

AGENDA

DES MOINES CITY COUNCIL
ENVIRONMENT COMMITTEE
City Council Chambers
21630 11th Avenue S, Des Moines, Washington
Thursday, April 11, 2024 - 5:00 PM

Environment Committee: Chair JC Harris, Vice Chair Yoshiko Grace Matsui, Gene Achziger

CALL TO ORDER

AGENDA

- Item 2.1. APPROVAL OF THE MINUTES FROM THE MEETING OF 03.14.2024
[03.14.24 Draft Environment Committee Minutes w header](#)
- Item 2.2. COMPREHENSIVE PLAN UPDATE – CONSERVATION AND ENVIRONMENT ELEMENT
- *Staff will provide an overview of the Comprehensive Plan Update process, Chapter 4: Conservation and Environment Element and proposed amendments for discussion and input by the Committee.*
- [Comprehensive Plan Update Memo](#)
[Attachment 1 – Chapter 4: Conservation and Environment Element](#)
- Item 2.3. CIP PROJECT UPDATES
- *Staff will provide an overview of active Capital Improvement Projects*
- [Enviro Committee CIP Update April 2024](#)
- Item 2.4. SOUTHWEST SUBURBAN GENERAL SEWER PLAN UPDATE
- *Staff will share a brief overview of the latest update to Southwest Suburban's General Sewer Plan.*
- [SWSSD General Sewer Plan - Enviro Committee Update](#)

ADJOURNMENT

DRAFT MINUTES – ENVIRONMENT COUNCIL COMMITTEE MEETING 03.14.2024

The meeting was called to order at 5:00 PM, Thursday, March 14, 2024 in the Council Chamber with the following in attendance:

Council Members

J.C. Harris (Chair)
Yoshiko Grace Matsui (Vice Chair)
Gene Achziger

City Staff

Tommy Owen – Acting Public Works Director
Tyler Beekley – Surface Water/Environmental Engineering Mngr
Michael Posey – SWM Engineering Tech I
Allyssa Beaver – Civil Engineer I
Matt Hutchins – Assistant City Attorney
Taria Keane – City Clerk
Laura Hopp – Admin. Coordinator I
Jodi Grager – Admin. Coordinator I

Guests – Mayor Traci Buxton, Councilmembers Matt Mahoney and Harry Steinmetz
Chuck Coleman, Barbara McMichael, Semso Imsic

AGENDA

1. Approval of the minutes from the 02.08.2024 meeting
2. NPDES (National Pollutant Discharge Elimination System) Program Overview
3. 2024 Stormwater Management Program Plan

MEETING:

1. Unanimous approval of the 02.08.2024 minutes.
2. Surface Water/Environmental Engineering Manager Tyler Beekley introduced this item, stating it is the time of year to update the committee and summarize what was accomplished in 2023 (Attachment #2). This is the third iteration and the last year of the City's Phase 2 NPDES permit. A new permit application will be submitted in August of 2024. Manager Beekley reviewed the eight permit requirements and introduced Michael Posey, SWM Engineering Technician to provide additional details.
3. Manager Beekley presented the draft 2024 Stormwater Management Program (SWMP) Plan (Attachment #3). He stated a request for public comment on the draft plan has been announced through City Currents and is also described on the NPDES page of the City website. Staff are planning to continue the SWM program as has been established with some improvements and schedule updates for 2024.

- Adopt a Drain Program launched in January with 12 drains adopted at this time.
- Stormfest dates: June 4th – 6th volunteer opportunity

The Committee discussed staffing, a recent spill response, mapping of the public/private stormwater system and the King County Public Health Zeropoo Program.

Meeting adjourned at 5:49 p.m.

Minutes respectfully submitted by: Jodi Grager, Admin Coordinator

MEMO

To: City Council Environment Committee

From: Jason Woycke, AICP – Senior Planner
Peyton Murphy, CFM – Land Use Planner II

CC: Tim George, Interim City Manager
Adrienne Johnson-Newman, Assistant City Manager
Planning & Development Services Staff

Date: April 2, 2024

Re: Comprehensive Plan Update

Background

In 2022, the City of Des Moines (City) embarked on the periodic review and update to the City's Comprehensive Plan and development regulations that will need to be complete no later than December 31, 2024. The Comprehensive Plan was last updated in 2015 and state law requires a major review and update every ten years.

The Des Moines Comprehensive Plan is a policy document that describes how the City will manage its growth and provide necessary services and facilities over a 20-year planning horizon (Year 2044). Des Moines needs to plan for an additional 3,800 housing units, 2,380 new jobs and 726 net new permanent Emergency Housing Units by 2044.

The comprehensive plan includes 12 elements that address community characteristics; land use; transportation; conservation and environment; capital facilities, utilities and public services; parks, recreation and open space; housing; economic development; neighborhoods (North Central, Marina District and Pacific Ridge); and health. Each element includes a general summary of existing conditions along with goals and policies, and implementation strategies that indicate how the city, programs, and priorities will implement the Plan's goals and policies.

The periodic update requires a thorough review of each element of the Plan to ensure it reflects new laws and requirements, demonstrates capacity to meet our growth targets, responds to changing conditions within the community and addresses Agency, Tribal and community's interests expressed via our public outreach efforts.

To help frame the scope of our update, our consultant AHBL completed a review of the existing comprehensive plan and development regulations for consistency with the Washington State Department of Commerce's update checklists, legislative amendment to the Growth Management Act (GMA), Vision 2050 and Countywide Planning Policies (CPPs), and identified updates needed to comply with these requirements.

Staff presented Chapter 1: Introduction and Chapter 2: Land Use Element to the Council Economic Development Committee. Key policy direction provided by the committee related to adding a tribal acknowledgement to Chapter 1 and weaving goals, policies and implementation strategies throughout the plan versus adding a separate Tribal Element. The other item related to the style of language (first person plural) and use throughout the plan (e.g., "our City" and "our citizens" and "important for us") and whether that should be maintained. The Economic Development Committee saw rationale for both.

Discussion

Tonight's discussion will focus on proposed changes to *Chapter 4: Conservation and Environment Element*. The changes are summarized below with policy questions for the Committee's input noted. This chapter (Attachment 1) is in track changes but the comments in the right sidebar are color coded to show legislative requirements and items for potential Council discussion (yellow highlight), housekeeping edits (green) and general comments (grey).

Chapter 4: Conservation and Environment Element

The Conservation and Environment Element contains goals, policies and implementation strategies aimed at environmental stewardship and protecting the City's environmental assets, with particular emphasis on environmentally critical areas, shorelines, surface and groundwater quality, and climate change. The Washington State Growth Management Act mandates the protection of aquifer recharge areas, fish and wildlife habitat conservation areas, flood hazard areas, geologically hazardous areas, wetlands, and stream corridors while the Shoreline Management Act provides for the protection of shorelines. Recognizing that a substantial portion of the City is located in geologically hazardous areas, this element also addresses the health of ecological functions, public safety, and protection from natural dangers, including erosion, landslides, and seismic hazards.

Most of the proposed amendments relate to updating information and data that has changed since the previous comprehensive plan update. Many of the substantive changes to the goals, policies and implementation strategies relate to updated state, regional and county requirements. Key items are listed below in the order they appear in the chapter to facilitate discussion:

1. Updated state and federal monitoring requirements and timelines
2. Addition of reference to the Puget Sound Water Quality Management Program
3. Addition of reference to the 2029 addition of a Climate Element chapter per HB 1181
4. Addition of reference to City's compost procurement procedures– Ord. 1774 passed 11/16/23
5. Addition of implementation strategy referencing SEPA (CE 1)
6. Addition of implementation strategies for preservation of trees (CE 2)
7. Addition of implementation strategy to meet NPDES requirements for trees (CE 2)
8. Addition of implementation strategy for providing residential design flexibility (CE 2)
9. Addition of implementation strategy for City's approach to archaeological resources (CE 2)
10. Clarification of the purpose and organization of the Shoreline Master Program (CE 3)
11. Addition of implementation strategies for consistency with state and federal programs (CE 4)
12. Addition of implementation strategy to ensure flood mapping is up to date (CE 4)
13. Addition of implementation strategy to ensure coordination with the tribes (CE 5)
14. Addition of implementation strategy to ensure salmon restoration efforts (CE 6)
15. Addition of implementation strategies for consistency with climate change HB 1181 (CE 8)
16. Addition of implementation strategy for tree preservation through specific programs CE 9)
17. Addition of implementation strategy to address environmental impacts and social equity (CE 9)

18. Addition of implementation strategy to address concerns regarding airport (CE 9)

The Conservation and Environment Element will undergo additional edits to ensure consistency with federal, state, and county requirements, tribal requests, and other elements of the comprehensive plan that are being revised and refined. As we get closer to completing the update, we will bring the Conservation and Environment Element back to this Committee for additional discussion.

Policy Considerations for Committee Input:

1. With the objective of weaving goals, policies and implementation strategies related to tribes throughout the comprehensive plan, staff has added the following to the Conservation and Environment Element:
 - a. Page 6 (CE 2.5.3) – Staff added a proposed implementation strategy to ensure City coordination with the tribes in protecting archaeological resources.
 - b. Page 9 (CE 5.2.1(3)) – Staff added a proposed implementation strategy to ensure City coordination with the tribes in managing streams and wetlands.
 - c. Page 9 (CE 5.2.1(4)) – Staff modified an implementation strategy to ensure City coordination with the tribes in watershed management.
 - d. Page 13 (CE 10.1.2) – Staff modified an implementation strategy to ensure City coordination with the tribes to protect and improve environmental quality.
2. Page 13 (CE 9.1.10) – Staff added a proposed implementation strategy to address concerns related to SeaTac airport operations.

