



OVERVIEW

Seattle Public Utilities (SPU) is undertaking an ambitious effort to integrate planning for its drainage and wastewater systems. The purpose of the Drainage and Wastewater (DWW) Integrated Planning effort is to plan future infrastructure investments that provide the greatest community value. The effort will integrate planning across drainage and wastewater systems, emphasize engagement, and focus on leveraging effective partnerships to meet Seattle's infrastructure challenges. This planning effort and its products are a major step toward making SPU a **community-centered utility**.

PROGRAM ELEMENTS

● Drainage and Wastewater Vision Plan

The Vision Plan will set the goals and provide the conceptual backbone for the overall planning effort. It is anticipated there will be an iterative relationship between the analysis projects and the Vision Plan. (See page 3)

● Data Collection and Analysis

The Drainage and Wastewater System Analysis

The DWW Systems Analyses will provide the technical analysis needed to develop the Integrated System Plan. These analyses will provide the technical analysis of the drainage and wastewater systems and associated receiving waters needed for the Integrated System Plan. (See pages 4 and 5)

Asset Management Plans

The asset management plans will provide information, analysis, and recommendations about condition, criticality, operations, maintenance and rehabilitation priorities for drainage and wastewater assets. (See page 6)

Social and Environmental Systems Analyses

The Social and Environmental Systems Analysis will provide spatial, quantitative and qualitative information needed to ground the Integrated System Plan in the broader context of Seattle's drainage and wastewater systems. The Social System Analysis will analyze known service equity disparities, health disparities and resource investment disparities that fall along racial lines. It will also compare existing organizational partnerships with anticipated partnership needs and opportunities. (See page 7)

● Integrated System Plan

The Integrated System Plan will integrate planning for SPU's drainage and wastewater systems. This will be an iterative relationship between the analysis projects and the DWW Vision Plan. (See page 2)

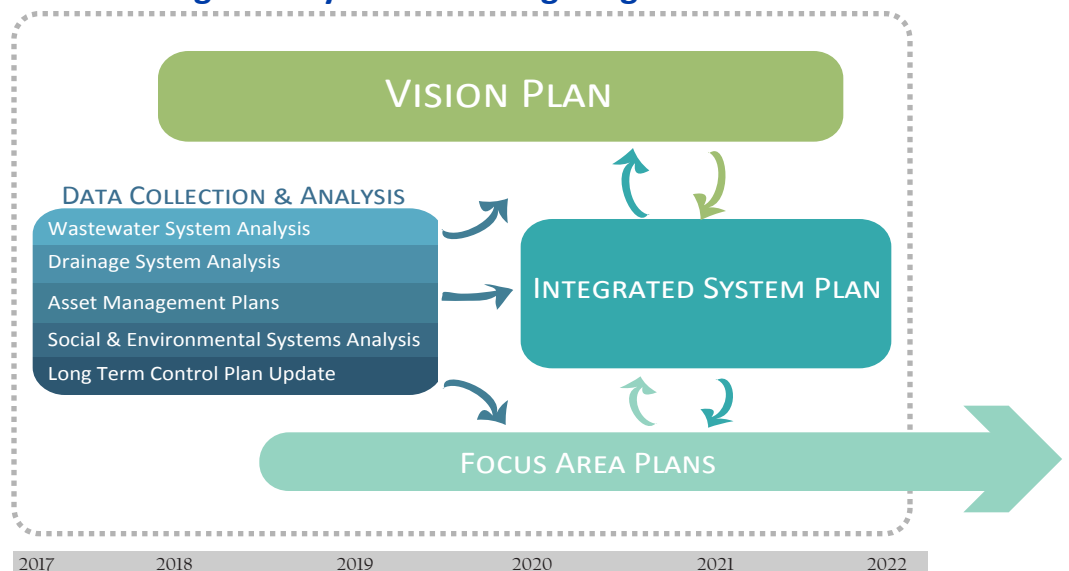
● Focus Area Plans

The Focus Area Plans will develop focused and integrated solutions in specific geographic areas that are meaningful to our customers.

