Existing Parking

The state provides free parking for employees, legislators, and visitors at the two campuses. Parking demand fluctuates significantly with the start and end of the legislative session. Historically, the state has prioritized parking for legislators (and visitors with legislative business) during session. The Capitol Police has authority to impose temporary restrictions to that effect and reserves spaces in West Campus lots on an ad hoc basis.

Parking was evaluated in the 2001 master plan. It noted crowded lots and state workers resorting to street parking. It was critical of the sprawling surface lots that continue to dominate much of the state footprint. The 2001 master plan made numerous parking recommendations, including:

- Convert some preferred spaces to short-term parking
- Construct an East Campus parking garage
- Build remote parking lots for peak days with shuttle service to both campuses
- Reduce demand for parking by increasing support for carpooling/ van pooling
- Improve paving, curbing, and landscaping in surface lots
- Expand the Sewall Street parking garage

Since 2001, the major projects recommended – a new garage and an expanded one – were not built. Parking demand has not yet justified their construction. Particularly with increased teleworking, parking supply is much less of a concern now than in 2001.

Standalone parking studies were completed of the East and West Campuses in 2016 and 2017, respectively. The 2016 East Campus study was performed amid a large-scale renovation project for vacant buildings on the East Campus. These renovations allowed more of the state workforce to be based at the East Campus. The 2016 study concluded that existing parking was adequate to support the increased demand through at least September 2017. After that point, it recommended an additional 268-335 spaces be added. Noting deteriorated pavement surfaces in East Campus lots, the study also recommended a subsurface investigation to identify causes and options for repair.

The 2017 study investigated parking capacity on the West Campus and efficiency of the parking network. The study called out several lots needing moderate repairs and maintenance. It also called for improving the garage's layout by widening spaces and changing the angle from 60° to 45°. The plan also called for the newly acquired lot at the former Bangor Savings Bank to be restriped for 20 spaces. Notably, the study did not see a shortage of parking or recommend additional capacity.

Parking Capacity

Parking is ample, mostly comprised of surface lots ringing the campuses. All parking is free, and only a small share of spaces are restricted. As shown in Figure 26, parking on the West Campus can be divided into 25 areas with a total capacity of 1,992 spaces. This is a larger figure than listed in the 2017 parking study, which did not include parking areas at the DOT office. This includes the Sewall Street Garage.

FIGURE 32. EAST CAMPUS PARKING LOT CAPACITIES

Parking on the East Campus consists of several surface lots scattered throughout the campus with a total of 1,359 spots. Around 84% of the East Campus parking is unrestricted, mostly used by employees. The 2016 study found that parking lots closest to the campus core and at the Riverview Psychiatric Recovery Center approached full occupancy at peak times, while other lots never saw utilization above 50%. East Campus parking areas are shown in Figure 27.

Electric Vehicles

Electric Vehicle (EV) charging is a relatively recent addition to the state campuses. On the West Campus, the State Garage and DOT have a total of six EV charging stations. The Ray Building on the East Campus has four EV charging stations. Although not directly on either campus, the Bureau of Motor Vehicles building at 101 Hospital Street has an additional two EV chargers.

All EV chargers on the state campuses are Level 2 chargers, with a cost of $1/hour (BMV building) or $0.79/hour (state campuses). These have a 6.6 kW charging rate, powering 12-30 miles per hour (depending on the vehicle). These are available to the public and complement other chargers available in Augusta at UMA, the city parking structure on Dickman St, and private businesses.

Reducing transportation emissions is central to the Maine Climate Action Plan, with support for EV adoption a prominent part of the recommendations. The Climate Action Plan estimates that Maine

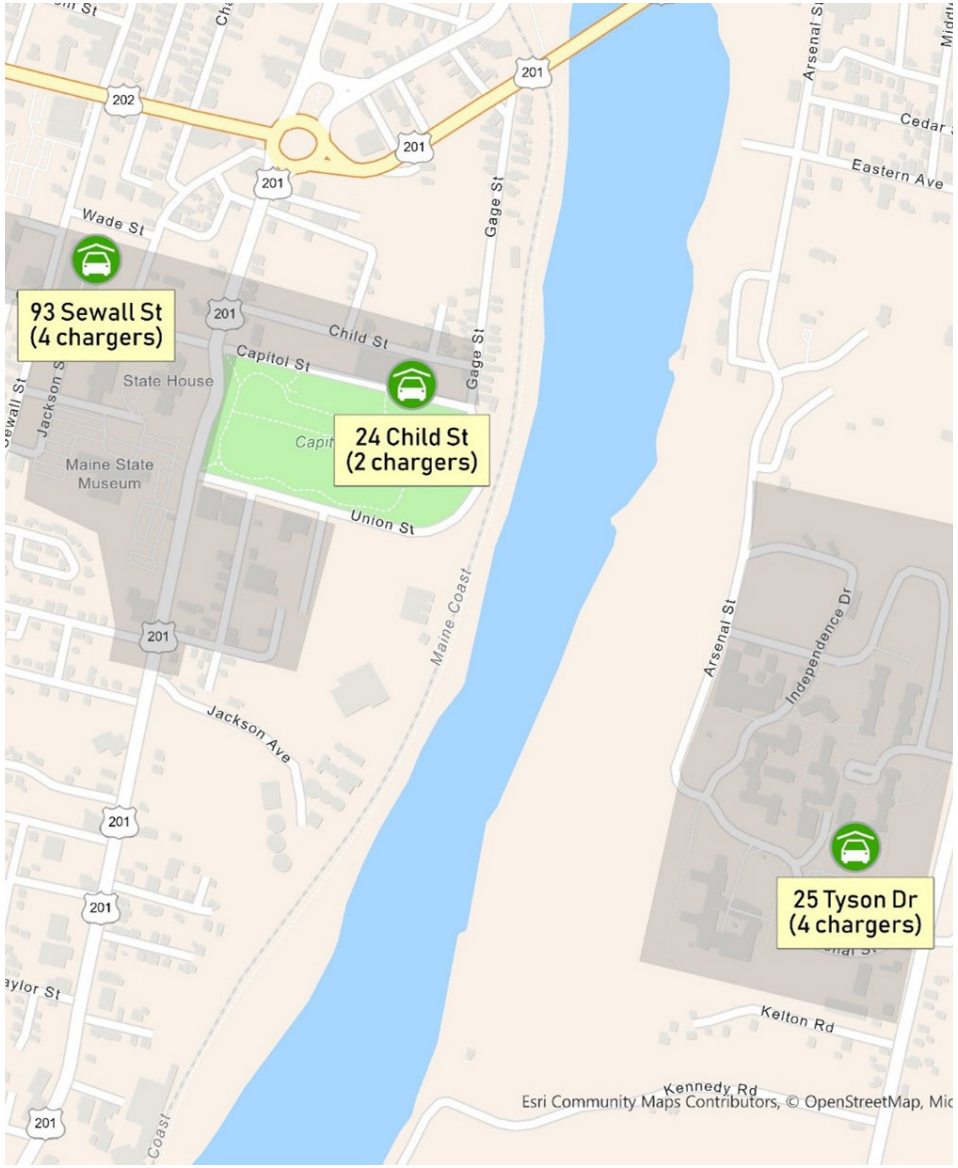
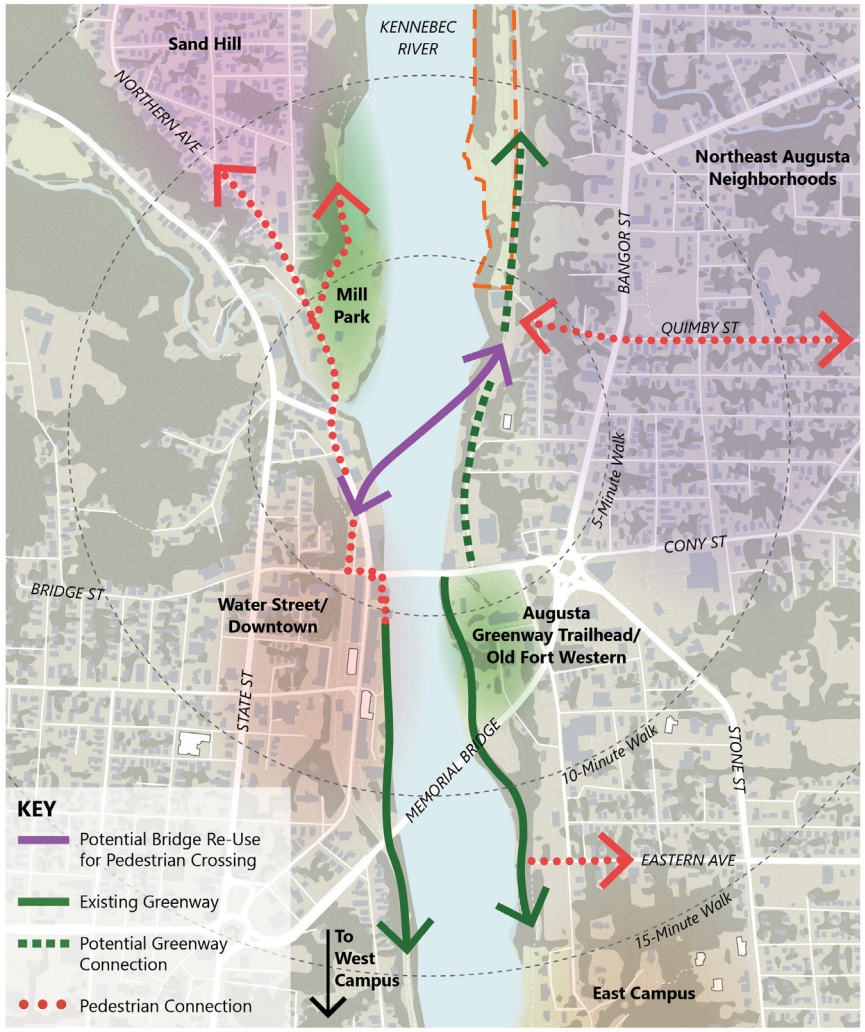


Figure 33. Electric Vehicle Chargers



Augusta Master Plan — Northeast Connector
Augusta, Maine | March 2022

Figure 34. ELECTRIC VEHICLE CHARGERS

will need 219,000 light-duty EVs on the road by 2030 to meet targets, an almost 40-fold increase from the 5,577 electric vehicles registered in Maine as of December 2021. Even progress far short of that goal will demand additional EV charging on the state campuses in coming years.

The state should prioritize keeping EV charging capacity ahead of demand. Visitors and staff should be confident that they can always find charging on campus. DAFS/BGS should monitor EV usage through its payment platform. When 75% or more of chargers are simultaneously occupied on a regular basis, additional capacity should be added. To manage electric load, DAFS/BGS may consider using splitters or smart circuit breakers to add capacity. These devices can control charging to multiple vehicles, for example charging vehicles sequentially to spread the load throughout the day. A map of current EV charging spaces on the state campuses is shown in Figure 28.

Public Transportation

Public transportation in Augusta is provided by the Kennebec Valley Community Action Program (KVCAP). There are six fixed-route bus lines in Augusta and one intercity route to Waterville. The routes all meet at a downtown hub (the Depot at Winthrop and Water Streets) as shown in Figure 29.

The 2001 master plan noted that bus service for commuters in Augusta ranges from fair to poor. Despite system improvements, that characterization remains true today. Each route sees only 3-7 runs

per day, with one-hour headways. Service times are limited and mismatched with typical work schedules, with most routes operating from 8:30 am – 3:30 pm.

