



WEST VIRGINIA STATE  
UNIVERSITY

# Campus Development Plan

2016 - 2025



## ACKNOWLEDGEMENTS

West Virginia State University embarked on a campus master planning process to establish a framework for the orderly development of all capital improvements that support the mission, vision, values, and strategic initiatives of the College. The successful master planning process included a comprehensive look at the physical environment of the campus and how that environment helps the College succeed in its educational mission. The Campus Development Plan was prepared with support and input from the College, including a Steering Committee, the faculty, staff, alumni and students. The consultant team acknowledges this important input, with many thanks to the following:

### Steering Committee

Dr. Brian Hemphill, President  
Mr. Melvin Jones, Vice President for Business & Finance  
Dr. Jose Toledo, Associate Dean of Administration  
Ms. Janis Bennett, Director of Purchasing  
Mr. Marvin Smith, Director of Physical Facilities  
Mr. Tom Bennett, Assistant Vice President for Univ. and Legislative Regulations

### Consultant Team

ZMM Architects and Engineers  
Bullock Smith Partners  
Terradon Corporation



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## EXECUTIVE SUMMARY

West Virginia State University (WVSU) began the campus master planning process in the Fall of 2015 by conducting a visioning session with the Steering Committee. The purpose of the visioning process was to gather information about the College, programs, and culture, and to provide an open forum about the development of facilities and a campus for the new institution. The discussions during this initial meeting produced several themes that guided the development of the Master Plan:

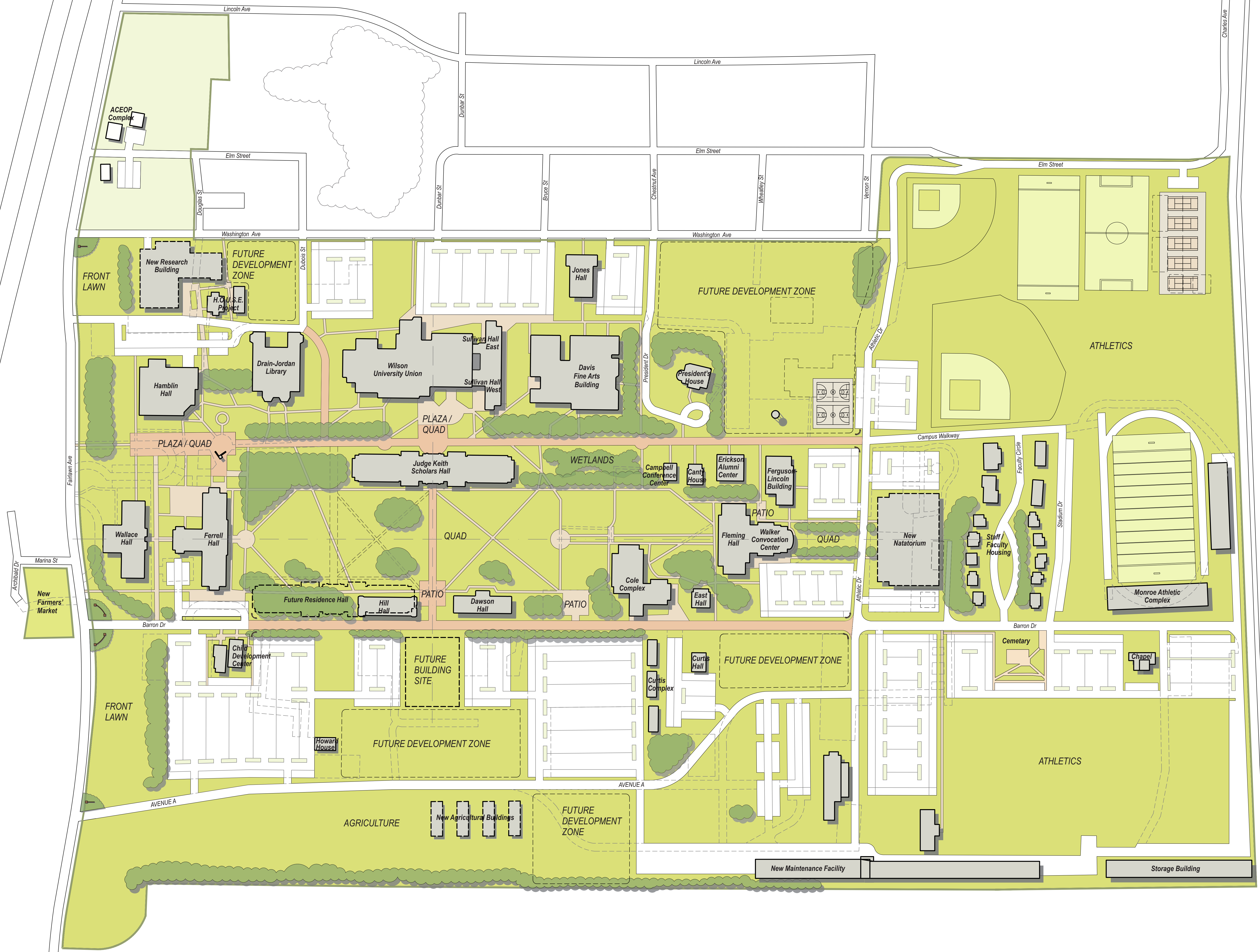
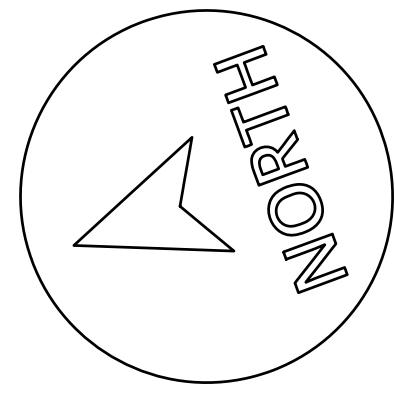
- The master plan needs to incorporate the newly acquired Rehab Property and the F. Ray Powers Building.
- The master plan needs to identify boundaries for WVSU, as well as the potential to attain adjacent property.
- The master plan needs to address WVSU's presence on Rt. 25, as well as the property recently obtained across the street.
- The master plan needs to focus on renovation and deferred maintenance of existing buildings, and create an outline of needs for selected buildings.
- The master plan needs to designate space for several new buildings in the future.

WVSU also owns several properties off campus including the Capitol Center in downtown Charleston and the Booker T. Washington Complex in Malden, WV. WVSU will maintain these properties as needed in the future.

To determine an appropriate strategy to implement the vision for WVSU, clear boundaries needed to be established. Based upon the location of existing facilities, while considering the possibility of development of the Rehab Campus, the boundaries of the campus were defined between the DuPont property line and Washington Ave., and between Rt. 25 and the Kanawha River. An investigation and assessment of the existing facilities, coordinated with an enrollment and demographic assessment, influenced the strategy for developing the WVSU Campus.

Primary circulation to the campus occurs along Barron Drive. One opportunity of the Master Plan was to incorporate the Rehabilitation Center property into campus.

The attached Master Plan document indicates the strategy to implement the vision noted above. Existing facilities were evaluated to quantify and prioritize needs. Property acquisition was investigated to help establish the physical boundaries of the campus. Enrollment, demographics, and program offerings were examined to determine realistic requirements for new and replacement facilities. All of the needs were then prioritized, and a timing, phasing, and cost analysis for the plan were developed. The outcome of this process is a realistic strategy to guide the development of West Virginia State University in a manner that supports the priorities and vision of the college.



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## WALLACE HALL ASSESSMENT



### BACKGROUND

Wallace Hall serves as one of the main academic buildings on WVSU campus. The ten story building currently houses the majority of the educational programs, several offices, computer labs, and classrooms, as well as several administration functions. Built in 1970, the 84,470 SF building consists of approximately 28,100 SF of classroom and laboratory space and 15,370 SF of office space. The building's core elements including the elevator, stair towers, and mechanical shaft run along the entire front of the building. The typical upper floor contains offices surrounding the perimeter walls with classrooms toward the center and rear of the building. The exterior skin consists of brick and limestone with entire walls of windows and insulated panels. Wallace Hall has become an iconic landmark from its close proximity to Interstate 64.

Wallace Hall has not seen a significant renovation since initial construction. Although the wall and floor finishes are dated, they remain in good condition. The lighting is very dated and many hallways appear dark, especially in the stair wells. In 2013, a new roof and boiler system was installed. The brick exterior of the building needs repointed in some places. The original windows are in need of replacement.

### BUILDING ENTRANCE

A drop-off loop is located directly off Rt. 25 at the front entrance. Parking is located on both sides of the building and a service road is located behind the building. The front first level entrance doors are ADA accessible, but do not have ADA operators and does not have an accessible approach from the closest handicap parking. No handicap parking is in proximity to these doors. An ADA entrance is located at the ground level rear entrance. This is the entrance most used by students on campus.



### INTERIOR

The interior of the building has remained almost unchanged since initial construction. Some spaces have been reworked to accommodate new programs and functions. The finishes are dated, but have been maintained well. A student lounge once existed on the ground floor, but has been turned into a Copy Center. Currently, there is no gathering space/lounge for students in Wallace Hall.

### CAMPUS FORUM

The consistent comments about Wallace Hall were that the classrooms need updated technology, and that the building needs generally updated. Several see the potential to use Wallace Hall for better signage to be seen from the interstate. Students like the proximity of Wallace Hall and Ferrell Hall.

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## ELECTRICAL

The electrical system consists of a 750 KVA pad mounted transformer located under the side of the front canopy behind a brick wall that feeds the original 1200A 277/480V 3ph Cutler Hammer Switchboard located on the third floor. This switchboard then feeds a horizontal bus duct to a mechanical room on the third floor that turns vertically to feed the stacked electrical closets on floors 4-9. A water leak has caused a recent failure in this horizontal to vertical transition that is currently being repaired at the time of this assessment. Dry type transformers are located in the electrical closets to provide 120/208V power to recessed panels located in the corridors. The main electrical gear appears to be in good condition. It is recommended to replace any original electrical panels as spaces are renovated since they are now reaching over 45 years old. The larger original Switchboard can remain in operation unless a repair is encountered that parts are not attainable for. At this time some code working space requirements will need to be addressed in the closets as someone cannot safely work on equipment in some of these rooms.

The building has a 2010 Generac 25KW 120/208V 3ph natural gas generator that mainly handles the emergency lighting loads on 3 panels distributed throughout the building. The generator is not connected and does not have the capacity for any of the 3 elevators in the building. The elevators are set up for Firefighters Operation and seem to indicate that there is emergency power connected but will not run in the event of a power outage. It is recommended that this generator be upgraded to a larger generator capable of handling at least one of the elevator loads. The fairly new existing generator can then be used to replace a much older generator at the Fine Arts building which does not have an elevator.

The lighting in the building is mostly surface mounted and some recessed T8 standard fluorescent lighting. This lighting is more efficient than older T12 fluorescent lighting but not as efficient as newer LED lighting. It is recommended to upgrade spaces to newer LED lighting as finishes are upgraded. The lighting in the stairwells however is very dim. It consists of compact fluorescent lamps which do not provide the light levels typically seen from linear fluorescent wall mounted fixtures in stairwells. It is recommended to change these fixtures to higher lumen output LED fixtures with integral occupancy sensors and bi-level output for energy savings when stairwell is unoccupied. Some of the spaces already have occupancy sensors installed. It is recommended to continue changing out areas that are controlled by only switches to add occupancy sensor control.

The fire alarm system has recently been updated to a new Edwards EST3 system. The system consists of ceiling mounted notification and detection devices and wall mounted pull stations. The building also has a firefighters telephone system by Edwards. This system is not in need of any updates.

## MECHANICAL



The central tower, nine floors of the building consisting primarily of office spaces, is served by several, aged, constant volume chilled/heating water air handling units, return/relief fans and space reheat coils. The AHUs are located in the third floor mechanical room. Chilled water is produced by a 2012 McQuay water cooled chiller, with a 1994 Evapco induced draft open cooling tower on the roof. Heating hot water is produced by new Camus DynaFlame high-efficient, condensing boilers. CHW and HHW pumps appear to be older but in decent working order. Most classrooms are served by aged, two-pipe unit ventilators or fan coil units. The unit ventilators have outdoor air louvers in the exterior walls for ventilation. Some classrooms were also provided with fin tube heaters, it's possible some unit ventilators are cooling only. There are hot water cabinet heaters located at most exterior entrances. Most of the main controls components are pneumatics with some new DDC controls and electronic actuators in the mechanical room. The majority of the space temperature sensors were units containing bi-metallic springs or mercury. Toilet rooms and Janitor's closets seemed to lack exhaust, or if exhaust was provided, insufficient.

It is recommended to upgrade/rebuild the existing air handling equipment with VFDs, DDC electronic controls, valves and sensors. New equipment will allow for updated sequences of operation including setback, demand control ventilation and variable speed operation. System pumps should be replaced or refurbished. Provide mechanical room with code compliant refrigerant sensing and evacuation. Space temperature sensors should be replaced with wireless, electronic sensors and any existing mercury thermostats should be properly disposed. Unit ventilators should be replaced and the building ventilation should be verified code compliant. Install or increase general exhaust in required spaces. Investigate the efficacy of converting from a 2-pipe to 4-pipe mechanical system. Budget the replacement of the existing cooling tower within the next 3-5 years (end of typical unit life span).

## PLUMBING



There is an 80% efficient Lochinvar domestic water heater/boiler, storage tank and circulating pump located in the basement mechanical room. The majority of the urinals and water closets are hands free flush valve type fixtures. The majority of the lavatories have handled faucets. No mixing valves were present at the lavatories which mean the DHW temperature is below 120 deg. F or scalding risks exist. There are electric water coolers throughout the building, some new, some were aged, and some were completely removed. The incoming water service is provided with proper backflow prevention. The building was previously utilized as more of a lab facility and the existing sanitary piping may be suspect.

It is recommended to replace the existing water heater with a high-efficiency, condensing, modulating gas water heater (Lochinvar). Perform a complete camera inspection of the existing sanitary piping



system to determine if there are issues with corrosion. Investigate the installation of point-of-use thermostatic mixing valves or utilize them for each toilet room or riser and begin to generate 140 deg. F domestic hot water.



#### FIRE PROTECTION

The building has a complete fire protection sprinkler system. The main riser room has sufficient backflow prevention. The system is provided with four separate zone valve assemblies, fire department connections, alarms and indicators. Fire extinguishers were observed throughout the building mostly located in abandoned hose cabinets.

There are no current recommendations.

#### ELEVATOR

There are three side-by-side elevator cars serving the building. The elevator cars have the required Firefighters' Operation connections, communications and overrides. The elevator machinery and controls located in a roof-top penthouse appear to be in proper working order and code compliant.

There are no current recommendations.



## FERRELL HALL ASSESSMENT

### BACKGROUND



Ferrell Hall, also known as the A-Building, was built in 1925. Ferrell Hall serves as the main administration building for the campus, and is the location for services such as the President's Office, Cashier, Registrar, Financial Aid, and Purchasing. The administration spaces are almost entirely segregated to the first floor of the building, with the upper two floors housing the classroom spaces. The circulation runs east-west with classrooms on either side. Ferrell Hall is 75,416 SF with approximately 30,200 SF of office space, 20,718 SF of classroom space, and an 8,900 SF auditorium. The building is not sprinklered, except for the auditorium.

Ferrell Hall is one of the buildings on campus that forms the main quadrangle. The main entrance to the building faces the quadrangle. The parking lots closest to the building are located to the west and to the north between Ferrell Hall and Wallace Hall.

### EXTERIOR



The exterior skin is an entirely brick structure with stone accents. The brick is in dire need of repointing. Water is coming through the walls at both side stairwells, and the interior walls have been repainted several times. The stone wrapping the building needs thoroughly washed. The windows have recently been replaced and are in good condition. The roof has also recently been replaced and is in good condition.

### ENTRANCE



The entrances to Ferrell Hall are not ADA accessible. The existing ramps on either end of the building are too steep to meet ADA guidelines. Also, the main entrance from the quadrangle does not have a ramp. The auditorium entrance ramps do not meet ADA guidelines, and an accessible entrance to the stage is not available.

### ELECTRICAL

The electrical system consist of a pad mounted transformer located at the rear of the building that feeds an older 2500A 120/208V 3ph Square D Switchboard located in the basement. The switchboard then feeds a horizontal bus duct to a Motor Control Center in a mechanical room in the basement. This bus duct has had water damage from mechanical piping that has been routed over it. Currently there is a plastic bag draped over the bus duct to divert any future water from contact with the bus duct. The smaller 120/208V 3ph panels can mainly be found in the corridors throughout the building. The only portion of the electrical system that needs replacement are portions of the bus duct that are damaged. At this time the mechanical piping that leaked on the bus duct should be relocated if possible. If not possible, leak protection should be installed below the mechanical piping. The same mechanical piping is routed above the main Switchboard, it is therefore strongly

recommended to relocate this piping to bring it up to the latest code that does not allow this type of installation directly above electrical equipment, especially without leak protection.

The building has a 2005 Kohler 60KW 120/208V 3ph natural gas generator that feeds a telecommunication closet and some other loads. The emergency lighting appears to be supplied power by a 600VA central inverter for the exit lights and 1200VA central inverter for the path of egress lights. Both of the inverters are old and have rust on the enclosures partly from mechanical piping being routed above them with no drip protection. These inverters should either be replaced or this lighting load be transferred to the generator if there is capacity as this is only a 1.8KW load. This assumes that the generator can meet all of the latest life safety requirements.

The lighting in the building is T8 fluorescent. The first floor has been renovated and has newer fixtures and occupancy sensors. The second floor has older fixtures and the corridors are controlled by a timeclock and other rooms with switches. It is recommended to continue changing out areas that are controlled by only switches to add occupancy sensor control.