COMMUNITY-CENTERED UTILITY

Achieving excellence in core service delivery, increasing affordability and accountability, improving investment value, enhancing public health and environment, ensuring service and racial equity and inclusion, expanding impact through strong partnerships.

DWW Integrated System Planning Program Elements





OVERVIEW

The Drainage and Wastewater (DWW) Integrated Planning effort is a comprehensive effort to plan future actions to address system needs while providing the greatest community value. This effort will integrate planning for SPU’s drainage and wastewater systems and help move SPU toward becoming a community-centered utility. The scope of this project is being developed.

KEY CONCEPT

EXPANDED ISSUES

In previous planning efforts, Seattle planned drainage and the wastewater systems in isolation and focused primarily on regulatory compliance, flood control, and aquatic resource protection. As we embark on our next planning effort, we are expanding the focus to our other core service areas.



EXPANDED OUTCOMES

Being a a community-centered utility means amplifying the outcomes of our work. In addition to providing excellent core services, through this integrated planning effort Seattle is striving to use infrastructure investment catalyze these multiple benefits.



CLIMATE RESILIENCE



EQUITY



IMPROVED HEALTH



IMPROVED AQUATIC HEALTH



IMPROVED PUBLIC SPACE

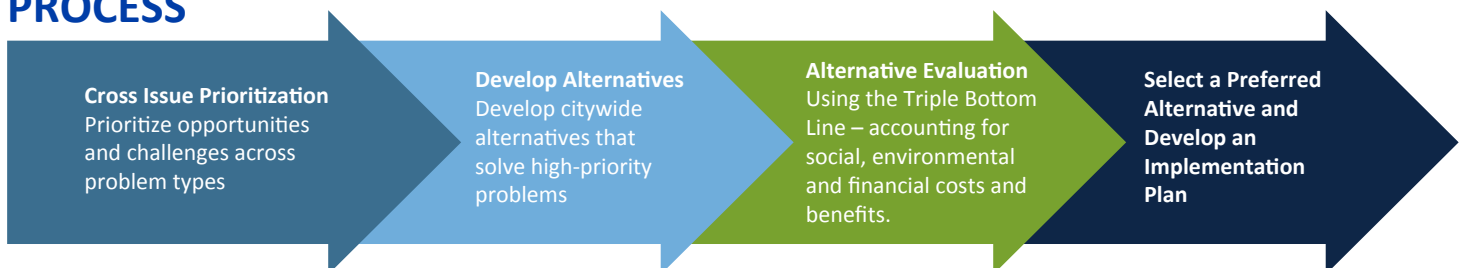


ACCOMMODATE GROWTH



COST-SAVING PARTNERSHIPS

PROCESS





OVERVIEW

The Drainage Wastewater (DWW) Vision Plan is one of the key elements of the DWW Integrated Planning effort. The DWW Vision Plan will provide the goals, objectives, guiding principles, and measures of success that are specific to the DWW Line of Business (LOB) and guide long-range planning and investment.

CULTIVATE

Cultivate financial, intellectual, and technical partnerships that will improve SPU’s delivery of core services equitably and affordably.

COLLABORATE

Collaborate with our diverse stakeholders to build a shared vision.

INTEGRATE

Integrated our planning approach to find multi-benefit solutions that meet Seattle’s stormwater and wastewater challenges.

GUIDE

Guide Seattle’s long-range planning and investment in blue + green + grey infrastructure, given a growing city and a changing climate.

TERMINOLOGY

- VISION** defines the overall purpose of the effort.
- GOALS** state the broad, primary outcomes toward which effort and actions are directed. [WHY?]
- OBJECTIVES** outline measurable steps an organization takes to achieve its goals. [WHAT?]
- GUIDING PRINCIPLES** describe how each of the objectives will be achieved. [HOW?]
- MEASURES OF SUCCESS** are used to determine if the objectives have been achieved.

