NORTH BASE MASTER PLAN

Final Report, Volume I

PREPARED FOR: THE CITY OF NORMAN DEPARTMENT OF PUBLIC WORKS

DECEMBER 2022

ADG | BLATT architects

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TABLE OF CONTENTS

MASTER PLAN TEAM

ADG | Blatt Project Manager, Design Development, Mechanical and Plumbing Assessment

CEC Corporation Civil and Electrical Assessment

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Artman Appraisals Commercial Appraiser


FLEET

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SECTION 1 **INTRODUCTION**

INTRODUCTION

Master Plan Goal

The purpose of this Master Planning effort, as noted in the original request for qualifications, is to develop a "sound, actionable, and fiscally responsible facilities master plan that supports all aspects of multiple City of Norman departments' operational needs existing now and in the future. These departments include Public Works, Utilities, Parks and Recreation, and Fire Departments. Currently, the Public Works Department has operations at three major locations: North Base, Lindsey Yard and City Hall. The City of Norman Utilities Department also has operations at North Base, City Hall and four other locations. Parks and Recreation has operations at North Base, Griffin Park, City Hall, and multiple neighborhood parks. The facilities master plan should focus on the preservation and potential redevelopment and/or repurposing of current facilities as well as the identification of and/or planning for new facilities to establish a framework for the anticipated facility needs for the next 20 – 30 years by each department.

Master Plan Process

ADG | Blatt and the North Base Master Plan team have embarked on a series of tasks in order to compile the necessary data and information to fully execute this Master Plan effort.

- Task 1: Information Gathering
- Task 2: Programmatic Inventories
- Task 3: Operations Interviews
- Task 4: Program Projections and Space Allocations
- Task 5: Concept Development
- Task 6: Feasibility Study (current task)
- Task 7: Final Report

At the conclusion of each task, ADG | Blatt has submitted its findings in report format to the City of Norman Department of Public Works for review, comment, and approval. Throughout Tasks 4 and 5, as programmatic adjacencies were identified and conceptual designs began to take shape, the team had regular meetings with all divisions of Public Works and staff from the Utilities, Parks and Facility Maintenance, and Fire Departments. Staff feedback is crucial to the overall success of the design and this project was the proud benefactor of a wealth of commentary from all stakeholders.

This Final Report is be a comprehensive document compiling all of the information acquired throughout this process, notes from employee interviews, site commentary, cost estimates and projections, financial data, proposed master plan, and any other necessary documents relevant to this effort.

Project Considerations

The North Base Master Plan team is working to develop a Final Master Plan package that reflects the guiding principles from the City's vision and common themes generated during interviews in Tasks 1 - 3 with Public Works, Parks and Facility Maintenance, Utilities and Sanitation, Fire, as well as City of Norman management staff. These guiding principles include the following:

- Improve Efficiencies
  - Create space for shared work functions (ie. a shared welding in a centralized location for ease of use)
  - Combine shared functions and programs into the same space
  - Eliminate redundancies in administrative support staff by combining duplicated spaces
- Improve (and expand) Employee Areas
  - Enlarge employee locker rooms and break areas
  - Provide additional employee amenities to attract and retain talented staff
  - Explore outdoor wellness areas and green space
- Implement Sustainable Elements
  - Utilize solar energy to offset utility costs
  - Incorporating electric vehicle charging stations throughout the campus
- Increase Storage
  - Establish systematic organization in designated areas, reducing storing items in work areas which can potentially halt or hinder productivity
  - Provide storage bays that can house heavy-duty equipment and fleet vehicles in the event of a weather event that will not interfere with daily operations
- Address Parking
  - Separate employee parking from fleet parking and removed from daily operational circulation of vehicles
  - Ensure adequate parking for light, medium, and heavy-duty vehicles now and with projected growth for the next 30-years
  - Provide covered parking throughout the campus

INTRODUCTION

Potential Project Savings

With the improvement of building technologies, sophistication of electrical and mechanical systems, and the incorporation of energy efficient practices, the Master Plan team estimates that considerable financial savings can be obtained in the amount the City of Norman expends in utility costs each year. Utilizing new and efficient building systems can also contribute to fewer maintenance costs overall.

The Master Plan team has recommended in their design the integration of solar panels at key areas, primarily any accomodating roof top and atop covered parking structures.

Please see the Mechanical and Plumbing narrative in Volume I, Section 4 that details recommended HVAC systems, plumbing considerations, as well as energy saving components and their range of impact.

Combining these savings with consolidated administrative spaces and shared work functions have potential savings in staffing, administrative, and equipment maintenance costs. Reducing redundancies in programmed space creates opportunities for further cost savings or potential to incorporate additional functions that are crucial to daily operations that have not been previously accounted for. Sharing equipment that is intermittently used with each Public Works division eliminates the need for multiple pieces of equipment and the associated costs with maintaining duplicative items.

SECTION 2 **EXISTING CONDITIONS**

SITE OVERVIEW

NORTH BASE SITE

LINDSEY YARD SITE

Site Overview

A key goal of the North Base Master plan is consolidating Public Works operations to its North Base facilities, primarily its operations at Lindsey Yard.

The North Base site is currently the base for the following City of Norman Departments and their divisions:

- Public Works, Fleet Division
- Public Works, Traffic
- Public Works, Transit and Parking
- Parks and Recreation, Parks Maintenance
- Utilities, Line Maintenance
- Utilities, Sanitation
- Fire Department

It is important to note from this list, Line Maintenance currently has a new facility on a separate site under construction. They will not have a future presence at this location. The North Base site also has land previously used as lay down space for Traffic's light poles, traffic lights, etc. This space is now the construction site for the City of Norman new Sanitation Facility. There are a myriad of storage sheds / buildings that house an array of items depending on its managing entity.

The Lindsey Yard is the location of Public Works's Streets and Stormwater divisions. Lindsey Yard is also the primary location for bulk material storage and lay down space for rip rap, miscellaneous construction materials, and equipment. It is the only location for salt storage as well as brine production and storage. The salt storage has been reported to be undersized.

Upcoming Development Considerations

A new multi-modal path is currently under design for the west side of Flood Avenue. The path will provide additional pedestrian, bicycle connectivity to surrounding commercial development and OU facilities.

The Aviation and Aerospace Academy has received funding from the State of Oklahoma due to the American Rescue Plan Act. The Academy will be transitioning from their current location west of the North Base Complex and south of the Fire Department to a proposed parcel south of Lexington Avenue. The Master Plan team recommends that conversations with the Aviation and Aerospace Academy take place to minimize impact on the proposed Master Plan design.

SITE ACQUISITION

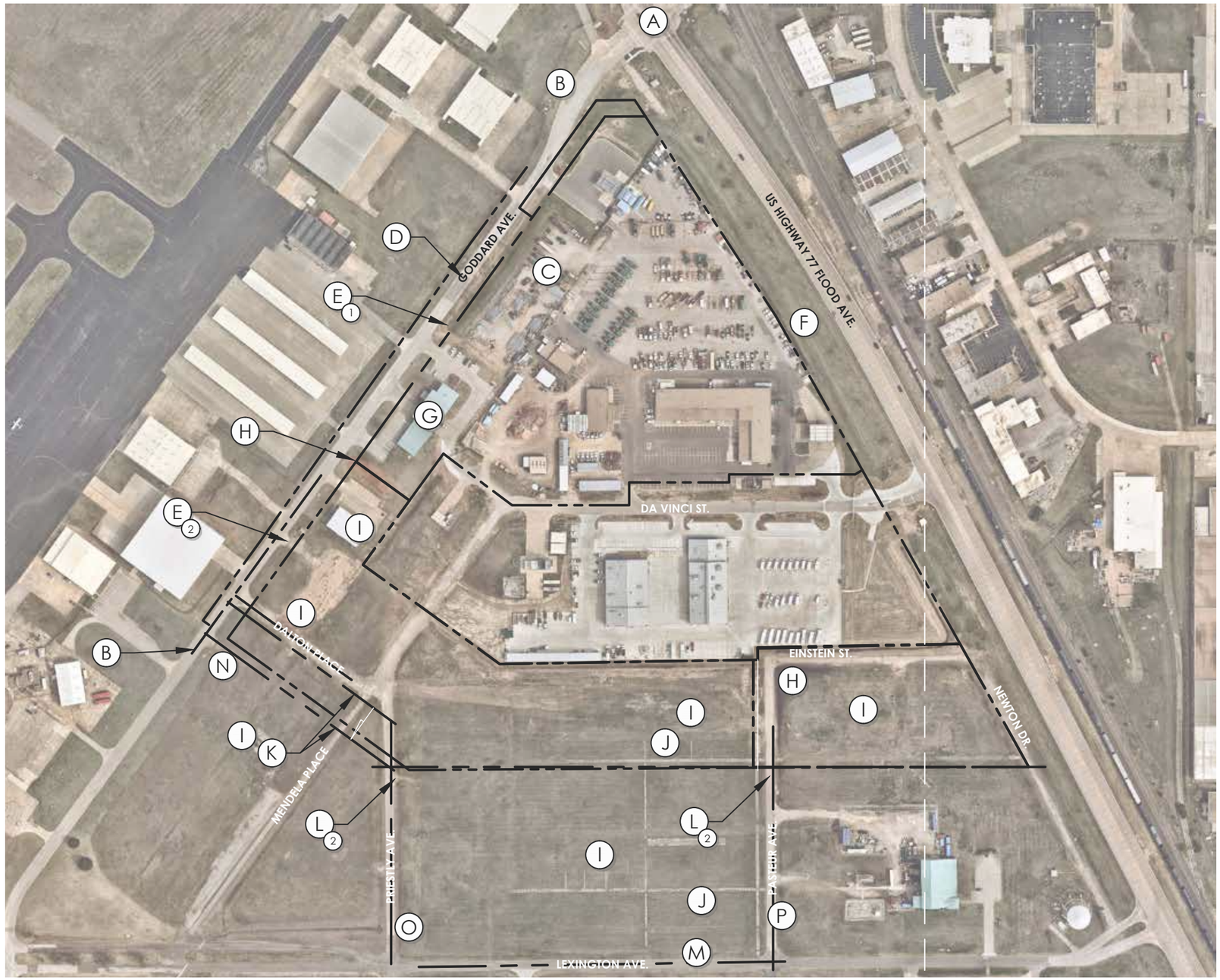
LEGEND

- (A) Goddard Ave. to become public road (Extent TBD)
- (B) The University of Oklahoma Land (ROW)
  Add landscape and berm maintenance
- (C) 13.4 Acres The University of Oklahoma
- (D) Road alignment: Move centerline of Dalton Place southwest 117'+-
- (E) Lexington Avenue Access
  - (1) Option 1
  - (2) Option 2
- (F) Lexington Avenue to become public road (Extent TBD)
- (G) Dalton Place to become public road (TBD)
- (H) Priestly Avenue to become public road (TBD)
- (I) Pasteur Avenue to become public road (TBD)

Site Acquisition

To fully satisfy the goals and guiding principles of this Master Plan, it is the recommendation that additional land be acquired to the south of the current City of Norman property at North Base. See the Exhibit to the left indicating the property proposed. The Master Plan team has conducted a property appraisal of this parcel of land, as well as an appraisal of its Lindsey Yard, to project its financial contributions to the construction of the proposed buildings included in this Master Plan design concept. Please see Volume II, section 07 for the commercial appraisal reports.

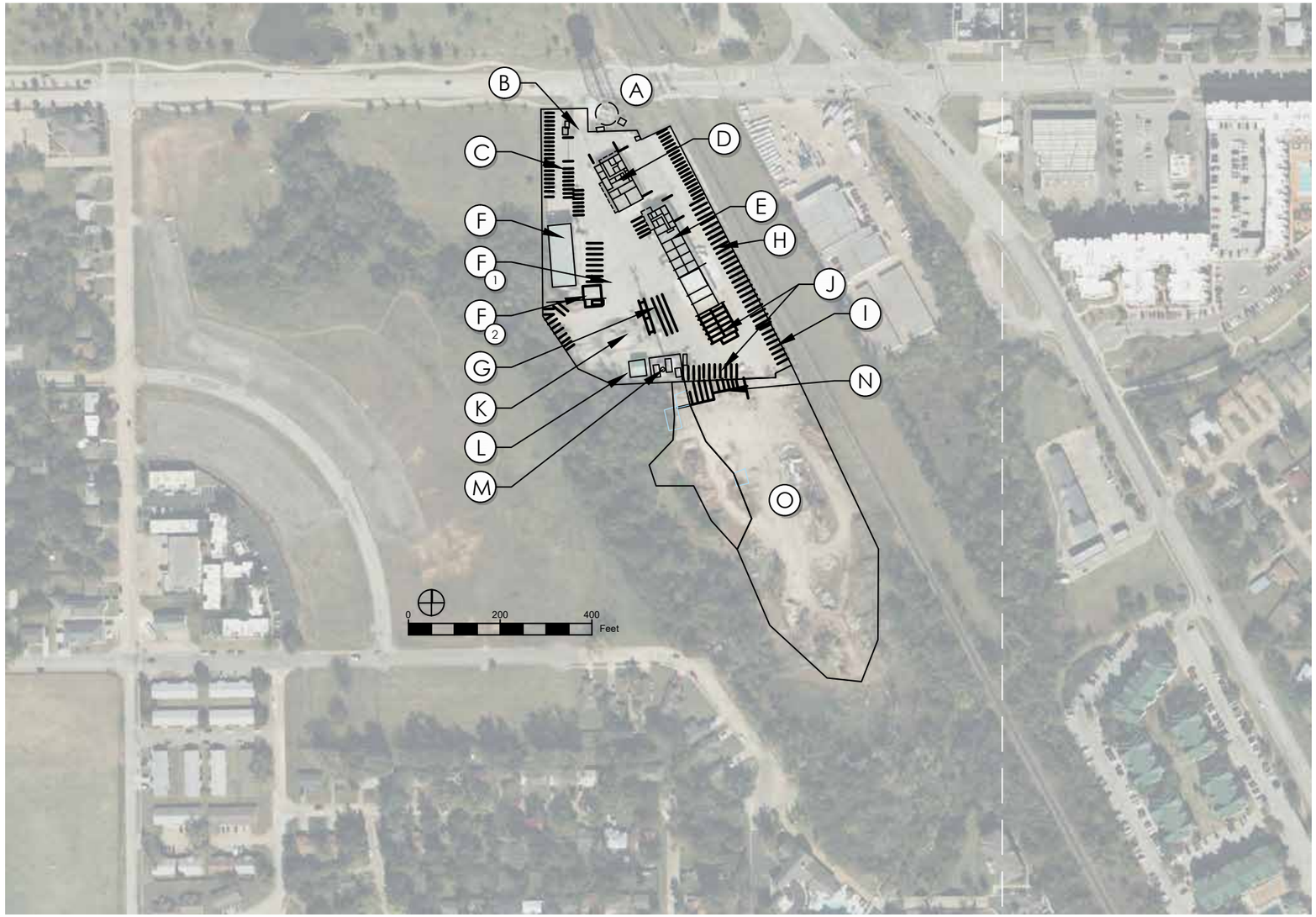
EXISTING SITE AND STRUCTURES



LEGEND

- (A) Light Controlled Intersection of US Highway 77 Flood Ave. & Goddard Ave.
- (B) Goddard Ave. to become public road (Extent TBD)
- (C) Future location for new sanitation department building
- (D) Goddard Ave. area subject to flooding
- (E) Goddard Ave. Access
  - (1) Option 1
  - (2) Option 2
- (F) Landscape buffer 115'+-
- (G) Fire Station
- (H) Area subject to ponding water
- (I) Existing building pad verified and removed
- (J) Existing sidewalks verified and removed
- (K) Roads Realignment move center line of Dalton Place southwest 117'+-
- (L) Lexington Ave. Access
  - (1) Option 1
  - (2) Option 2
- (M) Lexington Ave. to become public road (Extent TBD)
- (N) Dalton Place to become public road (TBD)
- (O) Priestly Ave. to become public road (TBD)
- (P) Pasteur Ave. to become public road (TBD)

EXISTING SITE AND STRUCTURES



LEGEND

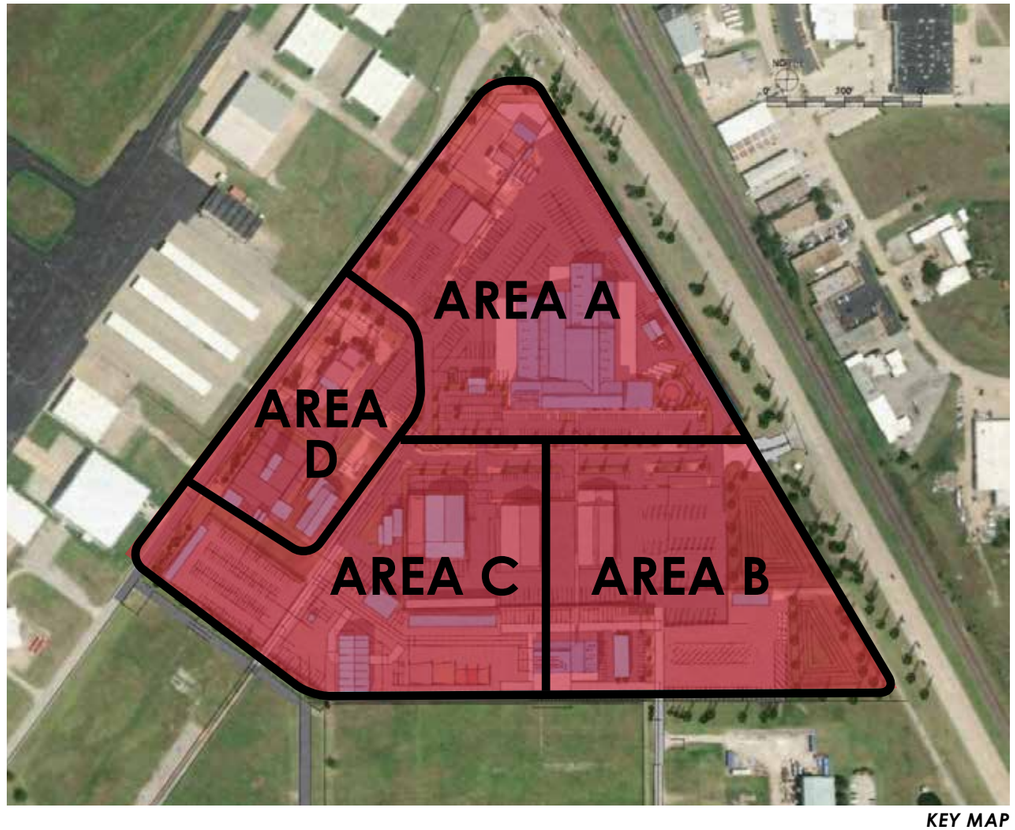
- (A) Water Tower
- (B) Entry Gate
- (C) Staff/Small Vehicle Parking 74 Spaces
- (D) Building #1
  - (1) Main Offices, Lockers and Meeting Rooms
  - (2) Storage Bays
- (E) Building #2
  - (1) Crew Offices, Meeting Room/Shelter
  - (2) 8 Work Bays
  - (3) 2 Bays Bulk Storage
  - (4) 2 Bays Brine Mixing and Storage Tanks
- (F) Salt Barn
  - (1) Mixing
  - (2) Loading Ramp
- (G) Equipment Staging area
- (H) Equipment Parking 25 Spaces
- (I) Rack Storage 8 Spaces
- (J) Heavy Equipment Parking 22 Spaces
- (K) Sand
- (L) Chem Storage
- (M) IT Cell Tower
- (N) Trailer Parking 10 Spaces
- (O) Material Storage on OU Land

SECTION 3 **PROPOSED DESIGN**

OVERALL CONCEPTUAL DESIGN

OVERALL CONCEPTUAL DESIGN

The subsequent pages more fully detail the components and features of this Master Plan, please use the legend below to navigate this section. As portions of Areas B and C include the parcel of land that the Master Plan team is recommending the City of Norman acquire and complete this work as one phase, the pricing for these areas are shown together.



KEY MAP

EV PARKING

EMPLOYEE SPACE

Proposed Program for the North Base Complex

AREA A
- Sanitation Building (Currently under construction)
- Additional Fuel Pump island at North CNG Fill station
- Generator with Enclosure
- CNG Slow-Fuel Stations
- Employee Parking

AREA B
- CNG Slow-Fuel Stations
- Existing Fleet Transit Facility
- Existing Bus Parking
- Existing and New Detention Ponds
- Lay down space for miscellaneous equipment, bulk materials, etc.
- Light Pole Racks

AREA C
- Warehouse space with Loading Dock
- Equipment Storage and Staging
- Existing Parks Maintenance Building
- New Facility Maintenance Building with Secured Yard Space
- Future Wash Bay (to start construction Q4 2022)
- Open and Covered Bulk Material Storage
- Secure Parking Lot for Auction Holding

AREA D
- Existing Fire Station
- Fire Tower
- Fire Apparatus Storage and Maintenance Building

THROUGHOUT
- Light, Medium, and Heavy-Duty Fleet Parking
- Electric Vehicle Charging
- Storage Sheds

Proposed New Buildings

Please Note: These square footages are estimates based on the conceptual designed and could fluctuate +/- 100 square feet.