The fire alarm system is an Edwards EST system. Some of the fire alarm pull stations have been lowered to meet ADA guidelines. The remaining pull stations should be lowered as well to ensure that they are used in the event of a fire.

#### MECHANICAL

The Auditorium is served by an aged, constant volume, chilled/heating water air handling unit with a return/relief fan and space reheat coils. There are outdoor air intake louvers and roof-mounted relief hoods for ventilation. The air handling unit also serves (ventilates) the corridors. There are 2-pipe unit ventilators located on the Auditorium stage. Most classrooms and office spaces are served by two-pipe unit ventilators or fan coil units that appear to be aged. The unit ventilators have outdoor air louvers in the exterior walls for ventilation. There are hot water cabinet heaters located at most exterior entrances. There is a basement mechanical room housing the majority of the mechanical equipment. Chilled water is produced by a 2010 Trane water cooled chiller. There are two 1964 Peerless steam boilers; only one appeared to be operational. Steam is converted to hot water thru a heat exchanger (converter) to serve the building. The mechanical room has refrigerant detectors and exhaust evacuation. A condensate receiver feeds back to the boilers. CHW and HHW pumps appear to be newer and in good working order. There is a new Marley induced draft open cooling tower with inlet sound silencers mounted on grade next to the building and parking lot. There were many Automated Logic DDC controllers in the mechanical room, but the majority of the space temperature sensors were original units containing bi-metallic springs or mercury, except the Auditorium. Toilet



rooms and Janitor's closets seemed to lack exhaust, or if exhaust was provided, insufficient.

It is recommended to upgrade/rebuild the existing air handling equipment with VFDs, DDC electronic controls, valves and sensors. New equipment will allow for updated sequences of operation including setback, demand control ventilation and variable speed operation. Replace the existing boilers with high-efficiency, condensing, gas-fired boilers (Camus DynaFlame) and eliminate all of the steam piping and components. Space temperature sensors should be replaced with wireless, electronic sensors and any existing mercury thermostats should be properly disposed. Unit ventilators and fan coil units should be replaced and the building ventilation should be verified code compliant. Install or increase general exhaust in required spaces. Investigate the efficacy of converting from a 2-pipe to 4-pipe mechanical system.



#### PLUMBING

There is an 80% efficient, 40 gallon, gas-fired, commercial water heater located in the basement mechanical room. The majority of the urinals and water closets are hands free flush valve type fixtures. The majority of the lavatories have handled faucets. No mixing valves were present at the lavatories which mean the DHW temperature is below 120 deg. F or scalding risks exist. There are electric water coolers throughout the building; there was a combination of new and aged units. The incoming water service is provided with proper backflow prevention. There is a backflow preventer for the mechanical system make-up water.



It is recommended to investigate the installation of point-of-use thermostatic mixing valves or utilize them for each toilet room or riser and begin to generate 140 deg. F domestic hot water.

#### FIRE PROTECTION

The majority of the building does not have a fire protection sprinkler system. There is a fire protection sprinkler system in the Auditorium with the main riser, backflow preventer and valve assembly in the basement mechanical room. Smoke detectors, pulls and fire extinguishers were observed in the building.

It is recommended to install a complete fire protection sprinkler system throughout the entire building.



#### ELEVATOR

There is one elevator car serving the building. The elevator is machine-room free, newer model without any issues. The elevator car has the required Firefighters' Operation connections, communications and overrides.

There are no current recommendations.

## DAVIS FINE ARTS ASSESSMENT

### BACKGROUND



Davis Fine Arts is an academic building that houses the Art program. The one-story building was built in 1964, and has not undertaken a significant renovation since then. The building consists of 50,566 SF, of which includes approximately 17,200 of classroom space, 4,100 SF of office space, and a 5,200 SF theatre. There is 2,400 SF of theatre support spaces. Davis Fine Arts is located along the main pedestrian walk which borders the campus' green space. The building is not sprinklered.

### EXTERIOR/INTERIOR

The exterior skin consists of brick and metal curtain wall glazing. The roof needs replaced very soon. The interior of the building consists of CMU walls, vinyl tile, and acoustical ceiling tiles. The finishes are dated and in need of replacement.



Davis Fine Arts does have several student gathering spaces/lounges that are well used, as well as an art gallery. These spaces make the building unique when compared with others on campus.

### CODE COMPLIANCE

An advantage of the one-story layout is that the entire building is ADA accessible. The front entrance door has an ADA operator, and the approach to the door is also code compliant. A disadvantage is the closest handicap parking stall is far away from the front entrance, with no direct ADA path.

Since the building has not been renovated since initial construction, several code issues exist. Three separate hallways have dead-end corridors, and some areas do not have a sufficient amount of exits.

### CAMPUS FORUM

The students like Davis Fine Arts because of its student lounges, but do believe the building needs updated. They also feel it needs a better entrance from the parking lot. The faculty mentioned that the building needs updated equipment and shop areas for the theatre department, and better art classroom spaces.

### ELECTRICAL

The electrical system consist of a pad mounted transformer located at the rear of the building next to the main electrical/mechanical room that feeds an 1800A 120/208V 1965 Westinghouse Switchboard. The 120/208V panels are recessed in corridors throughout the building. One panel has been relocated behind a set of stairs and now does not have code required front clearance. The main electrical gear appears to be in good condition. It is recommended to replace any original electrical panels as spaces are renovated since they are the now reaching over 50 years old. The larger original Switchboard can remain in operation unless a repair is encountered that parts are not

attainable for. At this time some code working space requirements will need to be addressed at the set of stairs.

The building has a very old Kohler 12.5KW 120/208V 3ph natural gas generator connected to a 1959 Zenith Automatic Transfer Switch (ATS) that serve the emergency lighting and some other receptacle loads. Parts are no longer made for the ATS and it has already had to be repaired with parts that were not specifically approved by Zenith. It is recommended that the generator and ATS be replaced. It is possible that the 25KW generator and corresponding ATS from Wallace could be relocated to this building if Wallace receives a larger generator in order to run the elevators.

The lighting in the building is mostly T8 fluorescent with some LED in the corridors. There doesn't appear to be any occupancy sensor controls, only switches. It is recommended that occupancy sensors be added for energy reduction.

The fire alarm system has recently been updated to a new Edwards EST3 system. The system consist of wall mounted notification devices, ceiling mounted detection devices, and wall mounted pull stations. This system is not in need of any updates.

#### MECHANICAL



The central core of the building, Auditorium and lecture hall are served by several, aged, constant volume chilled/heating water air handling units. The AHUs are located in a mechanical room above the rear of the Auditorium. Chilled water is produced by a 1994 Trane water cooled chiller in the mechanical room, with an aged Marley induced draft, side discharge open cooling tower mounted on grade outside. Heating hot water is produced by two 75%+ efficient, gas-fired, 1965 Cleaver Brooks fire-tube boilers. CHW and HHW pumps appear to be older but in decent working order. The Auditorium stage is provided with ducted fan coils and fin tube heaters. Most classrooms are served by aged, two-pipe unit ventilators or fan coil units. The unit ventilators have outdoor air louvers in the exterior walls for ventilation. Some classrooms were also provided with fin tube heaters, but most unit ventilators appear to be heating and cooling based upon temperature of 2-pipe loop. Classrooms appeared to have gravity relief vents to relieve excess ventilation air. There are hot water cabinet heaters located at most exterior entrances. Automated Logic DDC controls are located in the upper level AHU mechanical room with a majority of the actuators and sensors DDC. The main boiler/chiller mechanical room has mostly outdated controls with the exception of the chiller. The majority of the space temperature sensors were units containing bi-metallic springs or mercury. Very limited controls equipment was observed outside the AHU mechanical room. Classrooms that require exhaust appeared to have operational exhaust fans. Toilet rooms and Janitor's closets seemed to lack exhaust, or if exhaust was provided, insufficient.



It is recommended to upgrade/rebuild the existing air handling equipment with VFDs, all DDC electronic controls, valves and sensors. New equipment



will allow for updated sequences of operation including setback, demand control ventilation and variable speed operation. Replace the existing 1965 boilers with high-efficiency, condensing boilers (Camus DynaFlame). Replace existing Marley cooling tower with a similar unit. All system pumps should be replaced or refurbished. Unit ventilators should be replaced and the building ventilation should be verified code compliant. Address relief vents using motor-operated dampers with differential pressure sensors once ventilation is restored. Provide ductwork on discharge of generator radiator; fix operation of backdraft damper. Space temperature sensors should be replaced with wireless, electronic sensors and any existing mercury thermostats should be properly disposed. Investigate the efficacy of converting from a 2-pipe to 4-pipe mechanical system. Install or increase general exhaust in required spaces Budget the replacement of the existing water-cooled chiller within the next 3-5 years (end of typical unit life span).

#### PLUMBING

There is an 80% efficient, gas-fired, water heater, approximate 100 gallon storage tank and recirculating pumps located in the main mechanical room. The majority of the urinals and water closets are hands free flush valve type fixtures. The majority of the lavatories have handled faucets. No mixing valves were present at the lavatories which mean the DHW temperature is below 120 deg. F or scalding risks exist. There are electric water coolers throughout the building, most were aged. The incoming water service is not provided with proper backflow prevention. Backflow prevention is provided for mechanical system make-up water.



It is recommended to install a backflow preventer at incoming water service main. Replace the existing water heater with a high-efficiency, condensing, modulating gas water heater (Lochinvar). Investigate the installation of point-of-use thermostatic mixing valves or utilize them for each toilet room or riser and begin to generate 140 deg. F domestic hot water.

#### FIRE PROTECTION

The majority of the building does not have a fire protection sprinkler system. There is a fire protection sprinkler system in the Auditorium with the main riser and valve assembly in an adjacent janitor's closet. The stage high-tower is provided with fire curtains and a smoke evacuation system. Smoke detectors, pulls and fire extinguishers were observed in the building.



It is recommended to install a complete fire protection sprinkler system throughout the entire building. Automate the smoke separation and evacuation system at the stage. Install backflow preventer for existing zone valve assembly.

#### ELEVATOR

No elevators present or required.

## HAMBLIN HALL ASSESSMENT



### BACKGROUND

Hamblin Hall is an academic building that houses the college's science programs. The original building was built in 1953. A significant addition/renovation was undertaken in 1988. The 90,128 SF building has three floors and a basement. Interior circulation circles every floor with offices, classrooms, and laboratories off the main hallway. The basement has a lecture hall as well building support spaces. The building is sprinklered.

### EXTERIOR/INTERIOR

The exterior skin is an entirely brick building. The windows are in good condition, although the brick on the original building needs repointed. The roof is in good condition.

The interior finishes are in generally good condition. Directly inside the front entrance is a small lounge area for students.

### ENTRANCE

The existing ramps that lead to the main entrance of the building are not ADA compliant and do not have handrails. The front entrance doors do have ADA operators, but handicap parking is not in close proximity.

### CAMPUS FORUM

The building is currently at capacity with classrooms, laboratories, and storage.

### ELECTRICAL

The electrical system consists of an interior 2000KVA transformer in a main electrical room that feeds a 3000A 277/480V 3ph Square D Switchboard. This Switchboard feeds the new addition and a transformer that provides power to the original 1953 2000A Square D 120/208V 3ph Switchboard location in the older electrical/mechanical room. The smaller 120/208V 3ph and 277/480V 3ph panels are located in electrical closets and recessed in corridors throughout the building. It is recommended to replace any original 1953 electrical panels as spaces are renovated since they are the now reaching over 60 years old. The larger original Switchboard can remain in operation unless a repair is encountered that parts are not attainable for.

The building has a 2013 Generac 150KW 277/480V 3ph natural gas generator located on the exterior of the building that provides power to a 277/480V 3ph panel that feeds a 120/208V 3ph panel. These panels provide power to emergency lighting, two elevators, and other building loads.

The lighting in the building is T8 fluorescent and does have some occupancy sensors. It is recommended to continue adding occupancy sensors in places except where it would be a danger to the occupants if the lights were to



temporarily turn off if the sensor did not pick up the movement in an occupied room such as a chemistry lab.

This building does have a fire alarm system by Edwards located in the boiler room that needs to be updated.

#### MECHANICAL



The majority of the building is served by two, large, built-up, chilled water/steam VAV air handling units located in a roof penthouse. There are zone-level terminal units with hot water reheat. Chilled water is generated by two, 2004, Trane air-cooled chillers located on the roof. Chilled water pumps are located in a penthouse mechanical/electrical room and look to be in good condition. Steam is produced by two, 80% efficient, Smith cast iron boilers in the basement mechanical rooms. Steam system includes a heat exchanger (convertor) for producing heating hot water (reheat), condensate receiver and boiler feedwater tank and pumping station. Automated Logic DDC controls are located in the basement mechanical room and penthouse pump room. Most steam and chilled water sensors, actuators and controllers were electronic DDC. All of the roof-mounted laboratory exhaust had no issues; stainless steel ductwork, VFDs and no-loss stacks. There was a mixture of DDC and aged space temperature sensors. There is a first floor Lecture Hall that is served by a packaged, DX and gas heat roof top air conditioning unit (RTU) with Automated Logic controls.



It is recommended to replace the steam condensate receiver and investigate any steam or condensate losses in the system. Space temperature sensors should be replaced with wireless, electronic sensors and any existing mercury thermostats should be properly disposed. Provide an additional application of a UV-protectant coating on the exterior chilled water elastomeric piping insulation at the chillers. Long-term considerations should be made to eliminate the use of steam within the building.

#### PLUMBING



There is a high-efficient, power-vented, 80 gallon Lochinvar domestic water heater/boiler, Lochinvar storage tank and circulating pump located in the basement mechanical room. The majority of the urinals and water closets are hands free flush valve type fixtures. The majority of the lavatories have handled faucets. No mixing valves were present at the lavatories which mean the DHW temperature is below 120 deg. F or scalding risks exist. The incoming water service located within the crawl space is provided with proper backflow prevention. There is backflow prevention for the mechanical system make-up water. This building has laboratories throughout; the new portion of the building appears to be utilizing a complete polypropylene acid waste sanitary piping, the existing building sanitary piping is suspect and should be investigated further.

It is recommended to perform a complete camera inspection of the existing building sanitary piping system to determine if there are issues with corrosion. Investigate the installation of point-of-use thermostatic mixing valves or utilize

them for each toilet room or riser and begin to generate 140 deg. F domestic hot water.



#### FIRE PROTECTION

The building has a complete fire protection sprinkler system. The incoming service located in the crawl space has sufficient backflow prevention and the main alarm valve assembly. The sprinkler system is zoned by floor with a main stand/riser pipe located in the NE stairwell. The overall system is provided with proper zone valve assemblies, fire department connections, alarms and indicators. Smoke detectors, pulls, fire extinguishers and indicators were observed throughout the building.

There are no current recommendations.

#### ELEVATOR

There are two separate elevators located in the building. The single car elevator located in the original portion of the building has outdated elevator machinery and controls located in the penthouse elevator machine room. The single car elevator located in the new portion of the building has new machinery and controls in a basement elevator machine room adjacent to the shaft. All of the elevator cars have the required Firefighters' Operation connections, communications and overrides.

It is recommended to update the machinery and controls for the single elevator car located in the original building.



## DRAIN-JORDAN LIBRARY ASSESSMENT



### BACKGROUND

The Drain-Jordan Library was built in 1951 with a renovation and addition occurring in 1982. The 57,669 SF facility operates on three levels, with an extra floor in the book stacks area. The building is located along the main pedestrian walk which borders the campus' green space. The closest parking lot is located to the rear of the facility.

### EXTERIOR

The exterior skin consists of brick and accent stone. The brick is in need of repointing, and the windows need replaced. The roof is in good condition. The building is unsprinklered.

### INTERIOR

The interior of the library is outdated and uninviting. The finishes need updating, as well as the furnishings. Several areas in the library feel unsafe, especially the reading areas located in the upper first floor and the second floor. The layout of the book stacks is confusing, and the tight, confining spaces give a sense of insecurity. The lighting is very dim in these areas as well.

### ENTRANCE

The ramp located at the front entrance is ADA compliant. The front entrance doors do have working ADA operators, but the doors do not meet ADA guidelines for clearance. There is also no handicap parking within a close proximity to the front of the building.

### CAMPUS FORUM

Both the students and faculty agree that the library is in need of a renovation. The faculty were concerned that the library would deter potential students from selecting WVSU, when compared to other college's libraries. The students find the layout of the library confusing, especially the book stack area.

### ELECTRICAL

The electrical system consists of an interior medium voltage transformer integral to a 1982 1600A 120/208V 3ph Westinghouse Switchboard on the ground floor or basement level. This 1600A Switchboard feeds the original 1951 Trumbull by GE 600A 120/208V 3ph multiple section distribution panel. The smaller 120/208V 3ph panels are located in electrical closets and recessed in walls throughout the building. It is recommended to replace the original 1951 electrical system as parts to this 65 year old system will be hard to find.

This building does not have a generator. The public and private elevators therefore are not on emergency power. The building emergency lighting is provided by some wallpacks with integral batteries and some lighting is on a panel labeled EM. Many of the wallpacks with integral batteries are

incandescent and have batteries that fail as soon as you press the test button. It is recommended to replace the wallpacks with LED wallpacks that would be the equivalent lumen output which will also be a smaller footprint on the wall. Panel EM does not have an actual backup source that can be found. It is a panel that has only what would be emergency load associated with it. It is recommended that an inverter be installed to handle the load on this panel. When adding the inverter is considered, the size may be able to be reduced by replacing the fixtures being served by the inverter to more efficient options at the time of inverter addition.