IN ACTION

The DWW Vision Plan will answer these “why,” “what” and “how” questions for SPU’s DWW Line of Business to further our Community- Centered commitment. For example, the goals will tell us why we believe it is important for the DWW LOB to build strong partnerships, the objectives will tell us what steps the we will take to build partnerships; and the guiding principles will tell us how we will succeed at building strong partnerships.

ENGAGEMENT APPROACH

The DWW Vision Plan will be developed through engagement with our community, city departments, and partner agencies and organizations. Engagement will yield a shared vision for DWW system management and improvements that reflects the needs of these diverse stakeholders.

LEVELS OF ENGAGEMENT

SPU will involve and collaborate with stakeholders throughout the process.

- INVOLVEMENT is understanding and considering stakeholder concerns, values and aspirations.
- COLLABORATION is working with stakeholders to develop concepts, ideas, and/or solutions.

STAKEHOLDERS

- Seattle Public Utilities
- City Partners
- Partner Agencies and Organizations
- Community



WASTEWATER SYSTEM ANALYSIS

OVERVIEW

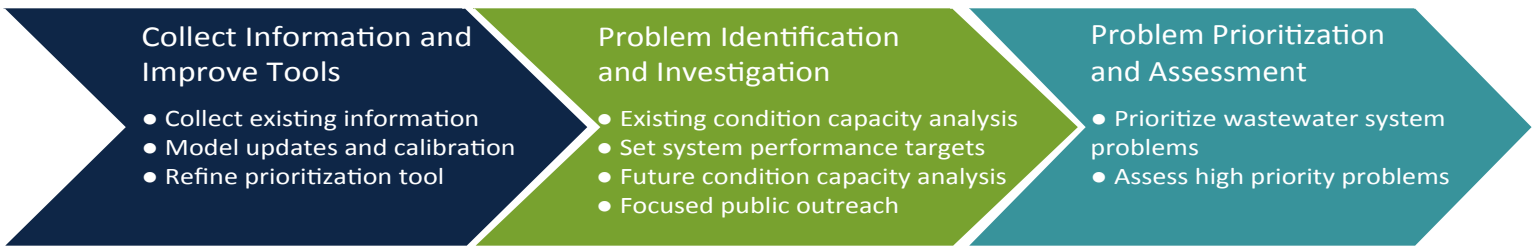
The Wastewater System Analysis (WWSA) will support the development of the Integrated System Plan with technical analysis of the wastewater system. The WWSA is a key component of this integrated planning effort. The WWSA will focus on the following key wastewater system issues:

PUBLIC SAFETY AND HEALTH: We need to supplement our complaint-based knowledge of wastewater capacity issues and identify priorities for future investment.

GROWTH: We need to quantitatively evaluate impacts of growth on Seattle’s wastewater system.

CLIMATE CHANGE: We need to assess potential impacts of changing precipitation patterns on Seattle’s wastewater system.

WWSA Process



OBJECTIVE

STRATEGIES

Identify and understand wastewater system capacity needs.

- Set wastewater system performance targets that are consistent with SPU’s economic realities, customer values, and SPU risk tolerance.
- Incorporate appropriate projections for growth and development, climate change, and regulatory mandates.
- Improve the wastewater system hydrologic and hydraulic models to better understand capacity shortfalls.
- Further our knowledge of the contribution of inflow and infiltration to locations that do not meet system performance targets.
- Incorporate current knowledge of the operations, maintenance, criticality and condition of the wastewater system in locations that do not meet system performance targets.

Set a transparent and consistent method to prioritize those wastewater system needs

- Apply appropriate criteria to prioritize wastewater system problems. Incorporate equity into those criteria.
- Link those criteria back to the SPU priorities and our customers’ values.

