

# FACILITY DESIGN PLAN

## CAMPANILE AVENUE UTILITY UPGRADES, PARKING MODIFICATIONS, AND SITE IMPROVEMENTS SOUTH DAKOTA STATE UNIVERSITY MAY 1, 2019

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South Dakota State University (SDSU) requests approval of this Facility Design Plan for design and construction of the first phase of utility, parking, and site improvements within and parallel to the right-of-way of Campanile Avenue. The timetable for the project has been established so phase one of the project can be bid in early May, construction started by late May, and the project substantially completed by mid-August. SDSU requests the Building Committee authorize the Facility Design Plan and authorize the construction drawings for bidding. A separate Facility Design Plan will be submitted for the second phase of the project at a later date.

a. Architectural, mechanical and electrical schematic design

This project combines a group of infrastructure maintenance and repair projects (water main, storm sewer, sanitary sewer, street, plus parking lot improvements) that have overlapping project boundaries. The project will be completed in two phases. The first phase of the project is being coordinated with separate projects to install an additional chiller and cooling tower in the central chiller plant, and to provide chilled water supply and return piping to Wagner Hall and ‘the Barn’.

The boundaries of the first phase of the project are parallel to Campanile Avenue between the south edge of the Central Heating Plant to the south edge of Sexauer Field. The primary features of the first phase will include the following:

- Replace the water main that lies under the street. The new water main will be upgraded to a 10 inch plastic pipe to provide proper domestic water and fire service to buildings in this vicinity. Two domestic service lines will be provided for the Central Heating and Central Cooling Plants to provide redundancy of service for this important utility service.
- Remove three portions of parking lot 131 in the vicinity of Yaeger Hall.
- Remove Campanile Avenue from the south edge of Yaeger Hall to Sexauer Field
- Remove, replace, and realign Campanile Avenue from the south edge of the Central Heating Plant to the south edge of Yaeger Hall. The street will be narrowed to a minimum width to slow traffic.
- Renovate the western edge of the Wagner Hall parking lot (Parking Lot 140) to provide one entrance to the parking lot
- Provide temporary access to the Wagner Hall parking lot throughout construction
- Provide temporary access to Avera Health & Sciences Center, Yaeger Hall, Wagner Hall, and the Central Heating Plant throughout construction
- Replace the sanitary sewer main and upgrade manholes from the south boundary of the project to the University Student Union
- Replace the storm sewer piping and inlets from the south boundary of the project to the western edge of Wagner Hall
- Replace sidewalks within the project boundaries. The primary north-south sidewalk will be designed to accept emergency vehicle traffic.

- Provide snow storage areas on the western edge of the Wagner Hall parking lot and the new northern terminus of Campanile Avenue. These concrete plazas will also facilitate pedestrian traffic.
- Provide landscaping and hardscaping screens around exposed utilities (e.g. electrical switchgear, electrical transformers)
- Modify off street parking (a portion of parking lot 131), service vehicle access, ADA parking, concrete sidewalks, and pedestrian crossing points between the Central Heating Plant and Yaeger Hall.

One attached sheet illustrates the overall design of the project. Attached are copies of selected sheets of the 90% review drawings that describe the construction of the project. A project schedule is included as an attachment. SDSU will request the building committee approve the construction documents in addition to this Facility Design Plan, so the project may be constructed in the summer.

Parking lot, sidewalk, and street modifications are being made to improve the campus for pedestrians and transition to a walking campus. Another goal is to reduce the amount of paved areas and increase the amount of landscaped areas, improving the aesthetic appearance of the central campus.

The water main and sanitary sewer mains that will be replaced lie directly under, are parallel and adjacent to, or cross Campanile Avenue. The Avenue will be replaced or be trenched for utility replacement. The west and north edges of the Wagner Hall parking lot (parking lot 140) will be trenched and patched so the sanitary sewer main may be replaced.

b. Changes from the Facility Program Plan

The primary scope of the first phase remains the same as described above. The features of this phase are the same as described in the Facility Program Plan. The design has been modified from the schematic design to:

- Increase space for snow storage south of Yeager Hall and provide snow storage in the Wagner Hall parking lot.
- Relocate on street motorcycle parking from Campanile Avenue to off street, north of the Central Heating Plant.
- Provide temporary parking lot access to the Wagner Hall parking lot during construction
- Ensure large service vehicle access to the Avera Health and Science Center during and after construction.
- Provide screening of exposed utilities in the vicinity of the Central Heating Plant and Yaeger Hall to meet campus design standards.

