, CMH007896, CMH006524	$0	$132,868,679	0
102	CIP Project 5.2a3 - NI ,3rd at Riverhouse, CMH006525, CMH006526	$0	$132,868,679	0
110	Existing Deficiency 5.4c1 - NI ,Town Logan east, CMH005494, CMH003162	$0	$132,868,679	0
111	CIP Project 5.5a1 - NC ,Town west of Wishing Well, CMH003159, CMH009222	$0	$132,868,679	0
112	CIP Project 5.6a1 - NC ,Purcell at Spinnaker, CMH002344, CMH002349	$0	$132,868,679	0
113	CIP Project 5.7a1 - NC ,Not considered, ,	$774,381	$133,643,060	0
116	CIP Project 5.9a1 - NC ,Not considered, ,	$351,992	$133,995,052	0
121	Existing Deficiency 6.2a3 ,Olney Hwy 97 to 1st, CMH001294, CMH006510	$0	$133,995,052	0
128	CIP Project 6.5a1 - NC ,Not considered, ,	$117,876	$134,112,928	0
135	CIP Project 8.1c2 - NC ,Mahogany Honkers east, CMH005014, CMH001649	$0	$134,112,928	0
140	CIP Project 8.2b1 - NI ,3rd at Hwy 97 near Geary, CMH001629, CMH001798	$0	$134,112,928	0
144	CIP Project 8.2e1 - NI ,Hwy 97 to Romaine 1, CMH001801, CMH001632	$0	$134,112,928	0
146	CIP Project 8.3a1 ,Angel Ct west, CMH006366, CMH006364	$0	$134,112,928	0
147	CIP Project 8.3a2 - NI ,Angel Ct north, CMH006364, CMH001745	$0	$134,112,928	0
150	CIP Project 8.4a3 - NI ,Division Hwy 97 south, CMH001785, CMH002496	$0	$134,112,928	0
152	CIP Project 8.5a1 - NI ,Old Mill PS west, CLS000026, CMH000071	$0	$134,112,928	0
153	CIP Project 8.6a1 - NI ,Wilson 6th east, CMH002499, CMH002593	$0	$134,112,928	0
154	CIP Project 8.6a2 - NI ,Wilson Douglas to 6th, CMH002502, CMH002499	$0	$134,112,928	0
159	CIP Project 9.1a1 - NI ,Bronzewood north at Valleywood 1, CMH002339, CMH002340	$0	$134,112,928	0
160	CIP Project 9.1a2 - NI ,Bronzewood north at Valleywood 2, CMH002340, CMH002341	$0	$134,112,928	0
161	CIP Project 9.1a3 - NI ,Bronzewood at Airpark, CMH002337, CMH002336	$0	$134,112,928	0
171	CIP Project 9.3c3 ,Dekalb east end of street, CMH002992, CMH002993	$0	$134,112,928	0

Attachment 6
Bend Sewer CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Benefit/Cost Score
174	CIP Project 9.4a1 ,Hwy 20 Dean Swift west, CMH001391, CMH001394	$0	$134,112,928	0
175	CIP Project 9.4a1 ,South of Hwy 20 at Azure, CMH003129, CMH003131	$0	$134,112,928	0
177	CIP Project 9.4a2 ,Hwy 20 south at Azure, CMH001394, CMH001391	$0	$134,112,928	0
178	CIP Project 9.4a2 ,South of Hwy 20 near Nates, CMH003137, CMH003133	$0	$134,112,928	0
179	CIP Project 9.4a3 - NI ,Cessna at Bear Creek to Pitts, CMH003209, CMH003213	$0	$134,112,928	0
180	CIP Project 9.4a3 - NI ,North of Bear Creek at Teliman, CMH003130, CMH003133	$0	$134,112,928	0
181	CIP Project 9.4a4 - NI ,South of Hwy 20 near Nates, CMH003129, CMH003137	$0	$134,112,928	0
182	CIP Project 9.4a4 - NI ,North of Bear Creek at Teliman, CMH003209, CMH003130	$0	$134,112,928	0
184	CIP Project 9.4c1 - NI ,Purcell Donegon south, CMH002469, CMH002468	$0	$134,112,928	0
185	CIP Project 9.4d1 - NI ,Paula Sharkey south, CMH002589, CMH002470	$0	$134,112,928	0
186	CIP Project 9.5a1 - NI ,Moody Park near Cliff 1, CMH002071, CMH002072	$0	$134,112,928	0
187	CIP Project 9.5a2 - NI ,Moody Park near Cliff 2, CMH002072, CMH002093	$0	$134,112,928	0
188	CIP Project 9.5b1 - NI ,Moody Park east of Blueberry, CMH009320, CMH002068	$0	$134,112,928	0
190	CIP Project 9.7a1 - NI ,Rosemary Buckwheat to Iris, CMH003560, CMH002921	$0	$134,112,928	0
191	CIP Project 9.8a1 - NI ,Jackson Shadow Brook to Moonlight, CMH000696, CMH003056	$0	$134,112,928	0
214	PS Elimination - Summer Meadows 4.PS12 - Removed ,, ,	$76,168	$134,189,096	0
215	PS Elimination - Summer Meadows 4.PS13 - Removed ,, ,	$27,203	$134,216,299	0
217	PS Elimination - Deschutes County Jail 5.PS03 - Removed ,, ,	$0	$134,216,299	0
220	PS Elimination - North Fire Station 5.PS06 ,, ,	$0	$134,216,299	0
234	PS Improvements - Deschutes River X-ing 8.PS01 ,, ,	$0	$134,216,299	0
240	PS Improvements - Parrell (new 8.PS08) - Removed ,, ,	$54,406	$134,270,704	0
244	PS Improvements - Wyndemere - New ,, ,	$0	$134,270,704	0
271	PS Elimination - Sunrise P.S -Relocate Discharge; New Gravity Solution - Duplicate ,, ,	$204,490	$134,475,194	0
276	SE Interceptor - South Village P.S -SE Interceptor Supplemental Project - Duplicate ,, ,	$55,770	$134,530,964	0
277	SE Interceptor - Sun Meadow P.S. -SE Interceptor Supplemental Project - Duplicate ,, ,	$845	$134,531,809	0
279	Westside PS REDUNDANT, DON'T SCORE ,, ,	$0	$134,531,809	0

Draft Implementation Plan	21-Feb-11				
Bend Collection System CIP					
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Project Number	Project Name	Capital Cost	Cumulative cost	Total Benefit from Calculation	Benefit-Cost Ratio
Group A: Implement Immediately					
108	Existing Deficiency 5.4a1 ,Nels Anderson from Fred Meyers north to pressure, CMH005864, CMH003153	$ 244,611	$ 244,611	64	262
109	Existing Deficiency 5.4b1 ,Fred Meyers Vogt to April Ann, CMH005864, CMH003148	$ 68,013	$ 312,624	59	865
117	Existing Deficiency 6.1a1 ,Tumalo Broadway to Idaho, CMH008319, CMH008318	$ 56,829	$ 369,453	21	367
118	Existing Deficiency 6.2a1 ,Brooks Alley Wall to Vermont, CMH001308, CMH001296	$ 261,502	$ 630,955	56	216
119	Existing Deficiency 6.2a2 ,Wall Brooks Alley to Norton, CMH001306, CMH008452	$ 205,279	$ 836,235	50	241
120	Existing Deficiency 6.2a3 ,Olney Wall to Hwy 97, CMH001295, CMH003481	$ 391,868	$ 1,228,103	50	126
121	Existing Deficiency 6.2a3 ,Olney Hwy 97 to 1st, CMH001294, CMH006510	$ -	$ 836,235	0	0
122	Existing Deficiency 6.2a4 ,Wall Norton to Olney, CMH008452, CMH001295	$ 86,810	$ 1,314,913	50	570
123	Existing Deficiency 6.2a5 ,Olney at Hwy 97, CMH003481, CMH001294	$ 163,837	$ 1,478,749	50	302
124	Existing Deficiency 6.2b1 ,Olney 1st east, CMH006510, CMH007905	$ 88,453	$ 1,567,202	50	560
155	Existing Deficiency 8.7a1 ,Alden east to Glenwood, CMH008199, CMH008201	$ 135,997	$ 1,703,200	15	110
Group B: Implement in 5 year CIP					
253	SE Interceptor NUID to Wells Acres ,, ,	$ 6,480,000	$ 8,183,200	88	14
257	SE Interceptor Ferguson to Brosterhous ,, ,	$ 7,040,000	$ 15,223,200	88	13
270	PS Improvements - Cornell Four -Updgrade Pump Stations ,, ,	$ 1,723,800	$ 16,947,000	40	23
267	PS Improvements - Enchantment @ Deschutes P.S. -Wetwell Modification ,, ,	$ 270,400	$ 17,217,400	45	166
241	PS Elimination - Summit Park 9.PS01 ,, , SE Interceptor Supplemental Project	$ 85,417	$ 17,302,816	15	175
242	PS Elimination - Summit Park 9.PS02 ,, , SE Interceptor Supplemental Project	$ 16,322	$ 17,319,138	15	917
254	SE Interceptor Wells Acres to Hwy 20 ,, ,	$ 8,620,000	$ 25,939,138	88	10
255	SE Interceptor Hwy 20 to Reed Market Rd (15-20' depth) ,, ,	$ 7,840,000	$ 33,779,138	88	11
256	SE Interceptor Reed Market Rd to Ferguson ,, ,	$ 9,720,000	$ 43,499,138	88	9
258	SE Interceptor Parrell to 3rd Street ,, ,	$ 1,250,000	$ 44,749,138	88	71
230	PS Elimination - Ridgewater #1 7.PS09 ,, , SE Interceptor Supplemental Project	$ 42,436	$ 44,791,574	13	297
231	PS Elimination - Ridgewater #1 7.PS10 ,, , SE Interceptor Supplemental Project	$ 27,203	$ 44,818,777	13	463
232	PS Elimination - Sun Meadows 7.PS11 ,, , SE Interceptor Supplemental Project	$ 221,975	$ 45,040,752	29	131
233	PS Elimination - Sun Meadows 7.PS12 ,, , SE Interceptor Supplemental Project	$ 27,203	$ 45,067,955	29	1071
238	PS Elimination - South Village 8.PS06 ,, , SE Interceptor Supplemental Project	$ 68,551	$ 45,136,506	16	236
239	PS Elimination - South Village 8.PS07 ,, , SE Interceptor Supplemental Project	$ 27,203	$ 45,163,709	16	596
226	PS Elimination - Darnell Estates 7.PS05 ,, , SE Interceptor Supplemental Project	$ 53,317	$ 45,217,026	11	199
227	PS Elimination - Darnell Estates 7.PS06 ,, , SE Interceptor Supplemental Project	$ 27,203	$ 45,244,229	11	391
273	SE Interceptor - The Pines 5, 6 & 7 P.S. -SE Interceptor Supplemental Project ,, ,	$ 544,180	$ 45,788,409	53	97
274	SE Interceptor - Quail Ridge 1&2 P.S. -SE Interceptor Supplemental Project ,, ,	$ 363,350	$ 46,151,759	53	145
275	SE Interceptor - Stone Haven P.S -SE Interceptor Supplemental Project ,, ,	$ 288,990	$ 46,440,749	20	69
223	PS Improvements - Nottingham #2 7.PS02 ,, , SE Interceptor Supplemental Project	$ 33,187	$ 46,473,936	46	1397
223	PS Improvements - Nottingham #2 7.PS02 ,, ,	$ 33,187	$ 46,507,124	46	1397
228	PS Elimination - Desert Skies 7.PS07 ,, , SE Interceptor Supplemental Project	$ 93,578	$ 46,600,701	46	492
229	PS Elimination - Desert Skies 7.PS08 ,, , SE Interceptor Supplemental Project	$ 27,203	$ 46,627,904	46	1694
264	GM - 20"Clay Line -8th & Ravenwood to Al Moody Park - Relocate Sewer Services; Rehab Oversized Pipe ,, ,	$ 1,215,110	$ 47,843,014	41	33
Group C: Implement in 6-10 year CIP					
247	North Interceptor Plant Interceptor to Hwy 97 ,, ,	$ 7,185,976	$ 55,028,990	79	11
248	North Interceptor Juniper Ridge to Hwy 97 ,, ,	$ 2,163,572	$ 57,192,562	79	36
260	Westside Interceptor Gravity Interceptor ,, ,	$ 9,093,295	$ 66,285,857	74	8
259	Westside Interceptor Westside Force main ,, ,	$ 2,501,131	$ 68,786,988	65	26
245	Plant Interceptor WWTP Siphon ,, ,	$ 2,938,272	$ 71,725,260	60	21
246	Plant Interceptor North Trunk Junction to Siphon ,, ,	$ 4,638,324	$ 76,363,584	60	13
243	PS Improvements - Westside ,, ,	$ 5,079,848	$ 81,443,431	64	13
269	PS Elimination - Pioneer Pump Station -Relocate Fairfield Inn Gravity Sewer; Downsize Pump Station ,, ,	$ 321,100	$ 81,764,531	59	183
199	PS Elimination - Awbrey Glen 2.PS06 ,, ,	$ 1,559,264	$ 83,323,795	56	36
200	PS Elimination - Awbrey Glen 2.PS07 ,, ,	$ 54,406	$ 83,378,200	56	1032
268	PS Improvements - Awbrey Glen P.S. -Upgrade Pump Station ,, ,	$ 5,560,100	$ 88,938,300	56	10
222	PS Improvements - Addison Pump Station 6.PS02 ,, ,	$ 1,504,858	$ 90,443,158	56	37
221	PS Improvements - Drake Pump Station 6.PS01 ,, ,	$ 410,218	$ 90,853,376	55	135
266	GM - Brooks Alley Sewer -North of Newport - Replace/Relocate Gravity Main ,, ,	$ 316,030	$ 91,169,406	43	137
265	GM - Old Mill Sewer -SW Mill A - Replace Gravity Main ,, ,	$ 1,542,970	$ 92,712,376	36	24
Group D: Implement Beyond 10 year CIP					
129	CIP Project 8.1a1 ,Amethyst Brookswood to Zircon, CMH001646, CMH001644	$ 148,044	$ 92,860,420	49	334
139	CIP Project 8.2a4 ,Mahogany Granite west, CMH001640, CMH001648	$ 98,670	$ 92,959,090	49	501
141	CIP Project 8.2c1 ,3rd near Geary to Pinebrook, CMH001629, CMH003638	$ 500,796	$ 93,459,886	49	99
137	CIP Project 8.2a2 ,Mahogany to Crystal Lane, CMH001631, CMH001638	$ 311,211	$ 93,771,097	48	153
193	CIP Project 9.8b1 ,Jackson Moonlight to Community, CMH000696, CMH003483	$ 168,133	$ 93,939,230	45	266
236	PS Improvements - River Rim 8.PS03 ,, ,	$ 46,789	$ 93,986,018	44	941
130	CIP Project 8.1a2 ,Amethyst Zircon east, CMH001644, CMH001643	$ 110,662	$ 94,096,680	42	384
131	CIP Project 8.1b1 ,Amethyst Platinum to Garnet, CMH001642, CMH001641	$ 145,132	$ 94,241,812	42	293
132	CIP Project 8.1b2 ,Amethyst Platinum west, CMH001642, CMH001643	$ 143,886	$ 94,385,698	42	295
133	CIP Project 8.1c1 ,Mahogany Garnet to Springcrest, CMH001655, CMH001654	$ 142,544	$ 94,528,242	42	298
136	CIP Project 8.2a1 ,Crystal Lane, CMH001637, CMH001638	$ 113,031	$ 94,641,273	42	376
138	CIP Project 8.2a3 ,Crystal Lane east, CMH001637, CMH001634	$ 345,226	$ 94,986,500	42	123
142	CIP Project 8.2d1 ,Hwy 97 to Romaine 2, CMH001632, CMH001633	$ 192,568	$ 95,179,068	42	220
143	CIP Project 8.2d2 ,Hwy 97 to Romaine 3, CMH001633, CMH001634	$ 305,848	$ 95,484,915	42	139
168	CIP Project 9.3c1 ,Hawthorned and 9th south, CMH002988, CMH002996	$ 197,364	$ 95,682,279	42	211
173	CIP Project 9.4a1 ,Purcell Paula to Hwy 20, CMH002466, CMH002678	$ 773,631	$ 96,455,910	41	53
174	CIP Project 9.4a1 ,Hwy 20 Dean Swift west, CMH001391, CMH001394	$ -	$ 96,455,910	41	53
175	CIP Project 9.4a1 ,South of Hwy 20 at Azure, CMH003129, CMH003131	$ -	$ 96,455,910	41	53
183	CIP Project 9.4b1 ,Paula Purcell north, CMH002466, CMH002468	$ 83,927	$ 96,539,837	41	487
192	CIP Project 9.8a2 ,Jackson Moonlight east, CMH003056, CMH007998	$ 19,824	$ 96,559,661	39	1992
194	CIP Project 9.8c1 ,Jackson Community to Daggett, CMH003483, CMH008021	$ 103,088	$ 96,662,748	39	383
218	PS Elimination - Majestic 5.PS04 ,, ,	$ 305,759	$ 96,968,508	38	126
219	PS Elimination - Majestic 5.PS05 ,, ,	$ 27,203	$ 96,995,710	38	1413
202	PS Improvements - Widgi Creek 3.PS02 ,, ,	$ 16,322	$ 97,012,032	38	2317
205	PS Elimination - Highlands 4.PS03 ,, ,	$ 427,628	$ 97,439,660	37	87
206	PS Elimination - Highlands 4.PS04 ,, ,	$ 27,203	$ 97,466,863	37	1375
213	PS Elimination - Phoenix 4.PS11 ,, ,	$ 44,613	$ 97,511,475	37	834
235	PS Improvements - Old Mill 8.PS02 ,, ,	$ 74,536	$ 97,586,011	37	499
272	SE Interceptor - The Shire -Abandon Wetwell; Gravity Solution ,, ,	$ 735,150	$ 98,321,161	36	49
278	SE Interceptor - Fox borough P.S. -SE Interceptor Supplemental Project ,, ,	$ 267,020	$ 98,588,181	36	136
43	CIP Project 2.11a1 ,Steidl Gordon to Portland, CMH008979, CMH008727	$ 83,822	$ 98,672,003	36	426
176	CIP Project 9.4a2 ,Hwy 20 Dean Swift east, CMH001391, CMH002678	$ 537,105	$ 99,209,108	36	66
177	CIP Project 9.4a2 ,Hwy 20 south at Azure, CMH001394, CMH001391	$ -	$ 99,209,108	36	66
178	CIP Project 9.4a2 ,South of Hwy 20 near Nates, CMH003137, CMH003133	$ -	$ 99,209,108	36	66
164	CIP Project 9.3a1 ,Burnside Alden east, CMH002785, CMH002786	$ 180,473	$ 99,389,581	35	192
165	CIP Project 9.3a2 ,Burnside 13th west, CMH002787, CMH002786	$ 118,383	$ 99,507,964	35	293
166	CIP Project 9.3a3 ,13th Bear Creek south, CMH002788, CMH002787	$ 69,936	$ 99,577,900	35	496
167	CIP Project 9.3b1 ,Alden at Burnside, CMH002785, CMH002989	$ 11,009	$ 99,588,909	35	3153