Although services are limited, strong demand for public transit exists. Pre-pandemic, the Kennebec Explorer buses were serving over 100,000 passengers per year. Commuters are very likely an untapped source of new ridership.

Both campuses are served by at least one bus route. The structure of routes is not ideal for commuters, most of whom would need to make a transfer. The West Campus is directly served by only the Gardiner line, which makes only three daily runs. It could be better served by one of the Augusta loop routes. On the East Campus, riders must catch the bus on Hospital Street. Buses could conceivably be routed in a loop through the East Campus to pick up commuters closer to their workplaces. As it stands, very few employees are likely commuting by public transit.

Among alternative modes, public transit should be considered a top growth opportunity. KVCAP already partners with other major employers in Augusta on subsidized fare programs and tailored bus services. If the State sponsors improved bus service and offers appropriate incentives, public transit would become a more popular commuting mode.

KVCAP is currently planning an overhaul of bus hours, frequency, and routes. It is an opportune time for the State to partner with KVCAP and have a voice in shaping the new system. At a minimum, the State should consider:

- Offering subsidized or free transit passes to employees
- Subsidizing additional bus runs to state campuses to align with typical work hours
- Subsidizing connections to in-town "loop" service at the West Campus
- Subsidizing the extension of at least one bus route into the East Campus (not just stopping at Hospital Street)
- Establishing a "Guaranteed Ride Home" program for employees who commute by transit

Carpooling

Most of the state workforce commutes from beyond Augusta, Hallowell, or Manchester. People with longer commutes are ideal candidates for carpooling, but often need help with matching rides or finding meeting points.

Carpooling potential was investigated by reviewing data from the Bureau of Human Resources. Data on employee home zip codes was used to compile a map of employee origins (shown in Figure 26) and determine their most direct route to the state campuses.

Figure 30 shows commuting routes at the regional level. The thickness of each road indicates the volume of Augusta campus commuters expected to use it. Significant volumes of commuters come from all directions, but some directions have more park-and-ride options than others. Commuters from Cumberland County have a multitude of park and rides along their path to work and can likely be easily matched for carpooling. Many towns 20-40 miles from Augusta also have park-

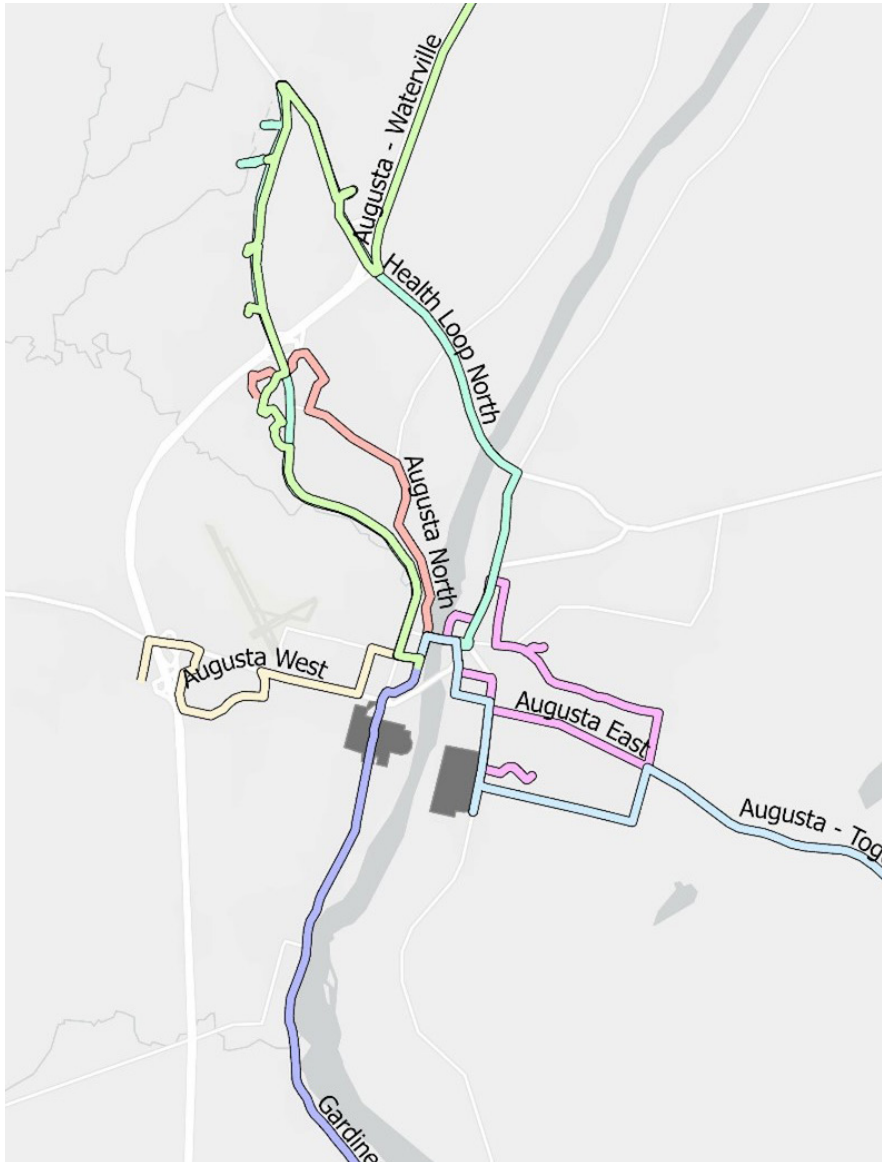


Figure 35. TRANSIT SYSTEM MAP

and-ride lots located in town. If every employee commutes daily, this revealed the number of commuters using each road segment. This was overlaid with park and ride locations to determine potential muster points for carpools.

In contrast, some of the areas closer to Augusta see high commuter volume but do not have park-and-ride facilities. Figure 31 highlights some of these areas, which include most of Waldo County, eastern Kennebec County, and even some larger cities like Waterville.

The State may consider sponsoring additional park and ride locations in areas with a high density of state employees but limited carpool capacity. Both towns without park and rides and towns where they approach capacity should be considered.

Carpool matching, where a service matches commuters on similar schedules whose routes overlap, can be readily outsourced to Go Maine. The State has had varying levels of participation with the program over the years. Each campus currently has a small number of preferred parking spaces reserved for Go MAINE. The East Campus has 20 Go MAINE parking spaces scattered across various lots, which were at full capacity most of the day when the 2016 Parking Study was conducted.

With most of the state's workforce commuting from outside the reach of transit (or bicycle/walking distance), carpooling will need to be a core part of the state's strategy. Incentives for carpooling should be generous – preferred carpool parking, drawings for prizes, and an emergency ride home program are all worth consideration.

Pedestrian Circulation

The quality of pedestrian and bicycle infrastructure ranges from good to poor depending upon which campus and block you are on.

Figure 36 illustrates the existing pedestrian network on the West Campus. As shown, pedestrians are accommodated on most roadways in the West Campus, however the sidewalks along Capitol Street and State Street are adjacent to high volume roadways with little to no separation from vehicles. The pedestrian network has multiple places, including along important corridors like Sewall Street and Capitol Street, where sidewalks are only provided on one side. Pedestrian connections within parking lots have improved significantly on the West Campus as shown in Figure 32.

Although earlier studies supported the provision of a raised island to provide pedestrian refuge for the high-volume crossing between the State Office Building and the parking garage, it has not been constructed. There is only one sign warning vehicles to yield to pedestrians within crosswalk placed on the brick pavers in the center of Capitol Street accompanied by a flashing light.

On the East Campus, there is limited pedestrian accommodation. Most significantly, most roads do not contain any sidewalks. Hospital Street does have sidewalks on both sides; however, Tyson Drive provides the primary connections into the East Campus from Hospital Street, and there are no sidewalks along this roadway. A pedestrian connection does exist diagonally into the campus to connect to the Ray Building and a good connection is present between the Ray and Deering

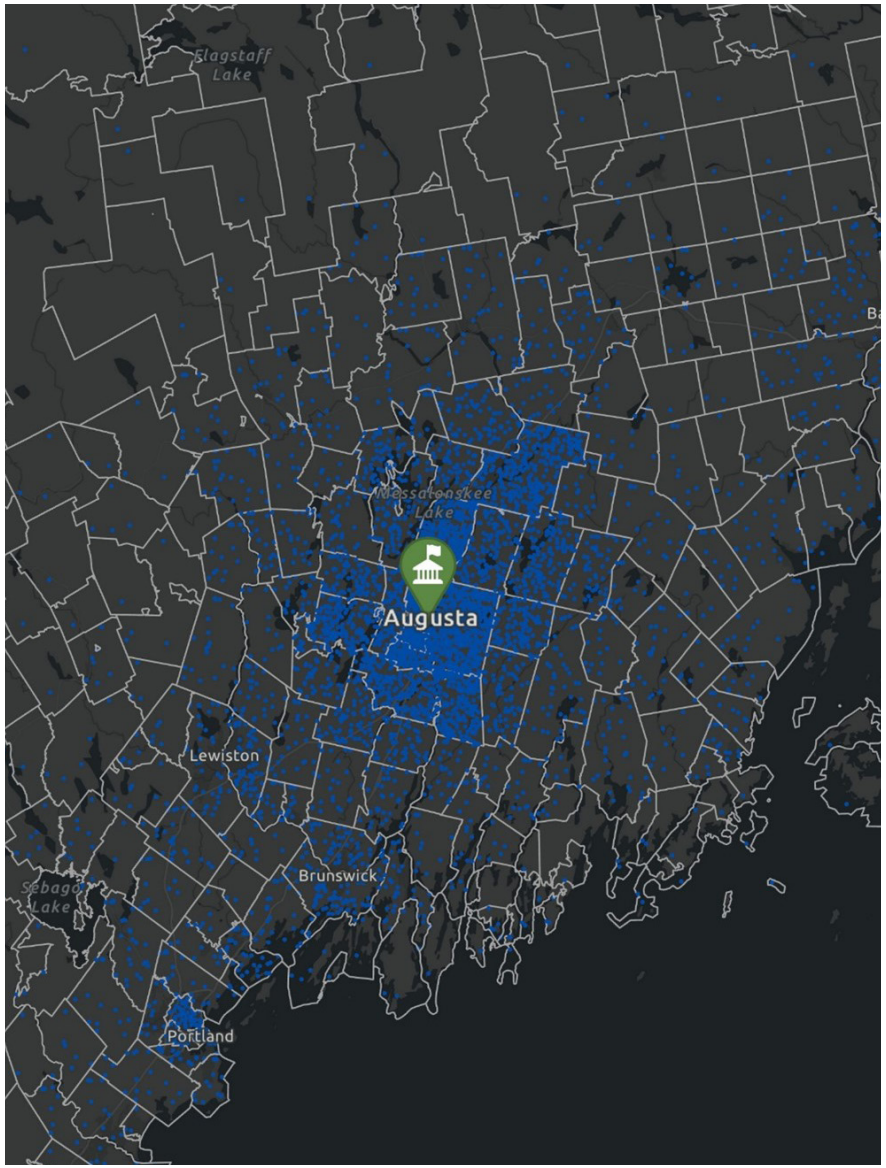


Figure 36. EMPLOYEE HOME LOCATIONS

buildings. Additionally, the grade on the entire campus is constantly changing with many steps and minimal flat walks. This is a concern and challenge for the disabled.

