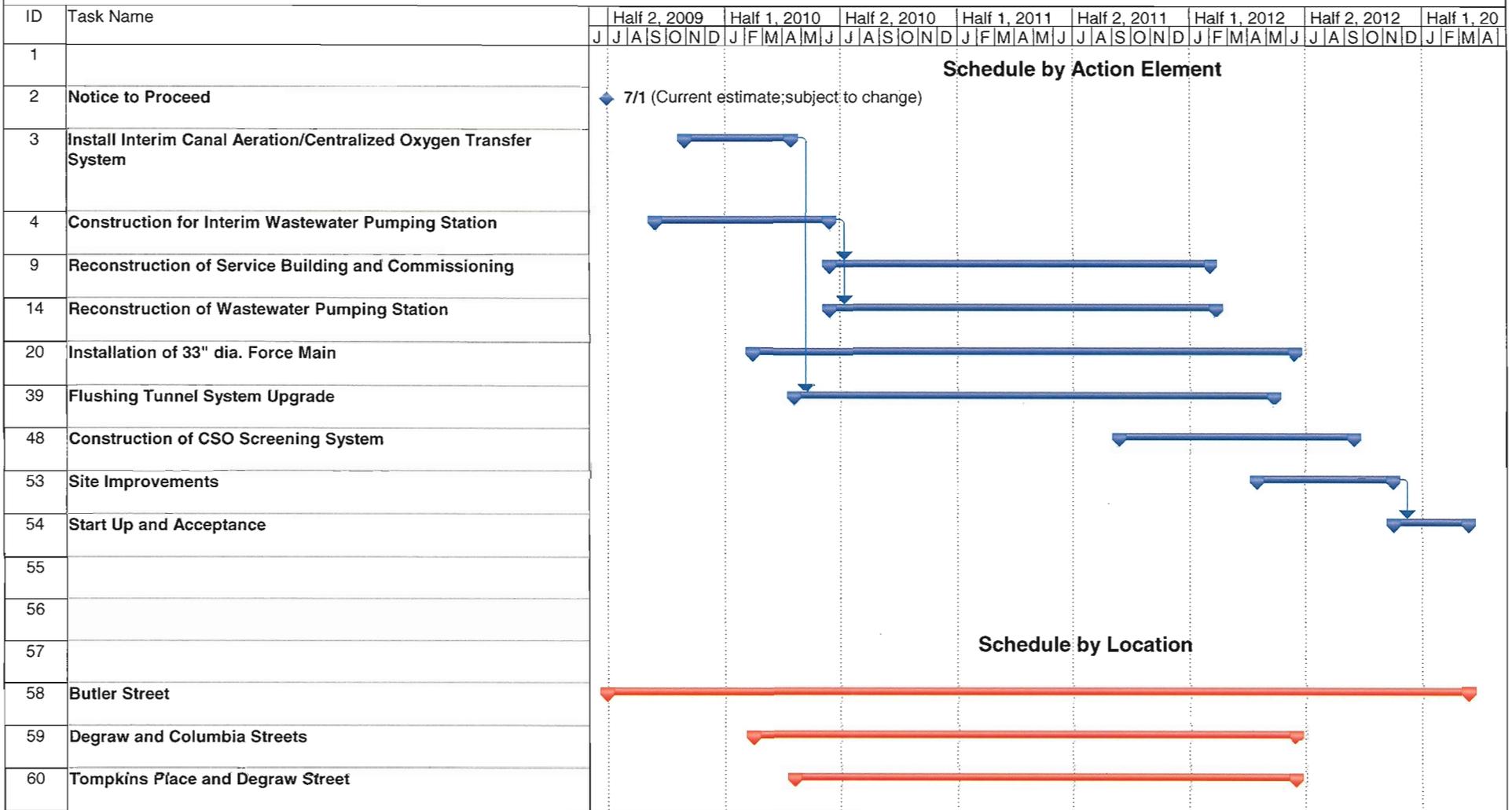


APPENDIX D

PROJECT SCHEDULE

Construction Schedule

GOWANUS FACILITIES UPGRADE CONSTRUCTION SCHEDULE



Expected Construction Activities, Equipment and Duration

**GOWANUS FACILITIES UPGRADE
EXPECTED CONSTRUCTION ACTIVITIES, EQUIPMENT AND SCHEDULE**

Gowanus Facilities at Butler Street

Phase	Description	Vehicles/Equipment	Duration
Asphalt/Concrete Removal	Asphalt removal on Butler Street for interim wastewater force main; interim property line box; removal of part of facility paving near wastewater pumping station; removal of pavers for flushing tunnel system work in courtyard.	Asphalt saw, concrete breaker, backhoe, front end loader	1 week; 1 week; 1 week;
Dewatering	Portable pumps would be installed at the work areas.	Water pump	Water pumps working throughout the construction activities
Sheeting/Jet Grout	Service building; wastewater pumping station; flushing tunnel system building; diversion chamber.	Backhoe, front end loader, crane, vibratory hammer, high pressure pump, drilling rig, excavator	3 weeks; 3 weeks; 3 weeks; 2 weeks
Excavation	Interim wastewater force main; service building; flushing tunnel system building; diversion chamber.	Backhoe, front end loader, crane, excavator	3 weeks; 4 weeks; 4 weeks; 4 weeks
Demolition	Interim wastewater force main; service building; courtyard portion of flushing tunnel system; wastewater pumping station; flushing tunnel system building.	Concrete saw, front end loader, crane, compressor	1 week; 4.5 months; 2 weeks; 3.5 months; 3.25 months
Construction	Service building; wastewater pumping station, flushing tunnel system pumping chamber; CSO diversion chamber. The duration of this phase includes the time necessary for the concrete to cure. During the curing periods construction activities are limited but ongoing.	Crane, concrete pump, compressor	13.5 Months; 11 months; 16 months; 6 months
Demolition	The HDPE wastewater force main and its concrete cradle would be demolished and removed. This task would be performed inside the flushing tunnel.	Concrete saw, front end loader, crane, compressor	2.25 months

**GOWANUS FACILITIES UPGRADE
EXPECTED CONSTRUCTION ACTIVITIES, EQUIPMENT AND SCHEDULE**

Gowanus Facilities at Butler Street (continued)

Phase	Description	Vehicles/Equipment	Duration
Construction	A new CCFRP 33" wastewater force main and concrete encasement would be put in place. This task would be performed inside the flushing tunnel. The concrete would be brought to the work site by truck and then pumped.	Crane, concrete pump, compressor	2 months

Flushing Tunnel Access at Intersection of Tompkins Place and Degraw Street

Phase	Description	Vehicles/Equipment	Duration