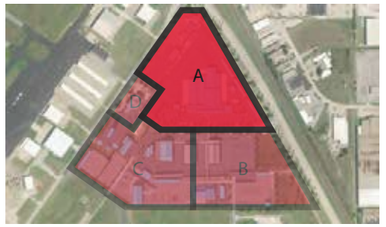
Main Campus Building	119,600 sf
Streets and Stormwater Maintenance Bays	13,600 sf
Salt Barn	12,200 sf

Proposed Budget-Range for the North Base Complex

New Construction, Area A	$43,382,000 - $60,633,400
New Construction, Areas B + C	$12,469,300 - $18,669,900
New Construction, Area D	$4,840,000 - $6,357,900
Site and Site Utilities	$1,373,300 - $2,101,800
Total Range	**$62,064,400 - $87,762,700**

* A detailed breakdown of costs can be found in Section 5

AREA A



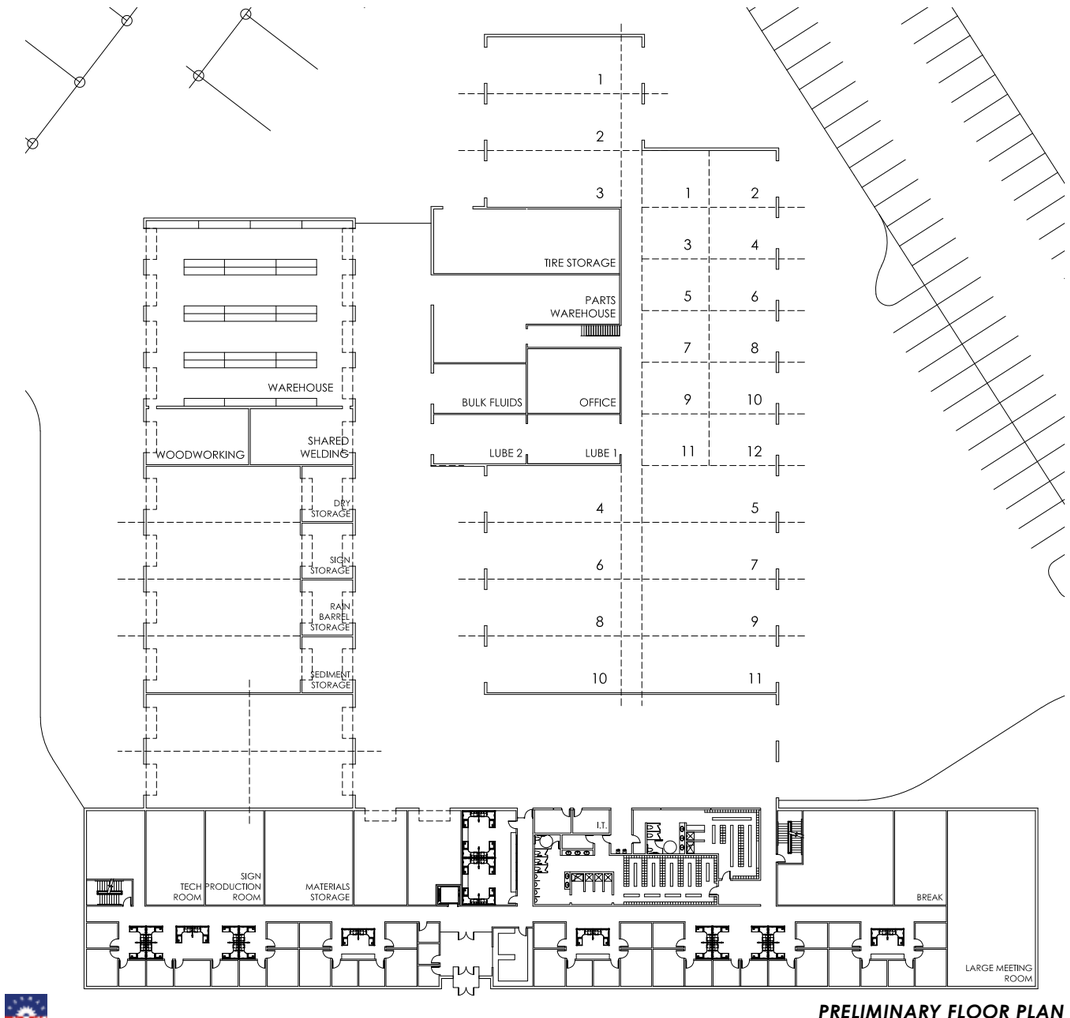
Area A

- (A) Relocated and Enlarged Fueling Station (5 Lanes)
- (B) Large Vehicle Parking 28 Spaces
- (C) Large Vehicle Parking 43 Spaces
- (D) Large Vehicle (Sanitation) Slow Fuel CNG - 28 Dual Post for 56 Vehicles
- (E) For Service, Done Line, 38 Spaces Covered, etc - 118 Spaces
- (F) Staff and Visitor Parking 173 Spaces
- (G) Long Vehicle For Service - 28 Spaces, 19 Spaces Covered
- (H) Electric Vehicle Charging Stations
  - (1) Station A
  - (2) Station B
- (I) New Sanitation Department Building
- (J) Sanitation Staff Parking
- (K) New Driveway
- (L) Fleet Maintenance Bldg. #2
- (M) Roadwork
  - (1) Goddard Ave. to become Public Road
  - (2) Access to Goddard Ave. Option 1

AREA A

Area A is the original portion of the North Base complex. Currently, the Fleet and Traffic Divisions of Public Works operate out of this location. Throughout the information gathering phases with these divisions, as well as Streets and Stormwater, a common theme heard was insufficient work space. The number of existing work bays are minimal and are in high demand - especially during a weather event. Heavy-duty vehicles need space to be stored that does not infringe on current operations or hinder any future work necessary. Each division also has shared tasks and functions, for example welding, chemicals, and fluids. Incorporating a centralized welding bay and inventory location helps increase efficiencies across divisions and reducing maintenance costs on multiple welding units.

Combining administrative functions in one common space gains efficiencies from both staffing and energy efficiency perspectives. The Master Plan team also recommends improving employee amenities such as breakrooms and gathering spaces.



PRELIMINARY FLOOR PLAN

Proposed Program for Area A

Site
- Main Campus Building
- Sanitation Building (Currently under construction
- Employee Parking
- Light to Medium-Duty Fleet Parking
- Additional Fuel Pump island at North CNG Fill station
- Generator with Enclosure
- Electric Vehicle Charging
- CNG Slow-Fuel Stations (Dual Post Dispenser)

Main Campus Building

Please Note: These square footages are estimates based on the conceptual designed and could fluctuate +/- 100 square feet.

Administration Office Spaces for the following:	37,000 sf
• Fleet	
• Traffic	
• Streets	
• Stormwater	
Work Bays	65,000 sf
Employee Break Rooms	
Employee Locker Rooms	
Multi-Purpose Meeting Rooms	
Conference Rooms	
Office Spaces for Technicians and Crew members	
Storage	17,000 sf
Circulation, Mechanical Spaces (~ 40%)	
Total Square Footage of Main Campus Building	**119,000 SF**

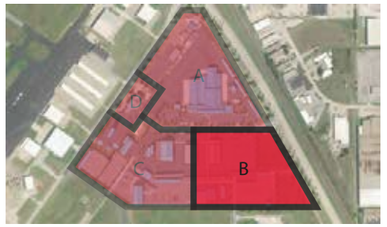
* Solar Panels anticipated to cover a significant portion of the administration wing

Proposed Budget Range for Area A

Demolition of Existing Paving and Buildings	$1,176,600 - $1,846,200
New Construction	$30,227,200 - $44,328,200
Site and Site Utilities	$1,214,000 - $1,607,100
Total Range for Construction Budget	**$32,617,800 - $47,781,500**
Soft Costs	$10,764,100 - $15,044,500
Total Estimated Budget Range for Area A	**$43,383,000 - $60,634,000**

* A detailed breakdown of costs can be found in Section 5

AREA B



Area B

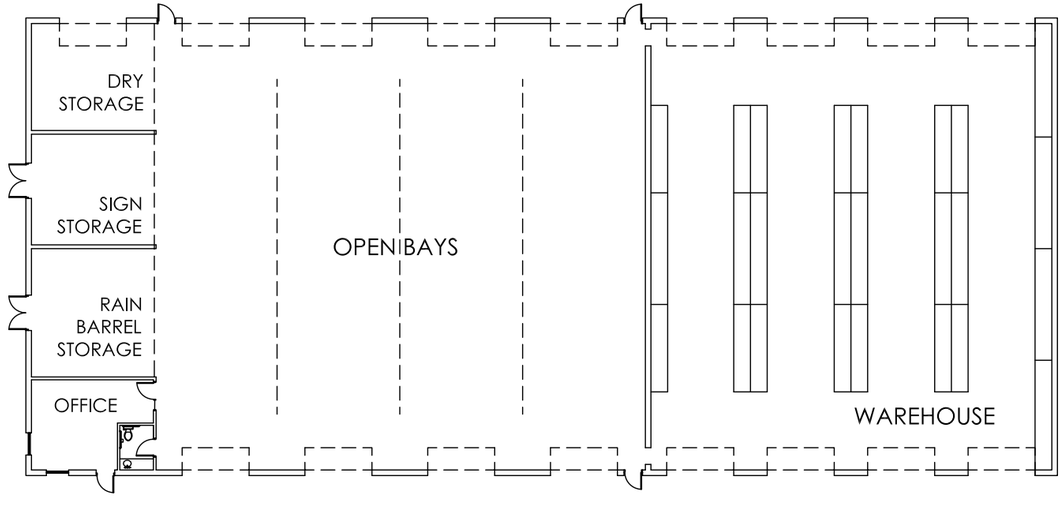
- (A) Staff Parking
- (B) Fleet Maintenance Bldg. #1
- (C) Bus Parking Existing
  - (1) Expansion Area (CNG and EV TBD)
- (D) Detention Basin Area
  - (1) Existing Area
  - (2) Expansion Area
- (E) Large Equipment Parking
  - (1) 24 12'x38' Spaces
  - (2) 32 10'x22' Spaces Light Duty
- (F) Trash Enclosure
- (G) Equipment Storage Area
  - (1) 11 12'x60' Spaces
  - (2) 6 12'x60' Spaces
  - (3) 22 12'x44' Spaces
- (H) Streets and Storm Maintenance Bldg. #1
  - (1) 10 Bays 20'x40'
  - (2) Shared Warehouse (5856 sf)
  - (3) 46 9'x20' Spaces
  - (4) 50' Clearance A
  - (5) 50' Clearance B
- (I) Sight Proof Fence
- (J) Excess Traffic Maintenance Storage Racks
  - (1) Pole Racks
  - (2) Shed 100'x30'
- (K) Optional Entry / Exit Gates
- (L) Chemical Storage

AREA B

Area B contains a portion of the land that this Master Plan recommends acquiring directly to the south of the recently completed Parks Maintenance Facility and Transit Maintenance Facility. In order for Area A to function smoothly with the servicing of fleet vehicles, circulation of Sanitation trucks, and other regular vehicle traffic, a separate location was identified for the storage of large equipment, heavy-duty vehicles, construction materials, and bulk materials. Open and covered bulk material storage can be found in Area C. A lay down yard containing miscellaneous equipment, building materials, light pole racks, and miscellaneous items is configured to accommodate contractor trucks as they load and unload per project need. Additional service bays with warehouse space was placed to support functions relating to this area of the complex, most likely connect to the work conducted by the Streets and Stormwater Divisions. A proposed floor plan of the maintenance bays is shown below. These bays also function as large vehicle storage during inclement weather, for vehicles that cannot be exposed to freezing temperatures.

LIGHT POLE RACKS

WAREHOUSE SPACE



PROPOSED FLOOR PLAN

Proposed Program for Area B

Site
- Existing Fleet Transit Facility
- Existing Bus Parking
- Existing CNG Slow-Fuel Stations
- Existing and New Detention Ponds
- Streets and Stormwater Maintenance Bays
- Warehouse space
- Loading Dock
- Lay down space for miscellaneous equipment, bulk materials, etc.
- Light Pole Racks
- Equipment Storage
- Covered Storage Shed
- Employee Parking
- Electric Vehicle Charging

Streets and Stormwater Maintenance Bays

Please Note: These square footages are estimates based on the conceptual designed and could fluctuate +/- 100 square feet.

Additional Work Bays	6,300 sf
Warehouse space	5,200 sf
Storage	1,300 sf
Crew Office	400 sf
Circulation, Mechanical Spaces (~ 40%)	
Total Square Footage of Maintenance Bays	**13,100 sf**

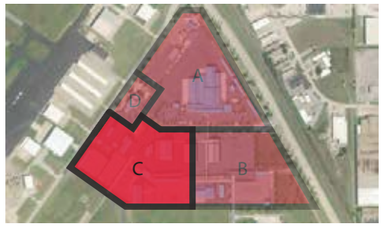
* Solar Panels anticipated to cover a significant portion of the maintenance bays

Proposed Budget-Range for Areas B + C

New Construction	$11,261,700 - $17,055,900
Site and Site Utilities	$1,074,500 - $1,413,200
Total Range for Construction Budget	**$13,096,100 - $19,608,900**
Soft Costs	$4,322,000 - $6,471,100
Total Estimated Budget Range for Area A	**$17,419,000 - $26,080,000**

* A detailed breakdown of costs can be found in Section 5

AREA C



Area C

- (A) Wash Bay
- (B) Parks & Recreation Maintenance Bldg.
  - (1) Parking Existing
- (C) Facilities Maintenance Bldg. #3
  - (1) 12,000 sf Bldg.
  - (2) 100'x30' Shed
  - (3) Storage Yard
  - (4) 80'x55' Bldg.
  - (5) 6 12'x30' Spaces
  - (6) 7 12'x38' Spaces
- (D) Equipment for Auction Holding
  - (1) 98 Spaces
  - (2) Shed on Back Wall
  - (3) Fence and Gates
- (E) Large Equipment Parking
  - (1) 24 12'x38' Spaces
- (F) Yard Supervisor Bldg.
- (G) Entry / Exit Gate
- (H) Materials Storage
  - (1) Bin Blocks with Shed
  - (2) Bin Blocks
  - (3) 90' Wide Loading and Drive / Staging
- (I) Rack Storage
- (J) Salt Storage and Distribution (26,522 SF)
  - (1) Brine Mixing and Tanks
- (K) Road Reconfiguration
- (L) Sight Proof Fence

AREA C

Area C, in addition to Area B, contains a portion of the land that this Master Plan recommends acquiring directly to the south of the current North Base Complex. In order for Area A to function smoothly with the servicing of vehicles, circulation of Sanitation trucks, and other regular vehicle traffic, a separate location was identified for open and covered bulk material storage. The Salt Barn will be transitioned from its location at Lindsey Yard to its proposed in Area C, accommodating proper truck turnarounds for salt drop-off. Brine mixing and tanks will also be included in the Salt Barn. Adjacent to the Salt Barn is rack storage containing salt-spreaders and any other necessary equipment for brine and salt distribution. Overflow fleet and equipment storage are interspersed throughout.

The Facility Maintenance Department is currently planning a new facility - with warehouse and maintenance bays. This department is managed alongside the Parks Maintenance Division of Parks and Recreation, giving priority to the facility being located near its existing facility (construction completed Winter 2022). The Master Plan design placed the new Facility Maintenance building in the land adjacent to this building, the current location for the Fire Training Tower. When considering sequencing, the new Fire Training Tower will need to be under construction or completed before this facility is designed or built.

A key need that the Fleet Division identified for their operations is a separate, secure parking lot for vehicles and equipment that are slated to be auctioned. This "Auction Lot" is located at the west side of this area, secured by a fence with a sliding gate. Sight proof fencing borders the southern perimeter as an aesthetic and security measure.

SALT BARN

BULK MATERIAL STORAGE

SALT BARN

Proposed Program for Area C

Site
- Existing Parks Maintenance Building
- New Facility Maintenance Building with Secured Yard Space
- Future Wash Bay (to start construction Q4 2022)
- Open Bulk Material Storage
- Covered Bulk Material Storage
- Storage Sheds
- Additional Fleet and Employee Parking
- Salt Barn
- Large Equipment Staging
- Heavy-Duty Vehicle Parking
- Secure Parking Lot for Auction Holding

Salt Barn

Please Note: These square footages are estimates based on the conceptual designed and could fluctuate +/- 100 square feet.

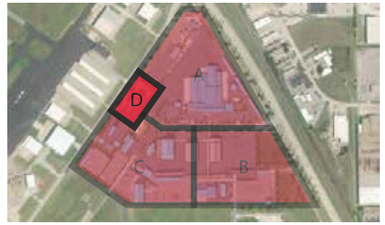
Salt Storage	12,000 sf
Brine Production and Storage	
Total Square Footage of Salt Barn	**12,000 sf**

Proposed Budget-Range for Areas B + C

New Construction	$10,636,799.80 - $16,120,117.11
Site and Site Utilities	$1,072,494.35 - $1,409,731.85
Total Range for Construction Budget	**$13,096,100 - $19,608,900**
Soft Costs	$4,322,000 - $6,471,100
Total Estimated Budget Range for Areas B + C	**$17,419,000 - $26,080,000**

* A detailed breakdown of costs can be found in Section 5

AREA D



Area D

(A) Fire Station
- (1) Existing Station
- (2) Station Bay Addition
- (3) 35 New Parking Spaces

(B) Fire Tower
(Verify Clearance Area Around)
- (1) (Verify Gate & Control Access Locations in Road)

(C) Fire Apparatus Storage & Maintenance Bldg.
- (1) Existing Area
- (2) New Building

(D) Station Bay Addition

AREA D

Area D is specifically programmed for the City of Norman Fire Department. The Fire Department's main goals for their site at North Base is to increase employee parking, enhance their training program amenities, and incorporate on-site storage and maintenance structures. This Master Plan explores the option of relocating the Fire Training Tower from its previous location to land adjacent the station. After an inventory of the various storage requirements at the station, training tower, and considering future growth, a storage building with six maintenance bays was developed to address this need and capture any future storage concerns.

With the proposed concept for Area D, there are two options for access to Goddard Avenue supplementing the station's existing access. The City of Norman is currently evaluating these two options and will direct the Master Plan team on which road to proceed with. Access to Area D from the remainder of the North Base complex is still under discussion by the Fire Department, if a secure perimeter needs to be established, and where entry/exit points would be located.

A 300' x 300' training pad has been discussed as a need for the Fire Department portion of the North Base Complex. Two possible locations have been identified in this Master Plan and are currently under review with the Fire Department.

