Investment

Reinvestment in existing places rather than expanded investment in new infrastructure to outlying, low-density areas will create long-term financial resiliency and stability for our community.

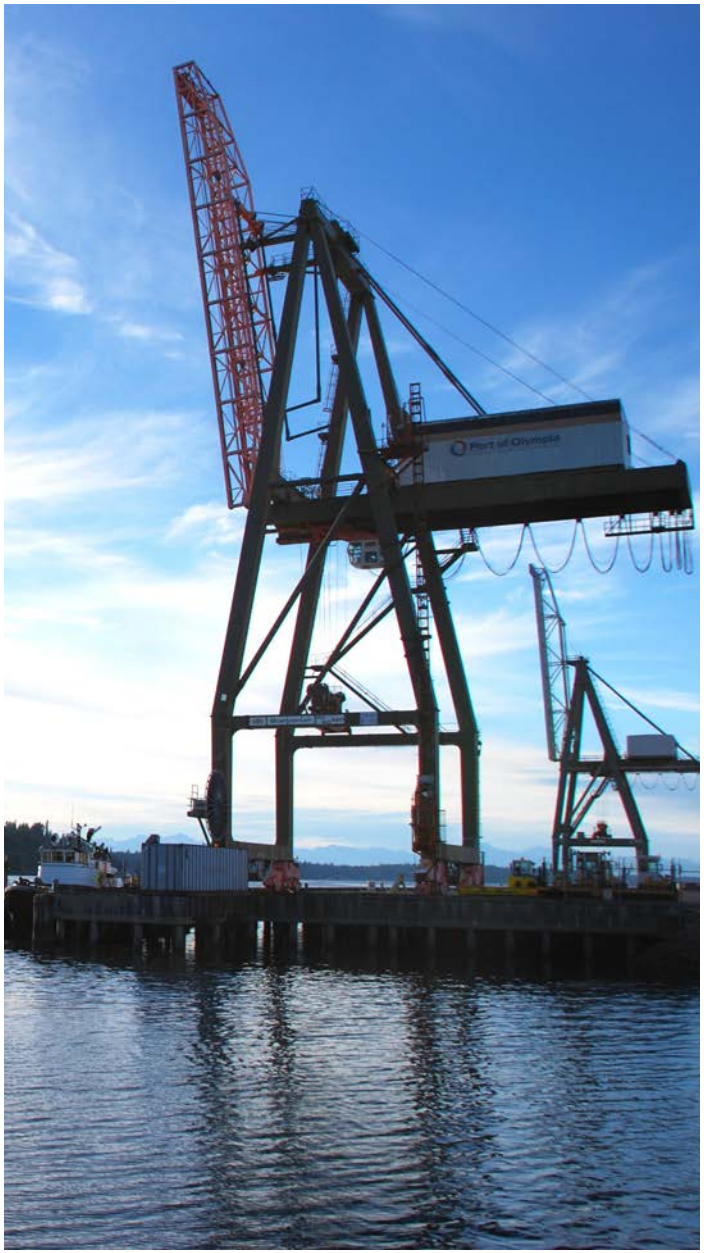
Providing infrastructure and services for the current population of 252,000 people in the Thurston Region is difficult. Providing infrastructure and services for an additional 120,000 by 2035 will be even more challenging. The state's Growth Management Act calls for concentrating growth in the urban areas, the most efficient and environmentally safe way to accommodate development. Our existing

land-use plans and regulations envision compact growth, and the Preferred Land-Use Scenario sets an ambitious target of accommodating 95 percent of growth in our existing and planned urban areas. This could lead to $1.6 billion savings in road and associated infrastructure for residential development alone, as well as spur reinvestment in our existing city and town centers. Such savings could help address our aging infrastructure, provide for a more efficient delivery of essential services, and create vitality that will increase tax base return on investment.

The following pages of this chapter include general goals, actions and sustainability outcomes related to Infrastructure, Energy, Public Safety, and Solid Waste. Taking the actions will help the region achieve its priority goals and targets.

Sustainable Thurston Foundational Principles & Policies related to Investment include:

- Maximize the use of existing infrastructure and assets. Leveraging the value of these in building vital, healthy, and economically viable communities;
- Make public investments that further multiple community goals, target identified priorities, and leverage additional investment;
- Consider economies of scale and long-term maintenance costs when investing in infrastructure;
- Provide and maintaining municipal services (water, sewer, solid waste, public safety, transportation, and communication networks) in a sustainable and cost-effective manner; and,
- Champion energy efficiency and renewable energy strategies that contribute to energy independence, economic stability, reduced climate impacts, and long-term household and community health.



Port of Olympia cranes.

Water Infrastructure

Residents of the Thurston Region want clean water that is sufficient to meet their daily needs. Water and wastewater entering and leaving homes and business should be delivered in a cost-effective and environmentally safe way.

Challenges & Opportunities

Water Infrastructure includes drinking water, wastewater, reclaimed water, and stormwater infrastructure. Each of these plays an important role in maintaining the quality and quantity of local water resources. Protecting our water resources is one of the region's highest priorities.

The Thurston Region benefits from past decisions to build major facilities such as the LOTT Clean Water Alliance's sewage treatment facility [LOTT is composed of Lacey, Olympia, Tumwater and Thurston County], which required many years to plan, fund, and construct. In the coming decades, choices about how we grow, where we grow, and efficiency of systems in new or retrofitted housing and commercial buildings will determine how cost-effective and environmentally safe our water infrastructure will be.

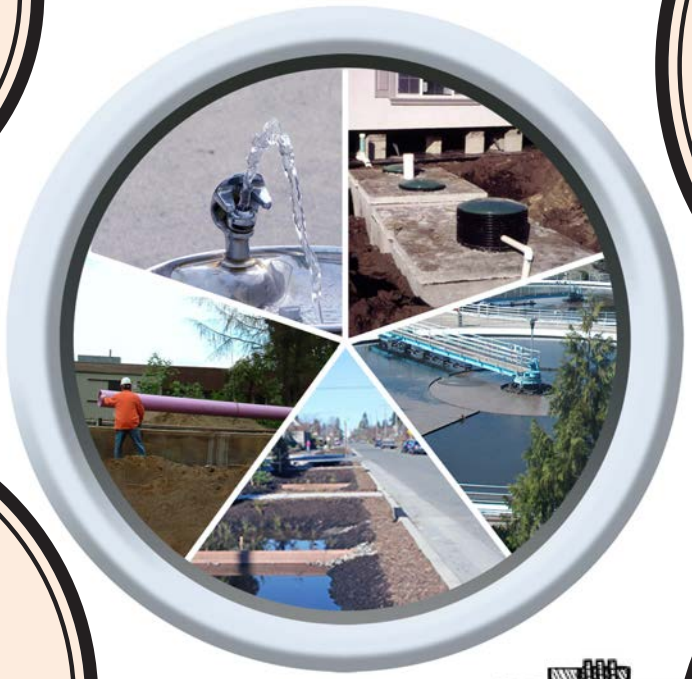
Many local and state regulations seek to protect groundwater, surface water, and aquatic resources from development impacts, but these regulations represent only one piece of a larger puzzle. Protecting water quality and quantity will require cooperation and collaboration between our local, state, and tribal governments. They will all share the burden of maintaining existing water infrastructure, as well as any infrastructure added to the water system. The challenge to our regional water system is to do more with less.

