



City of Seattle
Seattle Public Utilities

February 11, 2016

TO: Recipients of the Project SEPA DNS/Checklist

FROM: Betty Meyer, SEPA Responsible Official

SUBJECT: Addendum to the South Park Pump Station and Water Quality Facility Project SEPA Environmental Checklist

PURPOSE OF THIS ADDENDUM

In March of 2008, Seattle Public Utilities (SPU) prepared a State Environmental Policy Act (SEPA) Environmental Checklist that analyzed environmental impacts of the proposed South Park Pump Station and Water Quality Facility Project. As lead agency, SPU issued a Determination of Non-Significance (DNS) for the project on March 24, 2008.

As described in the March 2008 Environmental Checklist, this project included a proposed dual-purpose Pump Station to provide flood control and direct flows to the proposed Water Quality Facility (WQF). The design for the combined Pump Station and WQF was completed in 2009. In July 2012, based on new information concerning pollutant removal rates and maintenance requirements for the treatment technology to be used in the WQF, SPU determined it would be prudent to evaluate alternative water quality treatment options and analyze policy issues associated with water quality elements of the project.

Due to continuing delays associated with the WQF, SPU decided in November 2014 to proceed with a phased approach whereby the Pump Station would be built as quickly as possible, and the WQF later, after SPU determines what type of treatment technology to provide. This phased approach would enable SPU to provide some measure of flooding relief approximately 4.5 years earlier than with the combined project and would allow completion of both the Pump Station and WQF almost a year sooner than they could be completed as a single large project.

SPU has prepared this SEPA Addendum to document this change in the Project and to assess how that change affects analyses included in the March 2008 Environmental Checklist. At this time, SPU anticipates the redesigned WQF Project would undertake a new SEPA environmental review once SPU determines the preferred type of treatment. In the meantime, as lead agency SPU has reviewed the findings and concluded that the Pump Station project changes do not substantially alter the analyses of impacts contained in the March 2008 Environmental Checklist and will not result in any significant environmental impacts.

This addendum has been prepared in accordance with the authority provided in Seattle Municipal Code (SMC) 25.05.600 and in accordance with the procedures described in SMC 25.05.625.

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UPDATED PROJECT INFORMATION

Environmental Checklist Section A8: Environmental Information

In April 2009, SPU conducted a Cultural Resources Survey for the combined South Park Pump Station and Water Quality Project [Entrix, Inc. 2009 (April). Final Cultural Resources Technical Report, 7th Avenue South Park Pump Station and Water Quality Project. Prepared for SPU.]

Environmental Checklist Section A11: Description of the Proposal

The March 2008 Environmental Checklist described the proposed project as including both a new Pump Station and a new stormwater WQF. As described above, those elements are now being designed and constructed separately. Pump Station redesign is expected to be complete in the first quarter of 2017 and construction is expected to be complete by the third quarter of 2018. Redesign and construction of the WQF Facility is anticipated to be complete in 2020 and 2022, respectively. The original Pump Station design has been modified (a) to account for an increase in the estimated annual runoff volume predicted by updated hydraulic modeling of the 7th Avenue South drainage basin and (b) to include a larger wet well to accommodate future influent pumps for the adjacent WQF.

The March 2008 Environmental Checklist described the Pump Station as a below-grade stormwater pump station, approximately 30 feet by 25 feet by 30 feet deep (22,500 cubic feet) in size. The tallest above-ground structure (the electrical building) was described as being no more than 15 feet tall. The current design is still a below-grade, reinforced concrete structure. Current dimensions of the planned structure are approximately 27 feet wide, 38 feet long, and approximately 33 feet deep (33,900 cubic feet). The tallest above-ground structure (the electrical building) is now projected to be 20 feet tall.

The March 2008 Environmental Checklist described the Pump Station as being constructed on a parcel (parcel number 7327905700; 640 Riverside Avenue South) and in the adjacent City of Seattle right-of-way for 7th Avenue South—a designated Shoreline Street End. However, the Checklist was silent on the specific property right (that is, by means of term permit from Seattle Department of Transportation or by vacation) that would allow the project to occupy the right-of-way. SPU is now pursuing formal vacation of the 7th Avenue Street end for this project. A vicinity map is included as Attachment A, and the proposed street vacation is shown on Attachment B.