CHAPTER 4: Conservation and Environment Element

BACKGROUND AND CONTEXT

Des Moines is rich in beauty and natural resources that include the Puget Sound shoreline, hillsides and bluffs, urban forests, diverse streams and wetlands, ~~fish, wildlife~~ and open space. There are also a variety of fish and wildlife species present in the area including priority habitat species such as Chum, Coho Salmon, and Cutthroat Trout. The Puget Sound is the southern extent of the Salish Sea and part of the migration route for many birds, Bull Trout, and Chinook Salmon, with Des Moines Creek being an area that these species utilize for foraging habitat during parts of the year. These are defining features of our City that are valued by our citizens and are important for us to protect for generations to come. Both individually and interacting as a whole, these resources provide valuable functions to the City's ecosystem including:

- Control of flooding, surface water runoff, erosion, and sedimentation;
- Groundwater and aquifer recharge;
- Soil and geologic stability;
- Air and water quality; and
- Habitat for animals and marine life.

The Conservation and Environment Element contains goals, policies and implementation strategies aimed at environmental stewardship and protecting the City's environmental assets, with particular emphasis on environmentally critical areas, shorelines, surface and groundwater quality, and climate change. The Washington State Growth Management Act mandates the protection of aquifer recharge areas, fish and wildlife habitat conservation areas, flood hazard areas, geologically hazardous areas, wetlands, and stream corridors while the Shoreline Management Act provides for the protection of shorelines. Recognizing that a substantial portion of the City is located in geologic hazard-geologically hazardous areas, this element also addresses the health of ecological functions, public safety, and protection from natural dangers, including erosion, landslides, and seismic hazards.

Environmentally Critical Areas-critical areas (referred to as "critical areas") are those that provide environmental functions and require local and state law protections to ensure safe and/or functional environments. Scientific research has determined that unstable slopes are best protected by undisturbed buffer areas. Landslides on such slopes can result in enormous public and private costs, and severe threats to public safety and natural resources. Protection or avoidance of geologically hazardous areas (typically achieved through buffers) can

Commented [NS1]: General Note: It's seemed appropriate to highlight the fish and wildlife species in Des Moines when discussing habitats given the city's feature and amenities.

Commented [NS2]: **Housekeeping item:** The City's current plan includes this sentence and the following sentence in a "feature box." We have relocated the information to be integrated with the main text.

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help to prevent large amounts of public and private costs while ensuring public safety. Critical areas within the City of Des Moines include wetlands, streams, ~~areas with a critical recharging effect on aquifers~~ critical aquifer recharge areas (CARAs), frequently flooded areas, geologically hazardous areas, and fish and wildlife habitat conservation areas. The locations of critical areas within the City of Des Moines are shown in the following figures:

- Figure 4-1 Slope and Topography
- Figure 4-2 Drainage Basins
- Figure 4-3 Wetlands and Surface Water
- Figure 4-4 Geologically Hazardous Areas
- Figure 4-5 Fish and Wildlife Habitat Conservation Areas
- Figure 4-6 Critical Aquifer Recharge Areas
- Figure 4-7 Frequently Flooded Areas

Commented [NS3]: General note: This is the only map I think needs to be update, to match work that the city completed following new FEMA D-FIRM maps being released.

The GMA requires ~~that~~ the City of Des Moines to designate its critical areas and develop policies and development regulations to protect ~~their~~ the functions and values of critical areas using "best available science" (BAS). As defined in Washington Administrative Code (WAC) WAC 365-195-905, BAS is information that (1) state or federal natural resource agencies have determined represents the best available science, (2) was derived from consultation with qualified scientific expert(s), or (3) was produced through a valid scientific process. A valid scientific process should have the following characteristics: peer review, methods, logical conclusions and reasonable inferences, quantitative analysis, context, and references.

Commented [NS4]: General note: The most recent update to City of Des Moines Critical Area Regulations was via Ord 1649 in 2016. The City has one year following a Comp Plan periodic update deadline to update that work including identifying BAS, and review/ update the Environmentally Critical Areas code at Chapter 16.10. (Thus the deadline is December 31, 2025)

Approximately 115 acres of land is regulated by the City's Shoreline Master Program (SMP), one of the City's most important documents for environmental protection. The SMP is a planning document that outlines goals and policies for shorelines of the City, pursuant to the Shoreline Management Act of 1971 (SMA). The *City of Des Moines Critical Areas Inventory: Wetland, Stream and Habitat Elements* (2006) and map folio, along with the Shoreline Master Program (2019), and Surface Water Management Comprehensive Plan (2015), and 2021 Technical Memorandum Supplementing the Mid-Plan Update of the 2015 Surface Water Comprehensive Plan provide the background data for this element. The City's natural resource inventory is supplemented on an ongoing basis by technical information that is provided through individual project reviews or special studies.

Commented [NS5]: General note: Recent legislation has changed the timelines for SMP updates (was every 8 years, now every 10). The next SMP update for Des Moines will be due by June 30, 2029.

Commented [NS6]: **Housekeeping Item:** This is per Resolution No. 1434

In 1996, the Washington State Legislature established the Puget Sound Water Quality Management Program that clearly delineates federal, state, and local action necessary to protect and restore the biological health and diversity of Puget Sound. The plan includes the framework describing various governmental roles for enhancing recreational opportunities, and restoring a balanced population of indigenous shellfish, fish and wildlife. Using this road map, the City of Des Moines developed a long-term strategy that implements the goals outlined in the Puget Sound Water Quality Management Program.

Commented [NS7]: General Note: This paragraph is from the city's website ([Surface Water Management - City of Des Moines, WA \(desmoineswa.gov\)](https://www.desmoineswa.gov/surface-water-management)) This could instead be included in the Capital facilities section if desired.

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By 2029, the City of Des Moines will be required to include a separate Climate Element in its Comprehensive Plan per Washington State Legislature House Bill 1181, which aims to utilize the planning framework to strengthen the state's climate response. Although the City is not currently required to have a separate Climate Element, the Environment Element includes goals and policies throughout that provide a strong starting point for climate change prevention and resiliency, including methods for conserving energy and water, and improving air quality. Since the last Comprehensive Plan update, the City is continuing to expand efforts to preserve the environment and mitigate for future impacts through city-wide projects that have been pursued.

Previous projects in the City of Des Moines with environment and conservation focus have included removal of barriers to fish passage, natural areas restoration, invasive plant removal, floodplain improvements, and development of public parks. The Comprehensive Plan and critical areas regulations will continue to allow for future projects to restore, support, improve, and protect the City's environmental assets.

GOALS

Goal CE 1 Protect, improve, and sustain environmental quality through the State Environmental Policy Act (SEPA), the use of best management practices, and the use of best available science.

Goal CE 2 Protect environmentally critical areas from damage caused by encroachment and development.

Goal CE 3 Maintain and monitor a shoreline master program, consistent with state law, to enhance and protect the quality of the shoreline environment consistent with the best available science.

Goal CE 4 Prevent flooding, erosion, sedimentation, water quality, and habitat degradation, and to

Goal CE 5 Protect, restore, and enhance water quality of all surface waters (streams and shorelines).

Goal CE 65 Protect fish and wildlife species and habitats with emphasis on those identified by the State and Federal governments as endangered, threatened, or sensitive resources.

Goal CE 76 Maintain a solid waste system that bases its primary means of solid waste disposal on the principles of reduction, reuse, and recycling.

Goal CE 87 Promote the conservation of energy energy conservation in the location and design of public and private development.

Goal CE 98 Protect air quality to maintain a healthy environment now and for current and future generations.

Goal CE 109 Educate the community on how to care for and improve Des Moines's natural environment.

POLICIES AND IMPLEMENTATION STRATEGIES

Conservation Best Management Practices

Commented [NS8]: Updates per state/ regional/ county requirements are made to this paragraph. Compliance with HB 1181 is not due until June 30, 2029 for Cities in King County. Commerce has recently developed "model guidance." There will likely be up to \$500k in grant funding available to Des Moines to update the Transportation Element in conformance to HB 1181 requirements and create two new "Climate Element" sub-elements: Greenhouse Gas Reduction and Climate Resilience. (Later, adjustments must also be made to the Land Use, Capital Facilities, Utilities and Parks and Recreation Elements, but those aren't due until 2034)

We recommend: (1) The City should monitor for funding availability notices. (2) The City should monitor for changes to the model guidance or other adjustments to rules or requirements for HB 1181 compliance. (3) Monitor for regional efforts or initiatives that will support these requirements (such as a regional study that can help fulfill the requirements for data collection and monitoring, and so forth).

Commented [NS9]: Housekeeping item. Goal CE 4 is better organized into two goals. We have renumbered everything to fit in this change, and reorganized the policies and implementation strategies previously under CE 4.1, 4.2, etc. to best fit this change (now CE 4.1, 4.2 or 5.1, 5.2, etc.)

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CE 1.1 **Plan and encourage sound management of natural resources – land, air, water, vegetation, fish, wildlife, and energy – considering entire watersheds and regional influences.**

CE 1.1.1 Prepare studies of Des Moines area watersheds, identifying environmental problems and short-term and long-term means for solving identified problems.

CE 1.1.2 Identify and ~~rank-prioritize~~ capital improvement and land acquisition projects that can prevent or reduce flooding, protect surface and ground water quality, stabilize hillsides, and protect, restore, and enhance fish and wildlife habitat.

CE 1.1.3 Regulate public and private development proposals in ways to ~~insure-ensure~~ that the valuable functions of natural resources are preserved, restored, or improved.

CE 1.1.4 Explore approaches to regulations and procedures that streamline the permit review process for development in or near shorelines and critical areas.

CE 1.1.5 Balance social, economic, and environmental goals ~~to-with~~ land use planning activities.

~~CE 1.1.6 Consider-Evaluate the impacts of new development on natural resources as a part of the SEPA environmental review process and require mitigatingion measures as may be appropriate.~~

Commented [JW10]: Proposed implementation strategy referencing SEPA since it is referenced in the CE 1 goal.

~~CE 1.1.7 Use the City's compost procurement procedures and develop strategies to inform residents about the value of compost and how the City uses compost in its operations.~~

Commented [NS11]: Housekeeping item. We suggest adding this but it is not necessary. The City has already taken these steps through adoption of Ord. 1774.

CE 1.2 **Include “best available science” when reviewing, revising, or developing policies and regulations to protect the functions and values of critical areas, giving special consideration to the protection of anadromous fish.**

CE 1.2.1 Document the use of BAS and instances when non-scientific information is used in-lieu-of BAS during the process of developing policies and regulations to protect critical areas and anadromous fisheries. Documentation should include relevant sources of BAS.