Goals and associated actions at the end of the chapter are designed to address the following challenges:

- Water Resources: Water resources span jurisdictional boundaries requiring collaboration between communities for effective management. Maintaining, protecting and building water infrastructure is difficult — and it becomes more difficult with tight budgets. (Goal WI-1)
- Water Availability: The number of water rights owned and the success of conservation efforts limits the amount of water available to cities and water districts now and in the future. Both acquisition of water rights and conservation involve a long and difficult process. Drilling wells without any new water rights (exempt wells) is often less expensive than connecting to sewer. (Goal WI-1)
- Cost of Septic Systems versus Sewer: Adding septic systems is often less expensive than connecting to sewer. This encourages growth to occur in areas and in a manner that threatens clean water. (Goal WI-2)
- Growth Constraints: Commercial growth and economic development envisioned for Bucoda and Rainier cannot happen without significant investments in a public sewer system. (Goal WI-2)
- Septic Systems: Even properly functioning septic systems introduce damaging nitrates to waterways. Improperly functioning septic systems or a high concentration of septic systems — such as in higher-density residential neighborhoods — can pollute ground and surface waters. Providing new public sewer systems to existing or new neighborhoods is expensive. (Goal WI-2)
- Groundwater Pollution: Most of the water used within the county is groundwater, which requires resources to monitor and understand. You can't see it, and it can be polluted by transportation spills, inappropriate land-use practices, stormwater, and septic systems. (Goal WI-2 and 3)
- Stormwater Treatment: Few stormwater treatment systems exist in rural Thurston County neighborhoods, increasing risk for flooding of buildings and roads in some areas, as well as adding pollutants to groundwater and surface waters such as Puget Sound or the Deschutes River. (Goal WI-3)
- Reclaimed Water: Additional investment in reclaimed water systems needs clarity about use and required standards. Communities are looking to reclaimed water systems for opportunities to stretch drinking water supplies and mitigate new water rights. (Goal WI-4)

Drinking Water: water that is suitable for human consumption.

Drinking Water Infrastructure refers to the systems used to collect, store, pump, and convey water to users.



Wastewater: water that has been used for domestic, commercial, or industrial purposes and then discarded.

Wastewater infrastructure refers to the systems used to collect and treat wastewater so that it can be released back into the environment. These systems include sewer systems and wastewater treatment plants, or septic systems that serve one or more properties.

Reclaimed Water: water that is produced by treating wastewater to a high quality so that it can be used for non-drinking purposes such as irrigation, dust suppression, and toilet flushing.

Reclaimed Water Infrastructure refers to the systems used to treat and convey reclaimed water to areas where it is put to use.

Stormwater: water that accumulates from precipitation, including rain or snow events, which can increase in quantity as impervious surfaces increase.

Stormwater infrastructure refers to the systems used to collect and treat stormwater, including storm drains, piping networks, and retention ponds.

Goal WI-1: Provide efficient and effective drinking water infrastructure.

Sustainability Outcomes

Managing water resources holistically and collaboratively using the best information available will help local jurisdictions stretch limited fiscal resources. Reducing new development on individual wells, and providing incentives to encourage infill where there is water system capacity will make the best use of existing water infrastructure. This will also limit the need to expand and maintain existing systems. The health of residents and the natural environment depends on safe drinking water and basic sanitation.

Goal WI-2: Manage wastewater in a cost-effective and environmentally sound way.

Sustainability Outcomes

Addressing septic system threats to groundwater, lakes, streams, and Puget Sound will help protect the environment, including shellfish beds.

Encouraging infill and redevelopment in areas with existing sewer infrastructure will limit the cost of expansion and maintenance, making the best use of public dollars.

Goal WI-3: Manage stormwater in a cost-effective and environmentally sound way.

Sustainability Outcomes

We must manage stormwater to protect streams and water quality, as well as to prevent flooding and the costs to individuals, the region, and the nation. Use of new technology, research and innovation, as well as education that affects personal behavior, leads to cost-effective and environmentally positive outcomes.

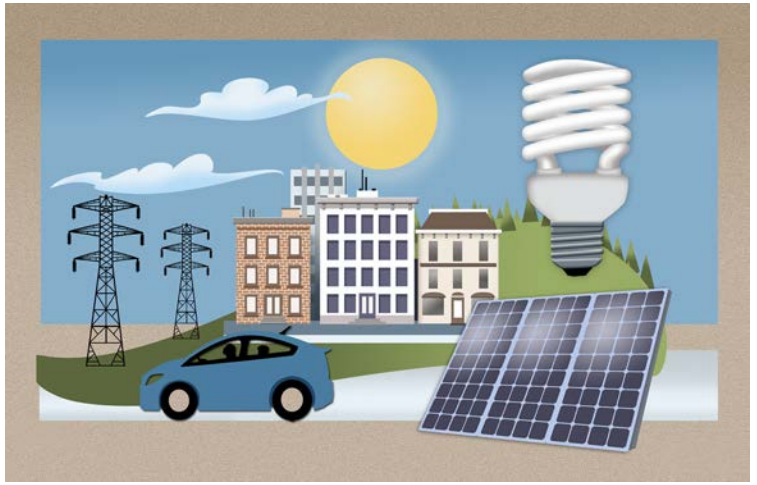
Goal WI-4: Expand the utilization of reclaimed water for non-potable uses.

Sustainability Outcomes

Reclaiming water helps reuse our limited water resource by replenishing groundwater and stretching the supply of drinking water. Reclamation acknowledges that water is a precious resource that deserves to be conserved and reused wherever possible. Taking advantage of new reuse technology will contribute to other conservation efforts to help ensure a continued supply of water to meet the needs of residents now and in the future.

