DRAFT

Public Safety and Maintenance Building Design Workshop

AB 6604
February 4, 2025

Agenda

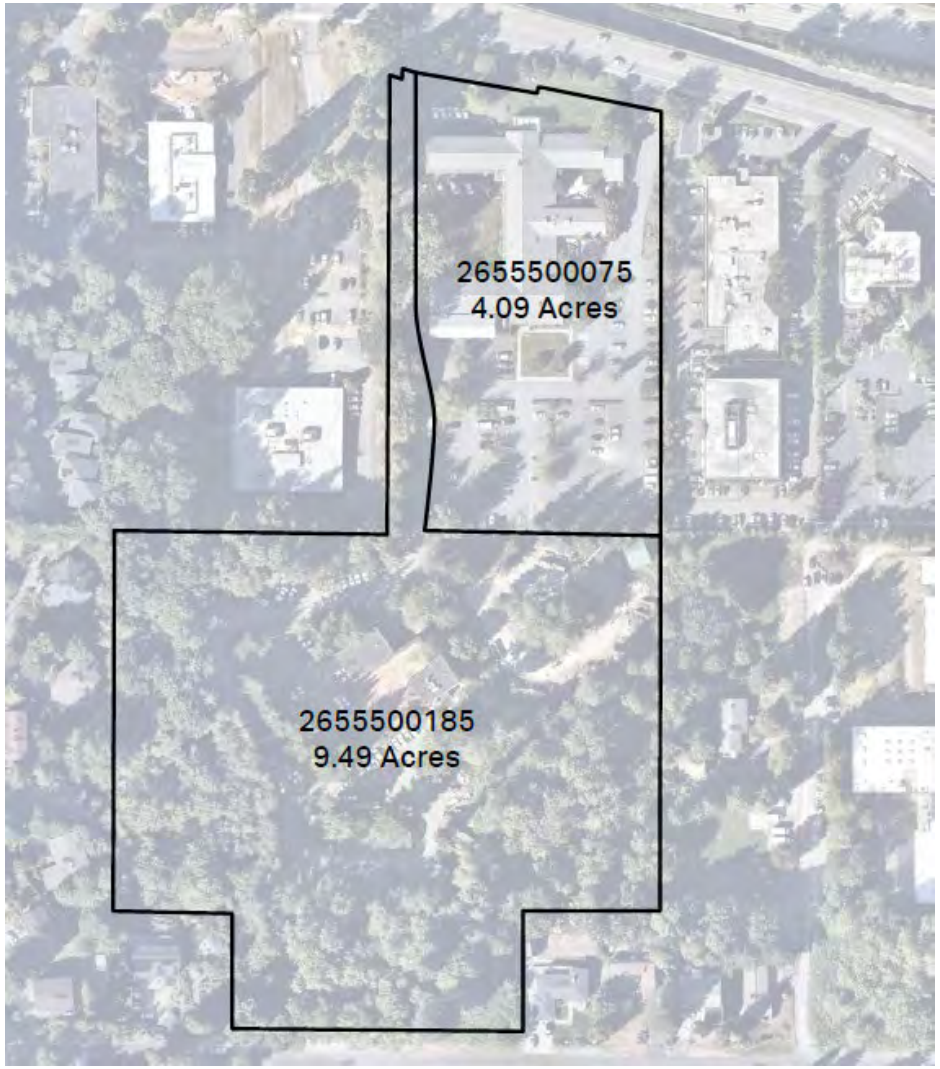
- Background on City Facilities
- Public Safety and Maintenance (“PSM”) Facility Pre-Design
- PSM Schematic Design (In Process)
- Design Questions and Discussion
- Next Steps

Background:
Public Safety and Maintenance Facility Project

Long Range Facility Planning

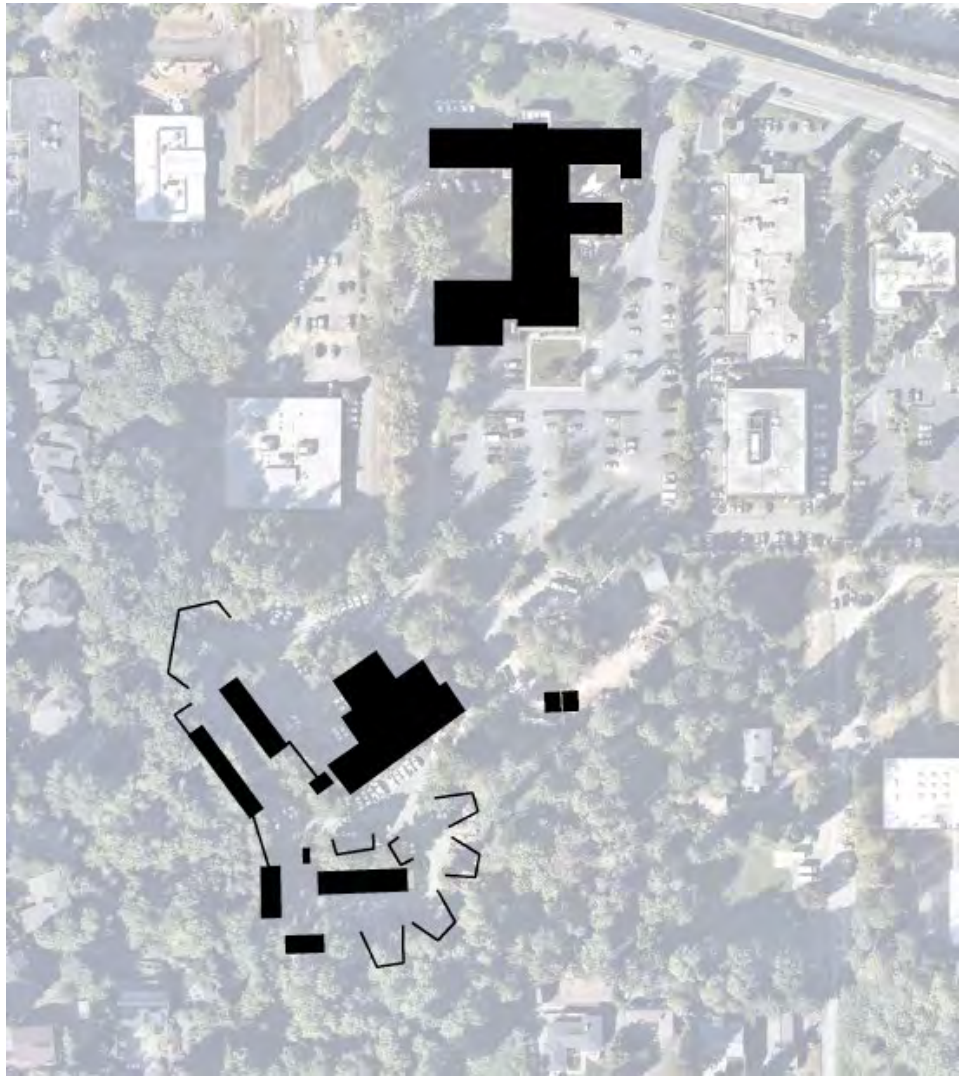
- In early 2023 the City began work on a Long-Range Facilities Plan to guide decisions about use and improvements to City facilities.
- The first phase of the project included Facilities Conditions Assessments for the following buildings:
  - City Hall
  - Public Works Building
  - MICEC Annex Building
  - Luther Burbank Administration Building
  - Mercer Island Thrift Shop
  - Former Tully's Building
- The purpose of an FCA is to inventory and evaluate building and site infrastructure conditions, document observed deficiencies, and develop a recommended strategy for **renovation or replacement** to extend the life of the asset and ensure continuity of services.

City Hall Campus



- The existing City Hall Campus is composed of two parcels:
  - City Hall – 4.09 acres
  - Public Works – 9.49 acres

City Hall Campus



Structures:

- City Hall
- Public Works Building
- Numerous Public Works yard structures that are an extension of the Public Works Building Program

City Hall Building

- Approximately 35,000 SF
- Served as City Hall for over 35 years, the last renovation was in 1988.

City Hall Building

- Housed the following teams:
  - City Manager’s Office
  - City Attorney’s Office
  - Finance and Utility Billing
  - Human Resources and Payroll
  - Customer Service
  - Community Planning & Development
  - Police
  - Municipal Court
  - Council Chambers

Public Works Building

- Constructed in 1981 as a workshop and mechanic facility
- Approximately 15,350 sq feet
- The building houses Public Works operations and administration.
- 64 year-round employees (FTE and LTE staff) and 15 to 20 seasonal employees.
- The building has been repurposed as City operation needs have expanded and changed over the last four decades.

Facilities Planning

Early 2023:

- The City intended to follow a gradual, structured approach to planning for building replacements through the Facility Conditions Assessment project, but…
- …just as that planning work was kicking off in early 2023, City Hall was closed due to asbestos contamination.

City Hall Emergency Closure

Timeline - Discovery

April 17, 2023

- Broken tiles and tile adhesive in the basement Mechanical Room of City Hall were identified as possibly containing asbestos.
- The tiles were discovered by a staff person while inspecting the Mechanical Room and may have been in that condition for some time.
- Same-day tests confirmed that both the tiles and adhesive contained asbestos.
- The Mechanical Room also included an air handling unit for the City Hall HVAC system.
- **City Hall was immediately closed to further investigate and to test inside the HVAC system.**

Picture: Broken tiles in Mechanical Room

Timeline – Early Investigation

April 18 – April 21, 2023

- The asbestos abatement contractor performed an initial building walk through.
- Additional floor tiles on the Main Floor of City Hall also tested positive for asbestos. These tiles were intact, undisturbed, and under carpet tiles, and did not present an immediate hazard. However, they would require abatement in the event of a renovation involving the floor plate in the areas where the tiles were present.
- **The contractor conducted initial air quality testing throughout the building; there were no positive tests for airborne asbestos.**

Picture: Asbestos-containing tiles under carpet floor tiles on first floor of City Hall.

Timeline – In-Depth Testing

April 21 – July 7, 2023

- The City worked with PBS Engineering and Environmental to develop and perform comprehensive testing protocols.
- Extensive testing was conducted, including **air samples, settled dust, and bulk materials.**
- A thorough investigation of the HVAC system was performed as conditions allowed.
- Other possible sources of asbestos were also evaluated.

May 15 – 19, 2023

- Boiler room flooring materials abated (pictured)

June 27, 2023

- Good Faith Inspection performed.

Picture: Basement mechanical room post-abatement.

Testing and Results

- **No asbestos fibers were identified in any air testing samples.**
- **Asbestos detected in 11 settled dust samples from 10 locations, including inside the HVAC system.**
- **Bulk testing** identified asbestos in two HVAC system filters and one sample of flooring.
- **Good Faith Survey** of other potential asbestos containing materials in the building was positive for asbestos including undisturbed floor tiles, window putty, and 31 fire doors.

Picture: Air sampling performed in City Hall kitchen.

Findings from 2023 City Hall Assessment

- **It is unlikely that the basement floor tiles were the sole source of the asbestos found in the HVAC system.** However, additional sources of asbestos have not been identified.
- It is possible that the asbestos contamination within the HVAC system occurred prior to City ownership or during a renovation project in the late 1980s - early 1990s.
- Significant destructive investigation (e.g. full removal of the City Hall ceiling) would have been required to fully confirm conditions.
- **Requirements to abate and re-occupy the building were anticipated to be costly and extensive.**

Preliminary Re-Occupancy of City Hall Cost Estimates in 2023

- Northwest Studio, the City's architect team, prepared preliminary cost estimates for two scenarios for re-occupancy of City Hall.
- The **first scenario** was a full re-occupancy of City Hall.
- The **second scenario** was investigating the possibility of temporarily re-occupying the Police Department area of the City Hall building.

Scenario 1: Re-Occupy City Hall (2023)

Note: This information from 2023 is included to provide context for current facility project planning work.

- Required abatement of the floor tiles in the basement mechanical room (already completed), replacement of the HVAC hydronic and ventilation system, and the replacement of various building infrastructure required associated with the HVAC system (ceilings, light fixtures, cabling, etc.).
- **Preliminary cost estimate was $10 million with an estimated timeline of nearly two years to complete the work.**
- This cost estimate did not include abatement costs or soft costs such as design, engineering, and project management costs.

Scenario 2: Re-Occupy Police Department (2023)

Note: This information from 2023 is included to provide context for current facility project planning work.

- Partitioning the existing Police Department spaces from the remainder of the building, abating those spaces, removing the existing HVAC system, and installing a contemporary system to serve this occupancy.
- 5 to 7 years while longer-term options were investigated
- **Preliminary cost estimate was $4 million with an estimated timeline of 12 to 18 months to complete the work.**
- This cost estimate did not include abatement costs or softs costs such as design, engineering, and project management costs.

City Hall Permanent Closure

City Hall Permanent Closure (October 2023)

- **The City had begun long-range facility planning work earlier in 2023. There are other matters of concern related to the long-term use of the City Hall building.**
- The City Hall building is at (or beyond) its expected lifespan. The building was originally constructed in 1957 and was last renovated in 1988.
- City Hall did not meet current new construction energy or building code requirements, and **multiple building systems were failing** or needed to be substantially replaced.
- **Almost all interior walls had been identified as lacking lateral bracing and, unless reinforced, are at risk of failure in the event of seismic activity.**
- Some of these walls are constructed with concrete-filled CMU (concrete masonry units/cinderblocks) and they are at risk of collapse during a seismic event, potentially rendering the building inoperable.

City Hall Permanent Closure (October 2023)

- The age and condition of City Hall meant **there was not a high return on investment for the significant cost of abating and re-occupying all or part of the building.**
- The City Council approved the permanent closure of City Hall during the October 3, 2023, City Council meeting.

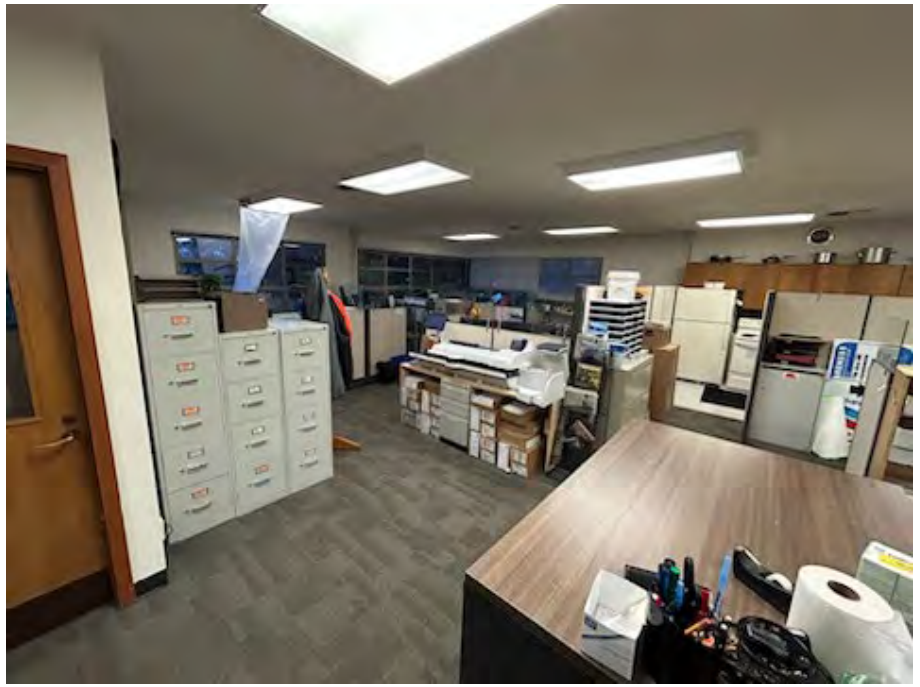
Public Works Building Facilities Conditions Assessment

Public Works Building Replacement

- Given the age and condition of the Public Works Building, the City Manager directed the staff and consulting teams to proceed with the facilities conditions assessment (FCA) for the Public Works Building in 2023.
- **The Preliminary Facility Conditions Assessment for the Public Works Building was presented to the City Council on February 6, 2024.**
- The FCA identified multiple systems that were failing or in need of significant repair or investment.

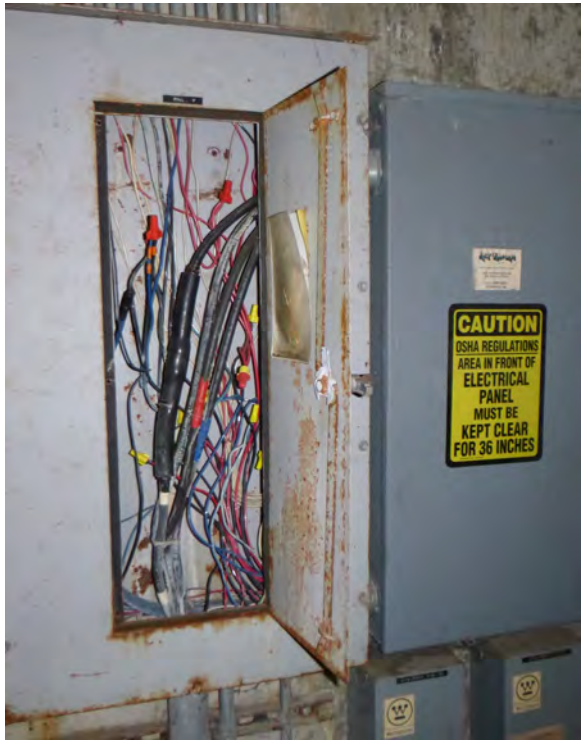
Public Works Building (2024 FCA Presentation)

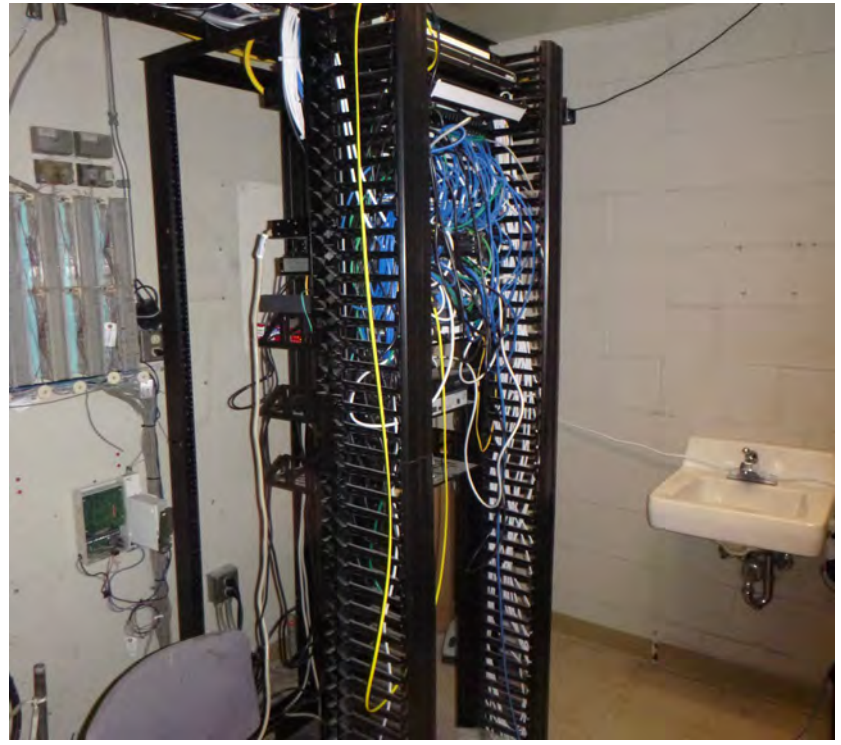
- Not suitable for current staff and operations needs.
- Inadequate work areas and support facilities.
- Facility is undersized and poorly laid out.



Public Works Building (2024 FCA Presentation)

- Does not meet certain codes or industry standards.
- Major systems are in need of complete replacement.





Public Works Building - the Yard
(2024 FCA Presentation)

- Critical equipment and vehicles stored uncovered, impacting operations, emergency response and equipment condition.

Public Works Building (2024 FCA Presentation)

- Green roof leaking and compromising structure
- Short term repairs initiated to buy time for full replacement

Public Works Building (2024 FCA Presentation)

- Seismic safety risks identified during conditions assessment

Public Works Building (2024 FCA Presentation)

- Based on these findings presented in early 2024, the City Manager recommended the City Council prioritize the Public Works Building for replacement.
- The Public Works Building houses many essential services and some short-term reinvestment was needed to extend the life of the building until a replacement strategy was identified.

Public Safety and Maintenance Facility Design Direction (March 2024)

- The City Council directed the City Manager at the March 1, 2024 Planning Session to commence planning and design for a new Public Safety and Maintenance Facility (PSM) on the current City Hall Campus.

Interim Facilities

Interim Staff Facilities

- The displacement of staff from City Hall has been challenging for City teams across all departments and workgroups. We understand it has also impacted the community.
- Approximately 80% of City staff are working in-person on Mercer Island each day, including:
  - Police
  - Fire
  - Municipal Court
  - Parks and Recreation
  - Public Works Engineers
  - Youth and Family Services
  - Maintenance Employees

Interim Staff Facilities

- The remaining staff are working from a combination of home offices and in shared/rotating office spaces and holding meetings at the Community Center or at other locations.
- Some modified/shared workspaces have been made available in the Luther Burbank Administrative building, the maintenance building, and the Community Center.

Interim Staff Facilities

Police

- The Police Department has been significantly impacted by the closure of City Hall.
- The City explored a number of alternatives for the Police Department, landing on leasing modular buildings. The lead time on these buildings was over a year.
- The Department initially relocated to the Mercer Island Community & Event Center and then over the summer moved to the Luther Burbank Building.
- The modular buildings opened for use in the fall of 2024.

Picture: Installation of Modular Buildings for Police on City Hall Parking Lot

Interim Staff Facilities

Municipal Court

- The Municipal Court was also significantly impacted by the closure of City Hall.
- After initial use of the Kirkland Justice Center, the City signed a lease at Newcastle City Hall.
- The lease includes office space in Newcastle for court staff offices and use of the Newcastle Council Chambers for court proceedings.

Picture: Newcastle City Hall, Court staff office space

Interim Staff Facilities

Council Chambers

- The City Council Chambers moved to the Slater Room at the Community Center in 2024.
- The Slater Room has undergone significant audio-visual upgrades and equipment procurement to better facilitate use as Council Chambers and meeting space for boards and commissions and City staff.

Picture: Slater room in use for City commission meeting

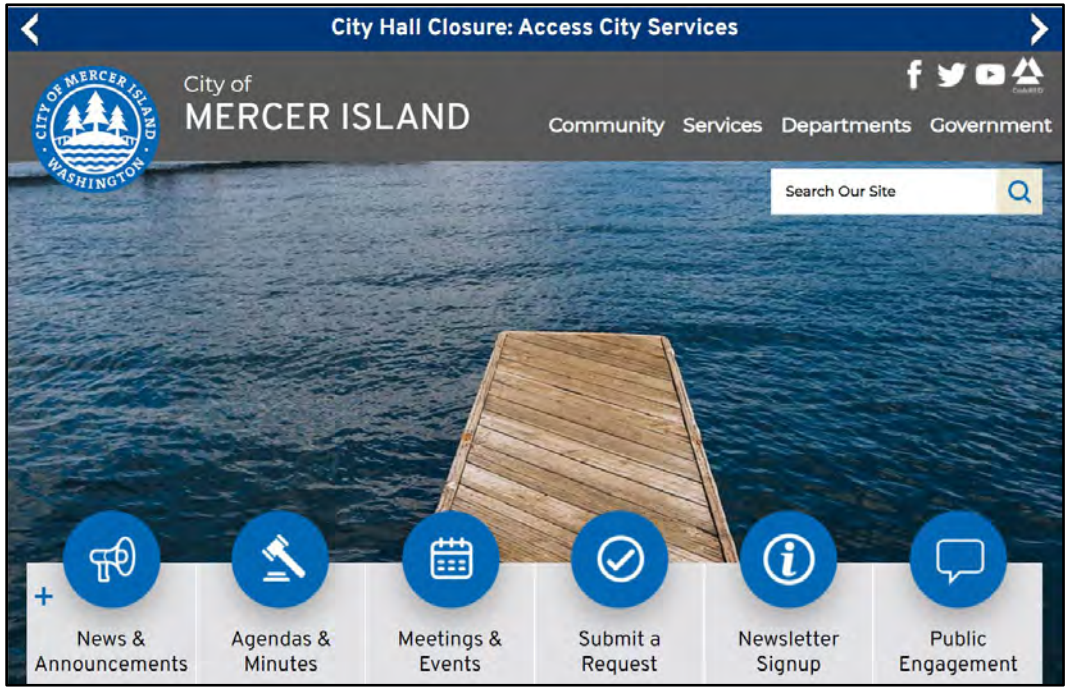
Public Works Building – Interim Repairs

- At the July 16, 2024, City Council meeting, the Council appropriated funds and authorized staff to proceed with seismic repairs to the Public Works building that are necessary to keep the Public Works building safely in operation in the short-term (five to seven years).
- City Council approval of the bid award for this work is scheduled for tonight’s City Council meeting.

How do you Access City services?

Customer Service Team
(206) 275-7600
CustomerService@mercerisland.gov
(staffed Mon-Fri 8:30a-5:00p, except holidays)

- For the quickest and fastest service, community members should contact the City of Mercer Island Customer Service Team.
- The City's Customer Service Team can help answer your questions about services, such as service requests, pet licensing, business licenses, or parking permits during the closure of City Hall.
- The Customer Service Team can also assist you in getting connected to other City department teams as needed.



PSM “Pre-Design” Phase

Public Safety & Maintenance Facility

- City begins “pre-design” phase for the PSM Facility in the spring of 2024 with the architect team from Northwest Studio.
- The new PSM Facility will replace the existing Public Works Building and provide a new combined home for the City’s:
  - Public Works teams including the maintenance facilities, and the maintenance yard
  - Police Department
  - Emergency Operations Center
  - IT & GIS team
  - Customer Service

Why Combine these City Departments in one Building?

- Police, Public Works teams, the Emergency Operations Center, and IT/GIS are the foundations for basic City operations, public safety, and customer service.
- The benefits of co-locating these departments include:
  - Improved operational and emergency response coordination
  - Efficiency in co-locating protected and secured parking
  - Significant overlap in common space needs
  - Large spaces driven by specific departmental needs can be shared
  - Risk Category IV facility

Staff Workshops (2024)

- Conducted workshops with each of the City teams expected to be housed in the future PSM Facility.
- Facilitated input on department operational and space needs in a new building and yard
- Determined area requirements for vehicle and equipment storage and maintenance
- Reviewed operational relationships between departments; daily operations and activity workflows
- Understand performance requirements for facility components
- Discussed future growth/future changes.

Key Police Department Needs

- Workstations and support spaces for approximately 40 Police Department staff, including patrol units, detectives, marine units, and administration.
- Secure parking for vehicles and equipment.
- Public facing workspace and storage for records team.
- Single controlled public access point to the Police Department.
- Secure interview rooms.

Key Police Department Needs

- Vehicle sallyport and areas for secured criminal intake, processing, and holding.
- Secure evidence storage.
- Specialty storage and operations areas including marine storage and dive lockers, special operations room, bicycle patrol storage, and the armory.
- Patrol lockers, locker rooms, and deployment mudroom.

Key Public Works Needs

- Currently operating out of existing PW admin and shop building, including yard space for various City vehicles and material storage.
- Public Works departments include:
  - Engineering
  - Capital projects
  - Parks and Recreation
  - Utility teams
  - Right of way team
  - Stormwater teams
  - Support services
  - Seasonal public works team members.

Key Public Works Needs

- Workspaces and support spaces for approximately 80 employees including offices, meeting rooms, and lunch areas.
- Storage for field equipment and gear for field staff.
- Locker rooms, mud rooms, and cleanup rooms for field staff.
- Laundry facilities.

Key Public Works Needs

- Sleep rooms for staff for overnight use during emergency operations.
- Primary loading, receiving, and storage areas for equipment and materials.
- Storage and maintenance facilities for over 100 pieces of equipment and City vehicles, many of which are the largest and most expensive vehicles owned and operated by the City.

Key Emergency Operations Center (EOC) Needs

- The former City Hall had a dedicated Emergency Operations Center (EOC) in the basement.
- With the closure of City Hall, the EOC has generally operated out of the Mercer Island Community and Event Center (MICEC) when needed.

Key Emergency Operations Center (EOC) Needs

- A large and flexible command center.
- Breakout meeting spaces and areas for local media.
- Support spaces including a call center, emergency radio communications, equipment storage, and workspaces to host members of partner agencies.
- Storage for medical, food and water, and related supplies for distribution to the community during emergencies.

Key IT/GIS Needs

- IT & GIS staff and the City's servers previous operated out of the former City Hall building.
- IT & GIS staff currently working out of the Luther Burbank Admin building or remotely.

Key IT/GIS Needs

- Workstations and support spaces for approximately 9 city staff. This team historically spends a significant amount of their daily operations supporting the unique technical needs of the Police Department and Public Works team.
- Equipment and server storage for the department. Access to loading, receiving, and storage areas.
- A dedicated and secure server room for the City's central computer servers.

Shared Spaces

- Several support spaces are a shared necessity among multiple departments, including:
  - Sleeping spaces for staff during emergencies, extreme weather or multiple shifts, or circumstances related to MIPD operations.
  - Large and flexible meetings spaces.
  - Exercise equipment and lunchroom spaces.
  - Lockers and storage for field equipment alongside shared cleanup and washdown areas,
  - Loading and receiving areas for equipment and supplies.

What are Building Standard Risk Categories?

- The risk category (RC) reflects the relative seriousness of potential failure.
- Categories vary from the lowest hazard to human life (RC I) to the highest hazard (RC IV) and serve as a threshold for a variety of code provisions related to earthquake, rain, flood, snow, ice, tornado, and wind loads.
- Most buildings are designated (RCII), including current City facilities.
- Most essential public facilities are designated (RC IV).