Documentation should also include the ~~rationale~~ ~~rationale~~ for using information that departs from BAS, and identify potential risks to the functions and values of the critical areas, and any additional measures to mitigate such risk.

Environmentally Critical Areas

CE 2.1 **Review and revise the City's Critical Areas Ordinance, on or before June 30, 20152025, and every ~~eight-ten~~ years thereafter to ensure protection of the ecological functions and values of critical areas from cumulative adverse**

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environmental impacts, and to ensure compliance with the requirements of the Growth Management Act.

CE 2.1.1 Designate and protect critical areas using “best available science” (BAS) pursuant to RCW 36.70A.172 and WAC 365-195-900 through 365-195-925.

CE 2.2 Prevent the destruction of critical areas including wetlands, areas with a critical recharging ~~effect~~ on aquifers used for potable water, fish and wildlife habitat conservation areas, frequently flooded areas, and geologically hazardous areas.

CE 2.2.1 Regulate development on bluffs and ravine sidewalls to ~~ensure~~ ~~insure~~ human safety, health, and welfare, and to restore and preserve other functions (~~relating to significant habitat qualities~~) served by bluffs and ravines.

CE 2.2.2 Limit development proposals and land disturbance on potentially unstable land, such as erosion, landslide, and seismic hazard areas, to ~~insure~~ ~~ensure~~ safety and conformity with existing natural constraints.

CE 2.2.3 Seek public acquisition of environmentally critical areas that have outstanding valuable natural functions and aesthetic assets.

CE 2.2.4 Require the issuance of a permit and critical area review by the City prior to any construction or land disturbing activity that would occur in or adjacent to, or would likely affect, a critical area.

CE 2.2.5 Where valid or complete scientific information is not available, the City shall take a precautionary or no risk approach, in which development and land use activities are strictly limited until the uncertainty is sufficiently resolved (as stated in WAC 365-195-920). As an interim approach, the City should take an effective adaptive management approach, where the results of land use decisions are scientifically evaluated as to their impacts on critical areas.

CE 2.3 Ensure that stream and wetland buffers are ~~of adequate size~~ ~~adequately sized~~ to protect critical wildlife species and habitat.

CE 2.3.1 Identify and delineate wetlands and their boundaries ~~pursuant to~~ in accordance with the approved federal wetland delineation manual and applicable regional supplements (WAC 173-22-035).

CE 2.4 Promote the preservation of native vegetation and mature trees, revegetation, and appropriate landscaping to improve air and water quality and fish and wildlife habitat.

CE 2.4.1 Regulate and plan land use and condition development proposals in ways that protect mature trees, native vegetation, stream flow, fish and wildlife habitat, groundwater recharge, and air quality, as well as natural topographic, geologic, and hydrologic features.

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CE 2.4.2 Encourage the preservation of trees within critical areas by maintaining a permitting process that requires review prior to tree removal or pruning.

Commented [NS12]: Proposed Update per DMMC Code update: Suggested addition per DMMC Chapter 16.25

CE 2.4.23 Maintain and preserve significant trees by requiring development proposals to adhere to a replacement ratio of 3:1 for the removal, destruction, or damage of any trees that were identified to be retained.

Commented [NS13]: Proposed Update per DMMC Code update: Suggested addition per DMMC Chapter 16.25

CE 2.4.4 Meet Department of Ecology National Pollutant Discharge Elimination System (NPDES) requirements for tree retention and preservation as new permits are issued.

Commented [JW14]: Proposed implementation strategy suggested by SWM.

CE 2.5 Balance the City's goals of protecting environmentally critical areas with the other social, cultural, and economic goals of the City of Des Moines Comprehensive Plan.

CE 2.5.1 Identify environmentally critical areas and implement performance standards and development regulations for any proposed developments within or adjacent to them.

CE 2.5.2 Accommodate design flexibility and compensate for critical area preservation by calculating density for residential dwelling units as the ratio of developable area to undevelopable critical areas on site.

Commented [NS15]: Proposed Update per DMMC Code update: Suggested addition per DMMC 16.10.290

CE 2.5.3 Work with Tribal Nations, state and regional agencies and other stakeholders to identify and protect archaeological resources from development.

Commented [JW16]: Proposed implementation strategy for City's approach to archaeological resources.

Shorelines

CE 3.1 Provide protections for shorelines of the state, as designated by the City's Shoreline Master Program (SMP). Review and revise the SMP at least every ten years to ensure protection of the ecological functions and values of shorelines from cumulative adverse environmental impacts, and to ensure compliance with the requirements of the Growth Management Act.

CE 3.1.1 Review and revise the SMP at least every ten years to ensure protection of the ecological functions and values of shorelines from cumulative adverse environmental impacts, and to ensure compliance with the requirements of the Growth Management Act. ~~The Des Moines Shoreline Master Program (SMP) update was adopted by the City Council Ordinance No. 1502 on January 27, 2011 and amended by Ordinance No. 1720 on July 11, 2019 and is codified in Title 16 Environment of the Des Moines Municipal Code -- Environment.~~

Commented [JW17]: General Note: Expanded on the deleted implementation strategy regarding monitoring of the SMP.

CE 3.1.2 Maintain and monitor the Shoreline Master Program SMP to control and regulate development in the shoreline area.

CE 3.12 Provide protections for environmentally critical areas within shorelines, as designated by the City's Shoreline Management Master Program (SMP). Review and revise the City's Shoreline Management Program, at least every eight ten

Commented [JW18]: General Note: Clarification that shorelines are not "environmentally critical areas" (RCW 36.70A.030 and page 4-2 of this document). There is a critical areas section within the SMP. This policy section has been edited accordingly.

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years to ensure protection of the ecological functions and values of shorelines from cumulative adverse environmental impacts, and to ensure compliance with the requirements of the Growth Management Act.

~~CE 3.1.1 The *Des Moines Shoreline Master Program* (SMP) update was adopted by the City Council Ordinance No. 1502 on January 27, 2011 and amended by Ordinance No. 1720 on July 11, 2019 and is codified in Title 16 Environment of the Des Moines Municipal Code.~~

~~CE 3.1.2 Maintain and monitor the Shoreline Master Program to control and regulate development in the shoreline area.~~

~~CE 3.2.1 Update the environmentally critical areas sections within the SMP including but not limited to Section 6.4 to be consistent with the City's Critical Areas Ordinance and best available science (BAS).~~

Water Management

CE 4.1 Analyze the chain of environmental impacts from public and private development proposals in context of the whole watershed. Approve, condition, restrict, or deny development proposals based upon accurate and well-documented environmental information.

CE 4.1.1 Implement the surface water management program to:

1. Enhance water quality and control flooding;
2. Effectively use and maintain existing drainage facilities that provide fish and wildlife habitat;
3. Satisfy all regulatory requirements and compliance schedules; and
4. Identify and fund capital improvements.

CE 4.1.2 Require that development proposals maintain surface water runoff rate, volume, and quality at pre-development levels.

CE 4.1.3 Protect and improve surface and ground water quality by requiring development proposals to implement best management practices and other available technology for controlling point and non-point sources of pollution.

CE 4.1.4 Promote ground water infiltration and minimize surface water runoff by requiring development proposals to mitigate impervious surfaces.

CE 4.1.5 Grading and construction activities shall implement erosion control Best Management Practices and other development controls as necessary to reduce sediment and pollution discharge from construction sites to minimal levels.

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CE 4.1.6 Work with the Washington State Department of Ecology to implement the programs of the Puget Sound Water Quality Management Plan.

CE 4.1.7 Study and consider incentives for residential and commercial property owners to maintain and enhance water quality.

~~CE 4.1.8~~ Implement the goals and regulations of the Federal Clean Water Act to maintain and ensure the chemical, physical, and biological integrity of the City's water.

Commented [NS19]: Proposed Update per DMMC Code update: Suggested addition per Ord. 1671

~~CE 4.1.9~~ Encourage Low-Impact Development (LID) by utilizing natural features when feasible, to preserve the quality and quantity of available water.

Commented [NS20]: Proposed Policy Update

~~CF 4.1.10~~ Encourage the use of drought-tolerant landscaping.

Commented [NS21]: Proposed Policy Update

CE 4.24.5 Protect, improve, and sustain ground water quality and quantity through best management practices, and sound innovative environmental management.

~~CE 4.2.14.5-1~~ Protect the quality and quantity of groundwater by:

- ~~Assisting Assist~~ with the implementation of the South King County Groundwater Management Plan ~~(as amended)~~.
- ~~Implementing Implement~~, as appropriate, Wellhead Protection Programs in conjunction with adjacent jurisdictions and ground water purveyors.
- ~~Requiring Require~~ use of Best Management Practices for new development recommended by the South King County Groundwater Management Plan ~~(as amended)~~.
- ~~Refining Refine~~ land use and critical areas regulations, as appropriate, to protect critical aquifer recharge areas.
- ~~Identifying Identify~~ innovative stormwater techniques that protect groundwater from contamination and pollution.

CE 4.34.4 Reduce flooding, erosion, and sedimentation; prevent and mitigate habitat loss; enhance ground water recharge; and prevent water quality degradation.

~~CE 4.3.14.4.1~~ The surface waters of the City of Des Moines should be managed through ~~plans~~, programs and regulations developed by the City of Des Moines ~~(and as amended)~~ in cooperation with affected jurisdictions.

Commented [NS22]: Housekeeping item The King County Flood Management Plan update is underway and the Draft Plan is currently available and Draft EIS is in SEPA comment period as of 02/16/2024. We have indicated "and as amended" to capture these types of updates. (Also, that plan could be named and added as a specific reference if needed.)

~~CE 4.3.24.4.2~~ Take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. ~~This can be obtained by reviewing and revising the City's Critical Areas Ordinance, on or before June 30, 2025, and every ten years thereafter to ensure protection of the ecological functions and values of the City's flood hazard areas from cumulative adverse~~

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environmental impacts, and to ensure compliance with the requirements of the Growth Management Act, Washington State Department of Ecology, and Federal Emergency Management Agency (FEMA).

CE 45.3.3 Continue to monitor and modify flood hazard mapping databases based on most current available information.