Proposed Program for Area D

Site
- Existing Fire Station
- Additional Employee Parking
- Fire Tower
- Fire Apparatus Storage and Maintenance Building
- Covered Storage
- Electric Vehicle Charging
- Access to Goddard Avenue

Proposed Budget-Range for Area D

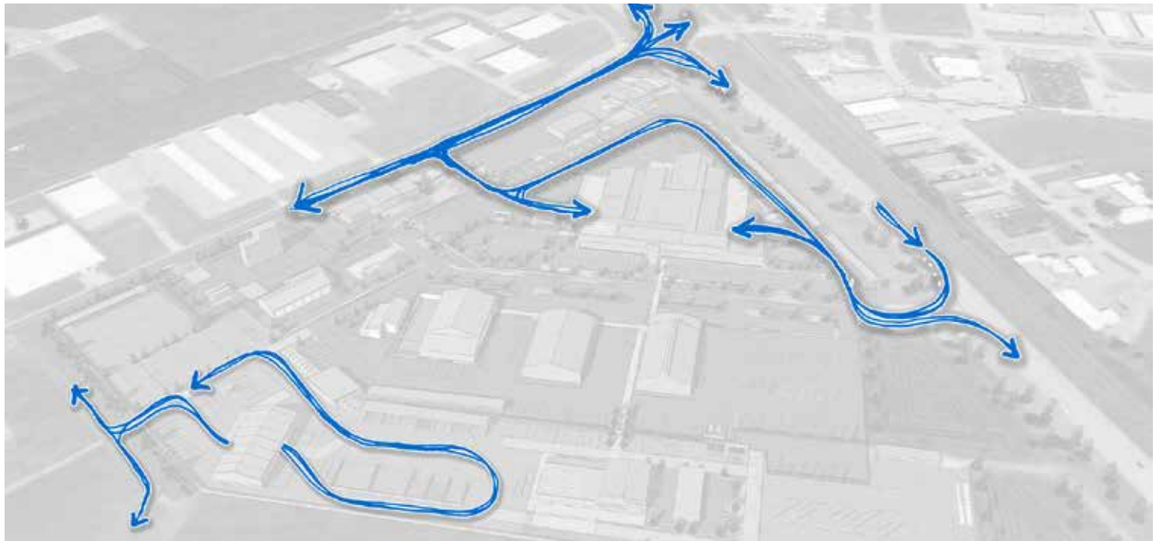
Demolition of Existing Paving and Buildings	$16,000 - $22,800
New Construction	$4,965,900 - $6,507,500
Site and Site Utilities	$100,200 - $145,600
Total Range	**$4,839.905 - $6,357,811.15**
Soft Costs	$1,677,200 - $2,203,200
Total Estimated Budget Range for Area D	**$6,760,000 - $8,879,000**

* A detailed breakdown of costs can be found in Section 5

EXISTING FIRE TOWER

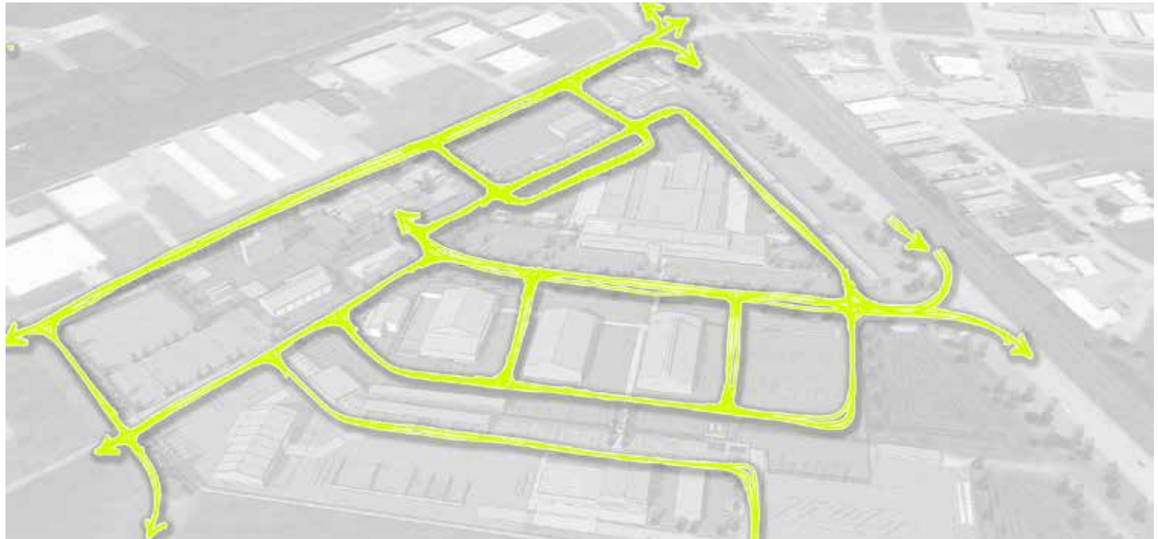
FAYETTEVILLE, AR FIRE TOWER

CIRCULATION



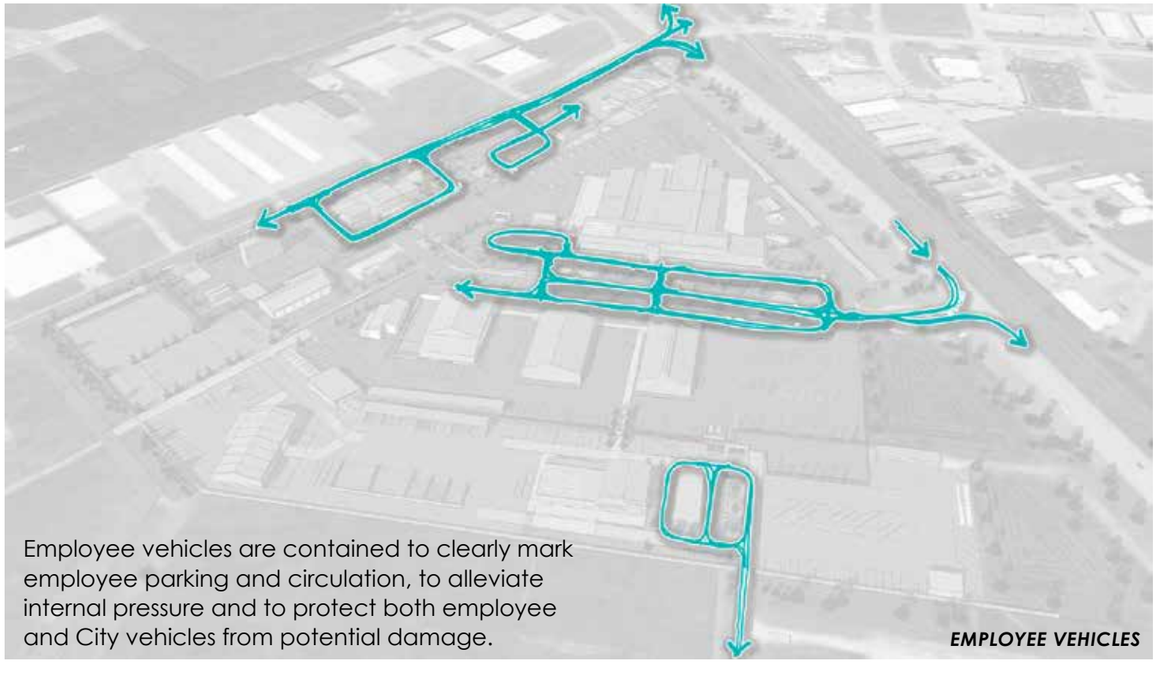
Heavy-duty fleet vehicles have a dedicated route so there is limited crossover with employee vehicles. Salt trucks can easily load and unload the Salt Barn without interfering with other traffic.

HEAVY DUTY FLEET VEHICLES



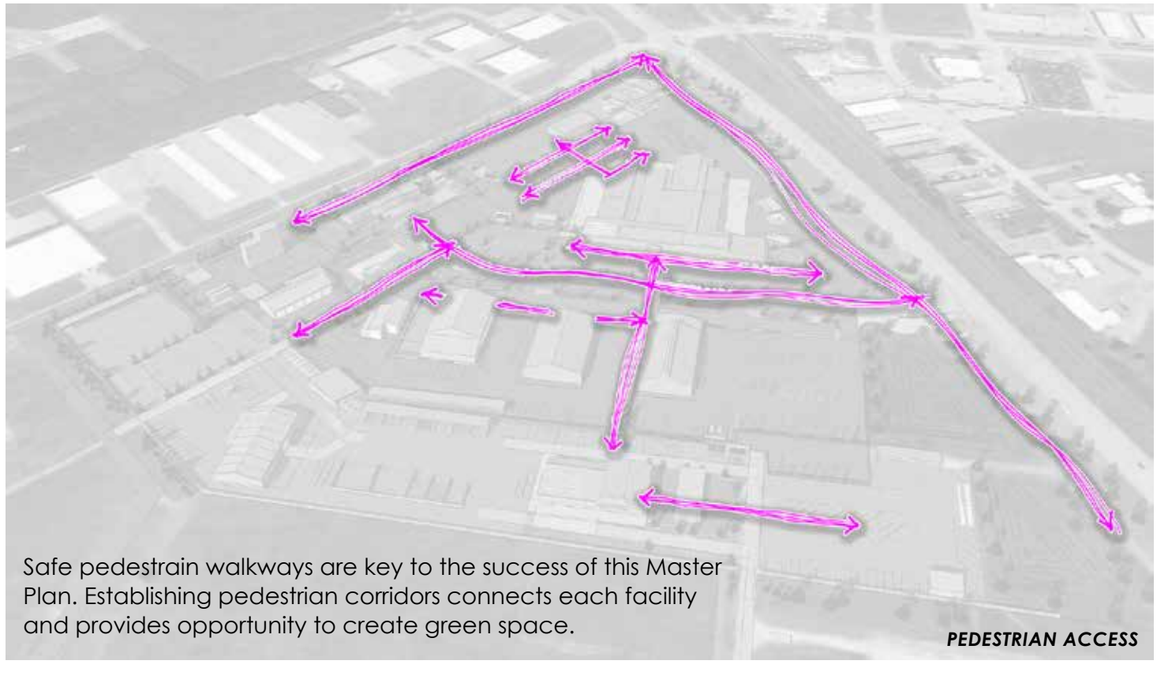
Light-duty vehicles can easiliy navigate the site using clearly defined paths of travel with minimal overlap of heavy-duty vehicles.

LIGHT DUTY FLEET VEHICLES



Employee vehicles are contained to clearly mark employee parking and circulation, to alleviate internal pressure and to protect both employee and City vehicles from potential damage.

EMPLOYEE VEHICLES



Safe pedestrain walkways are key to the success of this Master Plan. Establishing pedestrian corridors connects each facility and provides opportunity to create green space.

PEDESTRIAN ACCESS

PHASING PLANS: PHASES 1-2

Site Preparation:

Efforts performed as a part of the North Base Master Plan, including existing and expanded land areas, will be executed in a manner to minimize impact on current and future staff / activities. Master Plan phases are purposefully identified to take advantage of economies of construction scale while eliminating program redundancies. The intent of this effort is that the execution of the Master Plan will provide cost savings to the City of Norman and improve the quality of the work experience for staff members.

Phase 1: North Parking Lot

1.1. Relocation of the Fuel Service function to the north portion of the property, adjacent to the existing CNG fuel service islands and with gated controlled vehicular access to Goddard Avenue. All existing Fuel Service infrastructure, including but not limited to the sub-grade storage tanks, will be demolished and not retained. Testing of the service location will be required to confirm that there is no contamination of the site.

1.2. Additions and amendments to the current slow fill compressed natural gas islands / infrastructure. For the islands that service the large sanitation vehicles, the intent is for all infrastructure to remain in place and unchanged. Islands that serve the medium sized vehicles will be relocated outside of the zone of land that is dedicated for the future buildings identified as a part of this overall master plan.

1.3. Communications lines through the eastern portion of the site serving the facility south of Da Vinci Street will remain. Said lines are to be preserved and protected during construction.

1.4. Paving modifications will be made to accommodate future and relocated parking. This is specifically for vehicles that will be displaced during future phases of the master plan and will not be for staging of potentially auctioned vehicles, holding vehicles for future parts, nor for items that are deemed as refuse.

1.5. Accommodations including sub-grade raceways for future electric vehicle charging stations will be implemented during this phase. Incorporation of this scope into a larger electrical utility effort will maximize economies of scale.

1.6. Demolition of existing Sanitation Building as operations transition to their new facility.

Phase 2: Overhead Electrical Removal and Relocation

2.1. The existing overhead electric line bisects the property in a manner that restricts site development and the Master Planning effort.

2.2. In preparation of future buildings, the overhead electrical line will be routed below ground in a manner that does not impact buildings to remain operational during the respective phases of the work. This will be relocated to allow for Phase 5 to be constructed. Please note: the overhead electric line shall only be demolished back to the pole that currently serves fleet maintenance. This will allow this building to remain operational until Phase 7.

2.3. The existing Traffic Building is fed by this overhead line. It needs to remain online until Phase 7 and will either need to be relocated or operations transitioned to another location. If it is to remain, it could be backfed from Goddard Ave to the East, but could possibly be at a significant cost to the project.

2.4. During the execution of this intensive electrical scope, efforts will be made to accommodate a future pad site for multiple generators. Initial execution may be a single generator that addresses critical infrastructure on the North Base site. The long range plan will accommodate multiple generators, positioned functionally and economically on the site. One of these sites will be in alignment with the relocation of the current overhead electricity lines.

PHASING PLANS: PHASE 3

Phase 3: South Site Development & Access Drive to the North

3.1. Acquisition of land immediately south and adjacent to the current Parks Maintenance, Large Fleet Maintenance and detention pond is the proposed method to accommodate the program elements associated with the long range master plan. Specific components requiring additional land include:

   a. Relocation of the Lindsey Yard functions, specifically street and stormwater maintenance, to the North Base property.
   b. Repositioning existing north base functions, including sign and traffic maintenance, to the south side of the site.

3.2. Renovations and remodels of existing buildings, especially within an occupied site, is expensive in both time and cost. Existing buildings are not anticipated to be renovated or remodeled to accommodate departments relocating from the Lindsay Yard to the North Base campus.

3.3. Expansion into the south property and use of this land for new construction of existing and relocated functions will save time, money and will not impact current staff and functions until the projects are operational and ready for occupation. Cost savings associated with this approach including the following:

   a. Projected construction of new buildings will take advantage of current building technologies and efficiencies which will facilitate a lower operational cost.
   b. Critical evaluation of department staffing may identify redundant job descriptions that can be redistributed on the north base campus to maximize each staff members contribution to the overall Master Plan.
   c. Evaluation of current program elements may identify redundant functions within multiple buildings. These functions can be consolidated for cost savings and efficiency.

3.4. Program elements that are considered for the south expansion of the North Base property include the following:

   a. Dedicated space for storage of vehicles serviced by Fleet Maintenance and deemed for auction.
   b. Parking for staff and vehicles to accommodate the projections of the long range master plan. During initial phases of the plan, these spaces will accommodate those displaced by construction of buildings north of Da Vinci Street.
   c. Salt Storage and Distribution facility: sized and sited for ease of access, loading and for appropriate quantities of materials.
   d. Material Bulk Storage: including accommodating the required volumes present at that the current Lindsey Yard Site.
   e. Shared Warehouse Facility
   f. Streets and Storm Maintenance Building
   g. Equipment Staging Areas
   h. Electric Vehicle Charging Stations
   i. With the increase of impervious area during development of the site, should detention be required, the open area east of the site would be a suitable location to plan for a detention pond as it is located at the low point of the property, similar to the developed area with detention pond due north.

PHASE 3

3.5. Building construction types will be functional, efficient, and cost effective. Buildings constructed during Phase 3 will be primarily pre-engineered metal buildings, consistent with the recently constructed Parks and Large Fleet Vehicle Maintenance buildings.

3.6. The Salt Barn will have a modified construction with minimal ferrous metals and extremely high performing materials, responding to the corrosive environment indicative of salt storage. The space may include a combination of reinforced concrete push walls and canvas upper sections of the building.

3.7. Access to the south boundary of the North Base campus will be via Mendela Place and Priestly Avenue with a secured entrance at the intersection of the property line and Mendela Place. This location can either be manned during hours of operation or can be accessed via remote technology.

3.8. Per utility atlas information, it appears that OU Facilities Management and AT&T have existing utilities lines along Mendel Place that will need to be taken into consideration and coordinated at the time of design and development.

3.9. New utility service lines will need to be extended from the existing utilities in the vicinity to provide required services to the new facilities in this area.

3.10. A sight proof fence will be used along the south boundary to screen activities from adjacent uses.

PHASING PLANS: PHASES 4-5

Phase 4: West Site Development

4.1. Phase 4 addresses the Fire Department function of the property on the west side of the North Base campus and immediately adjacent to Goddard Avenue.

4.2. Program elements considered for this area on the west portion of the property include but are not limited to the following:

a. Relocated Fire Tower. This function will require perimeter security, access control and defined clearances around the tower element
b. Fire Apparatus and Storage and Maintenance Building
c. Open area for fire training activities
d. Expansion of parking areas to accommodate Master Plan projections

4.3. Building construction types will be functional, efficient, and cost effective. Buildings constructed during Phase 4 will be a combination of the following:

a. Pre-engineered metal buildings, consistent with the recently constructed Parks and Large Fleet Vehicle Maintenance buildings
b. Conventional steel-framed buildings where required by the program or evaluation of the scope and budget.

4.4. Most of the existing utilities in this area may be able to remain, pending the finalized site plan for the area. If not, existing water, storm sewer, sanitary sewer and gas lines may be removed and/or relocated, as needed, to accommodate the new development and maintain the surrounding existing facilities.

PHASE 4

Phase 5: North Facility Development

5. 1. Relocation and reallocation of North Base program functions, both staffed buildings and utility infrastructure, creates areas for new construction including the following:

a. Paved area immediately north of the current Fleet Maintenance Building

5. 2. Construction of new buildings shall accommodate the current staff and program components of existing departments on site. Building programs and associated construction requirements will be evaluated during each phase of the work. Construction will be implemented efficiently, including accommodating growth where appropriate and available.

5. 3. New Buildings will be designed for future expansion during subsequent phases of the Master Plan. This will happen after existing buildings are demolished.

5. 4. Building envelope, infrastructure and utility tie ins will be projected and planned in the construction of new buildings.

5. 5. Projected new buildings and program elements include but are not limited to the following:

a. Fleet Maintenance Building
b. New Central Warehouse Building
c. Tie in to redistributed electrical infrastructure and generator service

5. 6. Building construction types will be functional, efficient, and cost effective. Buildings constructed during phase five will be a combination of the following:

a. Pre-engineered metal buildings, consistent with the recently constructed Parks and Large Fleet Vehicle Maintenance buildings
b. Conventional steel-framed buildings where required by the program or evaluation of the scope and budget

PHASE 5

PHASING PLANS: PHASES 6-7

Phase 6: Central Site Development

6.1. The current land area immediately adjacent to and west of the new Parks Maintenance Building is specifically designated to accommodate the following Program Elements:

   a. New Building for the Building Maintenance Department

   b. New Vehicle Wash Bay (currently bidding to General Contractors and slated for construction in Q4 2022)

6.2. The existing water, storm sewer, sanitary sewer and communications lines through the area will need to be maintained and/or removed or relocated, as needed, to accommodate the new facilities and maintain the surrounding existing facilities.

Phase 7: North Facility Development

7.1. Relocation and reallocation of North Base program functions, both staffed buildings and utility infrastructure, creates areas for new construction including the following:

   a. Land area immediately west and adjacent to the current Fleet Maintenance Building. This area is accessible after demolition of the portion of the building previously occupied by the Line Maintenance Department.

7.2. Construction of new buildings shall accommodate the current staff and program components of existing departments on site. Building programs and associated construction requirements will be evaluated during each phase of the work. Construction will be implemented efficiently, including accommodating growth where appropriate and available.

7.3. New Buildings will be designed for future expansion during subsequent phases of the Master Plan. This will happen after existing buildings are demolished.

7.4. Building envelope, infrastructure and utility tie ins will be projected and planned in the construction of new buildings.

7.5. Projected new buildings and program elements include but are not limited to the following:

   a. Traffic Maintenance Building

   b. New Central Warehouse Building

   c. Tie in to redistributed electrical infrastructure and generator service

7.6. Building construction types will be functional, efficient, and cost effective. Buildings constructed during phase seven will be a combination of the following:

   a. Pre-engineered metal buildings, consistent with the recently constructed Parks and Large Fleet Vehicle Maintenance buildings

   b. Conventional steel-framed buildings where required by the program or evaluation of the scope and budget

7.7. The existing water, storm sewer and additional CNG and communications lines through the area will need to be maintained and/or removed or relocated, as needed, to accommodate the new facility and maintain the surrounding existing facilities.

7.8. New utility service lines will need to be extended from the existing utilities in the vicinity to provide required services to the new facilities in this area including a sanitary sewer service line from the south. A new electrical service capable of supplying all of Phase 5 and 7 shall be installed at this time.

PHASE 6

PHASE 7

PHASING PLANS: PHASES 8-9

Phase 8: South Facility Development & Parking

8.1. The balance of the land immediately north of Da Vinci Street and South of the programmed building spaces constructed as a part of Phase 5 will be developed in this Phase of the Work. Construction associated with Phase 8 will incorporate building areas that address the growth projected for the next 10, 20, and 30 years. Programmed spaces included in the Class 'A' Office Building portion of this phase are as follows:

a. Class 'A' office space for department directors and key staff members.

b. Large break area that will accommodate all personnel north of Da Vinci Street.

c. Large locker rooms, showers and restroom areas that will accommodate all personnel north of Da Vinci Street.

d. Large multi-purpose meeting room, sized to facilitate a meeting with all staff members working on the North Base campus.

e. Space for public greeting, waiting, and meeting.

8.2. Building construction types for this front office area will have an appropriate elevated aesthetic due to accommodating the public in this location. Even with the increased appearance, the building will be functional, efficient, and cost effective. Buildings constructed for the above-mentioned portions of phase eight will be conventional-steel framed buildings with an appropriate evaluation of the scope and budget.

8.3. EV charging locations along with covered parking will be incorporated into parking plan.

PHASE 8

Phase 9: South Facility Development & Parking

9.1. This phase of the work will incorporate various program functions that are specifically designed to eliminate redundant building functions and encourage efficiencies that will reduce the capital requirements needed for this property. Spaces that are intended to be shared, centralized functions include the following:

a. Large and substantially apportioned welding bay

b. Parts Storage

c. Tire Storage

d. Bulk Fluids

e. Lube Bay

f. Managing Office for these functions.