Why build the PSM to Risk Category IV?

- This type of facility is a lifeline to the community in the most extreme circumstances, and the departments proposed to be working out of this facility are critical to remain operational during a catastrophic event.
- Building risk categories are determined by the International Building Code (IBC).

Completion of Pre-Design Phase

- “Pre-design” phase confirmed the programming and conceptual outline of the Public Safety and Maintenance building.
- Identified that customer service team should be added to PSM building.
- Decision that Public Works Engineering and Capital Projects team could be housed in a separate facility.

PSM Schematic Design Phase

PSM Schematic Design Phase

- Began shift to schematic design phase of PSM Facility project in fall of 2024.
- Schematic design is the first step in taking a concept and turning it into a specific design plan, including architectural drawings and a site plan.

PSM Schematic Design Phase

- Recent actions from the PSM design team include:
  - Tours of other public safety and maintenance buildings in the region
  - Site visits of existing City facilities.
  - Ongoing design meetings with staff teams.

Regional Facility Tours

- Design team and councilmember tour of regional police departments, including:
  - Shoreline PD
  - University of Washington PD
  - Kirkland PD
- The team heard about both successes and “lessons learned” from the construction or renovation of these police facilities to help inform work as we plan for our new facility.

Regional Facility Tours

- Design team and councilmember tour of Kitsap County Public Works facility
- Tour discussion included:
  - Private office, shared workspace, and training space layouts.
  - Ingress/egress for large vehicles and equipment.
  - Covered storage, lighting, and security.
  - Comfort spaces for meals, hygiene, nursing, and team-building.

City Facility Tour

- The PSM design team led a site tour of the City Hall and Public Works Building properties for all subconsultants working on the project.

City Facility Tour

- PSM design team had a follow-up site visit with the City's Public Works Department operational leads.
- Discussed how the Public Works teams uses the facility and yard space for equipment and materials storage.

PSM Design Meetings

- Throughout the fall and into today's meeting and beyond, continued feedback given on preliminary design documents with PSM design team and staff from PSM departments.

Schematic Design Update on PSM Facility

- The PSM design team today will give an update on progress on schematic design of the PSM Facility and public works yard.
- Still significant work left to do, what you see today is not final.
- Looking ahead through 2025, several additional Council and community touch points on design and other actions necessary to approve this project

Next Steps and Timeline

Ongoing PSM Facility Design

- The PSM Facility project team will return to the City Council for additional project review and discussion later this year.
- A community engagement process is also anticipated for later this year to receive feedback on the PSM Facility schematic design.
- Tentatively aiming for council approval of schematic design in May of 2025.

Next Steps and Timeline

Funding

- The City Council will discuss PSM Facility funding in Q2 2025, including the consideration of a bond ordinance for voter approval.

Next Steps and Timeline

Zoning

- While the building site has the correct comprehensive plan land use designation, it is recommended that the City Council direct the City Manager to submit a rezone application to allow appropriate design and siting of the PSM Facility.
- A zoning review is anticipated for later this year or early 2026 .

Northwest Studio Schematic Design Presentation

Mercer Island Public Safety and Maintenance Facilities

Presentation Agenda

I. Site Conditions

II. Site and Facility Design Strategies

III. Concept Design

- Site Organization
- PSM Building
- Lower Yard Functions
- Upper Yard Functions

IV. Design Questions Preview

AERIAL PHOTOGRAPH OF THE EXISTING SITE

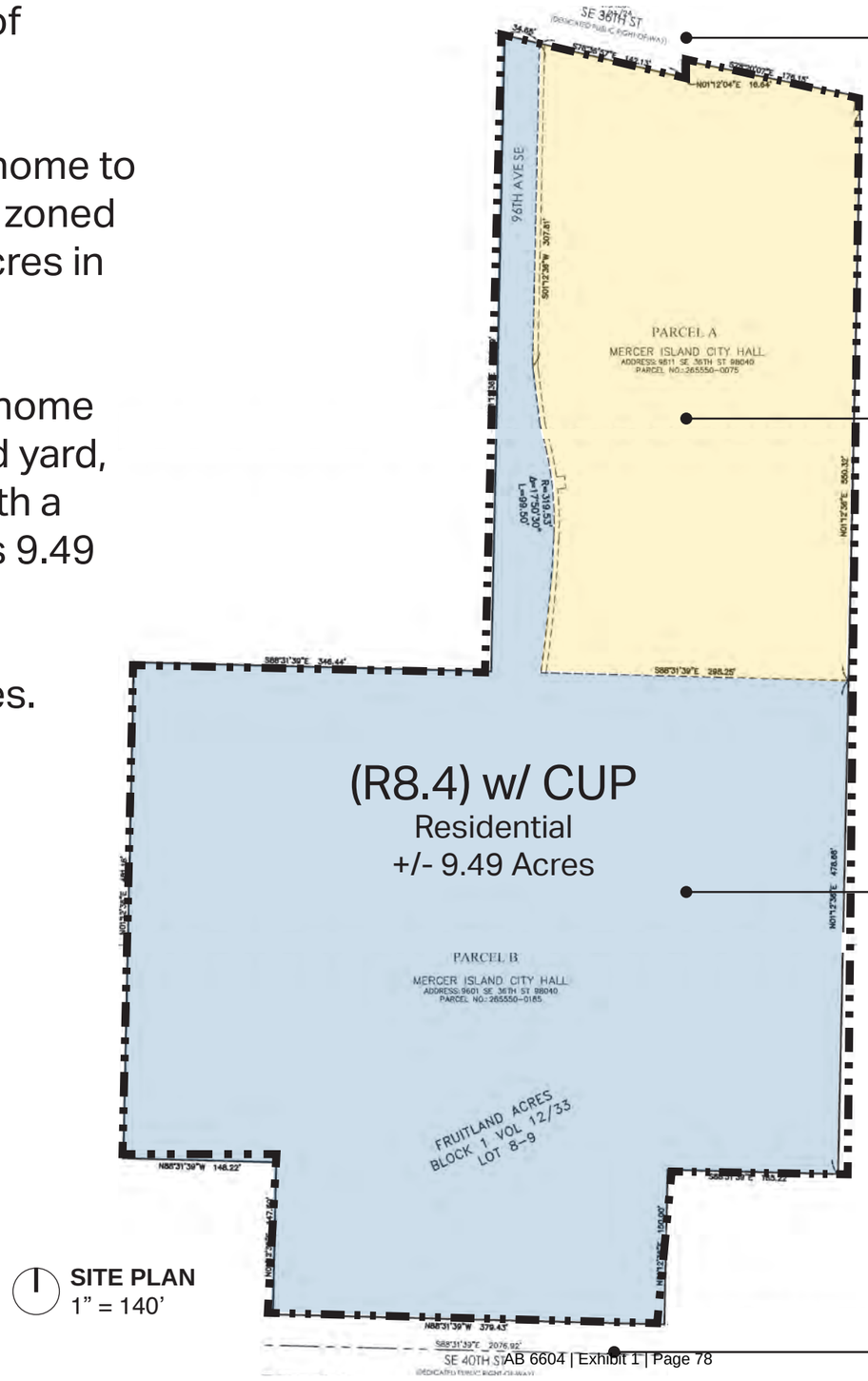
EXISTING PARCELS AND ZONING

The existing site is composed of two parcels.

The northern parcel, currently home to the (closed) city hall building, is zoned Commercial (CO) and is 4.09 Acres in size.

The southern parcel, currently home to the public works building and yard, is zoned (R8.4) Residential —with a Conditional Use Permit— and is 9.49 Acres in size.

The total site area is 13.58 Acres.



SITE PLAN
1” = 140’

SE 36TH STREET

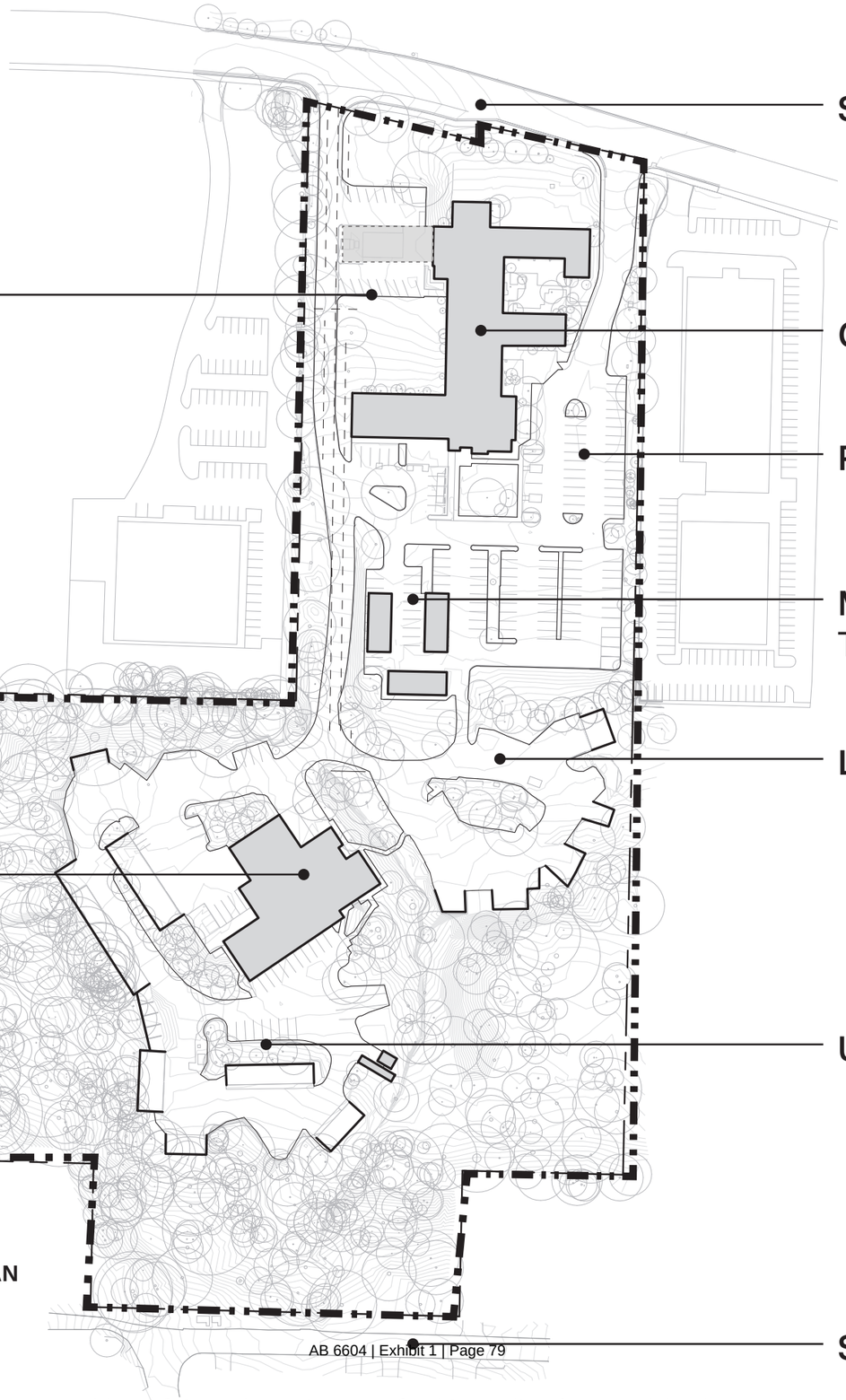
CO (COMMERCIAL) ZONE
4.09 ACRES

(R8.4) RESIDENTIAL ZONE
W/ CONDITIONAL USE PERMIT
9.49 ACRES

SE 40TH STREET

MAP OF EXISTING FACILITIES

This map identifies existing buildings, structures, and site elements, along with general uses at each location.



SE 36TH STREET

PARKING AREAS

CITY HALL (CLOSED)

PARKING AREAS

MERCER ISLAND POLICE DEPARTMENT
TEMPORARY FACILITIES

PROPERTY LINE

LOWER YARD
DECANT FACILITY (EXTERIOR)
WASH AREA (EXTERIOR PAD)
RAW MATERIALS
ORGANICS
WASTE BINS

PUBLIC WORKS BUILDING
STAFF OFFICES
MAINTENANCE SHOP
WAREHOUSE
VEHICLE STORAGE

UPPER YARD
EQUIPMENT STORAGE
TOOL STORAGE
VEHICLE STORAGE & PARKING
RAW MATERIALS STORAGE
MATERIAL LAY-DOWN AREA

SITE PLAN
1” = 140’

SE 40TH STREET

TREE INVENTORY MAP

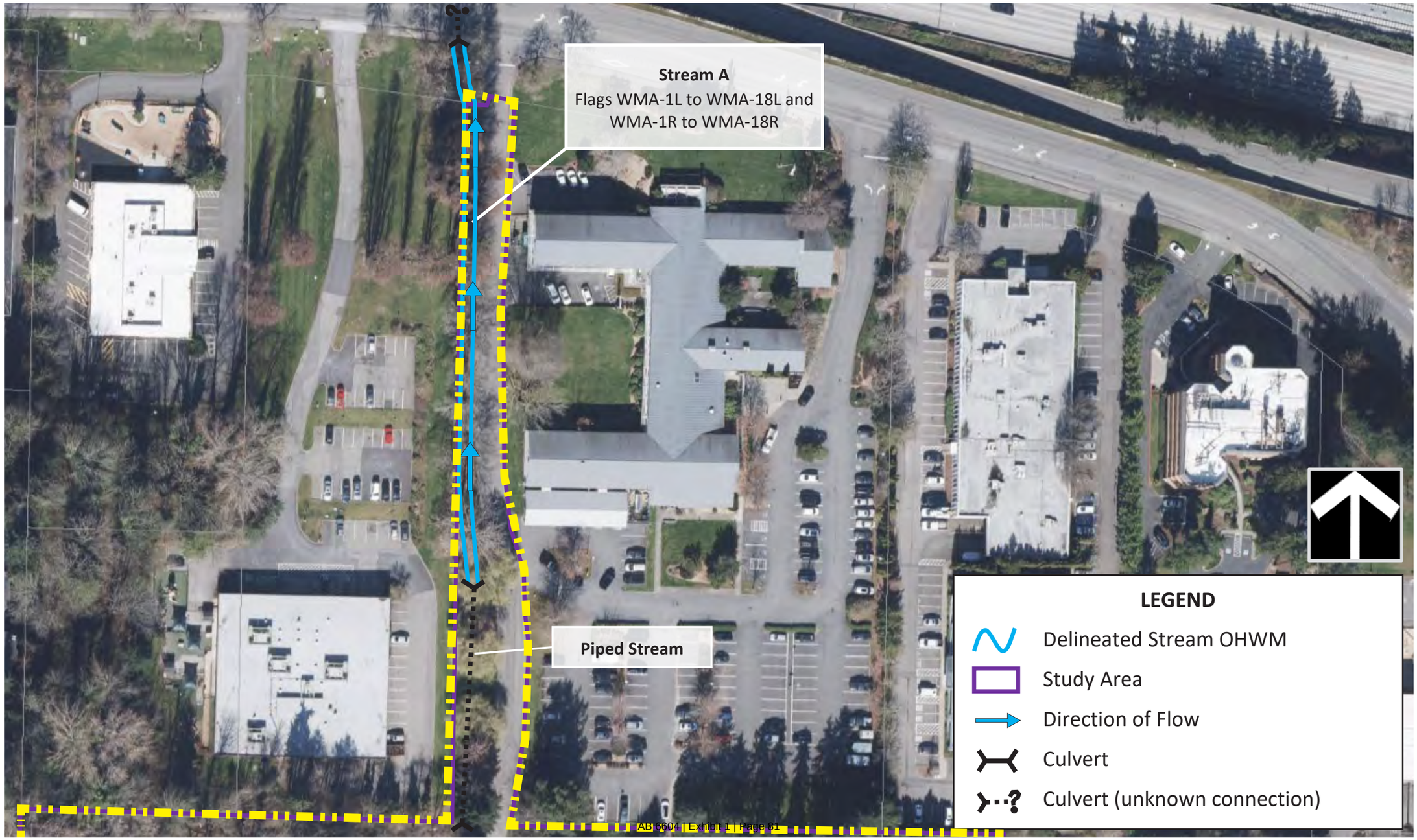
An arborist report was undertaken to identify, and assess, trees meeting th City of Mercer Island's large tree or exceptional tree definitions within the project site.

The map at right illustrates all trees greater than 10" diameter at breast-height (DBH) within the property boundary.

Redevelopment of the project site for Public Safety and Maintenance Facilities will require careful review of existing trees in relationship to proposed facilities and facility operations.

WETLAND AND WATERCOURSE DELINEATION

A wetland and watercourse delineation study was conducted. That study identified two watercourses, with several on-site piped segments, and six small wetlands. The map below identifies the locations of these elements for further study.



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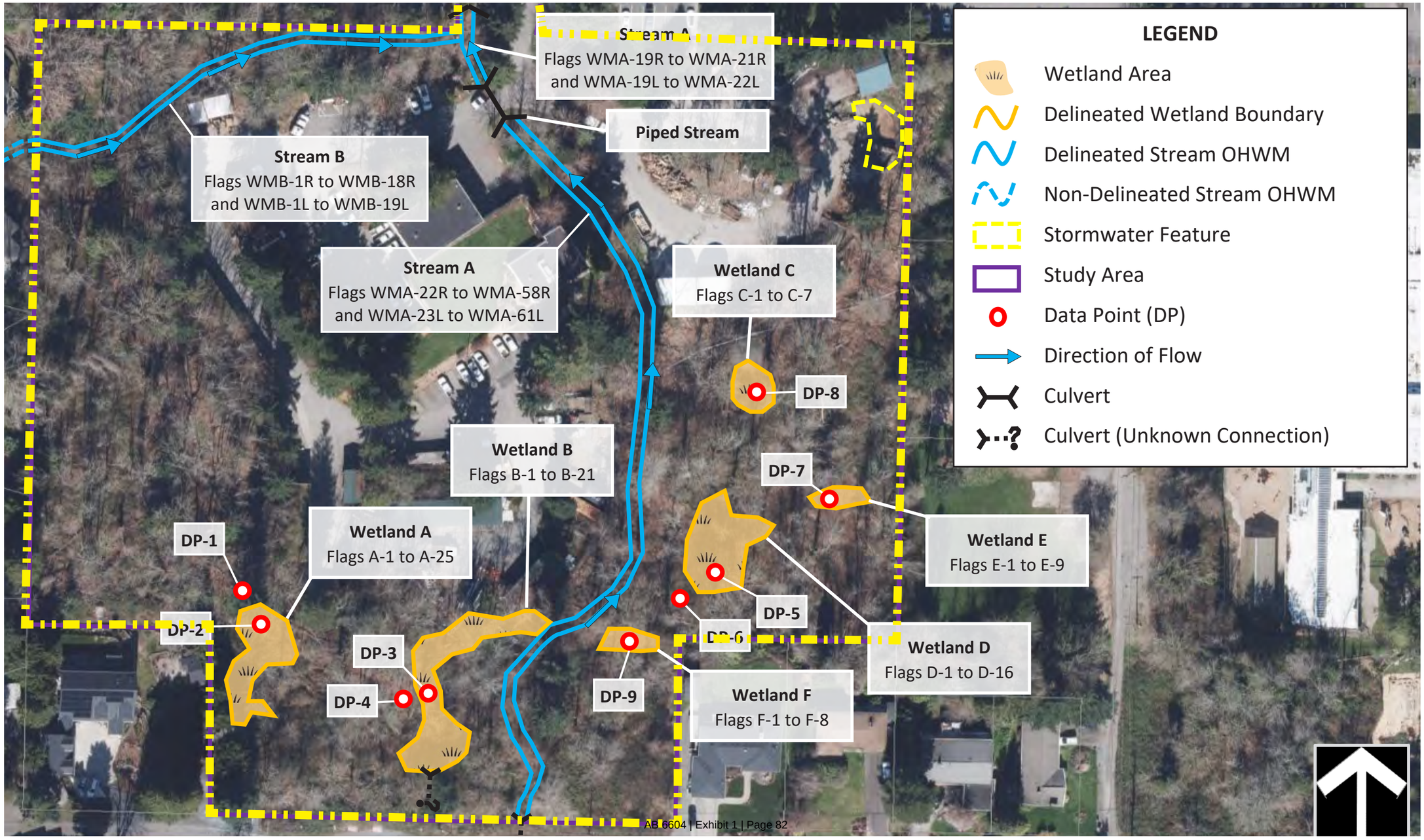
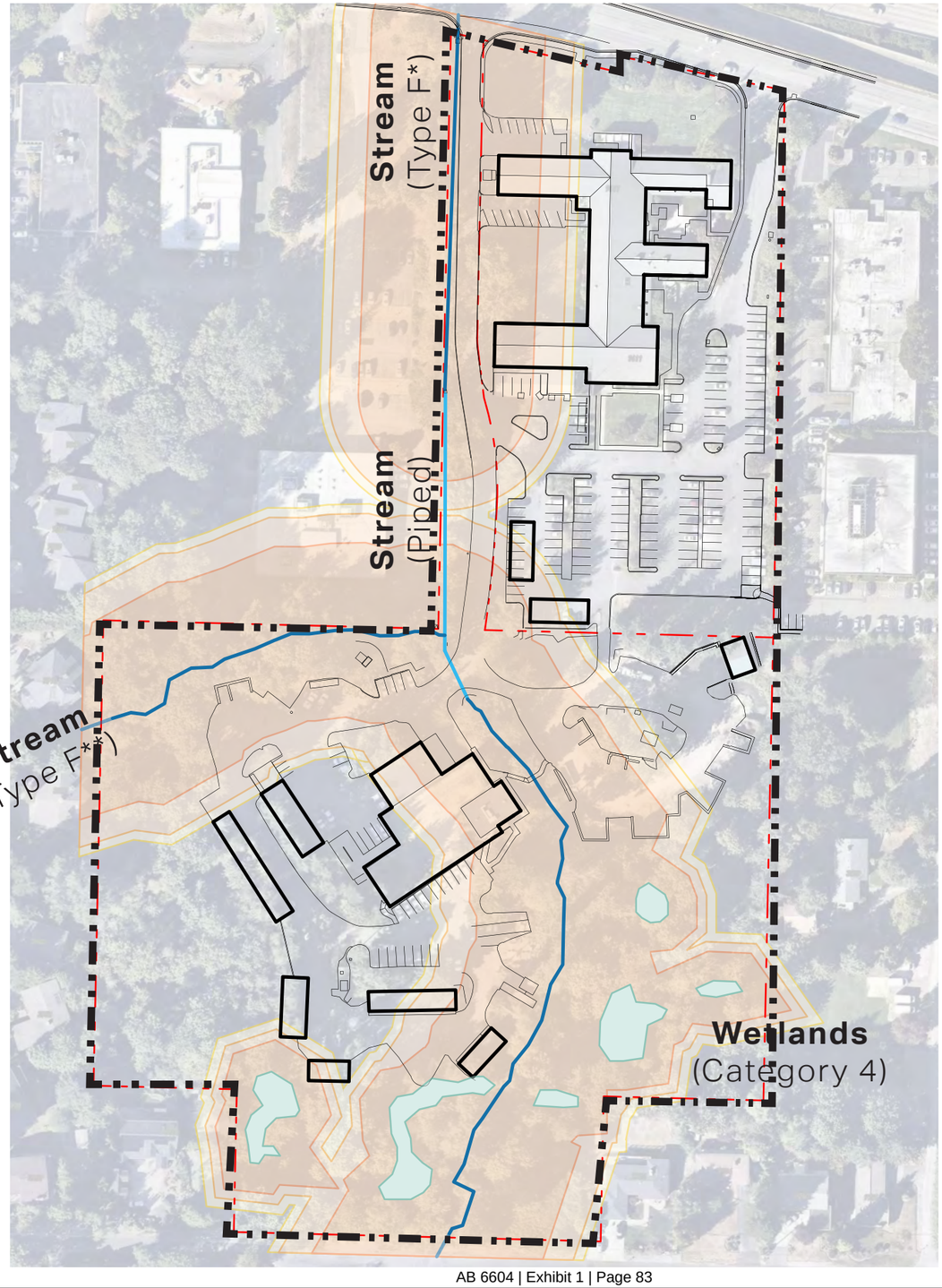


SITE ECOLOGY CONDITIONS INFORM AREAS FOR FUTURE WORK

This map illustrates the location of streams and wetlands identified on the project site.

Buffers and setbacks associated with the site's ecological features limit the majority of future development to areas currently occupied by existing structures or impervious surfaces (indicated on the next slide).



SITE PLAN
1" = 140'-00"

SITE ECOLOGY CONDITIONS INFORM AREAS FOR FUTURE WORK

This map illustrates the approximate areas of existing site development, including impervious surfaces and site structures.

These areas form the basis for planning future development on-site.

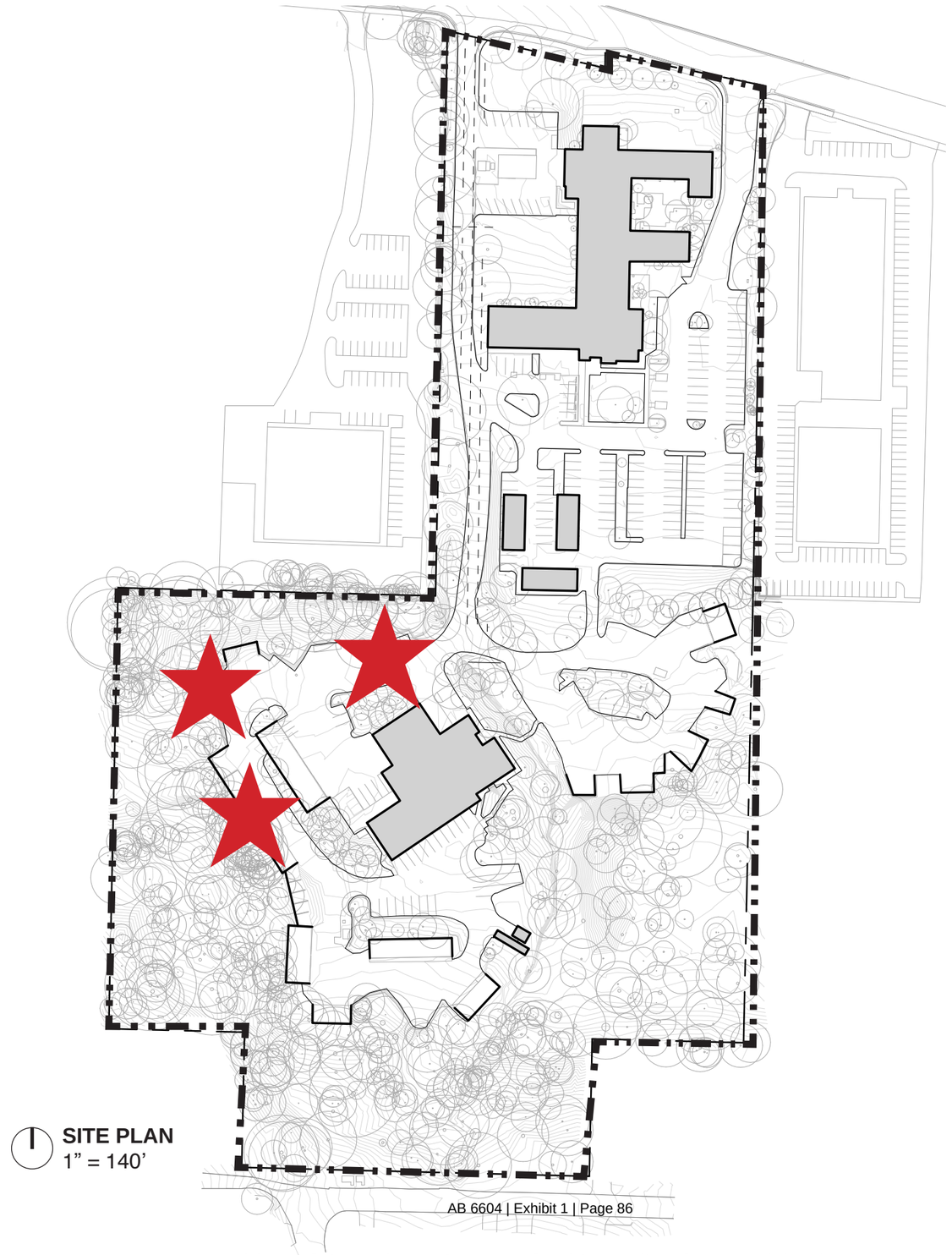
This map does not yet account for boundary variations that may occur with potential buffer averaging or mitigation strategies.

SITE PLAN
1” = 140’

Design Strategies

Five design strategies have arisen from site observation and operational and programmatic reviews with city staff.

THREE PHOTOGRAPHS OF THE EXISTING YARD HIGHLIGHT A CHALLENGING CONDITION



SITE PLAN
1” = 140’

Site Photograph

LACK OF WEATHERING COVER

This photograph illustrates conditions within the public works operations yard. Existing structures, designed 45-years ago, are inadequately sized for today's vehicles and equipment, resulting in continuous exposure to the elements.

LACK OF WEATHERING COVER

This photograph illustrates the expensive, and critical, city-owned vehicles—in this case a sewer VAC-Truck—that must be stored fully exposed to the elements, and to unnecessary wear.