Commented [NS23]: Proposed Policy Update: FEMA recently released D-FIRMS (new mapping) and while we wouldn't expect further changes in the near term it is possible that with new technologies and techniques this could occur again in the next ~20 years.

Water Quality

CE 5.14.2 Regulate significant land clearing, grading, and filling to minimize the area, time, and slope length of exposed soils, and to reduce on-site erosion and off-site sediment transport.

CE 5.1.14.2.4 Limit significant clearing, grading, or filling operations prior to drainage and erosion/sedimentation plan approval and implementation.

CE 5.24.3 Undertake all necessary actions to protect the quality of surface water bodies located in the city.

CE 5.2.14.3.4 ~~To Ensure~~ the quality of surface water and protect the health and welfare of citizens by:

1. ~~Establish~~ Establishing a program to monitor surface water quality within its boundaries and ~~encourage~~ encouraging neighboring jurisdictions to implement similar monitoring programs.
2. ~~Develop~~ Developing plans, programs and regulations, in cooperation with other jurisdictions, to manage the surface waters of the City.
3. Per the 2021 King County Countywide Planning Policies' Environment chapter, wWork cooperatively with the tribal jurisdictions to establish, monitor, and enforce consistent standards for managing streams and wetlands throughout drainage basins.
- 3-4. ~~Work~~ Working with other jurisdictions, tribes, and stakeholders to develop a watershed approach to surface water management that includes implementation of Best Management Practices and public education initiatives and coordinated, knowledge-based management decisions.
- 4-5. ~~Establish~~ Establishing and/or ~~maintain~~ maintaining enforcement mechanisms that may be used to prevent or stop contamination to surface water quality.

Commented [JW24]: Proposed implementation strategy from the King County Countywide Planning Policies to include the tribes.

Fish and Wildlife

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CE 6.15-1 Strive to maintain the existing diversity of species and habitat in the City and maintain a quality environment that includes fish and wildlife habitats that support the greatest diversity of native species.

CE 6.1.15-1.1 Continue to designate, map, and protect habitat networks throughout the City of Des Moines from significant adverse environmental impacts.

CE 6.25-2 Work with adjacent jurisdictions and state, federal and tribal governments during land use plan development review to identify and protect habitat networks at jurisdictional boundaries.

CE 6.2.15-2.1 Protect and preserve habitat for species that have been identified as endangered, threatened, or sensitive by the state or federal government, or as priority species or priority habitats by the County.

CE 6.2.25-2.2 Conservation or protection measures necessary to preserve or enhance anadromous fisheries include measures that protect habitat important for all life stages of anadromous fish, including, but not limited to, spawning and incubation, juvenile rearing and adult residence, juvenile migration downstream to the sea, and adult migration upstream to spawning areas. Special consideration should be given to habitat protection measures based on the best available science relevant to stream flows, water quality and temperature, spawning substrates, instream structural diversity, migratory access, estuary and nearshore marine habitat quality, and the maintenance of salmon prey species. Conservation or protection measures can include the adoption of interim actions and long-term strategies to protect and enhance fisheries resources.

CE 6.2.35-2.3 Encourage the integration of native plant communities and wildlife habitats with other land uses where possible. Encourage or require that development protect wildlife habitat through site design and landscaping.

CE 6.2.45-2.4 Provide technical assistance, education, and information to citizens and groups wishing to install wildlife enhancement projects. Encourage public demonstration projects that show the range of possibilities for integration of wildlife into a variety of land uses. Consider demonstration projects done jointly by the City and a private landowner or organization.

CE 6.2.55-2.5 Be a good steward of public lands and integrate fish and wildlife habitat into capital improvement projects when practicable.

CE 6.2.65-2.6 Preserve native vegetation in parks and other publicly owned lands in the design and construction of new public facilities.

CE 6.35-3 Protect salmonid habitat by ensuring that land use and facility plans (transportation, water, sewer, power, gas) include riparian habitat conservation

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measures. Ensure that development within basins that contain fish enhancement facilities consider impacts to those facilities.

CE ~~6.3.15.3.1~~ Designate and protect fish and wildlife habitat conservation areas including:

1. Priority species of local importance and their habitat as listed by the most current King County Comprehensive Plan and/or the Washington Department of Fish and Wildlife;
2. Commercial and recreational shellfish areas;
3. Kelp and eel grass beds;
4. Herring and smelt spawning areas; and
5. Wildlife habitat networks designated by the City of Des Moines.

CE ~~6.3.25.3.2~~ The City of Des Moines shall evaluate programs and regulations to determine their effectiveness in contributing to Endangered Species Act listed species conservation and recovery, and shall update and enhance programs and plans where appropriate including evaluation of the Zoning Code, the Critical Areas Ordinance, the Shoreline Master Program, the clearing and grading regulations, the landscaping regulations, best management practices for vegetation management, and use of insecticides, herbicides and fungicides. The City of Des Moines shall amend these regulations, plans and best management practices to enhance their effectiveness in protecting and restoring salmonid habitat.

~~CE 6.3.3 The City of Des Moines shall continue its collaboration efforts through projects such as the Water Resource Inventory Area (WRIA) Salmon Habitat Plan, Poverty Bay Shellfish Protection District, and the Des Moines Creek Basin Committee and 2021 update in an effort to restore the Chinook Salmon habitat.~~

Commented [NS25]: Proposed Policy Update per Resolution 431

Solid and Hazardous Waste Management

CE 7.16.1 Manage solid and hazardous wastes in a manner that results in waste reduction, prevents land, air, and water pollution, and conserves natural resources.

CE ~~7.1.16.1.1~~ Prepare, implement, and monitor a waste reduction and recycling plan consistent with State of Washington law and the King County Comprehensive Solid Waste Management Plan.

CE ~~7.1.26.1.2~~ Prepare, implement, and monitor a hazardous waste management plan consistent with State of Washington law and the Local Hazardous Waste Management Plan for Seattle-King County.

Energy

CE 8.17.1 Regulate land uses to conserve all forms of energy.

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~~CE 8.1.17.1.1~~ Establish construction and site planning standards that result in energy conservation, or utilize alternative energy sources.

~~CE 8.1.27.1.2~~ Seek to stimulate a land use pattern that encourages an efficient transportation system.

~~CE 8.1.37.1.3~~ Implement measures to increase accessibility, encourage the use of, and improve bicycle and pedestrian circulation systems, helping to achieve a reduction in per capita vehicle miles traveled.

~~CE 7.1.4~~ Support regional efforts to develop electric vehicle infrastructure, such as charging stations.

Commented [NS26]: Housekeeping item: This can be deleted as it's already a policy below (CE 8.1.3)

~~CE 8.1.4~~ In accordance with RCW 36.70A.210, ensure that the City's comprehensive plan and development regulations plan for, adapt to, and mitigate the ongoing and future effects of a changing climate.

Commented [NS27]: Updated per state/ regional/ county requirements:
This relates to HB 1181

~~CE 8.1.5~~ Explore various funding opportunities in order to continue developing a Climate Element by 2029 in accordance with RCW 36.70A.210.

Commented [NS28]: Updated per state/ regional/ county requirements:
This relates to HB 1181

Air Quality and Noise

CE 9.18.1 Protect clean air for present and future generations.

~~CE 9.1.18.1.1~~ Support federal, state, and regional clean air policies in cooperation with the Puget Sound Clean Air Agency and the Puget Sound Regional Council.

~~CE 9.1.28.1.2~~ Strive for high air quality through coordinated land use and transportation planning and management.

~~CE 9.1.38.1.3~~ Support regional efforts to develop electric vehicle infrastructure, such as charging stations.

~~CE 9.1.48.1.4~~ Implement measures to reduce the amount of air-borne particulates such as:

1. Continuing street sweeping.
2. Encouraging dust abatement at construction sites.
3. Promoting low-emission construction practices.
4. Transitioning to an electric or a low-emission municipal vehicle fleet.

~~CE 9.1.58.1.5~~ Require that trees be an integral part of City street development standards.

~~CE 9.1.68.1.6~~ Require all developments to include landscaping improvements using trees, shrubs, and ground covers. Undertake measures to ensure the survival and good health of trees

IMAGINE DES MOINES 2044

and plants for the replanting and maintenance of trees and plants that are unable to be restored or retained.

Commented [NS29]: Proposed policy revision.

CE 9.1.7 Implement and maintain processes that encourage the preservation and maintenance of trees through programs such as Off-Site Mitigation and Fees Paid In Lieu and continue developing strategies to increase funding to programs such as the Urban Forestry Fund.

Commented [NS30]: Proposed Update per Ord. 1964

CE 9.1.8.1.7 Study and consider incentives for residential and commercial property owners to maintain and enhance air quality.

CE 9.1.9 Identify environmental impacts disproportionately affecting people of color and low-income populations in the community and develop strategies to mitigate these outcomes.

Commented [NS31]: Updated per state/ regional/ county requirements: House Bill 1181 discusses environmental justice as a topic in the resiliency sub element .

CE 9.1.10 Continue to participate in the SEA Stakeholder Advisory Round Table (StART) meetings and provide feedback to the Port of Seattle on airport related issues such as air quality, small particulates, aircraft noise and disproportionate impacts on racial and ethnic minority groups and low-income households.

Commented [JW32]: Proposed implementation strategy to include the StART forum and concerns regarding the airport.

Education and Outreach

CE 10.19-1 Encourage and support education and public involvement programs aimed at protecting environmental quality. These programs should: (1) inform, educate, and involve individuals, groups, businesses, industry, and government; (2) increase understanding; and (3) encourage commitment.

CD 10.1.19-1.1 Promote public involvement in restoring, protecting, and enhancing natural resources through such programs as the Green Des Moines Partnership Urban Forest Enhancement Plan, Adopt-A-Stream and the Habitat at Home, Adopt-A-Drain, and Storm Drain Marking Program Backyard Wildlife Sanctuary Program, by working with local educational institutions, and by integrally involving citizens in developing, implementing, and monitoring environmental programs.