The lighting in the building is mostly surface and recessed mounted T8 fluorescent lighting. Because of the close proximity of the stacks, the light levels are lower than desired. If the stacks are to stay in their current locations for the foreseeable future it is recommended to change to a higher lumen output LED fixture to keep the wattage on the circuit the same but provide more lighting to the area. Most of the lighting is controlled by switches. It is recommended to add some occupancy sensors in key areas such as the individual study rooms.

The fire alarm system has recently been updated to a new Edwards EST3 system. The system needs to be reviewed based on the current furniture layout and a few extra notification devices may need to be added to ensure all occupants are notified in the event of a fire. Also, more smoke detectors may need to be added as there are not as many as typically present in a building that does not have a sprinkler system.



## MECHANICAL

The majority of the building is served by 30 – 40, 5-ton or less, water source heat pumps (WSHP). WSHP's are ducted to serve offices, study and stack areas. Heat pump condenser cooling water is generated by an aged Marley, forced draft fluid cooler. Heat pump condenser heating and space heating water are generated by two, new Camus DynaFlame, high-efficient condensing boilers located in a basement mechanical room. Campus steam used to serve the building, but all steam equipment is abandoned and non-operational. There are new heating primary boiler pumps located near the boilers. The existing secondary condenser water pumps in a basement mechanical room are operational and appear to be in good condition. There are Automated Logic DDC controllers located in the basement for the condenser water heating and cooling system and also located at most WSHP's. There are existing, heating only unit convectors located along the perimeter of the building beneath the windows. There is an existing make-up air unit in the basement which is no longer operational since the steam coil was removed. It is believed this unit is responsible for providing the code-required ventilation to the building. There was a mixture of DDC and aged space temperature sensors. There are hot water cabinet heaters located at most exterior



entrances. Toilet rooms and Janitor's closets seemed to lack exhaust, or if exhaust was provided, insufficient.

It is recommended to replace the existing Marley fluid cooler with a similar unit. Continue to replace the small WSHP's as required (upon failure). Rebuild (with upgrades), or replace the existing make-up air unit in the basement to provide code-required ventilation to the building. Keep the perimeter convectors to maintain building historical architectural character. Space temperature sensors should be replaced with wireless, electronic sensors and any existing mercury thermostats should be properly disposed.



#### PLUMBING

There is an 80% efficient, 40 gallon, gas-fired, commercial water heater and recirculation pump located in a basement mechanical room. There was a mixture of urinals and water closets with hands free flush valve type fixtures, while others were foot-operated or hand operated flush valves (most of the older fixtures were in the basement). The majority of the lavatories have handled faucets. No mixing valves were present at the lavatories which mean the DHW temperature is below 120 deg. F or scalding risks exist. There are electric water coolers throughout the building; there was a combination of new and aged units. The incoming water service is not provided with proper backflow prevention.

It is recommended to install a backflow preventer at incoming water service main. Replace the remaining fixtures that require hands free (automatic) flush valves. Investigate the installation of point-of-use thermostatic mixing valves or utilize them for each toilet room or riser and begin to generate 140 deg. F domestic hot water.

#### FIRE PROTECTION

The building is not provided with a fire protection sprinkler system. Smoke detectors, pulls, fire extinguishers, and indicators were observed.

It is recommended to install a complete fire protection sprinkler system throughout the entire building, especially since the building is packed with highly combustible materials.



## ELEVATOR

The building is provided with two separate elevators. The main, single car elevator in the front of the building has new machinery and controls in a basement elevator machine room adjacent to the shaft. This car has all of the required Firefighters' Operation connections, communications and overrides. The second, single car elevator located towards the rear of the building is much older and has outdated machinery and controls in a basement elevator machine room adjacent to the shaft.

It is recommended to update and resolve all operational and code issues with the older elevator car and equipment.

## SULLIVAN HALL ASSESSMENT



### BACKGROUND

Sullivan Hall was built in 1969 as the main residence hall on campus. The building is broken down into two sections, Sullivan West and Sullivan East. Although the buildings are connected, the only access from one side to the other is through the lobby. The eight story building consists of 95,628 SF. The lobby of Sullivan Hall is connected to the cafeteria in the Student Union, although students are not allowed to circulate between the two buildings. A courtyard is also located between the two buildings. The building has been sprinklered. Over the past several years, the first four floors of Sullivan East have been renovated into teacher offices and small classrooms. Sullivan West is currently empty. The future of Sullivan Hall is unknown at this time. WV SU will keep the building maintained.

### EXTERIOR

The exterior skin of the building consists of brick and pre-cast concrete. The windows are in need of replacement with fixed, energy-efficient windows. The current windows can be opened, which creates a safety risk for a residential hall. The roof needs replaced soon. The roof drains are leaking down into the 8<sup>th</sup> floor.

### INTERIOR

The interior of the building has remained untouched since initial construction, aside from the first four floors of Sullivan East. The elevators of Sullivan West were replaced in 2009, and the elevators of Sullivan East are in need of replacement. The floor in the ground level entrance area needs replaced.

The first four floors of Sullivan East have been renovated into classrooms and teacher offices, and these floors remain open to students during class times. The fifth through eighth floors still remain a residence hall. This creates a potential security risk, since students could take the elevator or stair to any level of the building. The front desk is staffed during classroom hours, but this is not enough to prevent someone from going to floors they don't belong.

The piping in the residence hall showers needs replaced.

### CAMPUS FORUM

Sullivan Hall was mentioned most when referring to buildings on campus that need renovation. The students feel that the use of Sullivan Hall is not clear to new students. They would like to see more student and faculty interaction, as well as the courtyard be used between the building and the Student Union. Several mentioned that the lobby between Sullivan and the cafeteria is underutilized.

### ELECTRICAL

The electrical system consist of a 7200V transformer that feeds several 1ph 120/240V transformers throughout the building, a 1ph 1600A 120/240

Switchboard in the Basement, and a 3ph 2000A 120/240V Switchboard in the Penthouse. Most of the transformers in the building are located in dedicated transformer rooms on floors 2,4,6 and 8 that feed separate electrical rooms on floors 3,5,7 and the Penthouse level because they are 7200V to 120/240V transformers instead of the more typically seen 480V to 120/240V transformers. The main electrical gear appears to be in good condition. It is recommended to replace any original electrical panels as spaces are renovated since they are now reaching over 45 years old. The larger original Switchboards can remain in operation unless a repair is encountered that parts are not attainable for.

The building has a newer Caterpillar natural gas generator that has capacity to run two of the elevators and provide power to the emergency lighting and fire alarm panel.

The building lighting in common areas mainly consist of T8 fluorescent lighting with some T5 fluorescent basket type recessed fixtures in the lower level corridor. The lighting in the corridors are on 24 hours a day for security reasons. For this reason, it is recommended to change these fixtures to LED type fixtures if any type of renovation is to be done in the area.

The fire alarm panel has recently been updated to a new Edwards EST3 system. Two new Edwards EST3 fire alarm annunciator panels are located in the East and West vestibules. The fire alarm system uses a combination of new Edwards devices in the renovated areas and existing Simplex devices in renovated areas. It is recommended to change the Simplex devices to newer addressable Edwards devices as renovations to other areas take place.



#### MECHANICAL

The front entrance/corridor connecting Sullivan to the Student Union is served by a packaged DX roof top unit (RTU). All of the dorm spaces appeared to have aged Singer Remington packaged terminal air conditioner (PTAC) units with DX cooling and electric heat. There were two, exterior mounted BARD units serving some lower level office or classroom spaces. Toilet rooms and Janitor's closets seemed to lack exhaust, or if exhaust was provided, insufficient. Basement dryers were vented, but unable to determine if dryers were vented to a common duct with a booster fan. Some exhaust ductwork in the basement mechanical/electrical room was disconnected and in need of repair. There were two, outdated, split system, DX suspended make-up air units located in the roof penthouse. It is assumed these units are providing ventilation air to each tower floor corridor. The updated elevator machine room has a small, split system fan coil unit. The non-updated elevator machine room is just provided with exhaust/ventilation. The majority of the space temperature sensors were original units containing bi-metallic springs or mercury.



It is recommended to replace all of the existing PTAC units with high-efficient heat pump PTAC units. Replace the existing make-up air units and design a system to provide all code-required ventilation air the hallways. All new equipment shall be provided with DDC controls and be connected to a central



DDC system. Install or increase general exhaust in required spaces. Space temperature sensors should be replaced with wireless, electronic sensors and any existing mercury thermostats should be properly disposed.



#### PLUMBING

There is one Lochinvar 108 KW electric water heater, one Lochinvar 120 KW water heater, one 1000+ gallon hot water storage tank and recirculating pumps located in the penthouse mechanical room serving the east and west towers. Hot water equipment appears to be new and in good condition. The plumbing fixtures (showers, tubs, urinals, lavatories and water closets) were a hodge-podge of manufacturers and quality throughout the east and west towers. Some fixtures were newer with automatic flush valves, while others looked original and completely unusable. The sanitary piping is suspect throughout the entire building, what was visible appeared to be leaking and corroded. The majority of the lavatories have handless faucets. No mixing valves were present at the lavatories which mean the DHW temperature is below 120 deg. F or scalding risks exist. There are electric water coolers throughout the building; most appeared to be aged units. The incoming water service is not provided with proper backflow prevention. The basement sump pit, pumps, piping and accessories appears rusted/corroded and in need of replacement. Washing machines in the basement did not appear to have water hammer arrestors.



It is recommended to install a backflow preventer on the incoming water service. Remodel and update the majority of the plumbing fixtures (water closets, urinals, showers, tubs, water coolers and all sanitary piping) within the building. Investigate the installation of point-of-use thermostatic mixing valves or utilize them for each toilet room or riser and begin to generate 140 deg. F domestic hot water.

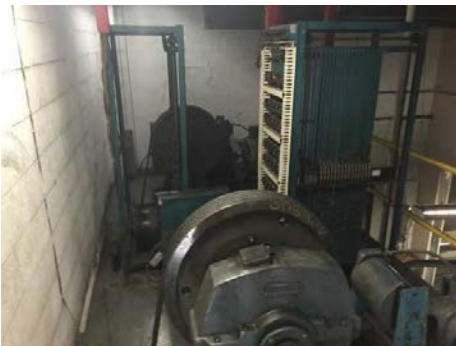
#### FIRE PROTECTION

The entire east and west towers are provided with a complete fire protection sprinkler system. The sprinkler system is zoned by floor in each tower with a main stand/riser pipe located in each tower stairwell. The overall system is provided with proper zone valve assemblies, fire department connections, alarms and indicators. Smoke detectors, pulls, fire extinguishers and indicators were observed throughout the building.

There are no current recommendations.

#### ELEVATOR

There are two separate elevators, each having two cars, serving each tower respectively. The west tower elevators, machinery and controls were recently upgraded. The elevator cars have the required Firefighters' Operation connections, communications and overrides. The east tower elevator cars, machinery and controls are outdated.



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It is recommended to update the machinery, controls and cars serving the east tower. Code-required dedicated cooling and ventilation will need to be provided to the east side elevator machine room.

## COLE COMPLEX ASSESSMENT



### BACKGROUND

Cole Complex is an academic building that was built in 1982. The building originally functioned as a community college and in 2012 has been obtained and used by WVSU.

The 43,460 SF three story building houses Business Administration and Communication & Media Studies programs. The building consists of typical functions such as classrooms and faculty offices, as well as a theatre, television studios, control rooms, and associated support spaces.

The building is ADA accessible, and a handicap accessible parking lot is located on the northwest corner of the building.

### INTERIOR/EXTERIOR

The style of the building is modern, which veers from most buildings at WVSU. The exterior skin is brick and is in good condition, as well as the windows. The roof does need to be replaced soon. The interior remains in generally good condition. The building is fully sprinklered.

### CAMPUS FORUM

The feedback we heard from students is that they like Cole Complex, but it is somewhat confusing to find your way around. The bulk of the classroom space is held on the third floor with mainly administration functions on the first and second floor. Students suggested flipping these functions to make it easier for students. They also mentioned it should have a more professional feel since it houses the business programs.

### ELECTRICAL

The electrical system consists of a pad mounted transformer located in the drive-in mechanical yard at the rear of the building that feeds original 1980's Square D 1200A 277/480V 3ph Switchboard in the main electrical room on the first floor. This switchboard feeds transformers and panels in the main electrical room and shared electrical/janitor closets on the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> floors. At over 35 years old, the electrical system may be entering the end of its serviceable life. The equipment in the main electrical room appears to be in good condition. The equipment in the shared janitor spaces however does show some signs of corrosion and may need to be replaced sooner.

This building does not have a generator. The elevator is therefore not on emergency power. The emergency power for interior lighting is provided by four inverters located in the main electrical room and electrical/janitor closets throughout the building. There is no emergency power for any exterior lighting. Emergency lighting needs to be added to the exterior of the building. This can potentially be accomplished in several different ways including adding an inverter, updating the normal lighting to have integral emergency battery packs, adding exterior emergency wall packs, or possibly add on remote emergency head onto the existing inverters if there is capacity.

The lighting in the building is mostly T8 fluorescent with some LED and some screw-in base LED and compact fluorescent in original incandescent downlights. The exterior lighting is mainly comprised of high pressure sodium (HPS) and screw-in LED lighting in original incandescent downlights in canopies. The controls for the building are mostly switches and a timeclock controlling corridors, stairwells, and exterior lighting. There have been some spaces retrofitted with occupancy sensors. It is recommended to continue changing out areas that are controlled by only switches to add occupancy sensor control.

The fire alarm system is the original 1980's Edwards by GS 5721B control panel. This system has an added Simplex annunciator panel near the main entrance. It is recommended that this system be updated similar to the newer Edwards EST3 systems installed in some of the other buildings on campus.

#### MECHANICAL

There is a McQuay, VAV, steam heat, split system DX air handling unit located in an exterior courtyard mechanical space. The split-system condensing unit is Carrier and located adjacent to the AHU. Campus steam is serving the AHU; the underground steam piping has been abandoned and now runs overhead to the unit. The VAV AHU has zone level terminal units with electric reheat throughout the majority of the building office and classroom spaces (three story structure). There is small Baltimore Air Coil, forced draft, fluid cooler with discharge dampers, a boiler and pumps serving ducted, water source heat pumps located in the single story first floor spaces. There is a packaged DX roof top unit (RTU) serving the stage/theater space only. There are electric cabinet heaters at most main building entrances. There were many Automated Logic DDC controllers in the mechanical rooms and spaces adjacent to the mechanical equipment. The majority of the space temperature sensors were electronic DDC sensors.



It is recommended to remove the building from campus steam. Replacement options include an onsite steam boiler, or convert/replace the AHU with hot water heating and provide an onsite hot water boiler (Camus DynaFlame to match campus). Budget the replacement of the existing BAC fluid cooler within the next 3-5 years (end of typical unit life span).

#### PLUMBING

There are AO Smith, 15 gallon, electric water heaters located in the Janitor's closets on each floor. The majority of the urinals and water closets are hands free flush valve type fixtures. The majority of the lavatories have handled faucets. No mixing valves were present at the lavatories which mean the DHW temperature is below 120 deg. F or scalding risks exist. There are electric water coolers throughout the building, most were in good working order. The incoming water service is provided with proper backflow prevention.





It is recommended to investigate the installation of point-of-use thermostatic mixing valves or utilize them for each toilet room or riser and begin to generate 140 deg. F domestic hot water.

**FIRE PROTECTION**

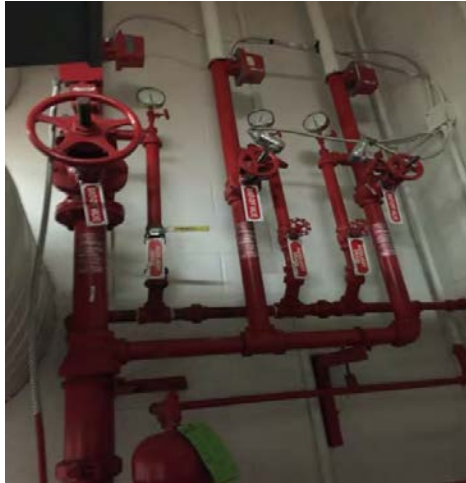
The building has a complete fire protection sprinkler system. The main riser has sufficient backflow prevention. The system is provided with three separate zone valve assemblies (zoned by floor), fire department connections, alarms and indicators. Fire extinguishers and pull stations were observed throughout the building.

There are no current recommendations.

**ELEVATOR**

There is one elevator serving the building. The elevator car has the required Firefighters' Operation connections, communications and overrides. The elevator machinery and controls located in an elevator machine room on the first floor adjacent to the shaft appear to be in proper working order and code compliant.

There are no current recommendations.



## STUDENT UNION KITCHEN AND CAFETERIA ASSESSMENT



### BACKGROUND

The Student Union was recently renovated in 2001, although the kitchen was left untouched. The kitchen is in dire need of a major renovation. The equipment needs replaced, as well as cooking areas redefined to maximize the efficiency of the cooks. New plumbing, drain lines, and electrical power to the equipment is outdated, and in some cases, not working. The kitchen is also not sprinklered.

The cafeteria's interior finishes have been updated, but the roof needs replaced.

### CAMPUS FORUM

The students reported that the cafeteria line is usually long during lunch hours and the cafeteria will not hold enough people. They would also like more takeout options. Both students and faculty stated that the use of the McGee Suites in the cafeteria are complicated to use and reserve.