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Project Number	Project Name	Capital Cost	Cumulative cost	Total Benefit from Calculation	Benefit-Cost Ratio
169	CIP Project 9.3c2 ,Franklin east then south, CMH002995, CMH002993	$ 824,418	$ 100,413,328	35	42
170	CIP Project 9.3c3 ,9th Franklin north, CMH002995, CMH002996	$ 547,832	$ 100,961,159	35	63
171	CIP Project 9.3c3 ,Dekalb east end of street, CMH002992, CMH002993	$ -	$ 100,961,159	35	63
172	CIP Project 9.3c4 ,10th Bear Creek to Alden, CMH002992, CMH002989	$ 277,552	$ 101,238,712	35	125
32	CIP Project 2.8b1 ,Harmon Hartford to Jacksonville, CMH008587, CMH008586	$ 55,055	$ 101,293,766	30	554
33	CIP Project 2.8b2 ,Harmon - 2 sections, CMH008587, CMH008588	$ 199,874	$ 101,493,641	30	153
34	CIP Project 2.8b2 ,see above, CMH008586, CMH008585	$ -	$ 101,493,641	30	153
36	CIP Project 2.8c1 ,Harmon Kingston to Nashville, CMH008585, CMH008589	$ 415,612	$ 101,909,253	30	73
37	CIP Project 2.8c2 ,Harmon Nashville North, CMH008579, CMH008568	$ 176,523	$ 102,085,776	30	173
38	CIP Project 2.8c3 ,Harmon to Newport, CMH008568, CMH008729	$ 265,391	$ 102,351,167	30	115
39	CIP Project 2.9a1 ,Columbia Harmon south, CMH008569, CMH008560	$ 130,863	$ 102,482,030	30	233
40	CIP Project 2.10a1 ,Portland Awbrey to 1st, CMH008749, CMH008738	$ 452,463	$ 102,934,493	30	67
41	CIP Project 2.10a2 ,Awbrey Rd 1st to Newport, CMH008754, CMH008755	$ 108,790	$ 103,043,283	30	280
197	PS Improvements - Shevlin Meadows 2.PS04 ,, ,	$ 63,110	$ 103,106,393	30	481
198	PS Improvements - Shevlin Meadows 2.PS05 ,, ,	$ 23,938	$ 103,130,332	30	1268
207	PS Elimination - Holiday Inn 4.PS05 ,, ,	$ 65,287	$ 103,195,618	30	463
208	PS Elimination - Holiday Inn 4.PS06 ,, ,	$ 10,881	$ 103,206,499	30	2778
209	PS Elimination - Northpointe 4.PS07 ,, ,	$ 59,846	$ 103,266,345	30	499
210	PS Elimination - Northpointe 4.PS08 ,, ,	$ 27,203	$ 103,293,548	30	1098
75	CIP Project 3.3b1 ,Athletic Club north to roundabout, CMH00371, CMH004754	$ 202,310	$ 103,495,858	28	139
81	CIP Project 3.3f1 ,Colorado near Emkay north, CMH000415, CMH000416	$ 204,625	$ 103,700,483	28	137
83	CIP Project 3.3g2 ,Columbia Colorado to Emkay, CMH000413, CMH000411	$ 197,911	$ 103,898,394	28	142
84	CIP Project 3.3g2 ,Columbia Emkay north 2, CMH000409, CMH000408	$ -	$ 103,898,394	28	142
29	CIP Project 2.7a1 ,Newport Harmon to 5th, CMH008729, CMH008728	$ 476,067	$ 104,374,461	28	58
30	CIP Project 2.7a2 ,Newport 5th to 3rd, CMH008728, CMH008758	$ 375,462	$ 104,749,924	28	74
103	CIP Project 5.2a4 ,3rd Riverhouse to OB Riley, CMH006526, CMH006529	$ 691,160	$ 105,441,084	27	40
104	CIP Project 5.2a5 ,OB Riley 3rd north, CMH006529, CMH006530	$ 208,915	$ 105,649,999	27	132
105	CIP Project 5.2b1 ,OB Riley south of Sawyer PS, CMH006519, CMH006521	$ 215,929	$ 105,865,927	27	127
106	CIP Project 5.2b2 ,OB Riley at Sawyer PS, CMH006521, CMH006522	$ 92,050	$ 105,957,977	27	299
77	CIP Project 3.3d1 ,Mt. Bachelor roundabout north, CMH000405, CMH000404	$ 81,845	$ 106,039,822	26	322
78	CIP Project 3.3d2 ,Reed Mkt / Mt. Bachelor roundabout, CMH004753, CMH000405	$ 24,871	$ 106,064,693	26	1059
1	CIP Project 2.1a1 ,Shields North to Shevlin, CMH004188, CMH004178	$ 119,512	$ 106,184,205	25	209
261	AIR - Airport line - Replace/Rehab Gravity System ,, ,	$ 1,051,180	$ 107,235,385	24	23
216	PS Improvements - Empire 5.PS02 ,, ,	$ 20,674	$ 107,256,059	23	1136
224	PS Elimination - Blue Ridge 7.PS03 ,, ,	$ 17,410	$ 107,273,469	23	1330
225	PS Elimination - Blue Ridge 7.PS04 ,, ,	$ 27,203	$ 107,300,672	23	851
16	CIP Project 2.5b1 ,Milwaukee and Stannium, CMH000358, CMH008698	$ 62,500	$ 107,363,171	22	344
68	CIP Project 3.3a1 ,Athletic Club south 1, CMH000373, CMH000374	$ 116,318	$ 107,479,489	21	182
70	CIP Project 3.3a3 ,Athletic Club south 3, CMH000375, CMH009209	$ 101,694	$ 107,581,183	21	208
71	CIP Project 3.3a4 ,Athletic Club south 4, CMH009209, CMH009211	$ 199,015	$ 107,780,198	21	106
72	CIP Project 3.3a5 ,Athletic Club south 5, CMH009211, CMH009214	$ 82,783	$ 107,862,981	21	255
76	CIP Project 3.3c1 ,Colorado Emkay north, CMH000400, CMH000415	$ 95,871	$ 107,958,853	21	220
79	CIP Project 3.3e1 ,Colorado Emkay south, CMH000400, CMH000402	$ 276,193	$ 108,235,046	21	76
80	CIP Project 3.3e2 ,Mt. Bachelor near Century north, CMH000402, CMH000404	$ 297,852	$ 108,532,898	21	71
82	CIP Project 3.3g1 ,Columbia Emkay north 1, CMH000411, CMH000409	$ 151,281	$ 108,684,179	21	140
87	CIP Project 3.3h2 ,Simpson Columbia south, CMH000407, CMH000399	$ 93,138	$ 108,777,317	21	227
92	CIP Project 3.6a2 ,Skyliners south Mt. Wash roundabout 1, CMH000995, CMH000994	$ 57,215	$ 108,834,532	21	369
47	CIP Project 2.12a4 ,Scenic Heights east of Todds Crest, CMH002877, CMH002878	$ 28,316	$ 108,862,849	20	723
203	PS Elimination - Boyd Acres 4.PS01 ,, ,	$ 78,344	$ 108,941,193	20	261
204	PS Elimination - Boyd Acres 4.PS02 ,, ,	$ 27,203	$ 108,968,396	20	752
201	PS Improvements - Sunrise Village #1 3.PS01 ,, ,	$ 79,976	$ 109,048,372	20	248
211	PS Elimination - North Wind 4.PS09 ,, ,	$ 68,551	$ 109,116,923	19	284
212	PS Elimination - North Wind 4.PS10 ,, ,	$ 27,203	$ 109,144,126	19	715
262	AIR - Airport PS and FM - Review Pump Station & Discharge Line Capacity ,, ,	$ 1,419,600	$ 110,563,726	19	13
107	CIP Project 5.3a1 ,3rd Mervin Samples to Hwy 20, CMH000002, CMH003158	$ 1,040,894	$ 111,604,619	19	18
145	CIP Project 8.3a1 ,Angel Ct west to Brosterhous, CMH001745, CMH002311	$ 156,425	$ 111,761,045	18	118
146	CIP Project 8.3a1 ,Angel Ct west, CMH006366, CMH006364	$ -	$ 111,761,045	18	118
62	CIP Project 3.1a1 ,Blue Lake to Metolius, CMH000900, CMH000899	$ 297,560	$ 112,058,605	18	60
63	CIP Project 3.1a2 ,Metolius northern edge, CMH000900, CMH000901	$ 133,142	$ 112,191,747	18	135
67	CIP Project 3.2c1 ,Mammoth August to Sunrise PS, CMH008454, Sunrise PS	$ 155,808	$ 112,347,555	18	112
2	CIP Project 2.1a2 ,Freemont North of Shields, CMH004189, CMH004188	$ 83,957	$ 112,431,512	16	194
3	CIP Project 2.1a3 ,Freemont North of Shields, CMH005427, CMH004189	$ 72,827	$ 112,504,339	16	224
5	CIP Project 2.1b1 ,Freemont South of Shields, CMH004190, CMH004192	$ 273,317	$ 112,777,656	16	60
6	CIP Project 2.1c1 ,2 sections, CMH004193, CMH004192	$ 241,591	$ 113,019,247	16	68
10	CIP Project 2.1c3 ,Lehmi Pass, CMH004192, CMH004193	$ 114,228	$ 113,133,475	16	143
11	CIP Project 2.2a1 ,Shevlin Park East, CMH008748, CMH003915	$ 95,583	$ 113,229,059	16	171
12	CIP Project 2.2b1 ,Shevlin Park West, CMH008748, CMH008750	$ 140,897	$ 113,369,956	16	116
13	CIP Project 2.3a1 ,Newport at College, CMH008742, CMH008741	$ 116,442	$ 113,486,398	16	140
14	CIP Project 2.4a1 ,Stannium and 18th, CMH003495, CMH003493	$ 65,327	$ 113,551,725	16	250
15	CIP Project 2.5a1 ,Stannium, CMH000359, CMH00358	$ 66,220	$ 113,617,944	16	246
17	CIP Project 2.5c1 ,Milwaukee and 15th, CMH008698, CMH008697	$ 12,264	$ 113,630,208	16	1330
18	CIP Project 2.5d1 ,Milwaukee 15th to 12th, CMH008697, CMH008694	$ 319,055	$ 113,949,263	16	51
19	CIP Project 2.5e1 ,Milwaukee 12th to Union, CMH008694, CMH008719	$ 205,599	$ 114,154,862	16	79
20	CIP Project 2.5f1 ,Union to Newport, CMH008719, CMH008732	$ 160,567	$ 114,315,430	16	102
7	CIP Project 2.1c1 ,see above, CMH4179, CMH004181	$ -	$ 114,315,430	16	68
163	CIP Project 9.2a1 ,15th Ramsay south, CMH002763, CMH002764	$ 32,496	$ 114,347,925	16	490
148	CIP Project 8.4a1 ,Cleveland Pelton to Hwy 97, CMH001562, CMH001781	$ 39,271	$ 114,387,196	15	381
149	CIP Project 8.4a2 ,Cleveland across Hwy 97, CMH001781, CMH001785	$ 84,636	$ 114,471,832	15	177
151	CIP Project 8.4b1 ,Pelton McKinley south, CMH001569, CMH001561	$ 44,941	$ 114,516,773	15	333
189	CIP Project 9.6a1 ,Neil north, CMH008004, CMH008002	$ 147,582	$ 114,664,355	15	99
162	CIP Project 9.1b1 ,Wildcat south end to east, CMH002761, CMH002342	$ 77,037	$ 114,741,392	14	183
64	CIP Project 3.2a1 ,Brookside west of Sleepy Ct., CMH004381, CMH004378	$ 49,183	$ 114,790,575	12	250
65	CIP Project 3.2a2 ,Brookside by Sleepy Ct., CMH004381, CMH004383	$ 196,423	$ 114,986,998	12	63
66	CIP Project 3.2b1 ,Mammoth east to Brookside, CMH000016, CMH000045	$ 39,903	$ 115,026,901	12	308
237	PS Improvements - Tri-Peaks 8.PS05 ,, ,	$ 27,203	$ 115,054,104	12	440
195	PS Elimination - Shevlin Commons 1.PS03 ,, ,	$ 78,888	$ 115,132,992	11	138
196	PS Elimination - Shevlin Commons 1.PS04 ,, ,	$ 27,203	$ 115,160,195	11	401
263	FM - Phoenix P.S - Relocate Boyd Acres Pump Station Discharge ,, ,	$ 434,330	$ 115,594,525	11	24
Eliminated from CIP					
4	CIP Project 2.1a4 - NI ,Shields and Freemont, CMH004190, CMH005427	$ -		9	0
8	CIP Project 2.1c2 - NI ,2 sections, CMH004147, CMH004181	$ -		16	0
9	CIP Project 2.1c2 - NI ,see above, CMH004193, CMH004179	$ -		0	0
21	CIP Project 2.6a1 - NI ,12th Iowa to Vicksburg, CMH009265, CMH009286	$ -		9	0
22	CIP Project 2.6a2 - NI ,12th Vicksburg to Trenton, CMH009286, CMH009285	$ -		9	0
23	CIP Project 2.6b1 - NI ,12th Saginaw to Quincy, CMH009284, CMH009283	$ -		9	0
24	CIP Project 2.6c1 - NI ,Quincy 12th to 11th South, CMH009282, CMH000642	$ -		9	0
25	CIP Project 2.6d1 - NI ,11th south to Portland, CMH000642, CMH009280	$ -		9	0