Commented [JW33]: General Note: Additions by SWM plus name change (<https://wdfw.wa.gov/species-habitats/living/habitat-at-home>)

CE 10.1.29-1.2 Work with citizens, land owners/landowners, businesses, tribes, neighboring cities, King County, special purpose districts, and private and public agencies to protect and improve environmental quality, seeking shared responsibility and uniform environmental management.

CE 10.1.39-1.3 Manage surface water using-by developing a watershed approach, with responsibility shared among the City of Des Moines and affected jurisdictions. Emphasize educational programs and implementation of Best Management Practices to reduce pollution entering surface waters.

Sources:

IMAGINE DES MOINES 2044

[Washington State Department of Transportation, SR 516/Barnes Creek fish passage project page, Accessed March 27, 2024 \(https://wsdot.wa.gov/construction-planning/search-projects/sr-516-barnes-creek-fish-passage\).](https://wsdot.wa.gov/construction-planning/search-projects/sr-516-barnes-creek-fish-passage)

[City of Des Moines Shoreline Master Program, Ordinance 1720.](#)

**Environment Committee
April 2024
Capital Project Update**

Current Construction	Phase	Status/Comment
Kent-Des Moines Culvert Replacement	CN	WSDOT Led Project; Culvert installation is complete; Final pavement restoration (Spring)
24th Ave S Pipeline Replacement Project	CN	Transportation Led Project; Construction suspended
1st Ave S Pump Replacement Project	CN	Construction underway; Completion by end of April

Planning, Engineering, ROW Acquisition	Status/Comment
Kent-Des Moines/16th Ave S (Segment A)	PE Final Design & Permitting initiated with consultant KPG-PSOMAS; Construction 2024
Des Moines Memorial Drive (208th-212th)	PE Final Design & Permitting initiated with consultant Perteet
216th Pl/Marine View Dr Pipe Upgrade	PE Final Design & Permitting initiated with consultant Perteet
Deepdene Outfall Project	PE Final Design & Permitting initiated with consultant Tetra Tech; Acquiring easement
Massey Creek Pocket Estuary and Fish Project	PE Preliminary Design & Permitting initiated with consultant Parametrix
Des Moines Creek Pocket Estuary Project	PE Preliminary Design & Permitting initiated with consultant Parametrix

Projects Targeted for Grant Funding:	Status/Comment
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- Working on
- Planning on, some risk
- Resource/Schedule Risk



SOUTHWEST SUBURBAN SEWER DISTRICT COMPREHENSIVE SEWER PLAN APRIL 2024

Southwest Suburban Sewer District Comprehensive Sewer Plan Update

The Southwest Suburban Sewer District (District) has requested that the City of Des Moines review a copy of its General Sewer Plan. Comments are due no later than April 24th, 2024. The full Council was sent a copy of the District's draft plan on 3/25/2024 via email correspondence.

This General Sewer Plan Update (Plan) is prepared for the District to fulfill its requirements under the Washington Administrative Code (WAC), the Revised Code of Washington (RCW), and the Growth Management Act (GMA). The Plan provides the District with a guide for managing and operating the sewer system and coordinating expansions and upgrades to the infrastructure through build-out. The Plan serves as a guide for policy development and decision-making processes for the District.

- **Service Area Map, (attachment #1)**

The District's service area boundary encompasses 9,942 acres or 15.5 square miles serving the City of Burien, the City of Normandy Park, portions of the City of Seattle, City of Des Moines, City of SeaTac, and a portion of Valley View Sewer District. The District service area is generally bounded on the north by the City of Seattle, on the east by the City of SeaTac, to the south by the City of Des Moines, and on the west by Puget Sound.

- **Executive Summary of the Plan, (attachment #2)**

The District's General Sewer Plan Update provides a summary of the District's current sewage capacities; an analysis of the impact of projected growth on the District's sewage collection, conveyance, and treatment systems; and proposes a Capital Improvement Program (CIP) to alleviate system deficiencies. It also documents the District's policies, operation and maintenance practices, and financial plan to implement the CIP.

- **Capital Improvement Projects, (attachment #3)**

No near-term (2024-2028) improvements are planned within the jurisdiction of Des Moines. One long-term (2042-2050) CIP project (MC-32A) is planned adjacent to the Des Moines boundary along 1st Avenue South between South 200th Street and South 199th Street. This project will replace 277 feet of existing sewer line with 12-inch pipe to increase capacity and has an anticipated budget of \$500,000.

- **Sewer Rate Structure and Financial 6-year Budget**

The six-year financial plan developed to support ongoing operations and fund the near-term capital projects recommended in this Plan suggests annual sewer rate increases of 4.50 percent per year for the years 2025 through 2028.

The current monthly sewer rate of \$47.00 for single-family residential customers is projected to increase to \$59.63 by 2028. This represents a total increase of \$12.63 per month over the six-year period, an average of \$2.53 per month per year. The projected monthly sewer rates are



SOUTHWEST SUBURBAN SEWER DISTRICT COMPREHENSIVE SEWER PLAN APRIL 2024

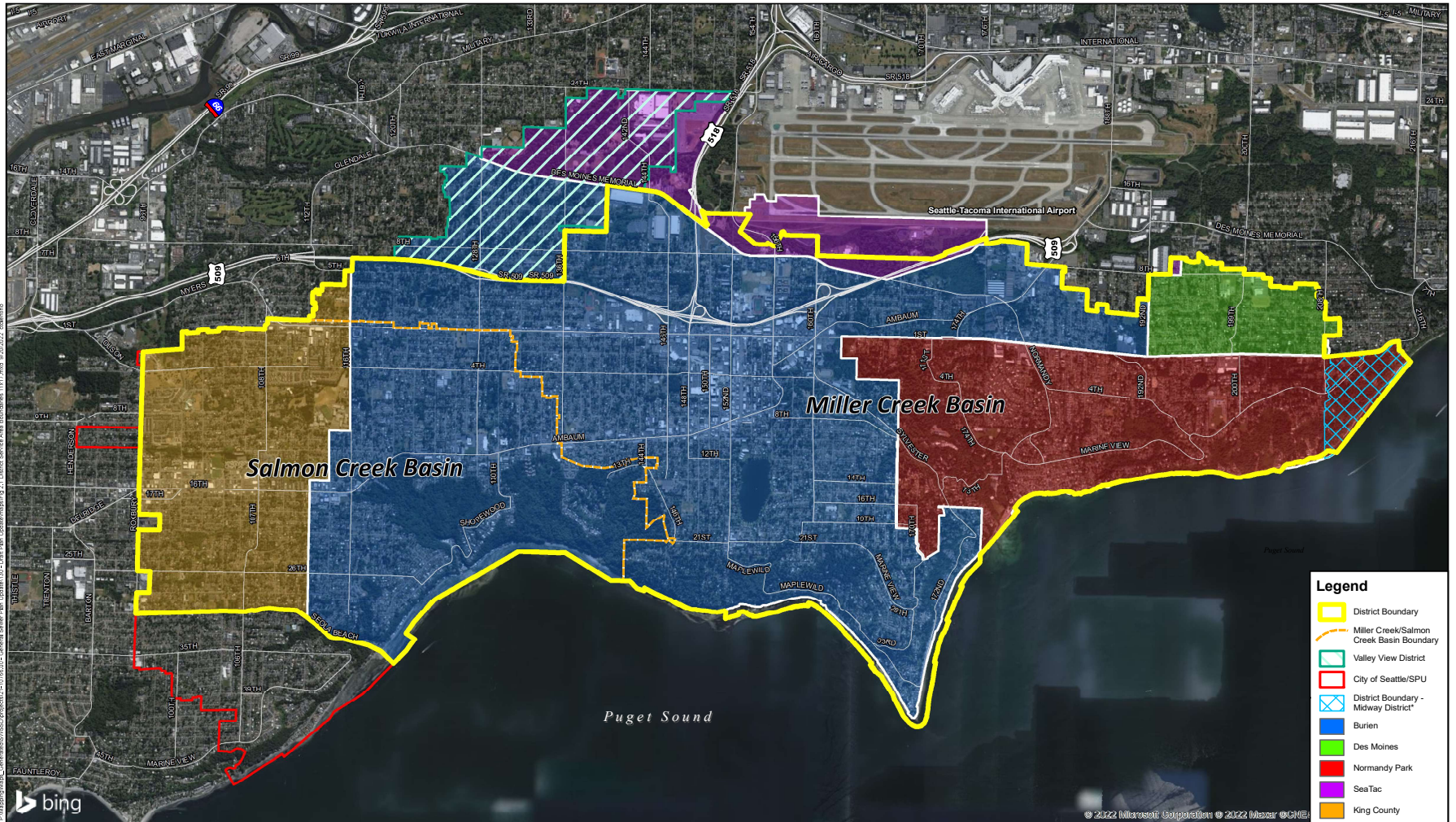
assumed to remain affordable under the industry metric of a monthly sewer cost that is no greater than 2.0 percent of the median household income.

Projected Six-Year Residential Monthly Bill

Single Family Residential Customer	Adopted 2023	Adopted 2024	Projected			
			2025	2026	2027	2028
Effective Date:	1-Jan-23	1-Jan-24	1-Jan-25	1-Jan-26	1-Jan-27	1-Jan-28
Projected Rate Increase:			4.50%	4.50%	4.50%	4.50%
Monthly Rate per Dwelling	\$ 47.00	\$ 50.00	\$ 52.25	\$ 54.60	\$ 57.06	\$ 59.63
Monthly Increase		\$ 3.00	\$ 2.25	\$ 2.35	\$ 2.46	\$ 2.57

- **Des Moines Staff Comments**
 - *Section 4.1 (Regulations and Policies: Introduction), page 4-1*
The plan states "It is the District's policy to respond to the property owners desiring sewer service but not to initiate such a request for sanitary service.". Within the Des Moines service area, to reduce failed septic systems and promote water quality, the City requests that the District revise its policy and take a more proactive role by promoting the benefits for Utility Local Improvement Districts (ULID's) within these unsewered areas.
 - *Appendix B (Sewer Service Agreements)*
Update the City of Des Moines Franchise Agreement to reflect the most current version (Ordinance No. 1652).