Energy

Thurston Region residents envision a community that reduces its dependence on fossil fuels and emissions of greenhouse gases. Pursuing energy-efficiency and renewable energy strategies will help the community become more energy-independent, economically stable, and contribute to long-term household and community health and resilience.



Challenges & Opportunities

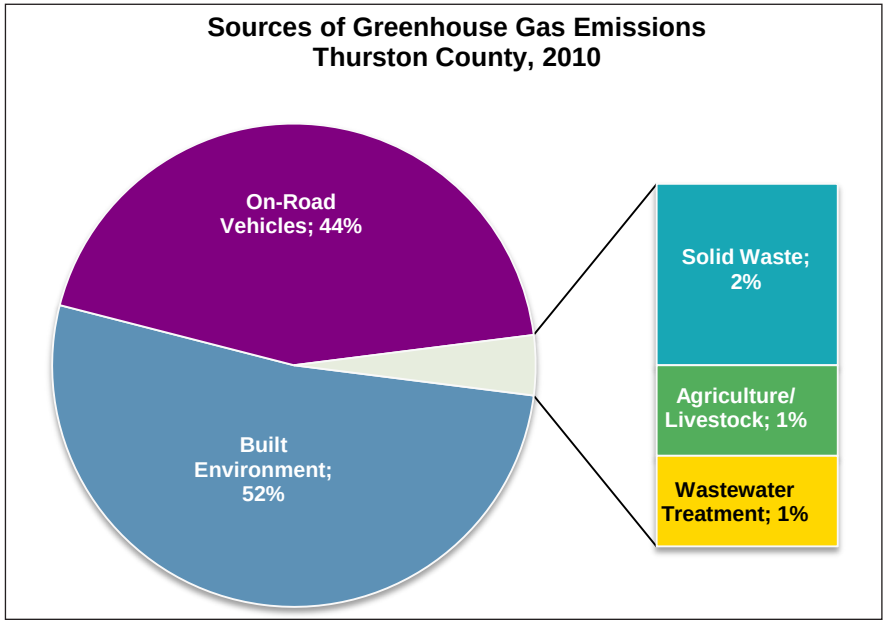
Leveraging the value of existing assets and infrastructure will help build vital, healthy, and economically viable communities. Achieving the community's goal of maintaining a sustainable electric grid system that is affordable, reliable, and based diminishingly on fossil fuels means pursuing the following strategies:

- Increasing the supply of renewable and distributed energy generation;
- Building energy-efficient and net-positive buildings ("net-positive" buildings generate more energy than they use);
- Developing energy-efficient commercial processes;
- Adopting grid-scale distributed energy storage technologies as they develop;
- Making incremental "smart-grid" improvements;
- Increasing availability of electric vehicle charging stations.

A "smart grid" is a modernized electrical grid that uses information and communications technology to gather and act on information about the behaviors of suppliers and consumers in an automated fashion to improve the efficiency and reliability of electricity production and distribution.

The built environment poses significant challenges to achieving the community's goals. In 2035, slightly more than two-thirds of the homes (more than 108,000) and 19 million square feet of commercial and industrial space will have been built prior to 2010. This means a huge amount of the housing stock will need energy retrofits. Further, we designed much of our existing infrastructure around the automobile. A key question: What can we do to reduce auto dependence, yet still provide access?

We need to develop tools to monitor progress toward our goals, including tracking energy expenditures. Good starting points for residential usages are per-residential unit and per capita consumption of electricity and natural gas. For commercial use, we can start with per-business unit and per-worker consumption.



Sources of greenhouse gas emissions for Thurston County, Washington. Source: Thurston Climate Action Team.

Powerlines in Tumwater with Mount Rainier in the distance.

Sustainability Activities Already Underway

Turning Vision 2 Action

The Olympia-based Northwest EcoBuilding Guild, with support from the Thurston Climate Action Team and other partners, is hosting quarterly symposia dedicated to improving the sustainability of the built environment. Recent Vision2Action discussions and exercises have focused on cutting the carbon footprint of buildings by boosting energy efficiency, adding accessory dwelling units and other forms of "gentle density" to neighborhoods, and encouraging active transportation by creating housing, shopping and transit hubs along the region's major urban corridors — key components of this plan and the companion Urban Corridor Communities project (www.trpc.org/regionalplanning/landuse/Pages/ucc.aspx). The Vision2Action series, which continues into 2014, is a prime example of community leadership and participation in action. To learn more, visit www.Vision2Action.us.

Goals and associated actions at the end of the chapter address the following challenges and will help the region achieve our sustainability goals *(Note: Goals related to transportation energy efficiency are located in the Opportunities & Choices chapter)*:

- Carbon Footprint: Energy generated from coal and other fossil fuels produces carbon dioxide and other heat-trapping gases that contribute to global climate change. **(Goal EN-1)**
- System Improvements: We need equipment upgrades, grid-scale energy storage, and partnerships to achieve efficiency goals. **(Goal EN-2)**
- What Gets Measures Gets Managed: Programs that track progress toward energy goals and per-unit and per capita consumption of energy are not adequate. **(Goal EN-2)**
- Retrofit Needs: More than two-thirds of housing units available in 2035 will have been built before 2013. Many of these will require energy retrofits to contribute to energy conservation. **(Goal EN-3)**

Goal EN-1: Increase energy generation from renewable resources to reduce the region's carbon footprint.

Sustainability Outcomes

Reducing our region's dependence on fossil fuels will contribute to greenhouse gas reductions and move our region toward a carbon-neutral future. Local household and community resilience will increase with fewer local dollars being spent on gas and other fuels — dollars that leave our region and won't be available to recirculate within our community. Clean air and water, and human health benefits accrue with less use of fossil fuels.

Goal EN-2: Enhance the region's electricity distribution, monitoring and storage infrastructure to support adoption of cleaner technologies and practices.

Sustainability Outcomes

Becoming leaders in energy-efficient technologies and practices will strengthen our economy and result in long-term financial savings for the community.

Goal EN-3: Increase energy efficiency and conservation to reduce the region's carbon footprint.

Sustainability Outcomes

Reduced per capita energy use and greater emphasis on renewables will limit household and community exposure to future higher fossil-fuel energy costs.

Reduced dependence on fossil fuels and more reliance on renewable energy sources will decrease carbon emissions and pollutants in air and water.