Asphalt Removal	Part of the street paving and subgrade would be removed to expose the below grade 12 x 8 opening in to the Tompkins Place manhole. The debris would be hauled away by truck.	Asphalt saw, backhoe, front end loader, vibratory hammer, compressor	1 week
Demolition	The HDPE force main and its concrete cradle would be demolished and removed. This task would be performed inside the flushing tunnel using a manhole situated on Tompkins Place to access the tunnel.	Concrete saw, front end loader, crane, compressor.	3.75 months
Construction	A new CCFRP 33" wastewater force main and concrete encasement would be put in place. This task would be performed inside the flushing tunnel. The concrete would be brought to the work site by truck and then pumped.	Crane, concrete pump, compressor	6 months

Exit Chamber and Clean Out Chamber at Degraw and Columbia Streets

Phase	Description	Vehicles/Equipment	Duration
Asphalt Removal	Part of both the street paving and sidewalk would be removed. The debris would be hauled by truck.	Asphalt saw, concrete breaker, backhoe, front end loader	2 weeks

**GOWANUS FACILITIES UPGRADE
EXPECTED CONSTRUCTION ACTIVITIES, EQUIPMENT AND SCHEDULE**

Exit Chamber and Clean Out Chamber at Degraw and Columbia Streets (continued)

Phase	Description	Vehicles/Equipment	Duration
Dewatering	Well points would be installed around the work area. Dewatering would continue also during the subsequent phases.	Backhoe, water pump, front end loader, crane	2 weeks
Sheeting/Jet Grout	Heavy equipment would be put in place and the concrete would be brought to the work site by truck.	Backhoe, front end loader, crane, vibratory hammer, high pressure pump, drilling rig, excavator	5 weeks
Excavation	The excavated soil would be hauled by truck.	Backhoe, front end loader, crane, excavator	5 weeks
Microtunneling	During this phase, part of the excavated area would be used as a temporary exit pit.	Front end loader, crane, welder, hydraulic boring, compressor	2 months
Construction	Trucks would deliver construction materials and concrete. The duration of this phase includes the time necessary for the concrete to cure. During the curing periods construction activities are limited but ongoing.	Crane, concrete pump, compressor	3.5 months
Demolition	The HDPE wastewater force main and its concrete cradle would be demolished and removed. This task would be performed inside the flushing tunnel using the exit chamber to access the tunnel.	Concrete saw, front end loader, crane compressor	1.5 months
Construction	A new CCFRP 33" wastewater force main and concrete encasement would be put in place. This task would be performed inside the flushing tunnel. The concrete would be brought to the work site by truck and then pumped.	Crane, concrete pump, compressor	1.5 months