Attachment #1

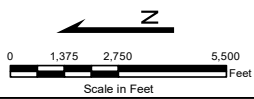


Legend

- District Boundary
- Miller Creek/Salmon Creek Basin Boundary
- Valley View District
- City of Seattle/SPU
- District Boundary - Midway District
- Burien
- Des Moines
- Normandy Park
- SeaTac
- King County

bhc
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Base Data: King County
Aerial Photo: Microsoft Bing
*Area is within District corporate boundary but will likely serve to Midway Sewer District.
Data sources may not reflect current or actual conditions.
This map is a geographic representation based on information available.
It does not represent survey data. No warranty is made concerning the accuracy, currency, or completeness of data depicted on this map.



District Service Area Boundaries
General Sewer Plan Update
Southwest Suburban Sewer District
September 2022

Figure
2.1

ES Executive Summary

ES.1 Introduction (Chapter 1)

The Southwest Suburban Sewer District (District) General Sewer Plan Update (Plan) provides a summary of the District's current sewage capacities; an analysis of the impact of projected growth on the District's sewage collection, conveyance, and treatment systems; and proposes a Capital Improvement Program (CIP) to alleviate system deficiencies. It also documents the District's policies, operation and maintenance practices, and financial plan to implement the CIP.

The District provides sanitary sewer service to customers within its sewer service area. Wastewater ultimately flows to one of two locations:

- Miller Creek Wastewater Treatment Plant, which is owned and operated by the District.
- Salmon Creek Wastewater Treatment Plant, which is owned and operated by the District.

The wastewater flow components that enter the District's collection and conveyance system can be categorized into two sources:

1. Direct Service. Flow from customers within the boundaries of the District.
2. Indirect Tributary Service. Flow that originates from areas outside the District boundaries from other sewerage agencies. These tributary areas include flow from the cities of Seattle, SeaTac, Des Moines, Normandy Park and Burien, unincorporated King County, and from the Valley View Sewer District.

Inter-local agreements between the District and the neighboring sewerage agencies define the terms by which sewer service is provided. It is possible that those agreements could be amended in the future, but it is unlikely that flows would be routed differently than currently described unless otherwise noted. It is assumed for the purposes of this Plan that the flows will continue under the current routing configuration and that there would be no change to the current inter-local agreements that govern these sewer services unless otherwise noted.

Of the District's 9,942 acres, approximately 601 acres and 670 acres of the sewer infrastructure service areas is maintained by Seattle Public Utilities (SPU) and Valley View Sewer District, respectively. All flow is treated by one of the two wastewater treatment plants (WWTPs) in the District. In 2021, the District provided sewer service to approximately 59,298 people.

Planning for future wastewater operations requires the District to address the land use decisions within the District sewer service boundary as determined by the cities of Seattle, Burien, SeaTac, Normandy Park, Des Moines, and King County.

This Plan evaluates future collection and treatment facilities required to accommodate both existing and future wastewater collection and treatment needs.

This Plan complies with the Washington State Department of Ecology (Ecology) requirements for General Sewer Plans (Washington Administrative Code [WAC] 173-240-050) as shown in Table ES-1.

Table ES-1
General Sewer Plan Requirements per WAC 173-240-050

Reference Paragraph	Description of Requirement	Location in Plan
3a	Purpose and need for proposed plan	Section 1.3
3b	Who will own, operate, and maintain system	Section 1.2
3c	Existing and proposed service boundaries	Figure 2.1
3d	Layout map showing boundaries; existing sewer facilities; proposed sewers; topography and elevations; streams, lakes; and other water bodies; water systems	Figures 3.1 and Figures A.2 thru A.55 (Appendix A)
3e	Population trends	Chapter 3
3f	Existing domestic and/or industrial wastewater facilities within 20 miles	Figure 1.1
3g	Infiltration and inflow problems	Chapter 7 Section 10.2
3h	Treatment systems and adequacy of such treatment	Chapters 5 and 8
3i	Identify industrial wastewater sources	Section 6.4
3j	Discussion of collection alternatives	Chapter 9
3k	Discussion of treatment alternatives	Chapter 8
3l	Discussion of disposal alternatives	Chapter 8
3m	Define construction cost and O&M costs	Chapter 10 and Appendix J
3n	Compliance with management plan	Section 9.4.5
3o	SEPA compliance	Appendix D

ES.2 Service Area Characteristics (Chapter 2)

The District is located in King County, Washington, and abuts the southern city limits of Seattle. The District’s service area boundary encompasses 9,942 acres or 15.5 square miles serving the City of Burien, the City of Normandy Park, portions of the City of Seattle, City of Des Moines, City of SeaTac, and a portion of Valley View Sewer District. The District service area is generally bounded on the north by the City of Seattle, on the east by the City of SeaTac, to the south by the City of Des Moines, and on the west by Puget Sound.

The District was established in 1945 to maintain sewer infrastructure installed by the Federal Government during World War II. The District formally purchased the sewer infrastructure in 1954 and the first sewer comprehensive plan was adopted in the 1950’s to provide sanitary sewer service.

The three most dominant freshwater features in the sewer service area are Lake Burien, Arbor Lake, and Hicklin Lake. Lake Burien is by far the largest of the three and is located in the central western portion of the District. Arbor Lake and Hicklin Lake are in the north central portion of the District. Wetlands are found adjacent to the many creeks, small streams, and lakes within the District. The retreat of glaciers at the end

of the last ice age formed the rolling terrain characteristic of the District area. Erosion and flooding of low-lying areas during that period resulted in surficial geology that is defined by the Washington State Department of Natural Resources. There are critical areas throughout the District which will limit development. Most of these areas are wetlands and floodplains. Of the several species present, the state government considers the Western Pond Turtle a threatened species and the Coho Salmon is considered a candidate. No species are currently considered threatened by the federal government.

Water supply within the District’s service area is provided through six purveyors.

- King County Water District No. 49
- King County Water District No. 20
- Seattle Public Utilities
- Highline Water District
- King County Water District 125
- King County Water District 45

These purveyors purchase all of their water from the City of Seattle or obtain it from wells.

ES.3 Existing and Future Population Forecasts (Chapter 3)

The projected population for the District over the planning horizon of this Plan is presented in Table ES-2. The existing population and employment data was provided by the Washington State Office of Financial Management (OFM) at a mini-basin level. Similarly, the 2027, 2041, 2050 population and employment projections were generated using model forecasted data provided by the Puget Sound Regional Council (PSRC) for mini-basin and basin levels. The estimated sewered and total populations for 2021, 2027, 2041 and 2050 are shown in Table ES-2.

Table ES-2
Service Area Population Forecast

Year	Miller Creek		Salmon Creek		Total Service Area	
	Total	Sewered	Total	Sewered	Total	Sewered
2021	40,044	29,688	32,962	29,610	73,006	59,298
2027	41,844	33,366	33,422	30,745	75,266	64,111
2041	45,530	41,987	33,916	32,859	79,446	74,846
2050	56,509	56,509	35,136	35,136	91,645	91,645

ES.4 Regulations and Policies (Chapter 4)

The District’s General Sewer Plan is guided by Comprehensive Plans from the adjacent agencies. The District’s policy for sewer service recognizes that its function is not to plan land uses for the service area but to respond to land uses planned by the land use planning agencies. It is the District’s policy to respond to property owners desiring sewer service but not to initiate such a request for sanitary sewer service. After entering a Developer’s Extension Agreement with the District, the proposed sewer design will be reviewed

by the District to ensure compliance with the District standards and design criteria. Sewer extensions shall follow the current version of the Southwest Suburban Sewer District Developer Extension Manual. The District's policies and criteria include the following:

- Design Standards
- Engineering Submittals
- Standard Details and General Notes
- Fats, Oils, and Grease Removal
- Easements

ES.5 Existing Wastewater Facilities (Chapter 5)

The District owns and operates approximately 3 miles of force mains, ranging from 4 inch to 16-inch, and approximately 200 miles of gravity sewer ranging in size from 6-inch to 36-inch and approximately 140 miles of sewer stubs. Conveyance pipe materials vary from older installations consisting of asbestos cement and vitrified clay pipe to more recent installations being constructed primarily of polyvinyl chloride (PVC) and ductile iron (DI) pipe. The District has a total of 11 active lift stations. Although the pumps and emergency generators used at these lift stations are manufactured by a variety of manufacturers and the District's Design and Construction Standards do not specify a particular make, model, or type of a pump station, it is generally desired to limit the number of manufacturers used. Most of the lift stations are comprised of wet wells with submersible pumps or are planned to be rehabilitated as such. Three lift stations remain wet well/dry well configurations. Most of the lift stations are not equipped with flow meters, though that is a feature which is generally included in lift station upgrade projects. All of the stations have alarm notifications which include pump on/off; pump failure; power failure; high/low wet well level; generator run; communication failure; intrusion; and smoke detection.

Flows are collected within two large drainage basins, Miller Creek Basin and Salmon Creek Basin, with the flows from each basin being directed to a separate WWTP. The Miller Creek Basin encompasses 6,540 acres. There are five lift stations in the Miller Creek Basin. There is one major interceptor line within this basin. The Salmon Creek Basin encompasses approximately 3,400 acres. There are six lift stations in the Salmon Creek Basin. There is one primary interceptor within this basin. The Miller Creek and Salmon Creek Basins were each sub-divided into mini-basins to help define the population growth patterns and the associated flows.

The Miller Creek WWTP provides wastewater treatment service for residential, commercial, and industrial customers in the Miller Creek Basin. The plant is located at 1015 SW 174th Place, Normandy Park, WA, 98166. The WWTP is owned and operated by the District. The WWTP is operated in accordance with the requirements of National Pollutant Discharge Elimination System (NPDES) Waste Discharge Permit No. WA-002276-4.

The existing treatment facilities consist of a headworks with screens and grit removal, four primary clarifiers, six rotating biological contractors (RBCs), two secondary clarifiers, two chlorine contact chambers, effluent Parshall flume, rotary drum thickener, gravity thickener, primary and secondary anaerobic digesters, sludge dewatering, and odor control.

The Salmon Creek WWTP provides wastewater treatment service for residential, commercial, and industrial customers in the Salmon Creek Basin. The plant is located at 12550 Shorewood Drive SW, Burien, WA, 98146. The WWTP is owned and operated by the District. The WWTP is operated in accordance with the requirements of NPDES Waste Discharge Permit No. WA-002277-2.