In June 2018, as a part of a Maine DOT signal project, pedestrians and bicycles were counted from 6:00 AM to 6:00 PM at Augusta's signalized intersections. Pedestrian traffic was highest on the West Campus, with over 100 pedestrian crossings at each intersection. This was true even at intersections that are not between parking lots and major buildings, demonstrating a certain base volume of pedestrian travel. Pedestrian traffic is much lower on the East Campus, with fewer walkable destinations. Other than a short stretch of Capitol St, there are no bicycle lanes around the campuses. As stated above, several roadways do not have adequate bike lanes.

Pedestrian Safety

The crash history from 2017-2021 (inclusive) at intersections surrounding the two campuses was reviewed. Maine DOT has not identified any high-crash locations bordering the campuses. Likewise, the five-year crash summary did not find significant crash volume in this area. The intersections that experienced the highest number of crashes were Capitol Street and State Street, and Capitol Street and Union Street/ Garage Street. There were no fatal crashes or crashes involving bicycles or pedestrians over the five-year span.

The highest crash volumes occurred at Capitol/State and Capitol/ Gage, with 4 crashes per year at each. The majority of crashes at the nine intersections reviewed were related to intersection conflicts. None caused deaths, and none involved a pedestrian or bicyclist. Overall, this demonstrates a low frequency and severity of crashes around the state campuses. A table summarizing crash history for individual intersections can be found in the appendix.

Bicycle Network

Bicyclists are not as well accommodated as pedestrians on the West Campus. There are shoulders marked as bicycle lanes provided along Capitol Street between State Street and Sewall Street, however, these bicycle lanes do not continue west of Sewall Street. State Street does not include any shoulders so cyclists must ride in traffic lanes.

The Kennebec River Trail is located along the west bank of the Kennebec River. It lies below a small bluff from Capitol Park and the rest of the West Campus. It can be accessed via a short connection trail at the YMCA. It is a lengthy trail, extending all the way to Gardiner with few at-grade crossings. To the north, it extends downtown. Pedestrians and cyclists heading downtown can use the trail to avoid high-traffic crossings, bypassing the Memorial Circle and passing beneath Western Ave. Unfortunately, the trail connections to the West Campus are not ideal, with only one out-of-the-way access point. A direct connection from Capitol Street would make the trail more accessible and increase the appeal of walking or bicycling from the West Campus to other points in Augusta.

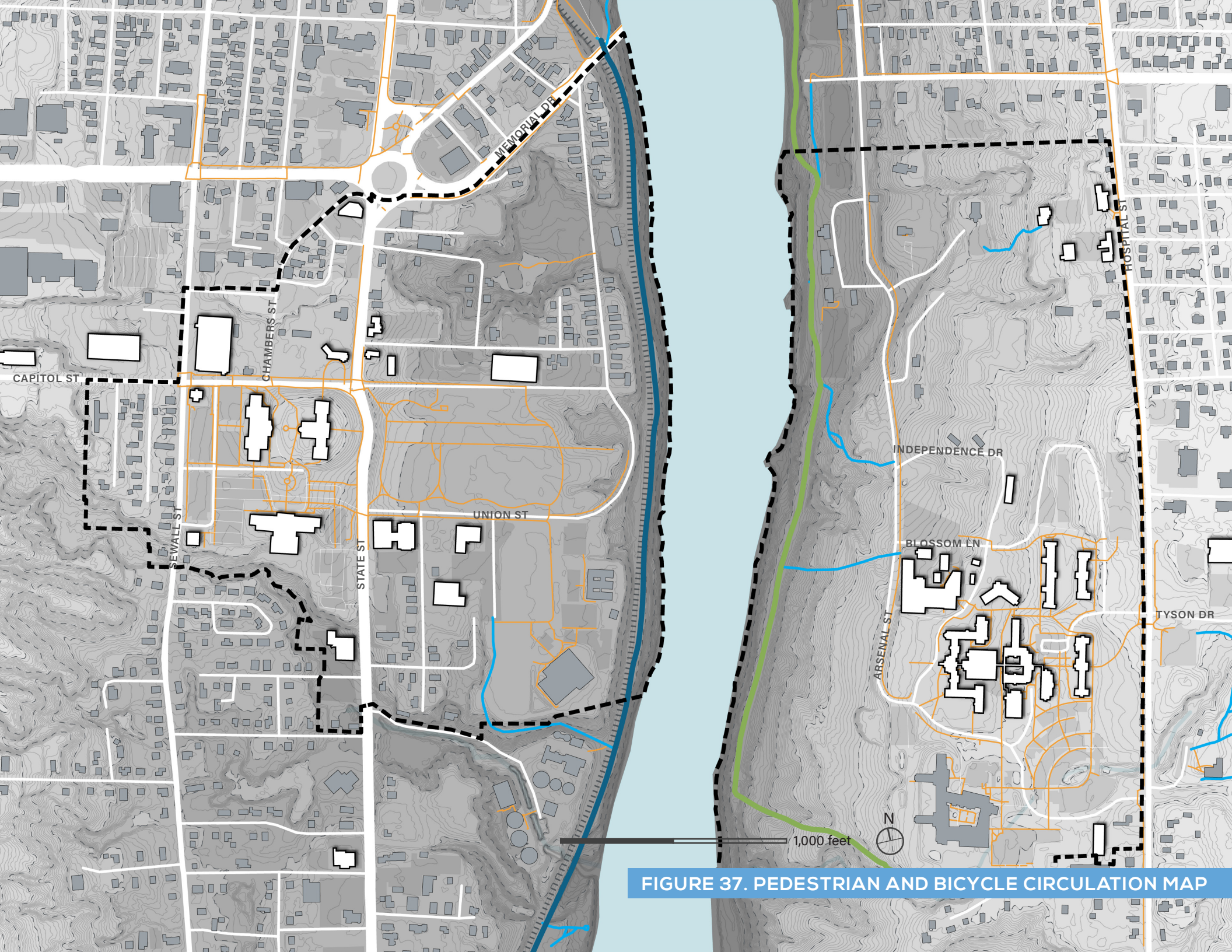


FIGURE 37. PEDESTRIAN AND BICYCLE CIRCULATION MAP

FIGURE 38. FACILITIES ENERGY USE CONDITIONS MAP

ENERGY, SUSTAINABILITY AND RESILIENCY

Data Collection and Methodology

The State of Maine Augusta facilities encompasses a wide range of building characteristics, and use types. Buildings are organized in three geographic groupings: West Campus, East Campus, and off-campus, which includes buildings in a much larger super-region. An evaluation of buildings occurred through data analysis, user group interviews, and on-site survey. The general condition of buildings currently in use is from fair to good, while buildings that have low to no occupancy have a much wider range of conditions.

Climate Action Plan and Energy Goals

The Bureau of General Services (BGS) has been collaborating with the Governor's Office of Policy Innovation and Future (GOPIF) to bring to life Maine's Climate Action Plan: Maine Won't Wait.

DAFS/BGS currently is organized into multiple functional groups, including a planning, design, and construction group, and a facility management group. Recent design projects have been influenced by the Maine Uniform Building and Energy Code (MUBEC), which adopts ASHRAE Standard 90.1-2016 as a reference energy standard.

Energy goals have been evaluated on a project by project basis, which indicates the benefit of this master planning effort in stitching together goals and initiatives in alignment with long-range components of Maine Won't Wait. Energy benchmarking is currently not a regular component of current facility management workflow.

Energy Data

DAFS/BGS provided data for several of their facilities that was then benchmarked against ENERGY STAR Score. The analysis of this data provided insight into building efficiency and can identify areas of differed maintenance or suggested retrofit.

Energy analysis can be used to determine how much energy a given building uses, its operational costs, and it's operational carbon emissions based on regional grid emission factors. This is vital information as the State aims to reduce energy use and greenhouse gas emissions. Identifying top energy use contributors can assist with the planning process to develop the most effective way to reduce energy use and carbon emissions.

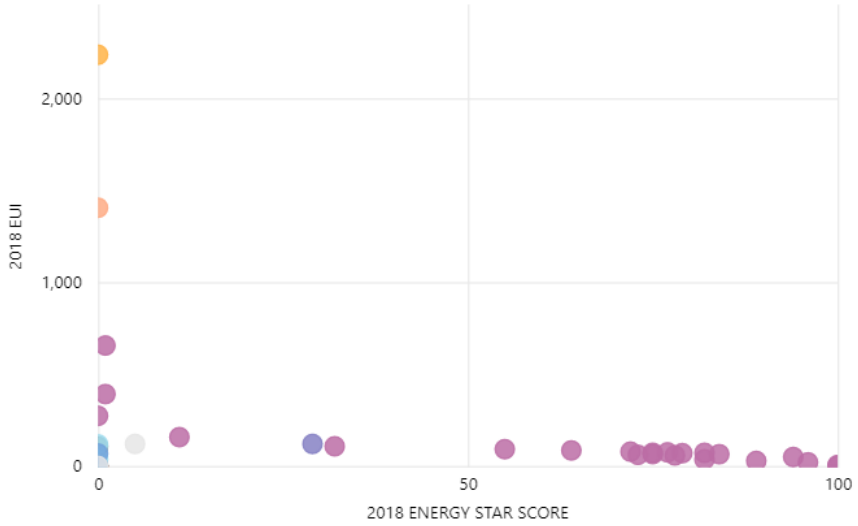


Figure 39. Table of energy star score of buildings

State of Facilities

As is the case for much of Maine's building stock, many of the States Augusta owned facilities are aging and performing below acceptable industry energy standards. This results in a building stock that requires more energy consumption to operate, leading to higher energy demand from suppliers, higher utility costs, and increased carbon emissions.

There are many factors that contribute to a building's energy use intensity (EUI). A building's thermal envelope performance and air tightness, efficiency of mechanical and building systems, and implementation of passive design strategies can all play a role in defining a property's energy demand.

The master plan collected data on approximately 1.2M gross square feet of State owned facility assets and scored them by level of retrofit and capital investments required to meet industry benchmarks. Of the inventory assessed, roughly 38% of the building stock requires "light touch" retro-commissioning for optimization, while 12% and 51% require ASHRAE Level 2 audit and larger capital investments, with the later requiring the most significant investments. These results are in correlation with the "Facility Conditions" on page 129.

Background Initiatives

The Maine Climate Action Plan sets a goal for the state to decrease greenhouse gas emissions by 45% by 2030 and 80% by 2050. Within the Climate Action Plan, several strategy themes are explored, including Strategy B – Modernize Maine's Buildings: Energy-Efficient, Smart and Cost-Effective Homes and Businesses. This strategy theme includes the following sub-topics:

- Transition to cleaner heating and cooling systems, efficient appliances – DAFS/BGS has implemented variable refrigerant flow heat pump technology in its most recent modernization projects.
- Accelerate efficiency improvements to existing buildings – DAFS/BGS has continued to invest in modernizations of several buildings, as well as spot energy upgrades, such as LED lighting retrofits.
- Advance the design construction of new buildings – DAFS/BGS has guided successful recent modernizations. There is an opportunity to integrate facility management insights to increase consistency of building systems used.
- Advance the design and promote climate-friendly building products – there are increasing opportunities to explore use of locally resourced low-embodied carbon products, such as mass-timber and to set policies related to sourcing of building systems.
- "Lead by Example" in publicly funded buildings – this master planning effort is a key step in supporting the goals of this sub-topic.