9.2. The above-mentioned construction types, specifically behind and concealed by the "front of house" will be functional, efficient, and cost effective. Buildings constructed during this portion of phase nine will be a combination of the following:

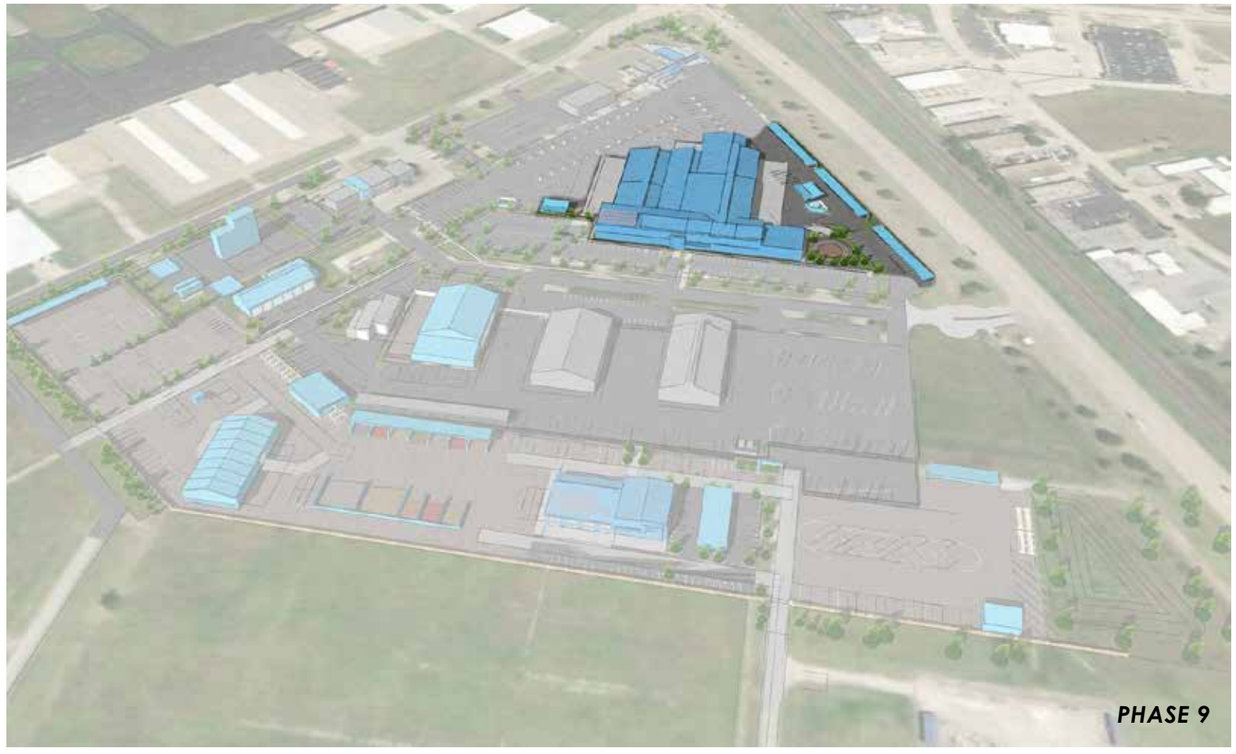
a. Pre-engineered metal buildings, consistent with the recently constructed Parks and Large Fleet Vehicle Maintenance buildings

b. Conventional steel-framed buildings where required by the program or evaluation of the scope and budget.

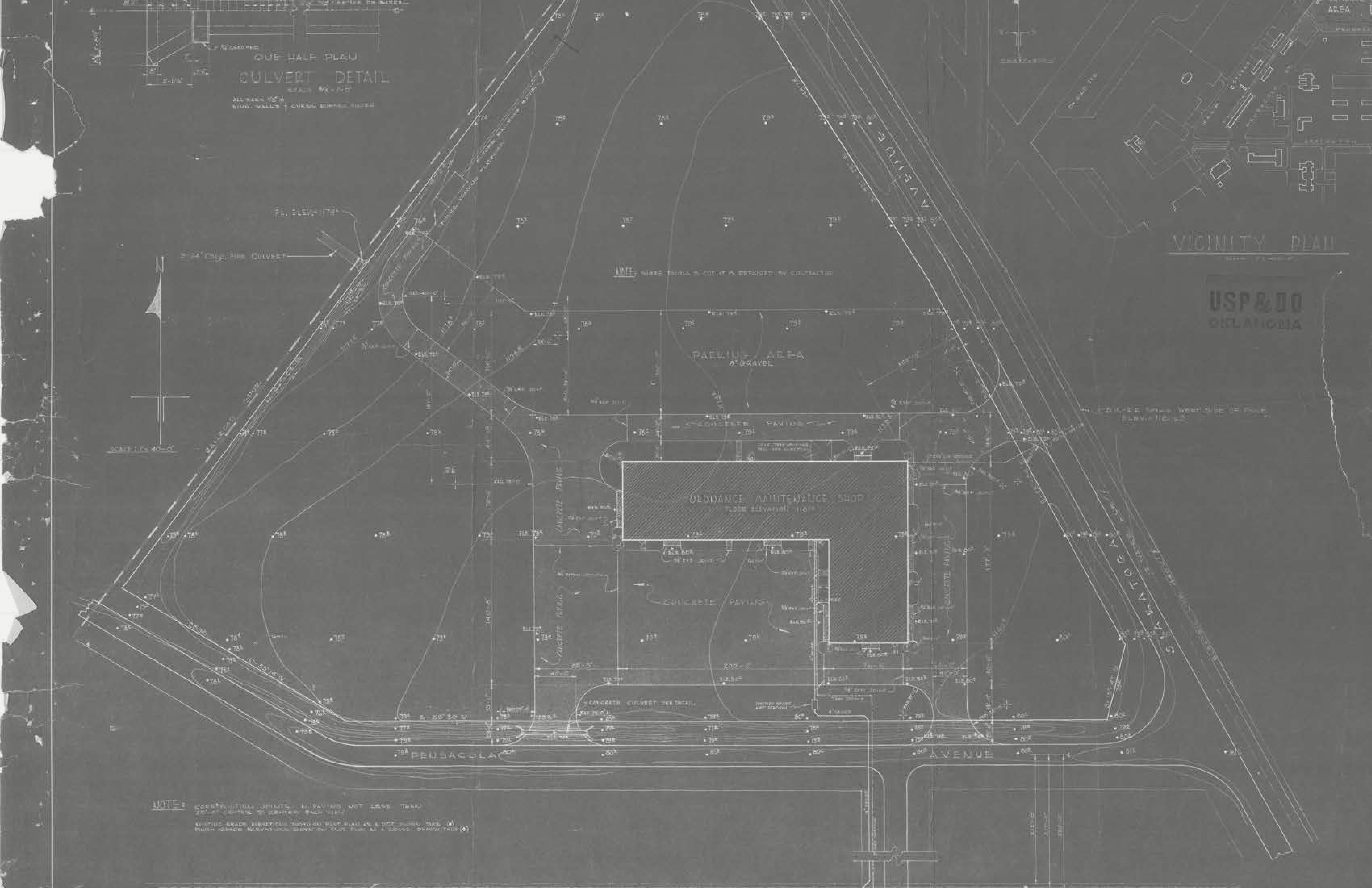
9.3. The existing storm sewer and sanitary sewer lines through the area will need to be maintained and/or removed or relocated, as needed, to accommodate the new facility and maintain the surrounding existing facilities.

9.4. The remainder of the overhead electric line can be removed back to North Flood Avenue.

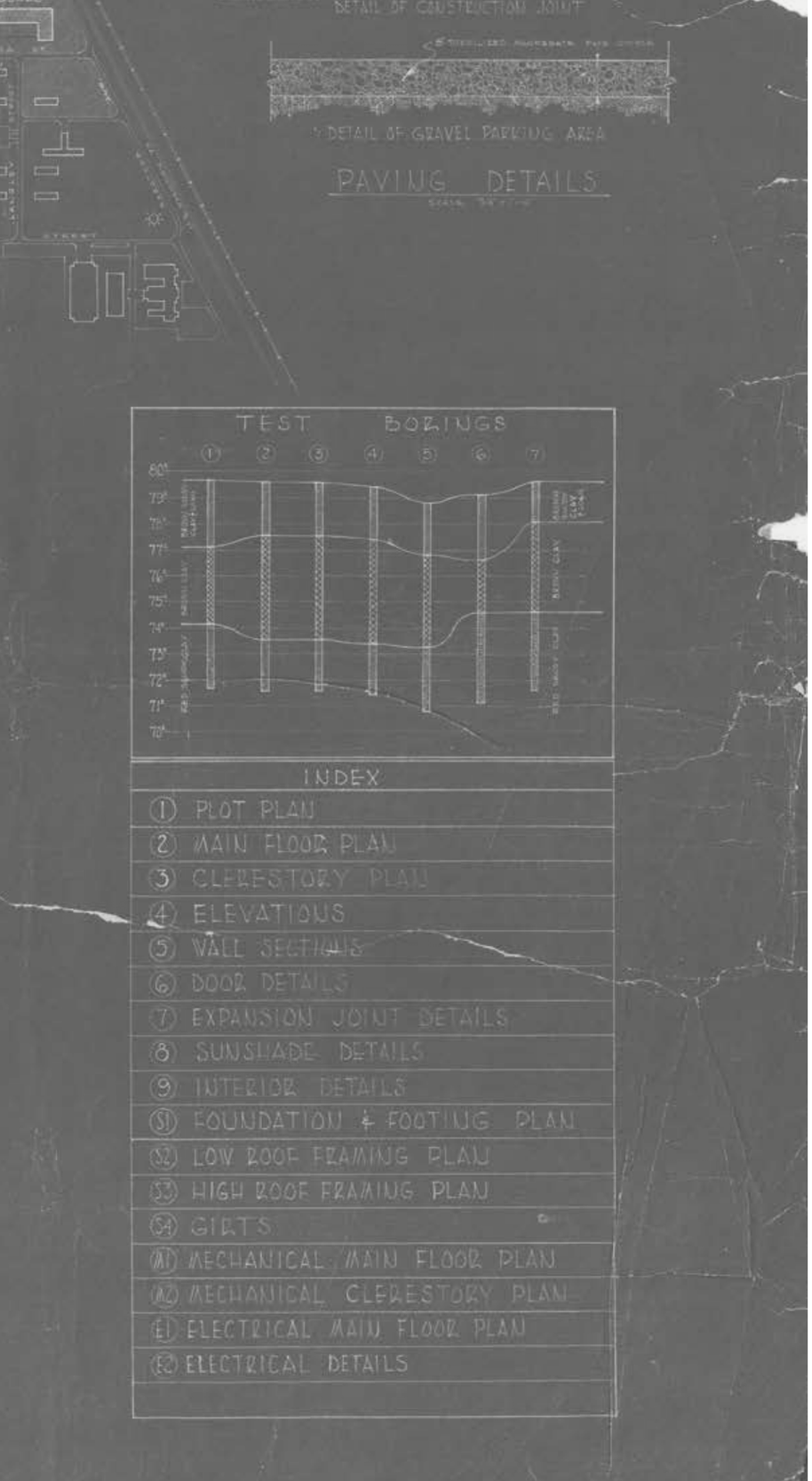
9.5. The roof of the proposed facility and covered parking structures are great opportunities to incorporate solar panels.



PHASE 9



ONE HALF PLAN
CULVERT DETAIL
VICINITY PLAN
USP&DO
OKLAHOMA
PARKING AREA
8" GRAVEL
ORDNANCE MAINTENANCE SHOP
CONCRETE PAVING
CONCRETE CULVERT SEE DETAIL
PENSACOLA
AVENUE
SARATOGA
AVENUE
NOTE:



SECTION 4 **DISCIPLINE NARRATIVES**

MECHANICAL + PLUMBING NARRATIVE

HVAC

When it comes to the heating, ventilation, and air-conditioning (HVAC) systems, the campus lends itself to several options. The first decision that needs to be made is if the campus will be served by a Campus-wide System or if each individual building will have its own stand-alone HVAC system. Campus-wide Systems offer more opportunities for energy efficiency but may be harder to scale as future phases are constructed.

Campus Systems
A ground source heat pump system (GSHP), often misnomered "geothermal", is an energy efficient option that could be considered. Each building that is brought online will need a dedicated Mechanical (Pump) Room for pumps and other equipment. The considerable amount of paving planned for the campus give ample locations under which the closed loop well field can be buried. The implication of this option is a higher cost first phase since it will need to include the cost of the well field. An estimate of the sum of future HVAC needs will have to be approximated to size the well filed. Since future phases served by the well field could change significantly between now and when they are constructed, this could mean that the initial estimate of the well filed size will not match the actual need. This may result in additional wells needing to be added later. This will introduce a level of complexity that should be considered when deciding the best HVAC system fit for the campus.

A more scalable campus-wide option is a central chiller/boiler yard with central hydronic pipe headers and a campus loop(s) of chilled water and heated water. An initial chiller and boiler can be sized to accommodate the first phase or two. As future phases of the campus are constructed, additional chiller(s) and boiler(s) can be added providing additional capacity and redundancy. As with the GSHP option above, each building that is brought online will need a dedicated Mechanical (Pump) Room.

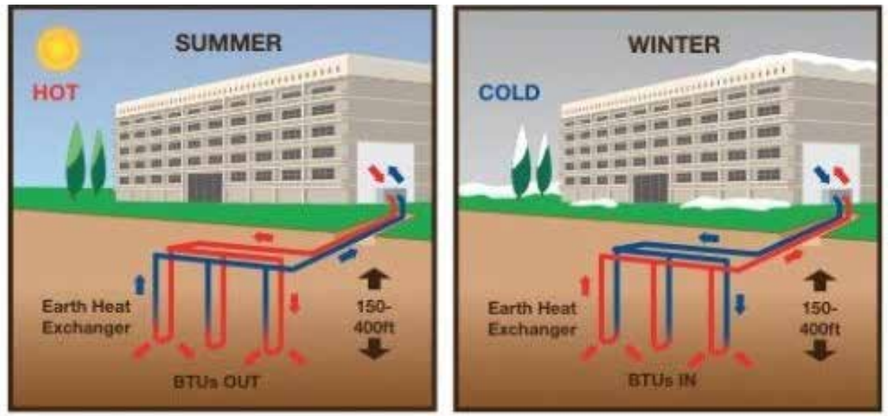
Stand-Alone Systems
If Stand-Alone Systems are preferred, packaged roof top units (RTU), split system air handling units (AHU) with outdoor heat pumps (HP), and variable refrigerant flow (VRF) systems might be considered. The components of all of these options are available as commodity items and would allow each building to operate completely independently. These systems are typically easier to maintain than a chiller/boiler system. And, whereas an outage in a Campus System may render the entire campus without heat or cooling, Stand-Alone Systems do not have this disadvantage. But the trade off is often lower efficiencies.

Other Considerations
Vehicles with internal combustion engines (ICE) introduce some complexity to the system. ICE vehicles indoors require significant amounts of airflow and air quality monitoring with alarming systems to keep building occupants safe. If ICE vehicles are to be parked indoors while running, a system similar to those installed in fire stations that connect directly to the tailpipe of the vehicle (Plymovent or similar) may be advised. Areas with high amounts of ventilation (like where ICE vehicles are indoors) are prohibited by code from being heated by any means other than radiant heating. Therefore, gas-fired radiant tube heaters will probably be recommended in areas where ICE vehicles are located. If a GSHP system is selected, radiant heated floors should be considered as they will be an additional heat sink and will extend the life of the well field by helping to balance the heating and cooling seasons.

Additional complexity is also added if any of the buildings include allowances for lead-acid battery charging. For example, lead-acid batteries are common at forklift charging stations and uninterruptable power supply (UPS) systems at server rooms. Spacing containing lead-acid battery charging have specific ventilation requirements. Note: Lithium ion or NiMH batteries do not have venting requirements.

If multiple temperature zones are in a single building (i.e. a ventilated and heated space for ICE vehicles next to a fully conditioned office space), insulation will be required between the zones. Higher than typical cost allowances should be made for insulation and air barriers.

CENTRAL CHILLER/BOILER YARD



GROUND SOURCE HEAT PUMP SYSTEM

PACKAGED ROOF TOP UNITS

MECHANICAL + PLUMBING NARRATIVE

Plumbing

Accommodation for a campus-wide domestic cold water (DCW) line may be considered. A Civil Engineer can best explain the pros and cons of a dedicated campus loop with a single tap and meter at the City main versus a tap and meter per building.

Each building will need space for the DCW entry point with accommodation for a back-flow preventer. If irrigation is to be included, accommodation for an additional back-flow preventer should be provided. Given the proximity to a water tower it is possible that each building may also require a pressure reducing device located at the building entry to protect plumbing fixtures. This building DCW entry point can be located in the Janitor's Closet or, if a Campus HVAC System is selected, the Mechanical (Pump) Room.

A dedicated domestic water heater (DWH) per building is probably the optimal arrangement for the campus. Gas-fired with storage, gas-fired instantaneous, electric with storage, or heat pump with storage should be considered. The DWH can be located in the Janitor's Closet or Mechanical (Pump) Room.

If a chiller/boiler Campus System is chosen, strong consideration should be given for a heat pump water heater located in the Mechanical (Pump) Room to utilize excess pump heat for domestic hot water production.

Additionally, if a GSHP systems is chosen for the HVAC system, the DWH could be tied into that system. That configuration would provide energy efficient domestic hot water production and extend the life of the GSHP well field by providing an additional heat sink to help balance the seasons.

Early consideration should be given to locate a campus storm drain loop during the first phase of the project. This scope would fall under a Civil Engineer.

Fire Sprinkler

Based on occupancy type and size, some buildings on campus will likely require fire suppression. Given the proximity to a water tower it is unlikely that a fire pump will be needed.

Consideration should be given to clean-agent systems in lieu of water systems in server rooms.

Electric Vehicle Charging Stations

Electric Vehicle (EV) charging stations are a great addition to any campus. Cost for installation typically decrease the closer the EV charging stations are located to the main distribution panel (MDP). Cost considerations should be made when locating the EV charging stations.

Locating EV charging stations between parking stalls allows for two (2) EVs to access the charging stations and decreases turnover time.

There are several charging types (i.e. SAE J1772, Tesla, CCS, CHAdeMO) and levels of charging. Since not all vehicles can utilize all charging types, consideration should be made when selecting chargers to accommodate the makes and models of the City fleet and others that will be utilizing the chargers.

- Level 1 chargers (SAE J1772) rely on 120V and are often referred to as "trickle chargers" because they take many hours to a full day to charge an EV.
- Level 2 chargers (SAE J1772, Tesla) rely on 240V and can charge an EV in hours.
- Fast DC Chargers (Tesla, CCS, CHAdeMO) rely on 480V and can charge an EV in under an hour.
- Super Fast DC Chargers rely on 480V and can charge an EV in under 30 minutes.

Commercially available third-party charging companies (Francis EV or similar) will administer paid EV charging stations and may create an additional revenue stream for the City, if located at the CNG fill station at the north end of the site. Additionally, several Tribal Nations are investing in EV charging in Oklahoma. Consideration could be made to partner with a third-party company or a Tribal Nation for Fast DC or Super Fast DC Charger installation.

SOLAR PANELS WITH EV CHARGING

EV CHARGING STATIONS

MECHANICAL + PLUMBING NARRATIVE

Energy Efficiencies

Energy efficient campuses require a multifaceted approach. Designing to the most recent International Energy Conservation Code is a great guide to do that. It will prescribe appropriate building envelope requirements including amounts of insulation, efficiency of lighting, and efficiency of HVAC systems.

HVAC systems consume the plurality of building energy. In Oklahoma, the cooling season (summer) slightly dominates over the heating season (winter). A huge step towards energy efficiency is decreasing the cooling and heating loads. This first way to decrease HVAC system demand is by constructing an energy efficient building with appropriate insulation and light in color. Since Oklahoma is cooling season dominated, a lighter building/roof will consume less energy over a year than an identical building that is medium or dark in color.