The existing treatment facilities consist of a headworks with screens and grit removal, three primary clarifiers, three RBCs, two secondary clarifiers, two chlorine contact chambers, effluent Parshall flume, gravity thickener, rotary drum thickener, primary and secondary anaerobic digesters, sludge dewatering, and odor control.

ES.6 Wastewater Flow Characteristics (Chapter 6)

Flow projections for the target years 2027, 2041, and 2050 are summarized in Table ES-3.

**Table ES-3
 Unit and Projected Flows**

Parameter	Miller Creek WWTP			Salmon Creek WWTP		
	2027	2041	2050	2027	2041	2050
Average Dry Weather Flow (ADWF), MGD	2.86	3.57	4.56	2.26	2.43	2.74
Annual Average Flow (AAF), MGD	3.64	4.60	5.76	2.63	2.86	3.21
Maximum Month Flow (MMF) ³ , MGD	6.53	8.38	10.18	5.22	5.84	6.46
Peak Day Flow (PDF), MGD	16.05	20.89	24.79	13.94	15.88	17.40
Peak Wet Weather Flow (PWWF), MGD	24.95	32.49	38.54	23.40	26.69	29.23
Notes:						
1) Per capita flow rates applied population projections to estimate future ADWF.						
2) I/I contribution (gpad) calibrated to 2010 flows then increased at 7% per decade due to assumed pipe degradation.						
3) Peak Wet Weather Flow Estimate assumes a peaked ADWF, based on diurnal patterns.						

ES.7 Conveyance System Analysis (Chapter 7)

A hydraulic capacity analysis of the District’s existing sewer network was performed using the MIKE+ 2023 software, by DHI. Existing model files were imported from the previous MIKE Urban model developed as part of the 2015 Comprehensive Sewer Plan (2015 Plan) and updated with record drawings and operational data for new facilities that have been constructed since the last update.

Future sewer system expansion was modeled by adding flow from all future population growth into the existing system model. Sewer extensions were not sized, but as the need arises, the model can be updated to ensure that the new sewer systems are constructed with adequate capacity for future growth.

Future sewer system expansion was modeled by adding flow from all future population growth into the existing system model. Flow projections were input into the models. Scenarios were created for 2021 Average Annual flows (AAF) and Peak Wet Weather Flows (PWWF). Additional PWWF scenarios were created for the 2027, 2041, and 2050 flow projections. The Peak Day diurnal patterns and the model

loading formed the basis for the scenarios that were analyzed to develop the CIP. Model simulations representing the 2021, 2027, 2041, and 2050 flow projections scenarios were run. From those results, conveyance system deficiencies were identified, and upgrades were defined for the three (3) capital improvement periods.

ES.8 Wastewater Treatment Plants (Chapter 8)

Both hydraulic and treatment capacity were evaluated for both WWTPs. The hydraulic evaluations were performed to assess whether the WWTPs could hydraulically accommodate flow rates projected for the 2050 planning horizon. The treatment capacity evaluations were performed to assess whether current treatment processes have the ability to accommodate future loadings associated with the 2050 planning horizon and maintain permit compliance with a changing regulatory environment.

Average annual and maximum month loading projections were calculated for each plant based on loading factors and the population projections. Average annual and maximum month loading factors were calculated based on the highest values for each plant reported in the 2016-2020 Discharge Monitoring Report (DMR) data and dividing by sewer service area population. Loading factors are presented in Table ES-4.

**Table ES-4
 Loading Factors**

Parameter	Miller Creek	Salmon Creek
Average Annual BOD Loading (lbs./day)	8,412	5,950
Maximum Month BOD Loading (lbs./day)	10,498	7,892
Average Annual TSS Loading (lbs./day)	6,185	4,623
Maximum Month TSS Loading (lbs./day)	8,509	6,013
2021 Sewered Population	29,688	29,610
Average Annual BOD Loading Factor (ppcd)	0.28	0.20
Maximum Month BOD Loading Factor (ppcd)	0.35	0.27
Average Annual TSS Loading Factor (ppcd)	0.21	0.16
Maximum Month TSS Loading Factor (ppcd)	0.29	0.20

The loading factors seen at both plants are within a typical range for municipal wastewater. Average annual loading factors typically range between 0.11-0.26 pounds per capita per day (ppcd) for biochemical oxygen demand (BOD), and 0.13-0.33 ppcd for total suspended solids (TSS). The loading factors at Miller Creek WWTP are higher than for Salmon Creek WWTP; this could be due to a combination of factors differences in age of construction affecting fixture efficiency, more industrial contributors, and differences in infiltration and inflow (I/I). Loading factors were then multiplied by the projected sewer service area of each plant. Projected BOD and TSS loadings are summarized in Table ES-5. Flow projections for the two WWTPs are presented in Table ES-6.

**Table ES-5
Loading Projections**

Parameter	Miller Creek				Salmon Creek			
	2021	2027	2040	2050	2021	2027	2040	2050
Average Annual BOD Loading (lbs./day)	8,412	9,454	11,897	16,012	5,950	6,179	6,603	7,061
Maximum Month BOD Loading (lbs./day)	10,498	11,798	14,846	19,981	7,892	8,195	8,758	9,365
Average Annual TSS Loading (lbs./day)	6,185	6,951	8,747	11,772	4,623	4,801	5,131	5,486
Maximum Month TSS Loading (lbs./day)	8,509	9,563	12,034	16,196	6,013	6,243	6,673	7,135

**Table ES-6
Flow Projections**

Parameter	Miller Creek WWTP			Salmon Creek WWTP		
	2027	2041	2050	2027	2041	2050
Average Dry Weather Flow (ADWF), MGD	2.86	3.57	4.56	2.26	2.43	2.74
Annual Average Flow (AAF), MGD	3.64	4.60	5.76	2.63	2.86	3.21
Maximum Month Flow (MMF) ³ , MGD	6.53	8.38	10.18	5.22	5.84	6.46
Peak Day Flow (PDF), MGD	16.05	20.89	24.79	13.94	15.88	17.40
Peak Wet Weather Flow (PWWF), MGD	24.95	32.49	38.54	23.40	26.69	29.23
Notes:						
1) Per capita flow rates applied population projections to estimate future ADWF.						
2) I/I contribution (gpad) calibrated to 2010 flows then increased at 7% per decade due to assumed pipe degradation.						
3) Peak Wet Weather Flow Estimate assumes a peaked ADWF, based on diurnal patterns.						

A capacity analysis was conducted as part of this Plan in order to predict what equipment or processes, if any, are likely to exceed their ability to handle plant flows and loads during the planning period. Hydraulic calculations were also performed to identify any deficiencies with the plant's ability to handle projected peak hour flows; hydraulic calculations were performed for the 2021 and 2041 peak hour flows.

Projections for future flows and loads were made based on predicted population growth for the Miller Creek service area. The flow projections calculated for the Miller Creek plant give a maximum monthly flow of 6.5 MGD in 2027 and 8.4 MGD in 2041. The projected maximum daily flow in 2041 is 20.89 MGD, which is greater than the 8 MGD at which the primary clarifiers are bypassed, and the 13.2 MGD at which the RBCs are bypassed. Therefore, without significant reductions in peak influent flows or treatment system capacity increases, it is expected to be necessary to bypass the primary clarifiers and secondary treatment processes several times each year.

Projections for future flows and loads were also made based on predicted population growth for the Salmon Creek service area. The flow projections calculated for the Salmon Creek plant give a maximum monthly flow of 5.2 MGD in 2027 and 5.8 MGD in 2041. The projected maximum daily flow in 2041 is 17.40 MGD, which is greater than the 8.2 MGD at which the RBCs and secondary clarifiers are bypassed. Therefore, without significant reductions in peak influent flows or treatment system capacity increases, it is expected to be necessary to bypass of secondary treatment several times each year.

In addition to the overall plants capacity analysis, the capacity of the plants' individual unit processes were also evaluated against common design values, as shown in literature that is widely consulted in the wastewater engineering field, including *“Wastewater Engineering: Treatment and Reuse”*, by Metcalf & Eddy; *“Design of Municipal Wastewater Treatment Plants”*, prepared jointly by the Water Environment Federation (WEF) and American Society of Civil Engineers (ASCE); and *“Criteria for Sewage Works Design”* by the Washington State Department of Ecology.

ES.9 Operations and Maintenance (Chapter 9)

The District is governed by a Board of Commissioners and General Manager and is composed of approximately 33 full time positions that are organized into distinct departments, including:

- Maintenance
- Operations
- Sewer Department
- Development and Emergency Management
- Administrative Services

The department heads report to the General Manager who is responsible for the overall management of the District. The General Manager reports directly to the Board of Commissioners.

District personnel maintain approximately three (3) miles of force mains, 340 miles of gravity sewers, 11 lift stations, and two (2) conventional extended aeration WWTPs with outfalls to Puget Sound. The District employs a total of 22 field people in the wastewater division. Of these 22, 16 are assigned to the Maintenance and Operations, and 6 are assigned to the Sewer Department. In 2012, the District compared their staffing as a function of miles of sewer pipe, against two other special purpose districts that provide only wastewater service – Valley View Sewer District and Midway Sewer District. In comparison with these two districts, the District is very efficient in maintaining their system. The District is adequately staffed for current conditions and for the foreseeable future.

ES.10 Capital Improvements Program (Chapter 10)

The District's CIP incorporates recommended improvements and operations. The costs for the individual capital projects are consolidated into Table ES-7. The projects and estimated costs for these projects are grouped into three terms and totaled for those periods as well. Project costs are in 2023 dollars and have not been adjusted for inflation with respect to the applicable planning horizons. Actual costs can and will differ from the opinions of probable costs. Volatility in the bidding climate, the number of contractors bidding on a project, and their approach to bidding and completing the work will all impact actual project costs.