Draft Implementation Plan	21-Feb-11				
Bend Collection System CIP					
CH2M HILL					
Project Number	Project Name	Capital Cost	Cumulative cost	Total Benefit from Calculation	Benefit-Cost Ratio
26	CIP Project 2.6e1 - NI ,Ogden 11th to 10th, CMH009275, CMH009264	$ -		9	0
27	CIP Project 2.6e2 - NI ,11th Portland to Ogden, CMH009280, CMH009275	$ -		14	0
28	CIP Project 2.6f1 - NI ,11th Ogden to Newport, CMH009264, CMH008733	$ -		9	0
31	CIP Project 2.8a1 - NI ,Hartford to Harmon, CMH008588, CMH008679	$ -		9	0
35	CIP Project 2.8b3 - NI ,Harmon Galveston to Hartford, CMH008588, CMH008589	$ -		9	0
42	CIP Project 2.10a3 - NI ,Awbrey to Newport, CMH008755, CMH008756	$ -		9	0
44	CIP Project 2.12a1 - NI ,Scenic Heights Washington south, CMH002891, CMH002877	$ -		9	0
45	CIP Project 2.12a2 - NI ,see above, ,	$ -		9	0
46	CIP Project 2.12a3 - NI ,see above, ,	$ -		9	0
48	CIP Project 2.13a1 - NI ,Mt Washington south of Links, CMH002875, CMH002886	$ -		14	0
49	CIP Project 2.14a1 ,PS south, Awbrey PS, CMH001205	$ -		5	0
50	,Putnam Kirkaldy south 1, CMH001208, CMH001196	$ -		0	0
51	CIP Project 2.14a2 ,Putnam Kirkaldy south 2, CMH001196, CMH001198	$ -		5	0
52	CIP Project 2.14a3 ,Putnam Kirkaldy north, CMH001206, CMH001208	$ -		5	0
53	CIP Project 2.14a4 ,Putnam South of PS, CMH001205, CMH001206	$ -		5	0
54	,Putnam Fernie north, CMH001181, CMH001194	$ -		0	0
55	CIP Project 2.15a1 ,Marken Scandia south, CMH002697, CMH002698	$ -		47	0
56	CIP Project 2.15a2 ,Marken Nordeen to Scandia, CMH000341, CMH002697	$ -		47	0
57	CIP Project 2.15b1 ,Marken Roberts Way north, CMH002698, CMH002693	$ -		47	0
58	CIP Project 2.15c1 ,Marken Roberts Way south, CMH002693, CMH002682	$ -		47	0
59	CIP Project 2.15d1 ,Marken Shevlin north, CMH002682, CMH002683	$ -		47	0
60	CIP Project 2.16a1 - NC ,No info, ,	$ 77,793		0	0
61	CIP Project 2.17a1 - NC ,No info, ,	$ 136,614		0	0
69	CIP Project 3.3a2 - NI ,Athletic Club south 2, CMH000374, CMH000375	$ -		9	0
73	CIP Project 3.3a6 - NI ,Athletic Club south 6, CMH009214, South to Pressure	$ -		9	0
74	CIP Project 3.3a7 - NI ,Combined with 3.3a6 - 151 feet, ,	$ -		9	0
85	CIP Project 3.3h1 - NI ,Columbia south of Simpson, CMH000408, CMH000407	$ -		9	0
86	CIP Project 3.3h1 - NI ,Columbia Simpson north, CMH000399, CMH008026	$ -		0	0
88	CIP Project 3.4a1 - NI ,Century north of Simpson, CMH008501, CMH008581	$ -		9	0
89	CIP Project 3.5a1 - NI ,Discharge to Shevlin Park PS, CMH000214, CMH000271	$ -		9	0
90	CIP Project 3.5b1 - NI ,Commerce Columbia to Allen, CMH008600, CMH008574	$ -		9	0
91	CIP Project 3.6a1 - NI ,Skyliners at Mt Washington roundabout, CMH004453, CMH004447	$ -		9	0
93	CIP Project 3.6a3 - NI ,Skyliners south Mt. Wash roundabout 2, CMH004447, CMH000995	$ -		9	0
94	CIP Project 3.6a4 - NI ,Skyliners Mt Washingto north, CMH004453, CMH004454	$ -		9	0
95	CIP Project 3.7a1 - NI ,Stannium 18th east, CMH003557, CMH003496	$ -		9	0
96	CIP Project 3.8a1 - NI ,Golf Vil Loop south of Widgi Creek PS, CMH000821, CMH000863	$ -		9	0
97	CIP Project 3.9a1 - NC ,Not considered, ,	$ 59,698		0	0
98	CIP Project 3.10a1 - NC ,Not considered, ,	$ 402,267		0	0
99	CIP Project 5.1a1 - NI ,Butler Mkt Boyd to Studio, CMH000327, CMH000328	$ -		9	0
100	CIP Project 5.2a1 - NI ,3rd at Mt Washingto, CMH006524, CMH006525	$ -		9	0
101	CIP Project 5.2a2 - NI ,Mt Washingto at 3rd, CMH007896, CMH006524	$ -		9	0
102	CIP Project 5.2a3 - NI ,3rd at Riverhouse, CMH006525, CMH006526	$ -		9	0
110	Existing Deficiency 5.4c1 - NI ,Town Logan east, CMH005494, CMH003162	$ -		9	0
111	CIP Project 5.5a1 - NC ,Town west of Wishing Well, CMH003159, CMH009222	$ -		9	0
112	CIP Project 5.6a1 - NC ,Purcell at Spinnaker, CMH002344, CMH002349	$ -		9	0
113	CIP Project 5.7a1 - NC ,Not considered, ,	$ 774,381		0	0
114	Existing Deficiency 5.8a1 - NC ,Not considered, ,	$ 146,120		14	95
115	Existing Deficiency 5.8a2 - NC ,Not considered, ,	$ 106,284		9	82
116	CIP Project 5.9a1 - NC ,Not considered, ,	$ 351,992		0	0
125	Existing Deficiency 6.3a1 - NC ,Not considered, ,	$ 188,373		9	46
126	Existing Deficiency 6.3a2 - NC ,Not considered, ,	$ 153,743		9	56
127	CIP Project 6.4a1 - NC ,Not considered, ,	$ 140,231		9	62
128	CIP Project 6.5a1 - NC ,Not considered, ,	$ 117,876		0	0
134	CIP Project 8.1c2 - NC ,Mahogany Springcrest east, CMH001654, CMH001652	$ 469,652		14	30
135	CIP Project 8.1c2 - NC ,Mahogany Honkers east, CMH005014, CMH001649	$ -		0	0
140	CIP Project 8.2b1 - NI ,3rd at Hwy 97 near Geary, CMH001629, CMH001798	$ -		9	0
144	CIP Project 8.2e1 - NI ,Hwy 97 to Romaine 1, CMH001801, CMH001632	$ -		9	0
147	CIP Project 8.3a2 - NI ,Angel Ct north, CMH006364, CMH001745	$ -		9	0
150	CIP Project 8.4a3 - NI ,Division Hwy 97 south, CMH001785, CMH002496	$ -		9	0
152	CIP Project 8.5a1 - NI ,Old Mill PS west, CLS000026, CMH000071	$ -		9	0
153	CIP Project 8.6a1 - NI ,Wilson 6th east, CMH002499, CMH002593	$ -		9	0
154	CIP Project 8.6a2 - NI ,Wilson Douglas to 6th, CMH002502, CMH002499	$ -		9	0
156	CIP Project 8.8a1 - NC ,Not considered, ,	$ 91,648		14	152
157	CIP Project 8.9a1 - NC ,Not considered, ,	$ 106,725		9	81
158	CIP Project 8.10a1 - NC ,Not considered, ,	$ 24,005		9	362
159	CIP Project 9.1a1 - NI ,Bronzewood north at Valleywood 1, CMH002339, CMH002340	$ -		9	0
160	CIP Project 9.1a2 - NI ,Bronzewood north at Valleywood 2, CMH002340, CMH002341	$ -		9	0
161	CIP Project 9.1a3 - NI ,Bronzewood at Airpark, CMH002337, CMH002336	$ -		9	0
179	CIP Project 9.4a3 - NI ,Cessna at Bear Creek to Pitts, CMH003209, CMH003213	$ -		9	0
180	CIP Project 9.4a3 - NI ,North of Bear Creek at Teliman, CMH003130, CMH003133	$ -		0	0
181	CIP Project 9.4a4 - NI ,South of Hwy 20 near Nates, CMH003129, CMH003137	$ -		9	0
182	CIP Project 9.4a4 - NI ,North of Bear Creek at Teliman, CMH003209, CMH003130	$ -		0	0
184	CIP Project 9.4c1 - NI ,Purcell Donegon south, CMH002469, CMH002468	$ -		14	0
185	CIP Project 9.4d1 - NI ,Paula Sharkey south, CMH002589, CMH002470	$ -		14	0
186	CIP Project 9.5a1 - NI ,Moody Park near Cliff 1, CMH002071, CMH002072	$ -		9	0
187	CIP Project 9.5a2 - NI ,Moody Park near Cliff 2, CMH002072, CMH002093	$ -		9	0
188	CIP Project 9.5b1 - NI ,Moody Park east of Blueberry, CMH009320, CMH002068	$ -		14	0
190	CIP Project 9.7a1 - NI ,Rosemary Buckwheat to Iris, CMH003560, CMH002921	$ -		14	0
191	CIP Project 9.8a1 - NI ,Jackson Shadow Brook to Moonlight, CMH000696, CMH003056	$ -		9	0
214	PS Elimination - Summer Meadows 4.PS12 - Removed ,, ,	$ 76,168		0	0
215	PS Elimination - Summer Meadows 4.PS13 - Removed ,, ,	$ 27,203		0	0
217	PS Elimination - Deschutes County Jail 5.PS03 - Removed ,, ,	$ -		0	0
220	PS Elimination - North Fire Station 5.PS06 ,, ,	$ -		2	0
234	PS Improvements - Deschutes River X-ing 8.PS01 ,, ,	$ -		10	0
240	PS Improvements - Parrell (new 8.PS08) - Removed ,, ,	$ 54,406		0	0
244	PS Improvements - Wyndemere - New ,, ,	$ -		0	0
249	North Interceptor Hwy 97 to Deschutes River ,, ,	$ 7,862,650		25	3
250	North Interceptor Deshhutes River to Shevlin Park ,, ,	$ 5,831,076		25	4
251	North Interceptor Deschutes River Force main ,, ,	$ 255,970		25	96
252	North Interceptor Pump Station2 ,, ,	$ 1,254,494		25	20
271	PS Elimination - Sunrise P.S -Relocate Discharge; New Gravity Solution - Duplicate ,, ,	$ 204,490		0	0
276	SE Interceptor - South Village P.S -SE Interceptor Supplemental Project - Duplicate ,, ,	$ 55,770		0	0
277	SE Interceptor - Sun Meadow P.S. -SE Interceptor Supplemental Project - Duplicate ,, ,	$ 845		0	0
279	Westside PS REDUNDANT, DON'T SCORE ,, ,	$ -		0	0

Appendix B

Stormwater CIP Prioritization Tool Inputs and Outputs

APPENDIX B
Stormwater CIP Prioritization Tool Inputs and Outputs

Attachment	Description
	Prioritization Model Inputs
1	Project Inputs
2	Criteria Inputs
3	Scoring Inputs (project scores for each criteria, provided by the City)
4	Scoring Guidance
	Prioritization Model Outputs
5	All Projects Ranked by Total Benefit
6	All Projects Ranked by Benefit/Cost
7	Final Implementation Plan