LACK OF WEATHERING COVER

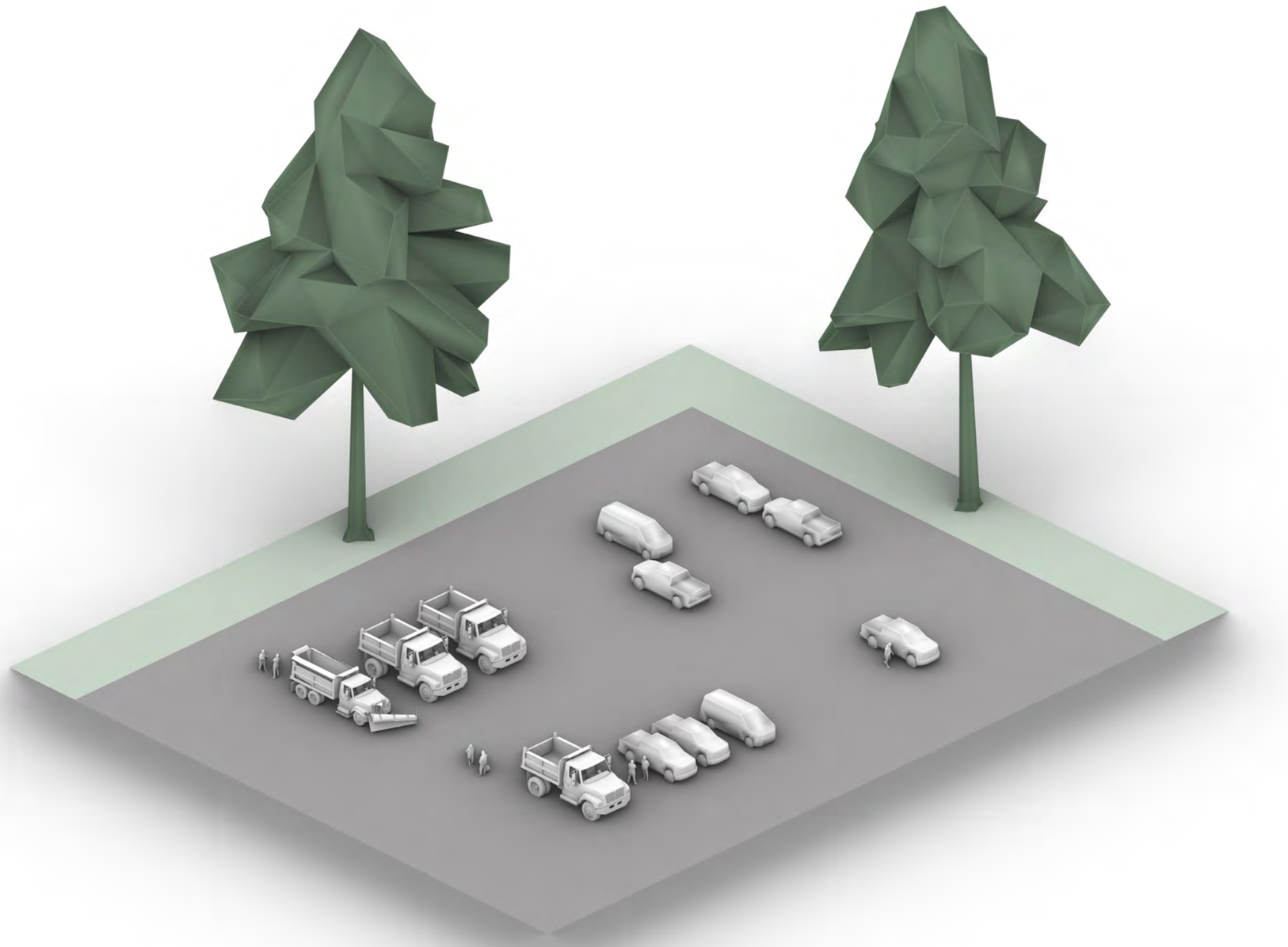
This photograph illustrates the existing public works operations yard during a storm event. The lack of weathering cover also means that city staff must clear the public works yard before crews can mobilize to serve the community.

Design Strategies

Strategy 1: Cover more vehicles, equipment, and work areas to protect equipment and promote efficient operations, no matter the weather.

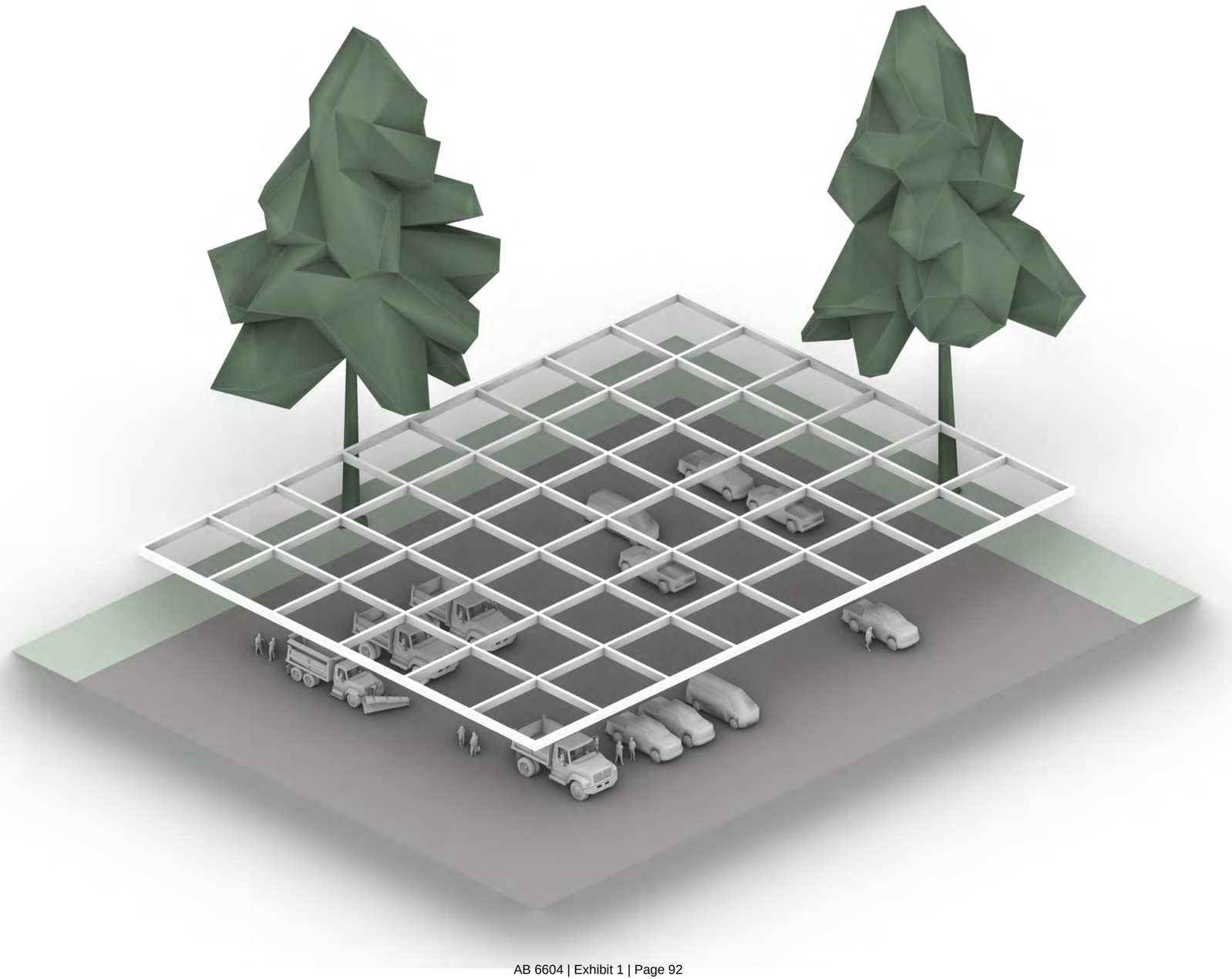
ILLUSTRATION OF EXISTING UNCOVERED VEHICLE AND EQUIPMENT STORAGE

The existing public works yard, including city vehicle parking areas, equipment storage, and operations areas are mostly uncovered and unprotected.



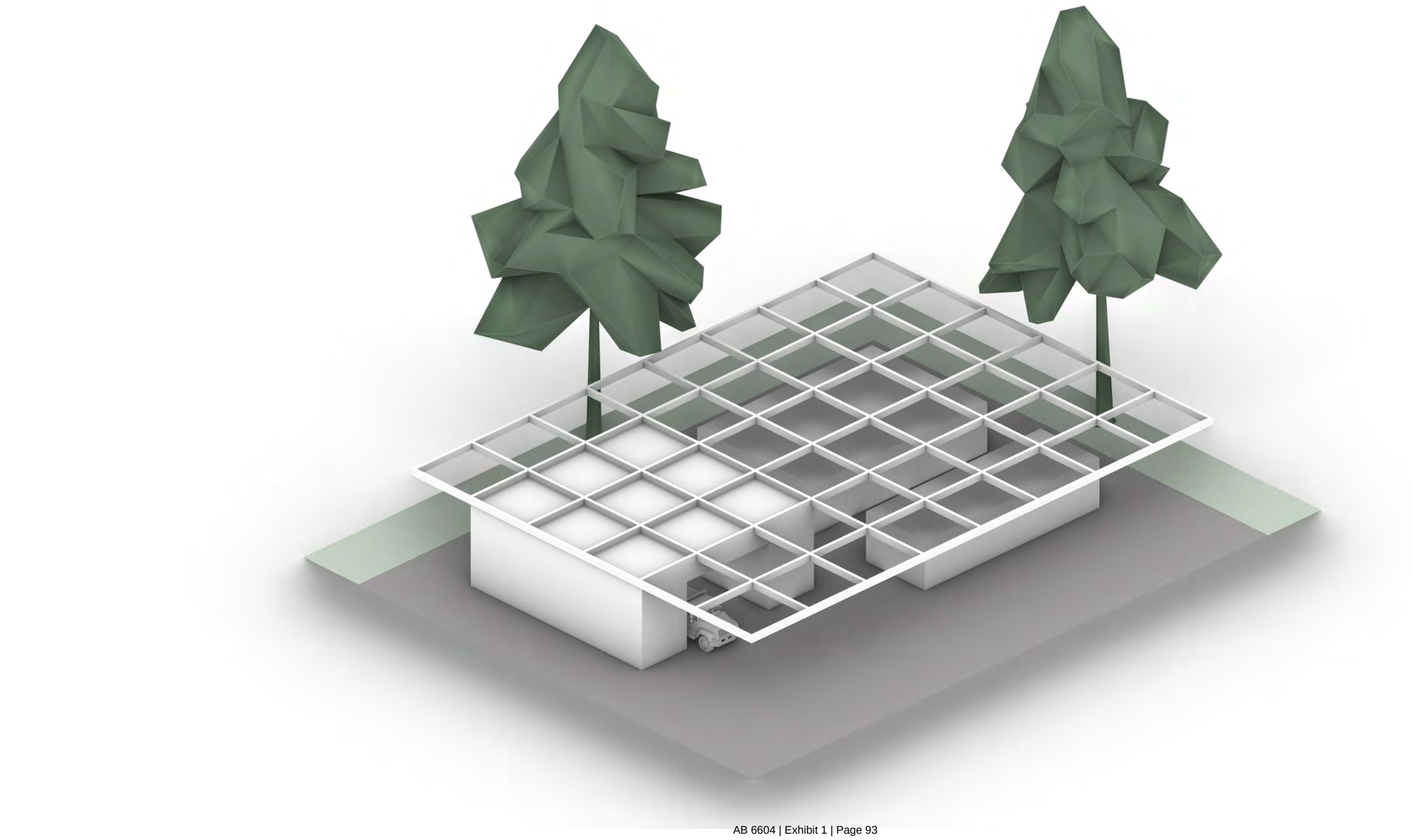
NEW AREAS SHOULD BE COVERED

New facilities should cover vehicles, equipment, and work areas to protect city assets and promote efficient operations.



NEW BUILDINGS SHOULD COLLOCATE WITH COVERED OPERATIONAL AREAS

New buildings should also be located underneath these weathering covers, or roof structures, for efficient work-flow between interior and exterior operations.



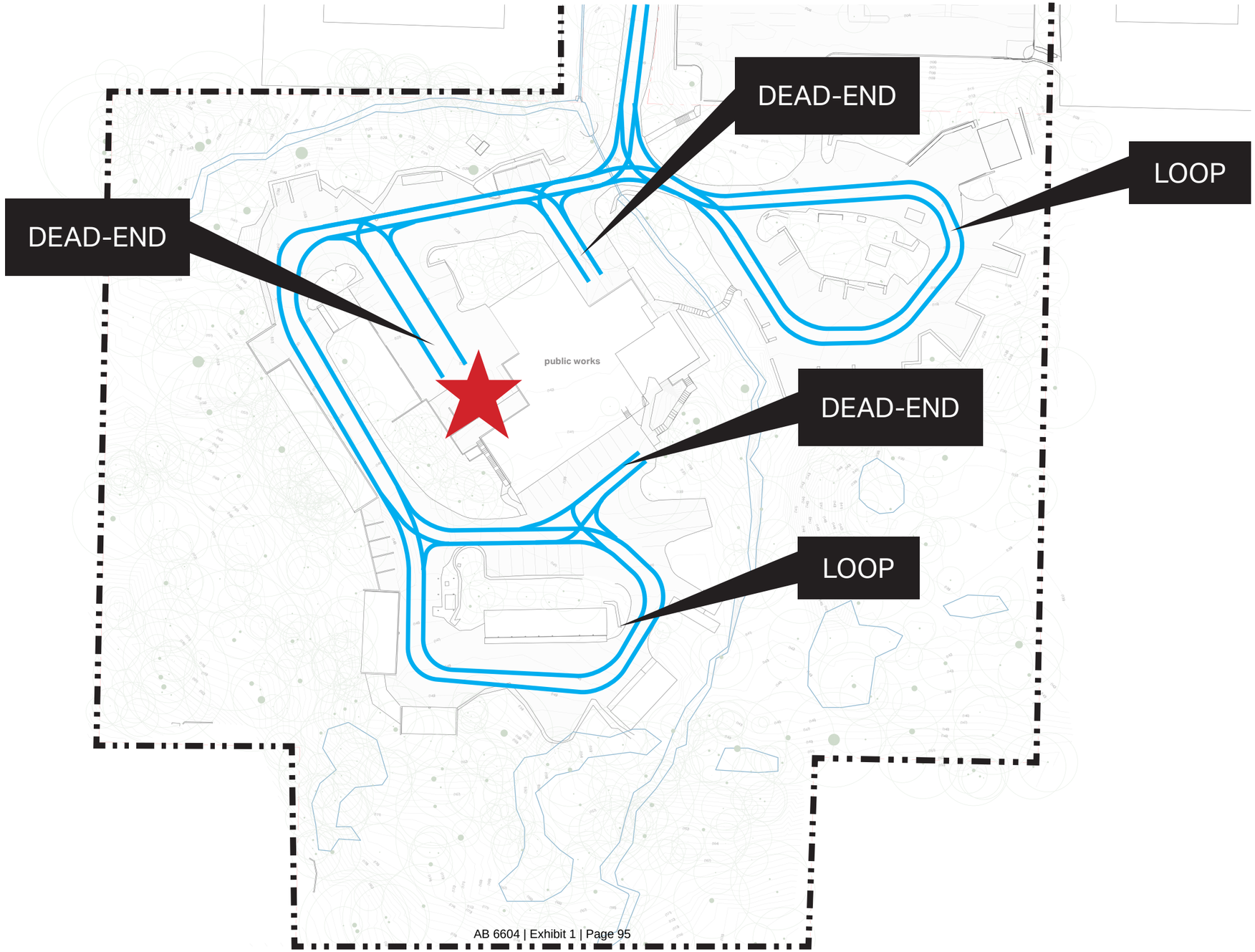
Design Strategies

Strategy 1: Cover more vehicles, equipment, and work areas to protect equipment and promote more efficient operations, no matter the weather.

Strategy 2: Co-locate buildings with covered areas for operational efficiency, and for cost effectiveness- leveraging weathering cover for building roof structures.

EXISTING VEHICULAR CIRCULATION ON THE PUBLIC WORKS SITE

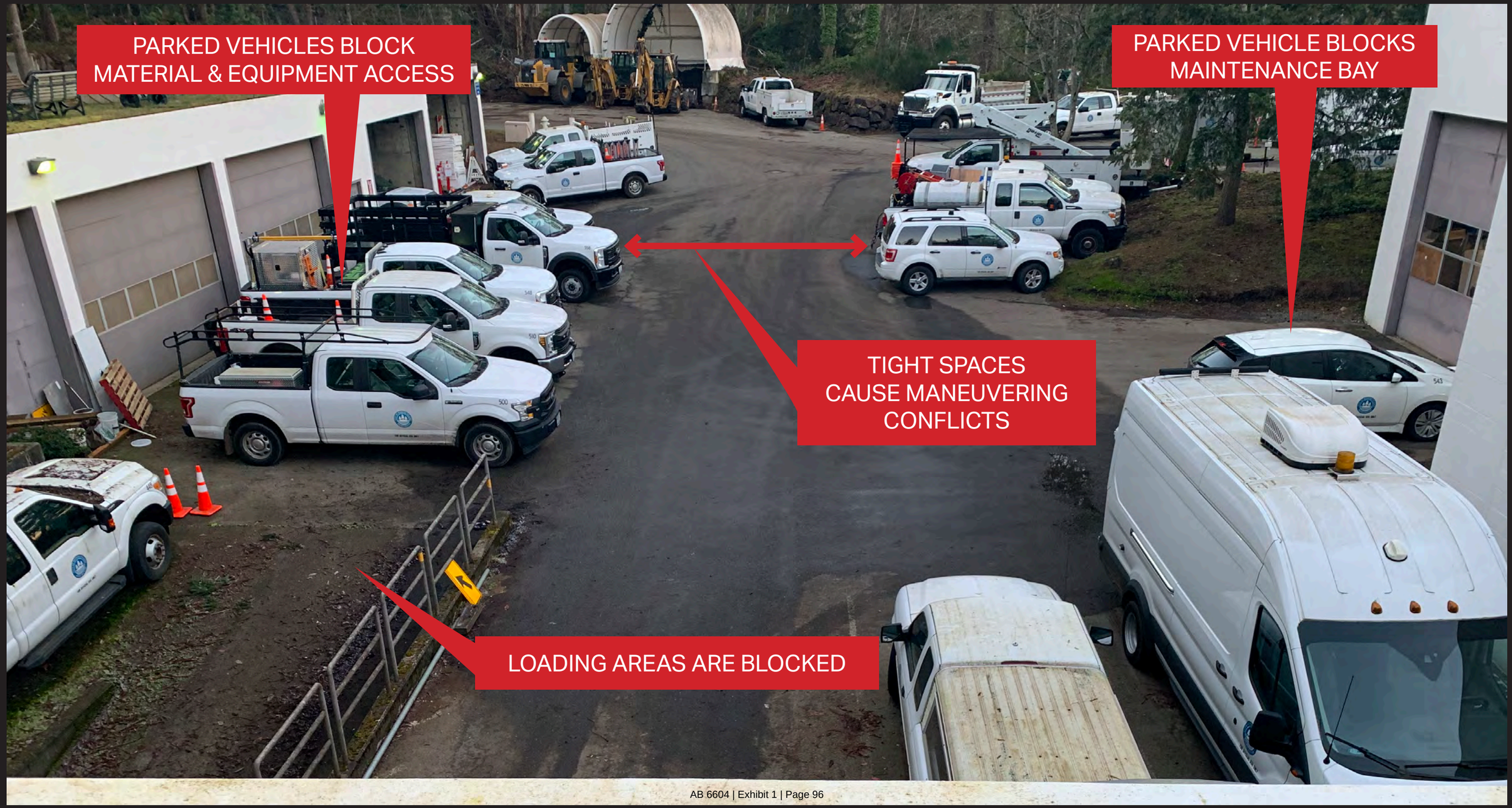
This map illustrates vehicular circulation routes across the public works site. All vehicular circulation is two-way, and includes two loops and three dead-end legs.



Site Photograph

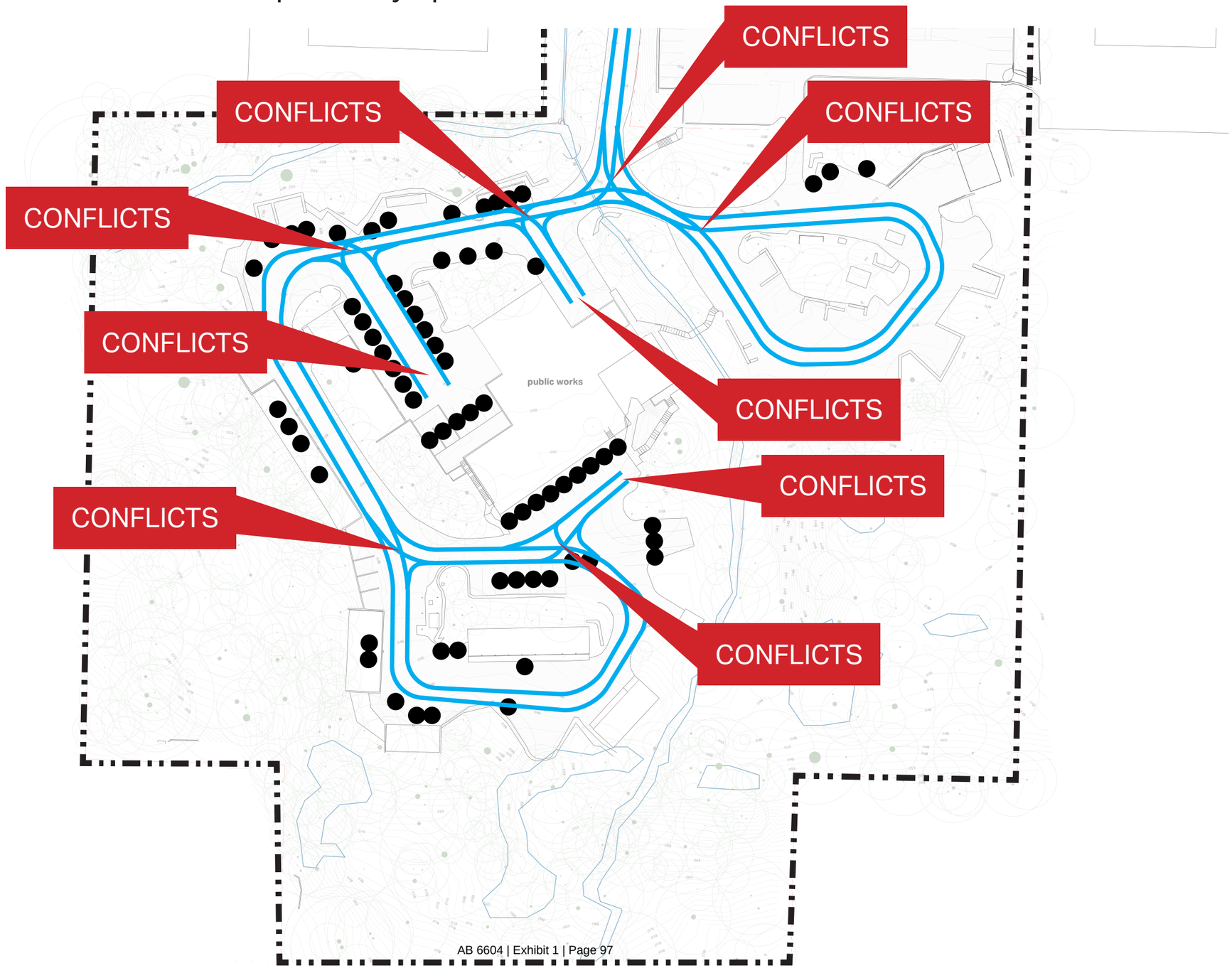
CONGESTED VEHICLE PARKING AND DRIVE-AISLES

This site photograph depicts existing vehicle parking that encroaches on areas required for drive-aisles and maneuvering. In some cases, multiple vehicles must be moved to access or maneuver needed equipment.



EXISTING TWO-WAY CIRCULATION CONFLICTS

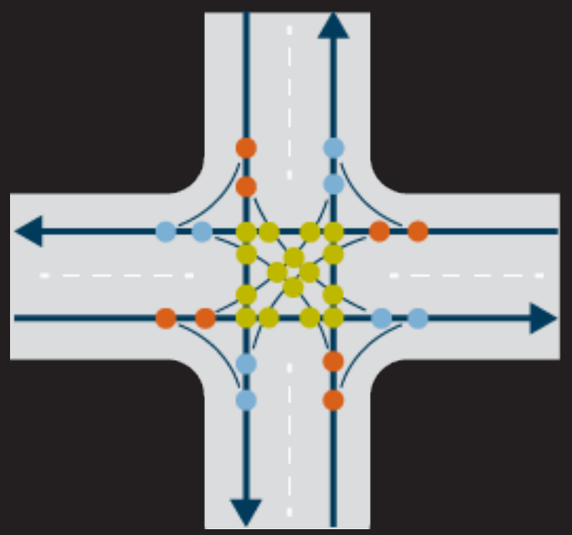
The combination of two-way circulation, ad-hoc vehicle parking, and access requirements to stored equipment results in a number of vehicle circulation conflicts that impact daily operations.



SIMPLIFY VEHICULAR CIRCULATION

One-way circulation reduces potential vehicle conflicts. The diagrams below compares intersection types to illustrate the reduction in vehicle conflicts between traditional intersections and one-way roundabouts. With a four-fold reduction in potential vehicle conflicts, one-way circulation should be employed wherever possible on-site.

TRADITIONAL INTERSECTION



32 POTENTIAL VEHICLE CONFLICTS

VS

ONE-WAY ROUNDABOUT INTERSECTION

8 POTENTIAL VEHICLE CONFLICTS

Design Strategies

Strategy 1: Cover more vehicles, equipment, and work areas to protect equipment and promote more efficient operations, no matter the weather.

Strategy 2: Collocate buildings with covered areas for operational efficiency, and for cost effectiveness- leveraging weathering cover for building roof structures.

Strategy 3: Prioritize one-way circulation to reduce conflicts and operational impacts.

VEHICLE, MATERIAL, AND EQUIPMENT STORAGE

This map is the product of a site-walk and illustrates the challenge faced by public works staff. Yard operations are constrained by facilities designed 45-years ago, forcing an ad-hoc organization of vehicles, materials, and equipment on-site.