Background Initiatives, continued

- Renewable fuels standard – due to the climate, fuel sources must be selected carefully to assure resilience, reliability, and efficiency in heating buildings. On-site renewable energy sources, such as solar, should be carefully integrated with consideration to historic preservation, end-of-life replacement, and cost effectiveness. Building efficiency should continue to be prioritized first and then balanced with renewable energy.
- Replace hydrofluorocarbons with climate-friendly alternatives – over the past five years, there has been a significantly increased focus on the impact of refrigerants on climate change. The global warming potential (GWP)of R-410a, an often used refrigerant for commercial HVAC systems, has a GWP of over 2000 times that of carbon dioxide. Systems implemented today should utilize alternative refrigerants or be suitable for use with drop-in replacements in the mid-term.

Alignment with CAP and Goals

The master plan will address energy, sustainability, and resiliency using three categories of recommendations:

- Building level energy conservation scope: the team will recommend an investment intensity and target energy use reduction by property and timeframe.
- Renewable energy – the team will clarify the role of renewable energy on-site and regionally in supporting the State's climate action goals. We will identify candidate properties best suited to demonstrate net zero energy level performance, to allow the State to educate and show progress in a positive and accessible way.
- Programs and policies – the team will identify programs and organizational policies that will have the most impact both short-term and long-term on energy management. This may include completely new initiatives or evolutions of existing initiatives related to roles, technology, and standards.

FIGURE 40. FACILITIES CONDITIONS MAP

FACILITY CONDITIONS

Data Collection

The criteria for data collection and analysis of facility conditions were based on building function, location, and scope of the master plan. The criteria were set to include buildings owned by the State and within the two major geographic groupings, East and West campuses, and exclude utility, storage, or other general unoccupied support facilities. Analysis of the facilities was conducted in collaboration and conjunction with DAFS/BGS staff through on-site observations, various user group interviews, and prior assessment reports performed within the last (5) years and provided to the team by DAFS/BGS.

Scoring Methodology

Facilities were scored across the following four categories: building envelope, building systems (mechanical, electrical, and plumbing), external site conditions, and interior finishes and Code compliance. Each category was scored on a scale of (1) to (4) with (1) representing poor conditions and (4) representing excellent conditions. The score from each category was combined and averaged to provide an overall score for each facility.

The following is a general breakdown of the building scoring:

- Score 1 – Poor. These facilities are considered in disrepair and unoccupiable in their current condition. Extensive work should be done to bring the building within compliance with health and safety standards necessary for occupation.
- Score 2 – Fair. These facilities are occupiable but need repair. Interior finishes are dated or worn, building envelope shows signs of air or water infiltration and poor thermal envelope, site has overgrowth and cracking or damaged hardscapes including parking and walking paths, and building meets Code as an existing building but improvements should be considered for future renovations.
- Score 3 – Good. These facilities need minor repair or maintenance within the next 5-10 years. Facilities function properly but aging building systems or envelope components are nearing their end-of-life and will need to be replace, upgraded, or more regularly maintained. Site components, such as vehicular drives and pedestrian paths, are in acceptable condition but some areas may need repair in the near future. Facilities meet current code.
- Score 4 – Excellent. These facilities are newly constructed or recently renovated and with routine maintenance should not need considerable work for 10-20 years.

Summary of Data

In total, 2,137,157 gross square feet of State-owned facilities (located in Augusta, Vasselboro and Hallowell), were included in this assessment, with 52% of the assessed area receiving a score of (3), or good condition. A quarter of facilities assessed received a score of (1) or poor condition, totaling 601,178 gross square feet, of which 257,984 gross square feet are attributed to the Stone Building on the East campus.

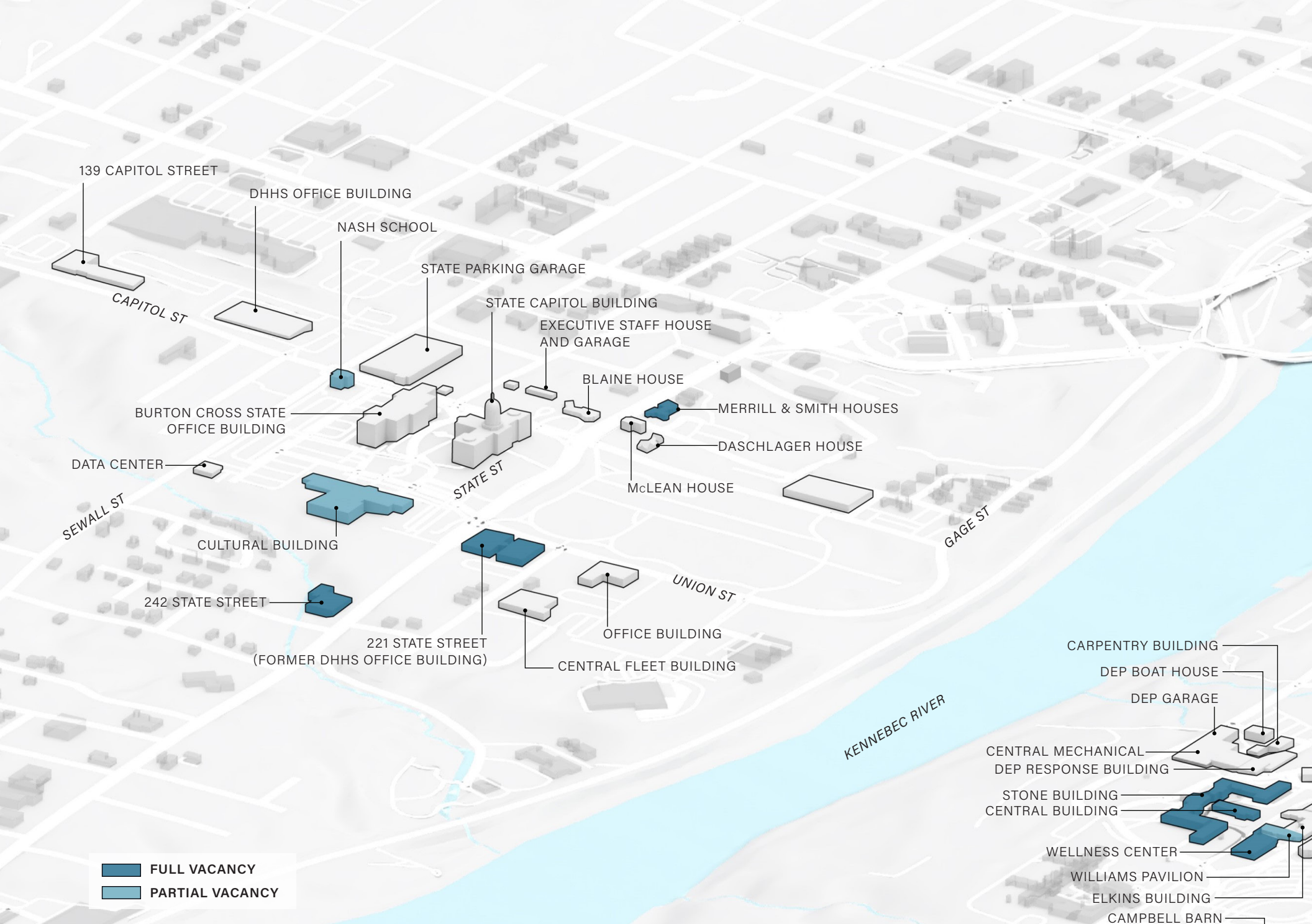
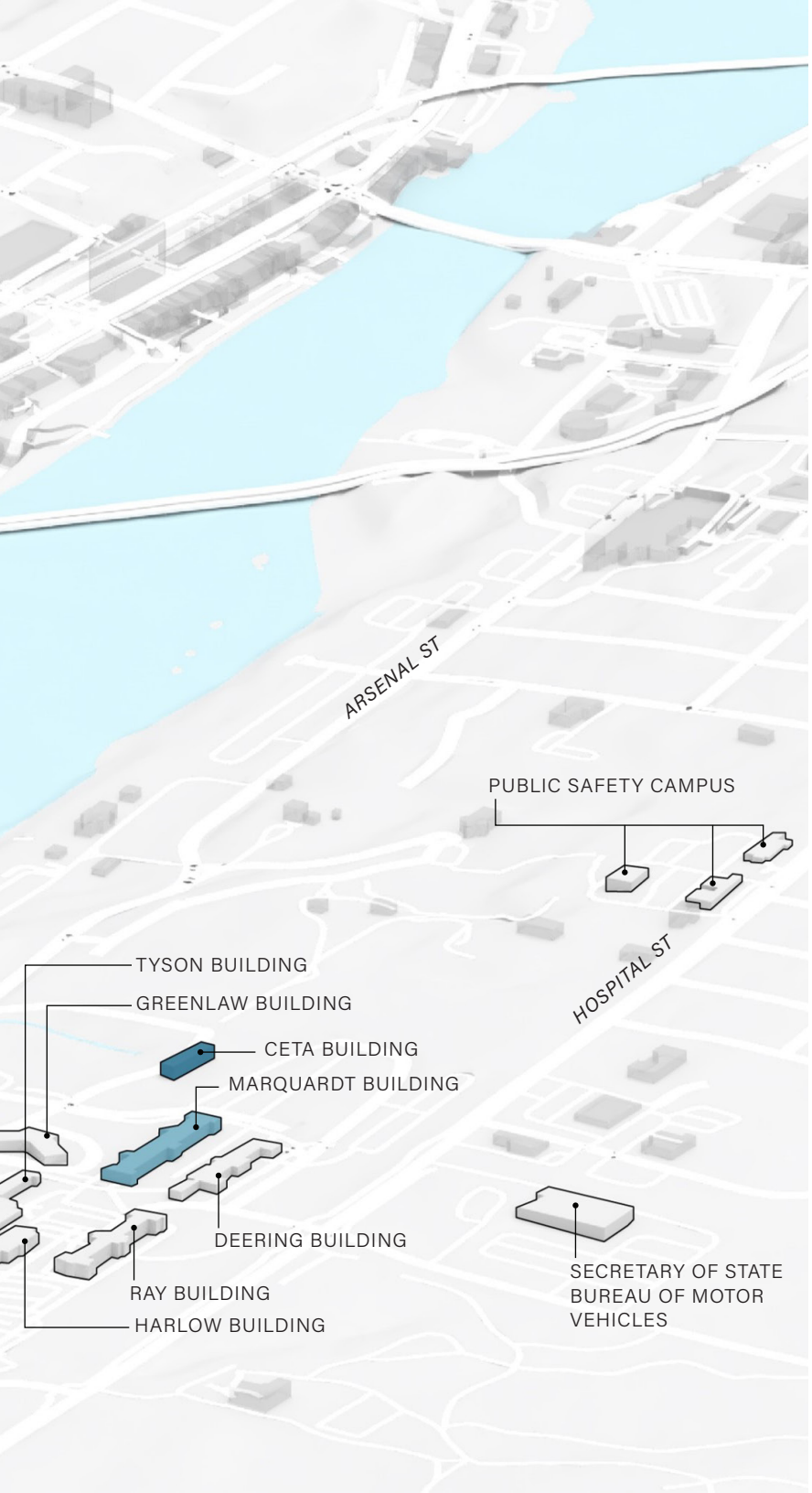


FIGURE 41. EXISTING BUILDING NAMES



Existing conditions

The facilities master plan team worked with the Bureau of General Services (BGS) to understand the inventory of state-owned and leased buildings in the Augusta area that are managed through DAFS/BGS; as well as what state departments are located in those buildings. Other facilities that are managed by the state departments directly may not be included in the building inventory. The location information gathered from DAFS/BGS was confirmed through department interviews.

State Owned Buildings

The state of Maine currently owns 54 buildings in the Augusta area, totaling 1,819,311 GSF. These buildings are split between the east and west campuses, with 30 buildings on the east campus totaling 925,265 GSF and 18 buildings on the west campus totaling 751,693 GSF.