CHANGES TO ENVIRONMENTAL ELEMENTS

Environmental Checklist Section B2: Air

The March 2008 Environmental Checklist did not attempt to estimate the project's greenhouse gas (GHG) emissions. SPU's current practice in preparing Environmental Checklists is to include a GHG Worksheet that summarizes estimated GHG emissions during the construction, operation, and maintenance of a proposed project. A GHG Worksheet for construction, operation, and maintenance of the Pump Station is included as Attachment C. The project would produce GHG in three ways: embodied in materials to be installed or used on the project; through construction activity; and during regular operation, maintenance, and monitoring activities throughout the anticipated 80 year lifespan of the facility.

Total GHG emissions for the project as described above (Pump Station construction, operation, and maintenance) are estimated to be 2,566.5 metric tons of carbon dioxide emission (MTCO₂e). The GHG emissions calculations are shown in Attachment C and summarized in Table 1. One metric ton is equivalent to 2,205 pounds.

The project would demolish and remove existing concrete surfaces, install replacement concrete and/or asphalt surfaces, and construct a new reinforced concrete pump station. GHG emissions embodied in the new structure are estimated to total 1,574 MTCO₂e (see Attachment C, Section 1). GHG emissions embodied in the estimated volume of new hot mix asphalt and concrete pavement (approximately 88 cubic yards) are estimated to total 237.6 MTCO₂e (see Attachment C, Section 2). The embodied energy in other materials that will be used in this project—such as aggregate bedding, rebar, fencing, equipment, and piping—have not been estimated for purposes of this SEPA environmental review due to the difficulty and inaccuracy in calculating those estimates.

For this project, construction equipment would include hand-held power tools, gasoline and diesel-powered compressors and generators, and gasoline and diesel-powered vehicles. These tools generate GHG emissions due to the combustion of gasoline and diesel fuels and the GHG emissions include compounds such as oxides of nitrogen, carbon monoxide, particulate matter and smoke, uncombusted hydrocarbons, hydrogen sulfide, carbon dioxide, and water vapor. Other emissions during construction could include dust and exhaust from construction vehicles. These effects are expected to be localized, temporary, and minimized.

The project would generate GHG emissions during the construction period (estimated to be 360 working days) through the operation of diesel- and gasoline-powered equipment, and in the transportation of materials, equipment, and workers to and from the site. The estimates provided are based on assumptions for typical numbers of vehicles to execute the work; see Attachment C for more information. Construction activities would generate an estimated 699.0 MTCO₂e of GHG emissions.

The project would also generate GHG emissions through the operation, maintenance, and monitoring of the project. The estimated emissions are based on an assumed life expectancy of 80 years. The estimated average annual GHG emissions generated from operations, maintenance, and monitoring is 55.9 MTCO₂e.

Table 1. Summary of Greenhouse Gas (GHG) Emissions for Pump Station Construction, Operation, and Maintenance

Activity/Emission Type	GHG Emissions (pounds of CO₂e)¹	GHS Emissions (metric tons of CO₂e)¹
Buildings	3,470,670	1,574
Paving	523,908	237.6
Construction Activities (Diesel)	1,471,135.5	667.3
Construction Activities (Gasoline)	69,984	31.7
Long-term Maintenance (Diesel)	123,192	55.9
Long-term Maintenance (Gasoline)	0	0
Total GHG Emissions	5,658,889.5	2,566.5

¹Note: 1 metric ton = 2,204.6 pounds of CO₂e. 1,000 pounds = 0.45 metric tons of CO₂e

Environmental Checklist Section B13: Historic and Cultural Resources

No archaeological or historical resources were discovered during the cultural resources survey conducted in 2009. However, large portions of the subsurface area of potential effect were inaccessible due to structures and paving. Known archaeological sites on the banks of the Duwamish River have been found at depths exceeding 1 meter. The likelihood of archaeological deposits in un-surveyed areas is moderate to high. Therefore, the Project may affect as yet undiscovered archaeological resources. As a mitigating measure for this situation, the Project would conduct cultural resource monitoring for ground-disturbing activities in native soils and native sediments during construction. That monitoring by a professional archaeologist would be conducted under provisions of a Monitoring and Unanticipated Discovery Plan that would outline steps to be taken and the parties to be consulted in the event archaeological resources are discovered during Project activities. The Plan would also incorporate information from the April 2009 updated cultural resources survey and any new information developed since the 2009 survey.