Attachment 1
Bend Stormwater CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
1	20975 West view Dr --New Driveway Apron, Sed. Manhole & Drywell	$ 40,000	$ 40,000
2	MP 298 SW Century Dr--New Gravity Collection System w/Treatment	$ 2,192,000	$ 2,232,000
3	Study 2984 NW Bordeaux Ln--New Drainage System	$ 1,162,000	$ 3,394,000
4	Downtown Business District, Minnesota and Wall--New piped system; Sed. Manhole, Catch Basins	$ 1,370,000	$ 4,764,000
5	196 SE Windance Ct--Site Inspection	$ 34,000	$ 4,798,000
6	MP Franklin Underpass --New Pump Station & Force Main	$ 1,113,000	$ 5,911,000
7	Greenwood Underpass --New Pump Station & Force Main	$ 1,113,000	$ 7,024,000
8	61505 Twin Lakes Loop--New Asphalt Berm; Repair Exisitng Drywell	$ 15,000	$ 7,039,000
9	Neff Road--Project on hold	$ 85,000	$ 7,124,000
10	902 SE Textron Dr - No further action needed	$ -	$ 7,124,000
11	1846 SE Arborwood Ave--New Catch Basins; New Drywells or Bioswales w/Treatment	$ 81,000	$ 7,205,000
12	61690 Woodriver Dr--Recondition Drill Hole	$ 21,000	$ 7,226,000
13	60887 SW McMullin Drive--Recondition Drill Hole or New Drywells	$ 28,000	$ 7,254,000
14	310 SW Maricopa Drive.--Recondition Drill Hole or New Drywells	$ 28,000	$ 7,282,000
15	60886 SW Granite Drive--New Sed. Manhole; Replace Drill Hole	$ 14,000	$ 7,296,000
16	SW 1769 Forest Ridge--New Catch Basin With Drill Holes	$ 57,000	$ 7,353,000
17	593 NW York Dr--New Road Side Swale	$ 20,000	$ 7,373,000
18	1197 NW Summit Dr--New Drywells & Retention Swale	$ 62,000	$ 7,435,000
19	61608 Summer Shade Drive--New Drywell w/Treatment	$ 14,000	$ 7,449,000
20	1545 Skylark--No Further Action Needed	$ -	$ 7,449,000
21	2679 NW Shields DR--Construct Swale	$ 62,000	$ 7,511,000
22	1936 SE Waco Drive--New Curbs, Catch Basins, Drywells w/Treatment	$ 90,000	$ 7,601,000
23	1370 SE Reed Mkt Rd--Construct Swale	$ 76,000	$ 7,677,000
24	61110 Parrell Rd--New Sed. Manhole; New Drywells	$ 28,000	$ 7,705,000
25	20336 Mel Ct--No Further Action Needed	$ -	$ 7,705,000
26	60801 BROSTERHOUS RD--Recondition Drill Hole or New Drywells	$ 14,000	$ 7,719,000
27	20 NW Hixon Ave--New Pump Station w/Treatment Vault	$ 177,000	$ 7,896,000
28	1233 NE Revere Ave--Long-term Solution Needed	$ 85,000	$ 7,981,000
29	21106 Reed Mrk Rd--CIP Concrete Curb - Project Completed	$ 11,000	$ 7,992,000
30	60953 Platinum Dr--Catch Basin; Infiltration Swale w/Treatment	$ 117,000	$ 8,109,000
31	197 NE 3rd St--New Pump Station; New Force Main	$ 1,324,000	$ 9,433,000
32	1160 NE Paula Dr--New Sed. Manhole; New Drywells	$ 56,000	$ 9,489,000
33	20282 Parr Ln--Recondition Drill Hole w/Treatment	$ 21,000	$ 9,510,000
34	21 NE Olney Ave--Construct Swale	$ 62,000	$ 9,572,000
35	360 NW Vermont--System Design/Constructed per plan and should be adequate	$ 85,000	$ 9,657,000

Attachment 1
Bend Stormwater CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
36	1501 NW Milwaukee Ave--New Catch Basins & Drywell (Completed)	$ 18,000	$ 9,675,000
37	546 NW Colorado Ave--	$ 85,000	$ 9,760,000
38	717 NW Georgia Ave--New Drywell w/Treatment	$ 14,000	$ 9,774,000
39	2484 NW 1st St--	$ 85,000	$ 9,859,000
40	1414 NW Davenport--Connect To Existing System	$ 85,000	$ 9,944,000
41	1976 NW 2nd--New Sed. Manhole (Completed)	$ 14,000	$ 9,958,000
42	1027 NW Trenton Ave--Recondition Drill Hole w/Treatment	$ 21,000	$ 9,979,000
43	1205 NW Davenport--Connect To Existing System; New Catch Basins	$ 183,000	$ 10,162,000
44	60690 Newcastle DR--New Road Side Swale	$ 20,000	$ 10,182,000
45	3285 Nels Anderson Rd--New Catch Basin; Construct Swale	$ 23,000	$ 10,205,000
46	3041 NE Waller Dr--Recondition Drill Hole w/Treatment	$ 21,000	$ 10,226,000
47	2844 NE Waller --Recondition Drill Hole w/Treatment	$ 21,000	$ 10,247,000
48	2783 NE Sandy - No further action needed	$ -	$ 10,247,000
49	1508 NE Revere Ave--New Catch Basins & Drywell	$ 35,000	$ 10,282,000
50	1331 NE Monroe (Madison and Taylor)--New Sed. Manhole & Drywell	$ 28,000	$ 10,310,000
51	2843 NE Lotno--Recondition Drill Hole w/Treatment	$ 28,000	$ 10,338,000
52	2739 NE Cordata--Recondition Drill Hole w/Treatment	$ 28,000	$ 10,366,000
53	2780 NE Broken Bow--Recondition Drill Hole w/Treatment; Additional Drainage	$ 117,000	$ 10,483,000
54	NW Iowa Ave--Asphalt Curb; Expand Collection System; Connect to Existing System	$ 47,000	$ 10,530,000
55	403 NE Revere--New Drywell	$ 14,000	$ 10,544,000
56	445 Seward Ave--Regional Improvements	$ 338,000	$ 10,882,000
57	755 NE 3rd St--Solution to be determined	$ 21,000	$ 10,903,000
58	655 NE 3rd St--Recondition Drill Hole w/Treatment	$ 21,000	$ 10,924,000
59	1203 NE 2nd St - No further action needed	$ -	$ 10,924,000
60	1757 SW Forest Ridge Ave - No further action needed	$ -	$ 10,924,000
61	821 NE 2nd St. --Relocate utiltieis in alley; New Biosale; New Drywell	$ 33,000	$ 10,957,000
62	735 NE 2nd St--Recondition Drill Hole w/Treatment	$ 21,000	$ 10,978,000
63	1507 NE 1St ST--Permanent Pavement?	$ 21,000	$ 10,999,000
64	807 NE 12th St. & 1331 NE 12th st--Recondition Drill Hole w/Treatment	$ 21,000	$ 11,020,000
65	906 NE 11th--Driveway Apron; Restore Curb Lines; New Drywells	$ 49,000	$ 11,069,000
66	1405 1st street--Recondition Drill Hole w/Treatment	$ 21,000	$ 11,090,000
67	King Hezekiah--New Drywell; Road Side Bioswales	$ 66,000	$ 11,156,000
68	19830 Nugget Ave--New Curbing	$ 13,000	$ 11,169,000
69	Hale court--New Catch Basins	$ 338,000	$ 11,507,000
70	MP Awbrey Butte--Increase Pipe Size	$ 538,000	$ 12,045,000
71	63250 Eastview Dr--New Drywell: Connect To Existing Catch Basin	$ 14,000	$ 12,059,000
72	Driftwood Ln--Construct Swale; New Catch Basin	$ 65,000	$ 12,124,000
73	Design 105 NW Drake Rd--Under Construction (Project Completed)	$ 1,116,000	$ 13,240,000

Attachment 1
Bend Stormwater CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
74	Alley behind 1233 NE 3rd Street--New Sed. Manhole & Drywell	$ 28,000	$ 13,268,000
75	143 Congress St--New Catch Basin; Pipe to Existing River Outfall	$ 61,000	$ 13,329,000
76	1396 NW College Way--Monitor	$ 12,000	$ 13,341,000
77	Awbrey Butte--New Bank Stabilization; New Cactch Basins	$ 21,000	$ 13,362,000
78	Yates Rd--Repair Eixisting Drywells	$ 17,000	$ 13,379,000
79	859 SW Bond St--New Drainage Controls & Bank Stabilization	$ 148,000	$ 13,527,000
80	63627 N. Brahma Ct.--New Driveway Apron	$ 9,000	$ 13,536,000
81	59 SW Hayes Ave--New Drainage Controls (May be fixed)	$ 64,000	$ 13,600,000
82	62890 Boyd Acres Rd Bend Cabinet and Fence--New Drainage Controls	$ 64,000	$ 13,664,000
83	63640 Boyd Acres Road--New Drainage Controls	$ 64,000	$ 13,728,000
84	Murray Road off Boyd Acres - Fuqua-New Drainage Controls	$ 64,000	$ 13,792,000
85	Empire Ave to Butler Mrk Including Murray Rd--CIP Concrete Curb; New Catch Basins & Bioswales	$ 143,000	$ 13,935,000
86	224 NE Thurston Ave--New Gravity Pipe to River; New Drywells w/Treatment	$ 474,000	$ 14,409,000
87	MP 745 Archie Briggs Rd--New Catch Basins; Pipe to River Outfall; Treatment	$ 608,000	$ 15,017,000
88	2500 NW Regency St--System Redesign (Project Completed)	$ 85,000	$ 15,102,000
89	2640 NE Jones Rd--New Road Side Swale	$ 20,000	$ 15,122,000
90	875 NW Brooks St--New Roof Structure Over Dumpsters	$ 8,000	$ 15,130,000
91	977 SW Hill Street--New Curb; Grade Street	$ 20,000	$ 15,150,000
92	2360 NW Summerhill Rd--New Catch Basin & Drywell	$ 328,000	$ 15,478,000
93	DSP000047--CIPP112' of Round18" CMP 5' Deep (Potentially Maintenance)	$ 29,000	$ 15,507,000
94	DSP000049--CIPP133.2' of Round18" CMP 5' Deep (Removed)	$ 35,000	$ 15,542,000
95	DSP000051--CIPP100' of Round18" CMP 5' Deep	$ 26,000	$ 15,568,000
96	DSP000398--Pipe Patch118' of Round18" CMP 5' Deep (Removed)	$ 1,000	$ 15,569,000
97	DSP001399--Excavate & Replace92 of Round12" Clay Tile 5' Deep and Add Treatment	$ 33,000	$ 15,602,000
98	DSP001400--Excavate & Replace118" of Round 8" CMP 5' Deep and Add Treatment	$ 34,000	$ 15,636,000
99	DSP001401--Excavate & Replace70 of Round12" Clay Tile 5' Deep	$ 14,000	$ 15,650,000
100	DSP001889--Excavate & Replace31' of Arch 16"x24" CMP 5' Deep	$ 9,000	$ 15,659,000
101	DSP002344--Excavate & Replace265 of Round 18" CMP 5' Deep	$ 61,000	$ 15,720,000
102	DSP002451--Excavate & Replace296 of Arch 24"x36" CMP 5' Deep	$ 97,000	$ 15,817,000
103	DSP003041--Pipe Patch84' of Round12" CMP 5' Deep (Removed)	$ 1,000	$ 15,818,000

Attachment 1
Bend Stormwater CIP
Project Inputs

Project Number	Project Name	Capital Cost	Cumulative Project Cost
104	DSP003355--Replace 10' Damaged Section414' of Round12" CMP 5' Deep	$ 2,000	$ 15,820,000
105	DSP003480--Excavate & Replace350' of Arch 29"x60" CMP 5' Deep	$ 168,000	$ 15,988,000
106	DSP003484--Replace 10' Damaged Section283' of Round12" CMP 5' Deep	$ 2,000	$ 15,990,000
107	DSP004351--Excavate & Replace160' of Arch15"x22" CMP 5' Deep	$ 38,000	$ 16,028,000
108	DSP004352--Replace 30' Damaged Section32' of Arch15"x60" CMP 5' Deep	$ 12,000	$ 16,040,000
109	DSP005885--Replace 10' Damaged Section73' of Round 20" CMP 5' Deep (Removed)	$ 3,000	$ 16,043,000
110	DSP007810--CIPP64' of Round12" CMP 5' Deep (Removed)	$ 9,000	$ 16,052,000
111	DSP007820--Excavate & Replace287' of Arch24"x36" CMP 5' Deep nd add treatment at outfall	$ 114,000	$ 16,166,000
112	DSP007823--Replace 10' Damaged Section32' of Round12" CMP 1.2' Deep	$ 2,000	$ 16,168,000
113	DSP007824--Replace 10' Damaged Section296' of Round18" CMP 5' Deep	$ 3,000	$ 16,171,000
114	DSP008001--Excavate & Replace540' of Arch16"x24" CMP 5' Deep	$ 140,000	$ 16,311,000
115	DSP008472--CIPP148 Round18" CMP 5' Deep (Remove)	$ 39,000	$ 16,350,000
116	DSP008485--Excavate & Replace119' of Round12" CMP 5' Deep	$ 23,000	$ 16,373,000
117	Roosevelt and McKinley: Create two stormwater retention basins on City owned property (about .15 ac each) with overflow to drywells on City owned properties	$ 575,000	$ 16,948,000
118	DSP008093--Newport, 742' dig and replace	$ 232,000	$ 17,180,000
119	DSP003481--Newport, 389'; dig and replace	$ 122,000	$ 17,302,000
120	DSP008276--Portland, 59'; dig and replace	$ 19,000	$ 17,321,000
121	DSP008431--Allen Rd; 170'; dig and replace, and add treatment at outfall; rusted, root, collabpsed, buried outfall.	$ 104,000	$ 17,425,000

Attachment 2
Bend Stormwater CIP
Criteria Inputs

Criteria No.	Evaluation Criteria Name	Criteria Weight (0 - 100 Scale)	Criteria Performance Measure Description
1	Public Health & Safety	100.0	-Degree of structural damage -Impact Road closures/traffic impacts
2	Environmental Impacts	70.0	-Degree of environmental benefits (e.g. water quality, noise reduction, open space, habitat benefits for sensitive species, tree protection, urban heat island effect reduction, energy savings, air quality)
3	System Reliability-- Reduced Risk of Failure	65.0	-Risk of flooding (design storm event) -Impacts on frequency of flooding
4	Regulatory Compliance	65.0	Project addresses regulatory concerns (TMDL, UIC, pollutants of concern)
5	O&M Efficiency/ Cost Savings/ Hot Spots	63.0	-Impact on O&M hotspots per O&M knowledge
6	Community Satisfaction	56.0	-Impact on traffic
7	Future Growth	38.0	-Adaptability to future public ROW projects.