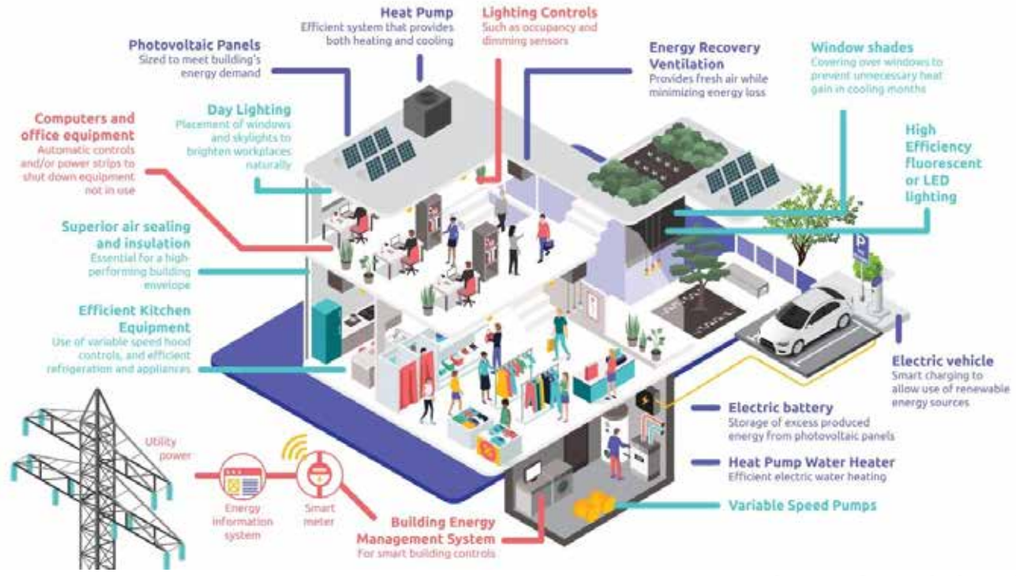
Mechanical equipment efficiency is quantified by SEER (Seasonal Energy Efficiency Ratio) and COP (Coefficient of Performance). The higher the rating, the more energy efficient the equipment. Think: the higher, the better. SEER ratings are used for cooling mode. The number is the ratio of cooling capacity (in BTUs) versus energy required to produce it (in Watts) and the units are in BTU/W. For example, a 3-ton system will remove, nominally, 36,000 BTU of heat. If that piece of equipment is rated at 9 SEER (old equipment), it requires 4,000 W to operate. A 3-ton unit that is rated for 28 SEER (ground-source heat pump) will remove the same amount of heat for 1,285 W of energy. That is one third of the energy. When compounded over a whole year, high-efficiency heat pumps usually see a payback in less than 5 years. Even if ground source heat pumps are not utilized for this project, higher efficiency packaged equipment with SEER ratings at 16 BTU/W and higher are available as commodity products. COP ratings are used for heating mode. The number is the ratio of heating capacity (in Watts) versus energy required to produce it (in Watts). It is a unit-less number or can be expressed in W/W. An electric heater has a COP of 1. A conventional heat pump has a COP of 2-4. A ground source heat pump has a COP of 5. Again, a piece of equipment with a COP of 2 will provide the same amount of heating as a piece of equipment with a COP of 1 for half the cost.

Utilizing energy efficient lighting like LED in lieu of traditional incandescent has been a significant industry shift in the last decade. LED lights have a 25 times longer lifespan (5-10 years) which saves significantly on maintenance costs. They also consume 90% less energy while producing the same light output. All of that wasted energy from traditional incandescent was being turning into heat. Not only do LED lights use less energy, they also contribute less heat to the space that has to be removed by the air conditioning system.

Another great method of increasing a building's energy efficiency is to add solar panels. Solar panels can convert approximately 20% of the sunlight they receive into electricity. A solar panel can produce approximately 200 W per square meter. They have a 20 year lifespan (meaning they will only be about 70% as efficient as new panels at that time). For maximum energy generation, solar panels should be mounted at an angle equal to the latitude of their installation. In Norman, Oklahoma, solar panels should be mounted at 35° facing south. In addition to energy consumption, solar panels provide shade. When mounted on a building roof, they will decrease the amount of heat that reaches the space which will decrease the air conditioning load. They are also a great option to provide shade as covered parking. Batteries can be paired with a solar panel array to provide energy when no sunlight is available. A battery and inverter systems is about $200/kWh. Grants for municipalities are available through the Department of Energy (DOE). Refer to https://www.energy.gov/eere/solar/funding-opportunities for resources.

The State of Oklahoma offers grants and loans to municipalities. Information can be found at the following website: https://www.okcommerce.gov/community-development/local-governments-edos/energy-efficiency-grants-loans/.

The DOE offers additional funding sources here:
https://www.grants.gov/learn-grants/grant-making-agencies/department-of-energy.html



ENERGY EFFICIENT SYSTEMS

ENERGY EFFICIENI LIGHTING

SOLAR PANELS ON LIGHT-COLOR ROOF

CIVIL + ELECTRICAL NARRATIVES: SITE UTILITIES

Existing storm sewer appears to be able to remain in place per current conceptual plans and limited grade changes.

Existing sanitary sewer to be removed and relocated as needed.

Existing water to be removed and relocated as needed.

Existing CNG and communications lines to remain in place.

Existing CNG and communicaions to be removed and relocated as needed.

LEGEND

- Fiber
- CNG
- Electricity
- Server
- Water

SECTION 5 **OPINION OF PROBABLE COST**

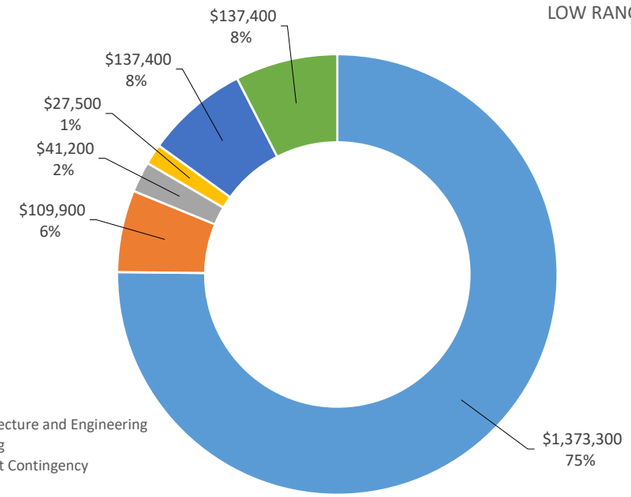
MASTER PLAN SUMMARY COST ESTIMATE, TABLE 0

Please Note: Prices shown in 2022 dollars.

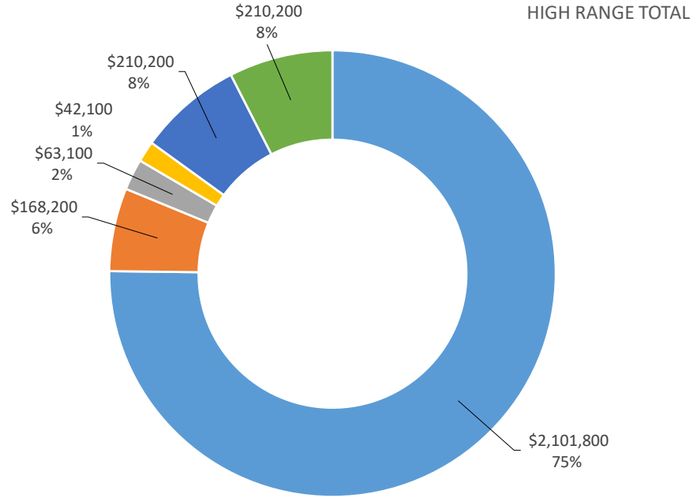
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL
0.1	Area A	Total Construction Estimate				$ 43,382,000	$ 60,633,400
0.2	Areas B + C	Total Construction Estimate				$ 12,469,300	$ 18,669,900
0.3	Area D	Total Construction Estimate				$ 4,840,000	$ 6,357,900
0.4	Site + Site Utilities	New Roads - Concrete	5,770	SY	$75 - $95	$ 432,800	$ 548,200
0.5	Site + Site Utilities	Sidewalks	3,260	SF	$5.75 - $6.25	$ 18,800	$ 20,400
0.6	Site + Site Utilities	Handicap Entrance - Sidewalks	10	EA	$850 - $1000	$ 8,500	$ 10,000
0.7	Site + Site Utilities	Dentention Pond, Excavation	2,079	SY	$5 - $7	$ 10,400	$ 14,600
0.8	Site + Site Utilities	Dentention Pond, Concrete Trickle Channel - 5'	1,530	LF	$40 - $48	$ 61,200	$ 73,500
0.9	Site + Site Utilities	Dentention Pond, Concrete Outlet Structures	2	EA	$2600 - $3500	$ 5,200	$ 7,000
0.10	Site + Site Utilities	Electrical Primary (Primary by OG&E) 1200 amp secondary	685	LF	$600 - $800	$ 411,000	$ 548,000
0.11	Site + Site Utilities	Ex. ~1200 amp service panel, 100' ditch, pipe, and wire	1	LS	$60000 - $80000	$ 60,000	$ 80,000
0.12	Site + Site Utilities	Generator	2	EA	$150000 - $350000	$ 300,000	$ 700,000
0.13	Contingency	Construction / Estimating Contingency, Excluding Areas A-D Estimates	--	--	5%	$ 65,400	$ 100,100
		RANGE TOTALS				**$ 62,064,400**	**$ 87,762,700**

MASTER PLAN SUMMARY PROJECT BUDGET WITH SOFT COSTS

LOW RANGE TOTAL



HIGH RANGE TOTAL



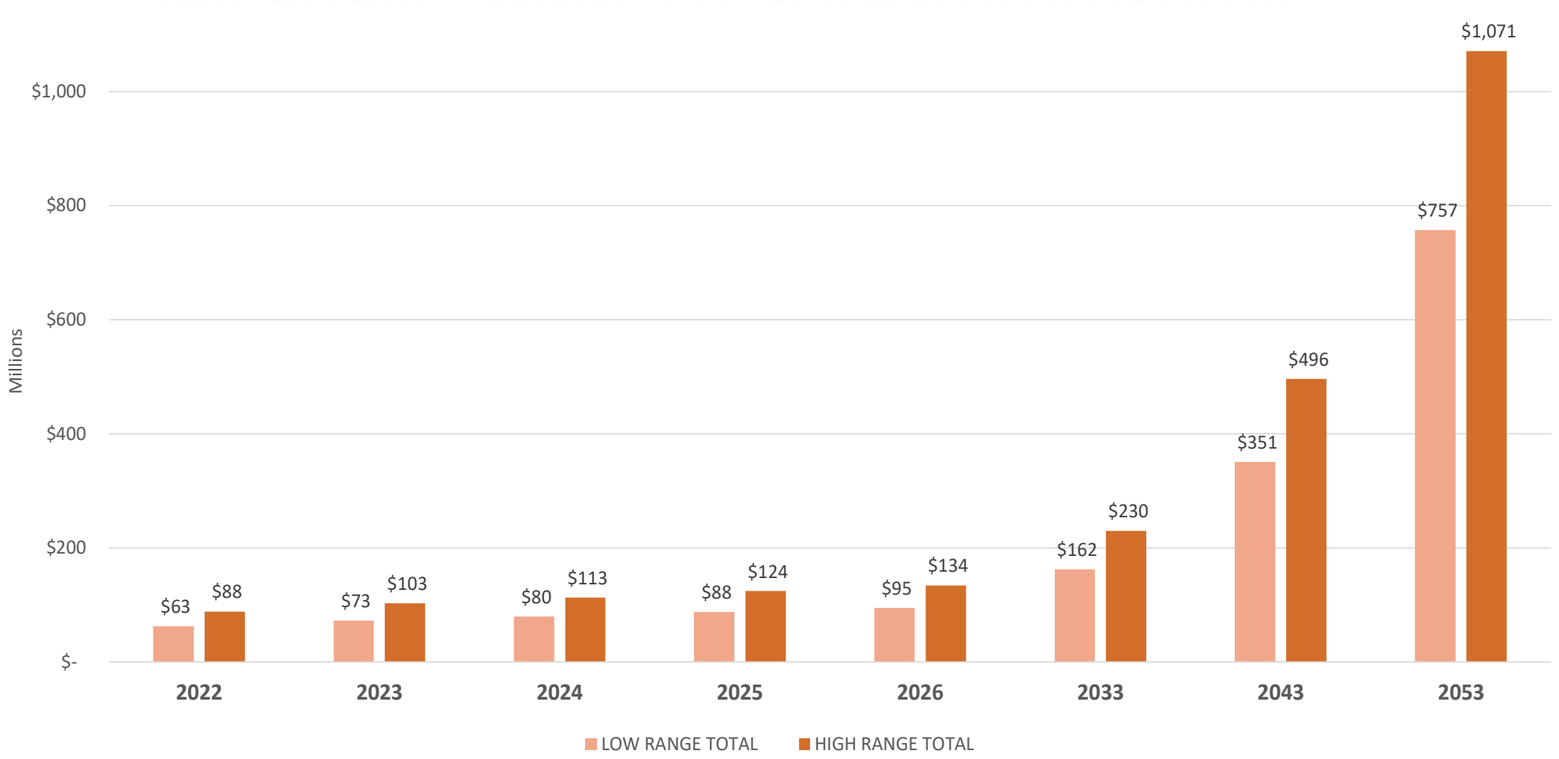
MASTER PLAN SUMMARY COST ESCALATION PROJECTIONS

ITEM	YEAR	ANNUAL ESCALATION RATE	LOW RANGE TOTAL	HIGH RANGE TOTAL
Construction Estimate Opinion of Cost	2022	-	$ 62,518,000	$ 88,457,000
Construction Estimate Opinion of Cost	2023	16%	$ 72,520,880	$ 102,610,120
Construction Estimate Opinion of Cost	2024	10%	$ 79,772,968	$ 112,871,132
Construction Estimate Opinion of Cost	2025	10%	$ 87,750,265	$ 124,158,245
Construction Estimate Opinion of Cost	2026	8%	$ 94,770,286	$ 134,090,905
Construction Estimate Opinion of Cost	2033	8%	$ 162,419,616	$ 229,808,247
Construction Estimate Opinion of Cost	2043	8%	$ 350,651,769	$ 496,138,769
Construction Estimate Opinion of Cost	2053	8%	$ 757,030,870	$ 1,071,126,390

MASTER PLAN SUMMARY COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.

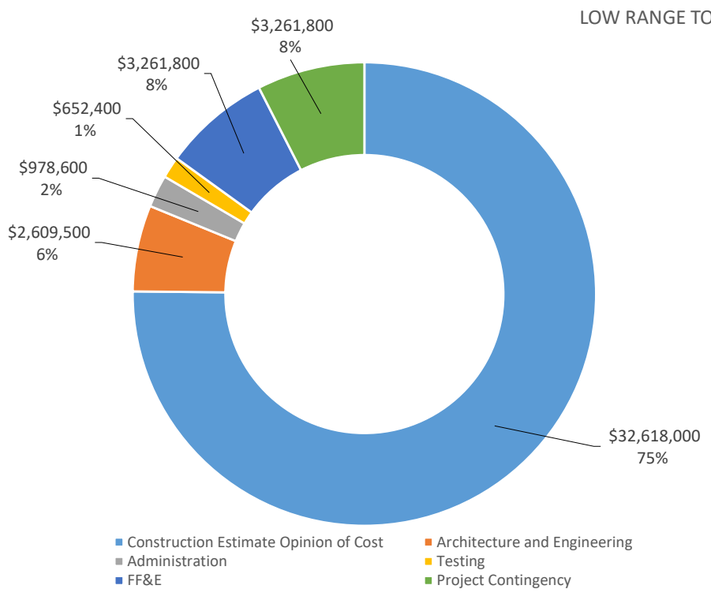


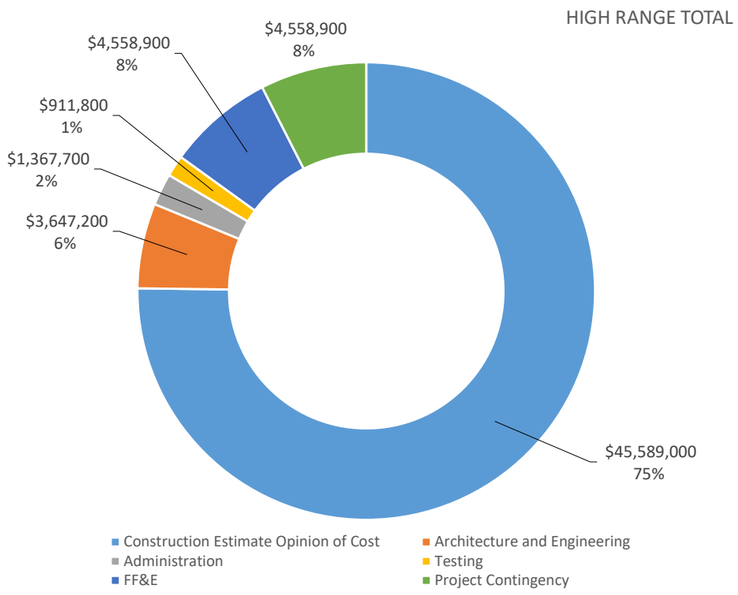
AREA A COST ESTIMATE, TABLE A

Please Note: Prices shown in 2022 dollars.

ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE, UNIT COST	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
A.1	Demolition	Demo existing paving	28,175	SY	$30 - $40	$ 845,300	$ 1,127,000	
A.2	Demolition	Remove Existing Building, Sanitation	3,200	SF	$8 - $12	$ 25,600	$ 38,400	
A.3	Demolition	Remove Existing Building, Traffic	7,500	SF	$7 - $12	$ 52,500	$ 90,000	
A.4	Demolition	Remove Existing Building, Fleet	29,500	SF	$6 - $14	$ 177,000	$ 413,000	
A.5	Demolition	Demo existing ancillary storage buildings	12,700	SF	$6 - $14	$ 76,200	$ 177,800	
A.6	New Construction	Paving	12,700	SY	$38 - $45	$ 482,600	$ 571,500	
A.7	New Construction	Install New Concrete Curb and Gutter - 6"	5,265	LF	$16 - $22	$ 84,300	$ 115,900	
A.8	New Construction	New Class A Office Space, Conventional Framed	54,795	SF	$325 - $400	$ 17,808,400	$ 21,918,000	*High range shown in total*
A.9	New Construction	New Class A Office Space, Tilt Up	54,795	SF	$300 - $375	$ 16,438,500	$ 20,548,200	*Low range shown in total*
A.10	New Construction	New Class A Office Space, Pre-Engineered	54,795	SF	$280 - $345	$ 15,342,600	$ 18,904,300	
A.11	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	64,825	SF	$245 - $275	$ 15,882,200	$ 17,826,900	
A.12	New Construction	New Maintenance Building Space - No Crane, Tilt Up	64,825	SF	$225 - $300	$ 14,585,700	$ 19,447,500	*High range shown in total*
A.13	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	64,825	SF	$180 - $225	$ 11,668,500	$ 14,585,700	*Low range shown in total*
A.14	Site + Site Utilities	Install Slab Sod	45,000	SF	$0.65 - $0.8	$ 29,300	$ 36,000	
A.15	Site + Site Utilities	Install Irrigation	45,000	SF	$1 - $1.35	$ 45,000	$ 60,800	
A.16	Site + Site Utilities	Install New Trees	60	EA	$400 - $800	$ 24,000	$ 48,000	
A.17	Site + Site Utilities	Install New Landscaping	1,500	EA	$7 - $9	$ 10,500	$ 13,500	
A.18	Site + Site Utilities	Covered Parking Structures	80	EA	$125 - $175	$ 10,000	$ 14,000	
A.19	Site + Site Utilities	EV Parking	5	EA	$25000 - $40000	$ 125,000	$ 200,000	
A.20	Site + Site Utilities	Install New Perimeter Fencing, Functional	2,750	LF	$22 - $32	$ 60,500	$ 88,000	
A.21	Site + Site Utilities	Install New Perimeter Fencing, Preminum	2,750	LF	$42 - $62	$ 115,500	$ 170,500	
A.22	Site + Site Utilities	Install New Perimeter Fencing, Secured Entry Points	2	EA	$28000 - $35000	$ 56,000	$ 70,000	
A.23	Site + Site Utilities	Install Parking Lot Lighting	50	EA	$16000 - $20000	$ 800,000	$ 1,000,000	*Quantity based on general recommendation of 60' between light fixtures for ample lighting levels*
A.24	Site + Site Utilities	Dumpster Enclosures	2	EA	$20000 - $30000	$ 40,000	$ 60,000	
A.25	Site + Site Utilities	Vehicle Low Volume Natural Gas	760	LF	$18 - $22	$ 13,700	$ 16,800	
A.26	Contingency	Construction / Estimating Contingency	--	--	5%	$ 1,553,300	$ 2,275,300	
		RANGE TOTALS				**$ 32,618,000**	**$ 45,589,000**	

AREA A PROJECT BUDGET WITH SOFT COSTS

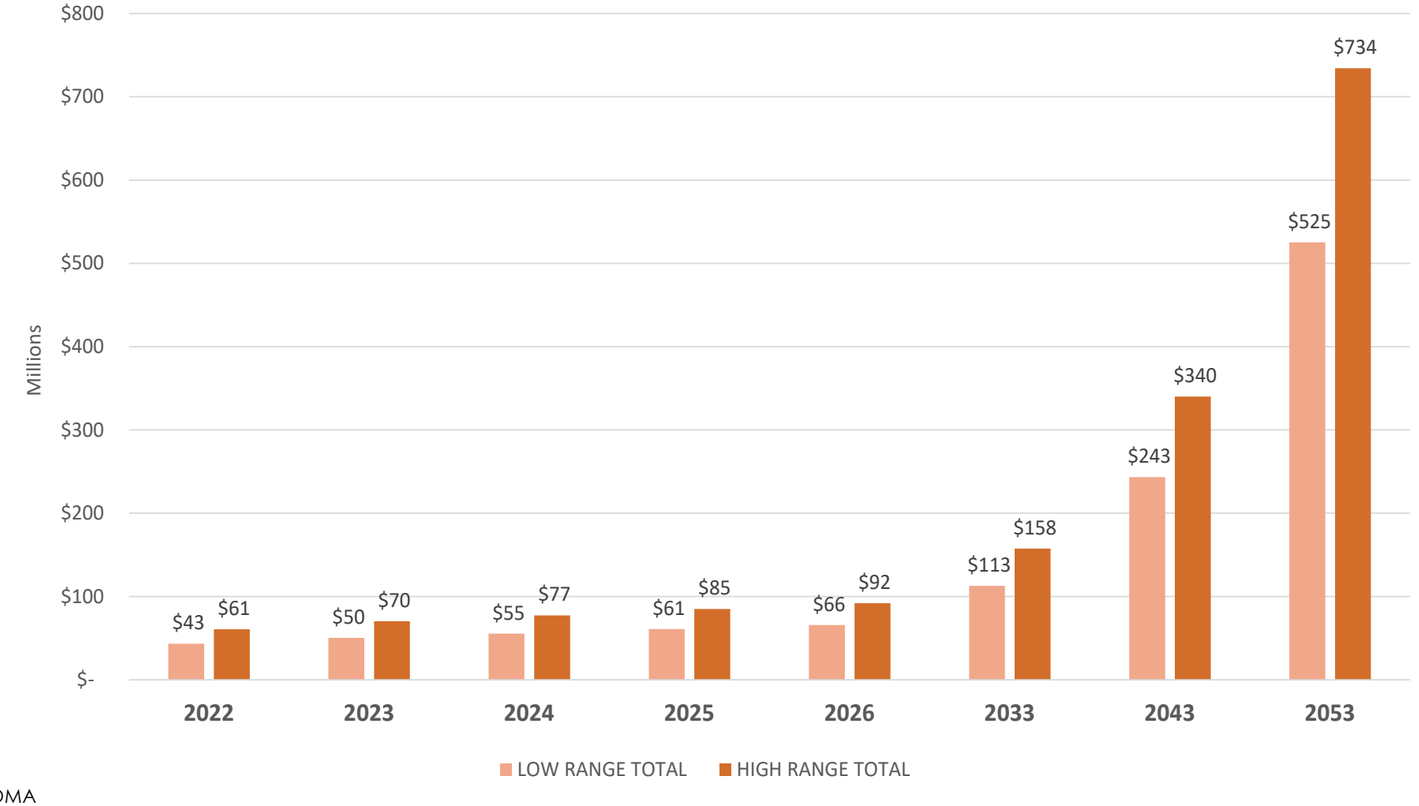




AREA A COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.