Site Photograph

Vehicle or equipment

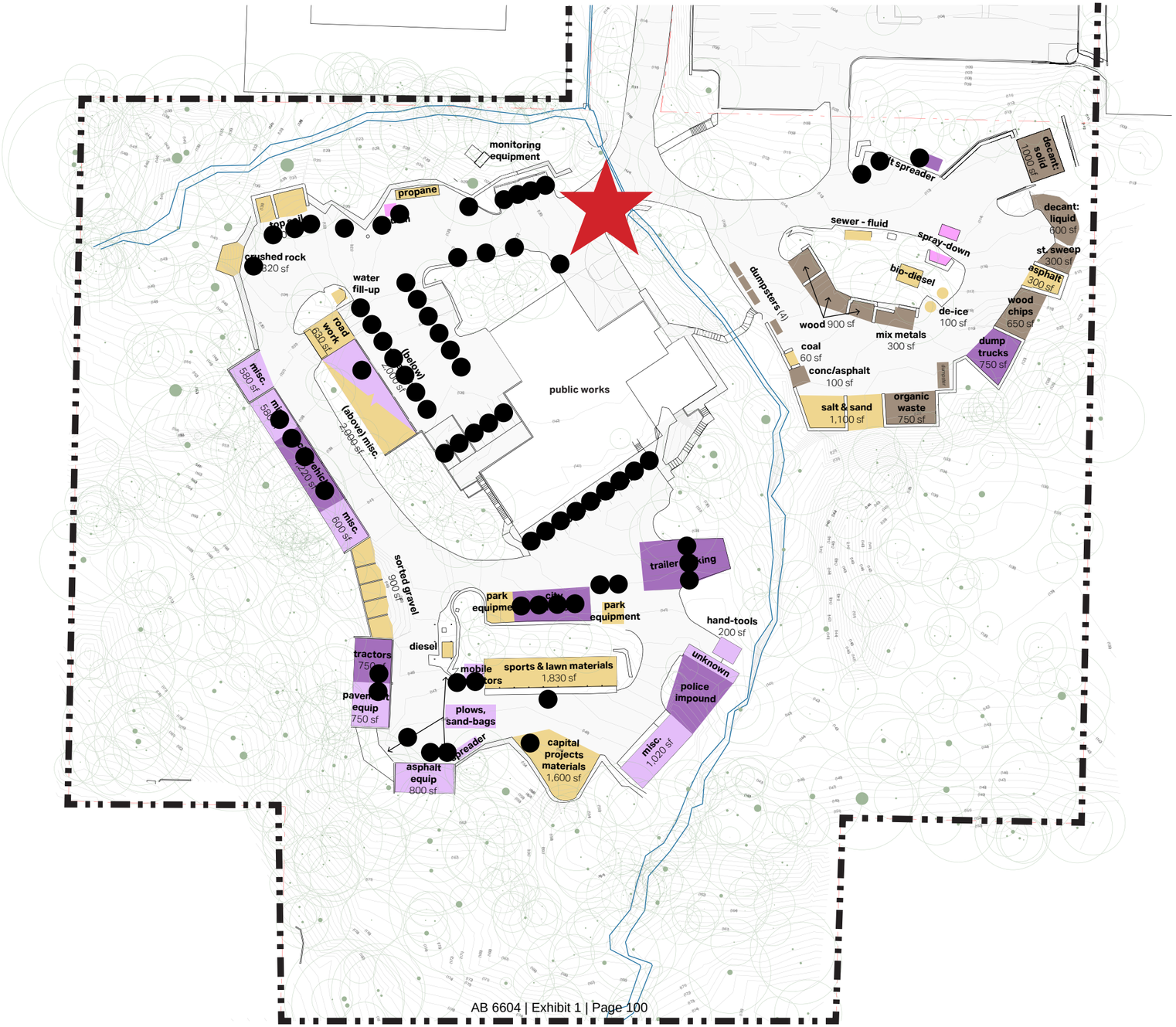
Operations area

Vehicle storage

Tool storage

Material storage

Waste storage

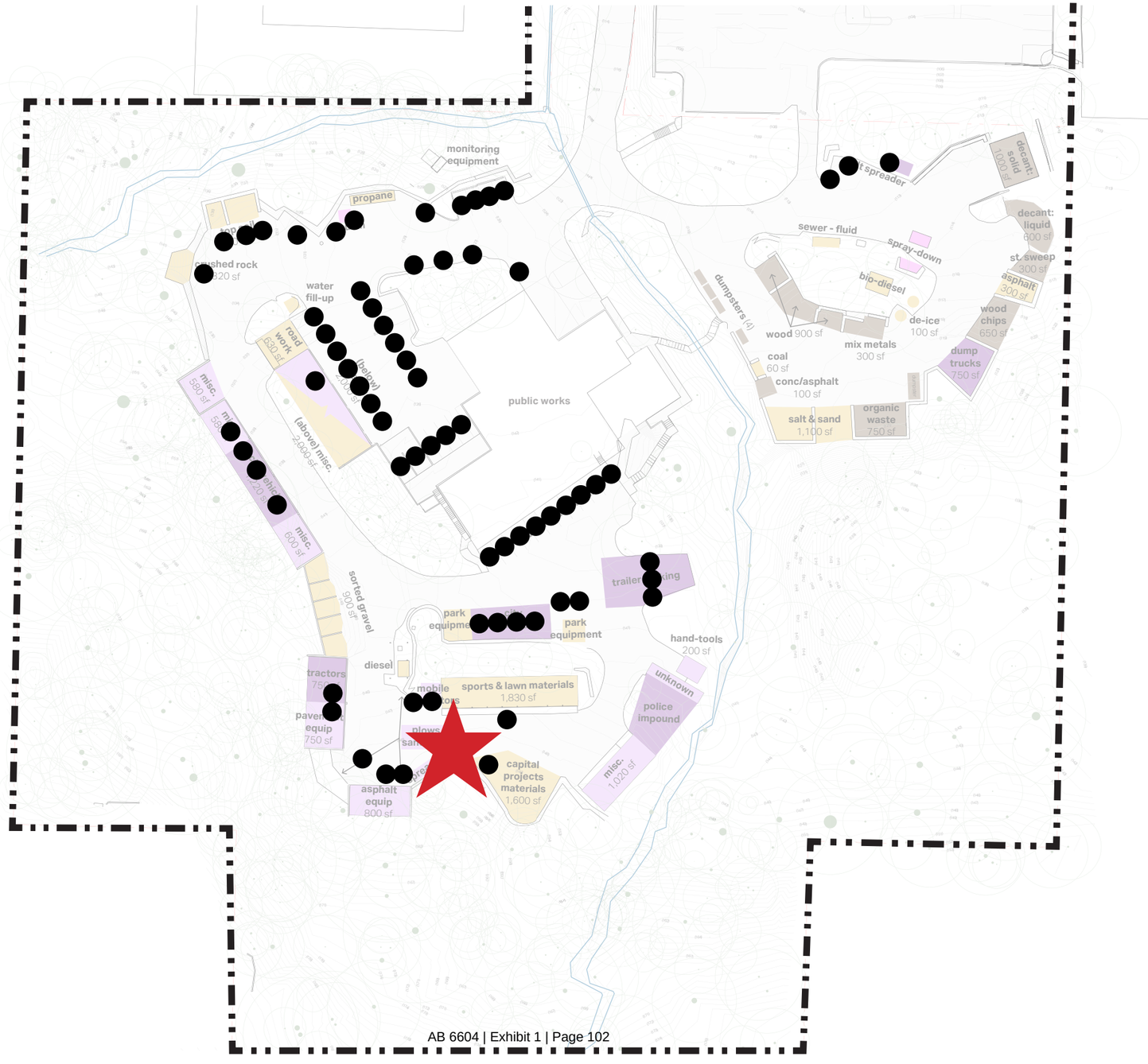


THE PUBLIC WORKS SITE IS OVER PARKED AND VERY CONGESTED

This photograph illustrates typical parking congestion on the public works site. Vehicles are parked wherever space permits, resulting in tight conditions with limited maneuverability.

CURRENT VEHICLE PARKING ON THE PUBLIC WORKS SITE

This map illustrates the position of parked vehicles. The existing layout did not anticipate the current quantity of vehicles, and as a result, many vehicles are parked in drive-aisles or in front of other vehicles or equipment.



Site Photograph

Vehicle

Operations area

Vehicle storage

Tool storage

Material storage

Waste storage

DIFFICULT TO ACCESS VEHICLES AND EQUIPMENT

This photograph illustrates vehicles and equipment that are stored where space permits. Access is often obstructed by other vehicles or equipment, causing operational delays.

AN EXAMPLE OF MATERIAL STORAGE CHALLENGES

This diagram highlights the storage of raw materials—like salt, sand, and gravel—that must be stored in three different locations, requiring trips between these locations to gather or redistribute materials for use.

- Vehicle
- Operations area
- Vehicle storage
- Tool storage
- Material storage
- Waste storage

Design Strategies

Strategy 1: Cover more vehicles, equipment, and work areas to protect equipment and promote more efficient operations, no matter the weather.

Strategy 2: Collocate buildings with covered areas for operational efficiency, and for cost effectiveness- leveraging weathering cover for building roof structures.

Strategy 3: Prioritize one-way circulation to reduce conflicts and operational delays.

Strategy 4: Organize the site into zones for clear and efficient use.

PUBLIC SAFETY AND MAINTENANCE BUILDING PROGRAM

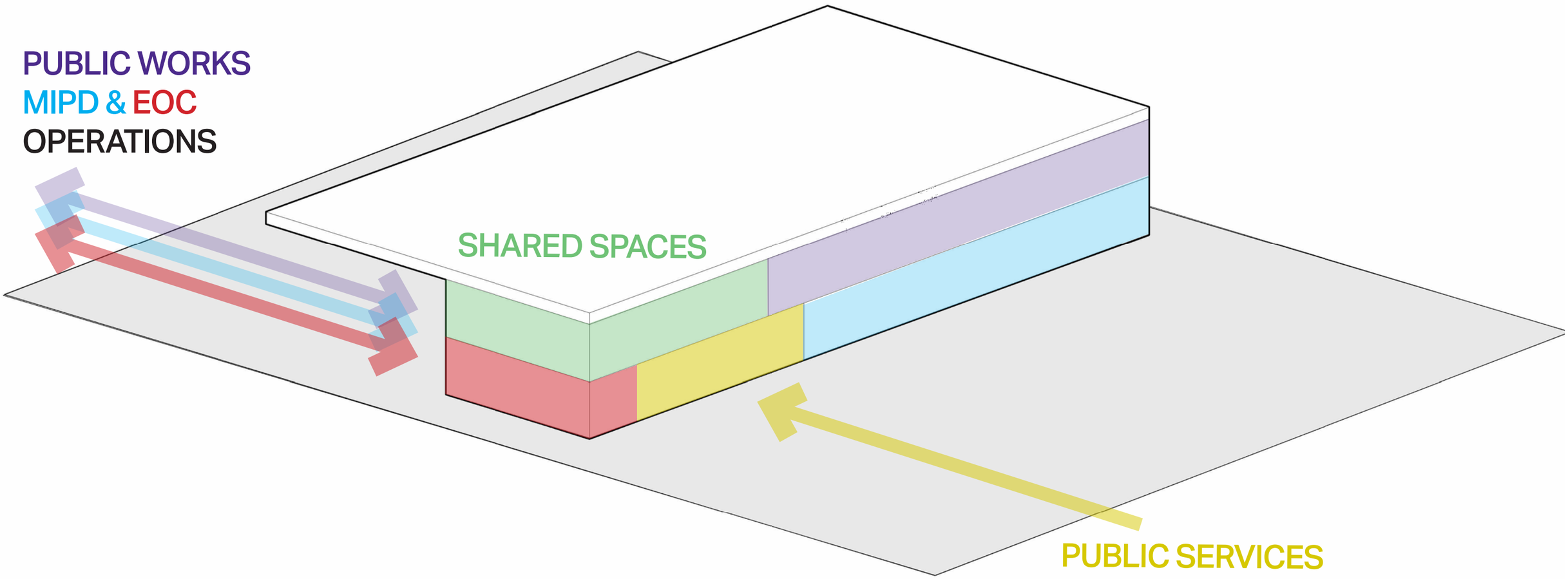
Five critical departments will occupy the proposed Public Safety and Maintenance Building. These departments are the foundation for basic city operations and public safety.

Mercer Island Police Department
Emergency Operations Center
Public Works, IT, & GIS departments
Customer service (public) counters

These five departments have requirements that overlap and offer opportunities for shared facilities to maximize functionality and minimize the square footages required, reducing costs.

ORGANIZE THE PSM BUILDING INTO FUNCTIONAL ZONES

The future Public Safety and Maintenance Building should dovetail with overall site design strategies and organize departments and building uses into clear zones for staff and public use.



Design Strategies

Strategy 1: Cover more vehicles, equipment, and work areas to protect equipment and promote more efficient operations, no matter the weather.

Strategy 2: Collocate buildings with covered areas for operational efficiency, and for cost effectiveness- leveraging weathering cover for building roof structures.

Strategy 3: Prioritize one-way circulation to reduce conflicts and operational delays.

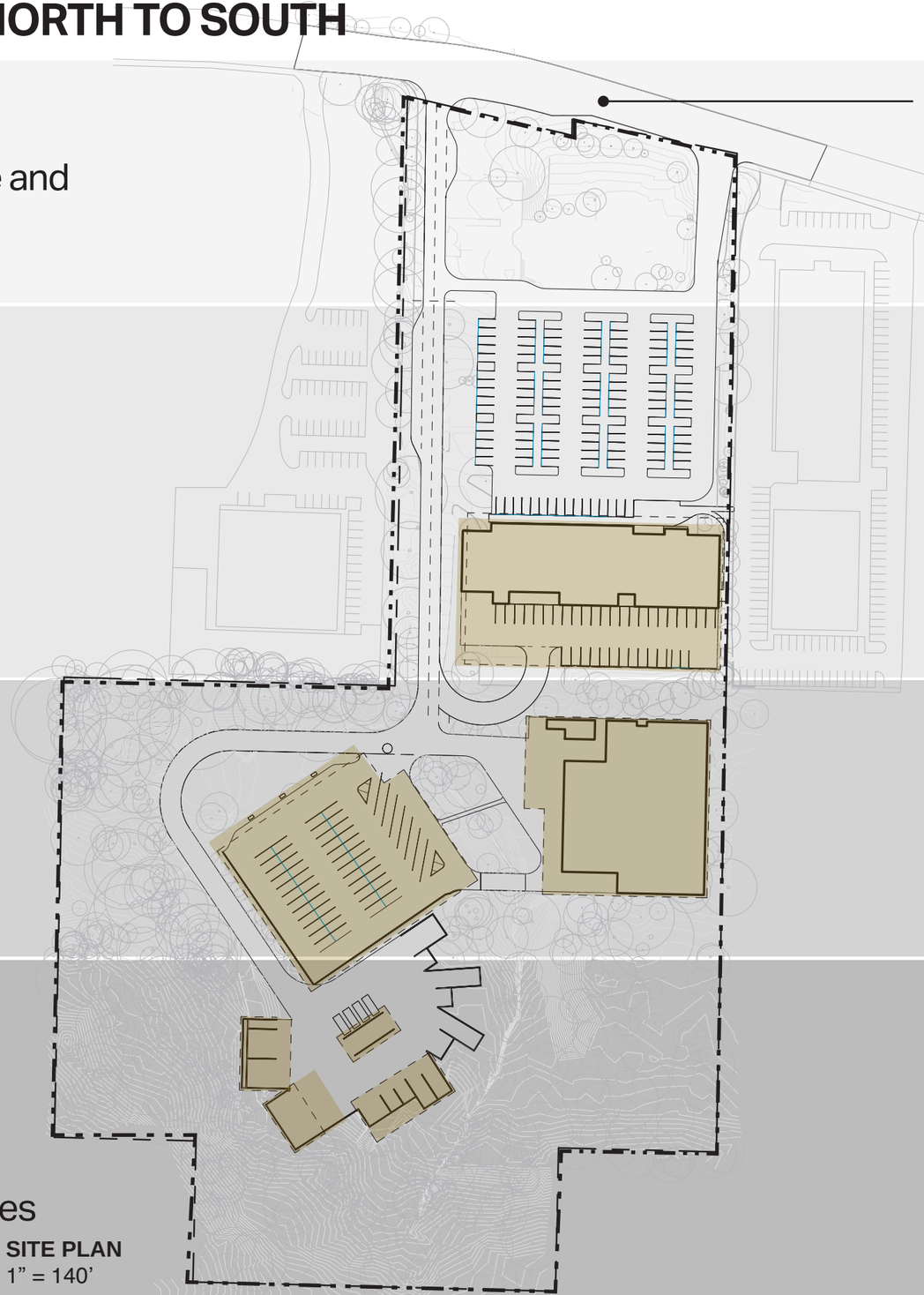
Strategy 4: Organize the site into zones for clear and efficient use.

Strategy 5: Organize the buildings into zones that maximize shared spaces, promote efficient operations for staff, and create clearly accessible spaces for public services.

Concept Design

SITE ORGANIZATION FROM NORTH TO SOUTH

From the most public,
where entries and parking are visible and
easily accessible



To the most "back-of-house",
where the existing hilly site and trees
screen activities

SITE PLAN
1" = 140'

SE 36TH STREET

Landscape buffer
Future/ Flexible Use
Construction staging area

Parking Area
Construction staging area

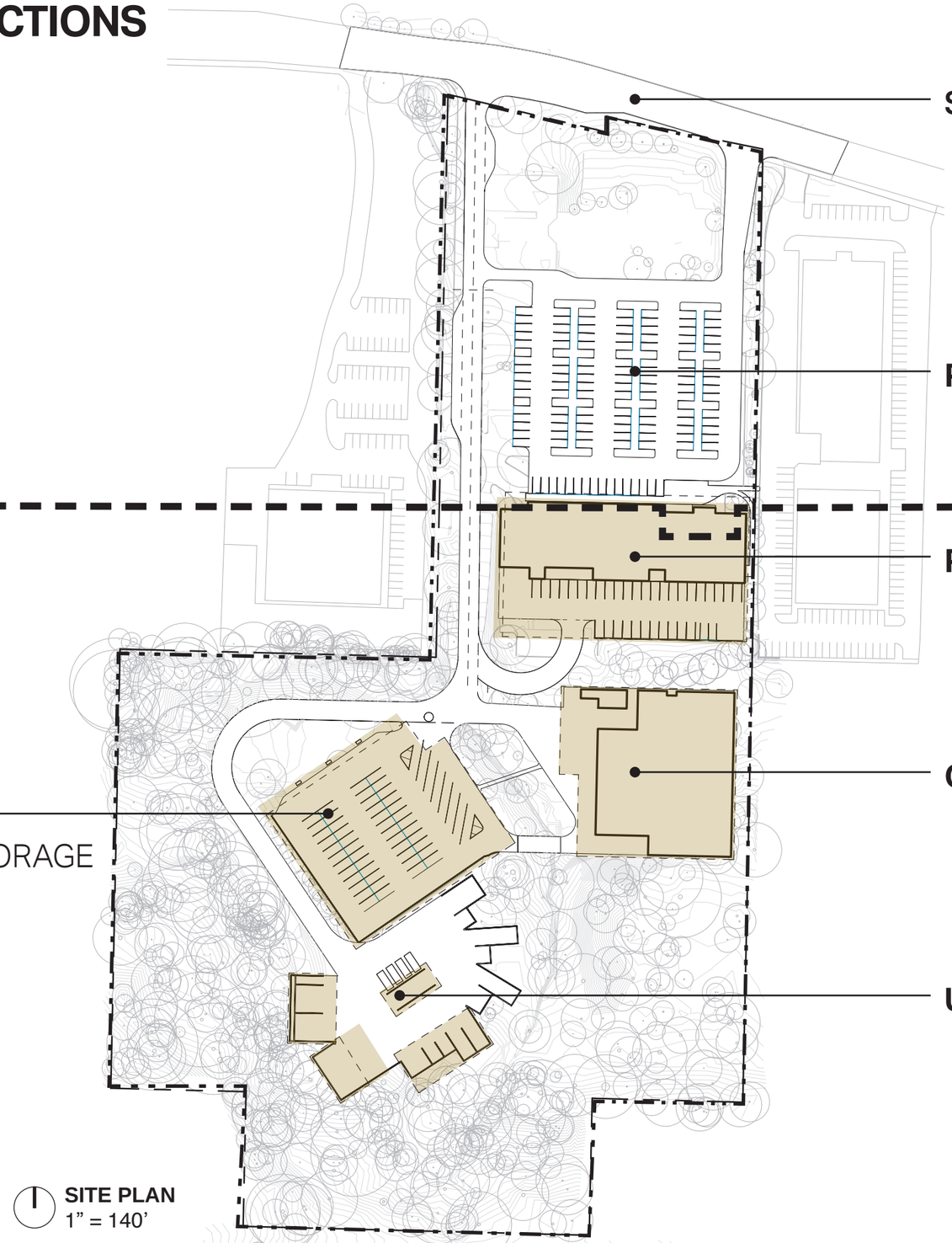
PSM Building and Secure Areas

Maint & Equipment Building
Vehicle & Equipment Storage
Operations Areas

Raw Materials
Waste & Compostables
Decant & Wash Facilities

SE 40TH STREET

SITE FACILITIES AND FUNCTIONS



Public functions

City functions

SE 36TH STREET

PUBLIC & STAFF PARKING

PSM BUILDING
MERCER ISLAND POLICE DEPARTMENT
CUSTOMER SERVICE CENTER
EMERGENCY OPERATIONS CENTER
PUBLIC WORKS STAFF

OPERATIONS BUILDING
MAINTENANCE SHOP & BAYS
WAREHOUSE
VEHICLE AND EQUIPMENT STORAGE
TOOL STORAGE

UPPER YARD
DECANT FACILITY
WASH BAY
RAW MATERIALS
MATERIAL LAY-DOWN
ORGANICS

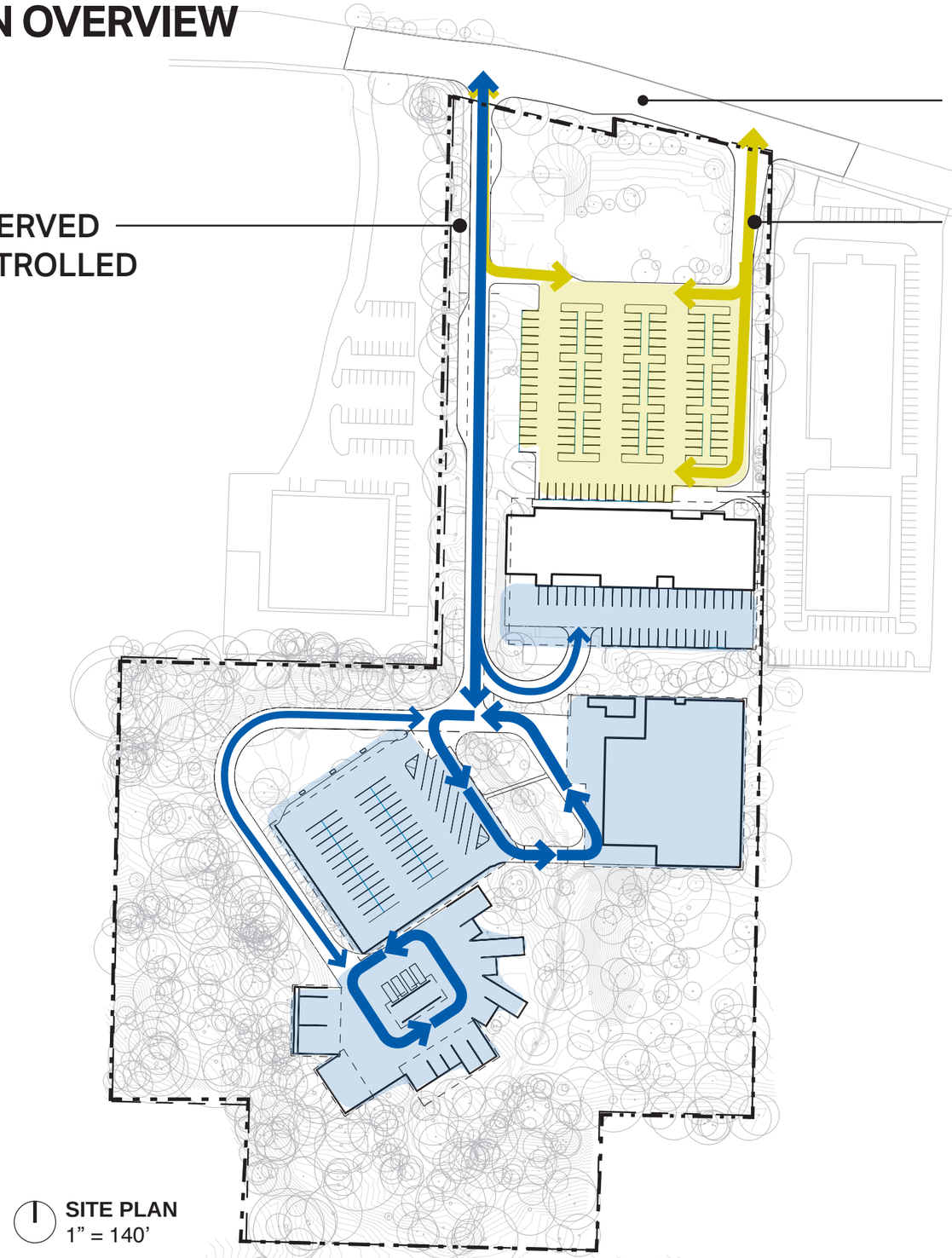
SE 40TH STREET

EASTERN LOWER YARD
VEHICLE & EQUIPMENT STORAGE
FUELING STATIONS

SITE PLAN
1” = 140’

VEHICULAR CIRCULATION OVERVIEW

THE WESTERN DRIVEWAY IS RESERVED FOR CITY VEHICLES AND IS CONTROLLED BY AN ACCESS GATE.

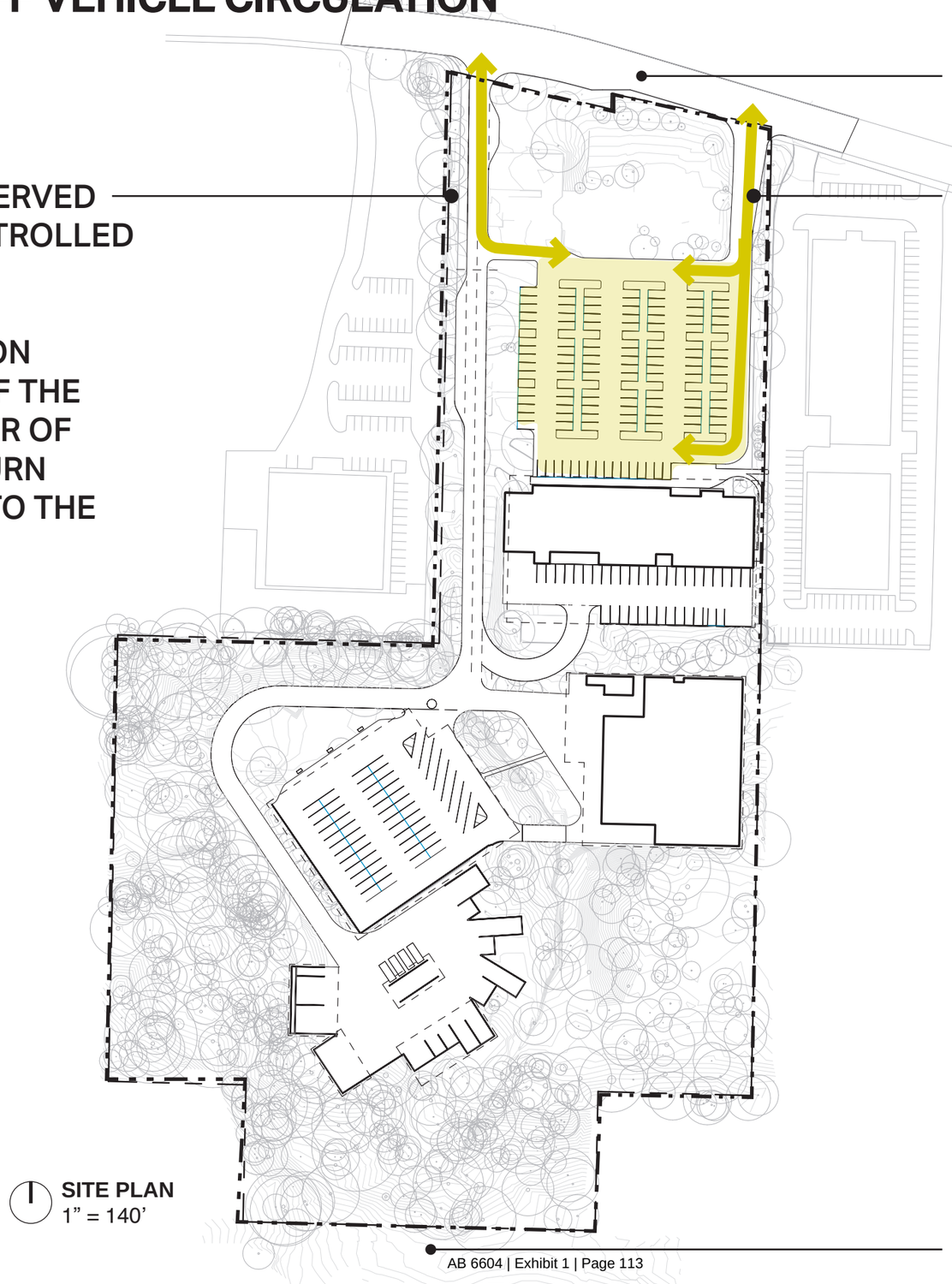


SITE PLAN
1” = 140’

MAP OF PUBLIC AND STAFF VEHICLE CIRCULATION

THE WESTERN DRIVEWAY IS RESERVED FOR CITY VEHICLES AND IS CONTROLLED BY AN ACCESS GATE.

A DIVERSION LANE IS LOCATED ON THE INBOUND LANE, IN FRONT OF THE ACCESS GATE, IN CASE A MEMBER OF THE PUBLIC MAKES A WRONG TURN THEY CAN BE EASILY DIRECTED TO THE PUBLIC PARKING AREA.



PUBLIC AND STAFF VEHICLES ENTER THROUGH THE EXISTING EASTERN DRIVEWAY AND ARRIVE AT A PUBLIC PARKING LOT WITH CLEAR ACCESS TO THE PSM BUILDING ENTRY.

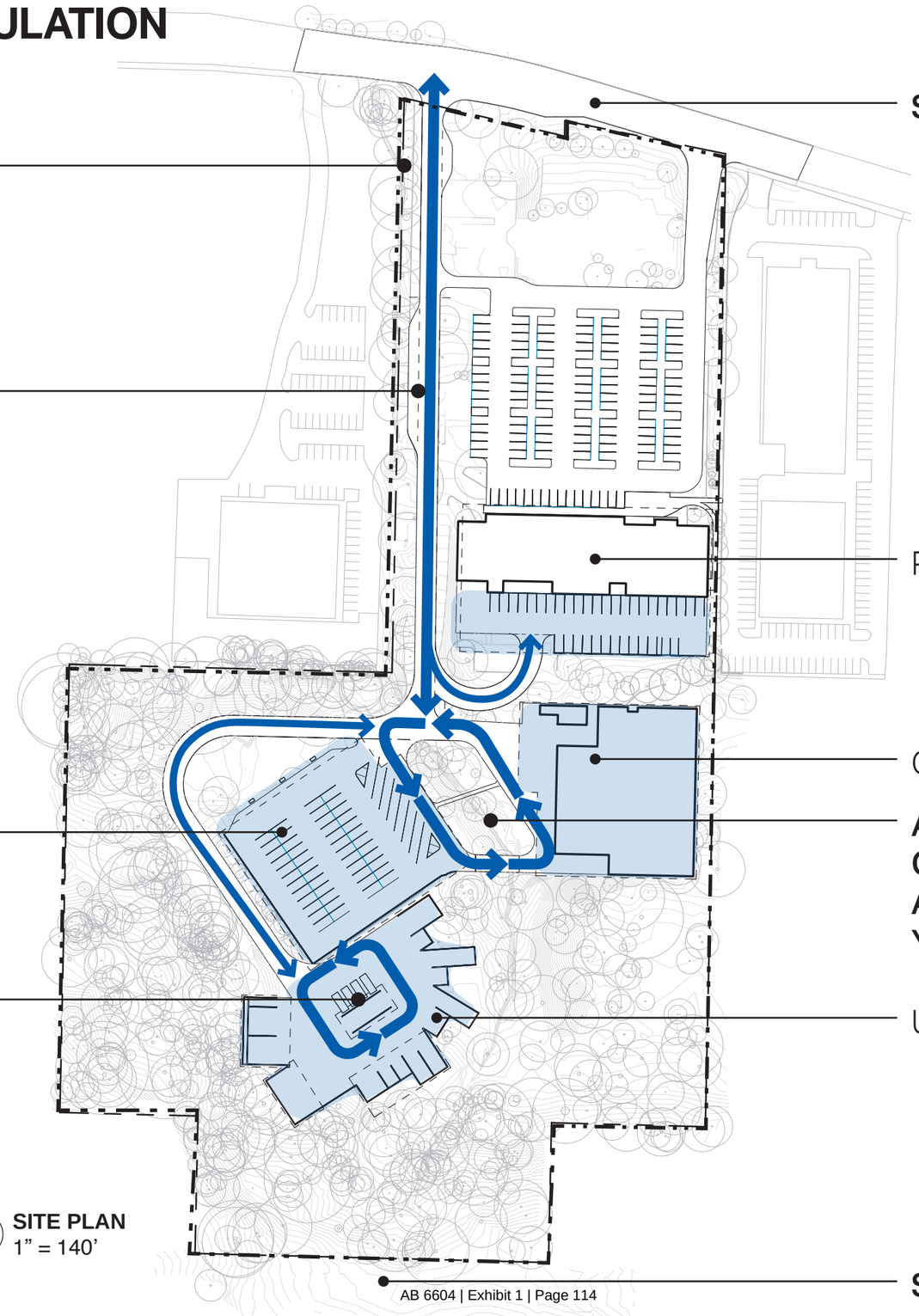
THIS PARKING LOT INCLUDES APPROXIMATELY 120 SPACES, WITH THE BALANCE OF CODE-REQUIRED PARKING LOCATED ELSEWHERE ON-SITE.