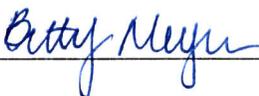
Environmental Checklist Section B14: Transportation

SPU is now pursuing vacation of the 7th Avenue Street street-end (north of South Riverside Drive) to accommodate the footprint of the Pump Station (Attachment B). The total vacated area would be 6,893 square feet (0.16 acre). Vacation is expected to be completed just prior to 2017, and would result in the loss of public benefits (related to proximity to the shoreline) that must be replaced under the City's street vacation policies. To mitigate this loss of public benefit, SPU has acquired a nearby 1,972 square foot shoreline property, commonly called the Wood Property, located at 1054 South Elmgrove Street. The Wood Property and its redevelopment as a neighborhood pocket park would be used to replace lost public benefits resulting from the Project's vacation of a City-designated Shoreline Street End.

This street vacation is exempted from the threshold determination provisions of SEPA as allowed by Washington Administrative Code (WAC) 197-11-800(2)(a) (street vacation) and SMC 25.05.800(B)(8). On May 7, 2013, SPU determined that acquisition and redevelopment of the Wood Property was exempt from the threshold determination provisions of SEPA as allowed by WAC 197-11-800(5)(a) (Purchase or Sale of Real Property) and SMC 25.05.800(E)(1).

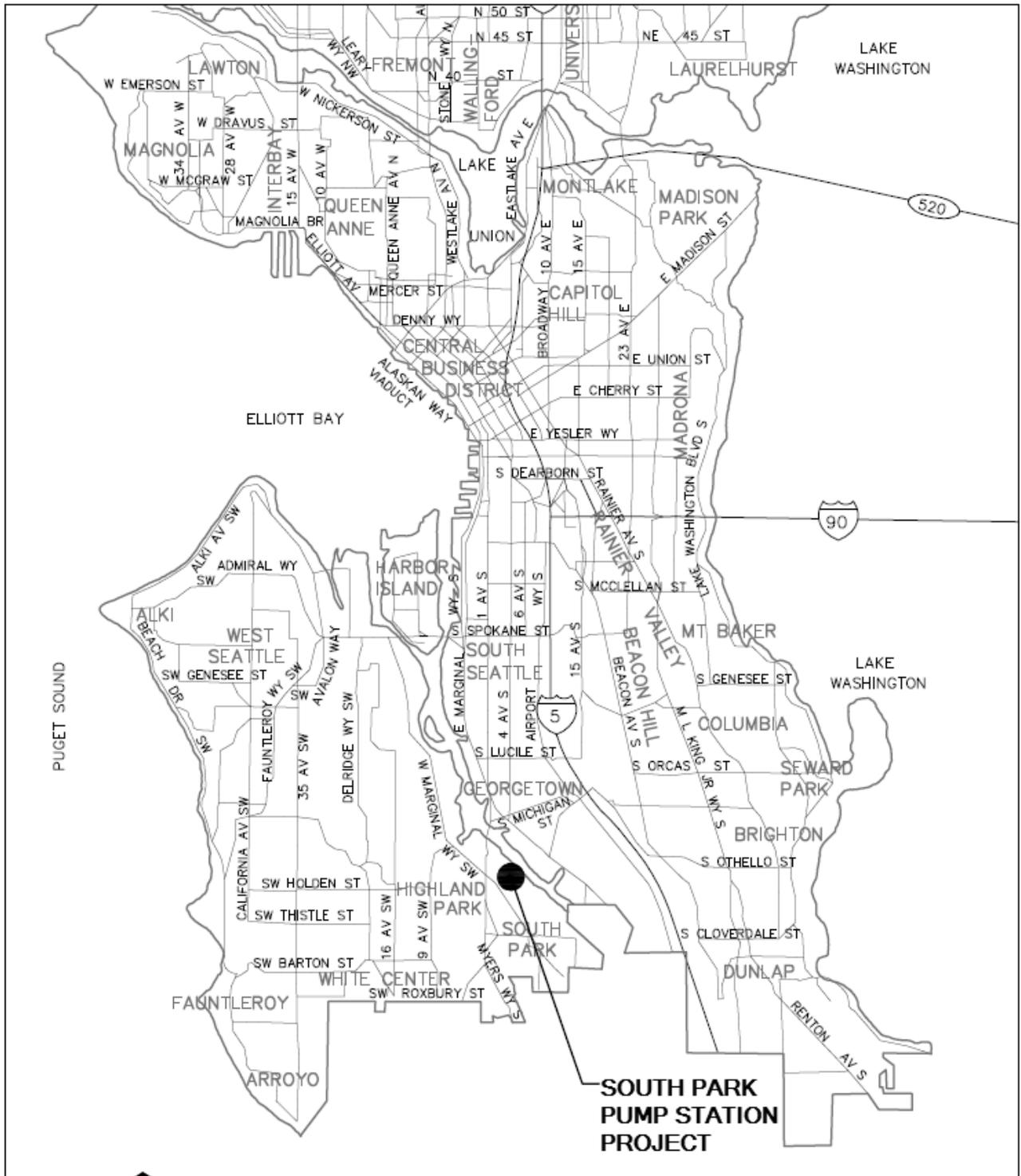
Please submit any comments on this addendum no later than close of business February 26, 2016, to:

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P.O. Box 34018
Seattle, WA 98124-4018
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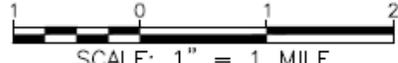
Signature:  _____

Issue Date: February 11, 2016

ATTACHMENT A: Vicinity Map

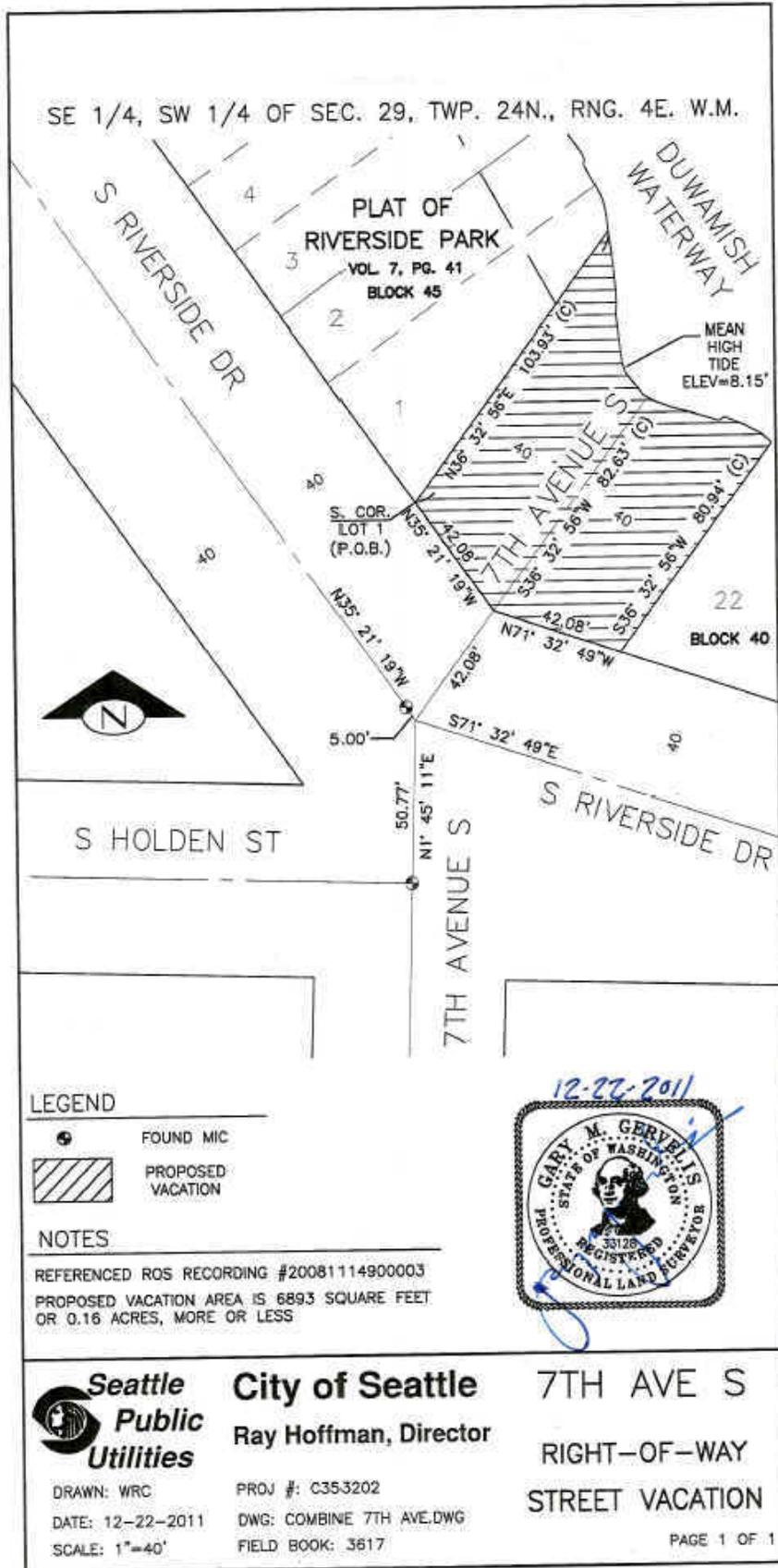


VICINITY MAP



SCALE: 1" = 1 MILE

ATTACHMENT B: Proposed Street Vacation, 7th Avenue South Street End.