**Table ES-7
Capital Improvement Plan Costs**

Project	Opinion of Probable Project Cost (2023\$)	2024-2028 (2023\$)	2029-2041 (2023\$)	2042-2050 (2023\$)
Conveyance Projects				
MC-25B	\$ 1,100,000		\$ 1,100,000	
SC-21A	\$ 2,100,000		\$ 2,100,000	
MC-14A	\$ 700,000		\$ 700,000	
MC-20B 4A	\$ 3,400,000		\$ 3,400,000	
MC-7B	\$ 2,700,000		\$ 2,700,000	
MC-21C	\$ 3,300,000			\$ 3,300,000
MC-32A	\$ 500,000			\$ 500,000
MC-3A	\$ 1,000,000			\$ 1,000,000
SC-17A	\$ 900,000			\$ 900,000
MC-21C	\$ 3,300,000			\$ 3,300,000
MC-28A	\$ 3,700,000			\$ 3,700,000
Lift Station Projects				
SC-21B (LS-17)	\$ 2,600,000		\$ 2,600,000	
SC-9A (LS-8)	\$ 2,600,000		\$ 2,600,000	
SC-20A (LS-4)	\$ 1,450,000	\$ 1,450,000		
SC-16A (LS-7)	\$ 3,700,000			\$ 3,700,000
MC-20A (LS-11)	\$ 1,550,000	\$ 1,550,000		
I/I Reduction				
Annual	\$ 1,000,000	\$ 4,650,000	\$ 13,000,000	\$ 9,000,000
Wastewater Treatment				
Salmon Creek WWTP				TBD
Miller Creek WWTP				TBD
Miller Creek Electrical	\$ 9,000,000	\$ 9,000,000		
Miller Creek Digesters	\$ 6,000,000	\$ 6,000,000		
Miller Creek Office	\$ 12,000,000	\$ 12,000,000		
Totals		\$ 34,650,000	\$ 28,200,000	\$ 25,400,000

Implementation of the projects identified in Table ES-7 will allow the District to address the capacity, obsolescence, O&M, and redundancy limitations identified within the District’s wastewater system based on the projected flows and loads over the planning horizon.

The opinions of probable cost herein are based on our perception of current conditions based on planning level project data only. This opinion reflects our professional opinion of construction costs at this time and is subject to change as the projects develop.

ES.11 Financial (Chapter 11)

Chapter 11, prepared by Karyn L Johnson Associates summarizes the District’s historical financial performance and determines the sewer rate adjustments necessary to pay the District’s ongoing operating costs, fund the capital improvement projects planned for execution over the six-year period (2023-2026), and maintain adequate cash reserves.

Based on a three-year review of financial reports, the District has historically set sewer rates sufficient to maintain sound financial performance in accordance with its adopted financial policies. Sewer rates have been adopted by the District Board of Commissioners for the years 2023 and 2024.

The six-year financial plan developed to support ongoing operations and fund the near-term capital projects recommended in this Plan suggests annual sewer rate increases of 4.50 percent per year for the years 2025 through 2028. The projected schedule of sewer rates is presented in Table ES-8.

Table ES-8
Sewer System Six-Year Operating and Capital Cash Flow

Sewer Rate Components	Adopted 2023	Adopted 2024	Projected			
			2025	2026	2027	2028
Effective Date:	1-Jan-23	1-Jan-24	1-Jan-25	1-Jan-26	1-Jan-27	1-Jan-28
Residential - \$/Month per Unit						
Single Family Residential	\$ 47.00	\$ 50.00	\$ 52.25	\$ 54.60	\$ 57.06	\$ 59.63
Low-Income	\$ 23.00	\$ 24.50	\$ 25.60	\$ 26.75	\$ 27.96	\$ 29.22
Multi-Family Residential	\$ 47.00	\$ 50.00	\$ 52.25	\$ 54.60	\$ 57.06	\$ 59.63
Commercial						
Base Charge - \$/Month						
(Includes up to 750 cubic feet of water)	\$ 47.00	\$ 50.00	\$ 52.25	\$ 54.60	\$ 57.06	\$ 59.63
Volume Charge - \$/ 100 cubic feet						
(Over 750 cubic feet per month)	\$ 6.00	\$ 6.50	\$ 6.79	\$ 7.10	\$ 7.42	\$ 7.75
Streetlights - \$/Month	\$ 2.70	\$ 2.70	\$ 2.70	\$ 2.70	\$ 2.70	\$ 2.70

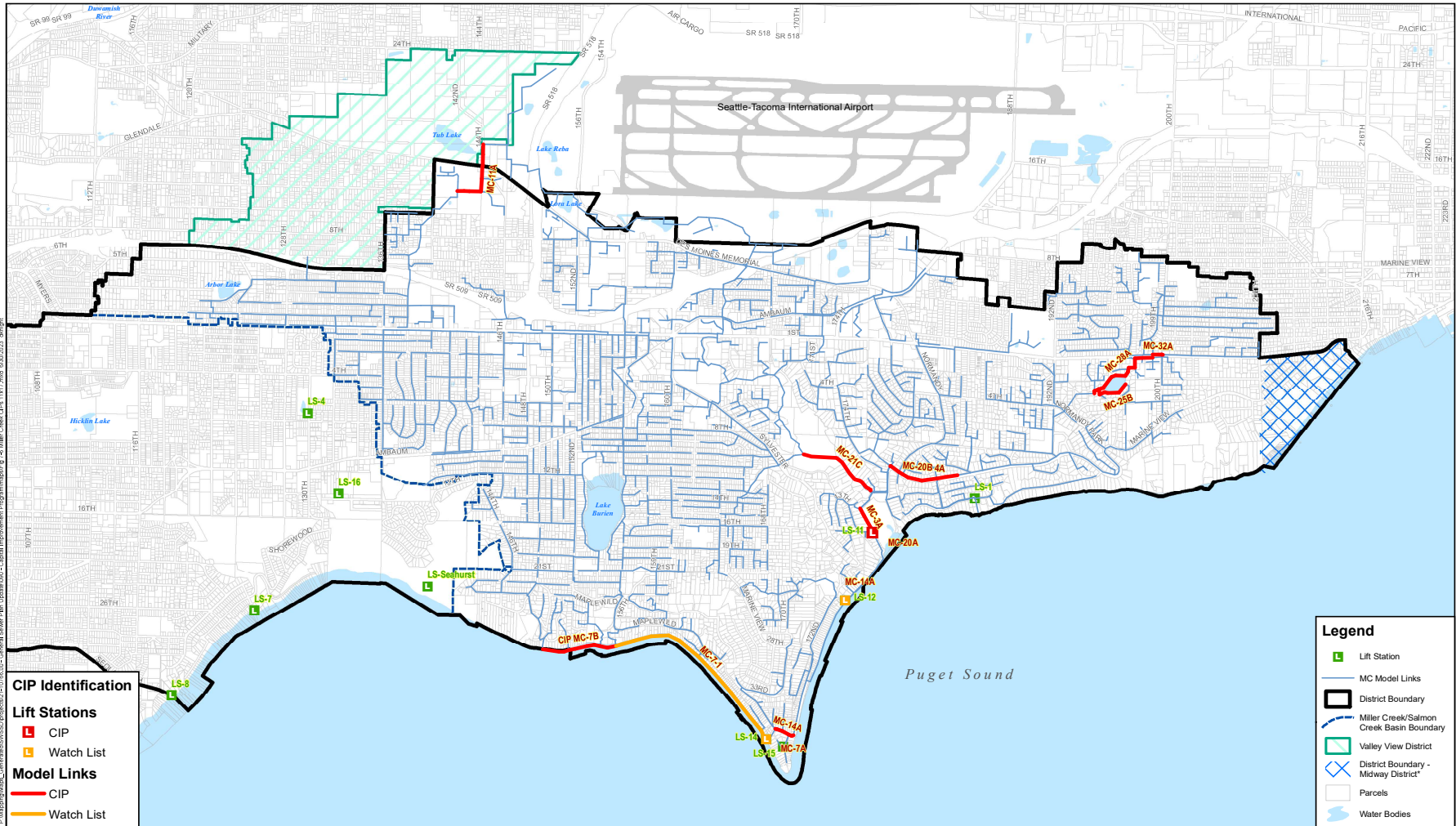
As shown in Table ES-9, the currently monthly sewer rate of \$47.00 for single-family residential customers is projected to increase to \$59.63 by 2028. This represents a total increase of \$12.63 per month over the six-year period, an average of \$2.53 per month per year. The projected monthly sewer rates are assumed to remain affordable under the industry metric of a monthly sewer cost that is no greater than 2.0 percent of the median household income.

**Table ES-9
 Projected Six-Year Residential Monthly Bill**

Single Family Residential Customer	Adopted 2023	Adopted 2024	Projected			
			2025	2026	2027	2028
Effective Date:	1-Jan-23	1-Jan-24	1-Jan-25	1-Jan-26	1-Jan-27	1-Jan-28
Projected Rate Increase:			4.50%	4.50%	4.50%	4.50%
Monthly Rate per Dwelling	\$ 47.00	\$ 50.00	\$ 52.25	\$ 54.60	\$ 57.06	\$ 59.63
Monthly Increase		\$ 3.00	\$ 2.25	\$ 2.35	\$ 2.46	\$ 2.57

The Financial Program was developed with reasonable and conservative assumptions based on current knowledge and cost estimates. The District will monitor the financial plan through the annual budget process and update as necessary to achieve balance between operations and maintenance, executing the necessary capital improvements, and maintaining affordable rates.

Attachment #3



Legend

- Lift Station
- MC Model Links
- District Boundary
- Miller Creek/Salmon Creek Basin Boundary
- Valley View District
- District Boundary - Midway District*
- Parcels
- Water Bodies

CIP Identification

Lift Stations

- CIP
- Watch List

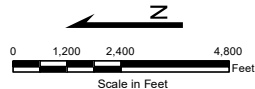
Model Links

- CIP
- Watch List

Sewer System: SWSSD.
 Base Data: King County.

*Area is within District corporate boundary but will likely serve to Midway Sewer District.

Data sources may not reflect current or actual conditions.
 This map is a geographic representation based on information available.
 It does not represent survey data. No warranty is made concerning the accuracy, currency, or completeness of data depicted on this map.



Miller Creek CIP Identification
 General Sewer Plan Update
 Southwest Suburban Sewer District
 June 2023

Figure
7.6