### MECHANICAL



There is a suspended, hot water heating only, make up air (MUA) unit serving the kitchen. The MUA is located in the mechanical penthouse above the kitchen and is a 100% outdoor air unit. Because the MUA is not provided with any cooling, the kitchen can become uncomfortably warm. There are three walls that have kitchen exhaust hoods and cooking equipment. Some of the exposed ductwork appears to be galvanized as opposed to code-required, welded stainless steel or sheet steel. There are three kitchen exhaust fans on the roof; two of the kitchen exhaust fans are long past their expected life span. There are gravity (assumed) make-up air intake hoods that are ducted to the inlet of the kitchen hoods. The gravity approach to providing kitchen exhaust make-up air is inefficient and no longer recommended. The dish machine is provided with ductwork and an exhaust fan; no issues observed with dish machine exhaust (aluminum or stainless). The pressurization between the kitchen and adjacent spaces is not correct, as evidenced by the highly observable airflows into the kitchen at any doorway.



It is recommended to investigate reusing as many of the existing exhaust hoods as possible for any future remodeling. Rework all kitchen exhaust ductwork to be code-compliant. Provide new, variable speed exhaust fans with temperature and/or smoke sensors in the kitchen hoods to only increase the exhaust airflow as cooking demand requires. Provide a cooling coil in the MUA; either chilled water or split DX to allow for some cooling within the kitchen. Provide variable speed, fan forced, heating only, kitchen make up air units designed to meet the majority of kitchen exhaust needs (eliminate gravity hoods) and interlock with variable speed exhaust fans. Provide MUA plenum diffusers along the front edge of all kitchen hoods.

### PLUMBING

Multiple issues were observed with the sanitary plumbing system in the kitchen. Several floor drains appeared to be non-functional and creating standing water. Standing water was observed in a dry storage closet. Although multiple grease traps were observed, it was difficult to determine if all applicable sink waste lines were being routed through functional grease traps. Several waste lines were disconnected and leaking straight onto the floor. It appears that a portion of the floor was recently opened, assumedly to address issues with the under floor sanitary piping.

It is recommended to perform a complete camera inspection of the existing sanitary piping system to determine what is salvageable and what should be replaced during future remodeling. Confirm 140 deg. F domestic hot water is being produced for the kitchen and thermostatic mixing valves are provided at all hand sinks to prevent scalding. Address all drainage issues and confirm all applicable sinks are being routed through functional grease traps.



#### FIRE PROTECTION

The kitchen area does not have a fire protection sprinkler system. Smoke detectors, pull stations, indicators and fire extinguishers were observed. The kitchen hoods are provided with adequate Ansul R-102 wet chemical fire suppression systems and the proper pull station was observed at the exit to the cafeteria.

It is recommended to provide a complete fire protection sprinkler system within the kitchen.

#### KITCHEN EQUIPMENT

All of the cooking equipment is electric, not gas-fired. None of the walk-in freezers or coolers are provided with rubber strip curtains to help maintain heat transfer when the doors are open. It was mentioned that the coolers and freezers were not insulated from their surroundings when installed, this wasn't able to be verified.

It is recommended to replace as much of the kitchen equipment with gas-fired equipment to substantially reduce operating costs. Properly insulate all coolers and freezers and provide rubber strip curtains



**ENROLLMENT AND DEMOGRAPHIC ASSESSMENT**



**ENROLLMENT**

WVSU is only one of three schools in the state of West Virginia to see an increase in enrollment since 2010. In 2013, the headcount was 2,677. In the fall year of 2015, the enrollment was 3,166. The Vision 20/20 report projects a target enrollment of 4,012 for the year of 2020.

In 2008, the Legislature separated the community and technical college from the University, and the community college moved to a new location in 2012. This had a negative impact on WVSU enrollment.

Full time students make up 69% of enrollment.

**DEMOGRAPHIC ASSESSMENT**

The majority of WVSU students are commuter students. In 2014, 88% of students were commuters. This impacts the master plan, because a main focus and goal is to control vehicular circulation around campus. Ideally, a commuter student will have access to a convenient parking lot which is located adjacent to several academic buildings. The path from the parking lot to the academic buildings should ideally be clear, safe, and fast.

**ADDITIONAL GROWTH AREAS**

On-line programs will continue to be growth areas for the college, creating the need for state-of-the-art distance learning facilities and support spaces.

**SUMMARY**

As the 2020 projected enrollment is still lower than the enrollment previously supported by the campus, the focus of the Campus Development Plan is to maintain and improve their existing facilities.

Below is the past enrollment by year:

<b>2015</b>	2,263
<b>2014</b>	2,229
<b>2013</b>	2,151
<b>2012</b>	2,106
<b>2011</b>	2,252
<b>2010</b>	2,458
<b>2009</b>	2,739
<b>2008</b>	2,338
<b>2007</b>	2,570
<b>2006</b>	2,727



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**DEFERRED MAINTENANCE PROJECTS**

Below is a comprehensive list of deferred maintenance projects at West Virginia State University that has been supplied by Building Services.

**PHASE II**

Cole Complex HVAC Upgrades	\$325,000
Ferrell Hall HVAC Upgrades	\$33,000
Drain-Jordan Library	\$6,000
Hill Hall HVAC Upgrades and Boiler	\$280,000
Physical Facilities Boiler Replacement	\$50,000
Ferguson Lincoln Boiler Replacement	\$75,000
Lighting Upgrades of Plazas, Sidewalks, and Parking Lots	\$25,000
Academic/Technology Classroom Building	\$250,000
Underground Electrical Upgrade	\$137,000
Replace Water Lines and Fire Hydrants	\$650,000
Roof Replacement E&G Buildings	\$500,000
Building Weatherproofing	\$100,000
Wallace Hall Window Replacement	\$1,500,000
Ferrell Hall ADA Accessibility	\$1,500,000
Storm Water Management	\$25,000
Upgrade Campus Elevators to ADA and Fire Marshal Standards	\$100,000
Building Upgrades for Energy Conservation	\$125,000
Lakin Field Upgrades	\$175,000
Capitol Center Sprinkler System	\$150,000
Upgrade Existing Parking Lots	\$160,000
Sullivan Hall East Elevator Replacement	\$100,000
Sullivan Hall Air Handler	\$75,000
Campus-wide Classroom Furniture Upgrades	\$75,000
Capitol Center Elevator Upgrade to ADA	\$250,000

**PHASE III**

Davis Fine Arts HVAC Upgrades	\$32,000
Hamblin Hall HVAC Upgrade	\$225,000
Wallace Hall HVAC Upgrade	\$1,000,000
Physical Facilities Boiler Replacement	\$50,000
Ferguson Lincoln Boiler Replacement	\$75,000
Lighting Upgrades of Plazas, Sidewalks, and Parking Lots	\$25,000
Academic/Technology Classroom Building	\$250,000
Replace Water Lines and Fire Hydrants	\$650,000
Roof Replacement E&G Buildings	\$500,000
Building Weatherproofing	\$100,000
Wallace Hall Window Replacement	\$600,000
Ferrell Hall ADA Accessibility	\$1,500,000
Storm Water Management	\$25,000
Upgrade Campus Elevators to ADA and Fire Marshal Standards	\$50,000
Building Upgrades for Energy Conservation	\$100,000



Lakin Field Upgrades	\$75,000
Capitol Center Sprinkler System	\$150,000
Upgrade Existing Parking Lots	\$150,000
Upgrade Existing Sidewalks	\$100,000
Sullivan Hall East Elevator Replacement	\$100,000
Sullivan Hall HVAC Upgrade	\$550,000
Sullivan Hall Air Handler	\$75,000
Campus-wide Classroom Furniture Upgrades	\$75,000
<b>PHASE IV</b>	
Hamblin Hall HVAC Upgrade	\$225,000
Lighting Upgrades of Plazas, Sidewalks, and Parking Lots	\$15,000
Roof Replacement E&G Buildings	\$500,000
Building Weatherproofing	\$100,000
Storm Water Management	\$25,000
Building Upgrades for Energy Conservation	\$75,000
Lakin Field Upgrades	\$75,000
Upgrade Existing Parking Lots	\$150,000
Sullivan Hall East Elevator Replacement	\$25,000
Campus-wide Classroom Furniture Upgrades	\$75,000
Roof Replacement E&G Buildings	\$40,000
Building Weatherproofing	\$100,000
Storm Water Management	\$25,000
Upgrade Existing Parking Lots	\$150,000
Campus-wide Classroom Furniture Upgrades	\$50,000
<b>TOTAL SCHEDULED DEFERRED MAINTENANCE</b>	<b>\$15,113,000</b>

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**EXISTING BUILDING NEEDS**

Below is a comprehensive list of buildings needs at West Virginia State University for each facility that was assessed. The cost estimate supplied for each building includes overhead and profit for the general contractor plus a small contingency.

<b>Ferrell Hall</b>	<b>75,416 SF</b>	<b>\$4,400,000</b>
<input type="checkbox"/> Repoint Brick Façade (\$300,000) <input type="checkbox"/> Auditorium AHU Upgrade (\$250,000) <input type="checkbox"/> Boiler Upgrade (\$150,000) <input type="checkbox"/> Remaining Building HVAC Upgrades (\$350,000) <input type="checkbox"/> Renovate Entrances for ADA Compliance (\$3,000,000) <input type="checkbox"/> Install sprinkler system (\$350,000)		
<b>Wallace Hall</b>	<b>84,470 SF</b>	<b>\$5,160,000</b>
<input type="checkbox"/> Generator Upgrade to 100KW Generator for Elevator (\$150,000) <input type="checkbox"/> Repoint Brick Façade and Weatherproof (\$300,000) <input type="checkbox"/> Window Replacement (\$2,100,000) <input type="checkbox"/> AHU Upgrades (\$1,000,000) <input type="checkbox"/> Cooling Tower Budget (\$250,000) <input type="checkbox"/> Remaining Building HVAC Upgrades (\$500,000) <input type="checkbox"/> Classroom Technology Upgrades (\$800,000) <input type="checkbox"/> Domestic Water Heater Upgrade (\$50,000) <input type="checkbox"/> Stairwell Lighting Upgrades (\$10,000)		
<b>Davis Fine Arts</b>	<b>50,566 SF</b>	<b>\$3,450,000</b>
<input type="checkbox"/> Replace roof (\$750,000) <input type="checkbox"/> Cooling Tower Upgrade (\$150,000) <input type="checkbox"/> Boiler Upgrade (\$150,000) <input type="checkbox"/> AHU Upgrades (\$500,000) <input type="checkbox"/> Remaining Building HVAC Upgrades (\$350,000) <input type="checkbox"/> Generator Replacement to 25KW Generator Disconnected from Wallace (\$40,000) <input type="checkbox"/> Replace ceiling tiles throughout (\$160,000) <input type="checkbox"/> Install Sprinkler System (\$250,000) <input type="checkbox"/> Replace Panels Excluding Switchboard (\$100,000) <input type="checkbox"/> General Interior Renovations (\$1,000,000)		
<b>Drain-Jordan Library</b>	<b>57,669 SF</b>	<b>\$5,005,000</b>
<input type="checkbox"/> Repoint Brick Façade (\$200,000) <input type="checkbox"/> Install Sprinkler System (\$275,000) <input type="checkbox"/> Window Replacement (\$800,000) <input type="checkbox"/> Fluid Cooler Upgrade (\$225,000) <input type="checkbox"/> MUA Upgrade (\$150,000) <input type="checkbox"/> Remaining Building HVAC Upgrades (\$125,000) <input type="checkbox"/> Install Backflow Preventer (\$10,000) <input type="checkbox"/> Interior Renovations (\$3,000,000) <input type="checkbox"/> Replace Pre-1982 Panels (\$200,000) <input type="checkbox"/> Emergency Lighting (\$15,000) <input type="checkbox"/> Fire Alarm Device Additions (\$5,000)		

<b>Hamblin Hall</b>	<b>90,128 SF</b>	<b>\$950,000</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Renovate Entrances for ADA Compliance (\$250,000)</li> <li><input type="checkbox"/> HVAC Upgrades (\$450,000)</li> <li><input type="checkbox"/> Elevator Upgrades (\$250,000)</li> </ul>		
<b>**Sullivan Hall</b>	<b>95,629 SF</b>	<b>\$5,855,000</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Replace Roof (\$350,000)</li> <li><input type="checkbox"/> East Elevators Replacement (\$225,000)</li> <li><input type="checkbox"/> HVAC Upgrade (\$550,000)</li> <li><input type="checkbox"/> Replace Air Handlers (\$150,000)</li> <li><input type="checkbox"/> Replace shower piping (\$130,000)</li> <li><input type="checkbox"/> Interior Renovations (\$1,600,000)</li> <li><input type="checkbox"/> Window Replacement (\$2,800,000)</li> <li><input type="checkbox"/> Security Upgrades (\$50,000)</li> </ul>		
<b>Cole Complex</b>	<b>43,460 SF</b>	<b>\$630,000</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Replace Roof (\$300,000)</li> <li><input type="checkbox"/> HVAC Upgrade (\$325,000)</li> <li><input type="checkbox"/> Exterior Emergency Lighting (\$5,000)</li> </ul>		
<b>Student Union Kitchen/Cafeteria</b>		<b>\$540,000</b>
<ul style="list-style-type: none"> <li><input type="checkbox"/> Replace Roof (\$310,000)</li> <li><input type="checkbox"/> Replace Kitchen Equipment (\$50,000)</li> <li><input type="checkbox"/> Replace Floor Drains/Sewer (\$150,000)</li> <li><input type="checkbox"/> Install Sprinkler System (\$30,000)</li> </ul>		

\*\*The number for Sullivan Hall is the price required to maintain the facility. A full renovation of the building for residential use or office space would be an additional investment.

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**MAJOR SITE IMPROVEMENTS**
**CIRCULATION OVERVIEW**

The West Virginia State University Campus is situated in the city of Institute. It is bound by a primary road, Fairlawn Avenue (WV County Route 25) to the North, the secondary road Baron Drive to the West, the Kanawha River to the South, and the secondary road Washington Avenue to the East. There are several secondary roads within the campus, including College Drive, Stadium Drive, Court Drive, President Drive, Douglas Street, and Dubois Street.

The overall intent of the circulation master plan is to create obvious and safe pedestrian and vehicular circulation and wayfinding on the West Virginia State University. Pedestrian circulation should take priority wherever possible.

**VEHICULAR CIRCULATION**

Vehicular circulation includes three levels of service; pass-through traffic, on-site traffic and service access. Nearly all pass-through traffic travels along Fairlawn Avenue. There is one traffic light to control pass-through traffic located at the intersection of Baron Drive and Fairlawn Avenue.

A majority of on-site traffic access the campus from Fairlawn Avenue at Baron Drive and Washington Avenue. The main vehicular circulation on campus consists of traffic moving from Baron Drive to Court Drive to Washington Avenue or the reverse. Traffic is heaviest on campus along Baron Drive between Fairlawn Avenue and Parking Lot E, and Washington Avenue from Fairlawn Avenue to Parking Lots L and M. The master plan shows moving the main vehicular entrance on the West Side of campus to Rehab Drive, which could access all the parking lots from the back side of the lots, and open up Baron Drive as a pedestrian only plaza. Rehab Drive would be reconfigured to meet at Baron Drive and Court Drive.

A campus entry feature will be installed on the west side of campus near the new Rehab Drive entrance, as well on the east side of campus near the intersection of Academy Drive and Fairlawn Avenue. The entry feature would create a gateway feature onto campus and would consist of signage, landscaping, and a change in pavement patterns to alert motorists that they are arriving on campus.

**PEDESTRIAN CIRCULATION**

The main core of campus is a pedestrian only zone, outside of University service vehicles and allows students and faculty to walk to and nearly every building on campus without any conflict with vehicles. To reinforce the pedestrian safety and focus of the campus, Baron Drive from Fairlawn Avenue to Court Drive will be converted from vehicular circulation to pedestrian only circulation. This will allow for safer circulation from the

parking lots located along Baron Drive to the academic buildings, dorm, and student union.

A new sidewalk will be provided along the entire length of the reconfigured Rehab Drive to allow pedestrians safe access from Fairlawn Avenue to the academic buildings, dorm, and student union. Additional sidewalks are planned along both sides of Baron Drive to improve connectivity between the academic core, dorms, and the athletic facilities.

Sidewalks are also planned along the newly acquired properties west of Baron Drive along Fairlawn Avenue, from Parking Lot O to Washington Avenue along Fairlawn Avenue, and along Washington Avenue to Parking Lots L and M to more fully connect pedestrian access to the campus core.

While bicycle lanes are not popular on campus because of the unique location in the valley, bicycle racks should be installed at academic buildings, dorm, and student union as demand necessitates.

#### **PARKING**

The majority of parking for the WVSU Campus is currently situated along Baron Drive, Washington Avenue, and Court Drive. A thorough study of parking use at different periods of the day throughout the week shows that the lots on the North Side of campus (Parking Lots C, O, N, M, L, D, D1 and E) were the most heavily used, often times over 90% full. The parking lots on the south side of campus are seldom used (parking lots I, J, H, G East, G South, G West, and the western portion of Parking Lot E), typically less than 30% full. The most heavily used parking lots are the most convenient to the academic buildings as well as the student union building.

The master plan calls for providing lower cost parking options for the lesser used lots to gain better use of the capacity of parking already available. A parking shuttle system will be provided to pick up patrons at various lots and drop them off at academic buildings, the dorm, and the student union.

#### **OPEN SPACE AND LANDSCAPE**

The pedestrian core bounded by Ferrell Hall to the North, Judge Keith Scholars Hall to the East, Fleming Hall to the South and Dawson Hall, Hill Hall and Cole Complex to the West. This area provides strong pedestrian linkages between the campus buildings, parking and off-site access while providing outdoor gathering space. The center green serves as a multipurpose lawn for casual passive activities as well as planned events in conjunction with the Student Center plaza.