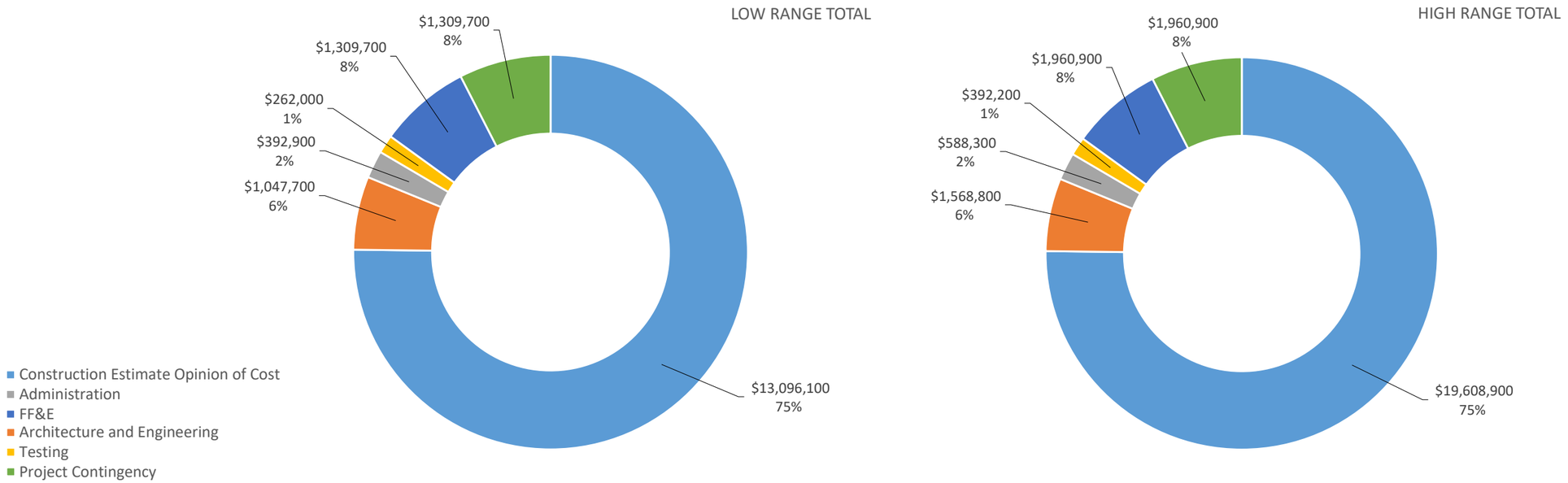


AREAS B + C COST ESTIMATE, TABLE BC

Please Note: Prices shown in 2022 dollars.

ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE, UNIT COST	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
BC.1	New Construction	New construction: paving	47,510	SY	$38 - $45	$ 1,805,400	$ 2,138,000	
BC.2	New Construction	Install New Concrete Curb and Gutter - 6"	3,750	LF	$16 - $22	$ 60,000	$ 82,500	
BC.3	New Construction	Gravel 1" with fines for compaction	1,890	SY	$14 - $18	$ 26,500	$ 34,100	
BC.4	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	17,960	SF	$245 - $275	$ 4,400,200	$ 4,939,000	
BC.5	New Construction	New Maintenance Building Space - No Crane, Tilt Up	17,960	SF	$225 - $300	$ 4,041,000	$ 5,388,000	*High range shown in total*
BC.6	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	17,960	SF	$180 - $225	$ 3,232,800	$ 4,041,000	*Low range shown in total*
BC.7	New Construction	New Salt Barn, Concrete Push Wall with PEMB	12,160	SF	$150 - $175	$ 1,824,000	$ 2,128,000	
BC.8	New Construction	New Salt Barn, Concrete Push Wall with Fabric	12,160	SF	$125 - $150	$ 1,520,000	$ 1,824,000	*Shown in total*
BC.9	New Construction	Covered Bulk Storage and Shed, Building Type 1	29,580	SF	$135 - $200	$ 3,993,300	$ 5,916,000	*Low range shown in total*
BC.10	New Construction	Covered Bulk Storage and Shed, Building Type 2	29,580	SF	$150 - $225	$ 4,437,000	$ 6,655,500	*High range shown in total*
BC.11	Site + Site Utilities	Sitework Allowance	95,000	CY	$8 - $12	$ 760,000	$ 1,140,000	*Assuming 2' delta for purposes of bidding*
BC.12	Site + Site Utilities	Install Slab Sod	29,160	SF	$0.65 - $0.8	$ 19,000	$ 23,400	
BC.13	Site + Site Utilities	Install Irrigation	29,160	SF	$1 - $1.35	$ 29,200	$ 39,400	
BC.14	Site + Site Utilities	40' Landscape Buffer	1	EA	$120000 - $140000	$ 120,000	$ 140,000	
BC.15	Site + Site Utilities	Install New Trees	110	EA	$400 - $800	$ 44,000	$ 88,000	
BC.16	Site + Site Utilities	Covered Parking Structures	24	EA	$125 - $175	$ 3,000	$ 4,200	*Quantity shown is parking spaces*
BC.17	Site + Site Utilities	EV Parking	3	EA	$25000 - $40000	$ 75,000	$ 120,000	
BC.18	Site + Site Utilities	Sight-Proof Fence	1,950	LF	$32 - $40	$ 62,400	$ 78,000	
BC.19	Site + Site Utilities	Install New Perimeter Fencing, Functional	1,725	LF	$22 - $32	$ 38,000	$ 55,200	*Shown in total*
BC.20	Site + Site Utilities	Install New Perimeter Fencing, Preminum	1,725	LF	$42 - $62	$ 72,500	$ 107,000	
BC.21	Site + Site Utilities	Install New Perimeter Fencing, Secured Entry Points	3	EA	$28000 - $35000	$ 84,000	$ 105,000	
BC.22	Site + Site Utilities	Install Parking Lot Lighting	35	EA	$16000 - $20000	$ 560,000	$ 700,000	*Quantity based on general recommendation of 60' between light fixtures for ample lighting levels*
BC.23	Site + Site Utilities	Dumpster Enclosures	2	EA	$20000 - $30000	$ 40,000	$ 60,000	
BC.24	Contingency	Construction / Estimating Contingency	--	--	5%	$ 623,700	$ 933,800	
		RANGE TOTALS				**$ 13,096,100**	**$ 19,608,900**	

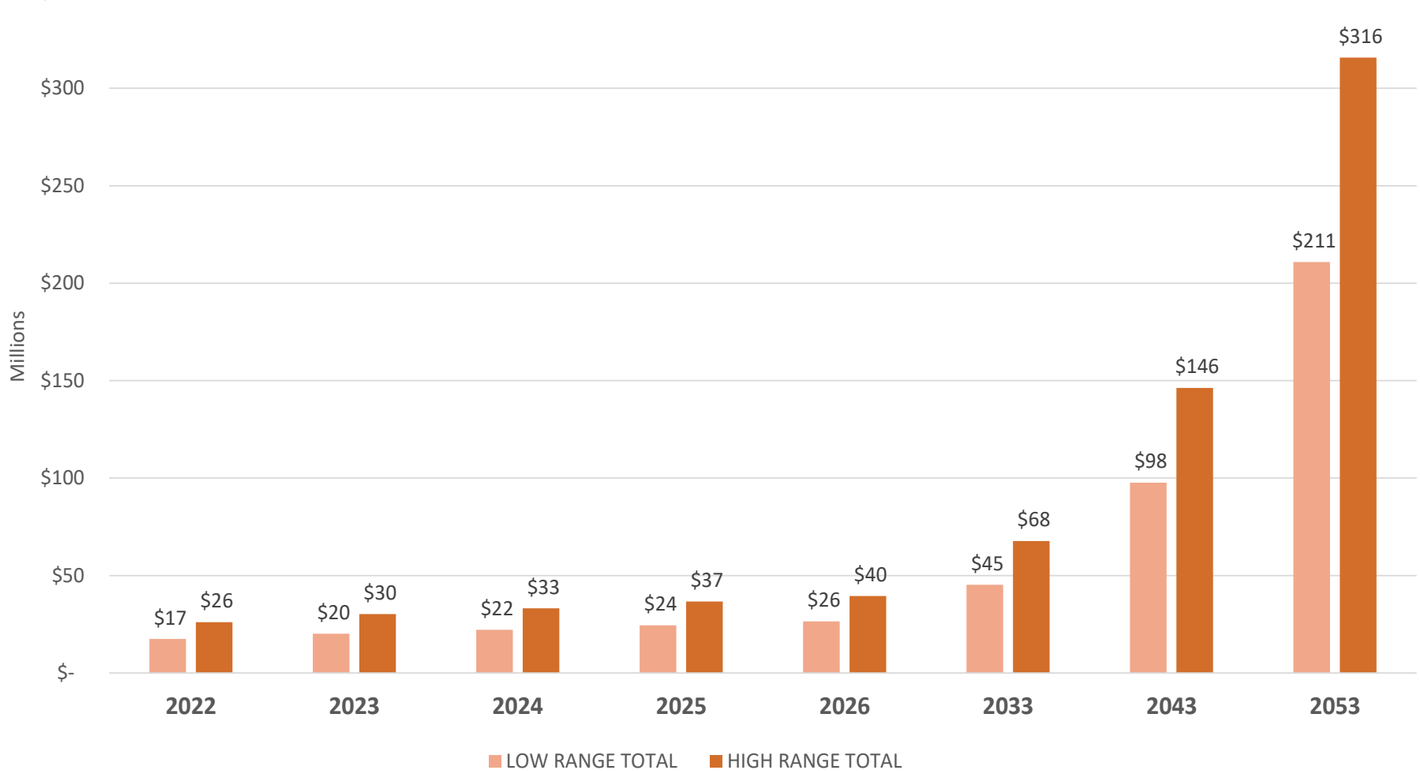
AREAS B + C PROJECT BUDGET WITH SOFT COSTS



AREAS B + C COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.

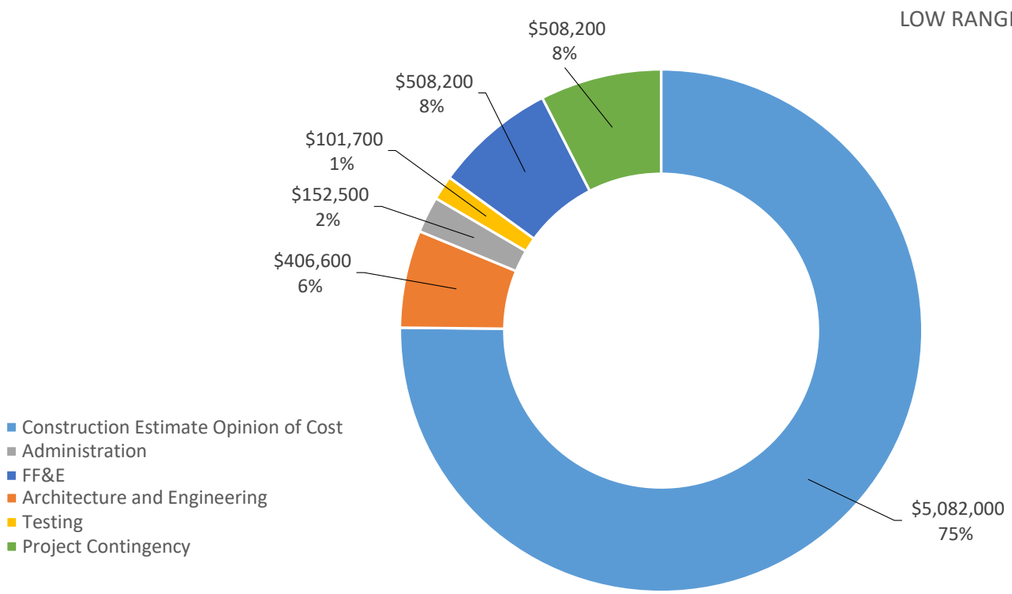


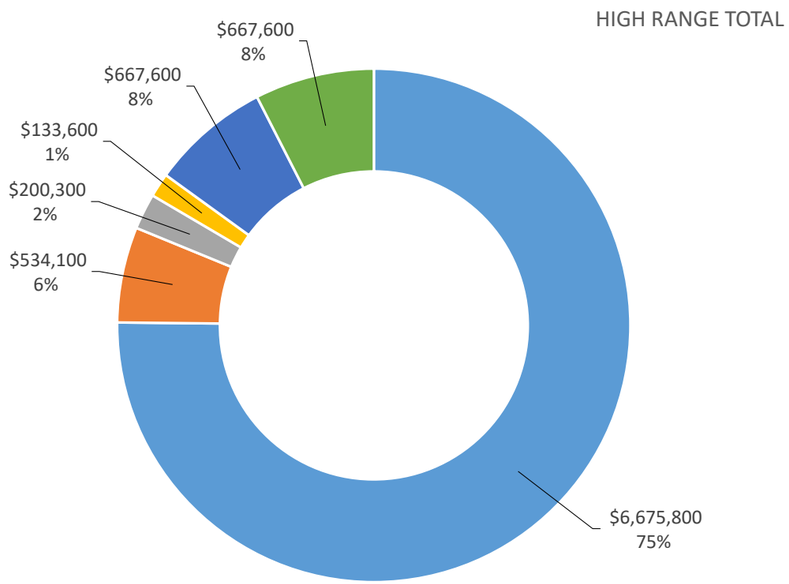
AREA D COST ESTIMATE, TABLE D

Please Note: Prices shown in 2022 dollars.

ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
D.1	Demolition	Demo existing paving	250	SY	$30 - $40	$ 7,500	$ 10,000	
D.2	Demolition	Demo Existing Buildings (sf range)	1,060	SF	$8 - $12	$ 8,500	$ 12,800	
D.3	New Construction	Paving	15,386	SY	$38 - $45	$ 584,700	$ 692,400	
D.4	New Construction	Install New Concrete Curb and Gutter - 6"	1,625	LF	$16 - $22	$ 26,000	$ 35,800	
D.5	New Construction	New Class A Office Space, Conventional Framed	8,800	SF	$325 - $400	$ 2,860,000	$ 3,520,000	*Shown in total*
D.6	New Construction	New Class A Office Space, Tilt Up	8,800	SF	$300 - $375	$ 2,640,000	$ 3,300,000	
D.7	New Construction	New Class A Office Space, Pre-Engineered	8,800	SF	$280 - $345	$ 2,464,000	$ 3,036,000	
D.8	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	4,184	SF	$245 - $275	$ 1,025,100	$ 1,150,600	
D.9	New Construction	New Maintenance Building Space - No Crane, Tilt Up	4,184	SF	$225 - $300	$ 941,400	$ 1,255,200	
D.10	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	4,184	SF	$180 - $225	$ 753,200	$ 941,400	*Shown in total*
D.11	New Construction	New Fire Tower	1	EA	$500000 - $1000000	$ 500,000	$ 1,000,000	*Typical Class A Live Fire Training Structure*
D.12	Site + Site Utilities	Install Slab Sod	38,861	SF	$0.65 - $0.8	$ 25,300	$ 31,100	
D.13	Site + Site Utilities	Install Irrigation	38,861	SF	$1 - $1.35	$ 38,900	$ 52,500	
D.14	Site + Site Utilities	Install New Trees	40	EA	$400 - $800	$ 16,000	$ 32,000	
D.15	Site + Site Utilities	Dumpster Enclosure	1	EA	$20000 - $30000	$ 20,000	$ 30,000	
D.16	Contingency	Construction / Estimating Contingency	--	--	5%	$ 242,000	$ 317,900	
		RANGED TOTAL				**$ 5,082,000**	**$ 6,675,800**	

AREA D PROJECT BUDGET WITH SOFT COSTS

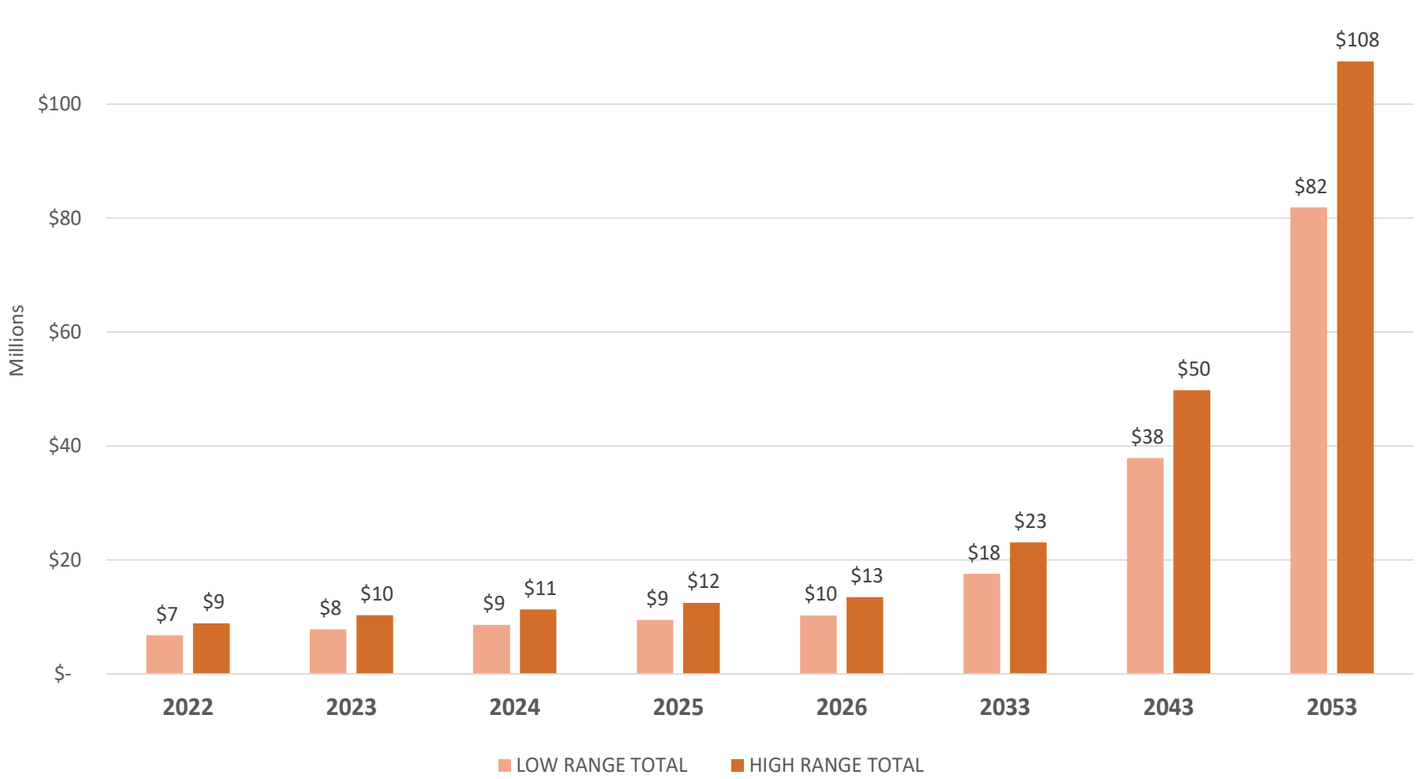




AREA D COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.