Attachment 3
Bend Stormwater CIP
Scoring Inputs

Project Number	Project Name	Public Health & Safety	Environmental Impacts	System Reliability- - Reduced Risk of Failure	Regulatory Compliance	O&M Efficiency/ Cost	Community Satisfaction	Future Growth
1	20975 West view Dr --New Driveway Apron, Sed. Manhole & Drywell	3.3	1.0	2.2	0.0	0.2	3.0	0.8
2	MP 298 SW Century Dr--New Gravity Collection System w/Treatment	6.2	6.0	5.5	7.7	3.3	4.7	6.0
3	Study 2984 NW Bordeaux Ln--New Drainage System	6.2	4.5	5.0	0.2	6.8	6.0	2.2
4	Downtown Business District, Minnesota and Wall--New piped system; Sed. Manhole, Catch Basins	6.3	5.8	6.8	9.3	7.2	8.7	4.5
5	196 SE Windance Ct--Site Inspection	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	MP Franklin Underpass --New Pump Station & Force Main	9.7	7.5	9.0	9.8	9.3	10.0	4.7
7	Greenwood Underpass --New Pump Station & Force Main	9.7	3.5	8.5	9.7	8.2	10.0	4.0
8	61505 Twin Lakes Loop--New Asphalt Berm; Repair Exisitng Drywell	0.5	5.0	2.2	0.0	0.0	1.7	4.5
9	Neff Road--Project on hold	5.2	4.8	6.0	4.0	6.3	7.5	4.8
10	902 SE Textron Dr	2.8	2.2	2.0	8.3	2.3	4.2	4.5
11	1846 SE Arborwood Ave--New Catch Basins; New Drywells or Bioswales w/Treatment	6.5	2.0	7.7	0.2	5.0	2.3	1.0
12	61690 Woodriver Dr--Recondition Drill Hole	4.5	6.2	4.0	7.3	4.0	4.7	5.5
13	60887 SW McMullin Drive--Recondition Drill Hole or New Drywells	1.3	4.7	2.2	1.0	3.2	5.5	3.8
14	310 SW Maricopa Drive.--Recondition Drill Hole or New Drywells	1.7	2.7	1.5	1.2	2.5	5.5	1.3
15	60886 SW Granite Drive--New Sed. Manhole; Replace Drill Hole	3.7	3.5	2.0	7.7	2.3	3.0	1.7
16	SW 1769 Forest Ridge--New Catch Basin With Drill Holes	4.3	5.8	8.3	8.2	8.0	3.5	3.7
17	593 NW York Dr--New Road Side Swale	9.0	5.7	5.8	3.3	6.8	6.8	3.0
18	1197 NW Summit Dr--New Drywells & Retention Swale							
19	61608 Summer Shade Drive--New Drywell w/Treatment	0.7	4.8	1.2	0.8	0.8	1.0	1.5
20	1545 Skylark--No Further Action Needed							
21	2679 NW Shields DR--Construct Swale	3.2	4.8	2.0	0.2	1.5	5.2	0.0
22	1936 SE Waco Drive--New Curbs, Catch Basins, Drywells w/Treatment	1.3	4.8	2.0	0.0	0.0	3.8	0.0
23	1370 SE Reed Mkt Rd--Construct Swale	6.8	6.3	9.2	7.0	8.0	9.8	5.0
24	61110 Parrell Rd--New Sed. Manhole; New Drywells	6.3	3.5	9.0	2.5	8.0	8.5	5.0
25	20336 Mel Ct--No Further Action Needed							
26	60801 BROSTERHOUS RD--Recondition Drill Hole or New Drywells	0.5	2.8	2.0	0.0	0.5	4.5	0.3
27	20 NW Hixon Ave--New Pump Station w/Treatment Vault	0.8	7.8	2.0	10.0	0.0	6.0	4.8
28	1233 NE Revere Ave--Long-term Solution Needed	0.8	4.2	2.0	1.0	2.3	6.0	1.2
29	21106 Reed Mrk Rd--CIP Concrete Curb							
30	60953 Platinum Dr--Catch Basin; Infiltration Swale w/Treatment	5.2	6.8	2.3	5.8	4.0	6.2	5.0
31	197 NE 3rd St--New Pump Station; New Force Main	10.0	10.0	10.0	9.7	10.0	10.0	9.8

Attachment 3
Bend Stormwater CIP
Scoring Inputs

Project Number	Project Name	Public Health & Safety	Environmental Impacts	System Reliability-- Reduced Risk of Failure	Regulatory Compliance	O&M Efficiency/ Cost	Community Satisfaction	Future Growth
32	1160 NE Paula Dr--New Sed. Manhole; New Drywells	6.0	5.7	2.2	3.8	5.7	6.0	4.3
33	20282 Parr Ln--Recondition Drill Hole w/Treatment	1.2	5.8	1.7	2.8	2.3	6.0	5.0
34	21 NE Olney Ave--Construct Swale	6.5	6.2	1.2	2.5	0.0	8.8	4.5
35	360 NW Vermont--System Design/Constructed per plan and should be adequate	0.0	1.0	1.0	2.0	1.0	2.6	0.0
36	1501 NW Milwaukee Ave--New Catch Basins & Drywell (Completed)							
37	546 NW Colorado Ave--	1.2	7.5	0.0	9.2	0.0	10.0	6.5
38	717 NW Georgia Ave--New Drywell w/Treatment	0.8	5.7	1.7	9.7	0.0	8.5	4.2
39	2484 NW 1st St--	6.2	4.2	0.3	0.7	2.3	6.0	4.8
40	1414 NW Davenport--Connect To Existing System	1.7	4.0	2.0	9.5	0.8	7.8	5.2
41	1976 NW 2nd--New Sed. Manhole (Completed)							
42	1027 NW Trenton Ave--Recondition Drill Hole w/Treatment	0.8	4.0	1.2	3.3	0.2	6.0	5.0
43	1205 NW Davenport--Connect To Existing System; New Catch Basins	0.5	3.3	2.0	9.0	0.0	6.0	4.8
44	60690 Newcastle DR--New Road Side Swale	5.8	5.0	2.2	3.0	4.0	9.8	5.0
45	3285 Nels Anderson Rd--New Catch Basin; Construct Swale	1.3	4.8	2.3	0.3	0.3	6.0	4.0
46	3041 NE Waller Dr--Recondition Drill Hole w/Treatment	0.3	5.0	2.0	3.0	0.3	6.0	4.8
47	2844 NE Waller --Recondition Drill Hole w/Treatment	0.3	5.0	2.0	3.0	0.3	6.0	4.8
48	2783 NE Sandy	7.0	5.2	5.0	3.0	4.0	6.0	4.2
49	1508 NE Revere Ave--New Catch Basins & Drywell	1.7	5.0	2.0	3.0	0.8	6.0	4.2
50	1331 NE Monroe (Madison and Taylor)--New Sed. Manhole & Drywell	7.0	5.2	5.0	3.0	4.0	6.0	4.2
51	2843 NE Lotno--Recondition Drill Hole w/Treatment	2.5	5.0	2.0	3.0	1.2	6.0	4.2
52	2739 NE Cordata--Recondition Drill Hole w/Treatment	2.5	5.0	2.0	3.0	1.2	6.0	4.2
53	2780 NE Broken Bow--Recondition Drill Hole w/Treatment; Additional Drainage	6.0	5.0	3.5	3.0	3.5	6.0	4.2
54	NW Iowa Ave--Asphalt Curb; Expand Collection System; Connect to Existing System	0.8	6.0	2.3	5.0	0.8	6.0	3.7
55	403 NE Revere--New Drywell	3.3	5.7	2.2	2.8	4.0	10.0	5.0
56	445 Seward Ave--Regional Improvements	7.3	5.2	8.3	4.0	8.3	6.0	5.2
57	755 NE 3rd St--Solution to be determined	1.0	7.5	2.0	9.8	0.3	10.0	5.0
58	655 NE 3rd St--Recondition Drill Hole w/Treatment	1.0	7.2	2.0	8.8	0.3	10.0	5.0
59	1203 NE 2nd St	8.3	5.7	8.0	5.0	8.0	6.0	5.7
60	1757 SW Forest Ridge Ave	1.5	6.3	5.0	7.5	1.0	6.2	7.5
61	821 NE 2nd St. --Relocate utiltieis in alley; New Biosale; New Drywell	6.0	7.5	2.5	9.8	4.0	6.0	7.0

Attachment 3
Bend Stormwater CIP
Scoring Inputs

Project Number	Project Name	Public Health & Safety	Environmental Impacts	System Reliability- - Reduced Risk of Failure	Regulatory Compliance	O&M Efficiency/ Cost	Community Satisfaction	Future Growth
62	735 NE 2nd St--Recondition Drill Hole w/Treatment	6.0	7.3	2.5	9.8	4.0	6.0	7.0
63	1507 NE 1St ST--Permanent Pavement?	6.0	3.7	6.2	4.2	8.0	6.0	5.5
64	807 NE 12th St. & 1331 NE 12th st--Recondition Drill Hole w/Treatment	1.7	5.8	2.0	2.8	3.2	6.0	5.0
65	906 NE 11th--Driveway Apron; Restore Curb Lines; New Drywells	3.3	5.7	1.8	2.7	2.8	6.0	5.2
66	1405 1st street--Recondition Drill Hole w/Treatment	8.0	4.2	6.7	3.0	8.0	6.0	5.0
67	King Hezekiah--New Drywell; Road Side Bioswales	0.5	4.2	2.0	0.0	0.2	10.0	5.0
68	19830 Nugget Ave--New Curbing	0.8	4.5	2.0	2.8	0.8	7.7	5.0
69	Hale court--New Catch Basins	1.0	4.0	2.0	2.0	0.0	6.0	4.2
70	MP Awbrey Butte--Increase Pipe Size	5.2	4.2	1.0	2.2	2.0	6.5	6.3
71	63250 Eastview Dr--New Drywell: Connect To Existing Catch Basin	0.8	4.2	2.0	2.2	0.0	6.0	4.3
72	Driftwood Ln--Construct Swale; New Catch Basin	1.2	5.0	2.0	8.5	1.5	6.0	5.5
73	Design 105 NW Drake Rd--Under Construction (Project Completed)							
74	Alley behind 1233 NE 3rd Street--New Sed. Manhole & Drywell	0.8	4.5	2.0	3.0	1.0	3.0	5.0
75	143 Congress St--New Catch Basin; Pipe to Existing River Outfall	1.0	5.0	2.0	10.0	1.0	6.0	5.6
76	1396 NW College Way--Monitor	1.0	4.0	0.8	2.0	0.8	10.0	5.0
77	Awbrey Butte--New Bank Stabilization; New Cactch Basins	2.3	4.5	1.7	3.0	1.3	6.0	6.2
78	Yates Rd--Repair Eixisting Drywells	3.6	5.2	2.0	5.2	1.6	6.0	6.4
79	859 SW Bond St--New Drainage Controls & Bank Stabilization	1.0	4.0	1.4	3.2	0.4	7.0	5.0
80	63627 N. Brahma Ct.--New Driveway Apron	0.5	4.0	1.0	0.0	2.5	6.0	5.0
81	59 SW Hayes Ave--New Drainage Controls (May be fixed)	1.2	4.6	2.2	3.2	1.2	6.6	5.0
82	62890 Boyd Acres Rd Bend Cabinet and Fence--New Drainage Controls	1.2	4.0	3.0	1.8	1.4	5.2	5.8
83	63640 Boyd Acres Road--New Drainage Controls	0.8	4.0	1.0	1.2	0.4	3.0	5.0
84	Murray Road off Boyd Acres - Fuqua-New Drainage Controls	3.4	4.6	1.8	1.6	1.2	3.4	5.0
85	Empire Ave to Butler Mrk Including Murray Rd--CIP Concrete Curb; New Catch Basins & Bioswales	2.0	5.0	2.0	3.0	1.0	3.0	5.0
86	224 NE Thurston Ave--New Gravity Pipe to River; New Drywells w/Treatment	5.0	5.8	6.4	3.0	6.4	6.8	5.0
87	MP 745 Archie Briggs Rd--New Catch Basins; Pipe to River Outfall; Treatment	3.5	6.3	5.0	5.0	4.0	8.0	6.3
88	2500 NW Regency St--System Redesign (Project Completed)							
89	2640 NE Jones Rd--New Road Side Swale	0.3	4.3	2.0	0.0	0.0	6.0	5.0
90	875 NW Brooks St--New Roof Structure Over Dumpsters	0.3	8.0	1.0	4.7	0.0	3.0	3.0
91	977 SW Hill Street--New Curb; Grade Street	0.8	4.7	2.3	2.5	1.2	4.0	5.0

Attachment 3
Bend Stormwater CIP
Scoring Inputs

Project Number	Project Name	Public Health & Safety	Environmental Impacts	System Reliability- - Reduced Risk of Failure	Regulatory Compliance	O&M Efficiency/ Cost	Community Satisfaction	Future Growth
92	2360 NW Summerhill Rd--New Catch Basin & Drywell	7.7	6.3	9.0	7.3	8.0	10.0	4.7
93	DSP000047--CIPP112' of Round18" CMP 5' Deep (Potentially Maintenance)	4.5	4.3	3.7	6.7	1.0	4.5	5.0
94	DSP000049--CIPP133.2' of Round18" CMP 5' Deep (Removed)	2.0	5.0	2.0	6.0	1.0	5.0	5.0
95	DSP000051--CIPP100' of Round18" CMP 5' Deep	3.3	4.5	2.0	7.5	2.0	5.5	5.0
96	DSP000398--Pipe Patch118' of Round18" CMP 5' Deep (Removed)	1.0	5.0	1.0	1.0	1.0	1.0	8.0
97	DSP001399--Excavate & Replace92 of Round12" Clay Tile 5' Deep and Add Treatment	4.2	6.8	4.7	7.0	1.2	5.0	4.8
98	DSP001400--Excavate & Replace118" of Round 8" CMP 5' Deep and Add Treatment	4.3	6.8	4.2	6.3	1.3	4.7	5.3
99	DSP001401--Excavate & Replace70 of Round12" Clay Tile 5' Deep	4.0	6.8	4.0	6.4	1.0	5.8	6.0
100	DSP001889--Excavate & Replace31' of Arch 16"x24" CMP 5' Deep	4.8	5.0	4.2	7.3	1.0	5.0	5.8
101	DSP002344--Excavate & Replace265 of Round 18" CMP 5' Deep	3.5	5.2	1.8	5.0	0.7	3.2	5.7
102	DSP002451--Excavate & Replace296 of Arch 24"x36" CMP 5' Deep	3.2	4.7	1.7	3.8	2.8	6.0	6.0
103	DSP003041--Pipe Patch84' of Round12" CMP 5' Deep (Removed)	1.0	5.0	1.0	2.0	1.0	1.0	4.0
104	DSP003355--Replace 10' Damaged Section414' of Round12" CMP 5' Deep	3.5	5.3	3.0	6.5	1.5	3.0	4.5
105	DSP003480--Excavate & Replace350' of Arch 29"x60" CMP 5' Deep	5.2	5.3	5.3	8.0	2.2	5.5	6.3
106	DSP003484--Replace 10' Damaged Section283' of Round12" CMP 5' Deep	3.2	4.7	2.8	4.2	1.2	3.5	5.0
107	DSP004351--Excavate & Replace160' of Arch15"x22" CMP 5' Deep	1.0	6.6	2.0	5.8	0.0	3.6	5.0
108	DSP004352--Replace 30' Damaged Section32' of Arch15"x60" CMP 5' Deep	4.8	5.0	5.5	6.8	0.0	4.5	6.0
109	DSP005885--Replace 10' Damaged Section73' of Round 20" CMP 5' Deep (Removed)	3.0	5.0	4.0	6.0	1.0	2.0	5.0
110	DSP007810--CIPP64' of Round12" CMP 5' Deep (Removed)	1.0	5.0	1.0	1.0	3.0	1.0	5.0
111	DSP007820--Excavate & Replace287' of Arch24"x36" CMP 5' Deep nd add treatment at outfall	6.3	6.5	7.2	9.0	1.0	3.8	6.0
112	DSP007823--Replace 10' Damaged Section32' of Round12" CMP 1.2' Deep	5.0	6.5	5.0	7.7	1.0	4.8	6.0
113	DSP007824--Replace 10' Damaged Section296' of Round18" CMP 5' Deep	4.8	4.8	4.5	7.0	1.0	4.0	6.0
114	DSP008001--Excavate & Replace540' of Arch16"x24" CMP 5' Deep	2.8	4.8	4.7	6.8	1.0	5.0	6.0
115	DSP008472--CIPP148 Round18" CMP 5' Deep (Remove)	2.0	5.0	3.0	6.0	3.0	1.0	5.0
116	DSP008485--Excavate & Replace119' of Round12" CMP 5' Deep	4.2	4.7	3.8	3.7	1.0	2.5	5.0

Attachment 3
Bend Stormwater CIP
Scoring Inputs

Project Number	Project Name	Public Health & Safety	Environmental Impacts	System Reliability- - Reduced Risk of Failure	Regulatory Compliance	O&M Efficiency/ Cost	Community Satisfaction	Future Growth
117	Roosevelt and McKinley: Create two stormwater retention basins on City owned property (about .15 ac each) with overflow to drywells on City owned properties	8.0	7.3	6.7	3.0	8.0	5.3	7.0
118	DSP008093--Newport, 742' dig and replace	7.7	6.0	5.5	7.5	1.5	8.0	7.0
119	DSP003481--Newport, 389'; dig and replace	4.5	6.0	8.0	10.0	3.5	8.0	7.0
120	DSP008276--Portland, 59'; dig and replace	7.5	5.5	4.5	5.0	1.5	5.5	7.0
121	DSP008431--Allen Rd; 170'; dig and replace, and add treatment at outfall; rusted, root, collabpsed, buried outfall.	7.5	6.5	6.0	6.0	4.5	6.0	6.5