Existing benches are scattered around campus and need maintenance to ensure a long future. Outdoor plaza areas will be enhanced to encourage



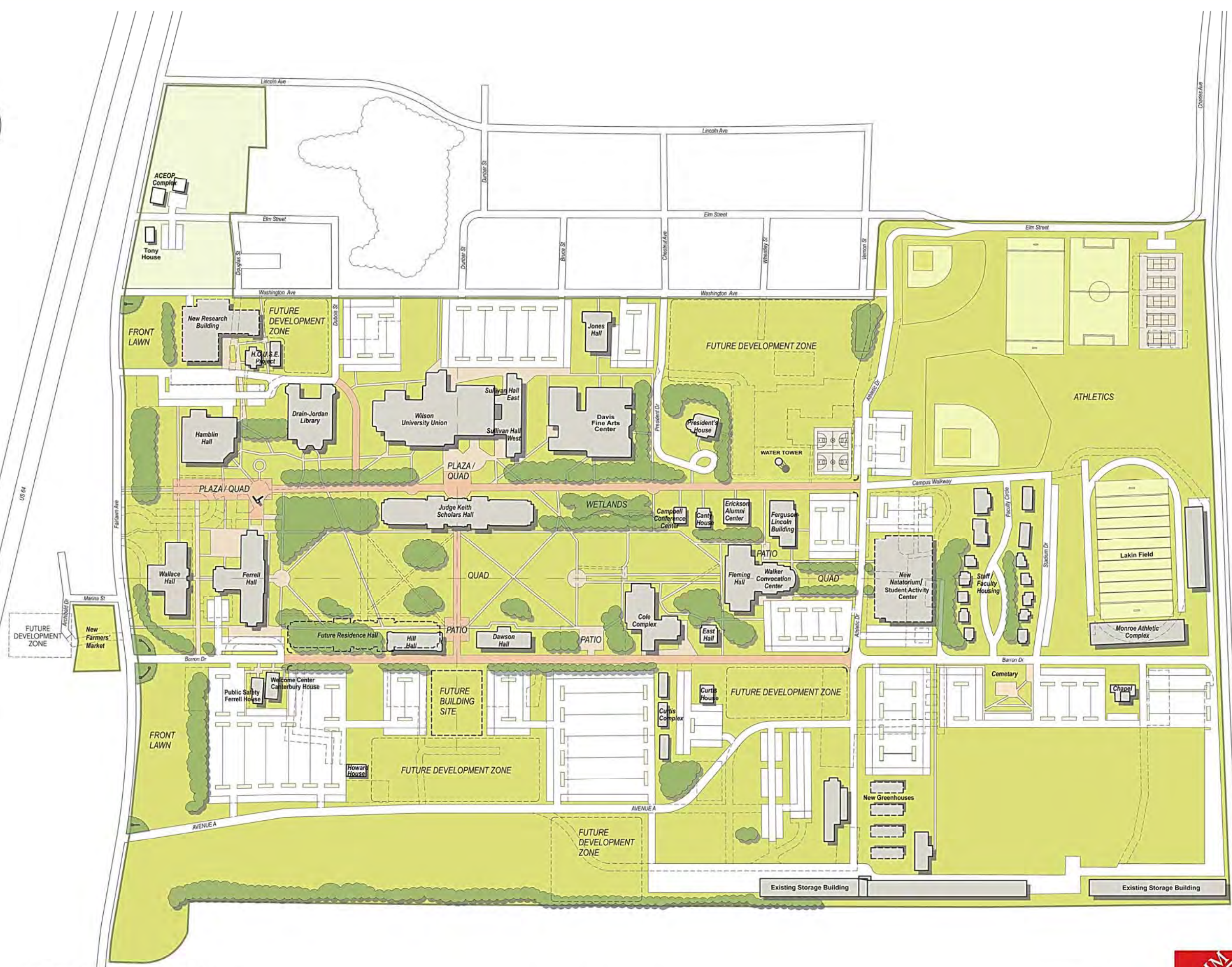
further use of the outdoor spaces for studying, relaxing, or small gatherings.

A mound and landscape buffer will occur on the west end to create a barrier between the campus and the industrial park. A grass mound will be built, and evergreen trees will be planted to allow for a green barrier.

Landscape materials are placed to emphasize the form of the campus and pedestrian circulation while enhancing buildings. Large deciduous trees provide shade during the warm growing season, and allow sunlight in the winter months. A minimalist approach to plant materials is suggested in anticipation of future limitations to the annual maintenance budget.

Below is a cost estimate associated with the site and infrastructure improvements.

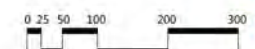
Qty	Unit	Description	Unit Cost	Total
800	LF	New Access Drive Connecting Rehab Drive to Court Drive (750 LF)	\$200	\$160,000
7,500	SY	New Sidewalk (9,000 LF, 6' average width)	\$50	\$375,000
2,250	LF	Replacement of Water Mains and Extending Water Service	\$70	\$157,500
2,500	LF	Duct Bank Expansion	\$200	\$500,000
3	EA	Building Conversions to 12kv Power		
2,000	LF	Sanitary Sewer Line Replacement	\$70	\$140,000
2,500	LF	Gas Line Extension	\$60	\$150,000
1	LS	Connect Maintenance Roof Drains to Storm System	\$25,000	\$25,000
1	LS	Recommended Landscaping Maintenance and Upgrades	\$250,000	\$250,000
2	LS	Entry Feature	\$100,000	\$200,000
8,000	SF	Pavers for Existing Pedestrian Core	\$8	\$64,000
45,000	SF	Pavers for Baron Drive Pedestrian Zone	\$8	\$360,000
1	LS	Vehicular Control for Baron Drive Pedestrian Zone (Gates and Bollards)	\$50,000	\$50,000
2	EA	Reconfiguration of Entrances *	\$75,000	\$150,000
1	LS	Campus Wayfinding Signage	\$100,000	\$100,000
<b>TOTAL</b>				<b>\$2,681,500</b>