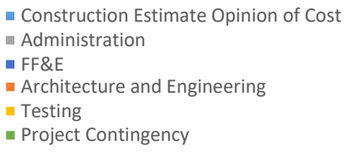
PHASE 1 COST ESTIMATE SUMMARY

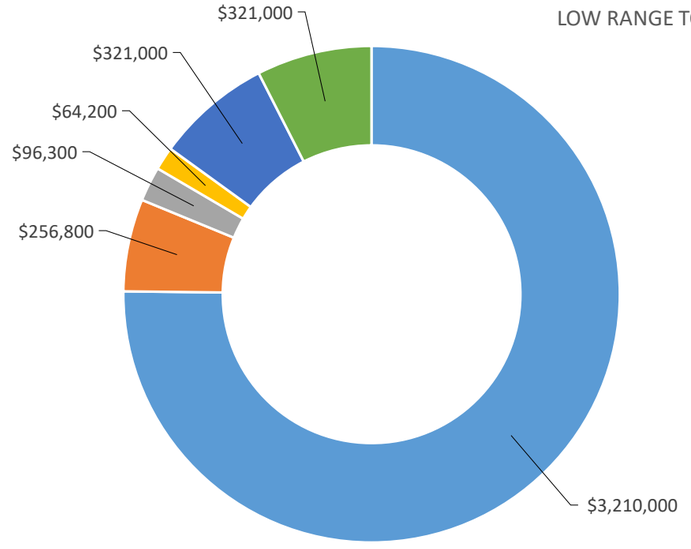
Please Note: Prices shown in 2022 dollars.

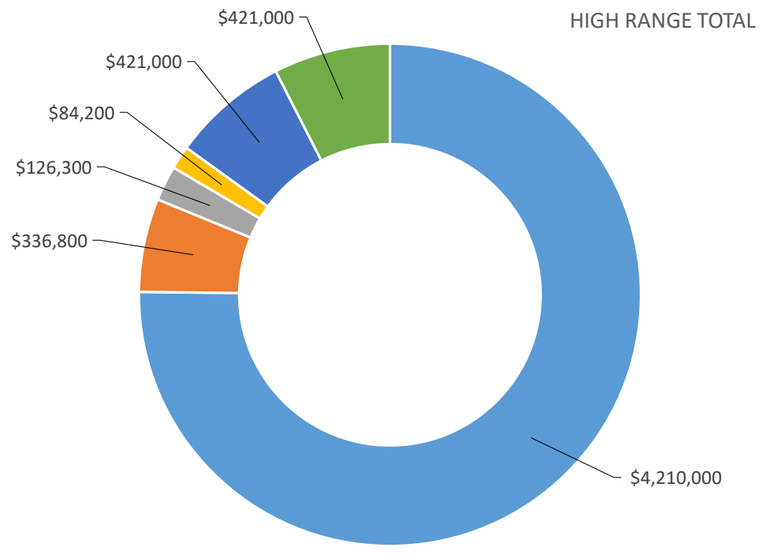
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL
1.1	Demolition	Demo existing paving	28,175	SY	$30 - $40	$ 845,300	$ 1,127,000
1.2	Demolition	Remove Existing Building, Sanitation	3,200	SF	$8 - $12	$ 25,600	$ 38,400
1.3	New Construction	Paving	12,700	SY	$38 - $45	$ 482,600	$ 571,500
1.4	New Construction	Install New Concrete Curb and Gutter - 6"	5,265	LF	$16 - $22	$ 84,300	$ 115,900
1.5	Site + Site Utilities	New Roads - Concrete	5,250	SY	$75 - $95	$ 393,800	$ 498,800
1.6	Site + Site Utilities	Covered Parking Structures	80	EA	$2750 - $3500	$ 220,000	$ 280,000
1.7	Site + Site Utilities	EV Parking	3	EA	$25000 - $40000	$ 75,000	$ 120,000
1.8	Site + Site Utilities	Install New Perimeter Fencing, Functional	2,750	LF	$22 - $32	$ 60,500	$ 88,000
1.9	Site + Site Utilities	Install New Perimeter Fencing, Preminum	2,750	LF	$42 - $62	$ 115,500	$ 170,500
1.10	Site + Site Utilities	Install New Perimeter Fencing, Secured Entry Points	2	EA	$28000 - $35000	$ 56,000	$ 70,000
1.11	Site + Site Utilities	Install Parking Lot Lighting	50	EA	$16000 - $20000	$ 800,000	$ 1,000,000
1.12	Site + Site Utilities	Vehicle Low Volume Natural Gas	760	LF	$18 - $22	$ 13,700	$ 16,800
1.13	Contingency	Construction / Estimating Contingency	--	--	5%	$ 152,900	$ 200,500
		RANGE TOTALS				$ 3,210,000	$ 4,210,000

PHASE 1 PROJECT BUDGET WITH SOFT COSTS

BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%



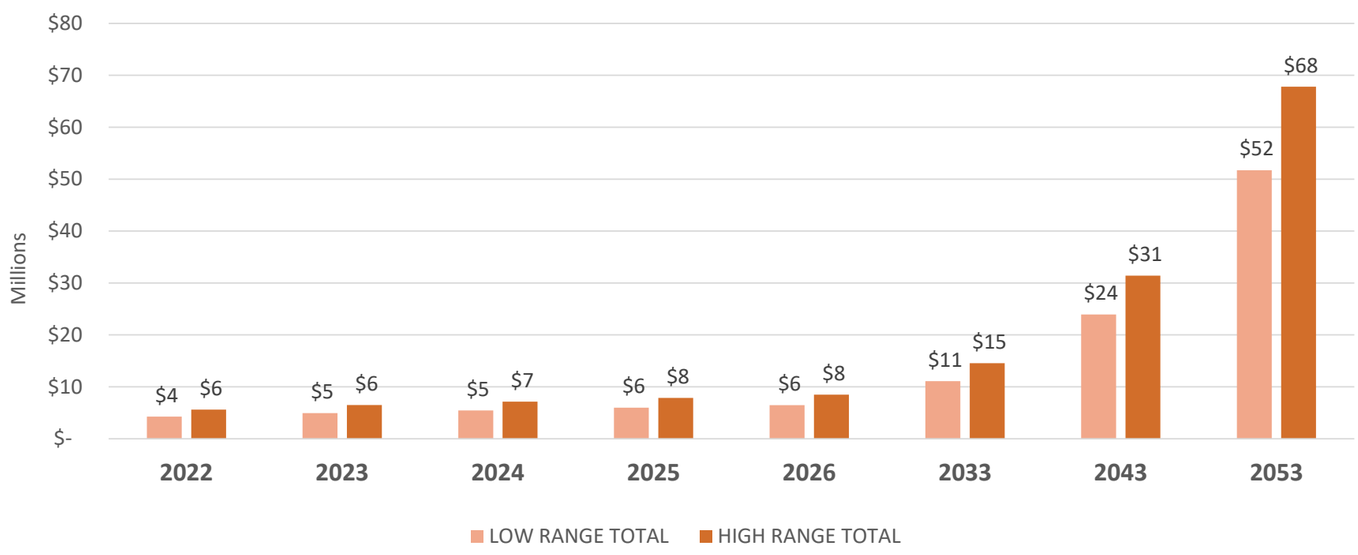




PHASE 1 COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.



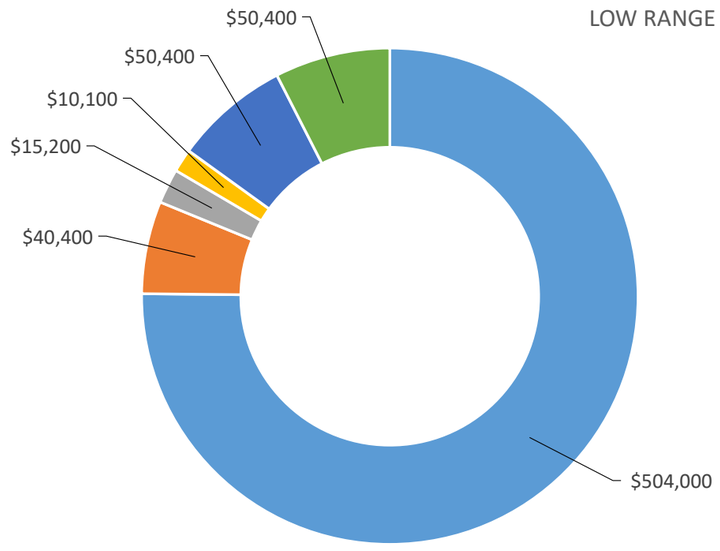
PHASE 2 COST ESTIMATE SUMMARY

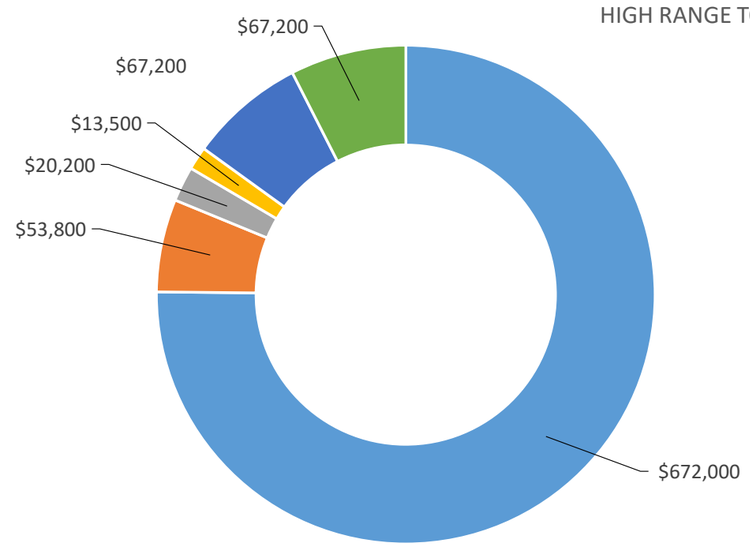
Please Note: Prices shown in 2022 dollars.

ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL
2.1	Site + Site Utilities	Electrical Primary (Primary by OG&E) 1200 amp secondary	700	LF	$600 - $800	$ 420,000	$ 560,000
2.2	Site + Site Utilities	Ex. ~1200 amp service panel, 100' ditch, pipe, and wire	1	LS	$60000 - $80000	$ 60,000	$ 80,000
2.3	Contingency	Construction / Estimating Contingency, Excluding Areas A-D Estimates	--	--	5%	$ 24,000	$ 32,000
		RANGE TOTALS				**$ 504,000**	**$ 672,000**

PHASE 2 PROJECT BUDGET WITH SOFT COSTS

BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%

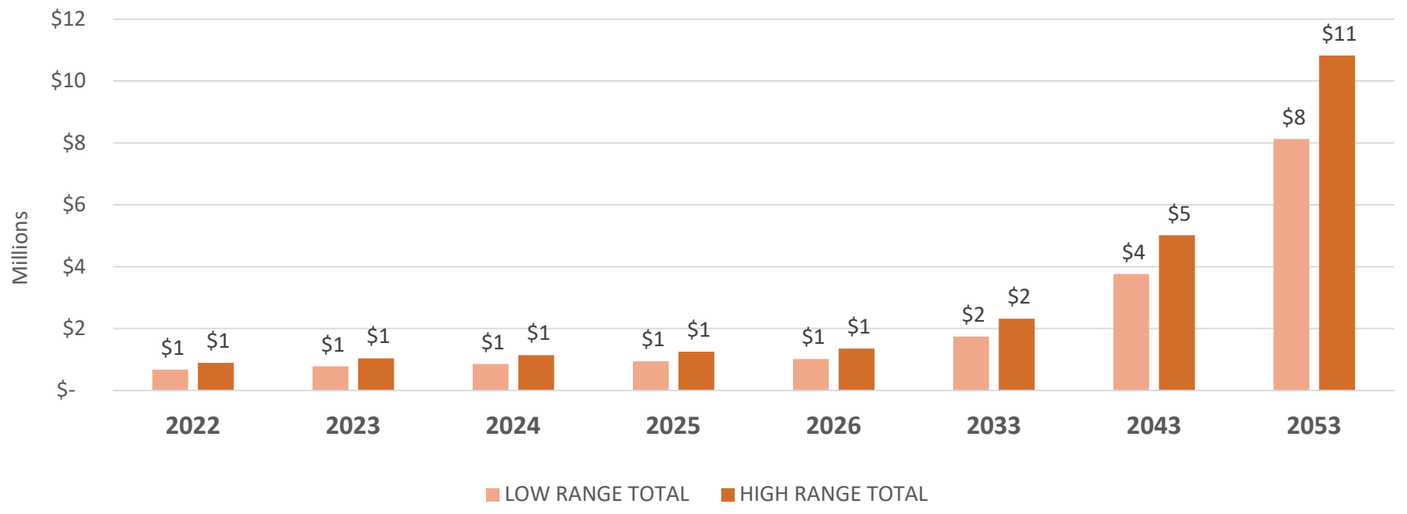




PHASE 2 COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.



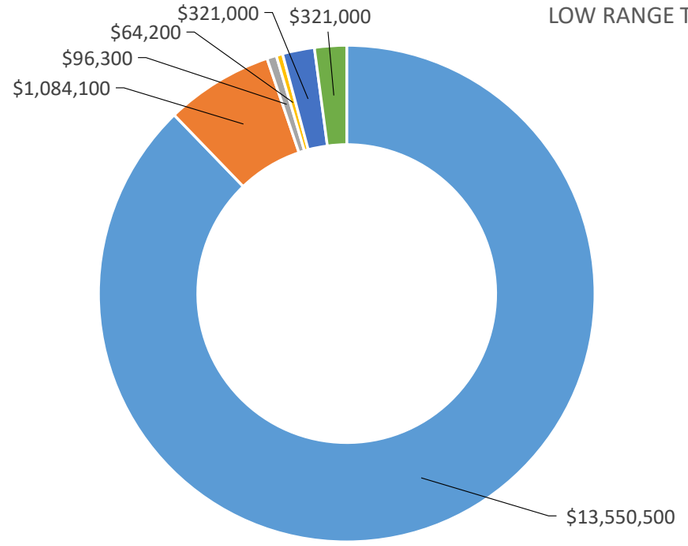
PHASE 3 COST ESTIMATE SUMMARY

Please Note: Prices shown in 2022 dollars.

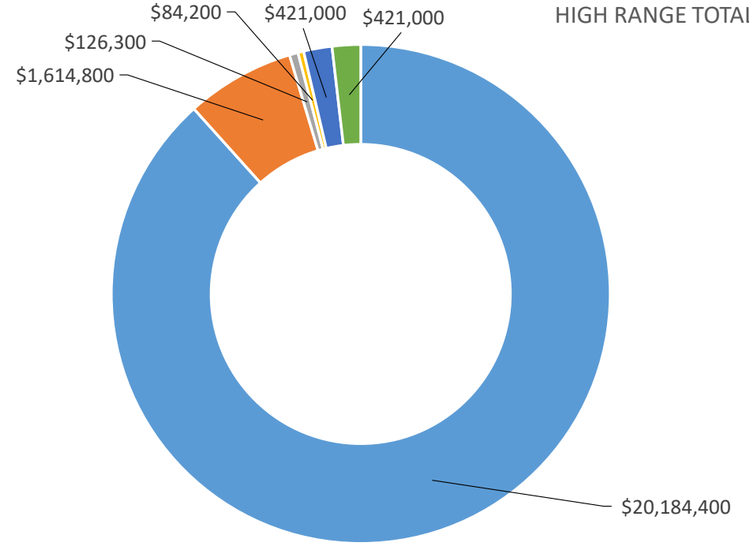
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
3.1	New Construction	New construction: paving	47,510	SY	$38 - $45	$ 1,805,400	$ 2,138,000	
3.2	New Construction	Install New Concrete Curb and Gutter - 6"	3,750	LF	$16 - $22	$ 60,000	$ 82,500	
3.3	Site + Site Utilities	New Roads - Concrete	5,770	SY	$75 - $95	$ 432,800	$ 548,200	
3.4	New Construction	Gravel 1" with fines for compaction	1,890	SY	$14 - $18	$ 26,500	$ 34,100	
3.5	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	17,960	SF	$245 - $275	$ 4,400,200	$ 4,939,000	
3.6	New Construction	New Maintenance Building Space - No Crane, Tilt Up	17,960	SF	$225 - $300	$ 4,041,000	$ 5,388,000	*High range shown in total*
3.7	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	17,960	SF	$180 - $225	$ 3,232,800	$ 4,041,000	*Low range shown in total*
3.8	New Construction	New Salt Barn, Concrete Push Wall with PEMB	12,160	SF	$150 - $175	$ 1,824,000	$ 2,128,000	
3.9	New Construction	New Salt Barn, Concrete Push Wall with Fabric	12,160	SF	$125 - $150	$ 1,520,000	$ 1,824,000	*Shown in total*
3.1	New Construction	Covered Bulk Storage and Shed, Building Type 1	29,580	SF	$135 - $200	$ 3,993,300	$ 5,916,000	*Low range shown in total*
3.11	New Construction	Covered Bulk Storage and Shed, Building Type 2	29,580	SF	$150 - $225	$ 4,437,000	$ 6,655,500	*High range shown in total*
3.12	Site + Site Utilities	Sitework Allowance	95,000	CY	$8 - $12	$ 760,000	$ 1,140,000	*Assuming 2' delta for purposes of bidding*
3.13	Site + Site Utilities	Install Slab Sod	29,160	SF	$0.65 - $0.8	$ 19,000	$ 23,400	
3.14	Site + Site Utilities	Install Irrigation	29,160	SF	$1 - $1.35	$ 29,200	$ 39,400	
3.15	Site + Site Utilities	40' Landscape Buffer	1	EA	$120000 - $140000	$ 120,000	$ 140,000	
3.16	Site + Site Utilities	Install New Trees	110	EA	$400 - $800	$ 44,000	$ 88,000	
3.17	Site + Site Utilities	Covered Parking Structures	24	EA	$125 - $175	$ 3,000	$ 4,200	*Does not include solar panel on roof in estimate*
3.18	Site + Site Utilities	EV Parking	3	EA	$25000 - $40000	$ 75,000	$ 120,000	
3.19	Site + Site Utilities	Sight-Proof Fence	1,950	LF	$32 - $40	$ 62,400	$ 78,000	
3.20	Site + Site Utilities	Install New Perimeter Fencing, Functional	1,725	LF	$22 - $32	$ 38,000	$ 55,200	*Shown in total*
3.21	Site + Site Utilities	Install New Perimeter Fencing, Preminum	1,725	LF	$42 - $62	$ 72,500	$ 107,000	
3.22	Site + Site Utilities	Install New Perimeter Fencing, Secured Entry Points	3	EA	$28000 - $35000	$ 84,000	$ 105,000	
3.23	Site + Site Utilities	Install Parking Lot Lighting	35	EA	$16000 - $20000	$ 560,000	$ 700,000	*Quantity based on general recommendation of 60' between light*
3.24	Site + Site Utilities	Dumpster Enclosures	2	EA	$20000 - $30000	$ 40,000	$ 60,000	
3.25	Contingency	Construction / Estimating Contingency	--	--	5%	$ 645,300	$ 961,200	
		RANGE TOTALS				**$ 13,550,500**	**$ 20,184,400**	

PHASE 3 PROJECT BUDGET WITH SOFT COSTS

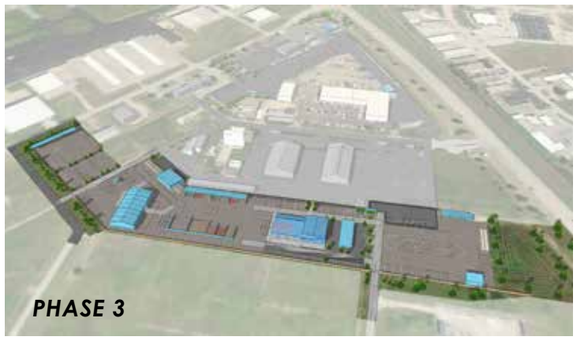
BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%



LOW RANGE TOTAL



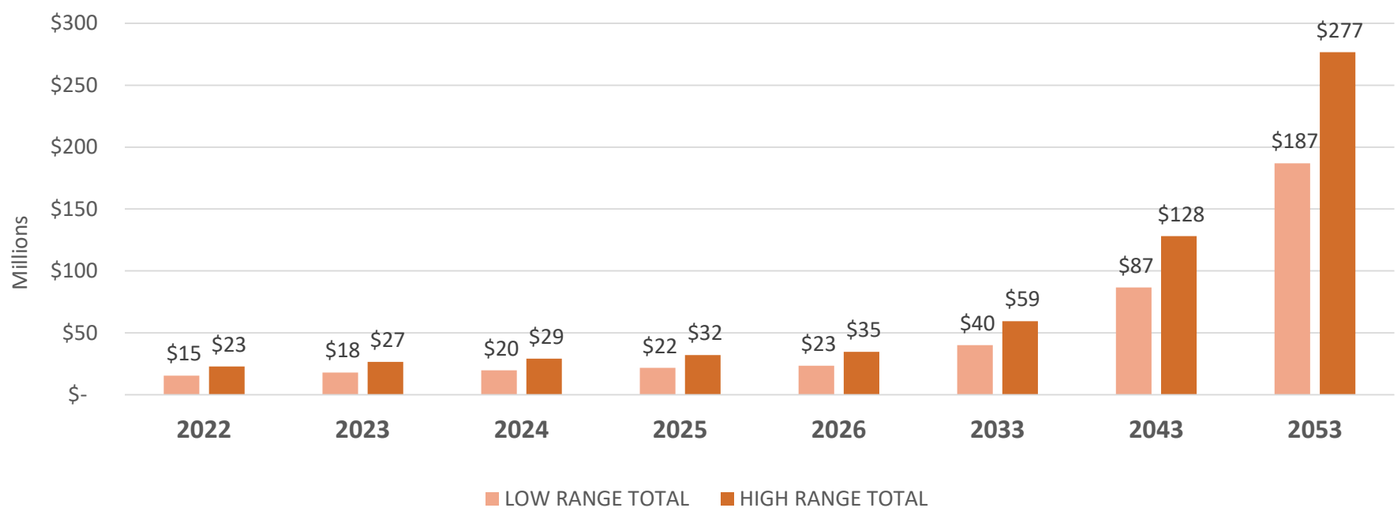
HIGH RANGE TOTAL



YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.