SITE PLAN
1” = 140’

MAP OF CITY VEHICLE CIRCULATION

THE WESTERN DRIVEWAY IS RESERVED FOR CITY VEHICLES AND IS CONTROLLED BY AN ACCESS GATE.

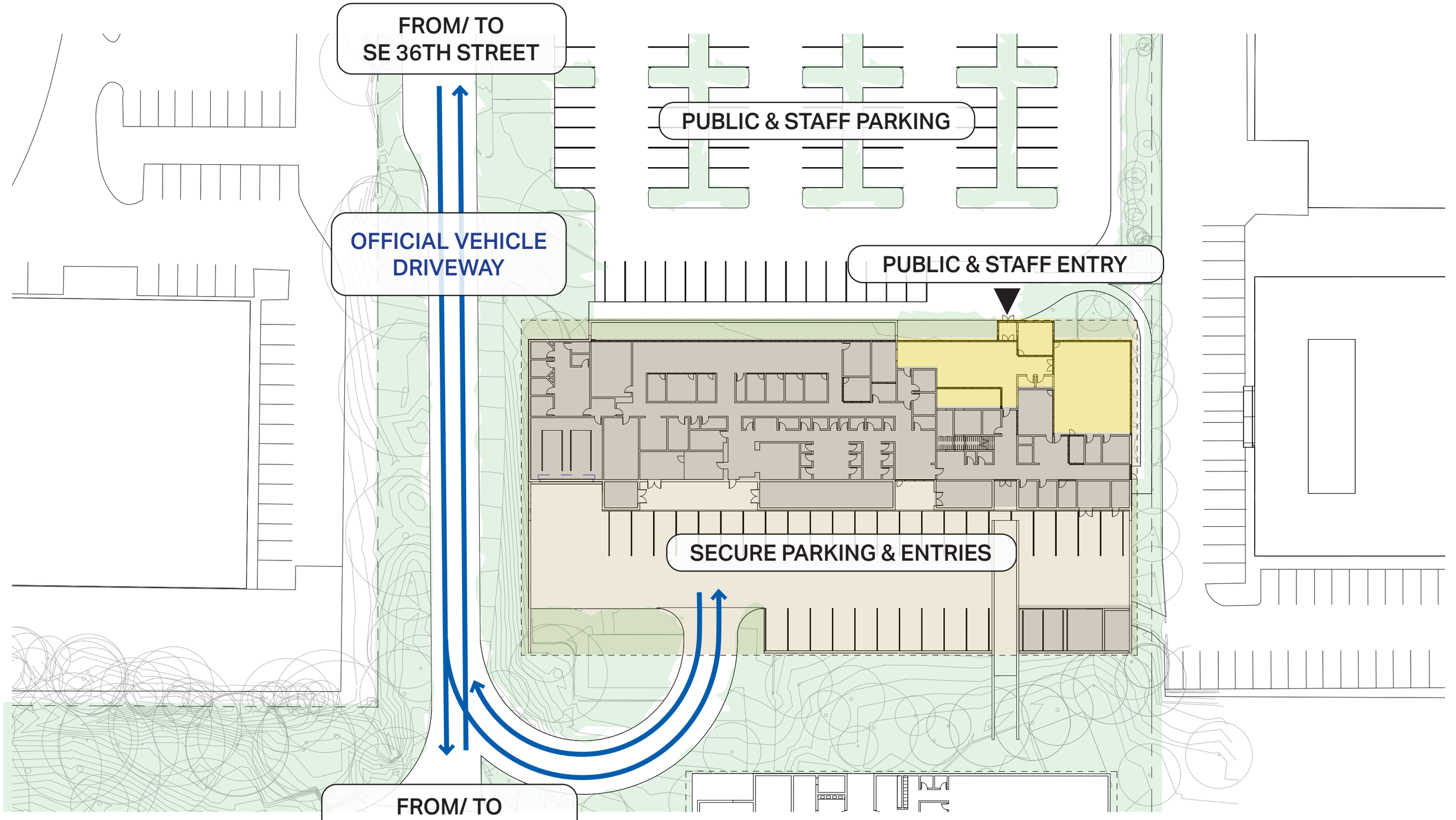
A TWO-WAY DRIVE AISLE GUIDES VEHICLES FROM SE 36TH STREET INTO THE PROJECT SITE.



SITE PLAN
1” = 140’

Public Safety and Maintenance Building

PSM BUILDING SITE PLAN



SITE PLAN
1” = 40’

CONCEPT VIEW

This concept view is taken from the city vehicle driveway and illustrates the PSM Building, at left, with the Lower Yard weathering cover visible in the background.

PUBLIC SAFETY AND MAINTENANCE BUILDING PROGRAM

The PSM Building is approximately 36,000 gross square feet (GSF) on two floors. Four functional groups occupy the building with shared spaces common to all groups located on each floor.

The square footages outlined below for each group represent utilized space, a measure that includes dedicated spaces and the portion of shared program spaces in use by that specific group.

Mercer Island Police Department

The Mercer Island Police Department utilizes 16,600 gross square feet (GSF).

Emergency Operations Center

The Emergency Operations Center utilizes 5,600 gross square feet (GSF).

Public Works, IT, & GIS departments

The Public Works, IT, & GIS offices utilize 10,000 gross square feet (GSF).

Customer Service (Public) Counters and Staff Areas

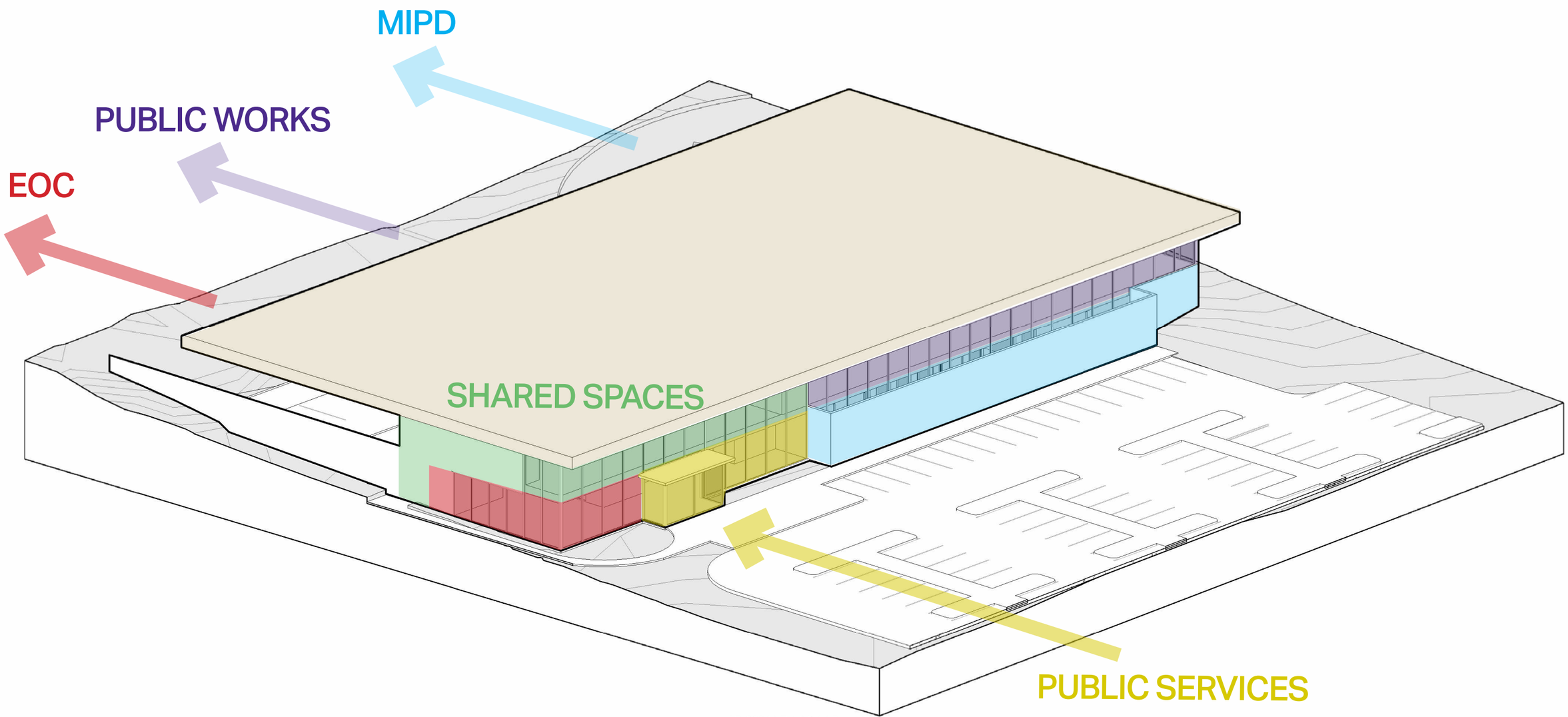
The Customer Service Center and Staff Areas on the ground floor utilize 6,300 gross square feet (GSF).

Shared work spaces

The building is organized to permit 12,100 gross square feet (GSF) of space to be shared among all departments.

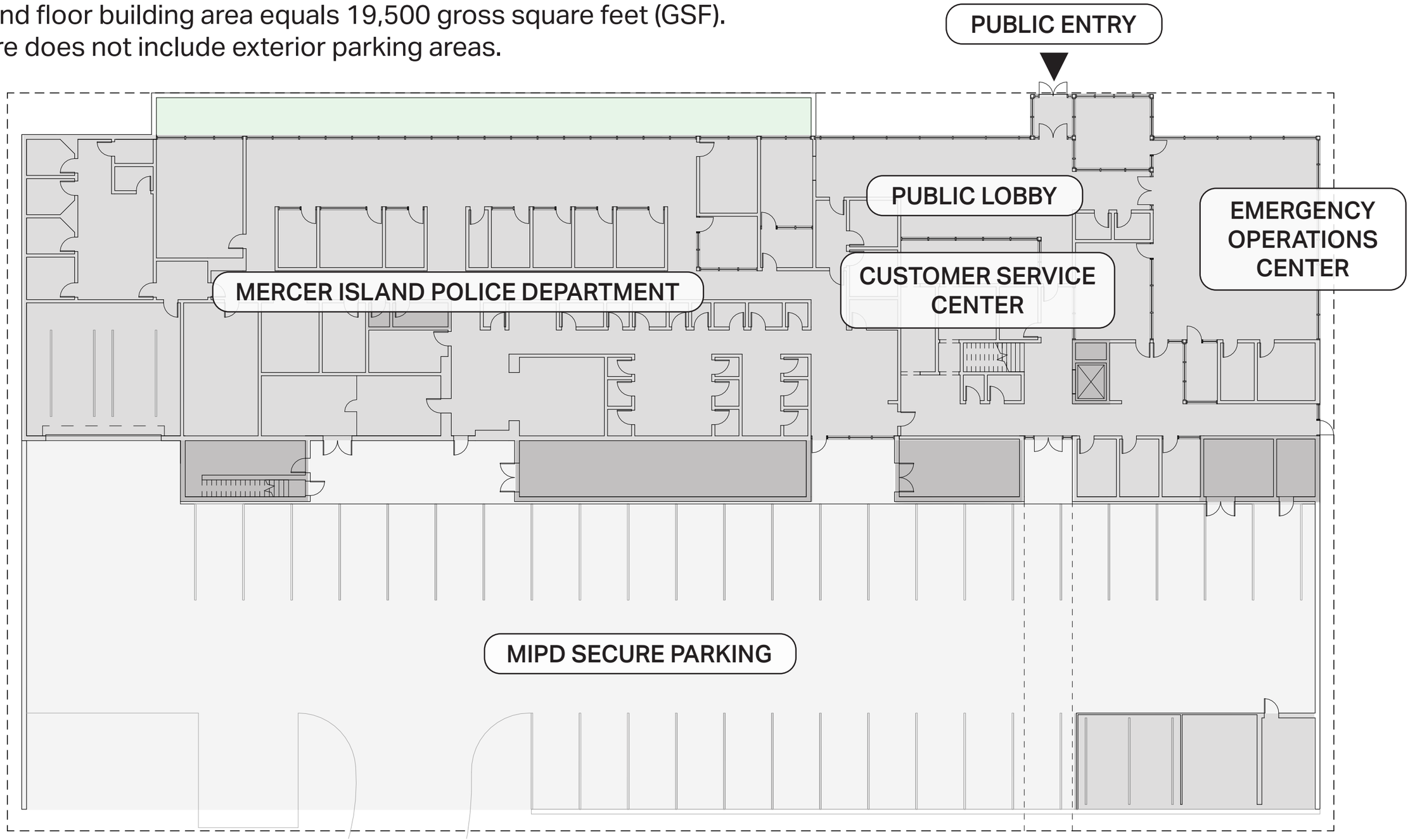
PUBLIC SAFETY AND MAINTENANCE BUILDING DIAGRAM

This diagram illustrates the basic programmatic organization of the Public Safety & Maintenance Building.



PUBLIC SAFETY AND MAINTENANCE BUILDING GROUND FLOOR PLAN

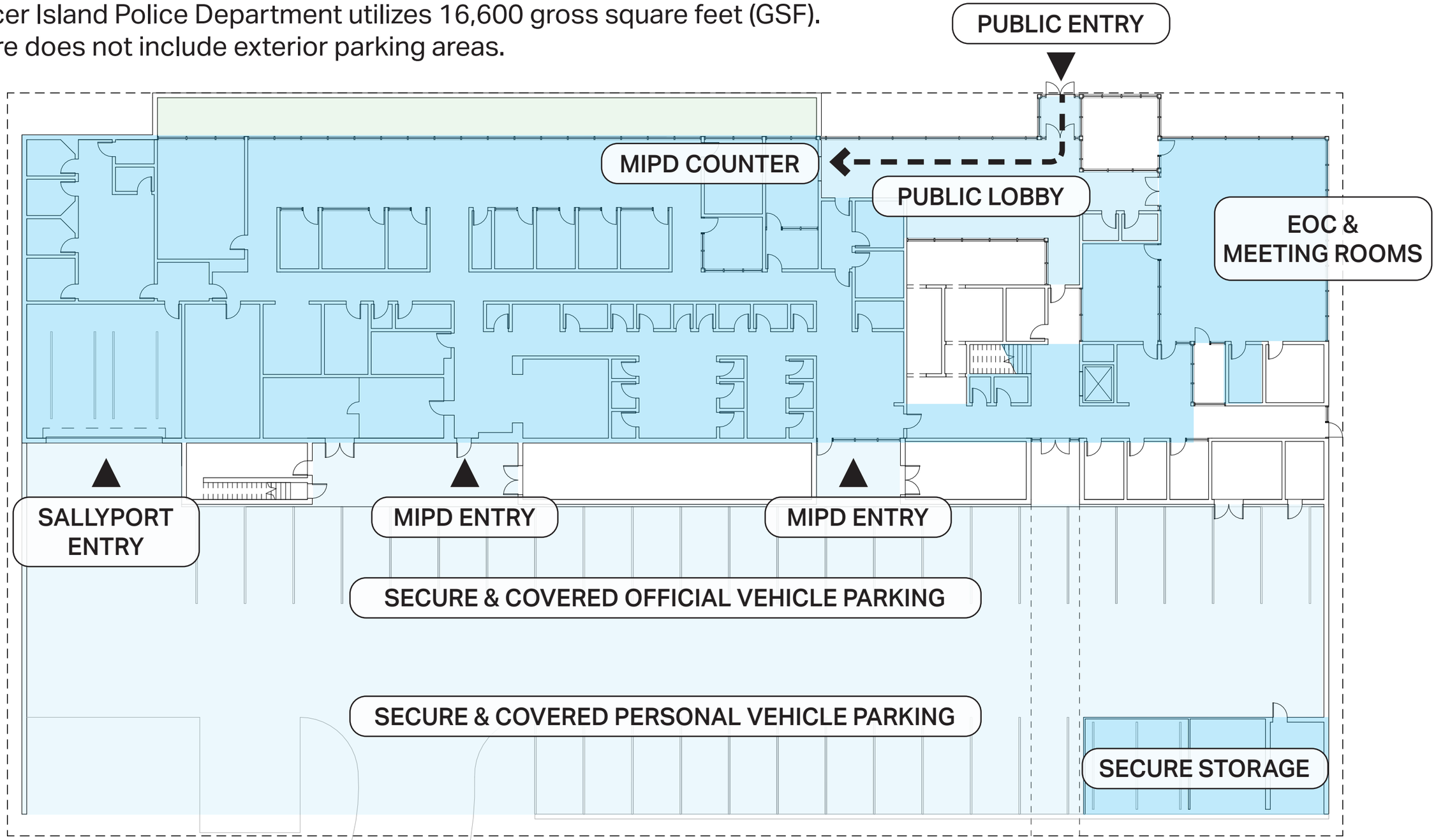
The ground floor building area equals 19,500 gross square feet (GSF).
GSF figure does not include exterior parking areas.



GROUND FLOOR PLAN
1” = 20’

MERCER ISLAND POLICE DEPARTMENT

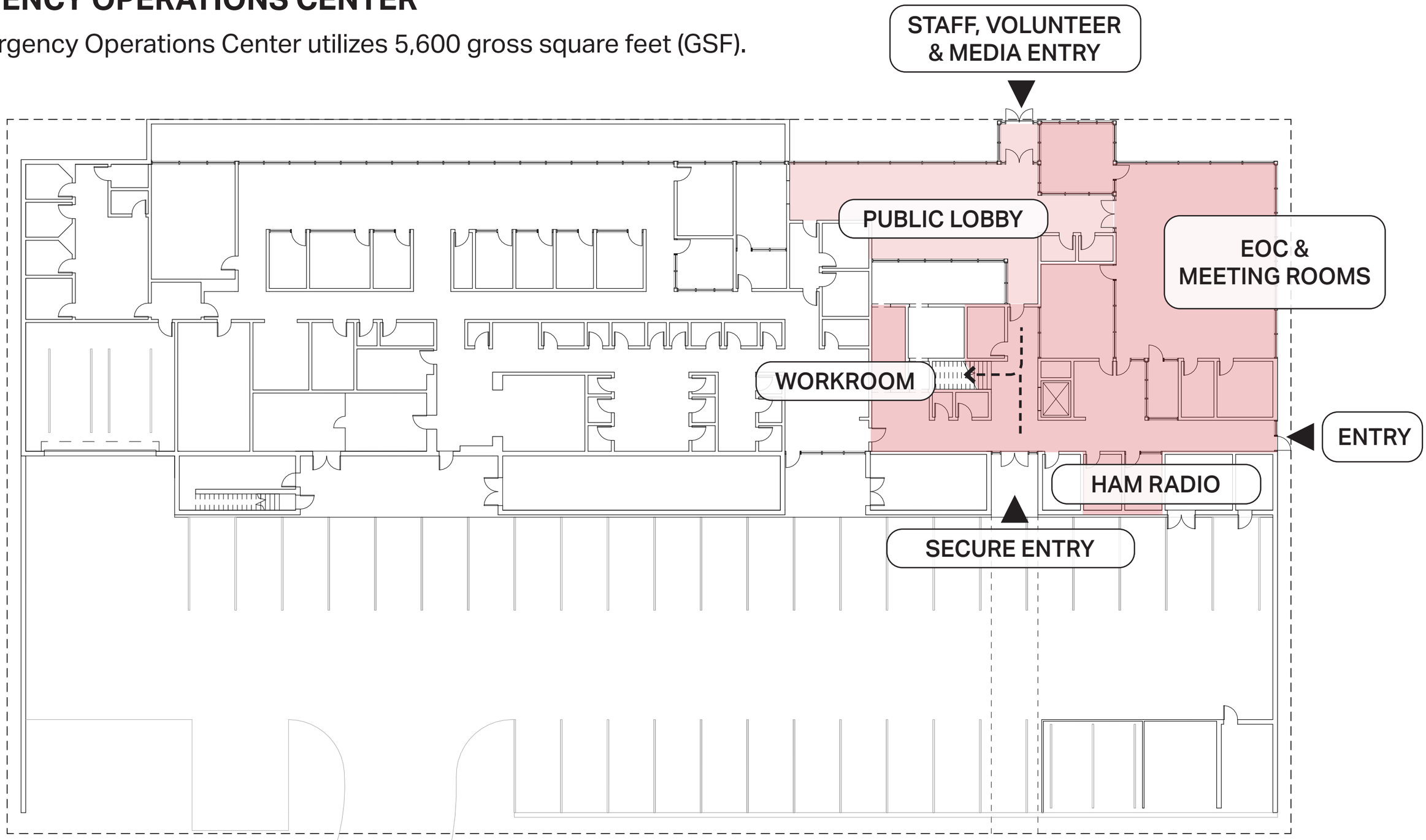
The Mercer Island Police Department utilizes 16,600 gross square feet (GSF). GSF figure does not include exterior parking areas.



GROUND FLOOR PLAN
1” = 20’

EMERGENCY OPERATIONS CENTER

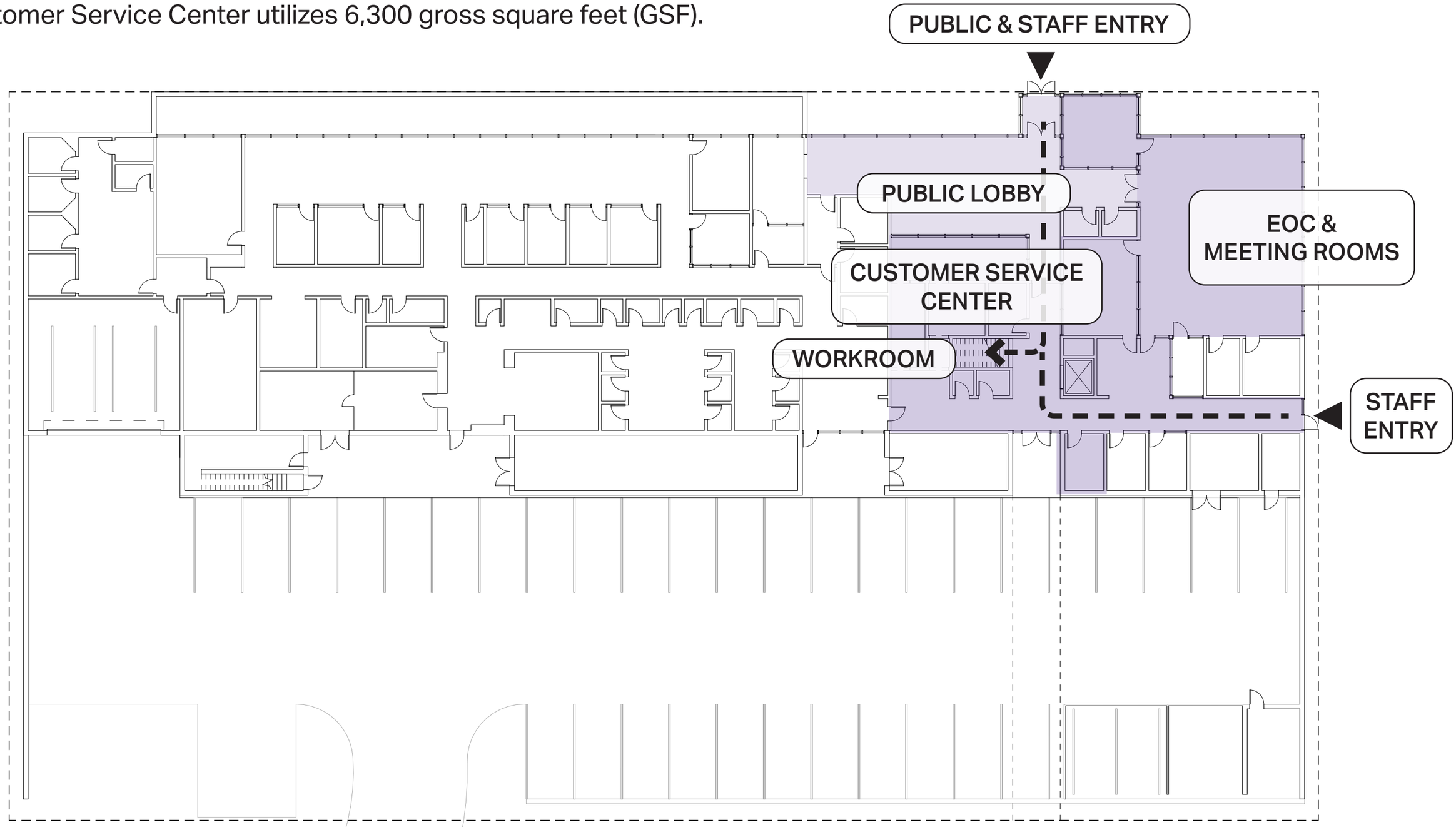
The Emergency Operations Center utilizes 5,600 gross square feet (GSF).



GROUND FLOOR PLAN
1” = 20’

CUSTOMER SERVICE CENTER AND CITY STAFF AREAS

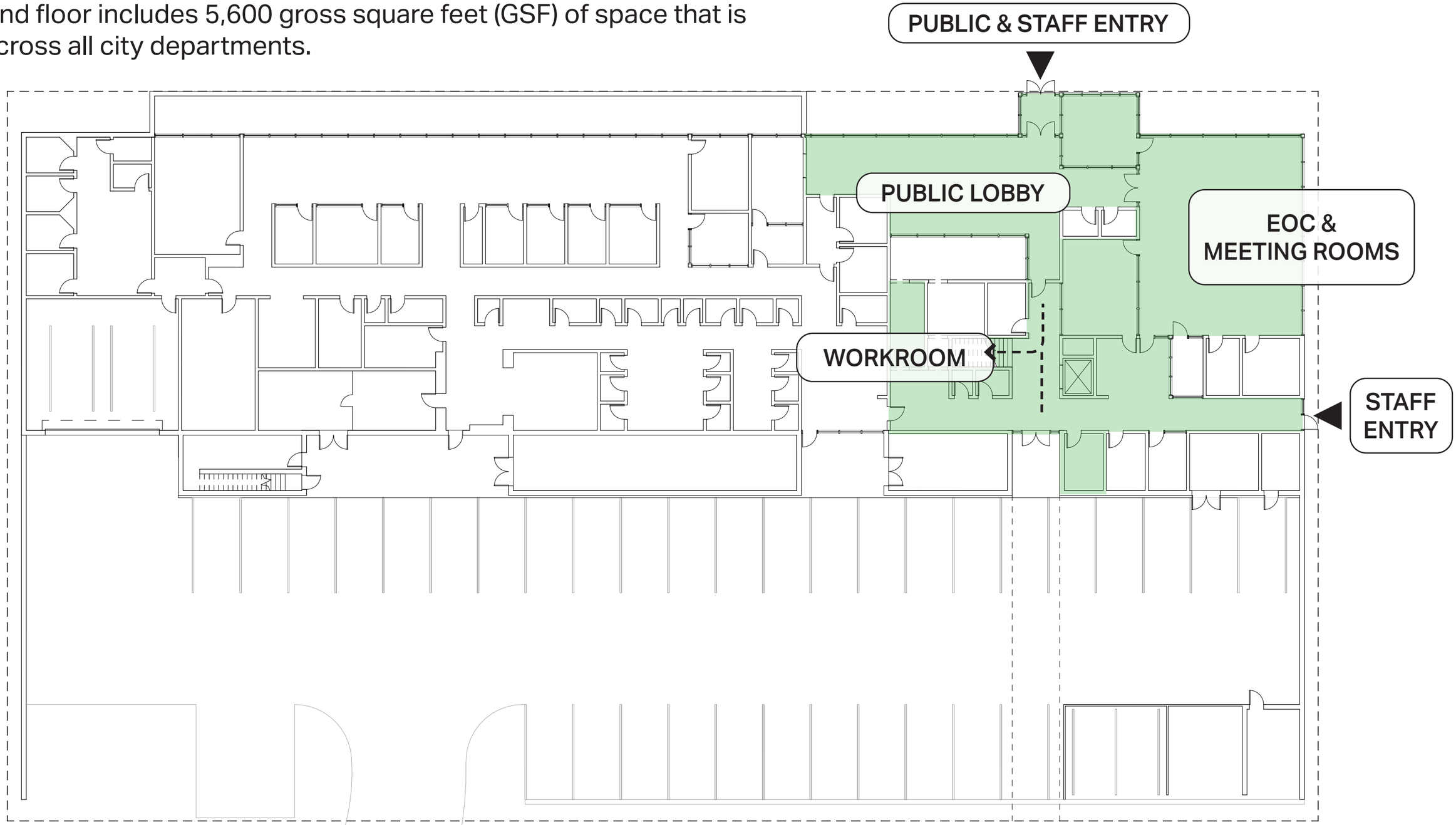
The Customer Service Center utilizes 6,300 gross square feet (GSF).



