

Green/Sustainable Strategies Included or Still Under Consideration for Murray CSO Control Facility Project

Strategy	How Incorporated into Baseline Design (Potential Strategies To Be Verified in Final Design noted separately. Community identified priorities highlighted in green)
Sustainable Sites	
Erosion/Sedimentation	King County specifications require that the contractor prepare a sediment and erosion control plan.
Site Selection Process	The selected project site does not develop prime farmland, land with elevation 5 feet above the 100-year flood, land identified as habitat of any threatened or endangered species, land within 100 feet of any water or wetlands, or land which prior to acquisition for the project was public parkland. The selected project site is also located near the Murray CSO Outfall, which will minimize piping and ground disturbance by construction.
Yard Operations Plan	<p>The same paved area on site will be used for O&amp;M access, parking, and vehicle turnaround.</p> <p><b>Potential Strategy To Be Verified During Final Design:</b> Provide yard lighting for safety considerations.</p>
Contaminants Control	Native and non-invasive plants that have little or no fertilization and irrigation requirements will be used. Low-impact development measures will be implemented to treat stormwater runoff.
Reduce Footprint, Retain or Create Open Space	<p>Six buildings will be demolished as part of this project, and areas of the property will be restored with native or adaptive vegetation. The proposed design reduces the area of impervious surfaces on the existing site. The facility will also be located below grade as much as possible to minimize the above-grade footprint.</p> <p><b>Potential Strategies To Be Verified During Final Design:</b> Install a vegetated roof for approximately half of the facility building. A life-cycle cost analysis will be performed to determine the feasibility of installing a vegetated roof. The feasibility of achieving this credit will be verified during final design.</p>
Return Runoff to Pre-Construction Conditions	<p>Green stormwater infrastructure and low-impact development measures will be implemented to the maximum extent feasible on the project site per City of Seattle requirements. The proposed design will reduce the area of impervious surfaces on the existing site. The facility will also be located below grade as much as possible to minimize the above-grade footprint.</p> <p><b>Potential Strategies To Be Verified During Final Design:</b> Further stormwater analysis is required to determine if it is possible to return runoff to pre-construction conditions.</p>

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Sustainable Sites (continued)	
Reduce Heat Island Effect	<p>Trees and other landscape features will provide shade for paved surfaces. The proposed design will reduce the area of impervious surfaces on the existing site. The facility will also be located below grade as much as possible to minimize the above-grade footprint.</p> <p><b>Potential Strategies To Be Verified During Final Design:</b> Specify light-colored materials for the concrete driveways, sidewalks, and walkways. A life-cycle cost analysis will be performed to determine the feasibility of using light-colored materials for paved surfaces.</p>
Minimize Light Pollution	Exterior lighting will be shielded, so that light is not cast outside of the project site. Exterior lighting will be minimized by installing several of the structures associated with this facility below grade. Exterior lighting will only be provided as required for safety.
Integrate Facility into Community	Natural acoustic barriers will be used.
Connect Public Use Areas to Community	Design will incorporate community access and will act as an extension to Lowman Beach Park and the community.
Water Efficiency	
Permascape Design	Native or non-invasive plants that require little irrigation will be used.
Reduce Potable Water Site Use, Reduce by 50%	<p>Water-saving plumbing fixtures will be used.</p> <p><b>Potential Strategy To Be Verified During Final Design:</b> Use captured rainwater or collected stormwater runoff as water supply for flushing system (tipping buckets). A life-cycle cost analysis will be performed to determine the feasibility of using rain cisterns to store rainwater/stormwater runoff for the flushing system.</p>
Energy & Atmosphere	
Variable Capacity Design	Variable frequency drives will be provided for odor control fans and storage tank drain pumps.
Optimize Energy Performance by 15%	Ventilation rates of odor control system will be reduced. Ventilation of spaces will be minimized by including controls to turn on systems only when spaces are occupied. Heating of the building will be reduced because it is not regularly occupied. Equipment with higher efficiencies will be used. Energy-efficient lighting will be installed. Flows will be diverted to the combined sewage storage tank by gravity, instead of pumping, reducing energy requirements.