Greater energy efficiency will enable residents to spend a smaller portion of their income on electricity and natural gas. That frees up disposable income for other purposes.

Less use of fossil fuels helps maintain clean air and decrease health risks such as asthma.

Public Safety

Residents and businesses expect their community to be safe and secure. In coming decades, the Thurston Region should maintain dependable emergency services — responding with appropriate resources in the most efficient, cost-effective manner possible.

Challenges & Opportunities

Public safety is important for jobs, industry, transportation, housing, schools, health care, sanitation, utilities, and energy. The long-term viability and sustainability of a community depends on its resilience to natural disasters and its ability to protect life-sustaining resources. Providing emergency services requires timely delivery of appropriate resources in the most efficient, cost-effective manner possible.

Goals and associated actions at the end of the chapter were designed to address the numerous challenges of maintaining and enhancing the region's public safety:

- Declining Revenues: Declining tax revenues jeopardize police, fire, and emergency medical response. Without long-term, stable funding, public emergency services will have difficulty keeping pace with future service demands. (Goal PS-1)
- Diminishing Services: Diminishing social and mental health care services and facilities mean less treatment for drug abuse and criminal victimization or perpetration — all of which leads to increased demands for emergency medical, law enforcement, justice, and corrections services. (Goal PS-1)

- Changing Technologies: Changes in building construction and communications, as well as society's growing energy demands, require significant investments in infrastructure and emergency services that can keep pace with emerging technologies. (Goal PS-1)
- Hazard Risks: The Thurston Region is vulnerable to the effects of severe storms and earthquakes. Climate change is projected to exacerbate weather-related hazards. An increasing frequency and severity of disruptions to essential services will strain government budgets and emergency resources. (Goal PS-2)
- Public Preparedness: Public safety begins with the public. Many people, especially those who are low-income, elderly, or disabled, are inadequately prepared to sustain themselves through disasters or prolonged power outages. (Goal PS-2)

Goal PS-1: Provide emergency services in a dependable and efficient manner to meet the dynamic needs of a diverse society.

Sustainability Outcomes

Economic vitality requires community and workplace safety. Safe communities foster new businesses, stabilize local markets, and expand opportunities. Equity in job access and employment security enables more people to become self-sufficient. Economically vibrant communities enjoy lower crime rates and reduced demand for social safety services.

Health & Human Services: 9-1-1 can't solve everyone's problems. Communities bolster public safety when government, the private sector, and faith-based organizations maintain easy-to-access social services. Individuals, households, neighborhoods, and businesses that create social networks and establish caring relationships can offer essential needs, supplementing over-taxed public safety services during and after a disaster.

Goal PS-2: Create a resilient region by improving disaster preparedness, response, and recovery efforts, as well as by expanding public safety education.

Sustainability Outcomes

Keeping people and property out of areas prone to floods, landslides, and other hazards helps to avoid disasters. Increasing defensible spaces around structures in forested or heavily vegetated areas reduces the risk of wildfires spreading to property and can serve to protect watersheds.

Sustainability Activities Already Underway

Making Every EMS Dollar Count

The long-term viability of a community's Emergency Medical Service (EMS) system requires a sustainable source of funding. A steady revenue stream is critical for both the ongoing operations and maintenance of the system as well as building an adequate reserve for contingencies. EMS system components must be financially solvent to allow the uninterrupted delivery of essential services. A poorly funded system will struggle to meet service goals, result in deferred maintenance on equipment and vehicles, and impact capital facilities. Most importantly, inadequate funding risks jeopardizing lifesaving services to seriously injured or sick individuals. Once service levels degrade, it is difficult and expensive to elevate system performance to desired standards.

In late 2012, TRPC was commissioned by the Thurston County Emergency Medical Services Council to assess the region's EMS system. TRPC assessed the system's finance, service delivery model, system performance, governance, and planning functions and identified 20 recommendations in a report prepared for the EMS Council. TRPC's observations and recommendations revolve around the principal that the collective acts of many exceed the singular efforts of a few. Funding for EMS services is stretched to meet growing system demands, let alone maintain existing service levels. The region's EMS providers and stakeholders will be challenged with a task to plan for future EMS services in a manner never performed in the region. TRPC's report gives the region's stakeholders justification for doing so.

A copy of the draft report is available online at www.trpc.org.

Aerial view of the Roosevelt Regional Landfill in Klickitat County — the disposal site of Thurston County's waste.

Solid Waste

Residents of the Thurston Region envision an effective and efficient trash collection system that maintains cleanliness and does not contribute to air, water, and soil contamination from solid or hazardous waste. People envision a future with a greater emphasis on waste reduction, reuse of materials, and recycling.

Challenges & Opportunities

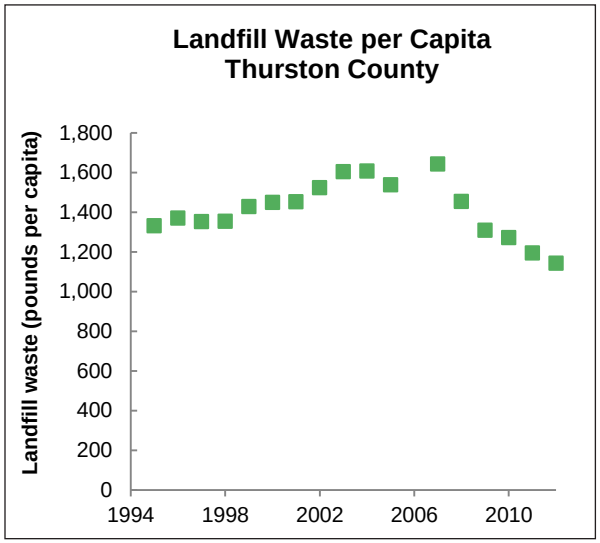
Solid waste management is an essential public service in the Thurston Region. Residents expect a community with regular trash collection — a community where they do not have to worry about air, water and soil contamination from solid or hazardous waste.

Our waste management system works well today. But during the Sustainable Thurston process, we heard people express a vision of a greater emphasis on waste reduction, reuse of materials, and recycling. People may want less trash, but we are a consumer society desiring goods that often come in bulky packaging. Some communities regulate packaging on the goods produced in their area.

While we produce less solid waste today than a decade ago, the future remains unclear. Did the recession cause this reduction? Will we return to our past disposal rate when times are better? Reduced rates will extend the useful life of the current Waste and Recovery Center (WARC), but it has a finite capacity. Depending on future disposal rates, the region may need a similar facility in southwestern Thurston County as part of a multijurisdictional project.