**WEST VIRGINIA STATE UNIVERSITY**

Institute, West Virginia

# Master Plan

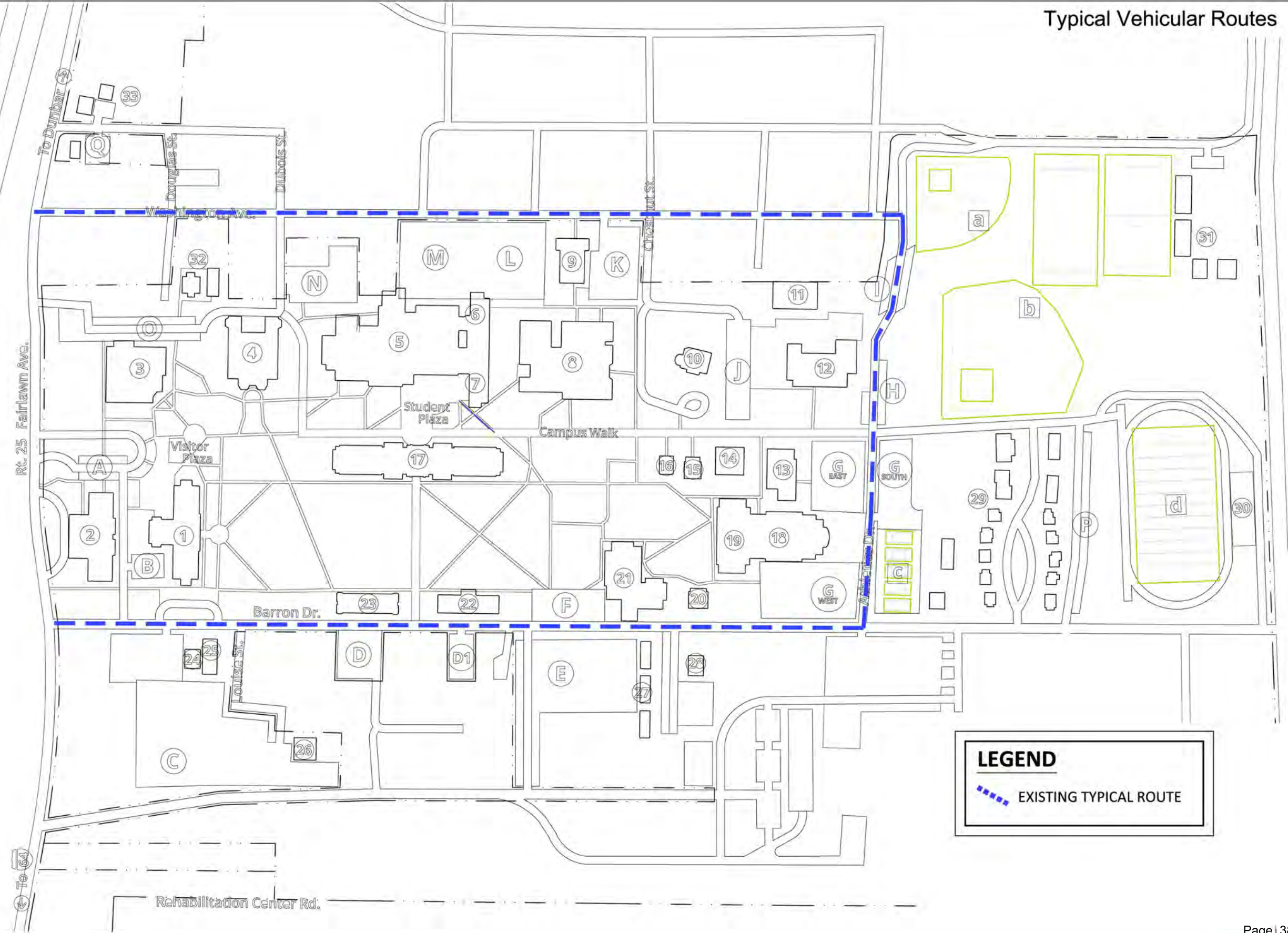


January 2016



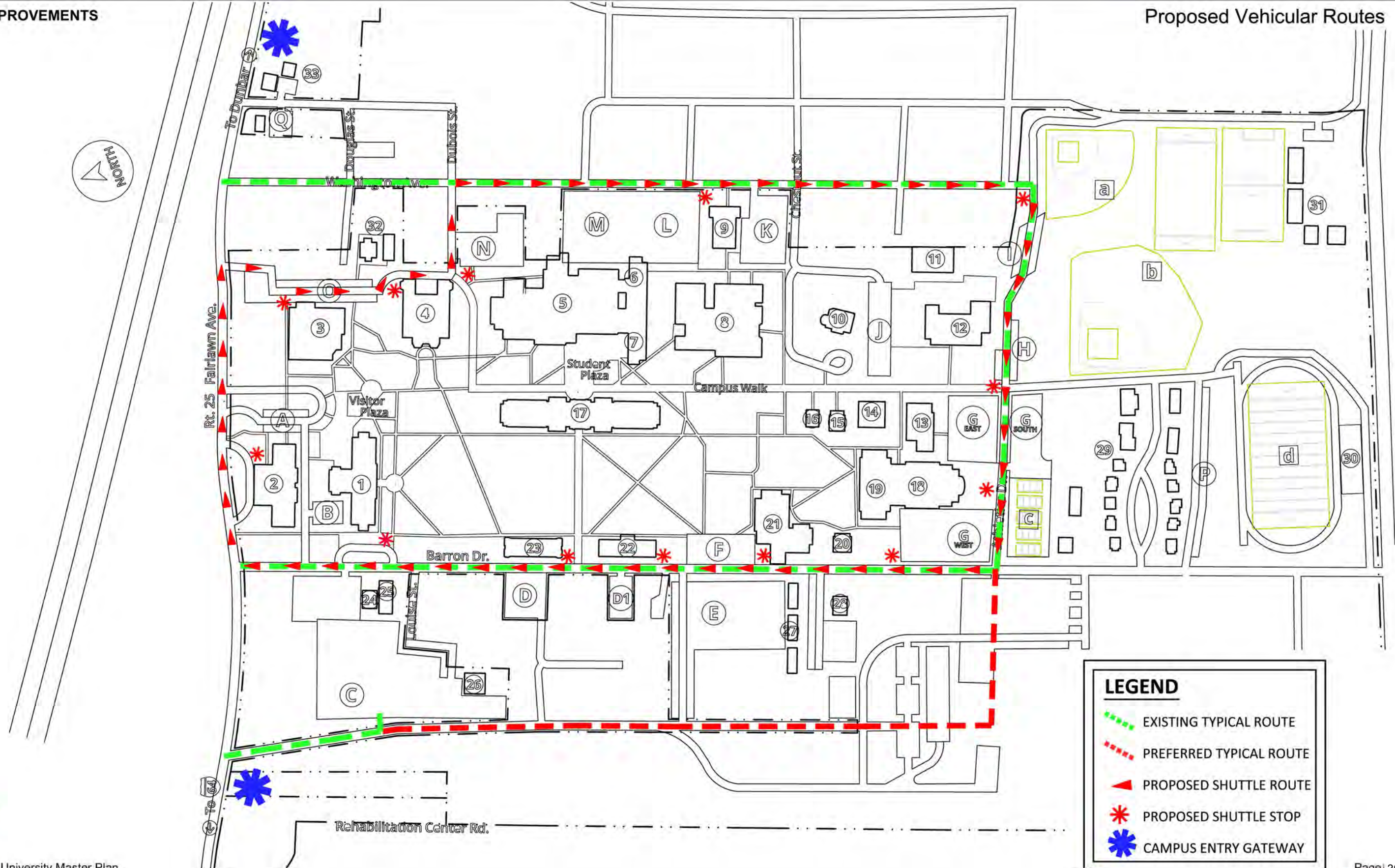
MAJOR SITE IMPROVEMENTS

Typical Vehicular Routes



MAJOR SITE IMPROVEMENTS

Proposed Vehicular Routes



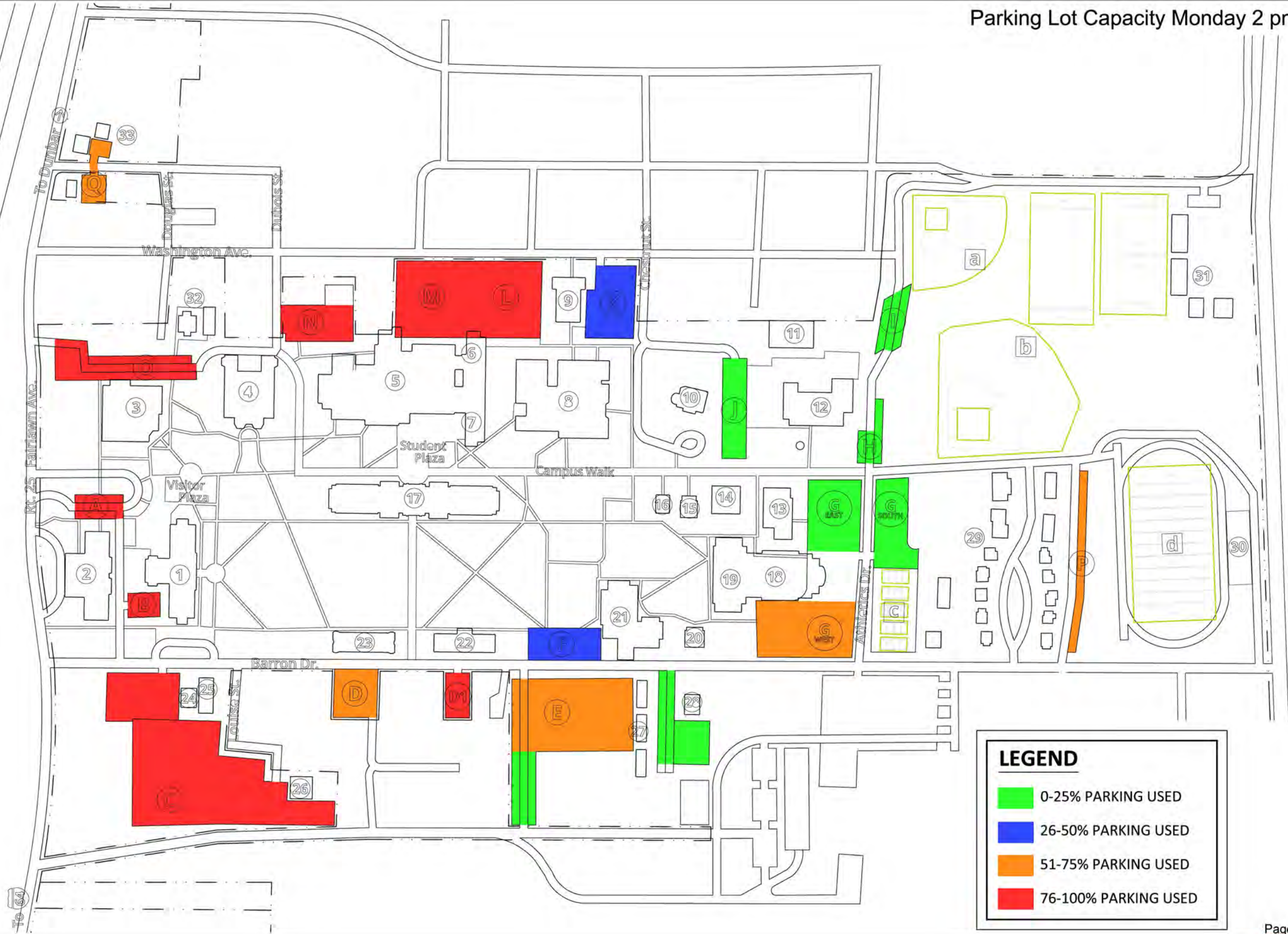
MAJOR SITE IMPROVEMENTS

Parking Lot Capacity Monday Early AM



MAJOR SITE IMPROVEMENTS

Parking Lot Capacity Monday 2 pm



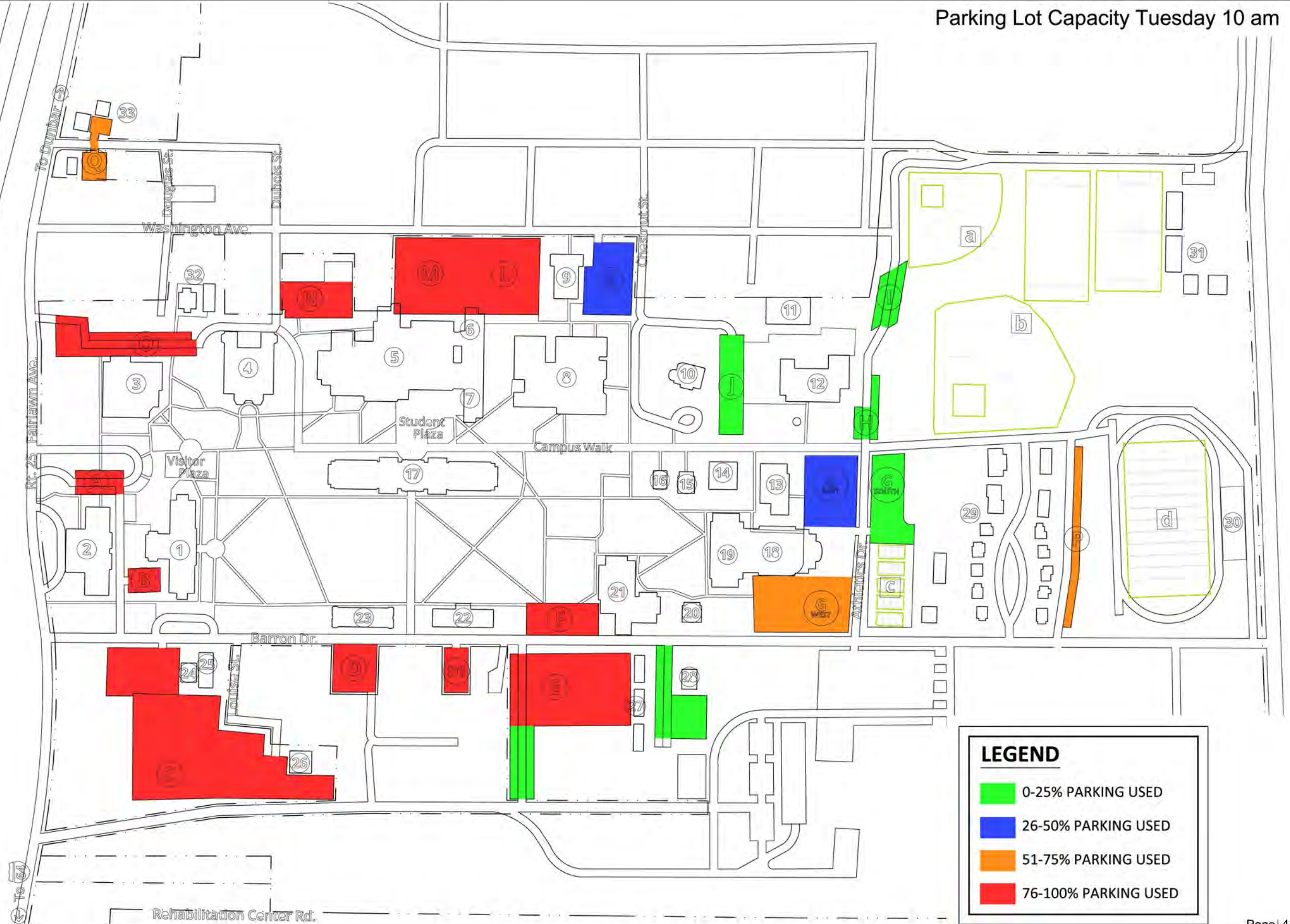
**LEGEND**

- 0-25% PARKING USED
- 26-50% PARKING USED
- 51-75% PARKING USED
- 76-100% PARKING USED



MAJOR SITE IMPROVEMENTS

Parking Lot Capacity Tuesday 10 am



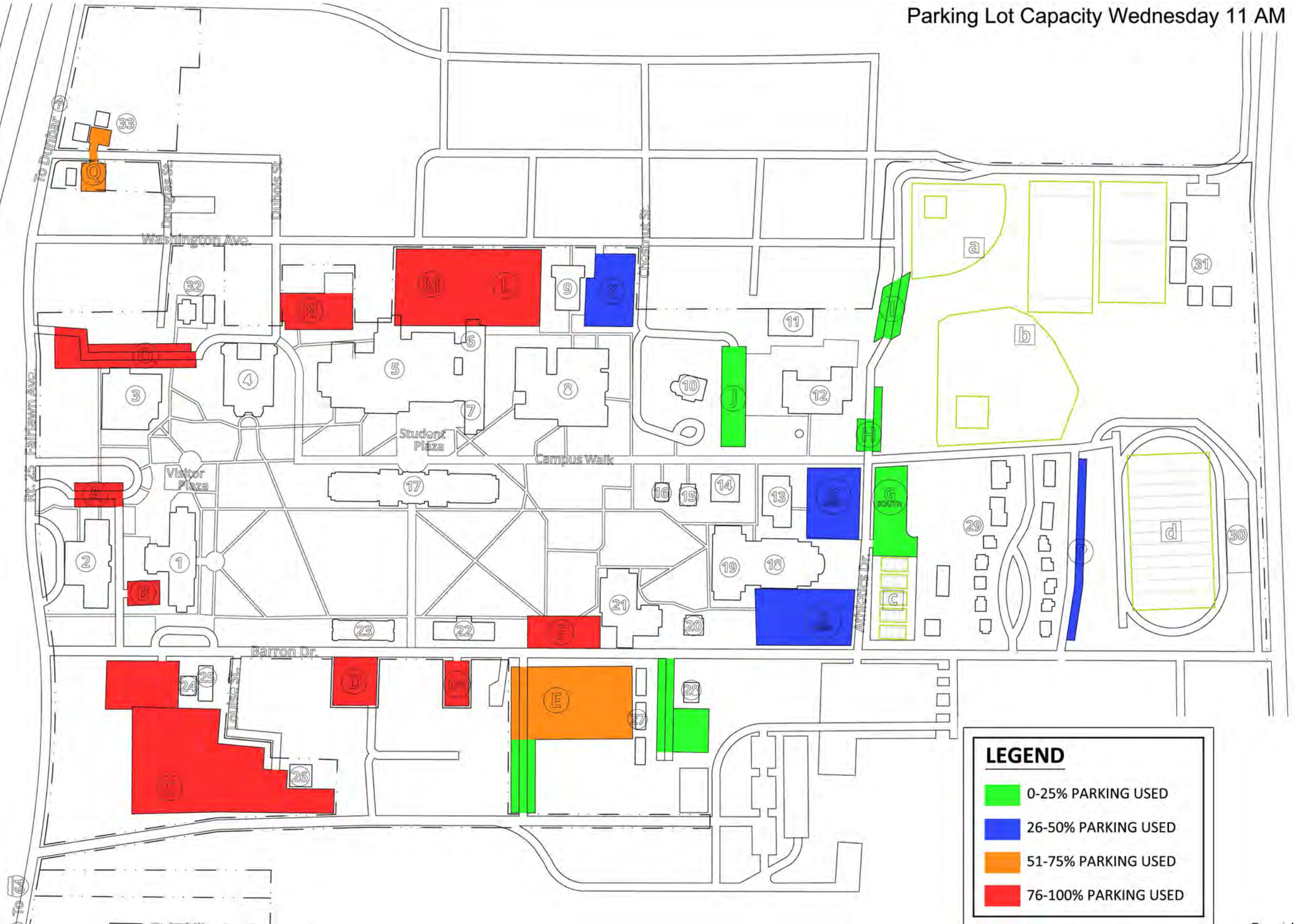
**LEGEND**

- 0-25% PARKING USED
- 26-50% PARKING USED
- 51-75% PARKING USED
- 76-100% PARKING USED



MAJOR SITE IMPROVEMENTS

Parking Lot Capacity Wednesday 11 AM



**LEGEND**

- 0-25% PARKING USED
- 26-50% PARKING USED
- 51-75% PARKING USED
- 76-100% PARKING USED



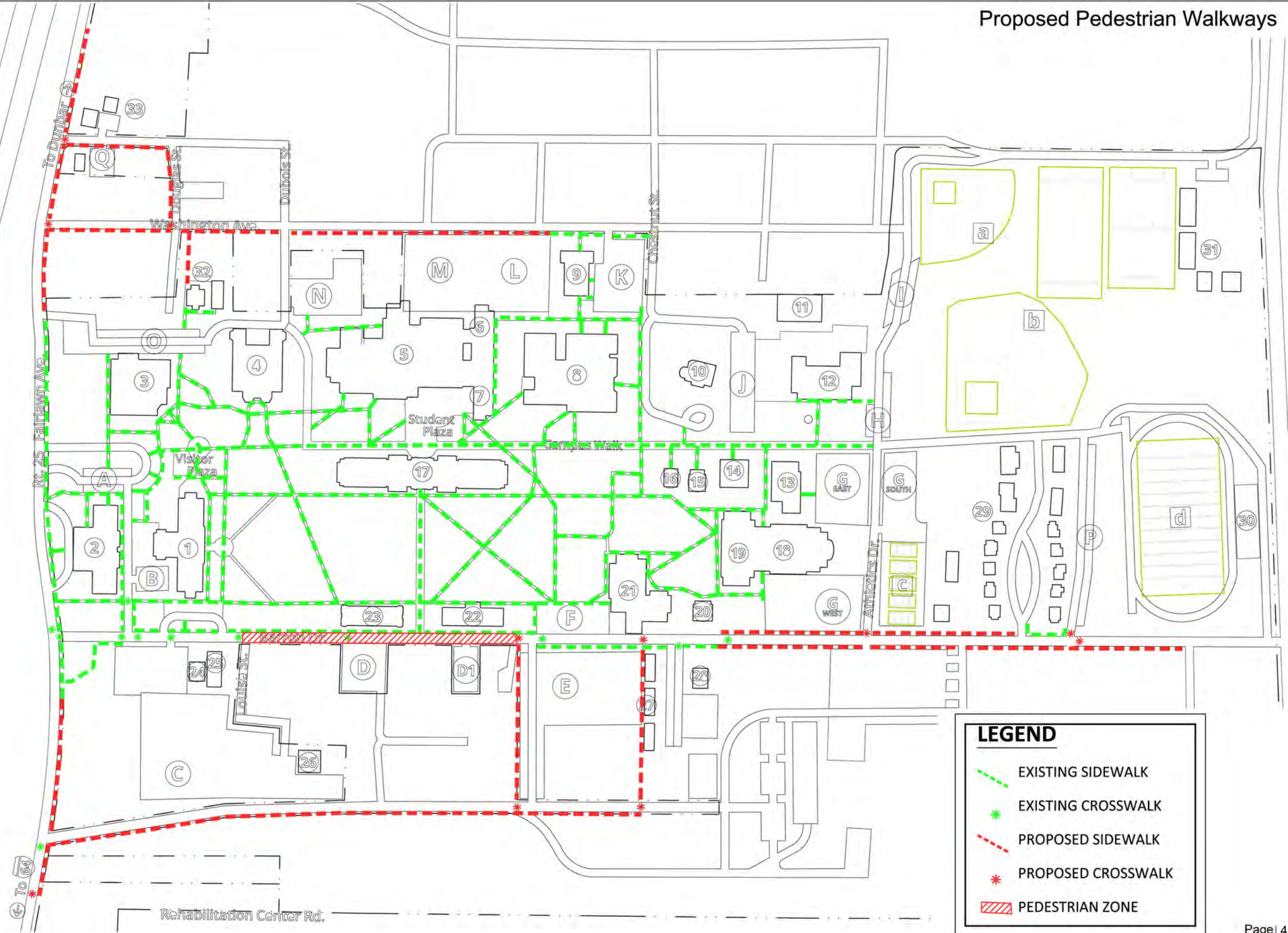
MAJOR SITE IMPROVEMENTS

Existing Pedestrian Walkways








MAJOR SITE IMPROVEMENTS

Proposed Pedestrian Walkways



**LEGEND**

-  EXISTING SIDEWALK
-  EXISTING CROSSWALK
-  PROPOSED SIDEWALK
-  PROPOSED CROSSWALK
-  PEDESTRIAN ZONE





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**INFRASTRUCTURE IMPROVEMENTS**
**GAS SERVICE**

WVSU has access to Mountaineer Gas service, as well as their own natural gas service from private gas wells. Over the past few years, WVSU has provided gas service to many of the buildings across campus. Service will be extended to the Wallace Hall, Hamblin Hall, Drain-Jordan Library, Cole Complex, Wilson University Union, and Sullivan Hall to complete the new private gas service loop. The gas supplied by the private wells provides sufficient gas for a majority of the year, but during times of high demand, Mountaineer Gas supplies any additional natural gas service required.

**WATER SERVICE**

Domestic water service is available throughout the campus from the WVSU water tower. The loop needs to be extended to the Cole Complex and Wallace Hall. West Virginia American Water also supplies water to several buildings on campus, including the athletic facilities, faculty housing, the H.O.U.S.E. Project buildings, the Aerospace Education Lab, ACEOP Building, and the Toney House. WVSU has proactively worked to upgrade the water service line throughout campus, by replacing old lines and adding isolation valves as needed. One large section of water line needs replaced East of Ferrell Hall around the Quad to Dawson Hall. A new West Virginia American Water tap is needed along Baron Drive to serve the Staff and Faculty Housing.

**ELECTRIC AND TELECOMMUNICATIONS DUCTBANK**

An extensive electric and telecommunications ductbank system has been extended throughout the campus. While a majority of the campus has updated power and communications, Jones Hall, Davis Fine Arts Building, and the McNeil Facilities Building need converted to 12kv power to match the rest of the campus. In addition, the duct bank will need to be extended to the athletic facilities. Currently, power at the Cole Complex and Wallace Hall is supplied by Appalachian Power and not from the WVSU ductbank system. These buildings may be included in the power grid of campus, or remain on the alternate power source as a redundant measure in the case of emergency and loss of power throughout the WVSU ductbank system. WVSU is also in need of power source hookups outside of each building for emergency generators.

**SANITARY AND STORM SYSTEMS**

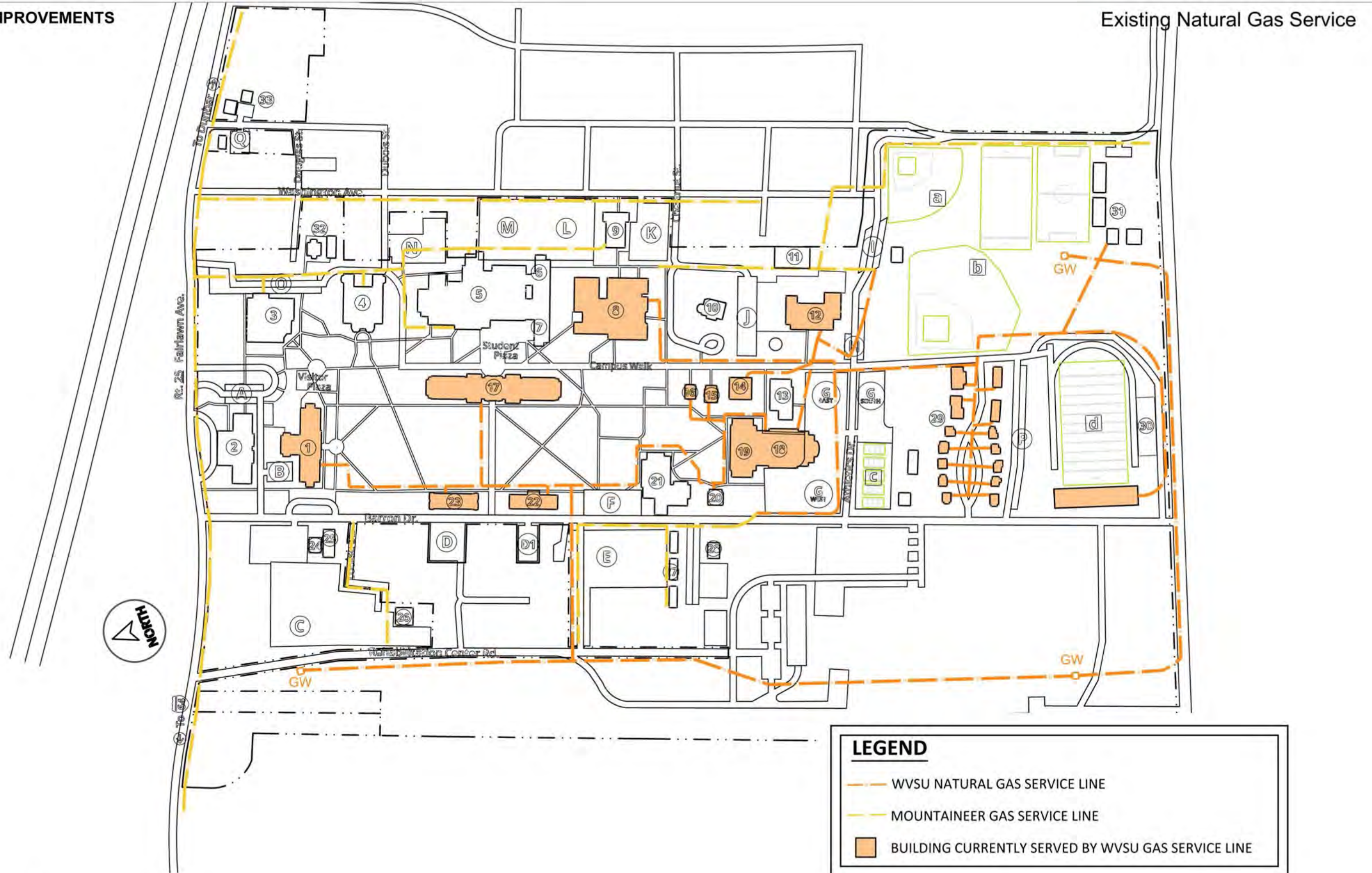
The sanitary system on the WVSU campus is in generally above average condition. The main concern is the replacement of the main sanitary sewer terra cotta line running through the Quad of the campus. The roof drains from the McNeill Facilities Building currently tie into the sanitary system and need to be rerouted to the storm system.