Attachment 4
Bend Stormwater CIP
Scoring Guidance

Score	Regulatory Compliance	System Reliability	Public Health & Safety	O&M Efficiency/Cost Savings/Hot Spots	Environmental Impacts	Future Growth	Customer Satisfaction/ Public Perception
10	Project substantially addresses multiple regulatory concerns (e.g. TMDL, UIC treatment requirements, pollutants of concern)	Project provides improved service to areas that experience frequent flooding	Project eliminates risk of events causing severe structural damage **OR** Project eliminates risk of events that cause extended road closures	Project addresses most significant O&M cost savings **AND** Most frequent O&M response needs	Project provides significant environmental benefits (e.g. noise reduction, open space, habitat benefits for sensitive species, water quality, tree protection, urban heat island effect reduction, energy savings, air quality)	Project is adaptable to future public right-of-way projects (large projects)	Project provides service to city arterial streets
9	Project satisifies regulatory order **OR** Substantially addresses multiple regulatory concerns						
8			Project eliminates risk of events causing moderate structural damages	Project addresses O&M issues that require a moderate level of response (not the highest or lowest frequency)			Project provides service to city collector streets
7			Project eliminates risk of events causing minor structural damages				
6			Project eliminates risk of events causing partial road closures (up to 1 lane of traffic or bike lanes)		Project provides environmental benefits		Project provides service to city local streets
5	Project moderately satisifies regulatory order **OR** Moderately addresses regulatory concerns	Project provides improved service to areas that experience occassional flooding				Project is adaptable to future public right-of-way projects (small projects)	
4				Project addresses issues requiring occassional O&M attention (drive by, but usually no response needed)			Project provides traffic benefits to areas with consistently validated complaints
3	Project satisifies potential future regulatory concerns.						Project provides service to alleys
2		Project provides improved service to areas that experience rare flooding					
1		Project provides improved service to private roads that experience flooding			Project has a few environmental impacts (e.g. vector problems like West Nile Virus/mosquitoes, increased noise, reduced open space/habitat, removal of heritage or other trees)		
0	Project does not satisfy regulatory order **OR** Does not substantially address multiple regulatory concerns.	Project does not provide improved service addressing flooding frequency	Project does not address health or safety considerations	O&M Cost Savings unknown	Project has many environmental impacts	Project is not adaptable to future public right-of-way projects	Project does not provide improved traffic benefits

Attachment 5
Bend Stormwater CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Benefit Score
31	197 NE 3rd St--New Pump Station; New Force Main	$1,324,000	$1,324,000	98
6	MP Franklin Underpass --New Pump Station & Force Main	$1,113,000	$2,437,000	86
7	Greenwood Underpass --New Pump Station & Force Main	$1,113,000	$3,550,000	78
92	2360 NW Summerhill Rd--New Catch Basin & Drywell	$328,000	$3,878,000	75
23	1370 SE Reed Mkt Rd--Construct Swale	$76,000	$3,954,000	72
4	Downtown Business District, Minnesota and Wall--New piped system; Sed. Manhole, Catch Basins	$1,370,000	$5,324,000	67
59	1203 NE 2nd St - No further action needed	$0	$5,324,000	67
119	DSP003481--Newport, 389'; dig and replace	$122,000	$5,446,000	65
117	Roosevelt and McKinley: Create two stormwater retention basins on City owned property (about .15 ac each) with overflow to drywells on City owned properties	$575,000	$6,021,000	64
56	445 Seward Ave--Regional Improvements	$338,000	$6,359,000	62
121	DSP008431--Allen Rd; 170'; dig and replace, and add treatment at outfall; rusted, root, collabpsed, buried outfall.	$104,000	$6,463,000	62
118	DSP008093--Newport, 742' dig and replace	$232,000	$6,695,000	61
24	61110 Parrell Rd--New Sed. Manhole; New Drywells	$28,000	$6,723,000	60
61	821 NE 2nd St. --Relocate utiltieis in alley; New Biosale; New Drywell	$33,000	$6,756,000	60
66	1405 1st street--Recondition Drill Hole w/Treatment	$21,000	$6,777,000	59
17	593 NW York Dr--New Road Side Swale	$20,000	$6,797,000	59
62	735 NE 2nd St--Recondition Drill Hole w/Treatment	$21,000	$6,818,000	59
16	SW 1769 Forest Ridge--New Catch Basin With Drill Holes	$57,000	$6,875,000	58
111	DSP007820--Excavate & Replace287' of Arch24"x36" CMP 5' Deep nd add treatment at outfall	$114,000	$6,989,000	56
63	1507 NE 1St ST--Permanent Pavement?	$21,000	$7,010,000	55
2	MP 298 SW Century Dr--New Gravity Collection System w/Treatment	$2,192,000	$9,202,000	55
9	Neff Road--Project on hold	$85,000	$9,287,000	53
120	DSP008276--Portland, 59'; dig and replace	$19,000	$9,306,000	52
86	224 NE Thurston Ave--New Gravity Pipe to River; New Drywells w/Treatment	$474,000	$9,780,000	52
105	DSP003480--Excavate & Replace350' of Arch 29"x60" CMP 5' Deep	$168,000	$9,948,000	51

Attachment 5
Bend Stormwater CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Benefit Score
87	MP 745 Archie Briggs Rd--New Catch Basins; Pipe to River Outfall; Treatment	$608,000	$10,556,000	51
112	DSP007823--Replace 10' Damaged Section32' of Round12" CMP 1.2' Deep	$2,000	$10,558,000	50
48	2783 NE Sandy - No further action needed	$0	$10,558,000	50
50	1331 NE Monroe (Madison and Taylor)--New Sed. Manhole & Drywell	$28,000	$10,586,000	50
12	61690 Woodriver Dr--Recondition Drill Hole	$21,000	$10,607,000	50
30	60953 Platinum Dr--Catch Basin; Infiltration Swale w/Treatment	$117,000	$10,724,000	48
44	60690 Newcastle DR--New Road Side Swale	$20,000	$10,744,000	48
32	1160 NE Paula Dr--New Sed. Manhole; New Drywells	$56,000	$10,800,000	47
57	755 NE 3rd St--Solution to be determined	$21,000	$10,821,000	46
97	DSP001399--Excavate & Replace92 of Round12" Clay Tile 5' Deep and Add Treatment	$33,000	$10,854,000	46
99	DSP001401--Excavate & Replace70 of Round12" Clay Tile 5' Deep	$14,000	$10,868,000	46
53	2780 NE Broken Bow--Recondition Drill Hole w/Treatment; Additional Drainage	$117,000	$10,985,000	45
60	1757 SW Forest Ridge Ave - No further action needed	$0	$10,985,000	45
100	DSP001889--Excavate & Replace31' of Arch 16"x24" CMP 5' Deep	$9,000	$10,994,000	45
3	Study 2984 NW Bordeaux Ln--New Drainage System	$1,162,000	$12,156,000	45
108	DSP004352--Replace 30' Damaged Section32' of Arch15"x60" CMP 5' Deep	$12,000	$12,168,000	45
113	DSP007824--Replace 10' Damaged Section296' of Round18" CMP 5' Deep	$3,000	$12,171,000	44
58	655 NE 3rd St--Recondition Drill Hole w/Treatment	$21,000	$12,192,000	44
37	546 NW Colorado Ave--	$85,000	$12,277,000	44
98	DSP001400--Excavate & Replace118" of Round 8" CMP 5' Deep and Add Treatment	$34,000	$12,311,000	43
55	403 NE Revere--New Drywell	$14,000	$12,325,000	43
34	21 NE Olney Ave--Construct Swale	$62,000	$12,387,000	42
93	DSP000047--CIPP112' of Round18" CMP 5' Deep (Potentially Maintenance)	$29,000	$12,416,000	41
27	20 NW Hixon Ave--New Pump Station w/Treatment Vault	$177,000	$12,593,000	40
95	DSP000051--CIPP100' of Round18" CMP 5' Deep	$26,000	$12,619,000	40

Attachment 5
Bend Stormwater CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Benefit Score
114	DSP008001--Excavate & Replace540' of Arch16"x24" CMP 5' Deep	$140,000	$12,759,000	40
75	143 Congress St--New Catch Basin; Pipe to Existing River Outfall	$61,000	$12,820,000	40
40	1414 NW Davenport--Connect To Existing System	$85,000	$12,905,000	39
78	Yates Rd--Repair Eixisting Drywells	$17,000	$12,922,000	39
38	717 NW Georgia Ave--New Drywell w/Treatment	$14,000	$12,936,000	38
72	Driftwood Ln--Construct Swale; New Catch Basin	$65,000	$13,001,000	38
104	DSP003355--Replace 10' Damaged Section414' of Round12" CMP 5' Deep	$2,000	$13,003,000	38
11	1846 SE Arborwood Ave--New Catch Basins; New Drywells or Bioswales w/Treatment	$81,000	$13,084,000	38
70	MP Awbrey Butte--Increase Pipe Size	$538,000	$13,622,000	37
102	DSP002451--Excavate & Replace296 of Arch 24"x36" CMP 5' Deep	$97,000	$13,719,000	36
109	DSP005885--Replace 10' Damaged Section73' of Round 20" CMP 5' Deep (Removed)	$3,000	$13,722,000	36
65	906 NE 11th--Driveway Apron; Restore Curb Lines; New Drywells	$49,000	$13,771,000	35
94	DSP000049--CIPP133.2' of Round18" CMP 5' Deep (Removed)	$35,000	$13,806,000	35
115	DSP008472--CIPP148 Round18" CMP 5' Deep (Remove)	$39,000	$13,845,000	34
10	902 SE Textron Dr - No further action needed	$0	$13,845,000	34
15	60886 SW Granite Drive--New Sed. Manhole; Replace Drill Hole	$14,000	$13,859,000	34
116	DSP008485--Excavate & Replace119' of Round12" CMP 5' Deep	$23,000	$13,882,000	34
39	2484 NW 1st St--	$85,000	$13,967,000	33
64	807 NE 12th St. & 1331 NE 12th st--Recondition Drill Hole w/Treatment	$21,000	$13,988,000	33
101	DSP002344--Excavate & Replace265 of Round 18" CMP 5' Deep	$61,000	$14,049,000	33
106	DSP003484--Replace 10' Damaged Section283' of Round12" CMP 5' Deep	$2,000	$14,051,000	32
43	1205 NW Davenport--Connect To Existing System; New Catch Basins	$183,000	$14,234,000	32
51	2843 NE Lotno--Recondition Drill Hole w/Treatment	$28,000	$14,262,000	32
52	2739 NE Cordata--Recondition Drill Hole w/Treatment	$28,000	$14,290,000	32
77	Awbrey Butte--New Bank Stabilization; New Cactch Basins	$21,000	$14,311,000	31

Attachment 5
Bend Stormwater CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Benefit Score
107	DSP004351--Excavate & Replace160' of Arch15"x22" CMP 5' Deep	$38,000	$14,349,000	31
54	NW Iowa Ave--Asphalt Curb; Expand Collection System; Connect to Existing System	$47,000	$14,396,000	31
33	20282 Parr Ln--Recondition Drill Hole w/Treatment	$21,000	$14,417,000	30
81	59 SW Hayes Ave--New Drainage Controls (May be fixed)	$64,000	$14,481,000	29
49	1508 NE Revere Ave--New Catch Basins & Drywell	$35,000	$14,516,000	29
76	1396 NW College Way--Monitor	$12,000	$14,528,000	28
68	19830 Nugget Ave--New Curbing	$13,000	$14,541,000	28
85	Empire Ave to Butler Mrk Including Murray Rd--CIP Concrete Curb; New Catch Basins & Bioswales	$143,000	$14,684,000	28
13	60887 SW McMullin Drive--Recondition Drill Hole or New Drywells	$28,000	$14,712,000	27
84	Murray Road off Boyd Acres - Fuqua-New Drainage Controls	$64,000	$14,776,000	26
82	62890 Boyd Acres Rd Bend Cabinet and Fence--New Drainage Controls	$64,000	$14,840,000	26
79	859 SW Bond St--New Drainage Controls & Bank Stabilization	$148,000	$14,988,000	26
67	King Hezekiah--New Drywell; Road Side Bioswales	$66,000	$15,054,000	26
90	875 NW Brooks St--New Roof Structure Over Dumpsters	$8,000	$15,062,000	26
46	3041 NE Waller Dr--Recondition Drill Hole w/Treatment	$21,000	$15,083,000	25
47	2844 NE Waller --Recondition Drill Hole w/Treatment	$21,000	$15,104,000	25
91	977 SW Hill Street--New Curb; Grade Street	$20,000	$15,124,000	24
69	Hale court--New Catch Basins	$338,000	$15,462,000	24
21	2679 NW Shields DR--Construct Swale	$62,000	$15,524,000	24
42	1027 NW Trenton Ave--Recondition Drill Hole w/Treatment	$21,000	$15,545,000	24
74	Alley behind 1233 NE 3rd Street--New Sed. Manhole & Drywell	$28,000	$15,573,000	24
71	63250 Eastview Dr--New Drywell: Connect To Existing Catch Basin	$14,000	$15,587,000	23
80	63627 N. Brahma Ct.--New Driveway Apron	$9,000	$15,596,000	23
45	3285 Nels Anderson Rd--New Catch Basin; Construct Swale	$23,000	$15,619,000	22
28	1233 NE Revere Ave--Long-term Solution Needed	$85,000	$15,704,000	22

Attachment 5
Bend Stormwater CIP
Total Benefit Project Rankings

Project Number	Project Description	Capital Cost	Cumulative Capital Cost	Benefit Score
110	DSP007810--CIPP64' of Round12" CMP 5' Deep (Removed)	$9,000	$15,713,000	22
96	DSP000398--Pipe Patch118' of Round18" CMP 5' Deep (Removed)	$1,000	$15,714,000	21
14	310 SW Maricopa Drive.--Recondition Drill Hole or New Drywells	$28,000	$15,742,000	21
89	2640 NE Jones Rd--New Road Side Swale	$20,000	$15,762,000	20
103	DSP003041--Pipe Patch84' of Round12" CMP 5' Deep (Removed)	$1,000	$15,763,000	20
83	63640 Boyd Acres Road--New Drainage Controls	$64,000	$15,827,000	17
8	61505 Twin Lakes Loop--New Asphalt Berm; Repair Exisitng Drywell	$15,000	$15,842,000	17
22	1936 SE Waco Drive--New Curbs, Catch Basins, Drywells w/Treatment	$90,000	$15,932,000	16
1	20975 West view Dr --New Driveway Apron, Sed. Manhole & Drywell	$40,000	$15,972,000	15
26	60801 BROSTERHOUS RD--Recondition Drill Hole or New Drywells	$14,000	$15,986,000	13
19	61608 Summer Shade Drive--New Drywell w/Treatment	$14,000	$16,000,000	13
35	360 NW Vermont--System Design/Constructed per plan and should be adequate	$85,000	$16,085,000	10
5	196 SE Windance Ct--Site Inspection	$34,000	$16,119,000	0
18	1197 NW Summit Dr--New Drywells & Retention Swale	$62,000	$16,181,000	0
20	1545 Skylark--No Further Action Needed	$0	$16,181,000	0
25	20336 Mel Ct--No Further Action Needed	$0	$16,181,000	0
29	21106 Reed Mrk Rd--CIP Concrete Curb - Project Completed	$11,000	$16,192,000	0
36	1501 NW Milwaukee Ave--New Catch Basins & Drywell (Completed)	$18,000	$16,210,000	0
41	1976 NW 2nd--New Sed. Manhole (Completed)	$14,000	$16,224,000	0
73	Design 105 NW Drake Rd--Under Construction (Project Completed)	$1,116,000	$17,340,000	0
88	2500 NW Regency St--System Redesign (Project Completed)	$85,000	$17,425,000	0