Greater emphasis on reducing items that are entering our waste stream is one of the action items in the Plan.

Goals and associated actions at the end of the chapter will help address the following challenges:



We've seen a sharp decrease in the amount of solid waste per person produced in Thurston County since the recession. Will these trends continue?
Source: Thurston County Solid Waste.

- Waste Generation Planning: We need up-to-date, accurate data collection and forecasts of volumes and types of solid waste to track the lifespan of the WARC. Adequate financing, including rate-setting plans, is needed to meet the needs of future populations and to ensure funding for waste-reduction programs. (Goal SW-1)
- The WARC at Hawks Prairie requires South County haulers to travel a long distance for disposal. Volumes are increasing as South County populations increase. (Goal SW-1)
- Reducing the Waste Stream: Both residential and commercial customers produce large amounts of solid waste. Reducing different types of waste from residential, commercial, and construction requires analysis to identify different approaches, facilities, funding opportunities, coordinated education, and outreach. We also need incentives to reduce, reuse, and recycle. (Goal SW-1)
- Convenience and Accessibility: Poorly planned and inconvenient recycling and waste-disposal areas will result in minimal recycling and make collection more difficult and costly. (Goal SW-1)
- Reliance on Market Forces: Market forces and profit motives can change the collection, processing, recycling, and disposal of waste. Recycling and diversion rely on ever-evolving national and international markets. Customers become confused with too-frequent changes in collection schedules and lists of what is recyclable/compostable. This can undo education and outreach efforts, increase handling costs, and discourage recycling. (Goal SW-1)
- No Contingency Plan: The garbage train carrying our waste travels on Interstate 5 (I-5) to Lewis County before continuing to Klickitat County for final disposal. Floods have closed I-5 multiple times and landslides pose a threat on the 250-mile journey of our waste to Eastern Washington. We have no plan for waste disposal in the event of a major disaster. (Goal SW-1)

- Unaccounted for Hazardous Waste, New Chemicals of Concern: Estimates suggest that we improperly dispose of a large amount of hazardous material. Newly emerging chemicals also raise concerns about safe disposal. (Goal SW-2)
- Lack of Resources for Education and Awareness Programs: The community devotes few resources to identifying, carrying out, and measuring the effectiveness of hazardous waste disposal awareness campaigns. Residents know little about the need for hazardous waste disposal of some readily available household, personal care products, and medicine. (Goal SW-2)
- Unequal Access for Hazardous Waste: Not all areas have equal access for recycling and proper disposal of hazardous waste. (Goal SW-2)

GOAL SW-1: Plan and take action to reduce, reuse, and recycle as much waste as possible and meet the needs of current and future populations.

Sustainability Outcomes

Today, trucks haul our garbage to Centralia where it is loaded on a train for the 250-mile trip to Klickitat County. Some people envision a time when we have reduced our waste stream enough so that we don't have to send our waste — and our local dollars — to another county. Reducing the amount of all types of waste at the source saves the most by eliminating any handling. Education programs based on good data, coordination, incentives, and outreach benefit the region by engaging residents and businesses in actions that support "reduce, reuse and recycle" efforts.

GOAL SW-2: Continue to plan for, educate, assist, and offer access to safely and efficiently manage disposal and reduce hazardous waste.

Sustainability Outcomes

Awareness of what constitutes hazardous waste and the importance of proper hazardous waste disposal means that engaged residents and businesses work together to make sure that air and water resources, humans, and animals are protected from the effects of improper disposal. Reducing the production and use of hazardous products at their source means fewer waste products needing disposal and reduced cost for disposal or hazardous waste cleanup.

The following table includes Investment goals and actions, as well as the timeline, lead, and partners for each action. Timeline definitions are as follows: Underway, Short (1-3 yrs); Medium (3-10 yrs); Long (10-20 yrs). See Appendix for lead and partner acronyms and explanations.

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Water Infrastructure				
GOAL WI-1	Provide efficient and effective drinking water infrastructure.			
Action WI-1.1	Continue to advance hydrogeological modeling to better quantify the region's available groundwater resources. This includes continuing to collect water monitoring data, building a strong data-management system, investing in software and technology, providing for community access to the data, and addressing water issues of regional importance.	Short; Medium; Long	County; Cities/towns; State	
Action WI-1.2	Identify methods to reduce new development on individual or exempt wells. This may include changing state law on exempt wells and focusing growth in urban areas where urban infrastructure is available.	Short; Medium; Long	State	County; Cities/towns
Action WI-1.3	Develop a water systems plan that includes an exploration of ways to manage water resources within the region more holistically and in collaboration among state and local governments. [Also Action L-2.4]	Medium	County	Cities/towns; PUD; Tribes; State
GOAL WI-2	Manage wastewater in a cost-effective and environmentally sound way.			
Action WI-2.1	Develop a regional sewerage plan. This should include a strategy to ensure all septic systems are monitored and maintained, that failing septic systems are identified and repaired, and a strategy and policy in place to evaluate existing developments with septic systems to determine if conversion to sewer is needed due to impacts on water resources and/or human health. [Also Action L-2.3]	Short; Medium	County	LOTT; Cities/towns; TRPC

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Action WI-2.2	Build governmental capacity to address septic system conversions. May include: identifying problem areas, assessing infrastructure needs, determining priority areas for conversion, and securing funding.	Short; Medium	County; Cities/towns	LOTT; Cities/towns; TRPC
Action WI-2.3	Continue conversions from onsite septic systems to sanitary sewers in the incorporated cities and within the urban growth boundaries where septic systems are impacting water resources.	Underway; Short; Medium; Long	County; Cities/towns	State; Federal
Action WI-2.4	Where sewers are available, require new developments and infill lots within 300 feet of existing sewer infrastructure to be connected to them.	Short	County; Cities/towns	
Action WI-2.5	Enforce or add a new automatic conversion requirement to city sewer systems for properties within a specific number of feet of a sewer system.	Short; Medium	County; Cities/towns	
Action WI-2.6	Encourage new research on septic system design and evaluate public health and environmental risks posed by chemicals of concern if warranted by research.	Underway	State	County; Cities/towns; Tribes
Action WI-2.7	Expand the region's operation and maintenance programs to educate septic owners and ensure that onsite systems are maintained and kept in proper working order.	Short	County	Cities/towns; State
Action WI-2.8	Adopt septic system management areas for stream basins flowing into Puget Sound, and use a phased, multiyear approach. Use the model established in the successful Henderson Watershed Protection Area program. Use the planned update of the Thurston County On-site Sewage System Management to determine if other areas in Thurston County should have enhanced septic system management programs.	Medium; Long	County	Cities/towns; State
Action WI-2.9	Track septic system failures and areas where cumulative impacts of septic systems are degrading water quality or causing public health concerns.	Short	County	State