GROUND FLOOR PLAN
1” = 20’

SHARED WORK SPACES

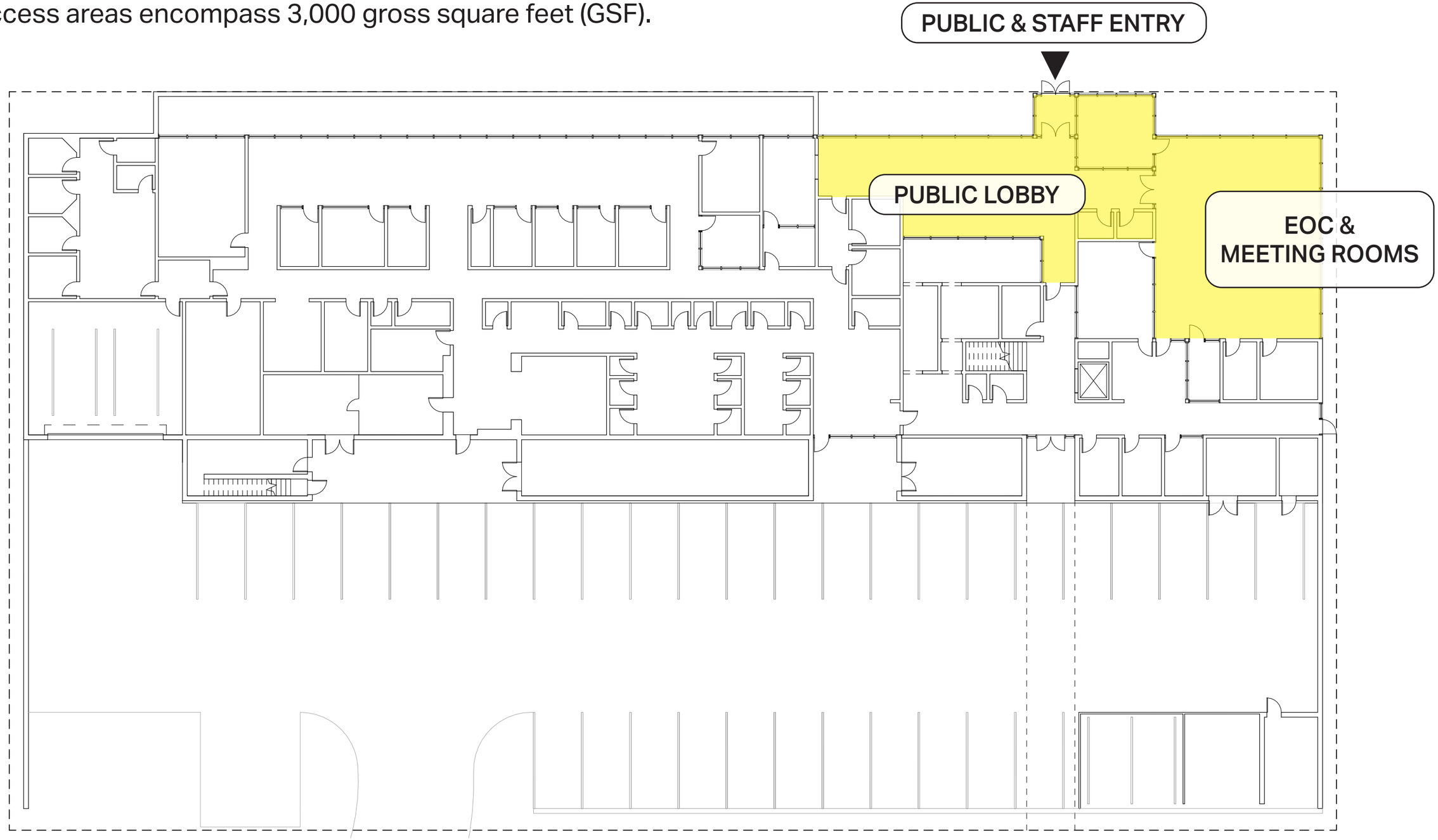
The ground floor includes 5,600 gross square feet (GSF) of space that is shared across all city departments.



GROUND FLOOR PLAN
1” = 20’

PUBLIC ACCESS AREAS

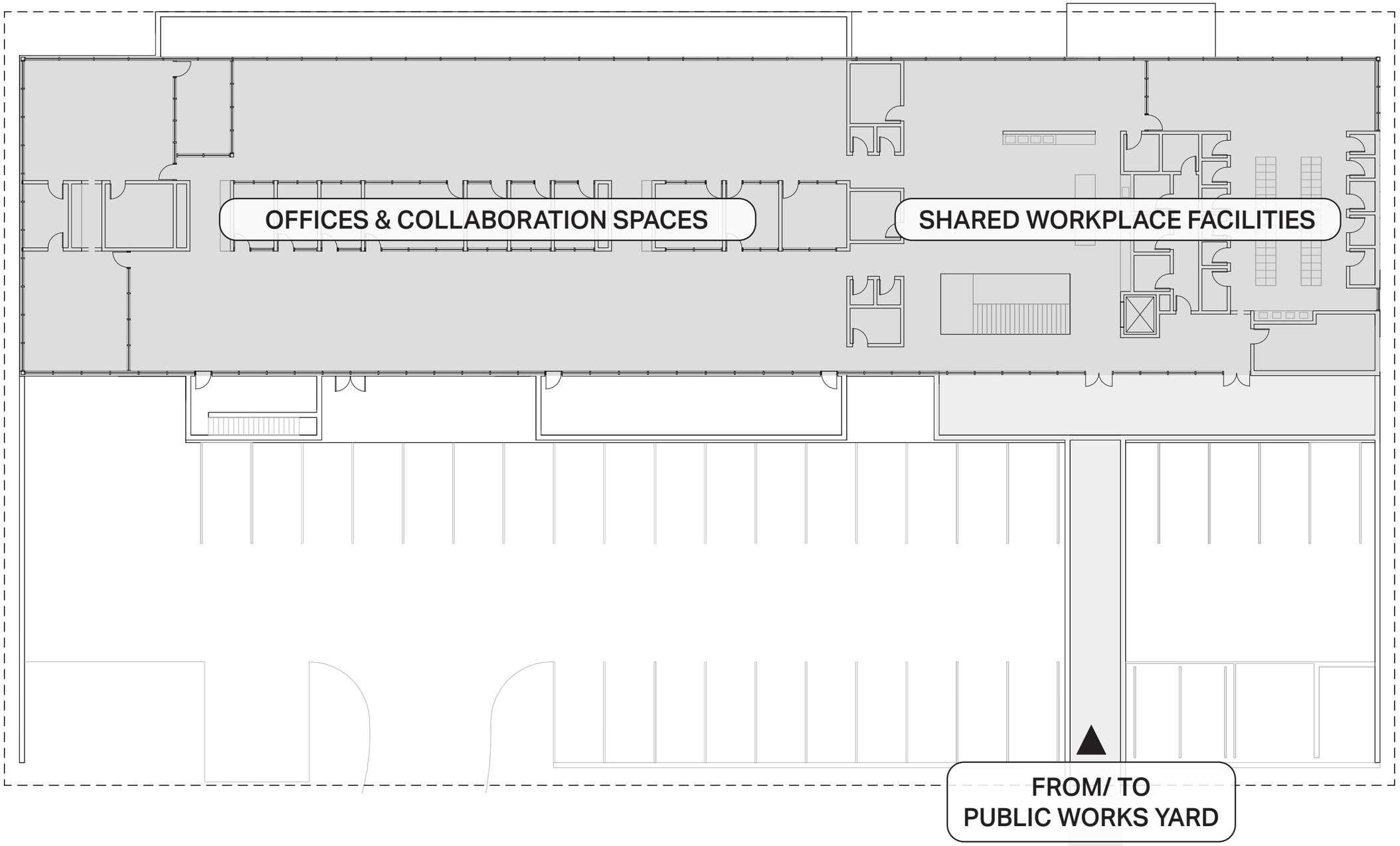
Public access areas encompass 3,000 gross square feet (GSF).



GROUND FLOOR PLAN
1” = 20’

PUBLIC SAFETY AND MAINTENANCE BUILDING SECOND FLOOR PLAN

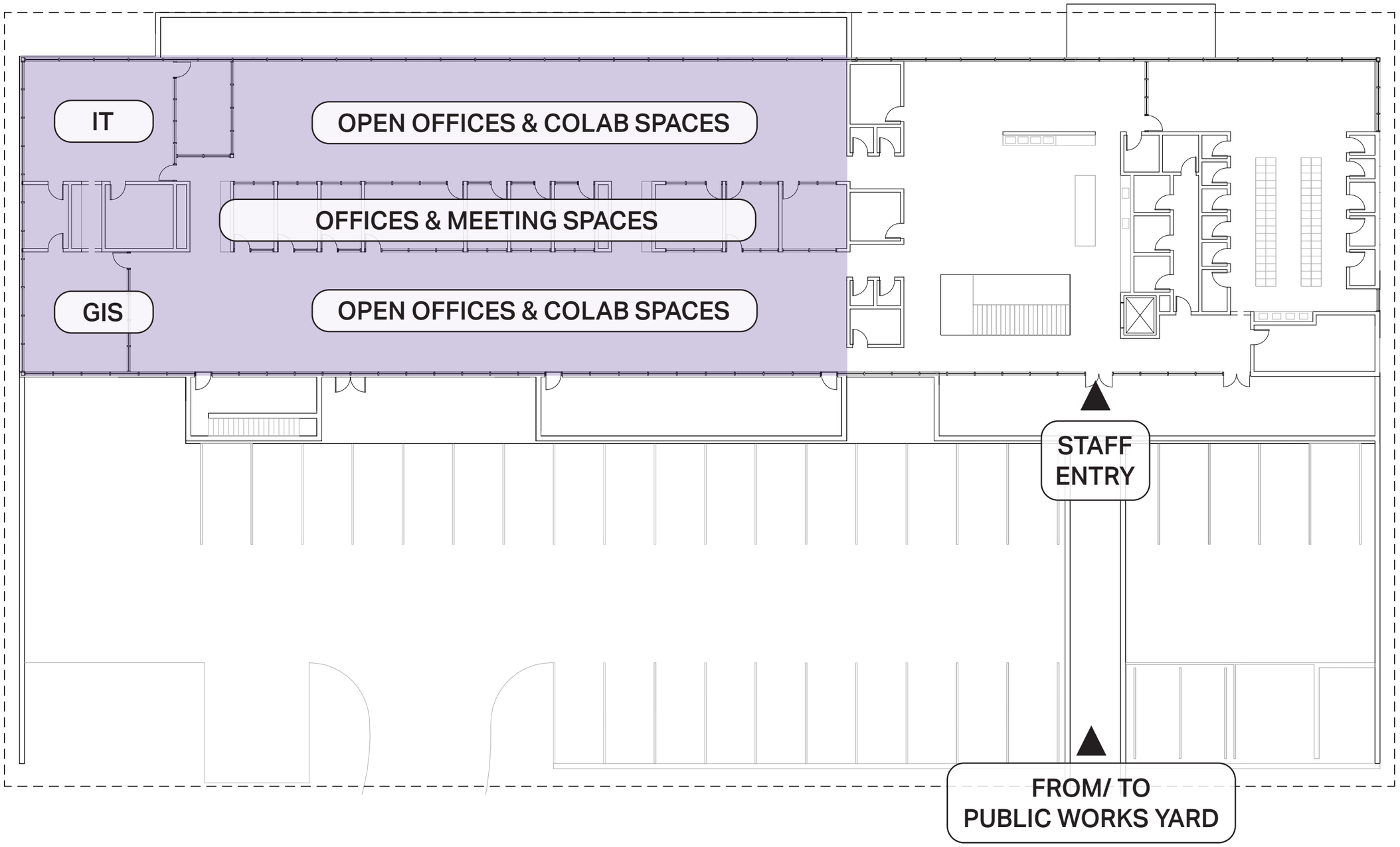
The second floor building area equals 16,500 gross square feet (GSF).



GROUND FLOOR PLAN
1” = 20’

PUBLIC WORKS, IT, AND GIS DEPARTMENTS

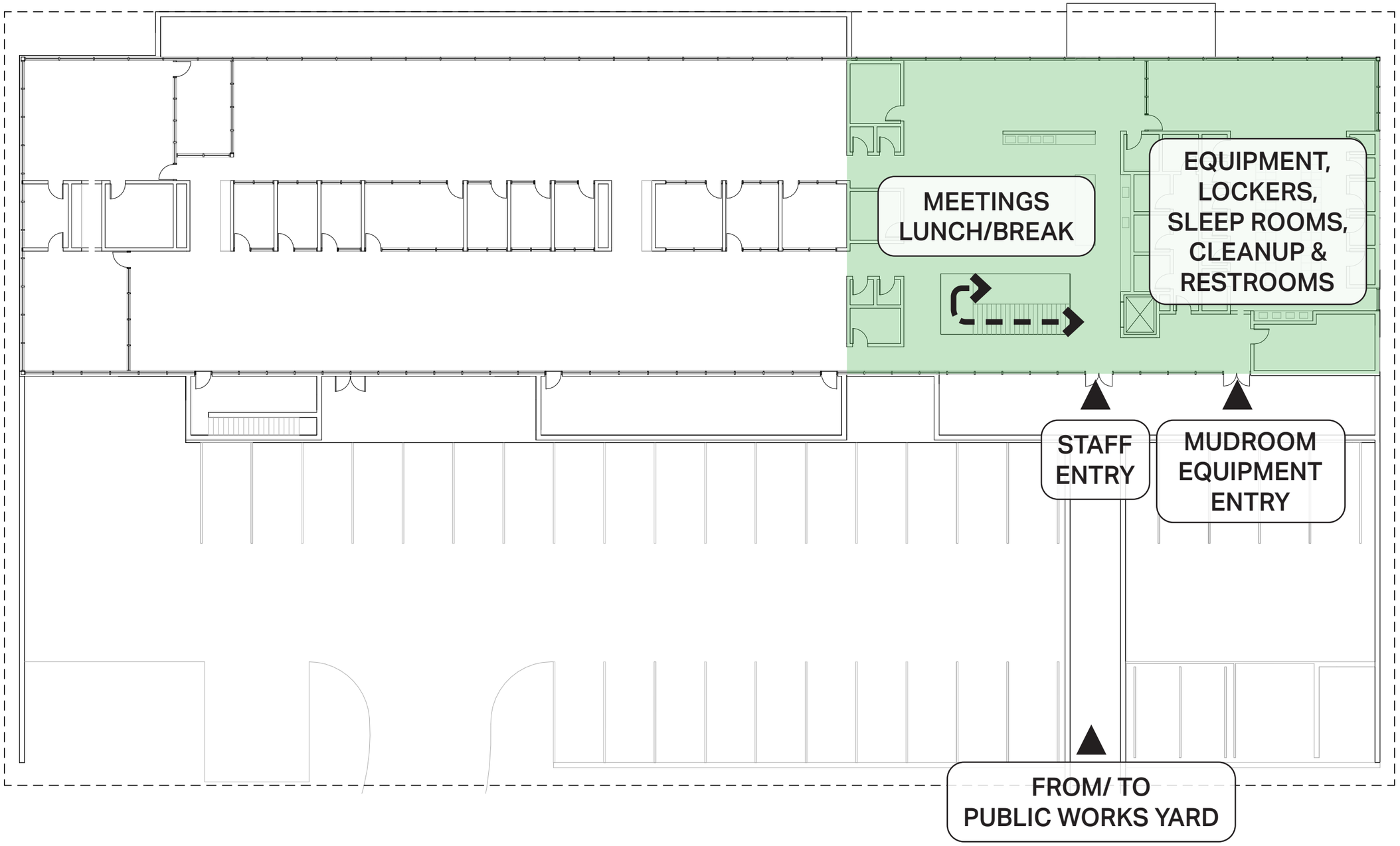
Public Works, IT, ans GIS offices on the second floor utilize 10,000 gross square feet (GSF).



SECOND FLOOR PLAN
1” = 20’

SHARED WORK SPACES

The second floor includes 6,500 gross square feet (GSF) of space that is shared across all city departments.



SECOND FLOOR PLAN
1” = 20’

Lower Yard


SE 40TH STREET
COVERED VEHICLES & EQUIPMENT
OPERATIONS BUILDING
SE 36TH STREET

LOWER YARD PROGRAM

The Lower Yard includes two facilities, the Operations Building and a Covered Vehicle & Equipment Storage area.

Operations Building

The Operations Building is approximately 33,000 gross square feet (GSF) and is constructed as a high-bay structure to accommodate overhead gantries and maintenance on lifted vehicles. The building program includes:

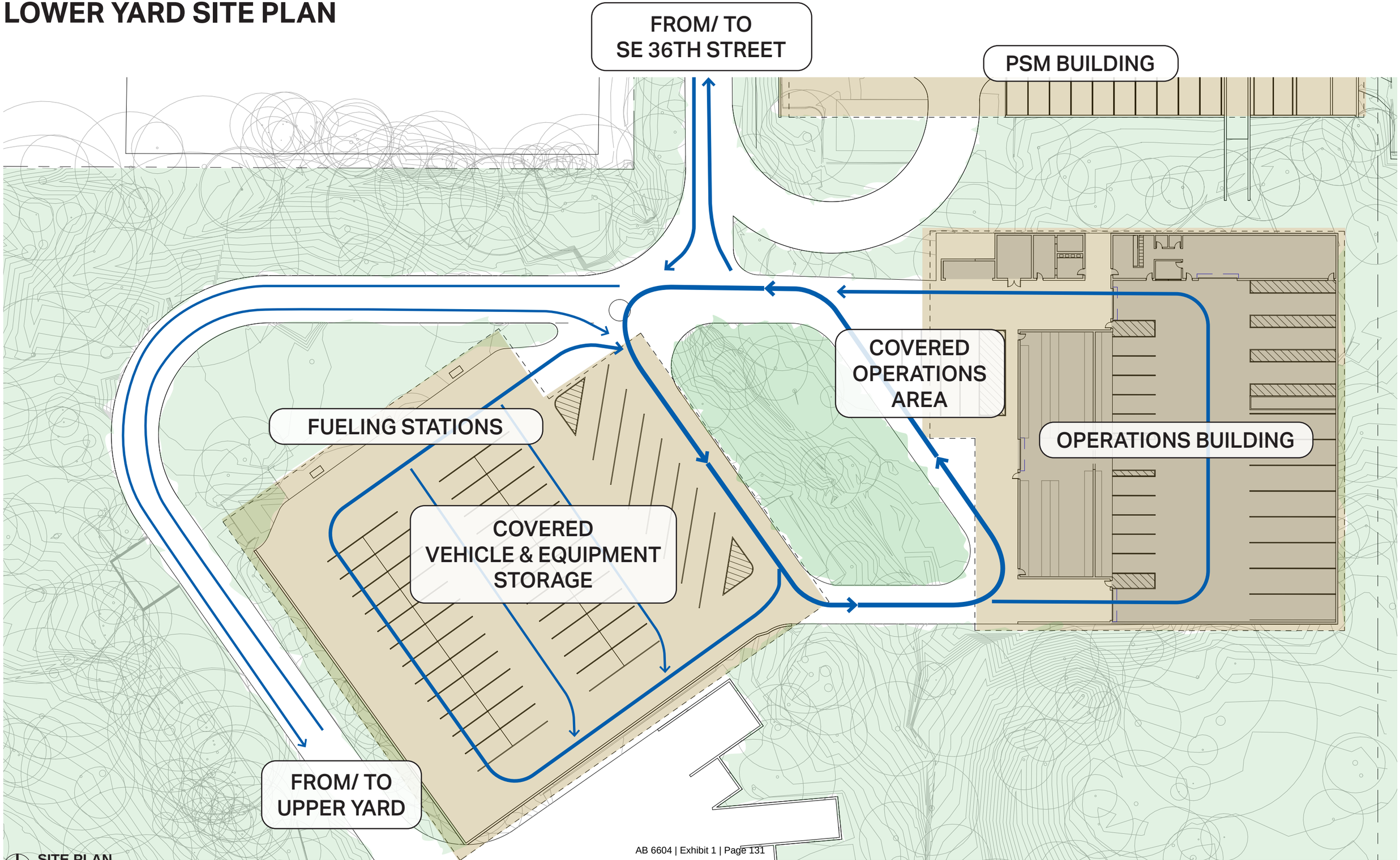
- Enclosed/ heated vehicle storage.
- A warehouse for material, equipment, & tool storage.
- The maintenance shop and maintenance bays, including Parks Department maintenance areas.
- Loading and operations temporary parking.
- Staff areas.
- Emergency operations storage.
- Waste collection.

Covered Vehicle & Equipment Storage

The Covered Vehicle & Equipment Storage is approximately 25,000 gross square feet (GSF) for the following program:

- Parking/ storage for approximately 60 pieces of equipment and vehicles, oversize vehicles, and trailers.
- Fueling stations for unleaded gasoline, diesel, and propane.

LOWER YARD SITE PLAN



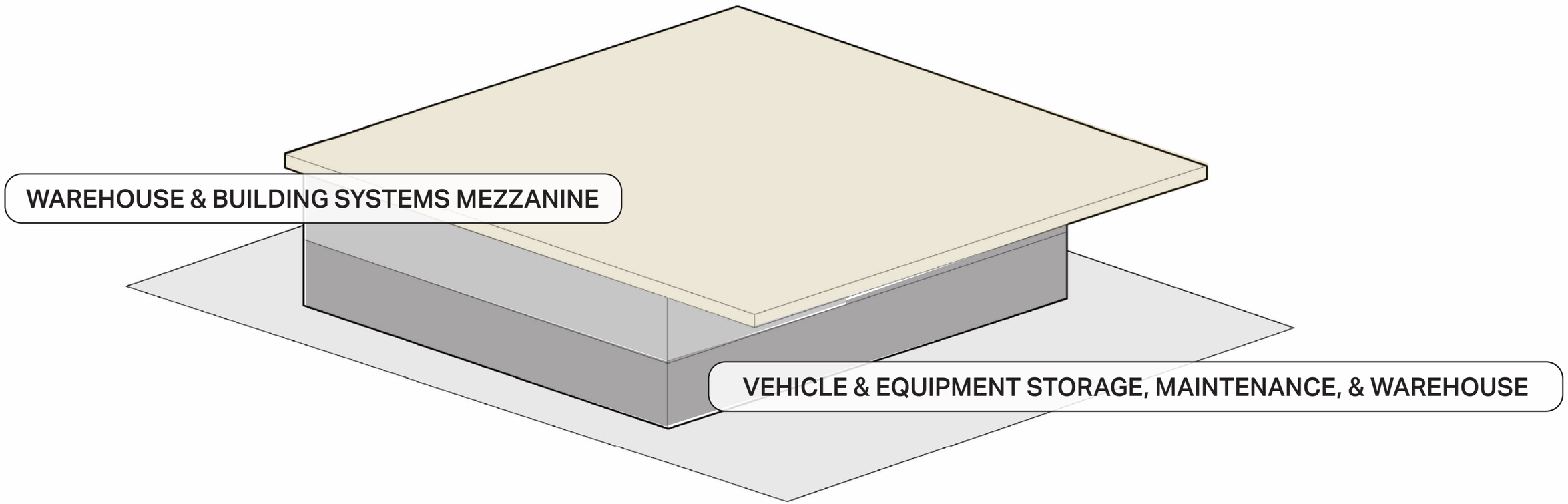
SITE PLAN
1” = 40’

CONCEPT VIEW

This concept view illustrates Lower Yard weathering covers as viewed from the covered operations area at the Operations Building.

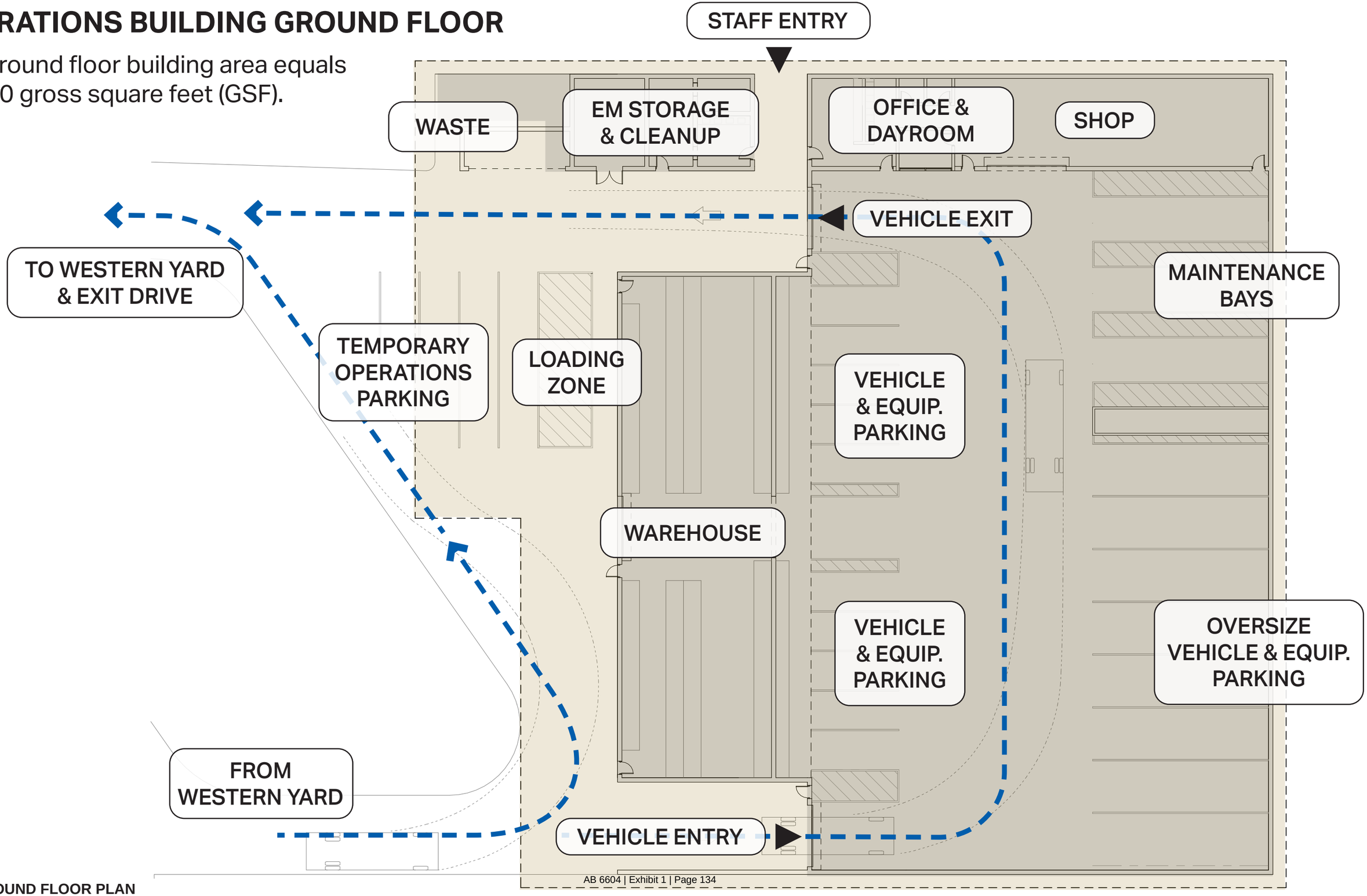
OPERATIONS BUILDING

This diagram illustrates the basic programmatic organization of the single story, high-bay, Operations Building.



OPERATIONS BUILDING GROUND FLOOR

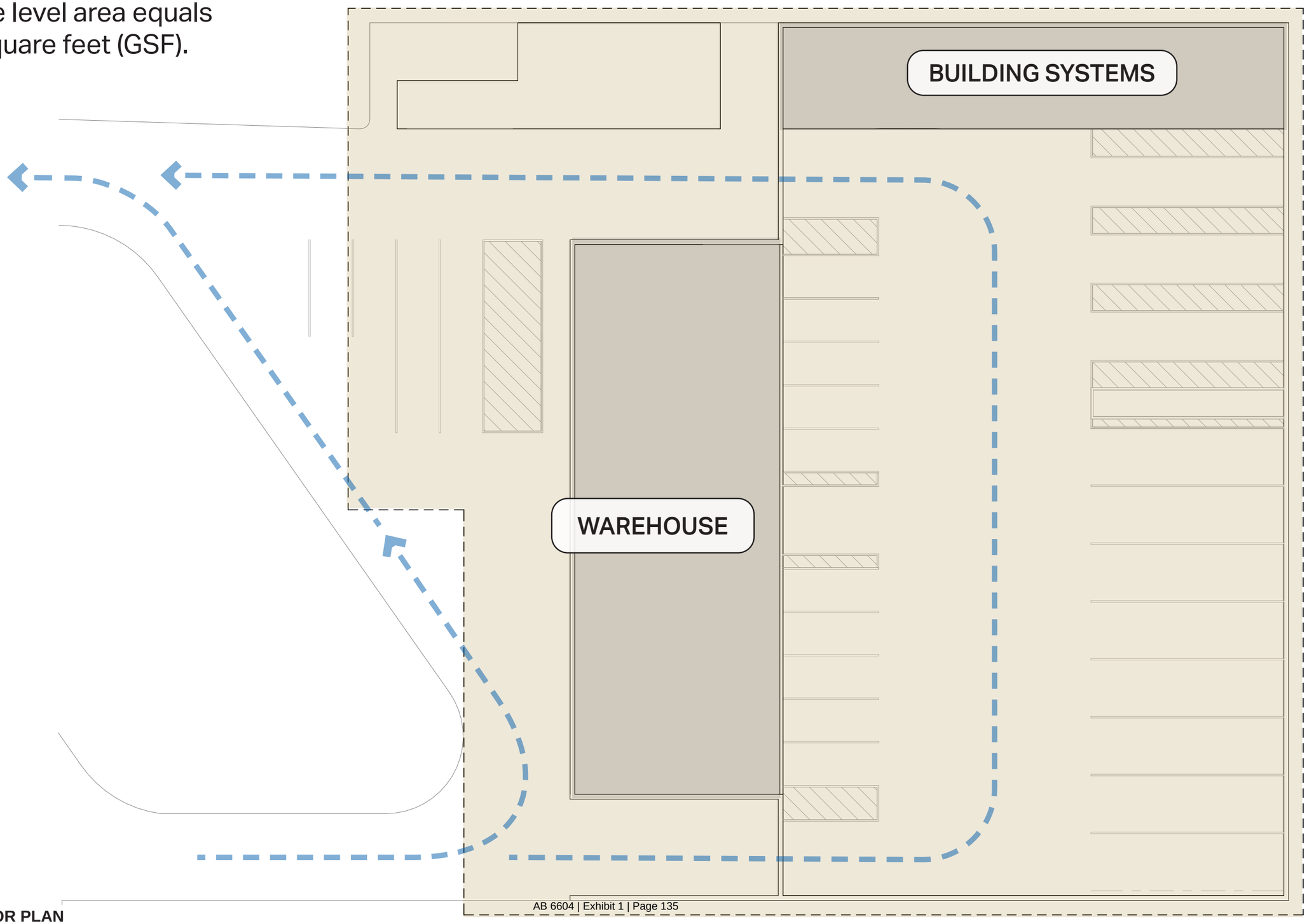
The ground floor building area equals 25,500 gross square feet (GSF).