Provide analysis of the wastewater system that aligns with the Drainage System Analysis and provides technical foundation for the Integrated System Plan

- Coordinate with the team completing the Drainage System Analysis to ensure that deliverables are consistent and compatible so that they are useful for the Integrated System Plan.
- Coordinate with the team developing the Vision Plan and the Integrated System Plan to ensure that the Wastewater System Analysis meets the vision.
- Adaptively align the Wastewater System Analysis with the Drainage System Analysis, Vision Plan, and Integrated System Plan.



OVERVIEW

The Drainage System Analysis (DSA) will provide a focused analysis of Seattle’s drainage system and receiving waters to support the development of the Integrated System Plan. The DSA will compile and update existing information related to SPU’s drainage system and receiving waters and provide new analysis of flooding and water quality challenges. The DSA will focus on the following challenges:

PUBLIC SAFETY: We need to supplement our complaint based knowledge of priority flooding areas, system layout challenges, and other system issues and identify priorities for future investment.

AQUATIC HEALTH: We need to characterize the environmental impacts associated with pollution, altered flow regimes, and habitat degradation.

GROWTH: We need to quantitatively evaluate impacts of growth on Seattle’s drainage systems.

CLIMATE CHANGE: We need to assess potential impacts of changing precipitation patterns and sea level rise on urban flooding.

OBJECTIVE

To meet the Drainage System Analysis project goal, the objective of the analysis is to identify, assess, and prioritize (within topic area) problems and/or opportunities to support the Integrated System Plan. Topic areas of the Drainage System Analysis are detailed in the figure below.

Topic Area	Objective
Flooding	<ul style="list-style-type: none"> Identify, assess, and prioritize flooding problems Develop system performance targets Evaluate future climate change and development conditions
Water Quality & Flow Control	<ul style="list-style-type: none"> Update summaries of receiving water conditions Summarize priority receiving waters & drainage basins for structural retrofitting Develop crosswalk of water quality actions
Fish Passage	<ul style="list-style-type: none"> Update and summarize locations and priorities for addressing fish passage barriers on public and private property
Creek Floodplain Opportunities	<ul style="list-style-type: none"> Update and summarize locations and physical suitability of opportunities to reconnect creek floodplains
Aquatic Habitat Opportunities	<ul style="list-style-type: none"> Summarize locations of identified potential shoreline habitat improvement projects citywide and prioritized creek daylighting projects on public land
Surfacing Groundwater	<ul style="list-style-type: none"> Update and summarize locations and joint SPU/SDOT priorities for addressing issues
System Layout Challenges	<ul style="list-style-type: none"> Identify areas that have system layout challenges
Landslide Mitigation	<ul style="list-style-type: none"> Summarize known areas of landslide concern and large-scale city priorities

Flooding Process

- Collect Information and Improve Tools
- Collect information, Conduct public outreach,
- Calibrate and update model
- Refine prioritization tool

- Problem Identification and Investigation
- Utilize modeling and non-modeling methods to analyze flooding
- Set system performance targets
- Update flooding inventory

- Problem Prioritization and Assessment
- Prioritize flooding problems,
- Complete high-level impact assessment,
- Assess potential flooding impacts



DRAINAGE AND WASTEWATER ASSET MANAGEMENT PLANS

OVERVIEW

Asset Management Plans (AMPs) provide a framework to assess the status of a category of assets and guide their management, including operation, maintenance, and capital investments. They do this by outlining the business drivers, asset inventory and conditions, asset deterioration rates, asset risk profile, asset renewal, operation, and maintenance strategies, data tools and processes for managing the asset class, and tactical plans to address gaps. DWW is in the process of developing AMPs for all its assets. AMPs are typically prepared looking forward 3-5 years. They are living documents that are updated and refined as more is learned about the condition of DWW infrastructure, performance and failure history, and cost of maintenance and renewal.

ASSET MANAGEMENT PLAN STRUCTURE



AMPs Answer the Following Questions:

- What are the drivers for SPU to own and operate these assets?
- What is the asset condition and the risk of deterioration and failure?
- How should the assets be operated, maintained and renewed?
- What processes and tools are used to manage the assets?
- What do we need to do for continuous improvement?