# 6

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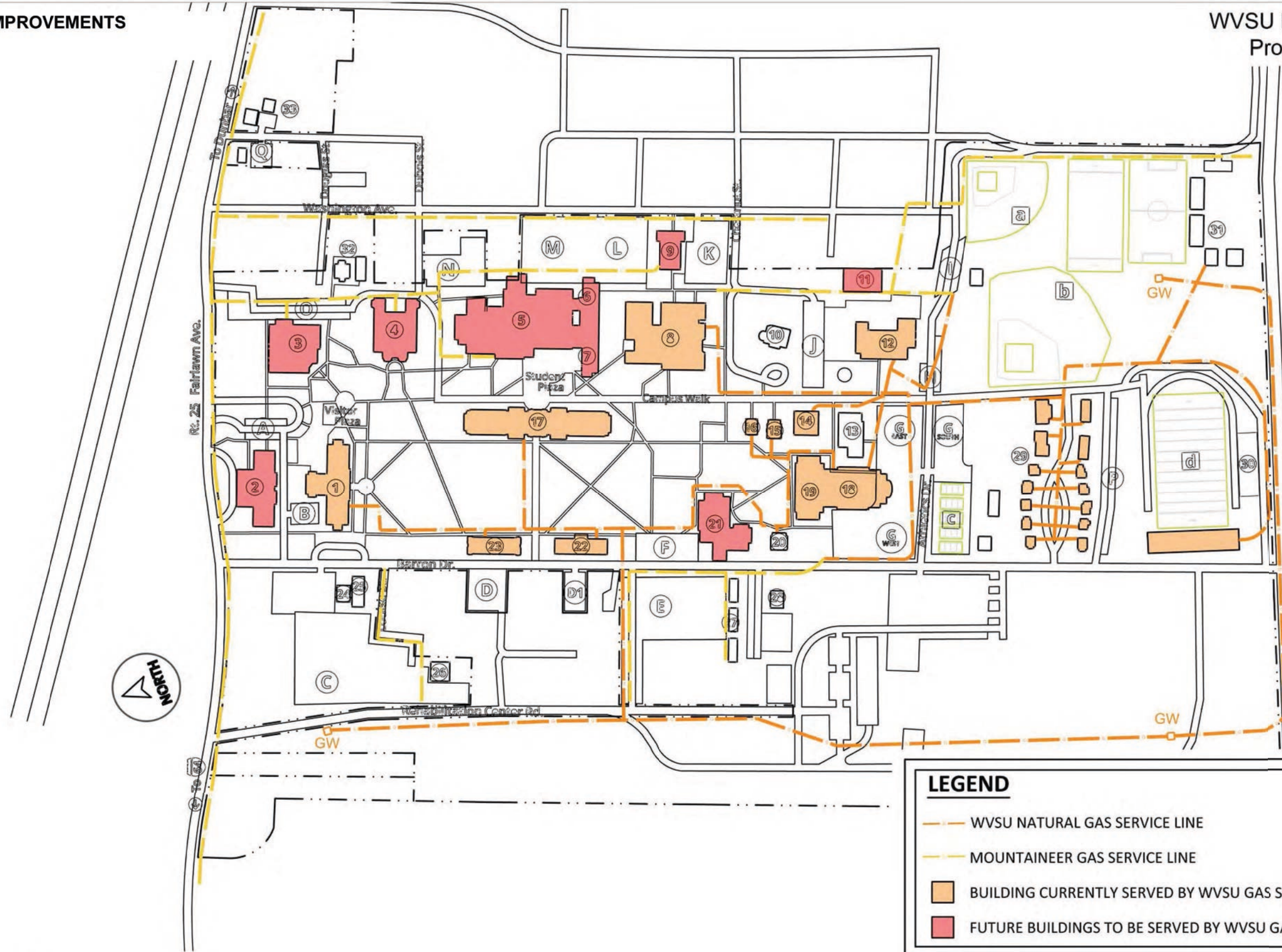
The storm system on campus is expanding and as further development occurs, will need to be expanded accordingly to meet federal, state, and local requirements. The storm system currently consists of underground piping and a rain garden serving the Judge Keith Scholars Hall.

INFRASTRUCTURE IMPROVEMENTS

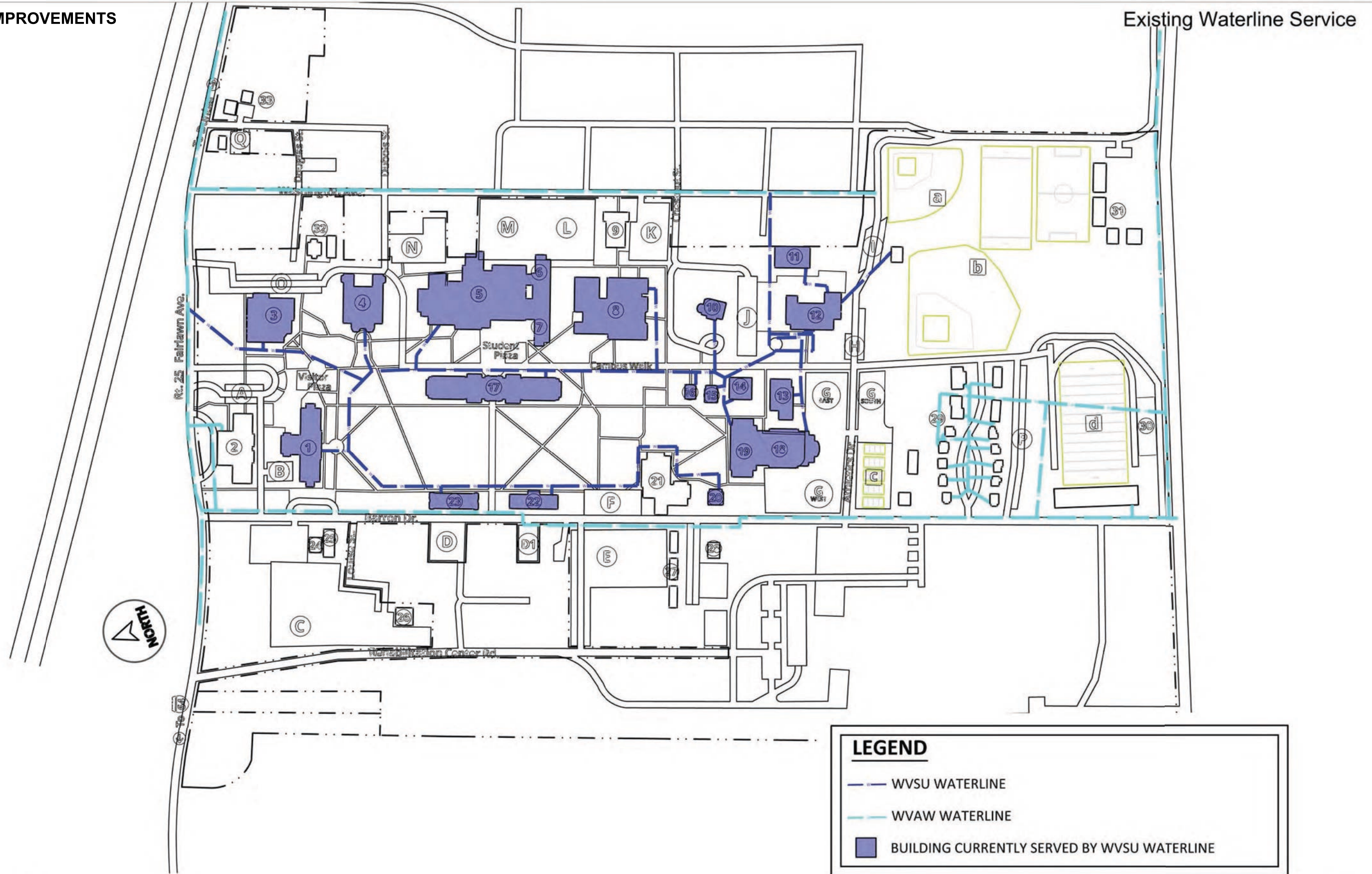


INFRASTRUCTURE IMPROVEMENTS

WVSU Natural Gas Service Proposed Modifications

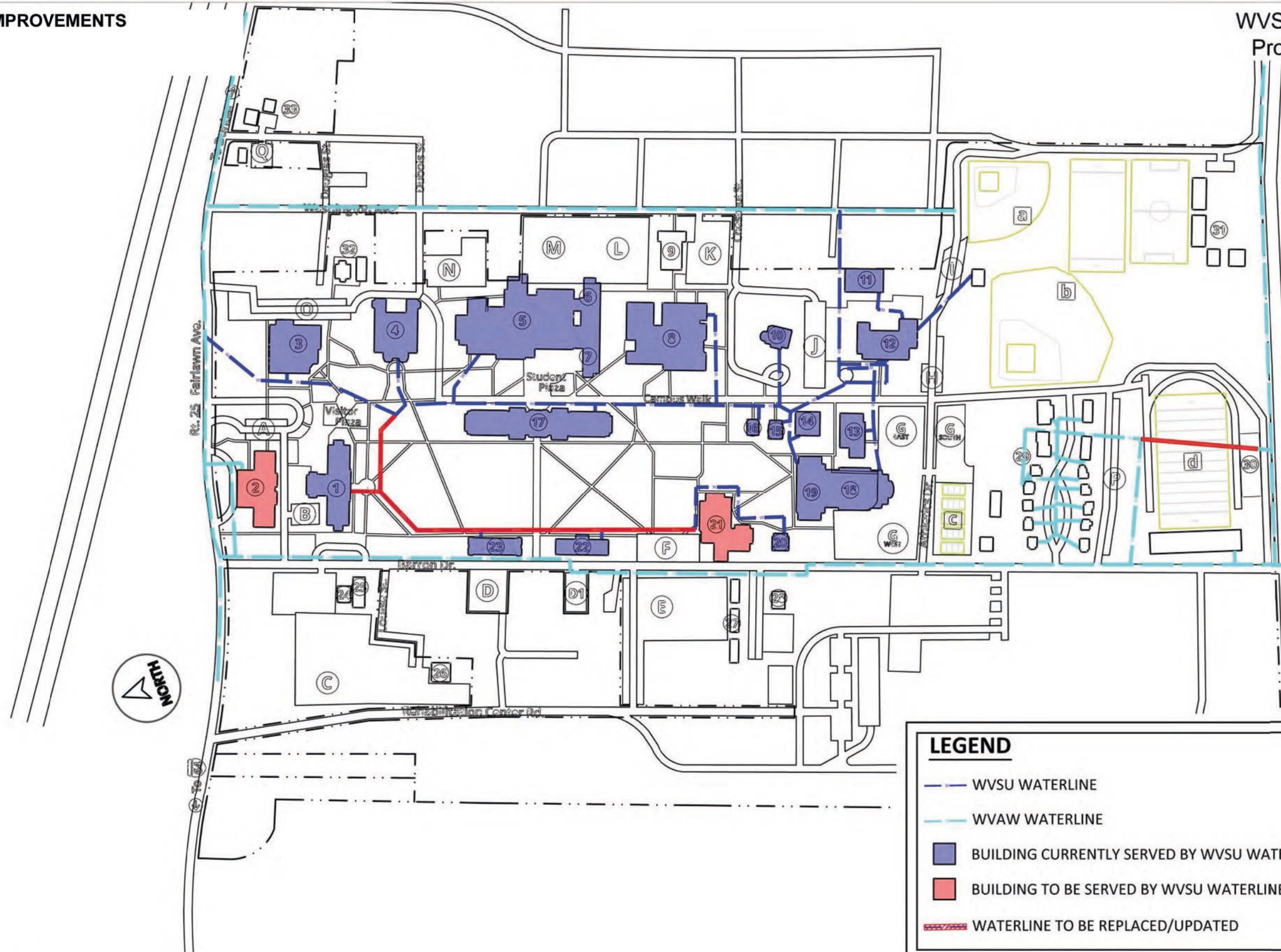


INFRASTRUCTURE IMPROVEMENTS



INFRASTRUCTURE IMPROVEMENTS

WVSU Waterline Service Proposed Modifications



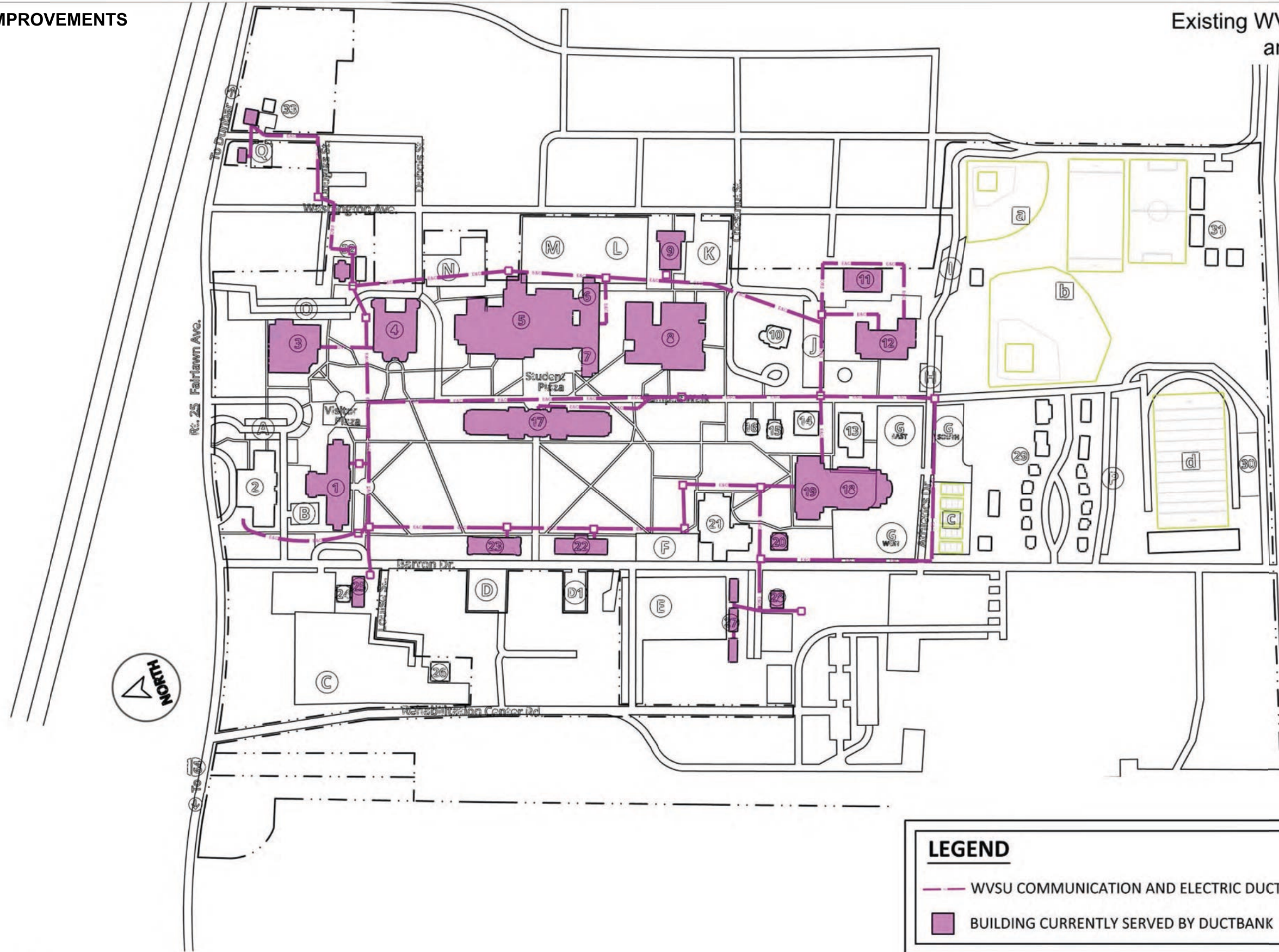
**LEGEND**

- WVSU WATERLINE
- WVAW WATERLINE
- BUILDING CURRENTLY SERVED BY WVSU WATERLINE
- BUILDING TO BE SERVED BY WVSU WATERLINE IN FUTURE
- WATERLINE TO BE REPLACED/UPDATED