The scope of the second phase remains the same as described in the Facility Program Plan. This design will be developed further after construction is started on the first phase.

c. Impact to existing building or campus-wide heating/cooling/electrical systems

The goals of the project are to improve utility systems in the center of the campus. This project will be coordinated with a separate project to add a chiller and cooling tower to the Central Chiller Plant, and extend the chilled water utilities from the Central Chiller Plant to the Barn and to Wagner Hall. The project area will be shared between the two projects, particularly around the Central Heating Plant. The scope of both projects is being adjusted so the construction work of the projects is coordinated and not duplicated any more than necessary.

d. Total construction costs

The project will be completed as a design-bid-build project. A summary of the current cost estimate is shown below for Phase 1 costs.

Phase 1

Construction Costs

a.	Mobilization & General Requirements	\$ 108,900
b.	Utilities (Water, Sanitary Sewer, Storm Sewer)	\$ 890,800
c.	Parking Lots and Related Street Modifications	\$ 334,500
d.	Sidewalks, General Paving, Security Lights	\$ 480,800
e.	Landscaping	\$ 268,000
	Subtotal	\$ 2,083,000

Design & Project Management Costs

f.	Design/Survey/Testing	\$ 375,000
g.	OSE Contract Management	\$ 26,000
h.	SDSU Facilities Management & Labor	\$ 115,000
i.	Project Contingency (12.5%)	\$ 259,900
	Subtotal	\$ 775,900

Estimated Phase 1 Project Costs \$ 2,858,000

The following are available or intended sources of funding for this project. All sources are applicable to the scope identified.

○	FY19 HEFF General Funds – Planning Funds for FY20 Projects (3G1901)	\$ 200,373
○	FY19 HEFF – Campus Utility – Water & Sewer Upgrades (3H1908)	\$ 345,000
○	FY20 HEFF – Campus Utility – Water & Sewer Upgrades	\$1,730,211
○	FY20 HEFF General Funds – Campus Utility – Water & Sewer Upgrades	\$ 300,000
○	FY19 – SDSU Parking & Traffic Revenues	\$ 500,000
○	FY20 – SDSU Parking & Traffic Revenues	\$ 500,000
○	FY19 HEFF – Campanile Ave Landscaping & Paving Imp. (3G1905)	\$ 450,000
○	FY18 HEFF – Landscaping & Hardscaping Improvements between AD, AV, RO, and WG (3G1805)	\$ 530,000
○	Currently allocated funding -	\$4,555,584
○	FY21 HEFF General Funds	\$1,177,416
○	Total Funding for project	\$5,733,000

Funding from Parking and Traffic Revenues would be applicable to the direct costs of item c within the cost estimate shown above, and a portion of the design costs shown in item f above. Item c includes costs for removal of the existing Campanile Ave, removal of three parking areas, modifications to the Wagner Hall parking lot, and a portion of the sidewalk costs to provide a replacement sidewalk paralleling the former Campanile Avenue that can be used as a secondary access to the center of campus for emergency vehicles.

FY18, FY19, and a portion of FY20 funds identified above will provide the Phase 1 funding for the project. The FY19 and FY20 HEFF – Campus Utility – Water and Sewer Upgrades funding identified above will complete the SDSU campus matching funds identified as part of the 2012 BOR SDSU Campus Utility Water and Sewer Upgrades capital improvement project. The funding identified in FY21 exceeds the match to be

provided by SDSU. FY18 and FY19 funds total \$2,680,373. FY20 funding will become available during construction of the first phase.

e. Changes from cost estimates for operational or M&R expenses

There is no impact to operational expenses. These improvements to water and sewer systems accomplish improvements identified in the campus water and sewer infrastructure studies. They are coordinated with street and parking lot and sidewalk improvements. Combining these improvements should reduce future first costs of construction that would have occurred had these projects been completed separately.

These utility, street, parking lot, and campus improvements are basic maintenance and repairs to these systems. These improvements will position the campus to flexibly develop the core of campus, install fire sprinkler systems in existing buildings that do not have fire service, reduce ground water infiltration to the sanitary sewer system, and further master planning goals of creating a pedestrian centered walking campus.

End of Report