Attachment 6
Bend Stormwater CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Total Cost Benefit
112	DSP007823--Replace 10' Damaged Section32' of Round12" CMP 1.2' Deep	$2,000	$2,000	25278
96	DSP000398--Pipe Patch118' of Round18" CMP 5' Deep (Removed)	$1,000	$3,000	21952
103	DSP003041--Pipe Patch84' of Round12" CMP 5' Deep (Removed)	$1,000	$4,000	20046
104	DSP003355--Replace 10' Damaged Section414' of Round12" CMP 5' Deep	$2,000	$6,000	19157
106	DSP003484--Replace 10' Damaged Section283' of Round12" CMP 5' Deep	$2,000	$8,000	16263
113	DSP007824--Replace 10' Damaged Section296' of Round18" CMP 5' Deep	$3,000	$11,000	14788
109	DSP005885--Replace 10' Damaged Section73' of Round 20" CMP 5' Deep (Removed)	$3,000	$14,000	12144
100	DSP001889--Excavate & Replace31' of Arch 16"x24" CMP 5' Deep	$9,000	$23,000	5025
108	DSP004352--Replace 30' Damaged Section32' of Arch15"x60" CMP 5' Deep	$12,000	$35,000	3756
99	DSP001401--Excavate & Replace70 of Round12" Clay Tile 5' Deep	$14,000	$49,000	3288
90	875 NW Brooks St--New Roof Structure Over Dumpsters	$8,000	$57,000	3281
55	403 NE Revere--New Drywell	$14,000	$71,000	3093
17	593 NW York Dr--New Road Side Swale	$20,000	$91,000	2981
66	1405 1st street--Recondition Drill Hole w/Treatment	$21,000	$112,000	2842
62	735 NE 2nd St--Recondition Drill Hole w/Treatment	$21,000	$133,000	2838
120	DSP008276--Portland, 59'; dig and replace	$19,000	$152,000	2788
38	717 NW Georgia Ave--New Drywell w/Treatment	$14,000	$166,000	2778
63	1507 NE 1St ST--Permanent Pavement?	$21,000	$187,000	2650
80	63627 N. Brahma Ct.--New Driveway Apron	$9,000	$196,000	2622
110	DSP007810--CIPP64' of Round12" CMP 5' Deep (Removed)	$9,000	$205,000	2468
15	60886 SW Granite Drive--New Sed. Manhole; Replace Drill Hole	$14,000	$219,000	2443
76	1396 NW College Way--Monitor	$12,000	$231,000	2414
44	60690 Newcastle DR--New Road Side Swale	$20,000	$251,000	2405
12	61690 Woodriver Dr--Recondition Drill Hole	$21,000	$272,000	2394
78	Yates Rd--Repair Eixisting Drywells	$17,000	$289,000	2334
57	755 NE 3rd St--Solution to be determined	$21,000	$310,000	2211
68	19830 Nugget Ave--New Curbing	$13,000	$323,000	2186
24	61110 Parrell Rd--New Sed. Manhole; New Drywells	$28,000	$351,000	2158
58	655 NE 3rd St--Recondition Drill Hole w/Treatment	$21,000	$372,000	2107
61	821 NE 2nd St. --Relocate utiltieis in alley; New Biosale; New Drywell	$33,000	$405,000	1829
50	1331 NE Monroe (Madison and Taylor)--New Sed. Manhole & Drywell	$28,000	$433,000	1805
71	63250 Eastview Dr--New Drywell: Connect To Existing Catch Basin	$14,000	$447,000	1684

Attachment 6
Bend Stormwater CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Total Cost Benefit
64	807 NE 12th St. & 1331 NE 12th st--Recondition Drill Hole w/Treatment	$21,000	$468,000	1607
95	DSP000051--CIPP100' of Round18" CMP 5' Deep	$26,000	$494,000	1562
77	Awbrey Butte--New Bank Stabilization; New Cactch Basins	$21,000	$515,000	1494
116	DSP008485--Excavate & Replace119' of Round12" CMP 5' Deep	$23,000	$538,000	1487
33	20282 Parr Ln--Recondition Drill Hole w/Treatment	$21,000	$559,000	1455
93	DSP000047--CIPP112' of Round18" CMP 5' Deep (Potentially Maintenance)	$29,000	$588,000	1422
97	DSP001399--Excavate & Replace92 of Round12" Clay Tile 5' Deep and Add Treatment	$33,000	$621,000	1403
98	DSP001400--Excavate & Replace118" of Round 8" CMP 5' Deep and Add Treatment	$34,000	$655,000	1293
91	977 SW Hill Street--New Curb; Grade Street	$20,000	$675,000	1241
46	3041 NE Waller Dr--Recondition Drill Hole w/Treatment	$21,000	$696,000	1231
47	2844 NE Waller --Recondition Drill Hole w/Treatment	$21,000	$717,000	1231
42	1027 NW Trenton Ave--Recondition Drill Hole w/Treatment	$21,000	$738,000	1162
51	2843 NE Lotno--Recondition Drill Hole w/Treatment	$28,000	$766,000	1153
52	2739 NE Cordata--Recondition Drill Hole w/Treatment	$28,000	$794,000	1153
8	61505 Twin Lakes Loop--New Asphalt Berm; Repair Exisitng Drywell	$15,000	$809,000	1145
89	2640 NE Jones Rd--New Road Side Swale	$20,000	$829,000	1024
16	SW 1769 Forest Ridge--New Catch Basin With Drill Holes	$57,000	$886,000	1020
94	DSP000049--CIPP133.2' of Round18" CMP 5' Deep (Removed)	$35,000	$921,000	1002
26	60801 BROSTERHOUS RD--Recondition Drill Hole or New Drywells	$14,000	$935,000	997
45	3285 Nels Anderson Rd--New Catch Basin; Construct Swale	$23,000	$958,000	982
13	60887 SW McMullin Drive--Recondition Drill Hole or New Drywells	$28,000	$986,000	969
23	1370 SE Reed Mkt Rd--Construct Swale	$76,000	$1,062,000	960
19	61608 Summer Shade Drive--New Drywell w/Treatment	$14,000	$1,076,000	948
115	DSP008472--CIPP148 Round18" CMP 5' Deep (Remove)	$39,000	$1,115,000	880
74	Alley behind 1233 NE 3rd Street--New Sed. Manhole & Drywell	$28,000	$1,143,000	868
32	1160 NE Paula Dr--New Sed. Manhole; New Drywells	$56,000	$1,199,000	850
49	1508 NE Revere Ave--New Catch Basins & Drywell	$35,000	$1,234,000	840
107	DSP004351--Excavate & Replace160' of Arch15"x22" CMP 5' Deep	$38,000	$1,272,000	822
14	310 SW Maricopa Drive.--Recondition Drill Hole or New Drywells	$28,000	$1,300,000	774
65	906 NE 11th--Driveway Apron; Restore Curb Lines; New Drywells	$49,000	$1,349,000	727
34	21 NE Olney Ave--Construct Swale	$62,000	$1,411,000	686
54	NW Iowa Ave--Asphalt Curb; Expand Collection System; Connect to Existing System	$47,000	$1,458,000	663
75	143 Congress St--New Catch Basin; Pipe to Existing River Outfall	$61,000	$1,519,000	659
9	Neff Road--Project on hold	$85,000	$1,604,000	626

Attachment 6
Bend Stormwater CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Total Cost Benefit
121	DSP008431--Allen Rd; 170'; dig and replace, and add treatment at outfall; rusted, root, collabpsed, buried outfall.	$104,000	$1,708,000	599
72	Driftwood Ln--Construct Swale; New Catch Basin	$65,000	$1,773,000	596
101	DSP002344--Excavate & Replace265 of Round 18" CMP 5' Deep	$61,000	$1,834,000	549
119	DSP003481--Newport, 389'; dig and replace	$122,000	$1,956,000	533
37	546 NW Colorado Ave--	$85,000	$2,041,000	519
111	DSP007820--Excavate & Replace287' of Arch24"x36" CMP 5' Deep nd add treatment at outfall	$114,000	$2,155,000	495
11	1846 SE Arborwood Ave--New Catch Basins; New Drywells or Bioswales w/Treatment	$81,000	$2,236,000	470
40	1414 NW Davenport--Connect To Existing System	$85,000	$2,321,000	468
81	59 SW Hayes Ave--New Drainage Controls (May be fixed)	$64,000	$2,385,000	463
84	Murray Road off Boyd Acres - Fuqua-New Drainage Controls	$64,000	$2,449,000	420
82	62890 Boyd Acres Rd Bend Cabinet and Fence--New Drainage Controls	$64,000	$2,513,000	418
30	60953 Platinum Dr--Catch Basin; Infiltration Swale w/Treatment	$117,000	$2,630,000	415
67	King Hezekiah--New Drywell; Road Side Bioswales	$66,000	$2,696,000	401
39	2484 NW 1st St--	$85,000	$2,781,000	397
21	2679 NW Shields DR--Construct Swale	$62,000	$2,843,000	395
53	2780 NE Broken Bow--Recondition Drill Hole w/Treatment; Additional Drainage	$117,000	$2,960,000	389
1	20975 West view Dr --New Driveway Apron, Sed. Manhole & Drywell	$40,000	$3,000,000	375
102	DSP002451--Excavate & Replace296 of Arch 24"x36" CMP 5' Deep	$97,000	$3,097,000	374
105	DSP003480--Excavate & Replace350' of Arch 29"x60" CMP 5' Deep	$168,000	$3,265,000	306
114	DSP008001--Excavate & Replace540' of Arch16"x24" CMP 5' Deep	$140,000	$3,405,000	289
83	63640 Boyd Acres Road--New Drainage Controls	$64,000	$3,469,000	279
118	DSP008093--Newport, 742' dig and replace	$232,000	$3,701,000	266
28	1233 NE Revere Ave--Long-term Solution Needed	$85,000	$3,786,000	263
27	20 NW Hixon Ave--New Pump Station w/Treatment Vault	$177,000	$3,963,000	230
92	2360 NW Summerhill Rd--New Catch Basin & Drywell	$328,000	$4,291,000	229
85	Empire Ave to Butler Mrk Including Murray Rd--CIP Concrete Curb; New Catch Basins & Bioswales	$143,000	$4,434,000	198
56	445 Seward Ave--Regional Improvements	$338,000	$4,772,000	185
79	859 SW Bond St--New Drainage Controls & Bank Stabilization	$148,000	$4,920,000	180
22	1936 SE Waco Drive--New Curbs, Catch Basins, Drywells w/Treatment	$90,000	$5,010,000	180
43	1205 NW Davenport--Connect To Existing System; New Catch Basins	$183,000	$5,193,000	177
35	360 NW Vermont--System Design/Constructed per plan and should be adequate	$85,000	$5,278,000	120

Attachment 6
Bend Stormwater CIP
Total Benefit-Cost Score Project Rankings

Project Number	Project Name	Capital Cost	Cumulative Capital Cost	Total Cost Benefit
117	Roosevelt and McKinley: Create two stormwater retention basins on City owned property (about .15 ac each) with overflow to drywells on City owned properties	$575,000	$5,853,000	112
86	224 NE Thurston Ave--New Gravity Pipe to River; New Drywells w/Treatment	$474,000	$6,327,000	110
87	MP 745 Archie Briggs Rd--New Catch Basins; Pipe to River Outfall; Treatment	$608,000	$6,935,000	84
6	MP Franklin Underpass --New Pump Station & Force Main	$1,113,000	$8,048,000	78
31	197 NE 3rd St--New Pump Station; New Force Main	$1,324,000	$9,372,000	74
69	Hale court--New Catch Basins	$338,000	$9,710,000	73
7	Greenwood Underpass --New Pump Station & Force Main	$1,113,000	$10,823,000	70
70	MP Awbrey Butte--Increase Pipe Size	$538,000	$11,361,000	68
4	Downtown Business District, Minnesota and Wall--New piped system; Sed. Manhole, Catch Basins	$1,370,000	$12,731,000	49
3	Study 2984 NW Bordeaux Ln--New Drainage System	$1,162,000	$13,893,000	38
2	MP 298 SW Century Dr--New Gravity Collection System w/Treatment	$2,192,000	$16,085,000	25
5	196 SE Windance Ct--Site Inspection	$34,000	$16,119,000	0
10	902 SE Textron Dr - No further action needed	$0	$16,119,000	0
18	1197 NW Summit Dr--New Drywells & Retention Swale	$62,000	$16,181,000	0
20	1545 Skylark--No Further Action Needed	$0	$16,181,000	0
25	20336 Mel Ct--No Further Action Needed	$0	$16,181,000	0
29	21106 Reed Mrk Rd--CIP Concrete Curb - Project Completed	$11,000	$16,192,000	0
36	1501 NW Milwaukee Ave--New Catch Basins & Drywell (Completed)	$18,000	$16,210,000	0
41	1976 NW 2nd--New Sed. Manhole (Completed)	$14,000	$16,224,000	0
48	2783 NE Sandy - No further action needed	$0	$16,224,000	0
59	1203 NE 2nd St - No further action needed	$0	$16,224,000	0
60	1757 SW Forest Ridge Ave - No further action needed	$0	$16,224,000	0
73	Design 105 NW Drake Rd--Under Construction (Project Completed)	$1,116,000	$17,340,000	0
88	2500 NW Regency St--System Redesign (Project Completed)	$85,000	$17,425,000	0