GROUND FLOOR PLAN
1” = 20’

OPERATIONS BUILDING MEZZANINE LEVEL

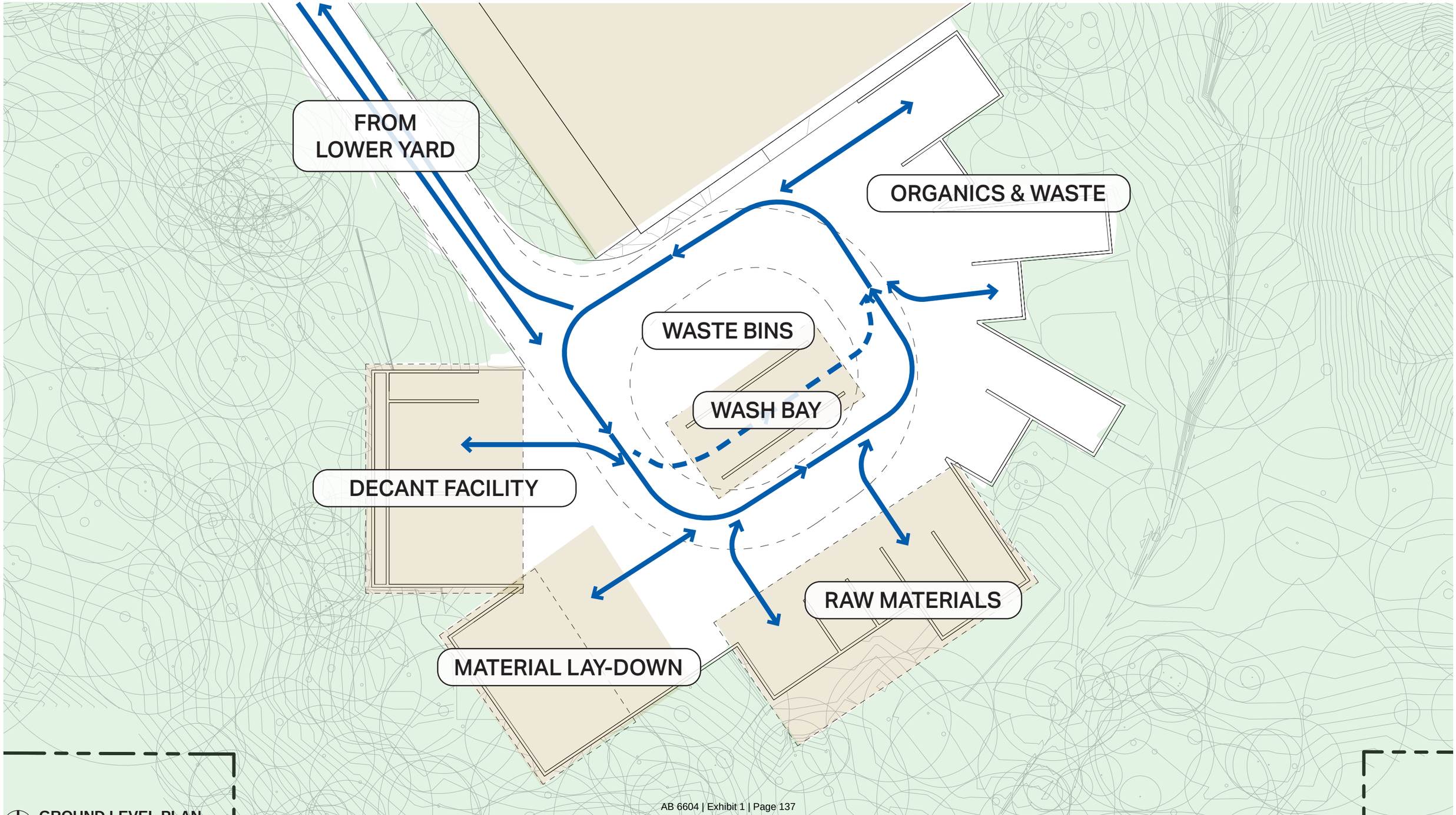
The mezzanine level area equals 7,500 gross square feet (GSF).



MEZZANINE FLOOR PLAN
1” = 20’

Upper Yard

UPPER YARD PRELIMINARY ORGANIZATION



GROUND LEVEL PLAN
1” = 20’

Design Questions Preview

A. Solar power generation.

B. Rainwater harvesting.

C. Potable water storage.

D. Structural systems.

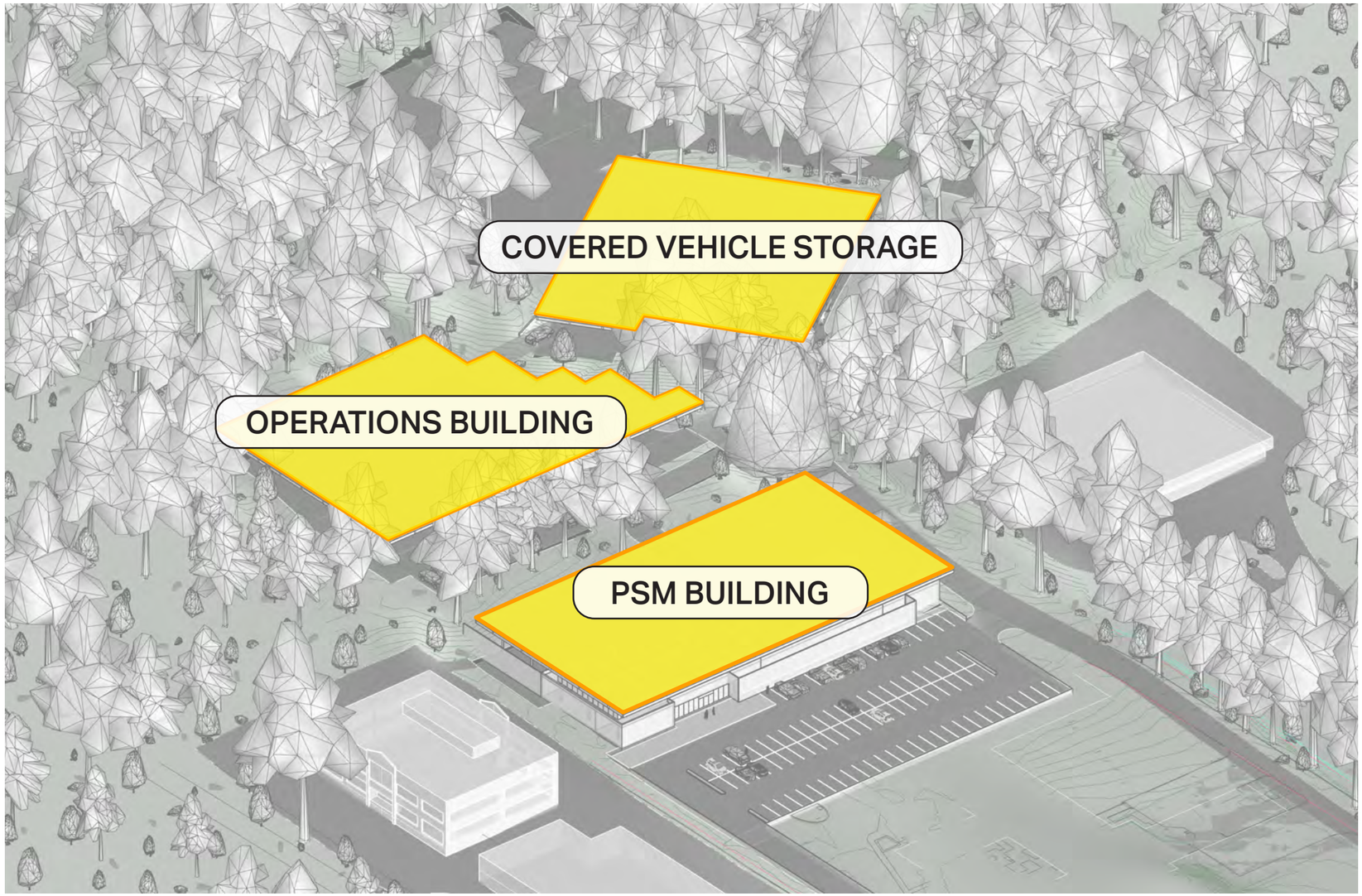
E. Expanding the Upper Yard.

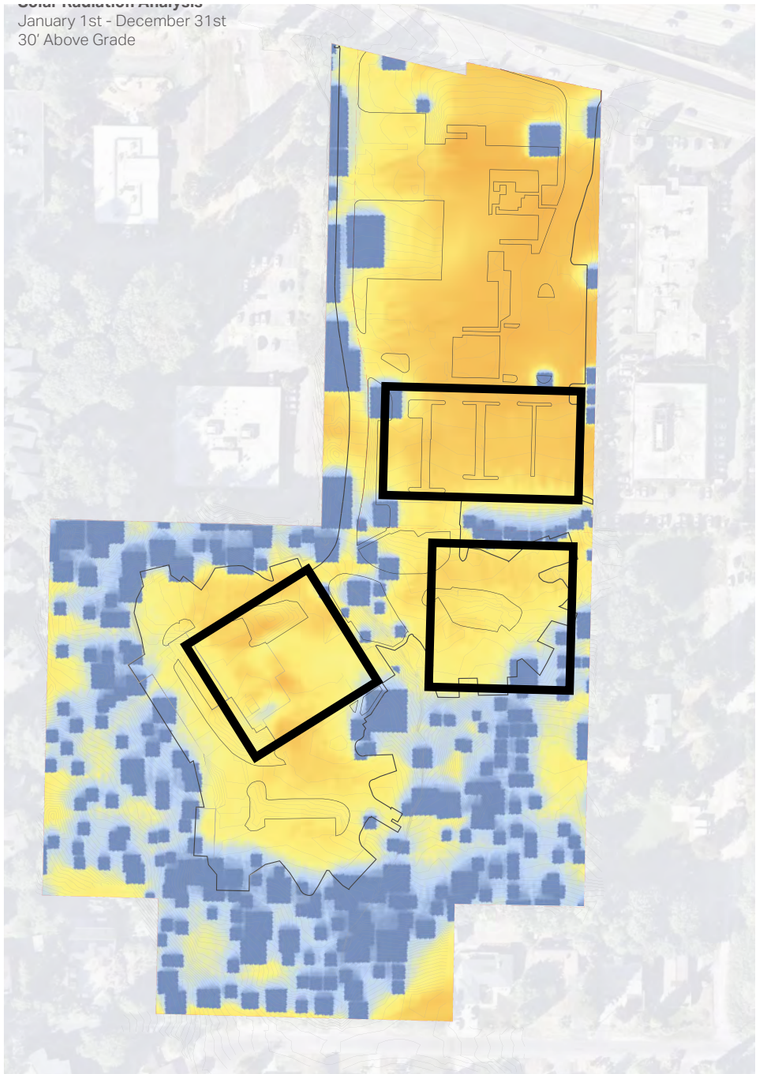
F. PSM building roof extents.

G. PSM building parking garage.

A. SOLAR POWER GENERATION

The project site is a good candidate for roof-mounted solar power generation to increase emergency resiliency, support future vehicle and equipment fleet electrification, and lower operational energy costs.



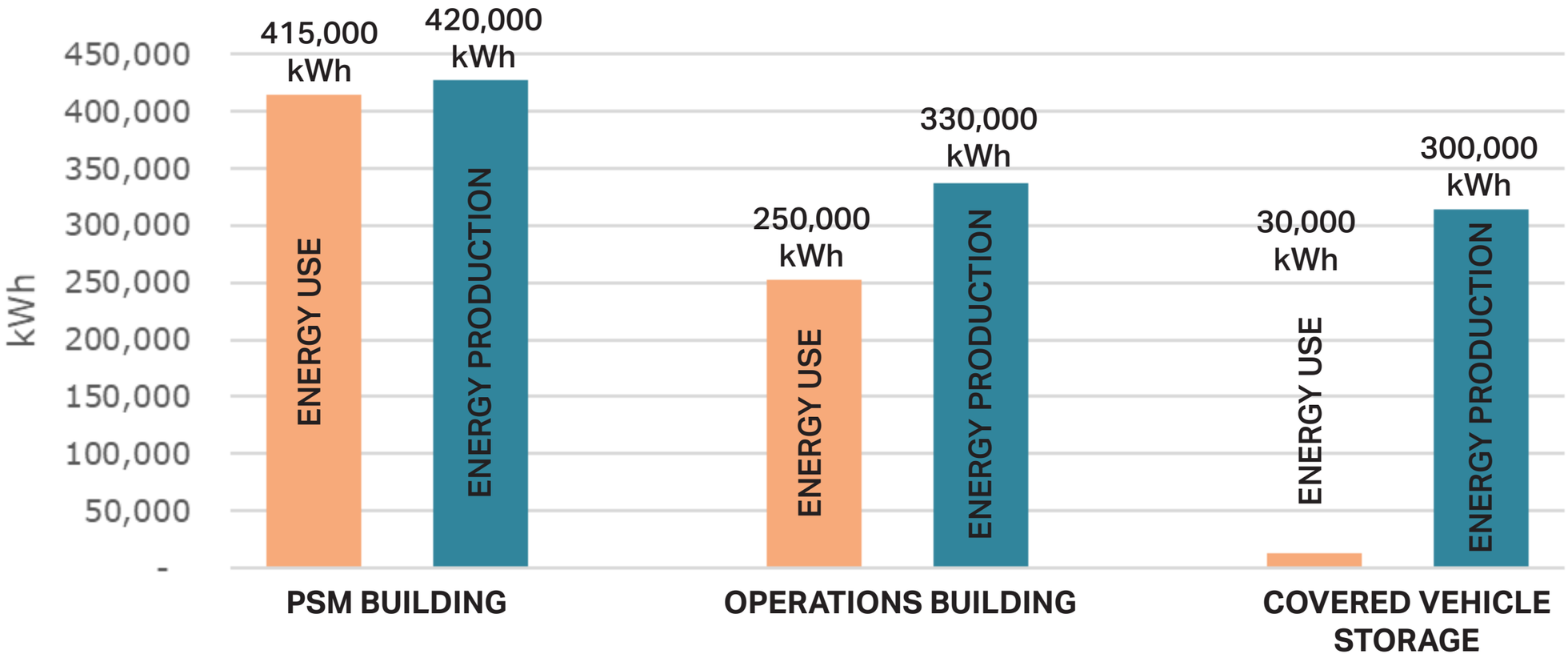


High solar availability, 30' above grade.

Low solar availability, 30' above grade.

A. SOLAR POWER GENERATION

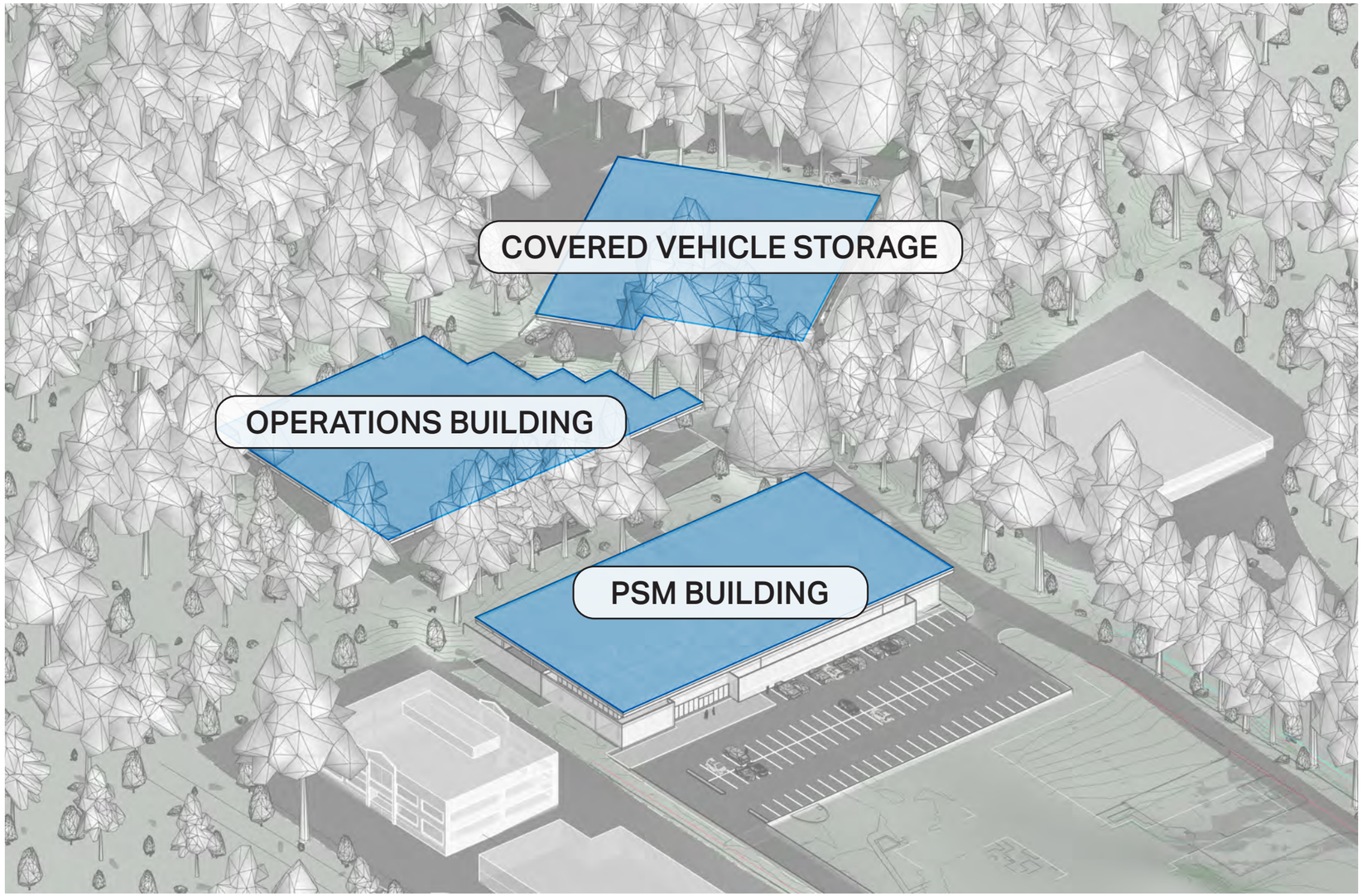
Preliminary benefit data is positive. Further study would be required to assess the proper sizing of a potential system, and the associated costs in order to evaluate the trade off between installation cost, facility resiliency, and long term operational savings.



Data by PAE Engineers. Preliminary information relies on data from similar facilities in the Seattle region, CBES averages for warehouse building types, and a 14W/sf panel density (reduced for anticipated spacing) for the total surface areas available (which may or may not be the future total area utilized).

B. RAINWATER HARVESTING

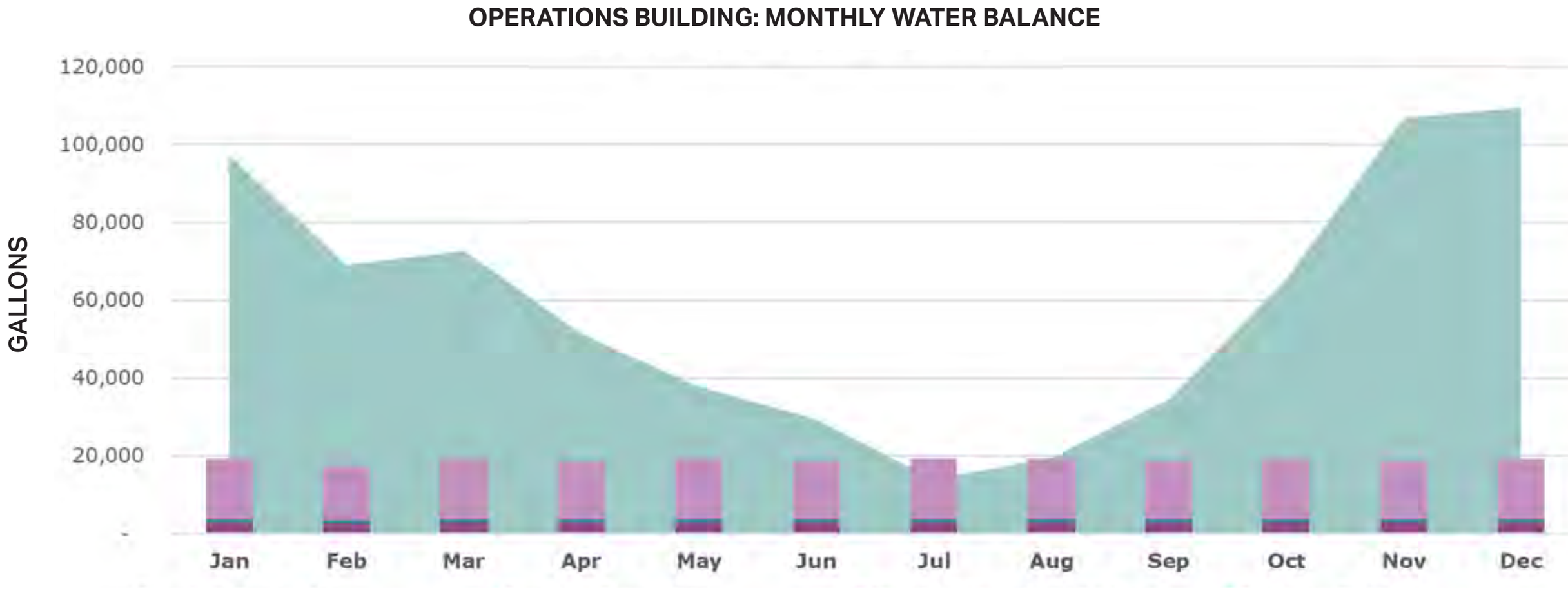
Roof surfaces are capable of harvesting rainwater for on-site storage and reuse at vehicle and equipment wash stations, wheel wash areas, and general site maintenance, lowering the city's operations cost by reducing the demand for potable water.



B. RAINWATER HARVESTING AT THE OPERATIONS BUILDING

Preliminary benefit data is positive. Further study would be required to assess the proper sizing of a potential system, and the associated costs in order to evaluate the trade off between installation cost and long term operational savings.

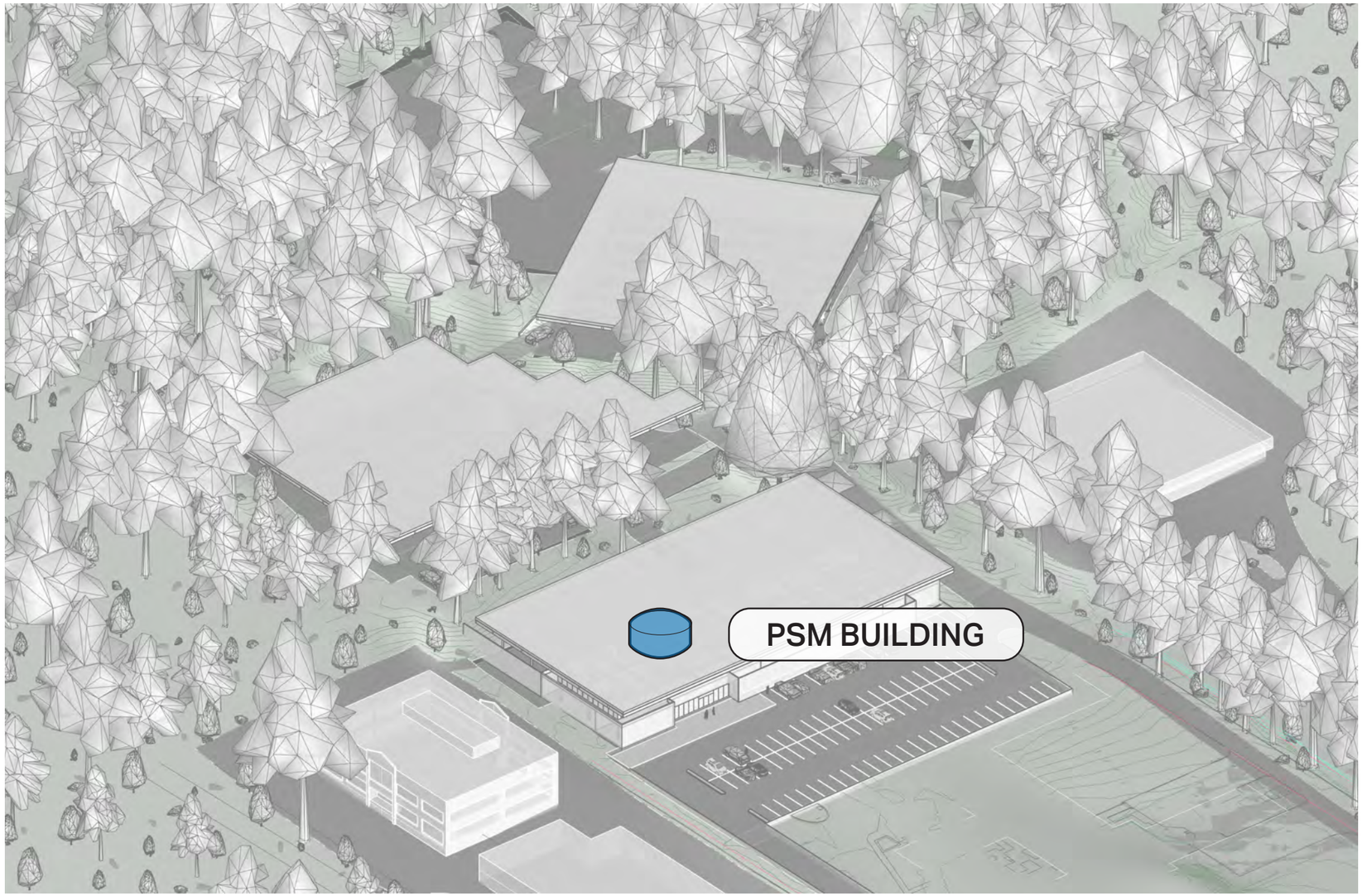
As an example, the chart below depicts the anticipated monthly water balance for the operations building with stored rainwater used for non-potable uses only.



Data by PAE Engineers. Preliminary information relies on data from similar facilities in the Seattle region with EPA and LEED averages for facility type water use estimates.

C. POTABLE WATER STORAGE AT THE PSM BUILDING

Storing potable water on-site would increase the PSM Building's emergency resiliency. A rooftop storage tank would enable gravity-fed water distribution for facility use during emergencies that affect the island's water supply.



As an example, a 10,000 gallon tank could provide potable water for approximately 10 days, while a 30,000 gallon tank could provide potable water for approximately one month. These figures are preliminary, based on typical useage profiles for similar facilities.

This option may warrant further study to evaluate installation cost based on more refined use-case scenarios.

D. STRUCTURAL SYSTEMS FOR BUILDINGS AND WEATHERING COVERS

The selection of a structural system for any building is based on a wide range of factors including site conditions, functional requirements, facility type requirements, load and seismic analysis, material availability, environmental impact, building codes, and system cost.

For review, the factors listed above are consolidated into four overarching considerations :

- **Applicability for a Risk Category IV structure.**
- **Achieving spans required for efficient layouts and use.**
- **The overall cost of the system.**
- **Alignment with Climate Action Plans adopted by the municipality.**

D. STRUCTURAL SYSTEMS FOR BUILDINGS AND WEATHERING COVERS

Three primary structural systems are available for consideration, Mass Timber, Steel, and Concrete (Cast-in-Place or Precast).

MASS TIMBER

- ☑ Risk Category IV Structures
- ☑ Achieve necessary spans
- $$ System cost
- \+ Climate Action Plan Alignment

STEEL

- ☑ Risk Category IV Structures
- ☑ Achieve necessary spans
- $$ System cost
- +/- Climate Action Plan Alignment

CONCRETE

- ☑ Risk Category IV Structures
- ☑ Achieve necessary spans
- $$$ System cost
- \- Climate Action Plan Alignment

Risk Category IV structures and achieving necessary spans:
All three systems meet requirements for use in Risk Category IV Structures and are capable of achieving necessary spans.

