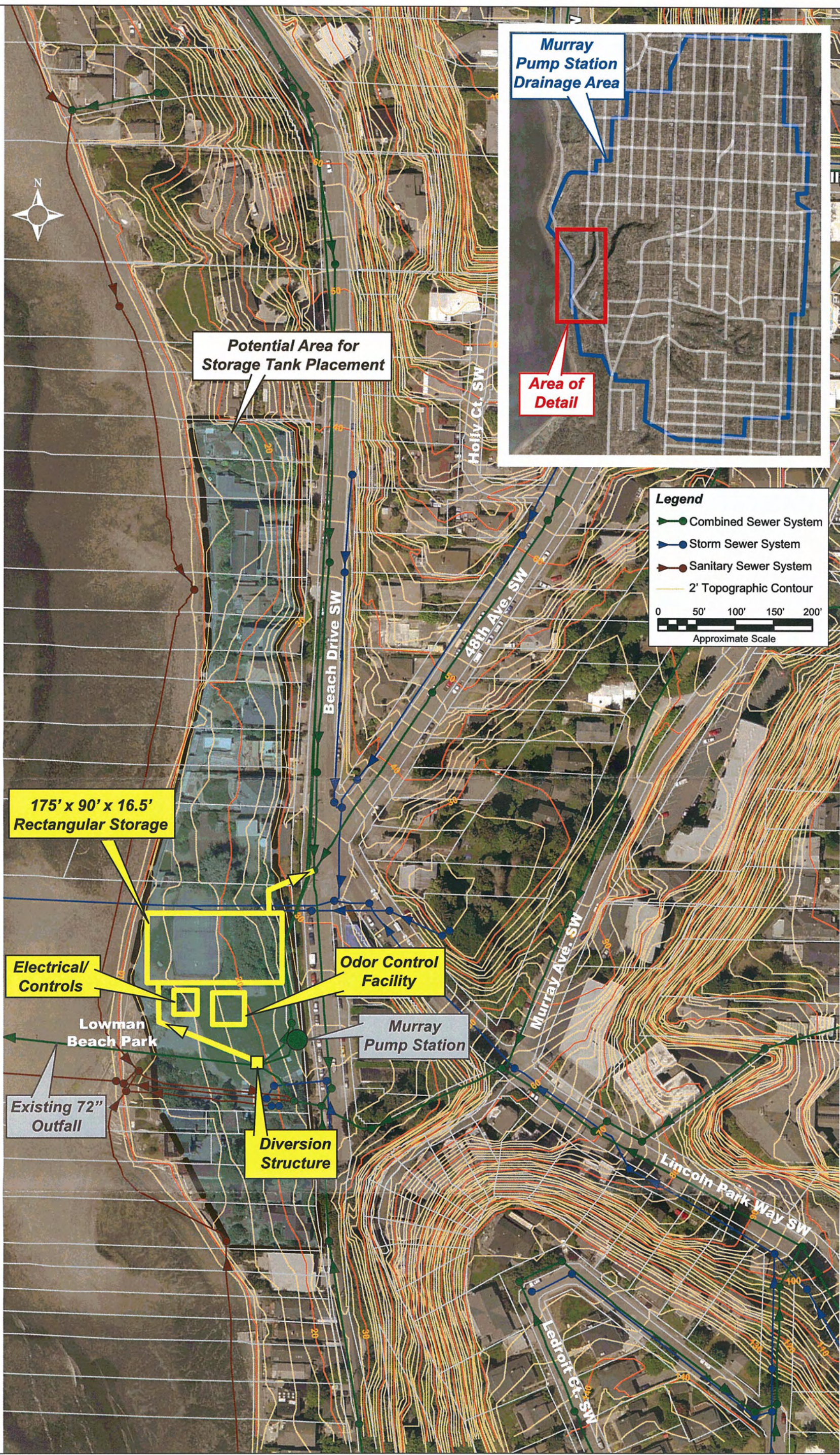


**MURRAY BASIN
INITIAL ALTERNATIVES MATRIX**

Control Approach		Alternatives								
		1A	1B	1C	1D	1E	1F	1G	3A	5A
		Rectangular Storage at Bottom of Basin	Circular Storage in Vicinity of Murray Avenue and Lincoln Park Way	Distributed Storage Along Beach Drive and Murray Avenue SW	Pipe Storage at Bottom of Basin by Tunneling	Upper Basin Storage	Combined Pipe/Rectangular Storage at Bottom of Basin	Convey and Treat at Alki	End of Pipe Treatment at Bottom of Basin	Peak Flow Reduction Combined with Storage
	Location	Bottom of Basin	Mid-Basin	Mid-Basin/ROW	Bottom of Basin/ROW	Upper Basin	Bottom of Basin/ROW	Bottom of Basin	Bottom of Basin	
1. Peak Flow Storage										
	"Rectangular Storage"	X				X	X			
	"Circular Storage"		X							
	"Pipe Storage"			X	X		X			
2. Convey and Treat								X		
3. End of Pipe Treatment									X	
4. Stormwater Flow Reduction										
5. Combined Approach										X



ALTERNATIVE TITLE		1- A - RECTANGULAR STORAGE AT BOTTOM OF BASIN
TECHNICAL SUMMARY		
LOCATION	BOTTOM OF BASIN	
CSO BASIN	MURRAY	
DESCRIPTION	1.0 MG, 175 x 90 x 16.5 feet, buried, rectangular, multi-channel, self cleaning, cast-in-place concrete tank. Flushing chamber with automated flushing gates and drain chambers with submersible pumps. New diversion structure.	
ANCILLARY FACILITIES	40' x 40' carbon scrubber type Odor Control Facility, 30' x30' Electrical/Controls Structure with electrical equipment and controls. Access hatches and above grade structures.	
OPERATIONAL FEATURES	Gravity flow over weir in Diversion Structure into tank, pumped flow out of tank.	
SELECTION CRITERIA NOTES		
LAND USE	Zoning	Commercial and Residential. Conditional use permit required.
	Ownership/acquisition	Easement required. May require private property acquisitions.
	Critical Areas	Yes, near shore line. Requires shoreline permit and possibly park permit.
ENVIRONMENT	Shorelines Zone	Yes
	Endangered Species	TBD
TECHNICAL	Complexity and Startup	Routing of flows using overflow weirs, automatic gates, and drain pumps. Facility would be located near to the Murray Pump Station. The weir would be used for flow measurement and drain pump would be single speed "on/off". All controls and infrastructure would be located within the site.
	Compatibility w/WW system	A new diversion structure would be needed near the existing CSO outfall to divert flow to the new storage tank. Flow would be pumped from storage tank back to an existing sanitary sewer manhole upstream of Murray Pump Station.