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	The feasibility of achieving this credit will be verified during final design.
Materials & Resources	
25% Recycled Content	<p>Use compost; local, native plants; biosolids for soil amendment; and salvaged plants. Use fly ash in concrete and steel. (Initial contacts with concrete manufacturers indicate the cost of fly ash in concrete mix does not increase concrete costs.)</p> <p><b>Potential Strategies To Be Verified During Final Design:</b> Include a minimum requirement for recycled asphalt in asphalt paving and fly ash in concrete mixes. Use crushed concrete for roadway sub-base (would require approval by SDOT).</p> <p>The largest single construction material for this project is concrete, and the County guide specification requires a maximum content of 15 percent of fly ash by weight. Thus, calculations will be performed as the design progresses to verify that it is possible to achieve 25 percent of high-recycled content materials.</p>
20% Manufactured Locally	<b>Potential Strategies To Be Verified During Final Design:</b> Utilize locally-sourced materials to the maximum extent possible.
Half of the Locally Manufactured 20% Harvested Locally	<b>Potential Strategies To Be Verified During Final Design:</b> Utilize locally-sourced materials to the maximum extent possible.
Outdoor Environmental Quality	
Develop Strategy for Environmental Quality Monitoring	King County WTD seeks community input throughout the design process to identify community concerns and potential view impacts. Baseline design includes an odor control system to treat odors and noise analysis to verify that noise generated from equipment does not exceed allowable noise limits per the City of Seattle Noise Ordinance. If WTD receives community complaints, then it is WTD policy to work with the community to resolve the issues.
Develop Environmental Quality Monitoring Contingency Plan	If WTD receives community complaints, then it is WTD policy to work with the community to resolve the issues.
Low-Emitting Exterior Adhesives & Sealants	Materials with low volatile organic compounds will be specified.
Low-Emitting Exterior	Materials with low volatile organic compounds will be specified.

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Paints	
Outdoor Environmental Quality (continued)	
Limit Toxic By Products Leaving Site	King County Guide Specifications require new fuel storage tank include double-containment. Another option would be to install a single-walled fuel storage tank located in a vault with the vault acting as the double-containment. Odor control system will be installed to treat odors.
Passive Solar Site Design Maximizing Daylighting	Include features allowing natural light to enter new structures.
View Corridor Preservation or Buffering	Site and landscaping will be designed to camouflage the site from the road and adjacent neighbors (e.g., green wall). The architectural model will be used to verify that view corridors are enhanced or preserved.
Minimize Fugitive Odor	Odor control treatment facility will treat odors from the existing Murray Avenue Pump Station wet well and new CSO control facility. Odor control system will be under negative pressure to reduce air leaks. An airflow study will be completed during final design to verify that odors are minimized.
Minimize Fugitive Noise	A noise study was performed in the immediate vicinity of the CSO control facility to document the existing conditions and the impacts of the acoustical changes due to the proposed equipment. Based on the noise study, noise control measures will be implemented, so that the project complies with the City of Seattle Noise Ordinance.
Innovation & Design Process	
Create Public Amenity	<p>The design of the facility will encourage views of Puget Sound (view corridor preservation/improvement), enhance continuous space between Lowman Beach Park and the project site, calm traffic and create a more pedestrian- and bike-friendly environment, incorporate community access, minimize fencing to the extent feasible, and will act as an extension to Lowman Beach Park.</p> <p><b>Potential Strategy To Be Verified During Final Design:</b> Provide a bike rack for public use to promote alternative transportation.</p>
Provide Sustainability Education	<p>King County will send informational fliers to the community about the project and provide public education features on site, such as signage, highlighting green elements of the project.</p> <p><b>Potential Public Education Features:</b> Sustainability visibility, demonstration projects, and educational programs. Incorporate educational themes into the art portion of the project.</p>

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Innovation & Design Process (continued)	
Other Innovation	<ul style="list-style-type: none"><li>Minimize waste and find opportunities for recycling and diversion of materials from landfills.</li><li>Minimize adverse impacts during construction (minimize dewatering, vibration, noise, excavation quantities, truck trips, and other impacts to the environment and community).</li><li>Design Beach Drive Southwest and intersection to create more parking and calm traffic.</li><li>Use secant piles to reduce the amount of dewatering, excavation required, and provide additional areas on the site for lay down.</li><li>Design combined sewage storage tank with a circular structure to reduce the material use and site impact.</li><li>Donate and recycle tenant items left in the buildings when vacated.</li><li>Plan for green salvage/demolition of existing structures.</li></ul> <p><b>Potential “Other Innovation” Credits To Be Verified During Final Design:</b></p> <ul style="list-style-type: none"><li>Provide storage space for recyclables on site during construction</li><li>Specify Forest Stewardship Council certified wood for any permanently-installed wood products.</li><li>Use natural materials for trail surfaces (e.g., seashells).</li></ul>
Credit 2.0 LEED Accredited Professional	LEED accredited professionals are part of the project team.