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
GOAL WI-3	Manage stormwater in a cost-effective and environmentally sound way.			
Action WI-3.1	Encourage jurisdictions to explore new technology to sweep streets to prevent stormwater pollution at the source.	Short; Medium	Cities/towns; County	
Action WI-3.2	Support applied research in Western Washington on cost-effective stormwater management technologies, routine maintenance, and low-impact development (LID) practices.	Short	Cities/towns; County	TRPC; State
Action WI-3.3	Encourage greater coordination between cities and Thurston County to meet stormwater goals by watershed. This can include updated stormwater and land use development codes, and creating incentive programs to encourage rainwater harvesting, porous pavement, and rain gardens on individual existing lots to improve stormwater quality.	Short	Cities/towns; County	TRPC; State
Action WI-3.4	Identify suitable locations and collaborate on developing regional infiltration, detention, and treatment stormwater facilities.	Long	Cities/towns; County	
Action WI-3.5	Impose the same stormwater treatment and well-head protection standards for rural residential development as is required in urban areas.	Medium	County	Cities/towns
Action WI-3.6	Encourage innovative and creative solutions for addressing stormwater runoff. Examples include reduced building fees for use of innovative technologies, and creating impervious surface limits and trading to reduce stormwater impacts. Another example is using in-lieu fee and off-site mitigation as an alternative when soil composition prohibits the ability to comply with the new low-impact development flow standard.	Short; Medium	Cities/towns; County	
Action WI-3.7	Retrofit existing developments with stormwater infrastructure that meets current standards. Establish a mechanism to fund stormwater retrofits including use of incentives.	Short; Medium; Long	County; Cities/towns	State; TRPC

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Action WI-3.8	Conduct comprehensive stream restoration plans for high priority streams in Thurston County to include plans for in-stream improvements, stormwater retrofits, riparian and wetland restoration.	Short; Medium	County; Cities/towns	Tribes; State; TRPC
Action WI-3.9	Increase awareness of personal behaviors that pollute water. For example: pet waste disposal, fertilizer use, car maintenance.	Underway	Cities/towns; County	LOTT
GOAL WI-4	Expand the use of reclaimed water for non-potable uses.			
Action WI-4.1	Recognize the changing and expanding role of reclaimed water to benefit the region, which may include the following: using non-potable water to stretch drinking water supplies; mitigating new water rights; meeting pollution-reduction goals in total maximum daily load (TMDL) implementation plans; and replenishing the groundwater aquifer.	Underway	LOTT	County; Cities/towns; Tribes; State
Action WI-4.2	Support efforts to restart the state rule-making process for reclaimed water.	Short	State	LOTT; County; Cities/towns; Tribes
Action WI-4.3	Pursue additional science regarding chemicals of concern in drinking water (private wells and municipal supplies), wastewater, reclaimed water, and septic effluent. This could include supporting the LOTT Cleanwater Alliance's Groundwater Recharge Scientific Study, which will examine these chemicals, their fate in the environment, and potential impacts to human health or aquatic species.	Underway	LOTT	County; Cities/towns; State; Tribes

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Energy				
GOAL EN-1	Increase energy generation from renewable resources to reduce the region's carbon footprint.			
Action EN-1.1	Explore "on bill" financing of distributed generation installations (spread over time).	Short	Nonprofits	PSE; State (WUTC); WSU; Finance
Action EN-1.2	Recognize and support clean-energy jobs. Link to education system — provide training opportunity.	Short; Medium	EDC	Higher Ed; School districts
Action EN-1.3	Explore incentives for the installation of distributed generation equipment, such as rooftop solar panels.	Short; Medium	Cities/towns; Nonprofits	PSE; WSU; Commerce; WUTC; Finance
Action EN-1.4	Investigate large-scale renewable energy projects (e.g., large-scale solar arrays).	Medium; Long	Cities/towns; Nonprofits	PSE; EDC; WUTC; Higher Ed
Action EN-1.5	Investigate a legislative solution to permit Property Assessed Clean Energy (PACE) in Washington State. Advocate if solution is identified. PACE financing supports energy efficiency and renewable energy projects by providing up-front capital that is subsequently paid back though a special assessment on participants' property taxes.	Short	Nonprofits; TCAT	County; State; Cities/towns; TRPC
Action EN-1.6	Explore the viability of energy generation at solid waste facilities. This could include exploring the Environmental Protection Agency's RE-Powering America's Land Program.	Short	County	PSE; State; WUTC; EDC
Action EN-1.7	Adopt uniform building codes and permitting practices in jurisdictions to make the installation of solar panels, or other distributed generation technologies, easier and faster.	Short; Medium	County; Cities/towns	TRPC; TCAT

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
GOAL EN-2	Enhance the region's electricity distribution, monitoring and storage infrastructure to support adoption of cleaner technologies and practices.			
Action EN-2.1	Monitor system, or grid-scale, energy storage innovations, and learn from the experiences of communities that begin to deploy them.	Short; Medium	Cities/towns; County	PSE; TE; TCAT; Higher Ed
Action EN-2.2	Support energy suppliers' equipment upgrades, new programs, and service offerings related to adding information technology to the system or grid.	Short; Medium	Cities/towns; County	PSE; TCAT; TE; Nonprofits
Action EN-2.3	Partner with energy providers to test innovative system-scale, grid-scale, energy storage solutions in isolated, controlled conditions. If, and when, technological progress is proven, partner with energy providers for deployment of such storage solutions.	Medium	Cities/towns; County; WSU	PSE; Higher Ed;
Action EN-2.4	Support voluntary programs for adding vehicle chargers to homes, businesses, and public parking infrastructure.	Short	County; Cities/towns	PSE; Nonprofits
Action EN-2.5	Promote integration of electric vehicle infrastructure into residential building codes and public and private facilities, including allowances in zoning regulations for charging stations in locations where they are needed.	Underway	Cities/towns; County	PSE; TCAT; Developers
Action EN-2.6	Create local projects to increase the existing electric vehicle fleet.	Short; Medium; Long	Cities/towns; County; Nonprofits	PSE
Action EN-2.7	Encourage energy providers make incremental improvements in the energy system using information technology to increase reliability to bring back systems online after power outages and to decrease transmission losses.	Short; Medium	PSE; Nonprofits	WUTC; State; County; Cities/towns
Action EN-2.8	Encourage a change in state policies to increase the utility share of funding for undergrounding of overhead wires to reduce power outages.	Short; Medium	Cities/towns; County; State	PSE