EXISTING WEST CAMPUS FACILITIES

1. BURTON M CROSS OFFICE BUILDING
2. 242 STATE ST - OLD PUC BUILDING
3. OLD DEPT OF HEALTH AND HUMAN SERVICES
4. DASCHLAGER HOUSE
5. MCLEAN HOUSE
6. MERRILL HOUSE
7. NASH SCHOOL
8. SMITH HOUSE
9. BLAINE HOUSE
10. OFFICE BUILDING (OLD LABOR)
11. STATE CAPITOL BUILDING (STATE HOUSE)
12. STATE OFFICE GARAGE
13. MAINE DOT HEAD QUARTERS
14. SERVICE GARAGE
15. MAINE CULTURAL BUILDING
16. DEPT OF HEALTH AND HUMAN SERVICES
17. MAINE PUBLIC EMPLOYEES RETIREMENT SYSTEM

FIGURE 42. WEST CAMPUS SITE PLAN

West Campus

The West Campus, anchored by the Capitol Building, the Cross Office Building, and the Cultural Building, is the centerpiece of the State Capital area. It includes Capitol Park and state-owned properties on Capitol and Union Streets. The geographic center of the West Campus is Capitol Park, an open space of approximately 20 acres leading from the State House east to the Kennebec River. A City-owned recreation and sports complex abuts the southeast end of the park, extending the feel of open space south along the river.

The area immediately north of the State House on State Street is comprised largely of historic structures, including the Blaine and Gannett Houses. West of Sewall Street on Capitol Street is the Maine Department of Transportation garage facility. A small pocket of residential development lies between the Capitol Hill complex and Howard Hill, a largely undeveloped and wooded preserve to the west.

▲ *Plaza and green space located between State Office Building and State House*

▲ *Historic detailing of McLean house scheduled for restoration in 2023-2024*

EXISTING EAST CAMPUS FACILITIES

19 CETA BUILDING
20 ELKINS BUILDING
21 MAINE STATE POLICE HEAD QUARTERS
22 STONE BUILDING
23 DEP RESPONSE GARAGE
24 STATE POLICE CRIME LAB
25 OFFICE BUILDING (OLD MECHANICAL BUILDING)
26 OFFICE OF CHIEF MEDICAL EXAMINER
27 TYSON BUILDING
28 BUREAU OF MOTOR VEHICLE
29 CAMPBELL BARN
30 DEP BOAT HOUSE
31 HARLOW BUILDING
32 WELLNESS CENTER
33 WILLIAMS PAVILION
34 DEERING BUILDING
35 GREENLAW BUILDING
36 MARQUARDT
37 RAY BUILDING
38 CENTER BUILDING
39 RIVERVIEW PSYCHIATRIC CENTER
40 FORMER ARSENAL

FIGURE 43. EAST CAMPUS SITE PLAN

East Campus

The East Campus (formerly the Augusta Mental Health Institute) includes large open space between historic buildings and has a much lower density of development than the surrounding urban areas. The East Campus also includes the Kennebec Arsenal, owned by Main Street LLC. The Campus is flanked by small-scale residential neighborhoods to the north and northeast, open space to the east and southeast, and rural residential development to the south, with the Kennebec River forming its western boundary. The revitalization of the East Campus has been underway over the last three decades. The state has already restored, renovated, and re-occupied many of the original hospital buildings, including Tyson, Harlow, Deering, Ray, Marquardt, and Greenlaw Buildings. The Stone Building was occupied by hospital administration and patients until it was replaced in 2004 with the Riverview Psychiatric Center. It has remained unoccupied since then with building envelope renovations scheduled for 2023 with subsequent phases of work planned to restore occupancy.

Other DAFS/BGS Facilities

The 2023 Augusta Area Facilities Master Plan included the Maine Criminal Justice Academy in Vassalboro and an approximately 62,000 GSF facility at 10 Water Street in Hallowell. The Maine Criminal Justice Academy includes approximately 167,000 GSF facilities and about 105 acres. The Master Plan reviewed energy data and building condition assessments for these two locations, but excluded them from the workplace analysis and scenario recommendations. This includes exclusion from lease consolidation scenarios and space utilization.

▲ *East Campus with Capitol Building in Background*

▲ *East campus Tyson Building and Elkins Building*

INFRASTRUCTURE, TELECOMMUNICATIONS, AND INFORMATION TECHNOLOGY

Three major factors on the horizon could stress the State facilities' electric infrastructure: increased loads from electric vehicle charging, electrified heating and cooling, and on-site power generation.

Three-phase power is important as it provides the level of voltage necessary for DC fast charging of electric vehicles, vital to a clean transportation future. Three-phase power is also important for larger scale power generation. A strong electric grid will minimize the amount of energy storage necessary on the State campuses.

▲ *Governor Mills launches EV charger infrastructure plan at Maine Turnpike, 2019*

Both the East and West campuses have ready access to critical three-phase power in the Central Maine Power distribution system. The West campus is largely ringed with three-phase power options. There is a mix of above ground and buried power lines. The operating voltage of each line is 12,470 volts. The East Campus is served by three-phase power from an overhead line on Hospital Street. On the East Campus itself, all lines are underground. Other potential power connections may be available to the campus from Kelton Road and Arsenal Street. While the East Campus lines are less redundant than the West Campus, in both cases they should provide adequate service for interconnection with solar installations and DC fast charge electric vehicle charging.

Supporting EV fast charging will require upgraded electrical services at charging locations as most current building services will not have available capacity. Electrification of other services (hot water, heating, cooling) will also need to draw from available amperage in those service boxes.

To support expanded EV charging, energy storage will likely become necessary to ensure voltage frequency remains in acceptable ranges. With building-level line upgrades and potentially energy storage, the grid should support anticipated volumes of electric vehicle charging at the West Campus due to the multiple distribution lines available. The East Campus can certainly support a small volume (on the order of 10) simultaneous fast chargers with current infrastructure; however, it is likely that at some point either an additional electrical feed, an improved substation, significant battery storage or other improvements will be necessary to address needs. This constraint could be avoided

by installing only Level I or II chargers instead of DC fast chargers, but this prolongs charging time.

The transition to renewable heating and cooling will involve electrified building heat, meaning greater building-level loads during heating and cooling seasons as buildings no longer use the central heating and cooling plants. The additional loads will almost certainly require additional power supply to buildings. These upgrades must be considered early on in planning, as storage, line and substation upgrades will likely need years to accomplish.

On-site generation will be an important part of meeting the State's climate goals. The State has already made a major investment in solar, installing 13 MW of generation in partnership with Cenergy on three DOT-owned sites in the Augusta area. When completed, the DOT solar projects will supply 70-75% of annual energy usage on the East and West campuses.

The State should continue to build its generation capacity with additional projects. As long as current federal tax incentives and advanced depreciation advantages continue to exist, Maine should continue to work in partnership with private entities. By design, only private entities are eligible for these federal incentives which significantly enhance the return on investment of solar, wind or energy storage investments. The easiest method to accomplish this would be to replicate the DOT project on other undeveloped state properties and net meter the additional necessary power to the appropriate feeder line and service meter at state facilities.

Installation of solar panels over existing parking lots, roof tops or green spaces on the campus can also be considered. Each campus has approximately nine acres of parking lots. Carport-style solar installations require roughly 2.5 acres per megawatt of installed panels. At this rate, each campus could support two to three megawatts of solar over parking alone. With a capacity factor of 18.9% for solar in Maine, a combined installation of approximately five MW would generate on the order of 7,500 MWh per year. These sites will be more expensive to develop per unit versus vacant land. However, there are benefits of having solar be visible to the public as it demonstrates the viability of the technology, uses land efficiently, and provides covered parking. As with the DOT initiative, any projects designed directly on the campuses should be done in conjunction with a private partner to take full advantage of the available federal benefits. DAFS/BGS should also consider engaging an Energy Procurement Consultant to assist with pricing alternatives.

▲ *Three primary types of charging equipment*

OPPORTUNITIES AND CONSTRAINTS

The following opportunities and constraints were observed.

Utilization

At the time of data collection, including agency interviews in 2021, a significant portion of buildings are underutilized due to the Covid-19 Pandemic, the resulting telework protocols, or vacant awaiting renovation. This is true particularly on the East Campus, with approximately 37% of the building stock vacant primarily due to unoccupied Stone Building. In addition to the vacancies, Cove-19 protocols have limited employees in office, further reducing the building utilization figures. Densification can be a key energy conservation measure, as the relative energy use per occupant for lighting and enclosure heating and cooling decreases as occupant density increase. We recognize that there is an inherent amount of embodied carbon associated with existing buildings. While the State might reposition buildings in the portfolio, it is key that there is a viable future for these buildings and good stewardship from any potential future Owner.

Enclosure Upgrades

The prevalence of historic structures with mass masonry will require careful analysis prior to addition of air-tightening and thermal insulation upgrades. Enclosure upgrades should be considered in an integrated manner with the sizing of replacement HVAC systems. Oversized equipment results in a longer-term maintenance burden, ties up capital that can be deployed to other building features, and can impact overall operational efficiency.

Design Standards

Lessons learned from the industry and across DAFS/BGS can shape design standards and guidelines used by project teams. This standards can integrate target energy and water use standards for new construction and modernization projects. We recommend leveraging opportunities to standardize equipment types in the categories of lighting controls, space cooling and heating, ventilation air delivery, building automation systems, and renewable energy systems.

District Utility Systems

The State has significant prior experience with district utility systems, both on the West and East campus. We recommend that a focused utility plan be developed for the West campus that explores conversion from natural gas heating systems to electric fuel source systems. For the East campus, because of recent investments in distributed HVAC systems, we recommend a plan be developed that determines the future disposition of existing steam heating systems. The State showed significant leadership in attempting to implement a biomass co-generation system. We recommend lessons learned from that process be shared within DAFS/BGS, to inform future decisions that balance innovation against risk.

Energy Management

DAFS/BGS has invested significantly in data analytics in the past few years to progress facility management, with an emphasis on maintenance and user comfort. Additional efforts can leverage the Honeywell Forge platform to further optimize energy tracking, even if there are limitations to how aggressive scheduling and temperature setbacks can be. DAFS/BGS will benefit from developing a formal energy manager position in the organization (vs. current use of a consultant) and using ENERGY STAR portfolio manager as a repository for utility data and benchmarking.