ATTACHMENT C: Greenhouse Gas Emissions Worksheet

Section I: Buildings						
			Emissions Per Unit or Per Thousand Square Feet (MTCO₂e)			
Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Embodied	Energy	Transportation	Lifespan Emissions (MTCO₂e)
Single-Family Home	0		98	672	792	0
Multi-Family Unit in Large Building	0		33	357	766	0
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other than Mall)		0.0	39	577	247	0
Office		0.0	39	723	588	0
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other		1,000	39	1,278	257	1,574
Vacant		0.0	39	162	47	0
TOTAL Section I Buildings						1,574

Section II: Pavement						
						Emissions (MTCO₂e)
Concrete (50 MTCO ₂ e/1,000 sq ft of pavement at a depth of 6 inches)		4,752 sq ft, 6 inches thick (80 cu yds hot mix asphalt; 8 cu yds conc pavement)				237.6
TOTAL Section II Pavement						237.6

Section III: Construction						
						Emissions (MTCO₂e)
(See detailed calculations below)						
TOTAL Section III Construction						699.0

Section IV: Operations and Maintenance						
						Emissions (MTCO₂e)
(See detailed calculations below)						
TOTAL Section IV Operations and Maintenance						55.9

TOTAL GREENHOUSE GAS (GHG) EMISSIONS FOR PROJECT (MTCO₂e)						2,566.4
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ATTACHMENT C: Greenhouse Gas Emissions Worksheet, continued

Section III Construction Details

Construction: Diesel		
Equipment	Diesel (gallons)	Assumptions
Excavator	40,000	2,000 hours x 20 gallons/hour (345 hp engine)
Front end loader	14,000	2,000 hours x 7 gallons/hour (345 hp engine)
Vibratory / Static Roller	120	150 hours x 0.8 gallons/hour (185 hp engine)
Two flatbed trucks	960	60 round trips x 40 miles/round trip x 2 ÷ 5 mpg
Dump truck w/pup (28 cubic yard/load)	300	75 round trips x 20 miles/round trip ÷ 5 mpg
Concrete truck (8 cubic yard/load)	30	25 round trips x 6 miles/round trip ÷ 5 mpg
Subtotal Diesel Gallons	55,410	
GHG Emissions in lbs CO₂e	1,471,135.5	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	667.3	1,000 lbs = 0.45359237 metric tons

Construction: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Pick-up trucks or crew vans	1,800	360 workdays x 5 trucks x 1 round-trip/day x 20 miles/round-trip ÷ 20 mpg
Misc. hand equipment	1,080	360 workdays x 5 hours x 2 pieces of equipment x 0.3 gal/hour
Subtotal Gasoline Gallons	2,880	
GHG Emissions in lbs CO₂e	69,984	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	31.7	1,000 lbs = 0.45359237 metric tons

Construction Summary		
Activity	CO ₂ e in pounds	CO ₂ e in metric tons
Diesel	1,471,135.5	667.3
Gasoline	69,984	31.7
Total for Construction	1,541,119.5	699.0

Section IV Long-Term Operations and Maintenance Details

Operations and Maintenance: Diesel		
Equipment	Diesel (gallons)	Assumptions
Maintenance Operation (truck)	4,160	4,160 events (once weekly for 80 years) x 5 miles/round-trip x 1 round-trip/event ÷ 5 mpg
Vactor truck (pipe and well cleaning)	480	480 events (6 times per years for 80 years) x 1 round-trip/event x 5 miles/round-trip ÷ 5 mpg
Subtotal Diesel Gallons	4,640	
GHG Emissions in lbs CO₂e	123,192	26.55 lbs CO ₂ e per gallon of diesel
GHG Emissions in metric tons CO₂e	55.9	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance: Gasoline		
Equipment	Gasoline (gallons)	Assumptions
Subtotal Gasoline Gallons	0	
GHG Emissions in lbs CO₂e	0	24.3 lbs CO ₂ e per gallon of gasoline
GHG Emissions in metric tons CO₂e	0	1,000 lbs = 0.45359237 metric tons

Operations and Maintenance Summary		
Activity	CO ₂ e in pounds	CO ₂ e in metric tons
Diesel	123,192	55.9
Gasoline	0	0
Total Operations and Maintenance	123,192	55.9