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
GOAL EN-3	Increase energy efficiency and conservation to reduce the region's carbon footprint.			
Action EN-3.1	Explore variable electric and natural gas rates: Reward lower-volume usage with lower rates. Some jurisdictions already do this with water rates.	Short; Medium	PSE	WUTC; Nonprofits
Action EN-3.2	Develop new incentives for green buildings (e.g., Leadership in Energy & Environmental Design – LEED), both commercial and residential.	Short; Medium	Cities/towns; County; State	PSE; Nonprofits; TE
Action EN-3.3	Jurisdictions consider complementary ordinances that require solar orientation for all new construction.	Medium; Long	County; Cities/towns	Nonprofits; Developers
Action EN-3.4	Continue to work with businesses to increase the energy efficiency of processes and facilities.	Short; Medium	PSE; Cities/towns	TE; EDC; State; Finance
Action EN-3.5	Offer incentives for the use of ductless and high efficiency heat pumps.	Underway	PSE; TE	State; Finance; WUTC
Action EN-3.6	Offer incentives for the use of roof-mounted solar water heaters.	Short; Medium	Cities/towns	PSE; Finance; State; TE
Action EN-3.7	Increase the energy efficiency of the region's water infrastructure. This includes replacing pumps and other systems that consume large amounts of energy.	Medium; Long	County; Cities/towns; LOTT	State; PSE
Action EN-3.8	Work regionally to adopt uniform energy-efficiency building standards and engage in continuous improvement.	Medium; Long	County; Cities/towns	Developers; Finance; Nonprofits; PSE
Action EN-3.9	Continue conversion of public fleets to hybrid, natural gas, and electric vehicles. Lead by example.	Medium; Long	County; Cities/towns; State; IT	
Action EN-3.10	Consider adopting policies that require residential and commercial properties to undertake an energy audit at time of sale or during substantial remodel, including, if deficiencies are found, encouraging energy retrofits to upgrade properties to a specified level.	Short; Medium	Cities/towns; County	Developers; Finance; Nonprofits; PSE

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Public Safety				
GOAL PS-1	Provide emergency services in a dependable and efficient manner to meet the dynamic needs of a diverse society.			
Action PS-1.1	Convene the region's health, social service, and public safety partners to seek opportunities to bridge the area's safety gaps.	Medium	County	Cities/towns; Fire districts; TCOMM; Nonprofits; School districts
Action PS-1.2	Maintain ongoing efforts of the Juvenile Justice Coalition to monitor, evaluate, suppress, and counter risky behaviors among youth and gang-related activities. Collaborate to develop evidence-based practices which support resiliency and healthy life styles among youth in Thurston County.	Underway	Juvenile Justice Coalition	Courts; County; School districts; Cities/towns; Nonprofits
Action PS-1.3	Support the initiatives of the Thurston County Law and Justice Council; 2013 goal -promote public safety by addressing mental health issues county-wide and provide alternatives to incarceration for mentally ill adults.	Medium	Law and Justice Council	Courts; County; Cities/towns; Fire districts; Nonprofits
Action PS-1.4	Continue fostering ongoing innovative programs such as the Thurston County Drug Court, Veteran's Court, and the Veteran's Assistance Program.	Long	County	Cities/towns
Action PS-1.5	Modify building codes where necessary to address emergency service radio communications, fire sprinkler systems in all new residential and commercial construction, and access and egress issues for emergency response and equipment.	Long	County Cities/towns	TCOMM; Fire districts
Action PS-1.6	Upgrade all emergency services radio communications equipment and infrastructure to a robust countywide platform that is responsive to changes in technology.	Medium	TCOMM	Cities/towns; Fire districts; IT

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Action PS-1.7	Emergency service agencies and departments will regularly engage their communities about the cost of delivering and maintaining adopted levels of public safety services.	Underway	County; Cities/towns; Fire districts	TCOMM; Utilities
Action PS-1.8	Explore the feasibility of expanding opportunities to share resources or consolidate (functional or administrative) law enforcement, fire protection, or emergency medical service agencies to determine if service level improvements or cost savings could be achieved.	Long	Cities/towns; Fire districts; County	Courts; Nonprofits
Action PS-1.9	Expand planning processes and outreach to address the unique risks of vulnerable sectors of the population, such as youth, elderly, people with disabilities, impoverished neighborhoods, and non-English speaking communities.	Medium	County	Cities/towns; School districts; Fire districts; Nonprofits; IT

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
GOAL PS-2	Create a resilient region by improving disaster preparedness, response, and recovery efforts, as well as by expanding public safety education.			
Action PS-2.1	Fund an update to the region's Federal Emergency Management Agency-approved Natural Hazards Mitigation Plan every five years.	Underway	County; TRPC	Cities/towns; Fire districts; School districts; Utilities; Federal
Action PS-2.2	Encourage local governments, tribes, schools, special-purpose district, and major private employers, such as hospitals, to participate in a regional risk-assessment process and adopt local plans.	Short	TRPC	County; Cities/towns; IT; Tribes; Utilities
Action PS-2.3	Identify cost-effective mitigation actions that provide all sectors of the community protection from disaster events.	Short	County; Cities/towns	TRPC; Fire districts; School districts; Utilities; Tribes; Nonprofits; Federal; State
Action PS-2.4	Consider emergency facilities in community planning and permitting.	Medium	County; Cities/towns	TCOMM; Fire districts; School districts; Utilities; IT
Action PS-2.5	Prioritize relationship building among public safety agencies and other entities to leverage response capacities during disaster events.	Medium	County	Cities/towns; Fire districts; School districts; Utilities; Port
Action PS-2.6	Participate in regional emergency exercises and recovery planning processes.	Underway	County	Cities/towns; Fire districts; TCOMM; Port; State; Utilities; IT