	Flexibility	Minimal opportunity to expand. Residential properties are developed within possible tank location. The County has planned a 96.5' x23.5' future generator upgrade project in park.
	Constructability	Geotechnical and construction constraints due to close proximity of shore line. Special shoring and dewatering measures would likely be required. Contractor Staging Issues likely because of space constraints, off site staging would be required. Special construction and permanent measures would be required to stabilize the site such as slurry walls, tiebacks, etc.
O&M	Staffing	Facility can be automatically started and remotely monitored/operated. Drain pump start and shut down would be through county telemetry and control system. Periodic access would be required for equipment exercising and cleaning. The facility requires operator attention during design conditions (e.g. monitoring, sampling, chemical control, etc.). An operator may need to be present periodically for sampling, carbon delivery or other discrete tasks. Peak staff times require 1-2 operators. The facility can be shut down with minimal staff time. Cleanup work is generally automated; however, 1-2 personnel may be required. Some procedures of shutdown may need to be conducted immediately; however, most work can be scheduled to be integrated with other staff duties.
	Training	Routine training would be required in accordance with County's standards.
	Access	Inside the park or on private property near the storage tank.
	Process Effects	None anticipated.
COST	Project Cost Factors	Mitigation for local traffic disruption during construction.
	Operation Cost Factors	Carbon for odor control.
	O&M	Carbon replacement, site checks, electricity, equipment and pump replacements and regular maintenance and cleaning.
	External Agency	Seattle Parks
	External Costs	Easement acquisition, site mitigation. Replacement of existing improvements required.
COMMUNITY	Location	Bottom of the basin near residential and park properties.
	Long Term Risk	Minimal impacts to residents from ongoing O & M: staff would be present infrequently (intermittent or only during/after storms).
	Construction	Reduction of usable park space due to proposed structures. Construction would be located near residences and it will be difficult to mitigate impacts such as noise, after hours work, light, vibration, and access.
		Traffic disruption from construction Requires disruption of park space or condemning of residential properties for storage tank placement.