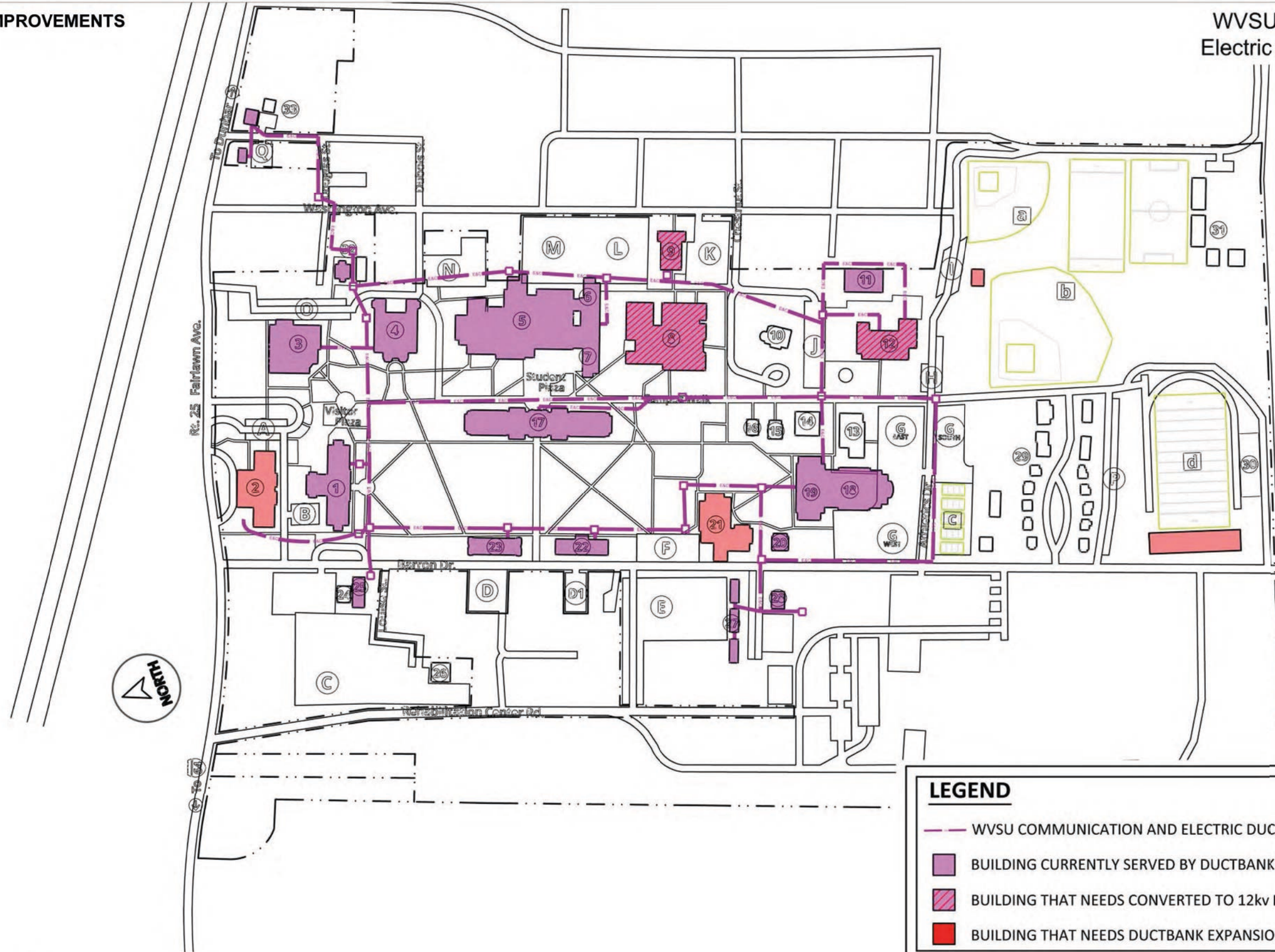
INFRASTRUCTURE IMPROVEMENTS

Existing WVSU Communication and Electric Ductbank







INFRASTRUCTURE IMPROVEMENTS

WVSU Communication and Electric Ductbank Expansion



**LEGEND**

-  WVSU COMMUNICATION AND ELECTRIC DUCTBANK
-  BUILDING CURRENTLY SERVED BY DUCTBANK
-  BUILDING THAT NEEDS CONVERTED TO 12kv POWER
-  BUILDING THAT NEEDS DUCTBANK EXPANSION





INFRASTRUCTURE IMPROVEMENTS

WVSU Sanitary Sewer



**LEGEND**

- SANITARY SEWER LINE
- SANITARY SEWER LINE TO BE REPLACED



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**PROPERTY ACQUISITION****CURRENT WEST VIRGINIA STATE UNIVERSITY PROPERTY**

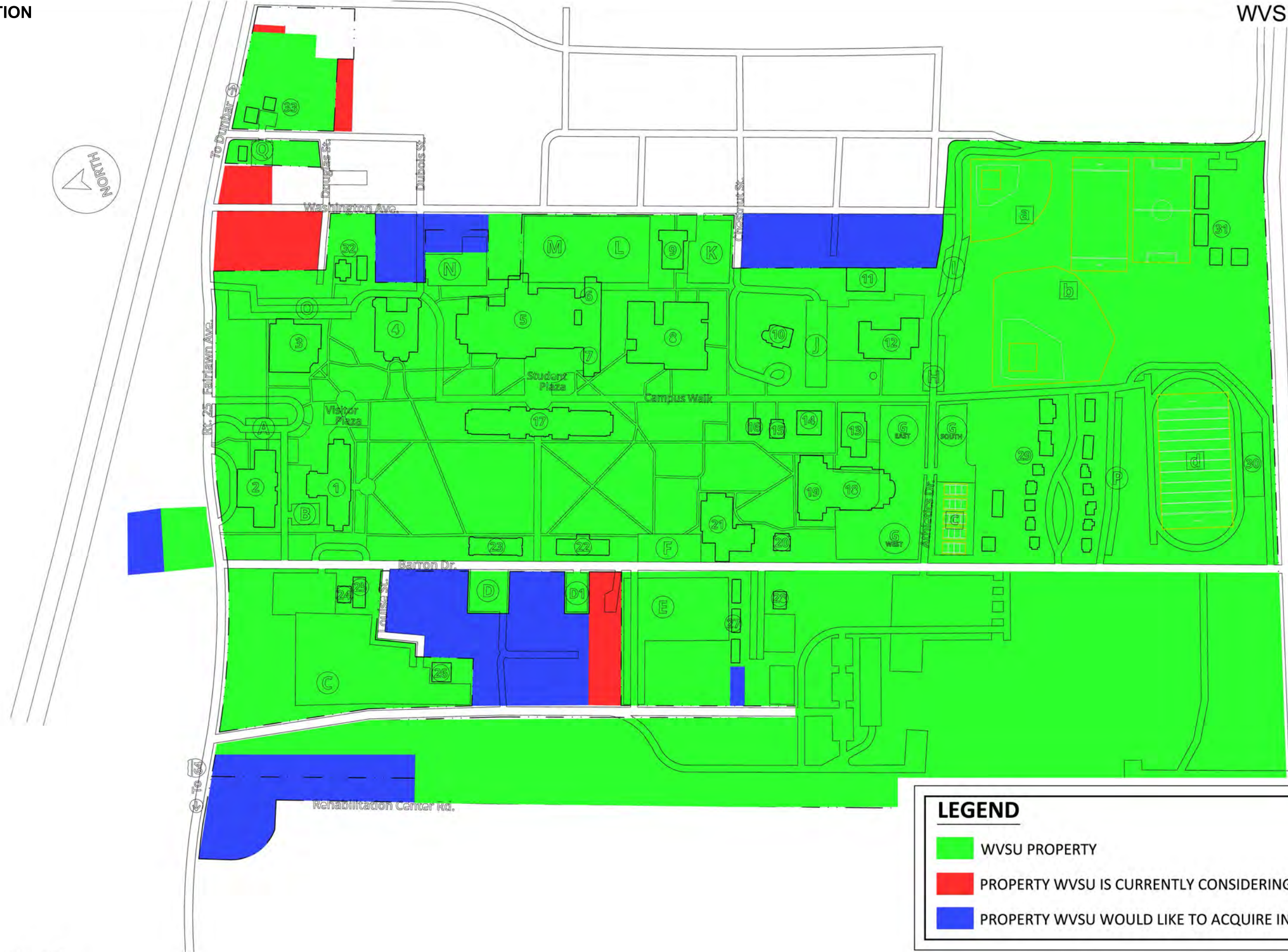
West Virginia State University currently owns a majority of the property bounded by Fairlawn Avenue to the North, Rehab Drive to the West, Kanawha River to the South, and Washington Avenue to the East. This property contains academic buildings, administration, parking and athletic facilities. Several lots are also owned along Fairlawn Avenue across from Academy Drive that are currently being used for Administrative uses. WVSU recently purchased additional lots between Rehab Drive and Baron Drive, and across Fairlawn Avenue between the church and strip mall. These lots are to be used for agricultural uses at this time. In all WVSU owns a little over 130 acres in and around the campus.

**FUTURE WEST VIRGINIA STATE UNIVERSITY PROPERTY**

WVSU plans to purchase additional property to expand campus, create a more cohesive campus, and to provide a safer environment for visitors to campus. Two lots situated West of Rehab Drive are desired to further enhance the Rehab Drive Entry and to create a gateway feature to campus. There are several lots scattered between Baron Drive and Rehab Drive that are targeted for the future expansion of parking and academic facilities. Additionally, there are several lots that WVSU currently does not own on the East side of campus bounded by Washington Avenue, Court Drive, and President Drive are targeted for further expansion of academic facilities and parking. By acquiring about 8 acres of additional property, WVSU would create a contiguous campus south of Fairlawn, from Washington Avenue to the eastern edge of the neighboring Dupont Property.

PROPERTY ACQUISITION

WVSU Property Inventory



**LEGEND**

- WVSU PROPERTY
- PROPERTY WVSU IS CURRENTLY CONSIDERING ACQUIRING
- PROPERTY WVSU WOULD LIKE TO ACQUIRE IN THE FUTURE



## NEW FACILITIES AND BUILDING SITES



Although West Virginia State University's main focus over the next ten years is to work on deferred maintenance and renovation projects, the Master Plan designates several new buildings on campus. These projects are listed for long range planning purposes.

### 1. RESEARCH BUILDING – 46,000 SF

The new research building is located directly East of Hamblin Hall. It will front Rt. 25.

### 2. NATATORIUM/STUDENT ACTIVITY CENTER – 50,000 SF

The new Natatorium will be located across from Walker Convocation Center, where the existing tennis courts are located. This will position the building in an athletic area on campus, close to plenty of parking. The location is close enough to the Student Union that visitors can take advantage of the cafeteria. The construction of the Natatorium will be funded by outside sources.

### 3. NEW DORMITORY – 106,000 SF

A future goal is to add another dormitory similar to the new Judge Keith Scholars Hall. This dormitory will be located on the quad, at the location of Hill Hall.

### 4. AGRICULTURE BUILDINGS

The Agriculture buildings will be moved to the Rehab property, where they will have ample room to expand their program.

### 5. FARMER'S MARKET – 5,000 SF

WVSU would like to build an open air farmer's market on a newly acquired site across Rt. 25. This site is across from the main entrance to the campus.

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**LIST of CAPITAL PROJECTS**

Below is a list of projects included in the Master Plan. The main priority of WVSU over the next ten years will be to focus on deferred maintenance of the existing buildings, including but not limited to: roof replacements, HVAC renovations, brick repointing, and ongoing yearly maintenance projects. In addition to deferred maintenance, WVSU has identified several buildings that need to undergo a full renovation. Renovation of the F. Ray Powers Building will be the first renovation project.

**RENOVATION PROJECTS**

- F. Ray Powers Building
- Davis Fine Arts
- Wallace Hall
- Drain-Jordan Library
- Relocate Maintenance/Physical Facilities to Rehab Property

While construction of new buildings may not occur in the next ten years, WVSU does anticipate new buildings in the next twenty years. The agriculture buildings will be relocated to the newly acquired Rehab Property. A farmer's market is planned across Rt. 25. Outside sources are interested in building a Natatorium on campus across from Walker Convocation Center. A new research building is needed across from Hamblin hall. With the success of Judge Keith Scholars Hall dormitory, another dormitory will be planned across the quad at the location of Hill Hall.

**NEW CONSTRUCTION PROJECTS**

- Natatorium
- Research Building
- Dormitory
- Agriculture Buildings
- Farmer's Market

**SITE ENHANCEMENTS**

- New front lawn along Fairlawn Avenue
- New entry gates at Avenue A, Barron Drive, and Washington Avenue.
- Improved Avenue A for west access to site
- Improved pedestrian circulation and additional paved plazas
- New pedestrian gateways at either end of Barron Drive and Campus Walk
- Conversion of most of Barron Drive to pedestrian circulation
- Better defined and increased Parking areas
- New multipurpose athletic field
- New basketball courts
- New tennis courts

#### INFRASTRUCTURE IMPROVEMENTS

- New access drive connecting Rehab Drive to Court Drive (750 LF)
- New Sidewalk (9,000 LF, 6' average width)
- Replacement of Water Mains and Extending Water Service
- Duct Bank Expansion
- Building Conversions to 12kv Power
- Sanitary Sewer Line Replacement
- Gas Line Extension
- Connect Maintenance Roof Drains to Storm System
- Recommend Landscaping Maintenance and Upgrades
- Entry Feature
- Campus Wayfinding Signage

## TIMING, PHASING and PROJECTED COSTS

In order for the Master Plan to be appropriately implemented and funded over time, timing estimates with associated costs were identified. These estimates provide a sequence of construction, allowing capital projects to be built to accommodate the ongoing needs of West Virginia State University. The planned projects have been identified starting with immediate needs and include proposed construction through 2024. The estimated scheduling for capital projects assume that funding strategies will begin in 2016. The estimated scheduling also assumes that the Master Plan will be implemented in multiple steps to allow for ongoing operations and reduced interruption of activities on campus. The project sequencing reflects the findings of the enrollment and space projections. Identified below are the list of capital projects in order of priority and their associated order of magnitude costs.

<b>Phase 1: 2017</b>	<b>Cost Estimate</b>
1. Renovation of F. Ray Powers Building	\$4,500,000
2. Site Improvements to implement Master Plan	\$555,000
<b>Phase 2: 2018-2019</b>	
3. Deferred Maintenance Projects	\$6,666,000
4. Site Improvements to implement Master Plan	\$700,000
<b>Phase 3: 2020-2022</b>	
1. Renovation of Davis Fine Arts Building	\$3,450,000
2. Deferred Maintenance Projects	\$6,457,000
3. Site Improvements to implement Master Plan	\$700,000
<b>Phase 4: 2023-2026</b>	
1. Renovation of Wallace Hall	\$5,160,000
2. Deferred Maintenance Projects	\$1,995,000
3. Site Improvements to implement Master Plan	\$700,000
<b>TOTAL INVESTMENT</b>	<b>\$30,883,000</b>

TIMING, PHASING, AND PROJECTED COSTS

Proposed Projects	Category 1			Category 2				Category 3					Category 4						
	Educational and General	Auxiliary	Transitional	Repair/Maintenance	Modernization	Alteration	New Construction	Reliability	Asset Preservation	Program Improvement	Economic Operations	Life Safety/Code	New Construction	Building Envelope	Building Systems	Life/Safety/Code	Space Renewal	Utility Infrastructure	Grounds Infrastructure
Renovation of F. Ray Powers Building	●					●				●				●	●	●	●		
Site Improvements to Implement Master Plan		●		●	●			●										●	●
Deferred Maintenance Projects	●	●		●	●			●	●		●			●	●	●			
Renovation of Davis Fine Arts Building	●				●				●			●			●		●		
Renovation of Wallace Hall	●				●	●			●	●				●	●	●			

- Category 1: Physical Plant Needs Segregated by the Following Asset Groups
- Category 2: Physical Plant Package Needs Segregated by the Following Project Categories
- Category 3: Physical Plant Package Investment Needs Segregated by the Following Categories
- Category 4: Physical Plant Package Needs Segregated by the Following Categories





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**CAMPUS INTERACTION and SUPPORT**

Several campus forums were held at West Virginia State University to aide the planning for this Master Plan. Below are the meeting minutes from our forums.

We started with a student forum, which was held at the new residence hall, Judge Keith Scholars Hall. The students that attended were helpful in establishing the buildings on campus that they feel need to be renovated, and the buildings on campus they like. But their favorite part of campus isn't a building: it's the trees, flat landscape, and outdoor gathering spaces that they believe sets WVSU apart from other universities in West Virginia.

Our faculty forum was well attended and was held at the Alumni Center. Like the students, the green, walkable campus was among the faculty's favorite parts of campus. A better entrance to campus was brought up several times, with suggestions for better ways to welcome visitors and revised wayfinding signage to help students and visitors find their way. Several suggestions for new signage opportunities on Wallace Hall and a digital message board were heard.

We also met with WVSU Alumni. They were proud of WVSU, and the direction it is headed. To them, the best features on campus are the iconic water tower, the continuity of building architecture, and the lawn and landscape. They enjoy the new buildings on campus such as Monroe Athletic Complex, Scholar's Hall, and the renovated Student Union. Consistent with the faculty forum feedback, they also believe a better "main" entrance would be helpful, as well as a continuation of razing dilapidated buildings that are close to campus.

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## IMPACT on LOCAL COMMUNITY

With the implementation of the Master Plan, WVSU and the town of Institute will derive positive benefits.

The western side of campus adjacent to the Rehab property is located among multiple single-family housing units. This mixture of properties inhibits not only the aesthetic of the campus but also the functionality for residential occupants. With the purchase of these homes, the owners will benefit, as the location and market will make it difficult to sell these properties. As a result, a more cohesive entrance and campus atmosphere will be created. Once entering campus, a visitor will know they have arrived on campus, and will not be distracted or confused by residential homes located in such a close vicinity to campus.

The ongoing renovation and demolition that will occur on the Rehab property will greatly influence the area, as it will beautify a once vacant, dilapidated property.