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Action PS-2.7	Convene recovery committees immediately after a disaster to prioritize restoration of vital public safety facilities and other essential community assets.	Underway	County	Cities/towns; School districts; Utilities; Port; State; IT
Action PS-2.8	Train personnel in best practices following lessons learned.	Underway	Cities/towns; Fire districts; County	Utilities; Port; Nonprofits
Action PS-2.9	Build residents' capacity to mitigate hazards. This includes urging residents: to install and maintain fire extinguishers and smoke and carbon monoxide detectors in every living space; to reduce fire fuels around living structures in wildland-urban interface areas; to perform seismic stabilization retrofits of older homes; and in remote, hard-to-reach areas to install fire sprinkler systems.	Medium	Cities/towns; Fire districts	County
Action PS-2.10	Build residents' capacity to respond to and recover from hazards. This entails: broadly publicizing the locations and descriptions of community disaster shelters to all sectors of the community; encouraging residents to stock rations, medications, backup heating, and emergency supplies to maintain self-sufficiency for at least 72 hours, preferably seven to ten days; and, building relationships among neighbors to leverage skills and resources to assist those in need when public safety services are overextended during a disaster (e.g., build upon the successes of community education and outreach activities like Thurston County's Crime Watch and Map Your Neighborhood programs).	Underway	County	Cities/towns; Fire districts; School districts; Utilities; Nonprofits
Action PS-2.11	Enhance local government awareness of the risks of transporting hazardous materials via pipeline, road, rail, marine, and air routes through the region.	Medium	County	Utilities; Federal; Cities/towns; Fire districts; Port; State
Action PS-2.12	Increase support for hazardous materials inspection, planning, management, and disposal.	Long	County; Cities/towns	State; Fire districts

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Action PS-2.13	Establish trusting relations with private utility companies to maintain awareness of community risks from major gas and electrical distribution systems.	Underway	County; Cities/towns	PSE; Utilities
Action PS-2.14	Ensure that adequate response contingencies are in place to swiftly address hazardous materials release.	Medium	County	Cities/towns; State; Fire districts
Action PS-2.15	Jurisdictions with adopted hazard-mitigation plans should actively pursue funding opportunities to implement their highest-priority mitigation actions.	Medium	Jurisdictions with adopted plans	State; Federal
Action PS-2.16	Coordinate on strategies for containing urban wildfires.	Medium	Cities/towns; Fire districts	County; TCOMM
Action PS-2.17	Expand the eligibility of Federal Emergency Management Agency (FEMA) mitigation grant programs to allow replacement of aging structures (i.e. facilities such as water reservoirs, fire stations, transportation facilities, emergency coordination shelters, and buildings used as emergency shelters that are better suited to serve communities in the future).	Long	County	Cities/towns; Federal; Utilities; School districts; Fire districts; IT

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Solid Waste				
GOAL SW-1	Plan and take action to reduce, reuse and recycle as much waste as possible and meet the needs of current and future populations.			
Action SW-1.1	Generate the information needed to keep the Solid Waste Management Plan reflective of the needs – as well as the financial resources – to achieve the most efficient and sustainable waste reduction possible.	Short; Medium; Long	County; Olympia (Solid Waste)	Cities/towns
Action SW-1.2	Evaluate the need for facility expansion and new facility needs for both north and south county. Focus programs to reduce commercial waste as well as the waste from the growing multifamily residential sector. Update the disposal rates to achieve "reduce, reuse, recycle" goal.	Short; Medium; Long	County; Olympia (Solid Waste)	Cities/towns
Action SW-1.3	Expand waste prevention education, outreach and technical assistance programs to reduce the need for waste collection, transport, and processing. Use community based social marketing techniques so that recycling, composting, and waste reduction become the norm.	Short; Medium; Long	County; Olympia (Solid Waste)	Cities/towns
Action SW-1.4	Work with regional jurisdictions to build consistent recycling/compostable material lists and messaging so that consumers understand what is recyclable/compostable no matter where they live.	Short; Medium; Long	County; Olympia (Solid Waste)	Cities/towns
Action SW-1.5	Collaborate with jurisdiction departments during planning and review of multifamily, commercial and mixed use projects to accommodate easy and convenient recycling for occupants to divert waste and for haulers to collect recyclables and garbage.	Short; Medium; Long	County; Olympia (Solid Waste)	County; Cities/towns

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
Action SW-1.6	Expand recycling to new product areas including construction debris, textiles, plastics, and electronic waste as well as waste streams that may have tangible cost benefits to the county (e.g., silver recovery unit at HazoHouse, used oil, batteries).	Short; Medium; Long	County; Olympia (Solid Waste)	Cities/towns
Action SW-1.7	Support the development of local uses for recycling/composting of materials to minimize reliance on national and international markets.	Short; Medium; Long	County; Olympia (Solid Waste)	County; Cities/towns; EDC
Action SW-1.8	Support statewide product stewardship initiatives that require producers to be responsible for funding end-of-life disposal of their products and packaging. Consider container deposits, as well as consider county-level bans or mandatory recycling requirements when waste reduction goals are not met through education and voluntary efforts.	Short; Medium; Long	County; Olympia (Solid Waste)	County; Cities/towns
Action SW-1.9	Develop a Disaster Debris Management plan with action initiatives that will address debris disposal transportation issues including any garbage train disruptions for major disaster debris disposal.	Medium	County; Olympia (Solid Waste)	County; Cities/towns

INVESTMENT

Goals and Actions		Timeline	Lead	Partners
GOAL SW-2	Continue to plan for, educate, assist and offer access to safely and efficiently manage disposal and reduce hazardous waste.			
Action SW-2.1	Continue hazardous collections efforts at HazoHouse and at WasteMobile events. Determine what portion of hazardous waste is disposed of in trash, drains, on the ground or is in storage, and establish an action plan. Track and evaluate new chemicals of concern.	Short; Medium; Long	County	Cities/towns
Action SW-2.2	Continue to follow the updated Hazardous Waste Management Plan and support identified needs and programs, such as technical assistance to small business.	Short; Medium; Long	County	Cities/towns
Action SW-2.3	Continue education and outreach programs. Evaluate education and outreach methods. Fund methodical, targeted methods that are promising or have been shown to be effective increasing awareness of the need to reduce use of hazardous materials and the importance of safe disposal.	Short; Medium; Long	County; Olympia (Solid Waste)	Cities/towns
Action SW-2.4	Evaluate new collection facilities in collaboration with the County Environmental Health Division. Analyze the need for new hazardous waste collection facilities to serve south county areas as they grow.	Underway; Short	County (Public Works)	Cities/towns
Action SW-2.5	Continue enforcement of illegal solid and hazardous waste dumping/disposal.	Underway; Short; Medium; Long	County	Cities/towns