



## Chapter 6 - Costs



## Costs for Domestic Water System

Building/ Location	Area (SF)	Description of Impact to Campuswide Utilities	Estimated Cost
Peterson Hall 3 Replacement Building	160,000	The work limit of the proposed replacement building for Peterson Hall 3, Microbiology and Science Lecture Hall should shrink along the northern edge so that it no longer conflicts with the existing 8-inch line that connects two existing 6-inch lines running north/south on the east and west sides of the Peterson Halls. There is also a fire hydrant to the north of the project site that should be avoided. By reducing the project limits slightly, the only modifications necessary to the water system will be removal of local service lines to existing buildings that will be demolished as part of the project. Potholing should be performed to verify the location of the 8-inch line. Service to the project can be provided from either of the 6-inch lines to the east and west of the project or the 8-inch to the north. Some improvements to the Campus mains should also be constructed as part of this project, including replacement of the 6-inch line in East Campus Drive with a 10-inch line from the water meter near the Central Plant to Microbiology.	\$130,000
Liberal Arts Building (Phases 1 and 2)	155,000	The work limit of the proposed replacement building for Peterson Halls 1 & 2 and Faculty Office 5 should shrink in the southwest corner to avoid conflicting with the existing 6-inch main on the west side of the Peterson Halls. Potholing should be performed to verify the location of the 6-inch line. Service to the project can be provided from either of the 6-inch lines to the east and west of the project. Some improvements to the campus mains should also be constructed as part of this project, including replacement of the 6-inch line in the East Campus Drive with a 10-inch line, from Microbiology to Studio Theatre.	\$150,000
Parking Structure 3	416,000	No modifications to the existing water network are necessary to accommodate the proposed Parking Structure 3. Service to the project can be provided from the 8-inch line to the south.	-
Student Recreation Center	120,000	No modifications to the existing water network are necessary to accommodate the proposed Recreation Building. Service to the project can be provided from the 8-inch lines to the north, west and south.	-
Nursing Building Addition	5,000	It is recommended to replace the 6-inch ACP line that conflicts with the site of the proposed Nursing School Expansion with a DI pipe, but moved slightly to the north. The ACP line is old and should be replaced soon. The replacement could be confined to the portion conflicting with the proposed building or could expand to include the entire Residence Commons 6-inch ACP loop. Potholing should be performed to verify the location of the 6-inch line.	\$60,000
Outpost Replacement Building	8,000	No modifications to the existing water network are necessary to accommodate the proposed building.	-
Liberal Arts Complex	155,000	No modifications to the existing water network are necessary to accommodate the proposed replacement building for Liberal Arts 2, 3 & 4, Instructional Resources, Lecture Hall and Faculty Office 2. Service to the project can be provided from the 6-inch transite line to the west. The service connections to the existing buildings can be removed with the construction of the proposed building. There is also a drinking fountain located to the east of Instructional Resources that will need to be removed or reconnected to the 6-inch line to the south during the construction of the proposed building. Some improvements to the Campus mains should also be constructed as part of this project, including replacement of the 6-inch line in West Campus Drive with a 10-inch line running from the 8-inch water meter on Seventh Street to Parking Lot 3.	\$ 225,000
Student Services Complex	70,000	No modifications to the existing water network are recommended to accommodate the proposed Student Services Complex. Service to the project can be provided from the 6-inch line to the south. Some improvements to the campus mains should also be constructed as part of this project, consisting of replacement of the 6-inch line to the south with	



## Costs for Sanitary Sewer System

Building/ Location	Area (SF)	Description of Impact to Campuswide Utilities	Estimated Cost
Peterson Hall 3 Replacement Building	160,000	The work limit of the proposed replacement building for Peterson Hall 3 and Science Lecture Hall should shrink along the western edge so that it no longer conflicts with the existing 10-inch main to the west of the project. The proposed building can be served from either the existing 10-inch line to the west or the existing 8-inch line to the east. As shown in the sewer video, there are some instances of severe root intrusion and pipe cracking in the downstream 10-inch line (see Appendix: Inspection Report from MH 28 to MH 41). Based on the added usage caused by the proposed projects and the existing condition of the 10-inch line, it is recommended that the 10-inch line be replaced with a 12-inch line from the connection point with the 12-inch line in West Campus Center Drive to the project site.	\$100,000
Liberal Arts Building (Phases 1 and 2)	155,000	The work limit of the proposed replacement building for Peterson Halls 1 & 2 and Faculty Office 5 should shrink along the western edge so that it no longer conflicts with the 10-inch main to the west of project. The proposed building can be served from either the existing 6-inch line to the south or the existing 10-inch line to the west. The remainder of the 10-inch line not replaced by the Peterson Hall 3 project should be replaced with a 12-inch line. The 6-inch line was found	







Costs for Air Traffic Control Tower (ATCT) at Long Beach, CA. The cost estimate is \$12.5 million, which includes construction, equipment, and installation. The project is currently in the design phase, and the cost estimate is preliminary. The project is expected to be completed in 2025.





## Costs for Electrical System

Building/Location	Area (SF)	Installed Proposed Capacity (KVA)	Description of Impact to Campuswide Utilities	Estimated Cost
Peterson Hall 3 Replacement Building	160,000	2000	The proposed replacement building for Peterson Hall 3, and Science Lecture Hall does not conflict with any existing electrical infrastructure systems. Future service to these buildings will be provided by a 15KV, 600A, Selector Switch (S23), Feeder '9' located on north side of the proposed buildings.	\$20,000
Liberal Arts Building (Phase 1 & 2)	155,000	1250	The proposed replacement Liberal Arts building is located on top of existing underground conduit and feeders that should be relocated. Future electrical service to these buildings will be provided through a 15KV, 600A, Selector Switch (S25), Feeder '9' located on north and west side of the proposed buildings.	\$150,000
Parking Structure 3	416,000	1000	The proposed parking structure building does not conflict with the existing electrical infrastructure system. Future electrical power to this building will be provided by a new 15KV, 600A, Selector Switch (S40), Feeder '5' to feed the building.	\$125,000
Student Recreation Center	120,000	2000	The proposed Recreation center does not conflict with the existing electrical infrastructure system. Future electrical power to this building will be provided by a new 15KV, 600A, Selector Switch (S40), Feeder '5' and connecting it to the 12kV network.	\$40,000
Nursing Building Addition	5,000	750	The proposed Nursing building addition does not conflict with the existing electrical infrastructure system. Future electrical service will be provided by upgrading the existing 300 kVA electrical transformer to 500 kVA, Selector Switch (S40), Feeder '5' to feed the building and connecting it to the 12kV network.	







Building/ Location	Area (SF)	Description of Impact to Campuswide Utilities	Estimated Cost
Parking Structure 5 (Lot 7)	-	<p>Our recommendation is Option A: Avoid and Maintain The Ductbank Along North Boundary And Serve The Parking Structure From the Existing Manhole. This plan requires no demolition and provides for the following infrastructure upgrades:</p> <ul style="list-style-type: none"> <li>• Extend (2) 4 inch underground conduits from existing manhole CMH#5. (See Exhibit EC11-A.)</li> <li>• Install 100 pair copper building entrance cable from splice in manhole CMH#5 to the new Parking Structure BDF. In manhole CMH#5, splice the new entrance cable to 100 spare cable pairs in the 1200 pair cable from MDF A. (See Exhibit EC12-A.)</li> <li>• Install fiber cable consisting of 12 singlemode and 6 multimode optics in the existing and new ductbank from Building 27, University Theater. Serve the Parking Structure as an IDF from BDF in Building 27 in lieu of a new</li> </ul>	