AMPs are concise and readily accessible and understandable to SPU staff, project managers and engineers, and field operations managers and planners. They are prepared internally by teams that include planners and those who operate and maintain assets. Once adopted, AMPs become guiding documents for asset data management, condition assessment, operation, maintenance, renewal, repair and replacement, and CIP planning.



OVERVIEW

The Social and Environmental Systems Analysis (SESA) provides context to the Integrated System plan through spatial, quantitative, and qualitative information on social and environmental systems. The SESA also supports the development of a community-centered Vision Plan by providing community partners with critical social and environmental baseline information.

PROJECT OBJECTIVE

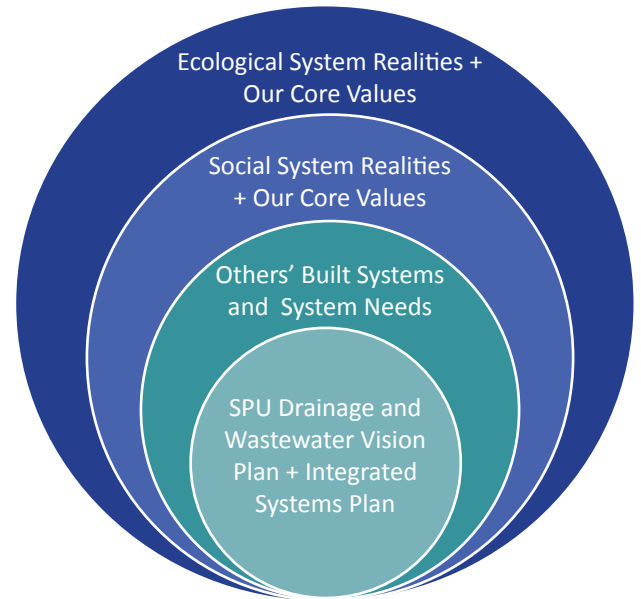
Situate our understanding of Seattle’s drainage and wastewater systems in the broader social and environmental context so that our Vision Plan and Integrated System Plan are responsive to:

Core Drivers: Shared city values like racial equity and community empowerment, system disruptions like climate change and population growth, and existing built and ecological conditions.

Co-investment Opportunities: Strategic, reciprocal partnerships in a range of areas including project and program funding, community engagement, maintenance, policy, research, education, and volunteer empowerment.

TOOLS

Two primary tools will come out of the SESA project:



NARRATIVE ATLAS

The Narrative Atlas provides context to our Vision Planning process so that current racial inequities in health, wealth, and environmental quality can be understood and addressed. The atlas also summarizes ecological conditions, the built environment, and best-available predictive data for future conditions. Contents will include data such as:

RACIAL EQUITY + HEALTH

- Environmental risk and exposure as a function of race
- Health outcomes and public safety as a function of race
- Trees, sidewalks, views, parks, etc. as a function of race

RACIAL EQUITY + WEALTH

- Spatial history of redlining and race-restrictive covenants
- Economic displacement risk as a function of race
- History of drainage and wastewater claims and investments as a function of race
- Current land values and property ownership patterns

ECOLOGICAL/BUILT CONDITIONS (NOW + FUTURE)

- City and partner agencies’ known system gaps and planned projects
- Projected population growth and land use
- Climate change predictions

PARTNERSHIPS ANALYSIS

The Partnership Analysis helps SPU and our partners identify strategic co-investment opportunities to leverage greater value for our rate payers dollars.

AXES OF ANALYSIS

The Partnership Analysis process will engage SPU employees and internal and external partners to inventory and analyze opportunities across a range of needs such as:

- Project and program funding and financing
- Community engagement efficacy
- Operation and maintenance of drainage and wastewater systems
- Policy development
- Research and technical analysis
- Place or neighborhood-specific coordination
- Strategic communications and education
- Land use, land access, land acquisition
- Workforce development and youth pathways
- Community knowledge, vision, and cultural resources
- Volunteer recruitment, organization, and appreciation