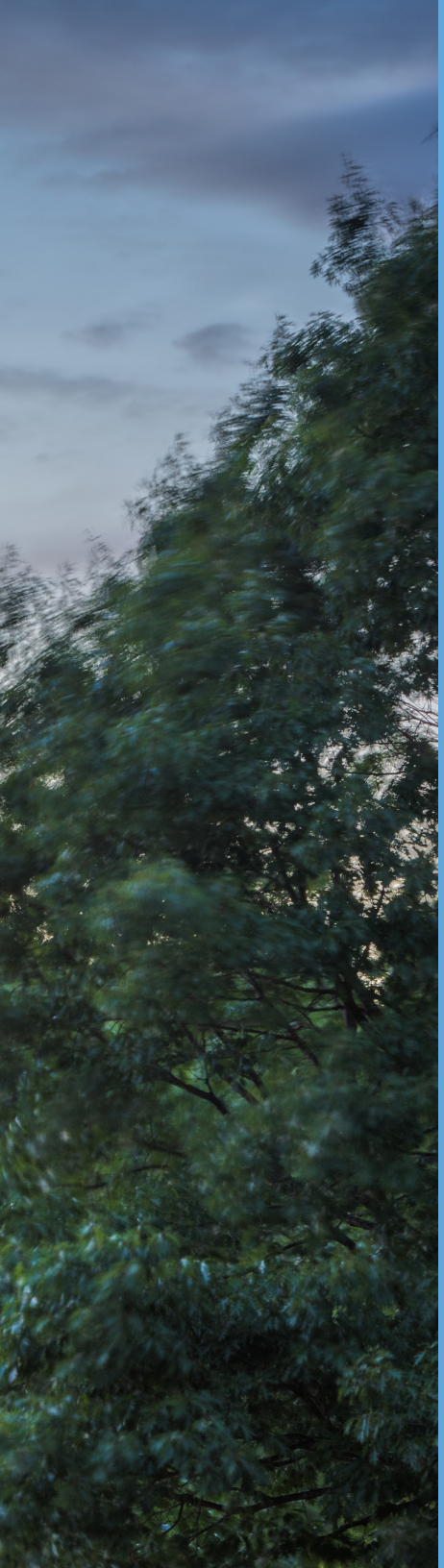
Data Gaps

Energy data for a significant portion of properties outside the core Augusta campuses is not currently available, due to limitations in staffing. We recommend a forward-looking approach that sets clear requirements for data capture, including roles and responsibilities, and data gathering frequency.

Historic Preservation

The previous facilities master plan (2001) was successful in establishing a framework for making the highest and best use of the State's real estate resources by rehabilitating several of the historic East Campus (former AMHI buildings) and the two primary existing buildings of the West Campus. This plan update highlights the opportunities and constraints offered by those significant State buildings in Augusta that remain to be adapted or updated for continuing or new uses, or in one or two instances, replaced. These are the Stone Building on the East, the DHHS buildings at State and Union streets, and 242 State Street. With their prominent locations and appropriate uses, these rehabilitated or new buildings can be used to meet the functional and environmental requirements outlined in this plan while also weaving them into the historic landscapes of their respective campuses.

The Stone Building complex represents a remarkable opportunity to re-use an irreplaceable historic building group, but at significant cost. The three West Campus buildings occupy prime real estate and could be sensitively upgraded for continuing state office use, or they could be replaced with landmark-quality green buildings with sites developed to meet many of the design and use goals of this plan.



06 /

WORKPLACE: CURRENT AND FUTURE SPACE NEEDS

Workplace Existing Conditions
Department Space Needs
Existing Space Utilization
Workplace Trends
Future Growth and Space Projections

WORKPLACE EXISTING CONDITIONS

The planning team collected available existing space data for the DAFS/BGS-owned facilities and also used an online survey instrument. The survey responses were followed by phone/virtual interviews with each division or department. The survey and interviews were beneficial in understanding the existing and future space needs and workplace conditions.

During the survey and interview process, the planning team collected information on the following topics:

- Department Mission, Organization, & Duties
- Impacts of the 'Maine Won't Wait Climate Action Plan' & other relevant legislation
- Impacts of climate change on services and daily operations
- Current locations and critical adjacencies (only locations in Augusta were discussed)
- Current square footage, space types, and employee counts
- Projected growth and space type needs over the next 20 years
- Deficiencies in current spaces (environmental deficiencies or space type deficiencies)
- Number of visitors and ability to accommodate visitors
- Parking and commuting needs
- Security concerns
- Recruitment and retention needs
- Teleworking and technology needs

All information collected from the survey and meetings was compiled into department indexes documenting the comprehensive needs of each department. These indexes, as well as a copy of the survey questions, can be found as part of the "Appendix B - Department Workplace Indexes". The following departments participated in this data collection process:

- Department of Administration and Financial Services (DAFS)
- Department of Agriculture, Conservation, and Forestry (DACF)
- Maine Attorney General (AG)
- Department of Economic & Community Development (DECD)
- Department of Education (DOE)
- Department of Environmental Protection (DEP)
- Office of the Governor (OG)
- Department of Health and Human Services (DHHS)
- Department of Inland Fisheries and Wildlife (IF&W)
- Department of Labor (DOL)
- Department of Marine Resources (DMR)
- Department of Professional and Financial Regulation (DPFR)
- Department of Public Safety (DPS)
- Maine Secretary of State (SOS)
- Maine State Auditor (MSA)
- Maine State Treasurer (MST)
- Workers' Compensation Board (WCB)

The following departments were not included within the scope of the master plan at the direction of DAFS/BGS.

- Department of Transportation**
- Department of Corrections
- Department of Defense, Veterans, and Emergency Management

*** Department of Transportation was included in the department interviews that were conducted.*

DEPARTMENT SPACE NEEDS

The impact of the Climate Action Plan on departmental space needs is not significant. Overall, most departments did not anticipate the need for additional staff or adding programs to specifically address Climate Change. A few departments noted relevant legislative directives that could actively change their services and staffing. These include:

- Dept. of Economic & Community Development
- Dept. of Environmental Protection
- Dept. of Health and Human Services
- Dept. of Labor

Departments that support and protect natural resources, waterways, and wildlife are seeing the effects of climate change in the environment and are adapting their programs and support as necessary. Across the board, growth in programs or changes in the number of full-time employees due to climate change are predicted to be minimal, though some operational changes statewide are anticipated.

The changes most anticipated due to climate change are less travel, less commuting and different ways of working, which could lead to a reduction in workspace needed. Some agencies also anticipated new services, changes to existing services, and changes in the workforce and required skill sets. See Figure 44 on page 144 to see how climate change is expected to impact the workplace. Many departments also anticipated operational changes that were not agency specific. These changes included:

- The possibility of shared transportation to reduce carbon emissions by State employees who commute, incentivized by the "Go Maine" program.
- Greater emphasis on electric and hybrid vehicles for State-owned auto fleet.
- Potential opportunities for integration of solar power collection on State-owned property.
- Installation of EV chargers in State parking facilities and, for departments with staff who operate across the entire state, the feasibility of statewide access to EV chargers.

▲ *Capitol Park*

Recruitment and Retention Needs

Maine faces some of the same issues with recruitment and retention as other states, including competition with the private sector and federal government. Departments that have law enforcement divisions, such as the Department of Public Safety and the Department of Inland Fisheries and Wildlife, see issues due to the nationwide lack of interest in law enforcement professions.

Attracting new talent and appealing to the younger generation entering the workforce will be a factor the State will need to consider in the 20-year implementation of this plan. In the survey, respondents stated that they thought having assigned workspaces in the office, access to conference spaces, and the quality of the office environment were the most important factors when it comes to attracting and retaining employees, followed by space for an impromptu gathering and access/ connection to outdoor spaces, see Figure 45 on page 145.

Workplace amenities will also be a factor in attracting and retaining employees. The following considerations are nationwide trends that when implemented improve employee satisfaction and retention:

- Teleworking and work schedule flexibility – This includes the flexibility to work from home at least part time.
- Wellness centers or membership reimbursement to fitness centers.
- Outdoor recreational opportunities – People will often walk or run on their lunch break, however showers and places to freshen up after outdoor activities must also be provided.
- Mixed use campuses to make the campuses a thriving and energetic area. It could be beneficial to State employees to better integrate the campus into the surrounding community and make the campus feel easier to reach through walking/biking etc.
- Mothers/wellness rooms promote health and personal well-being.

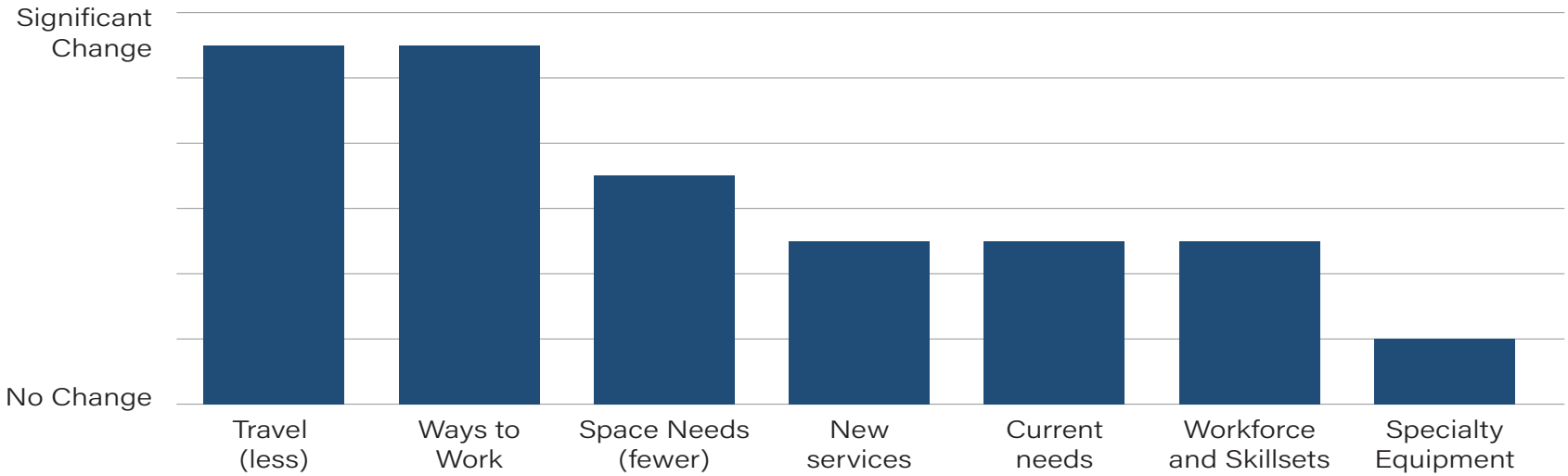


Figure 44. Most anticipated changes due to impacts of Climate Change

- Healthy food options accessible to all workplaces.
- Modern work spaces – Updating work spaces to meet modern trends in workplace design would aid in attracting new talent. This includes spaces that have more light, lounge/informal meeting spaces, drop-in hoteling spaces, and ergonomic furniture.
- Hoteling stations in other cities such as Portland – This could aid employees that commute from other communities but also provide conference space in other cities for the State to conduct meetings.
- Shared transportation options provided by the GoMaine program along with other incentives for alternative transportation methods.

See "Workplace Trends" on page 149 for more information on trends.

Parking and Commuting Needs

Most State employees commute daily in personal vehicles. While teleworking has greatly decreased the number of people driving to the East and West campuses daily, it is anticipated that over the course of this 20-year plan the majority of employees will come back to the office for at least a few days a week. During the interviews, the consensus was that there is ample parking on campus. However, some of the available parking is located at a distance from the buildings in which people work. Interview participants also noted that parking on the West campus is significantly more difficult when the legislature is in session. Other specific parking highlights include:

- Lack EV chargers, both personal and State fleet vehicles.
- Parking not well lit, leading to security concerns.
- Lack of guest parking directly adjacent to buildings that receive walk-in foot traffic.
- No bus or large group parking adjacent to Cultural Building.
- Accessible parking for employees is not always easy to come by.