Attachment 7
Bend Stormwater CIP
Implementation Plan

Implementation Order	Project No.	Project Description	Capital Cost	Cummulative Capital Cost	Benefit Score	Benefit Cost Score
1	31	197 NE 3rd St--New Pump Station; New Force Main*	$1,324,000	$1,324,000	99	75
2	3	Study 2984 NW Bordeaux Ln--New Drainage System*	$1,162,000	$2,486,000	45	39
3	6	MP Franklin Underpass --New Pump Station & Force Main	$1,113,000	$3,599,000	87	78
4	7	Greenwood Underpass --New Pump Station & Force Main	$1,113,000	$4,712,000	78	70
5	117	Roosevelt and McKinley: Create two stormwater retention basins on City owned property (about .15 ac each) with overflow to drywells on City owned properties	$575,000	$5,287,000	65	113
6	4	Downtown Business District, Minnesota and Wall--New piped system; Sed. Manhole, Catch Basins	$1,370,000	$6,657,000	67	49
7	119	DSP003481--Newport, 389'; dig and replace	$122,000	$6,779,000	65	533
8	118	DSP008093--Newport, 742' dig and replace	$232,000	$7,011,000	62	266
9	86	224 NE Thurston Ave--New Gravity Pipe to River; New Drywells w/Treatment	$474,000	$7,485,000	53	111
10	56	445 Seward Ave--Regional Improvements	$338,000	$7,823,000	63	185
11	112	DSP007823--Replace 10' Damaged Section32' of Round12" CMP 1.2' Deep	$2,000	$7,825,000	51	25278
12	96	DSP000398--Pipe Patch118' of Round18" CMP 5' Deep (Removed)	$1,000	$7,826,000	22	21952
13	103	DSP003041--Pipe Patch84' of Round12" CMP 5' Deep (Removed)	$1,000	$7,827,000	20	20046
14	104	DSP003355--Replace 10' Damaged Section414' of Round12" CMP 5' Deep	$2,000	$7,829,000	38	19157
15	106	DSP003484--Replace 10' Damaged Section283' of Round12" CMP 5' Deep	$2,000	$7,831,000	33	16264
16	113	DSP007824--Replace 10' Damaged Section296' of Round18" CMP 5' Deep	$3,000	$7,834,000	44	14788
17	109	DSP005885--Replace 10' Damaged Section73' of Round 20" CMP 5' Deep (Removed)	$3,000	$7,837,000	36	12144
18	100	DSP001889--Excavate & Replace31' of Arch 16"x24" CMP 5' Deep	$9,000	$7,846,000	45	5025
19	108	DSP004352--Replace 30' Damaged Section32' of Arch15"x60" CMP 5' Deep	$12,000	$7,858,000	45	3756
20	10	902 SE Textron Dr - Needs a culvert	$2,500	$7,860,500	34	3416
21	99	DSP001401--Excavate & Replace70 of Round12" Clay Tile 5' Deep	$14,000	$7,874,500	46	3288
22	90	875 NW Brooks St--New Roof Structure Over Dumpsters	$8,000	$7,882,500	26	3281
23	55	403 NE Revere--New Drywell	$14,000	$7,896,500	43	3094
24	17	593 NW York Dr--New Road Side Swale	$20,000	$7,916,500	60	2981
25	66	1405 1st street--Recondition Drill Hole w/Treatment	$21,000	$7,937,500	60	2842
26	62	735 NE 2nd St--Recondition Drill Hole w/Treatment	$21,000	$7,958,500	60	2838

Attachment 7
Bend Stormwater CIP
Implementation Plan

27	120	DSP008276--Portland, 59'; dig and replace	$19,000	$7,977,500	53	2788
28	38	717 NW Georgia Ave--New Drywell w/Treatment	$14,000	$7,991,500	39	2779
29	63	1507 NE 1St ST--Permanent Pavement?	$21,000	$8,012,500	56	2651
30	80	63627 N. Brahma Ct.--In remission- monitor for 25 year storm performance	$0	$8,012,500	24	2622
31	110	DSP007810--CIPP64' of Round12" CMP 5' Deep (Removed)	$9,000	$8,021,500	22	2468
32	15	60886 SW Granite Drive--New Sed. Manhole; Replace Drill Hole	$14,000	$8,035,500	34	2444
33	76	1396 NW College Way--In remission- monitor for 25 year storm performance	$0	$8,035,500	29	2414
34	44	60690 Newcastle DR--New Road Side Swale	$20,000	$8,055,500	48	2406
35	12	61690 Woodriver Dr--Recondition Drill Hole	$21,000	$8,076,500	50	2395
36	78	Yates Rd--Repair Eixisting Drywells	$17,000	$8,093,500	40	2334
37	57	755 NE 3rd St--Solution to be determined	$21,000	$8,114,500	46	2211
38	68	19830 Nugget Ave--New Curbing	$13,000	$8,127,500	28	2186
39	24	61110 Parrell Rd--New Sed. Manhole; New Drywells	$28,000	$8,155,500	60	2159
40	58	655 NE 3rd St--Recondition Drill Hole w/Treatment	$21,000	$8,176,500	44	2107
41	61	821 NE 2nd St. --In remission- monitor for 25 year storm performance	$0	$8,176,500	60	1829
42	50	1331 NE Monroe (Madison and Taylor)--New Sed. Manhole & Drywell	$28,000	$8,204,500	51	1805
43	71	63250 Eastview Dr--New Drywell: Connect To Existing Catch Basin	$14,000	$8,218,500	24	1685
44	64	807 NE 12th St. & 1331 NE 12th st--Recondition Drill Hole w/Treatment	$21,000	$8,239,500	34	1607
45	95	DSP000051--CIPP100' of Round18" CMP 5' Deep	$26,000	$8,265,500	41	1562
46	77	Awbrey Butte--New Bank Stabilization; New Cactch Basins	$21,000	$8,286,500	31	1495
47	116	DSP008485--Excavate & Replace119' of Round12" CMP 5' Deep	$23,000	$8,309,500	34	1487
48	33	20282 Parr Ln--Recondition Drill Hole w/Treatment	$21,000	$8,330,500	31	1456
49	93	DSP000047--CIPP112' of Round18" CMP 5' Deep (Potentially Maintenance)	$29,000	$8,359,500	41	1422
50	97	DSP001399--Excavate & Replace92 of Round12" Clay Tile 5' Deep and Add Treatment	$33,000	$8,392,500	46	1403
51	98	DSP001400--Excavate & Replace118" of Round 8" CMP 5' Deep and Add Treatment	$34,000	$8,426,500	44	1294
52	91	977 SW Hill Street--New Curb; Grade Street	$20,000	$8,446,500	25	1241
53	46	3041 NE Waller Dr--Recondition Drill Hole w/Treatment	$21,000	$8,467,500	26	1232
54	47	2844 NE Waller --Recondition Drill Hole w/Treatment	$21,000	$8,488,500	26	1232
55	42	1027 NW Trenton Ave--Recondition Drill Hole w/Treatment	$21,000	$8,509,500	24	1163

Attachment 7
Bend Stormwater CIP
Implementation Plan

56	51	2843 NE Lotno--Recondition Drill Hole w/Treatment	$28,000	$8,537,500	32	1153
57	52	2739 NE Cordata--Recondition Drill Hole w/Treatment	$28,000	$8,565,500	32	1153
58	8	61505 Twin Lakes Loop--New Asphalt Berm; Repair Exisitng Drywell	$15,000	$8,580,500	17	1145
59	89	2640 NE Jones Rd--New Road Side Swale	$20,000	$8,600,500	20	1024
60	16	SW 1769 Forest Ridge--New Catch Basin With Drill Holes	$57,000	$8,657,500	58	1020
61	94	DSP000049--CIPP133.2' of Round18" CMP 5' Deep (Removed)	$35,000	$8,692,500	35	1002
62	26	60801 BROSTERHOUS RD--Recondition Drill Hole or New Drywells	$14,000	$8,706,500	14	998
63	45	3285 Nels Anderson Rd--New Catch Basin; Construct Swale	$23,000	$8,729,500	23	983
64	13	60887 SW McMullin Drive--Recondition Drill Hole or New Drywells	$28,000	$8,757,500	27	969
65	23	1370 SE Reed Mkt Rd--In remission-monitor for 25 year storm performance	$0	$8,757,500	73	960
66	19	61608 Summer Shade Drive--New Drywell w/Treatment	$14,000	$8,771,500	13	949
67	115	DSP008472--CIPP148 Round18" CMP 5' Deep (Remove)	$39,000	$8,810,500	34	881
68	74	Alley behind 1233 NE 3rd Street--New Sed. Manhole & Drywell	$28,000	$8,838,500	24	868
69	32	1160 NE Paula Dr--New Sed. Manhole; New Drywells	$56,000	$8,894,500	48	851
70	49	1508 NE Revere Ave--New Catch Basins & Drywell	$35,000	$8,929,500	29	841
71	107	DSP004351--Excavate & Replace160' of Arch15"x22" CMP 5' Deep	$38,000	$8,967,500	31	823
72	14	310 SW Maricopa Drive.--Recondition Drill Hole or New Drywells	$28,000	$8,995,500	22	774
73	65	906 NE 11th--Driveway Apron; Restore Curb Lines; New Drywells	$49,000	$9,044,500	36	727
74	34	21 NE Olney Ave--Construct Swale	$62,000	$9,106,500	43	686
75	54	NW Iowa Ave--Asphalt Curb; Expand Collection System; Connect to Existing System	$47,000	$9,153,500	31	664
76	75	143 Congress St--New Catch Basin; Pipe to Existing River Outfall	$61,000	$9,214,500	40	659
77	9	Neff Road--Project on hold	$85,000	$9,299,500	53	627
78	121	DSP008431--Allen Rd; 170'; dig and replace, and add treatment at outfall; rusted, root, collabpsed, buried outfall.	$104,000	$9,403,500	62	600
79	72	Driftwood Ln--Construct Swale; New Catch Basin	$65,000	$9,468,500	39	597
80	101	DSP002344--Excavate & Replace265 of Round 18" CMP 5' Deep	$61,000	$9,529,500	34	549
81	37	546 NW Colorado Ave--	$85,000	$9,614,500	44	519
82	111	DSP007820--Excavate & Replace287' of Arch24"x36" CMP 5' Deep nd add treatment at outfall	$114,000	$9,728,500	56	496
83	11	1846 SE Arborwood Ave--New Catch Basins; New Drywells or Bioswales w/Treatment	$81,000	$9,809,500	38	471
84	40	1414 NW Davenport--Connect To Existing System	$85,000	$9,894,500	40	468

Attachment 7
Bend Stormwater CIP
Implementation Plan

85	81	59 SW Hayes Ave--New Drainage Controls (May be fixed)	$64,000	$9,958,500	30	464
86	84	Murray Road off Boyd Acres - Fuqua-New Drainage Controls	$64,000	$10,022,500	27	421
87	82	62890 Boyd Acres Rd Bend Cabinet and Fence--New Drainage Controls	$64,000	$10,086,500	27	419
88	30	60953 Platinum Dr--Catch Basin; Infiltration Swale w/Treatment	$117,000	$10,203,500	49	415
89	67	King Hezekiah--New Drywell; Road Side Bioswales	$66,000	$10,269,500	26	401
90	39	2484 NW 1st St--	$85,000	$10,354,500	34	398
91	21	2679 NW Shields DR--Construct Swale	$62,000	$10,416,500	24	395
92	53	2780 NE Broken Bow--Recondition Drill Hole w/Treatment; Additional Drainage	$117,000	$10,533,500	46	389
93	1	20975 West view Dr --New Driveway Apron, Sed. Manhole & Drywell	$40,000	$10,573,500	15	376
94	102	DSP002451--Excavate & Replace296 of Arch 24"x36" CMP 5' Deep	$97,000	$10,670,500	36	375
95	105	DSP003480--Excavate & Replace350' of Arch 29"x60" CMP 5' Deep	$168,000	$10,838,500	52	307
96	114	DSP008001--Excavate & Replace540' of Arch16"x24" CMP 5' Deep	$140,000	$10,978,500	41	289
97	83	63640 Boyd Acres Road--New Drainage Controls	$64,000	$11,042,500	18	280
98	28	1233 NE Revere Ave--Long-term Solution Needed	$85,000	$11,127,500	22	264
99	27	20 NW Hixon Ave--New Pump Station w/Treatment Vault	$177,000	$11,304,500	41	230
100	92	2360 NW Summerhill Rd--In remission-monitor for 25 year storm performance	$0	$11,304,500	75	230
101	85	Empire Ave to Butler Mrk Including Murray Rd--CIP Concrete Curb; New Catch Basins & Bioswales	$143,000	$11,447,500	28	198
102	79	859 SW Bond St--New Drainage Controls & Bank Stabilization	$148,000	$11,595,500	27	181
103	22	1936 SE Waco Drive--New Curbs, Catch Basins, Drywells w/Treatment	$90,000	$11,685,500	16	180
104	43	1205 NW Davenport--Connect To Existing System; New Catch Basins	$183,000	$11,868,500	32	177
105	35	360 NW Vermont--System Design/Constructed per plan and should be adequate	$85,000	$11,953,500	10	120
106	87	MP 745 Archie Briggs Rd--In remission-monitor for 25 year storm performance	$0	$11,953,500	51	85
107	69	Hale court--New Catch Basins	$338,000	$12,291,500	25	73
108	70	MP Awbrey Butte--Increase Pipe Size	$538,000	$12,829,500	37	69
109	60	1757 SW Forest Ridge Ave - Same as Project 16; Deleted from CIP	$0	$12,829,500	0	45.218
110	2	MP 298 SW Century Dr--New Gravity Collection System w/Treatment	$2,192,000	$15,021,500	55	25
111	5	196 SE Windance Ct--Site Inspection	$34,000	$15,055,500	0	0
112	18	1197 NW Summit Dr--New Drywells & Retention Swale	$62,000	$15,117,500	0	0
113	20	1545 Skylark--No Further Action Needed	$0	$15,117,500	0	0
114	25	20336 Mel Ct--No Further Action Needed	$0	$15,117,500	0	0

Attachment 7
Bend Stormwater CIP
Implementation Plan

115	29	21106 Reed Mrk Rd--CIP Concrete Curb - Project Completed	$11,000	$15,128,500	0	0
116	59	1203 NE 2nd St - In remission- monitor for 25 year storm performance	$0	$15,128,500	67	0
117	48	2783 NE Sandy - In remission- monitor for 25 year storm performance	$0	$15,128,500	51	0
118	36	1501 NW Milwaukee Ave--In remission- monitor for 25 year storm performance	$0	$15,128,500	0	0
119	41	1976 NW 2nd--In remission- monitor for 25 year storm performance	$0	$15,128,500	0	0
120	73	Design 105 NW Drake Rd--In remission- monitor for 25 year storm performance	$0	$15,128,500	0	0
121	88	2500 NW Regency St--In remission- monitor for 25 year storm performance	$0	$15,128,500	0	0

**Indicates that project was currently underway as of Spring 2011*

Stormwater
Five Year Capital Improvement Program (CIP) Schedule

	Cost Estimate Classification*	Revised Budget 2014-15	Budget Estimate 2015-16	Budget Estimate 2016-17	Budget Estimate 2017-18	Budget Estimate 2018-19
Line Replacement Repairs & Maintenance		$ 50,000	$ 253,400	694,700	149,000	175,000
SR0701 Stormwater Master Plan	1	$ -	$ -	-	-	-
SR0703 Westside Meadows	2	$ -	$ -	-	-	-
SR0802 Drake and Dohema Pump Station	1	$ 150,000	$ -	-	-	-
SR09AA Third Street Underpass	1	$ 21,000	$ 55,000	-	-	-
SR15AA Butte and Hillside Drainage Specific Plans		$ -	$ 250,000	-	-	-
		$ 171,000	$ 305,000	$ -	$ -	$ -
Total Stormwater CIP		$ 221,000	$ 558,400	$ 694,700	$ 149,000	$ 175,000

Cost estimate classifications are based on standards developed by the Association for the Advancement of Cost Engineering International (AACE)

Estimate Class	Purpose	Project Definition Level	Cost Est. Range
Class 5	Concept or Feasability	0% to 2%	+100%/-50%
Class 4	Preliminary Engineering	1% to 15%	+50%/-30%
Class 3	Semi-Detailed (30-60% Design)	10% to 40%	+30%/-20%
Class 2	Detailed (60-90% Design)	30% to 70%	+20%/-15%
Class 1	Final (100% Design)	50% to 100%	+15%/-10%
N/A	Not applicable. Line replacement and maintenance represents a variety of small capital rehabilitative projects, therefore does not conform to conventional Cost Engineering estimates.		