System Cost:
Concrete exhibits the highest install-cost. Mass Timber and Steel are relatively cost comparable, with Mass Timber likely slightly higher for this use-case.

Climate Action Plan Alignment:
Mass Timber aligns with Mercer Island's Climate Action Plan GHG targets. Steel systems may align depending on the forging methods and emissions controls used during production. Concrete structures may utilize various manufacturing strategies to reduce GHG impacts but may not fully align with policy targets.

D. STRUCTURAL SYSTEMS FOR BUILDINGS AND WEATHERING COVERS

Preliminary review by the design team recommends further study into Mass Timber and Steel structures for use at each facility on-site to develop information necessary for a comparative review.

MASS TIMBER

SITE PLAN
1” = 140’

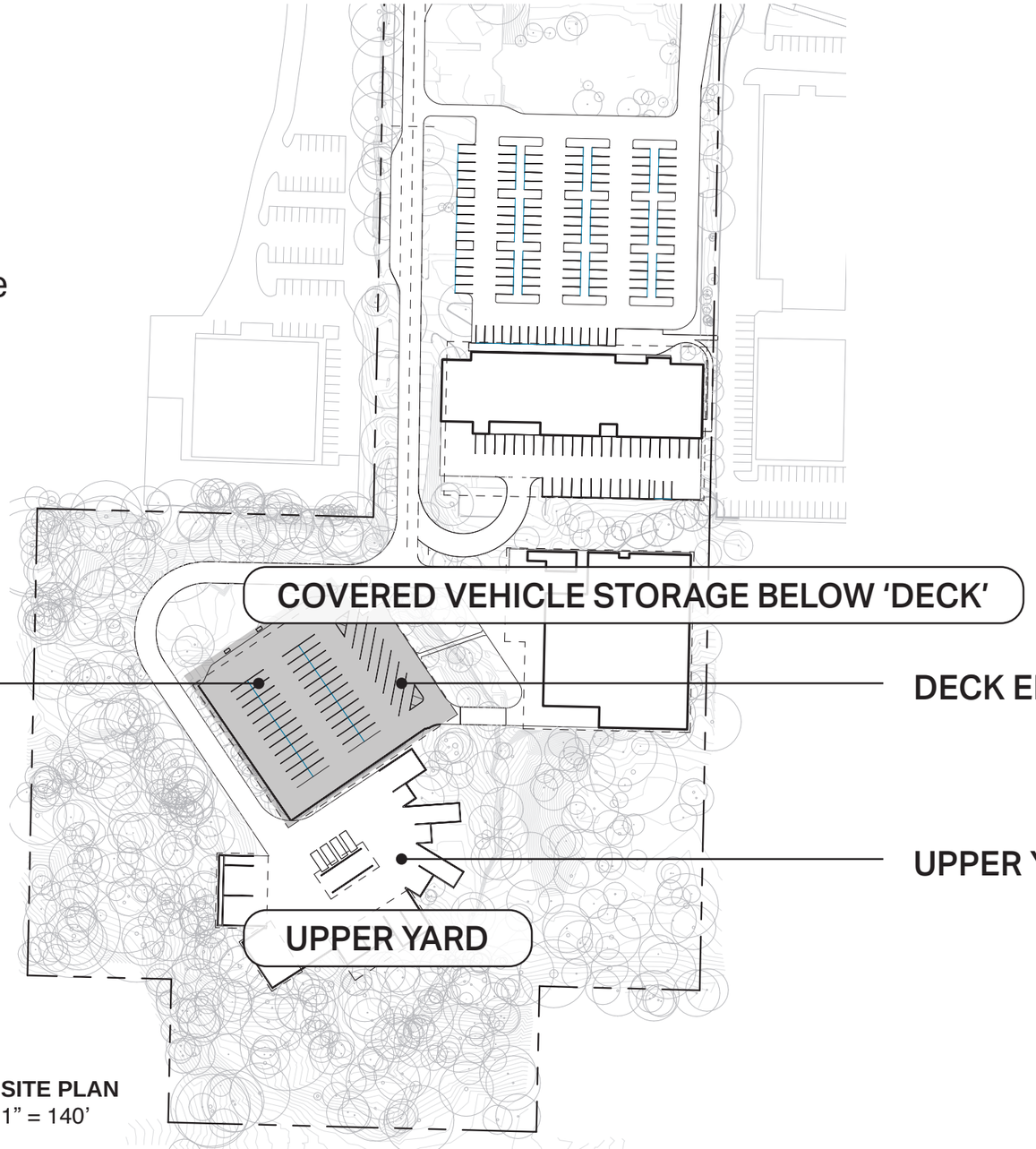
STEEL

SITE PLAN
1” = 140’

E. EXPANDING THE UPPER YARD

With limited area available at-grade for Public Works operations, it may be prudent to design the Covered Vehicle & Equipment Storage structure as a load-bearing deck to enable use of the structure's roof for material lay-down and vehicular access.

The rooftop of the Covered Vehicle Storage could be set at grade level with the Upper Yard for direct vehicle and equipment access.



LOAD BEARING DECK
PROVIDES APPROX. 25,000 SQUARE FEET OF ADDITIONAL UPPER YARD LAY-DOWN AREA FOR PUBLIC WORKS OPERATIONS

DECK ELEV +/- 145.00'

UPPER YARD +/- ELEV 145.00'

SITE PLAN
1" = 140'

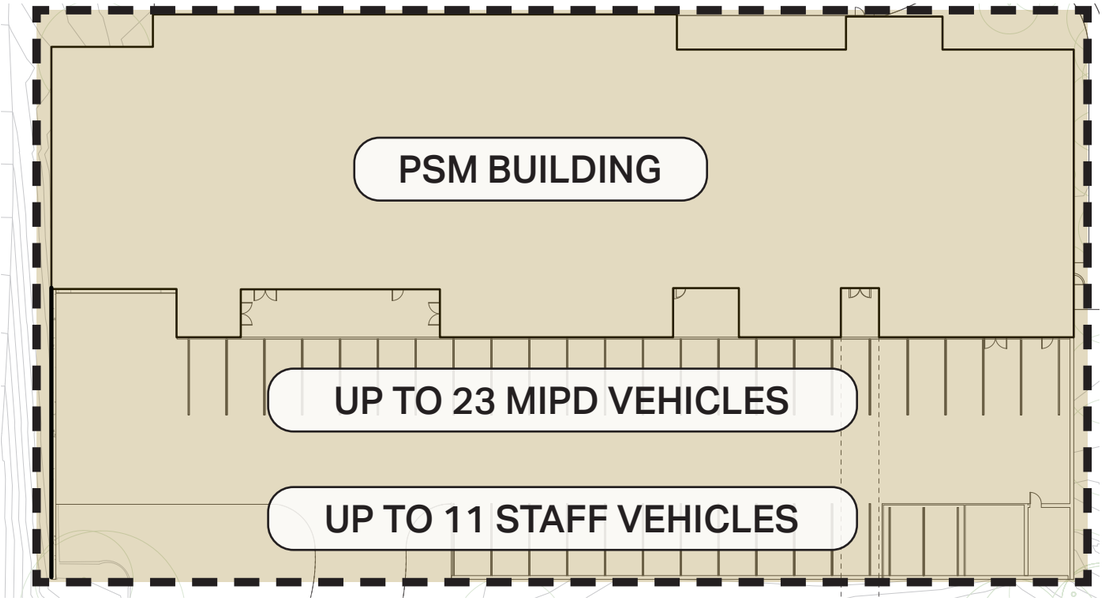
F. PSM BUILDING ROOF EXTENTS

The PSM building roof covers MIPD official vehicles, protecting those vehicles from wear, promoting efficient loading and unloading of equipment during inclement weather, and providing the necessary environment for regular and required IT maintenance of vehicle systems.

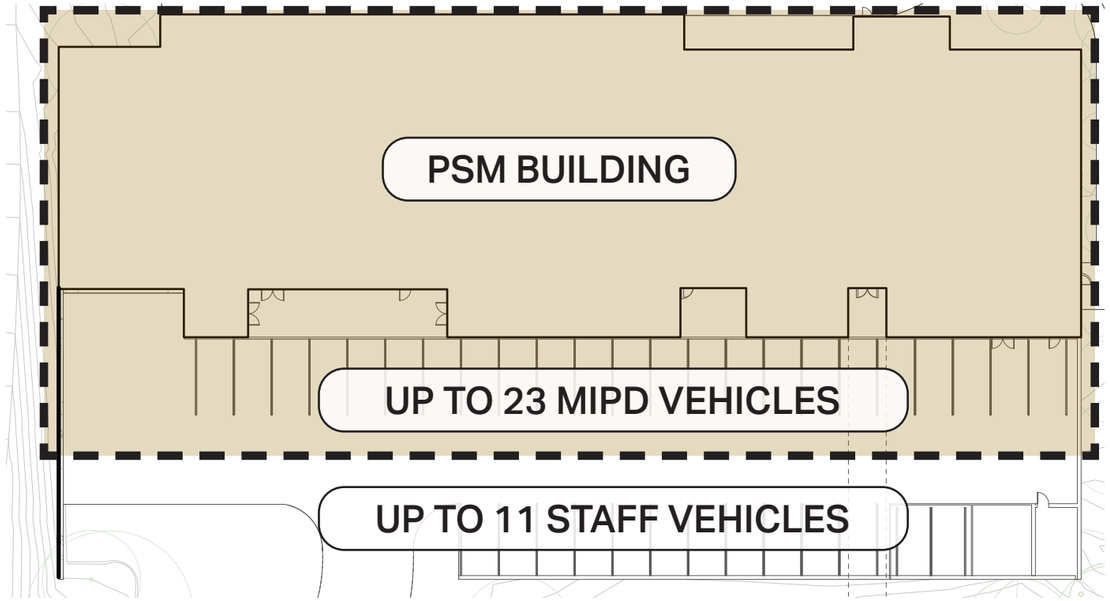
The roof also covers an area available for on-duty staff personal vehicles.

As a potential cost savings measure, the PSM Building roof may be limited to covering essential functions related to MIPD vehicles only.

COVERED PARKING FOR OFFICIAL MIPD VEHICLES AND STAFF PERSONAL VEHICLES



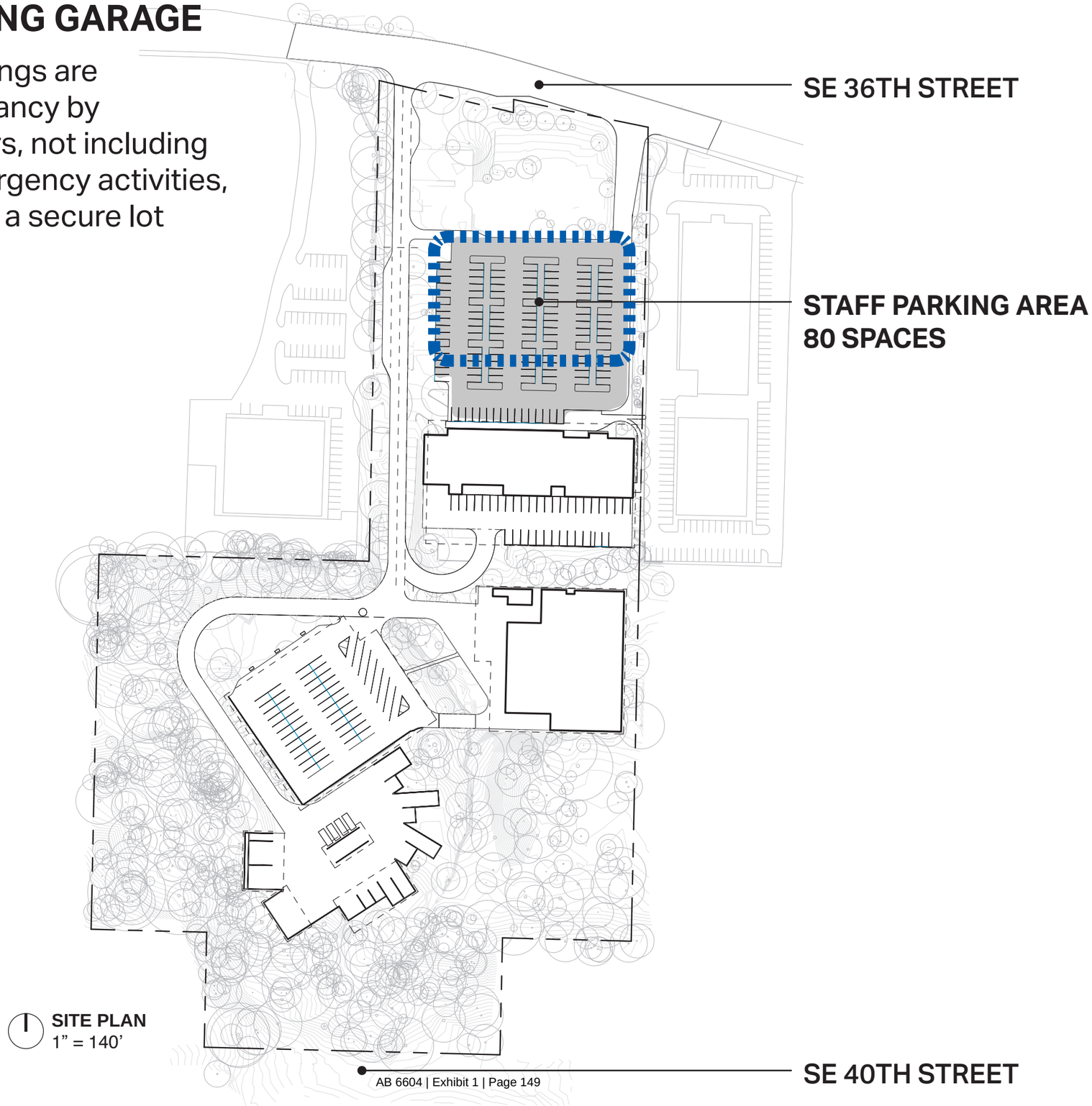
COVERED PARKING FOR OFFICIAL MIPD VEHICLES ONLY



THE RESULTING ROOF AREA REDUCTION WOULD BE APPROXIMATELY 8,000 SQUARE FEET.

G. PSM BUILDING PARKING GARAGE

The PSM and Operations Buildings are programmed for regular occupancy by approximately 80 staff members, not including public parking, parking for emergency activities, or MIPD which currently park in a secure lot behind the PSM Building.

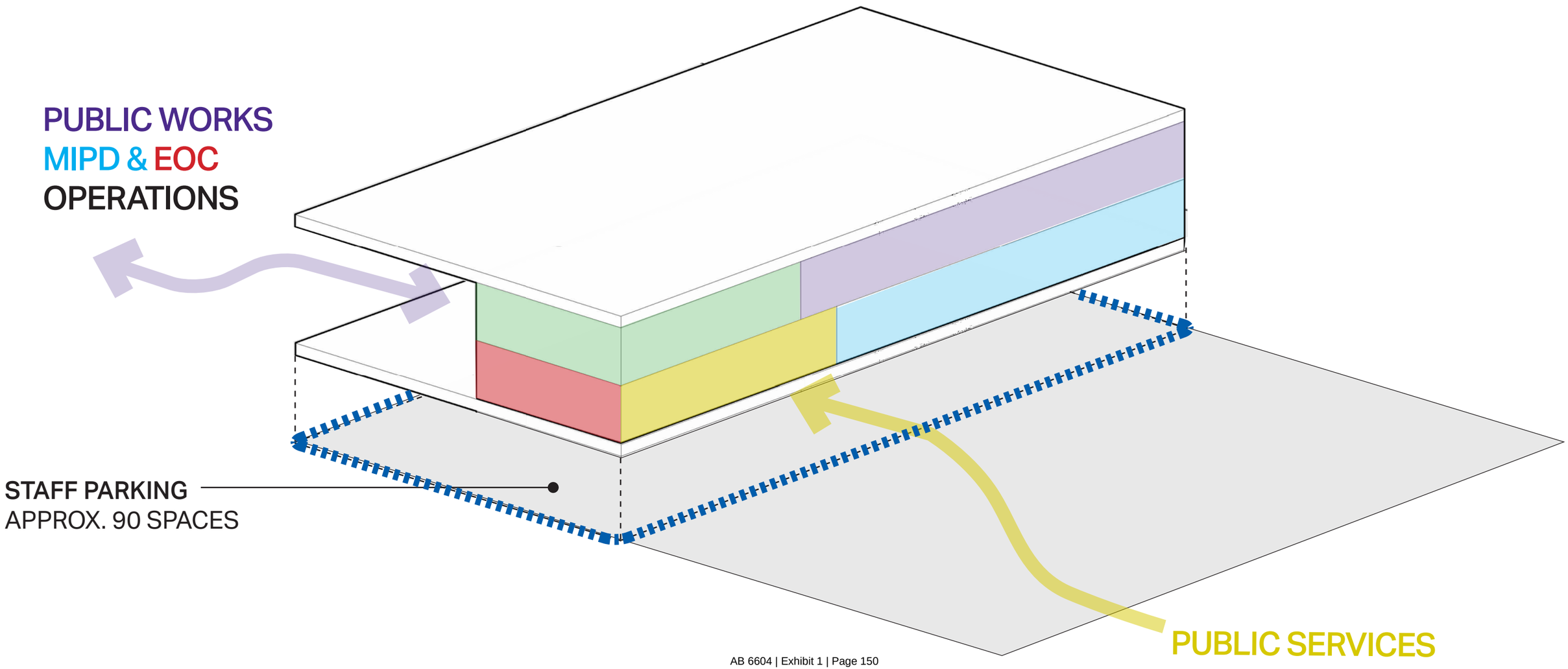


SITE PLAN
1” = 140’

G. PSM BUILDING PARKING GARAGE

It may be possible to consolidate staff parking underneath the footprint of the PSM Building. Raising the building to include a one-story at-grade parking structure would provide approximately 90 parking spaces.

This strategy would require the construction of an approximately 30,000 square foot structured parking garage, and strategies to resolve the grade relationship for public entry from the north, and staff circulation between the PSM building and the Lower Yard to the south.

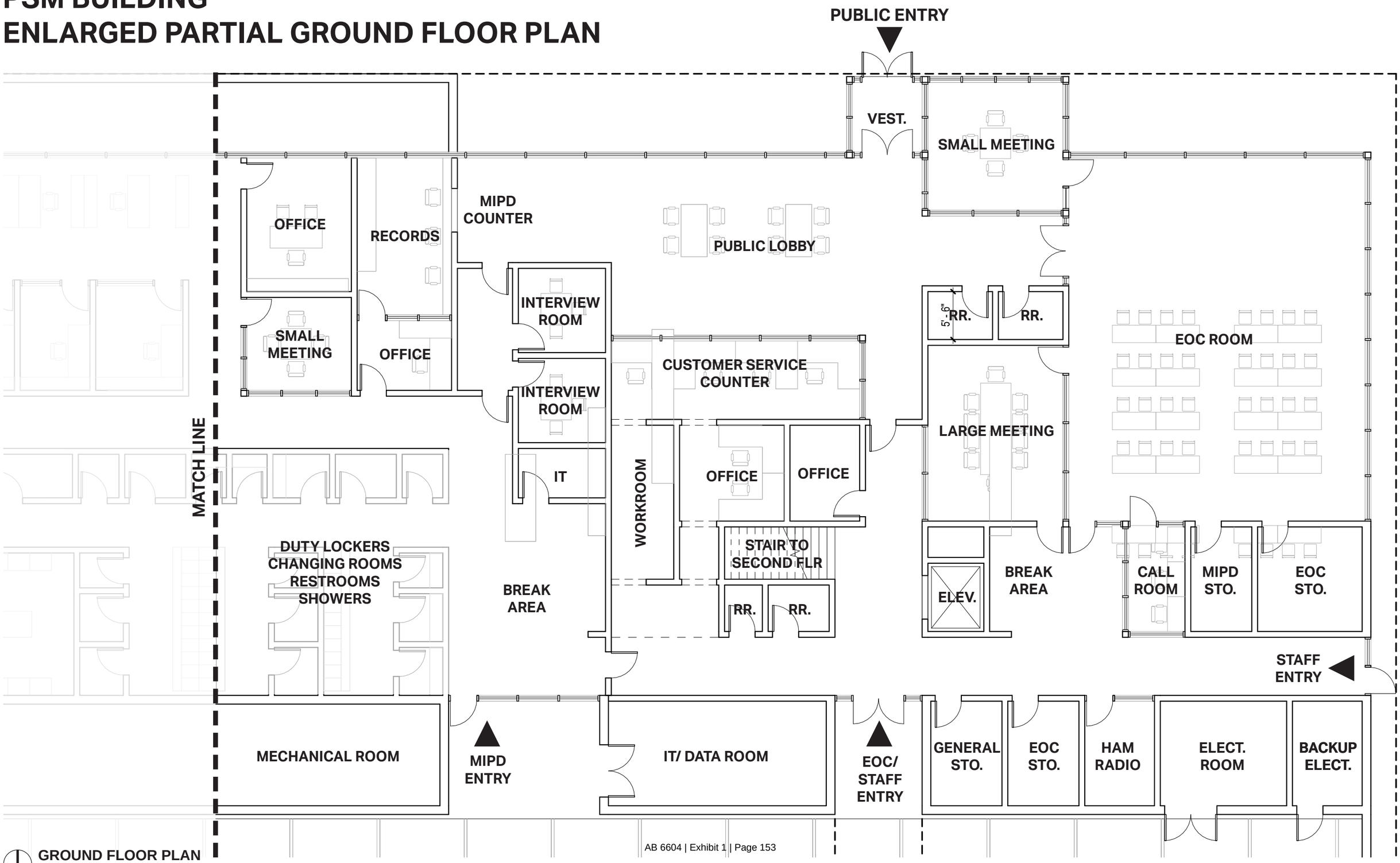


Mercer Island Public Safety and Maintenance Facilities

Appendix

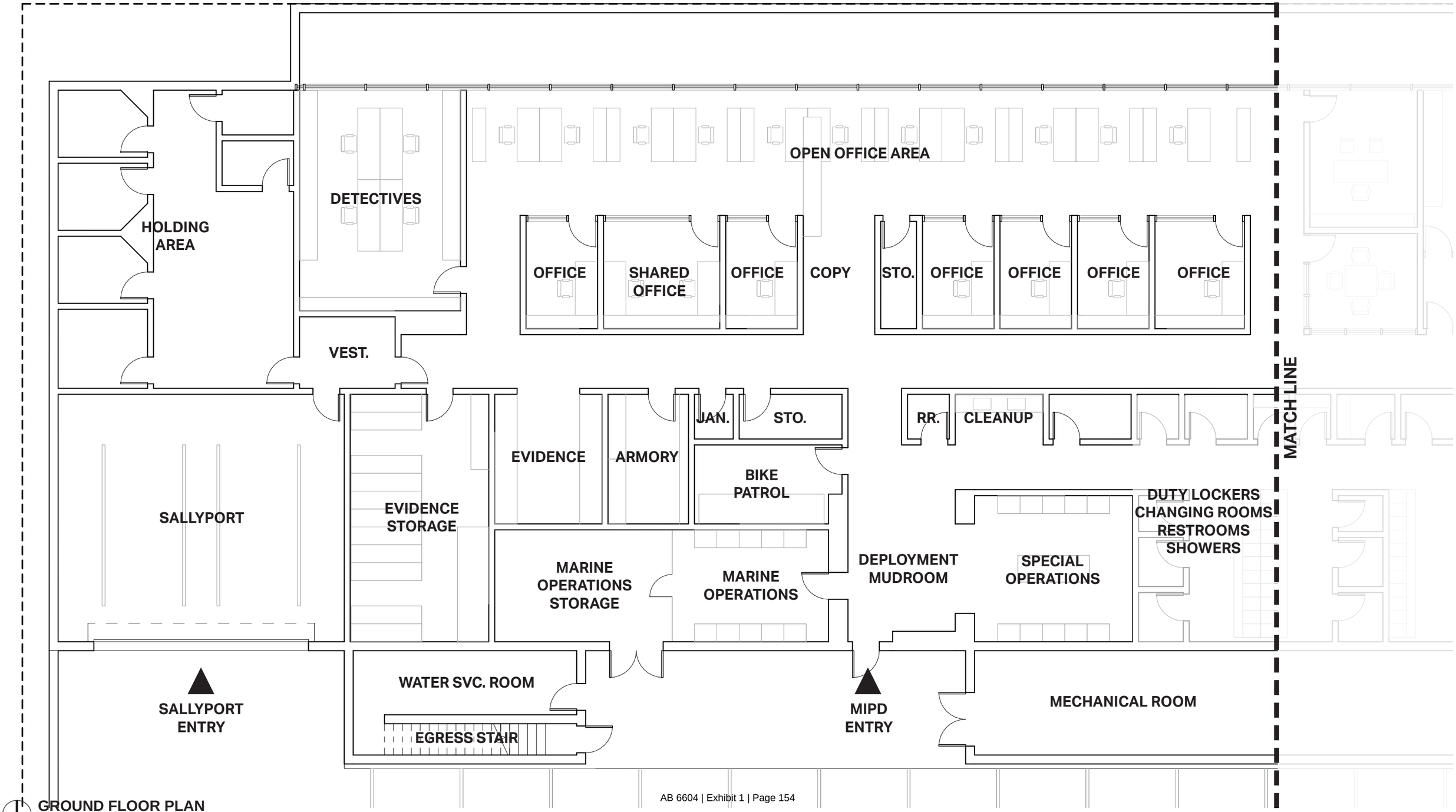
Enlarged PMS Building Concept Floor Plans

PSM BUILDING
ENLARGED PARTIAL GROUND FLOOR PLAN



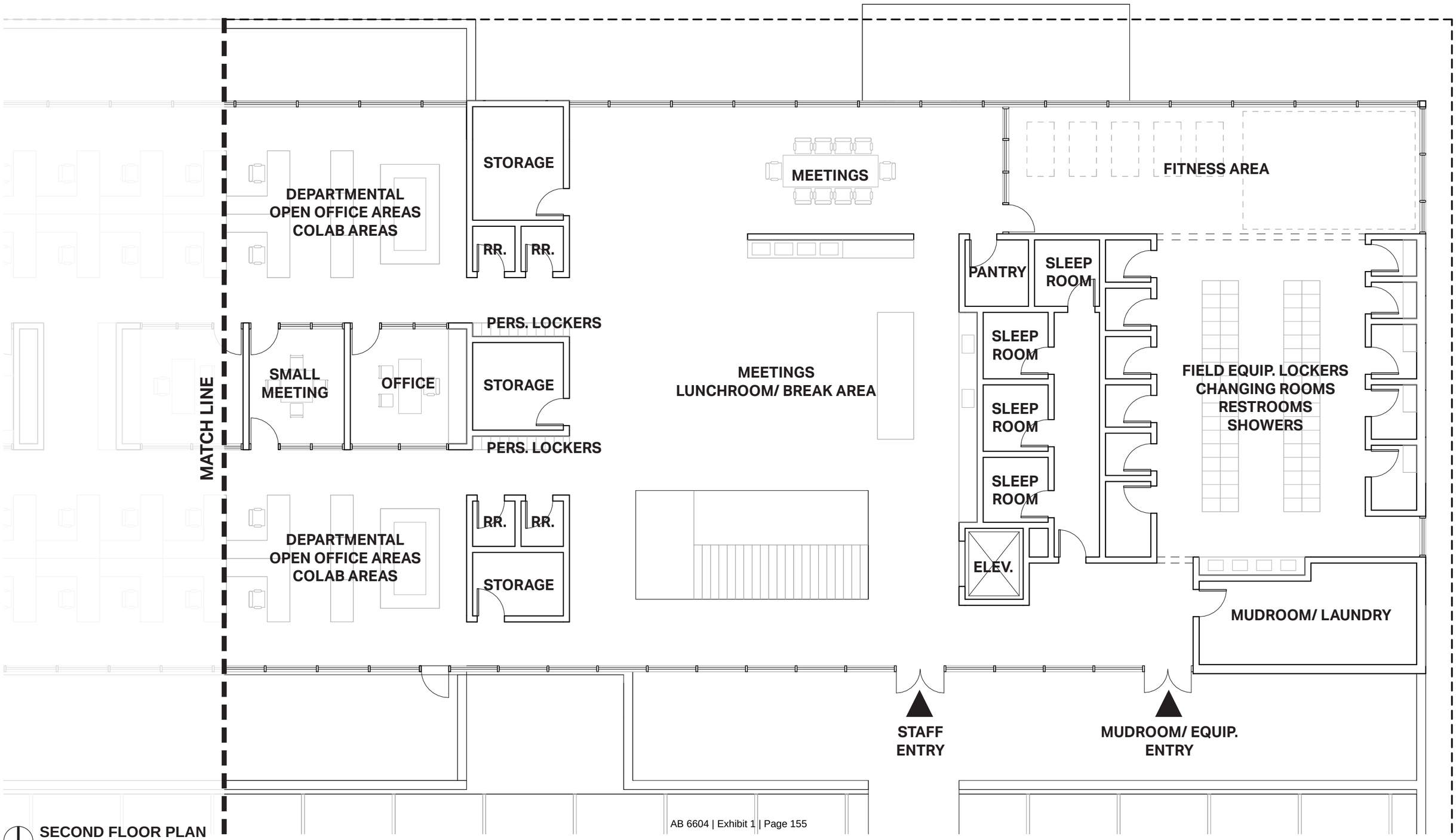
GROUND FLOOR PLAN
1” = 10’

PSM BUILDING
ENLARGED PARTIAL GROUND FLOOR PLAN



GROUND FLOOR PLAN
1” = 10’

PSM BUILDING
ENLARGED PARTIAL SECOND FLOOR PLAN



SECOND FLOOR PLAN
1” = 10’

PSM BUILDING
ENLARGED PARTIAL SECOND FLOOR PLAN

SECOND FLOOR PLAN
1” = 10’