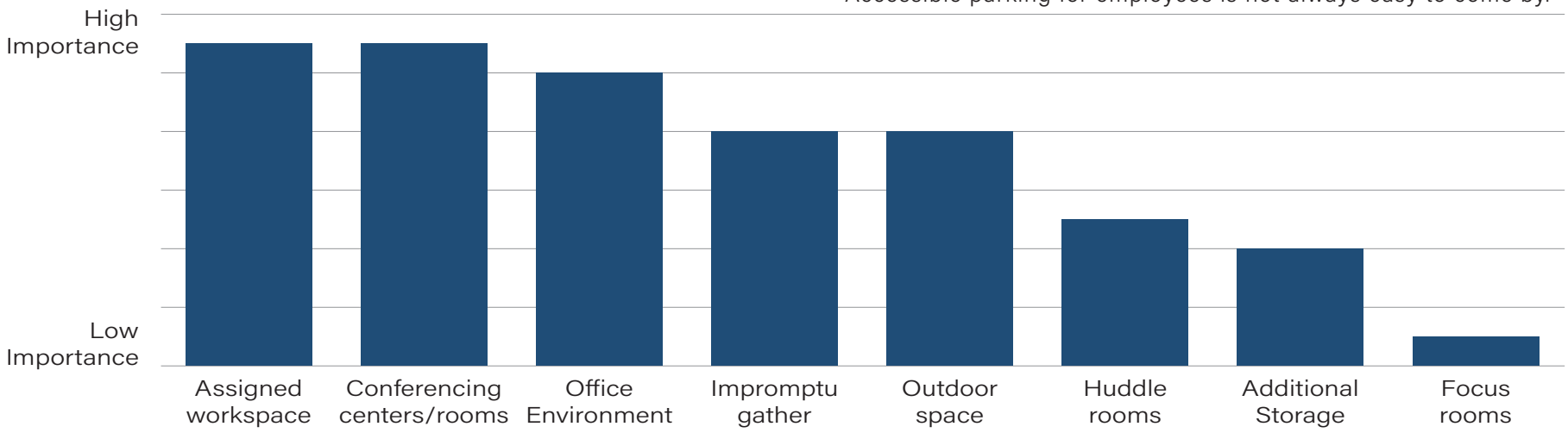


Figure 45. Desired spaces and characteristics for attracting and retaining employees per data collected through Workplace Survey and interviews.

EXISTING SPACE UTILIZATION

Inventory of State Occupied Space

The 2023 Augusta Area master plan includes facilities owned and managed by the Bureau of General Services (BGS) within the Augusta area. An existing inventory of DAFS/BGS owned space was compiled for the Augusta Area facilities. From that information, the facilities master plan team compiled an inventory of the current space utilization of the State of Maine current as of February 2023. Listed below, and in Figure 46 on page 147, is a summary of building area that were inventoried as part of the 2023 Augusta Area master plan:

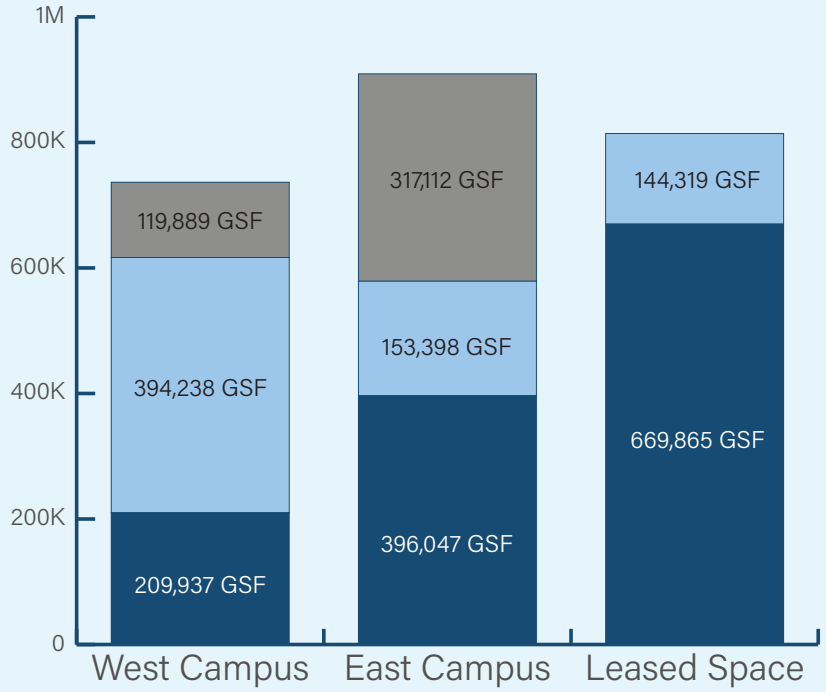
- 75 total State buildings included in the master plan scope, 69% are State-owned and 31% are leased.
- 54 State owned buildings included within the master plan scope, 38% is dedicated to office space, 34% is non-office space, and 27% is currently vacant.
- 25 State leased buildings, 82% is dedicated to office space, and 18% is non-office space.

Definitions of the different space type categories that are shown in Figure 46 on page 147. are listed below:

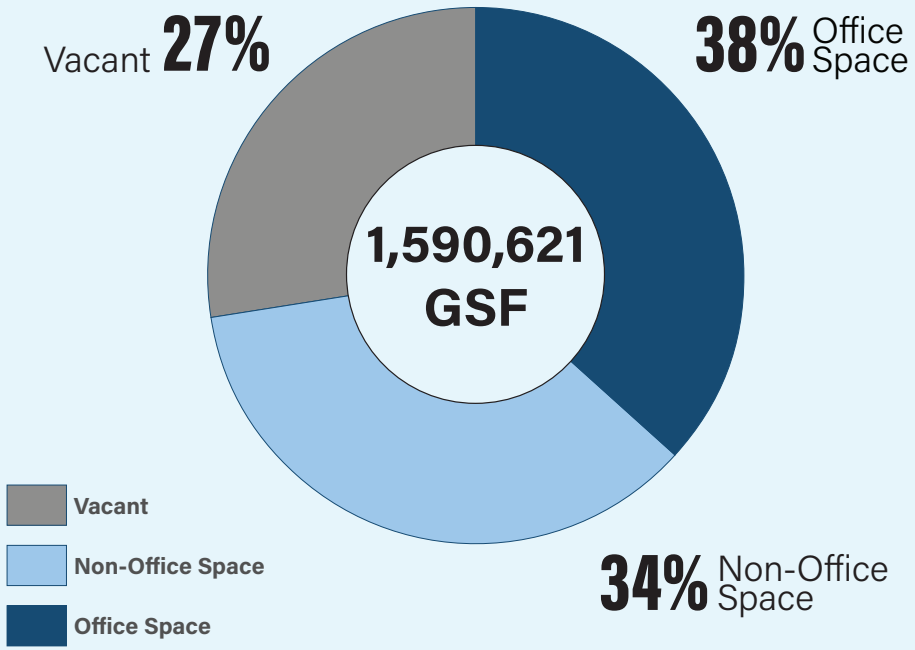
- **Office Space GSF** – Gross square footage of space that is dedicated to use as an office. It includes square footage of personal offices and cubicle spaces as well as support spaces for the offices such as circulation, break rooms, work rooms, etc. This number is used when calculating the SF/person of a building.
- **Non-Office Space GSF** – Gross square footage of space that is dedicated to uses other than office. Spaces in this category include Labs, large hearing rooms, large dedicated storage spaces, amenity spaces not assigned to agencies, etc. This number does not factor into the SF/person of a building.
- **Vacant GSF** – Gross square footage of space that is currently vacant in each building.
- **Out of Scope GSF** – Gross Square footage of space belonging to agencies that were not in scope for this facilities master plan.
- **Total GSF** – Calculated by adding the sum of the Office Space GSF, Non-Office Space GSF, Vacant GSF, and Out of Scope GSF. This number shows the total gross square footage of each building.
- **# of Employees** – The current number of employees housed in each building as confirmed in the department interviews.
- **Total Employees** – Total number of employees currently in housed in each building.
- **SF/employee** – Calculated by dividing the Office Space GSF by the # of Employees. This number helps the facilities master plan team better understand how efficiently the office space is used in each building.

Augusta Facilities By The Numbers

Space Utilization - By Campus



Space Utilization - Owned Facilities Only



Facility Portfolio - Owned vs Leased

*Note: State Capitol Building, Vasselboro campus, and Hallowell excluded from figures

FIGURE 46. STATE OF MAINE AUGUSTA FACILITIES BREAKDOWN

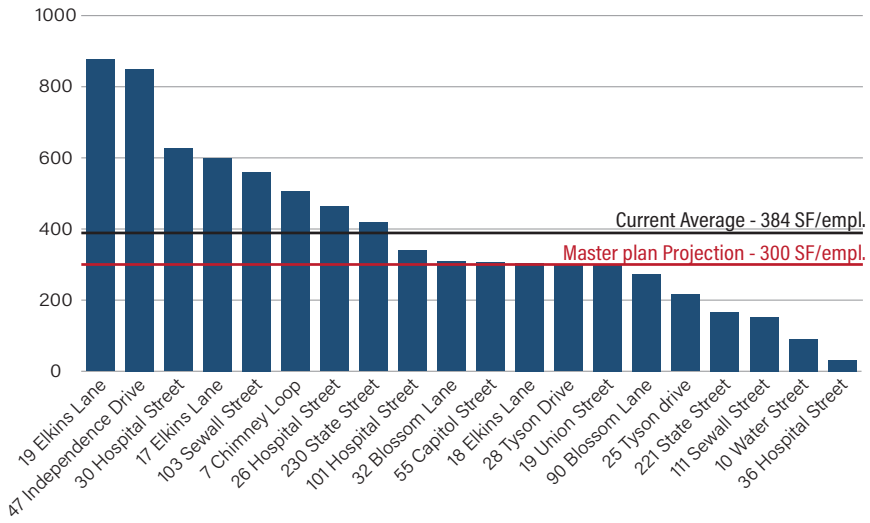


Figure 47. Square Footage Per Employee in State Owned Buildings

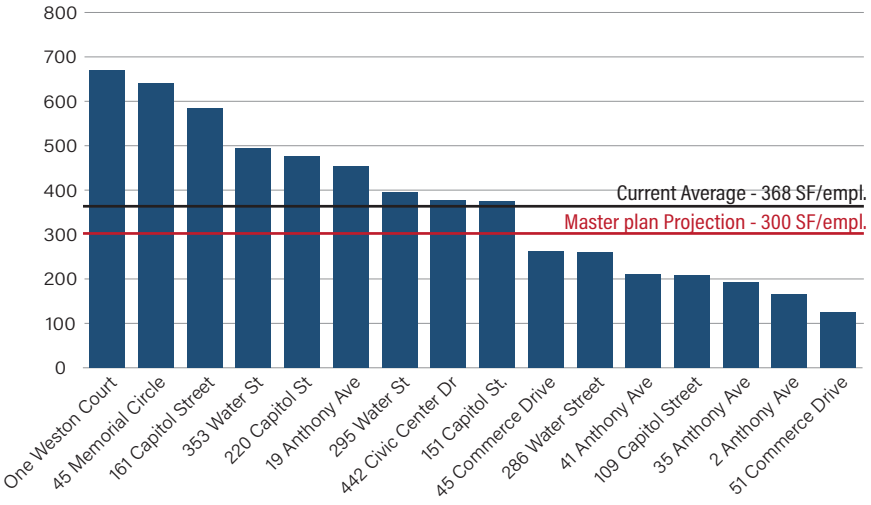


Figure 48. Square Footage Per Employee in State Leased Buildings

Space Utilization and Vacancy

The 2001 facilities master plan recommended a space utilization standard of 250 SF per employee for the State of Maine. This does not meet modern space standards for class A office space, however it does align with other State governments, which tend to range from 200-250 SF/employee as a goal space standard according to other published facilities plans.

Our analysis of data provided by the State shows that State-owned buildings currently average 384 SF per employee (see Figure 47), while State-leased buildings average 368 SF per employee (see Figure 48). For State-owned buildings this breaks down to an average of 317 SF per employee on the West campus and 413 SF per employee on the East campus. While the majority of State facilities are above the average 2001 master plan recommended space utilization, it is likely that this is due to the nature of the building typology. Most State-owned buildings are not modern Class A office buildings, rather historic buildings that have been adapted for office use, as seen in Figure 27 on page 100.

To understand the efficacies possible for the States current owned building stock, the Stone Building, Ray Building, and Cross Office Building were selected as case studies, as they represent the oldest to newest eras of campus building stock, and the unique characteristics of those eras. Using a combination of recent renovations and our own programming analysis, the case studies provided a reasonable utilization factor for each building typology. Our team then categorized State owned buildings by these three typologies and applied the corresponding utilization factor. Based on this data, future projections as discussed in "Workplace Trends" on page 149 use a space utilization standard of 300 SF/employee to calculate future space needs for the State of Maine.

WORKPLACE TRENDS

▲ *Augusta Area State Facilities Interior Workplace , Cross Office Building*

▲ *Augusta Area State Facilities Interior Workplace, Cross Office Building*

This 2023 facility master plan takes into account the current facility conditions and future space needs of the Augusta Area Facilities for the next 15+ years. It is worth mentioning that the space planning analysis was conducted during the Covid-19 pandemic. The pandemic has led to questions about the future of the workplace, employee commuting patterns, and the future of offices in general, which introduces a level of uncertainty to the planning process.

The planning team follows current research on post-pandemic workplace trends and offers the following key findings. Although space needs will continue to evolve, the workplace is set for reinvention by combining the best elements of the past with future promises focused on creating healthier and dynamic workplaces.

The most prominent workplace evolution over the last few decades has been the balance between 'heads-down focus work' and providing layers of collaboration to improve employee productivity and well-being. As we transition into a post-Covid-19 future this remains a focus. The return to work, teleworker, and hybrid work policies are likely to change again as we adapt to new policies, technologies, and strategies for returning to work.

During the pandemic, working from home forced employees to collaborate differently and increased dependency on existing and new technology. While the slow return to the office environment is expected to bring back some old challenges, those who are in the office will have opportunities for impromptu collaboration and engagement by overhearing their co-workers discuss their daily tasks. The "future of now" workplace is becoming part of workplace design, and the following opportunities are emerging:

- **Communication tops the list as the most important single element in the future**. No matter where team members are physically, they must be linked with a purpose, with a sense of belonging, and be aligned in their work. This communication will foster trust and teamwork, and accountability. Effective communication will channel the energy to the desired results.
- **The air quality and amount of fresh air introduced into space will be reevaluated.** New spaces will be built to open to the outside and allow activities to flow seamlessly from indoors to outdoors. Mechanical systems will be reevaluated to reduce airborne particles, thereby reducing the exposure to disease. The amount of fresh air introduced into work areas will be increased.
- **More touch-less.** We will likely see more touch-less options on entry doors, elevators, and features within a space. Technology, apps, and voice technology will help us achieve fewer ways to touch things.
- **Anti-microbial materials will be in high demand throughout workspaces, as the focus to naturally reduce any kind of bacteria in the workplace will be beneficial.** Materials with natural inherent anti-microbial tendencies will be used more frequently, and coatings to resist germs will be considered. All materials will be evaluated based on routine disinfecting.
- **The focus on wellness in the office is paramount now.** It will be critical that employees want to come to the office, not only for interaction but because it is a place where they feel good, feel uplifted, and are connected to their colleagues. Their productivity will depend on feeling their health, safety, and welfare is important to their employers.

FUTURE GROWTH AND SPACE PROJECTIONS

Projected Space Needs Scenarios

Projected space needs for the next 20 years were calculated using the employee count data provided by DAFS/BGS and the space standard of 300 SF/employee. This does not take into consideration moving employees in leased space to state-owned space. With the uncertainly around the future of teleworking and the evolution of the workplace as previously outlined, the master plan team studied the space and climate impacts of different teleworker scenarios; 100% of in-office employees, 10% remote employees, and 25% remote employees. It is important to note that these space projections are for employee needs only, including workstations and workplace amenities. Department requirements for storage outside of typical office storage is not included in Figure 49 but are present in the department data sheets included in "Appendix B - Department Workplace Indexes".

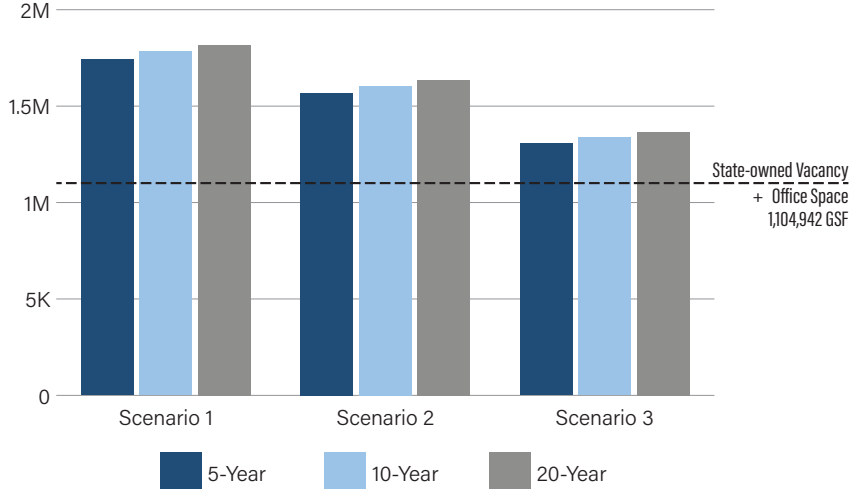


Figure 49. Space needs to accommodate growth predictions based on space utilization factor of 300 SF/employee.

Scenario 1 - One-for-One Workstation Assignment

This scenario looks at space needs if 100% of employees are provided with their own dedicated work space in State managed facilities, how the State operated prior to Covid-19. After speaking with State departments and analyzing nationwide workplace trends, it is expected that not all employees will return to the office and thus it would not be economical for the State to maintain workspace for all employees. Using this scenario, it is projected that the State would need 1,818,900 GSF of space in 20 years.

Scenario 2 - Limited Hybrid Work Environment

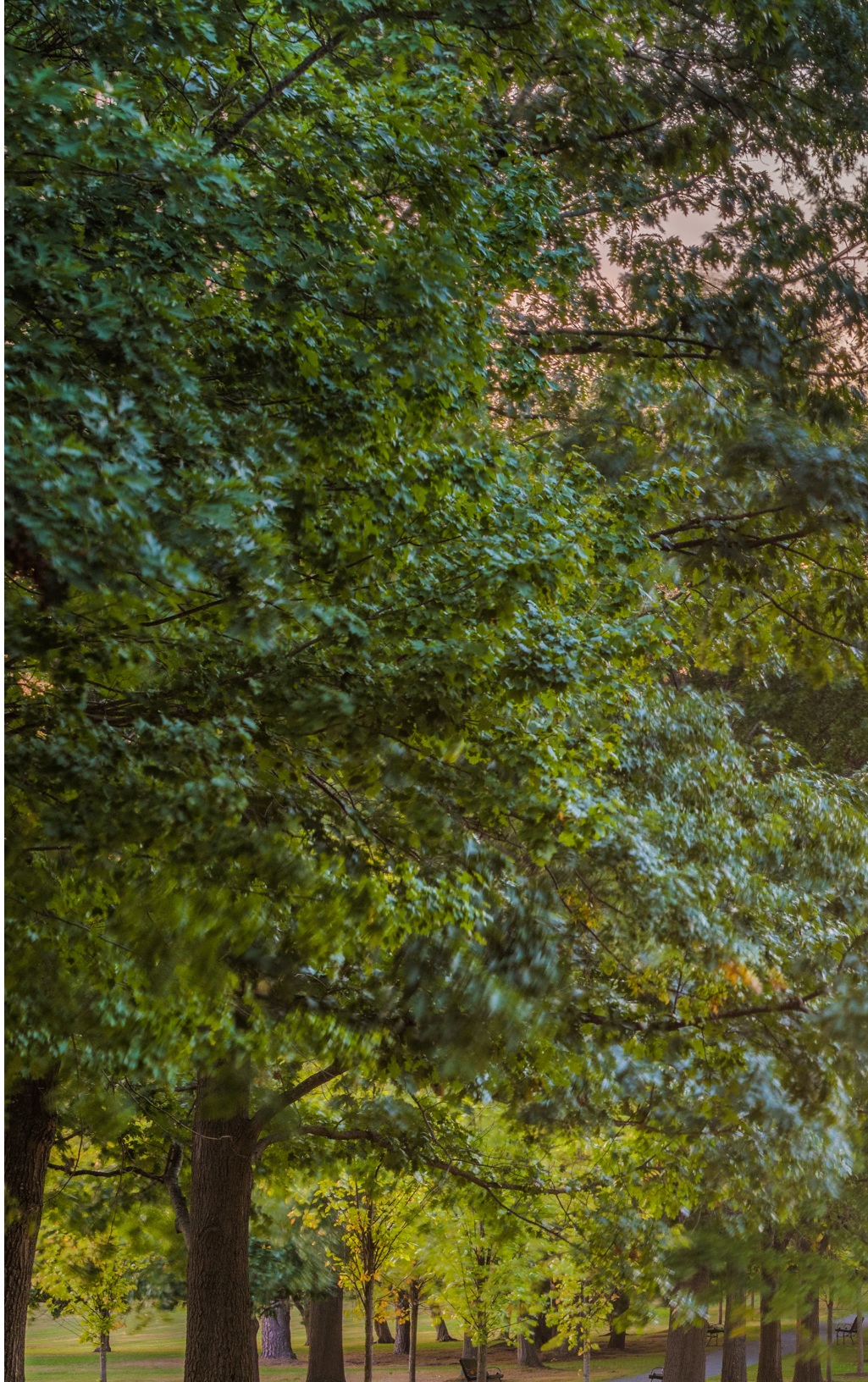
This scenario illustrates the total space needs of the State if 90% of employees are provided with their own dedicated work space in State managed facilities. This scenario aligns with the State's own estimates that 10% of employees will work remote full-time and would not need dedicated work space in a State managed facility. All other employees working in the office full-time or in a hybrid fashion are projected to receive a dedicated workspace. Using this scenario, it is projected that the State would need 1,637,010 GSF of space in 20 years. Given current workplace trends, this scenario offers a realistic number for the high range of projected space needs.

Scenario 3 - Hybrid Work Environment

This scenario assumes work spaces are provided for 75% of employees in State managed facilities. This scenario takes into account hybrid working and the possibility of shared work stations. Employees may not have dedicated work stations but rather would share a workspace with another employee or a greater number of hotel stations can be provided for use by any employee in the office on any given day.

This scenario assumes that 10% of employees are remote full-time, 40% of employees are in the office full-time and need their own dedicated work space, and 50% of employees are working a hybrid model and only in the office part-time (3 days a week). Providing a desk for all full-time in-office employees and 70% of employees working in a hybrid fashion results in providing a workstation for 75% of the total projected employees for a department as illustrated in Figure 49. Using this scenario, it is projected that the State would need 1,364,175 GSF of space in 20 years.

These projections assume annual growth based on a combination of data collected during Department and Agency interviews and as stated by data shared by DAFS/BGS at the time of this study. As previously mentioned, the State of Maine will need to further explore how its work from home policies will apply to different departments within the State to better understand how much GSF they would like to target for their 20-year projections. However, these studies do provide valuable data in the impacts these policies can have on space needs and the environment.



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