PHASE 3 COST ESCALATION PROJECTIONS



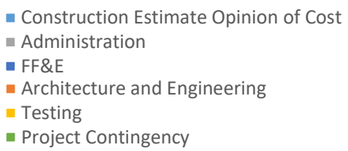
PHASE 4 COST ESTIMATE SUMMARY

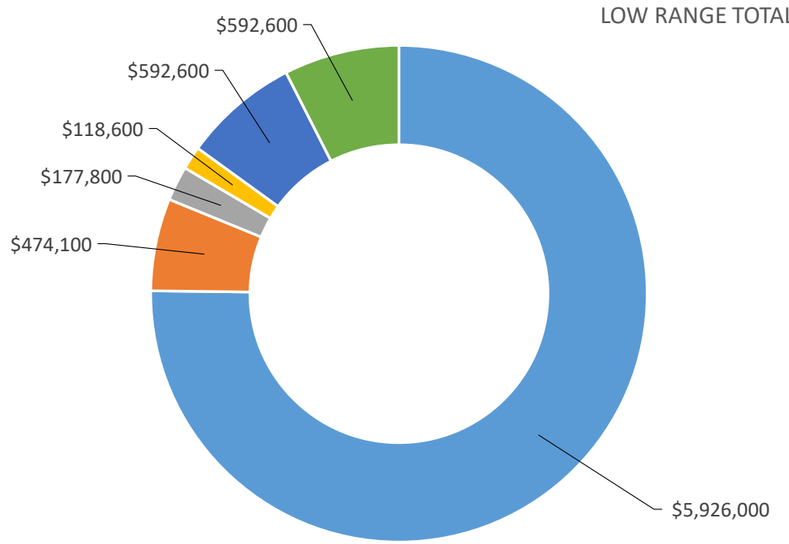
Please Note: Prices shown in 2022 dollars.

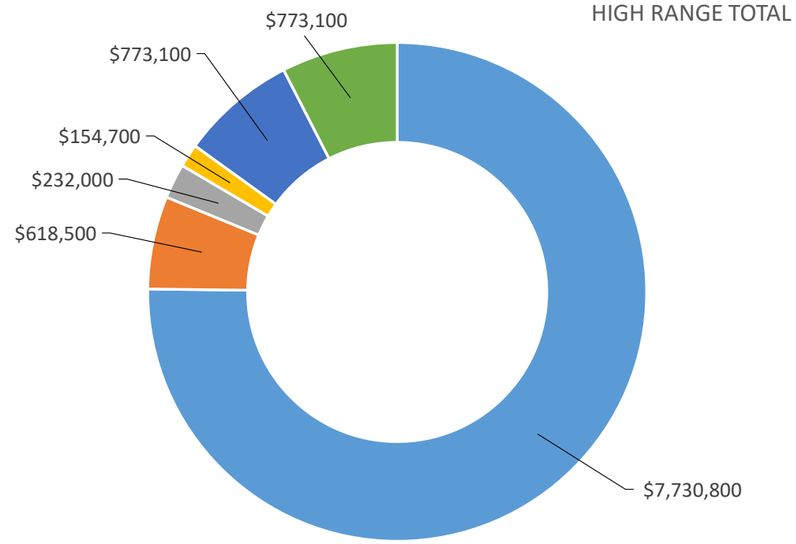
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
4.1	Demolition	Demo existing paving	250	SY	$30 - $40	$ 7,500	$ 10,000	
4.2	Demolition	Demo Existing Buildings	1,060	SF	$8 - $12	$ 8,500	$ 12,800	
4.3	New Construction	Paving	15,386	SY	$38 - $45	$ 584,700	$ 692,400	
4.4	New Construction	Install New Concrete Curb and Gutter - 6"	1,625	LF	$16 - $22	$ 26,000	$ 35,800	
4.5	New Construction	New Class A Office Space, Conventional Framed	8,800	SF	$325 - $400	$ 2,860,000	$ 3,520,000	*Shown in total*
4.6	New Construction	New Class A Office Space, Tilt Up	8,800	SF	$300 - $375	$ 2,640,000	$ 3,300,000	
4.7	New Construction	New Class A Office Space, Pre-Engineered	8,800	SF	$280 - $345	$ 2,464,000	$ 3,036,000	
4.8	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	8,650	SF	$245 - $275	$ 2,119,300	$ 2,378,800	
4.9	New Construction	New Maintenance Building Space - No Crane, Tilt Up	8,650	SF	$225 - $300	$ 1,946,300	$ 2,595,000	
4.10	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	8,650	SF	$180 - $225	$ 1,557,000	$ 1,946,300	*Shown in total*
4.11	New Construction	New Fire Tower	1	EA	$500000 - $1000000	$ 500,000	$ 1,000,000	*Typical Class A Live Fire Training Structure*
4.12	Site + Site Utilities	Install Slab Sod	38,861	SF	$0.65 - $0.8	$ 25,300	$ 31,100	
4.13	Site + Site Utilities	Install Irrigation	38,861	SF	$1 - $1.35	$ 38,900	$ 52,500	
4.14	Site + Site Utilities	Install New Trees	40	EA	$400 - $800	$ 16,000	$ 32,000	
4.15	Site + Site Utilities	Dumpster Enclosure	1	EA	$20000 - $30000	$ 20,000	$ 30,000	
4.16	Contingency	Construction / Estimating Contingency	--	--	5%	$ 282,200	$ 368,200	
		RANGED TOTAL				**$ 5,926,000**	**$ 7,730,800**	

PHASE 4 PROJECT BUDGET WITH SOFT COSTS

BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%



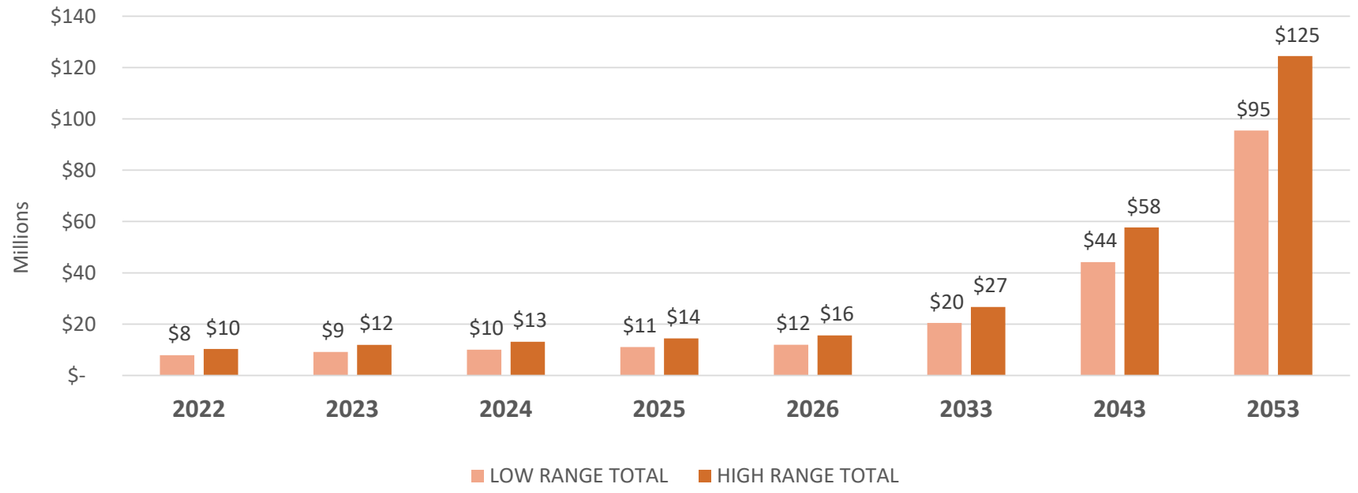




PHASE 4 COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.



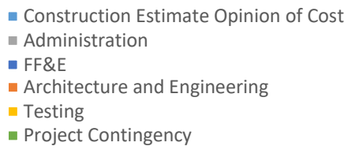
PHASE 5 COST ESTIMATE SUMMARY

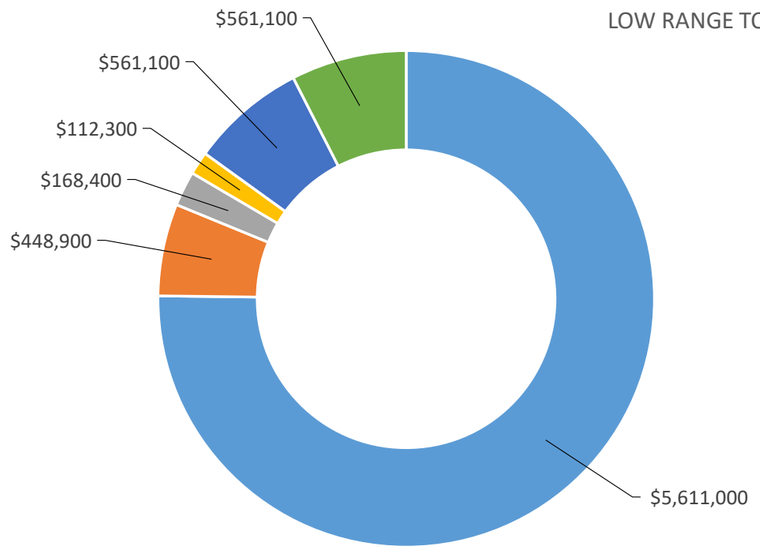
Please Note: Prices shown in 2022 dollars.

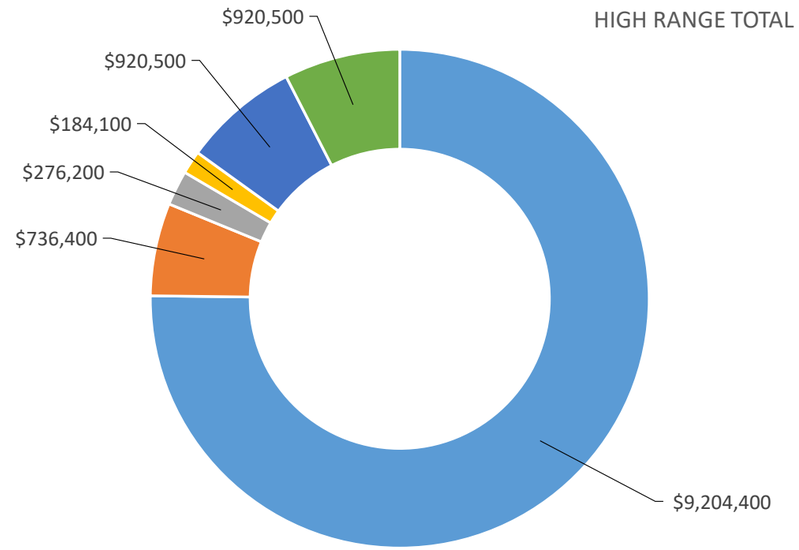
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
5.1	Demolition	Remove Existing Paving, North of Fleet	3,500	SY	$30 - $40	$ 105,000	$ 140,000	
5.2	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	29,100	SF	$245 - $275	$ 7,129,500	$ 8,002,500	
5.3	New Construction	New Maintenance Building Space - No Crane, Tilt Up	29,100	SF	$225 - $300	$ 6,547,500	$ 8,730,000.00	*High range shown in total*
5.4	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	29,100	SF	$180 - $225	$ 5,238,000	$ 6,547,500.00	Low range shown in total
5.5	Contingency	Construction / Estimating Contingency	--	--	$ 0.05	$ 267,200	$ 334,400.00	
		RANGE TOTALS				**$ 5,611,000**	**$ 9,204,400.00**	

PHASE 5 PROJECT BUDGET WITH SOFT COSTS

BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%



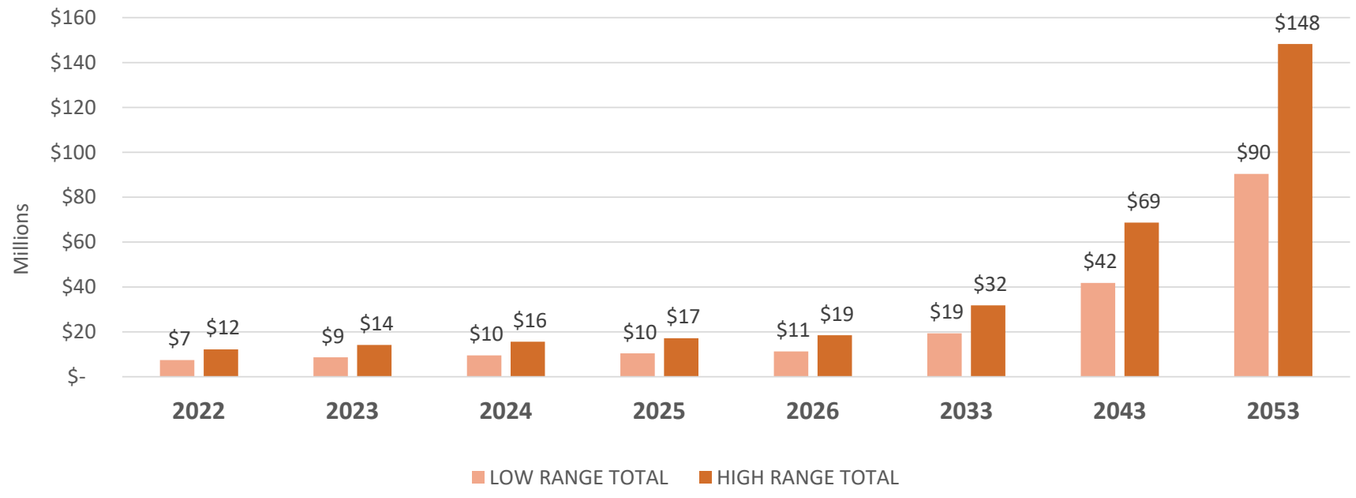




YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.

PHASE 5 COST ESCALATION PROJECTIONS



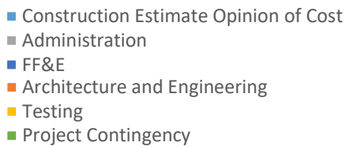
PHASE 6 COST ESTIMATE SUMMARY

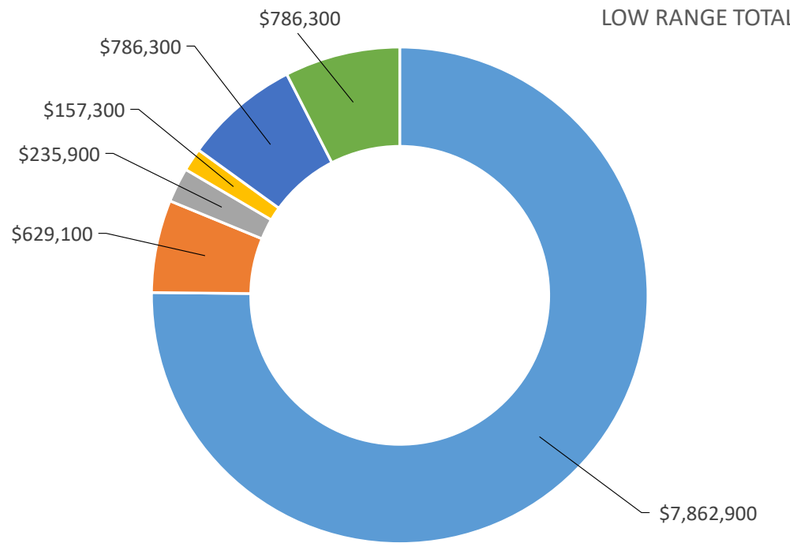
Please Note: Prices shown in 2022 dollars.

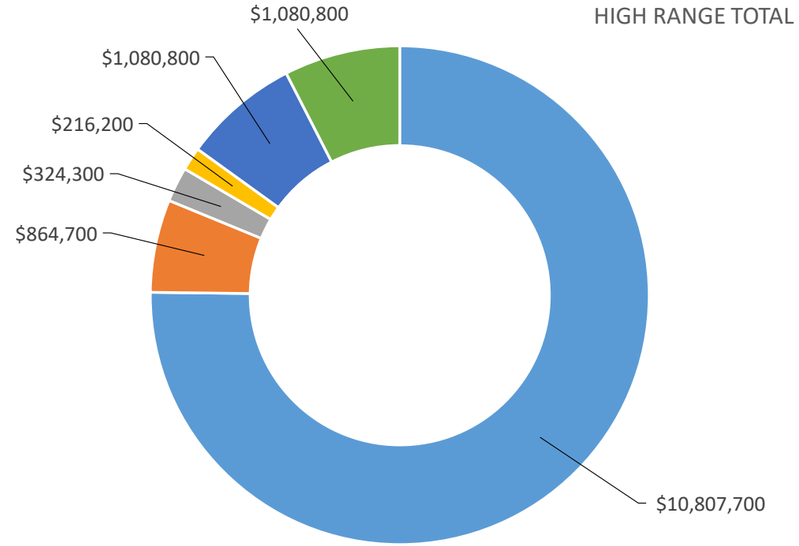
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
6.1	New Construction	New construction: paving	1,265	SY	$38 - $45	$ 48,100	$ 57,000	
6.2	New Construction	Install New Concrete Curb and Gutter - 6"	400	LF	$16 - $22	$ 6,400	$ 82,500	
6.3	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	16,500	SF	$245 - $275	$ 4,042,500	$ 4,939,000	
6.4	New Construction	New Maintenance Building Space - No Crane, Tilt Up	16,500	SF	$225 - $300	$ 3,712,500	$ 5,388,000	*High range shown in total*
6.5	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	16,500	SF	$180 - $225	$ 2,970,000	$ 4,041,000	*Low range shown in total*
6.6	New Construction	Covered Bulk Storage and Shed, Building Type 1	4,400	SF	$135 - $200	$ 594,000	$ 5,916,000	*Low range shown in total*
6.7	New Construction	Covered Bulk Storage and Shed, Building Type 2	4,400	SF	$150 - $225	$ 660,000	$ 6,655,500	*High range shown in total*
6.8	Site + Site Utilities	Dumpster Enclosures	1	EA	$20000 - $30000	$ 20,000	$ 60,000	
6.9	Contingency	Construction / Estimating Contingency	--	--	5%	$ 182,000	$ 234,500	
		RANGE TOTALS				**$ 7,862,900**	**$ 10,807,700**	

PHASE 6 PROJECT BUDGET WITH SOFT COSTS

BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%



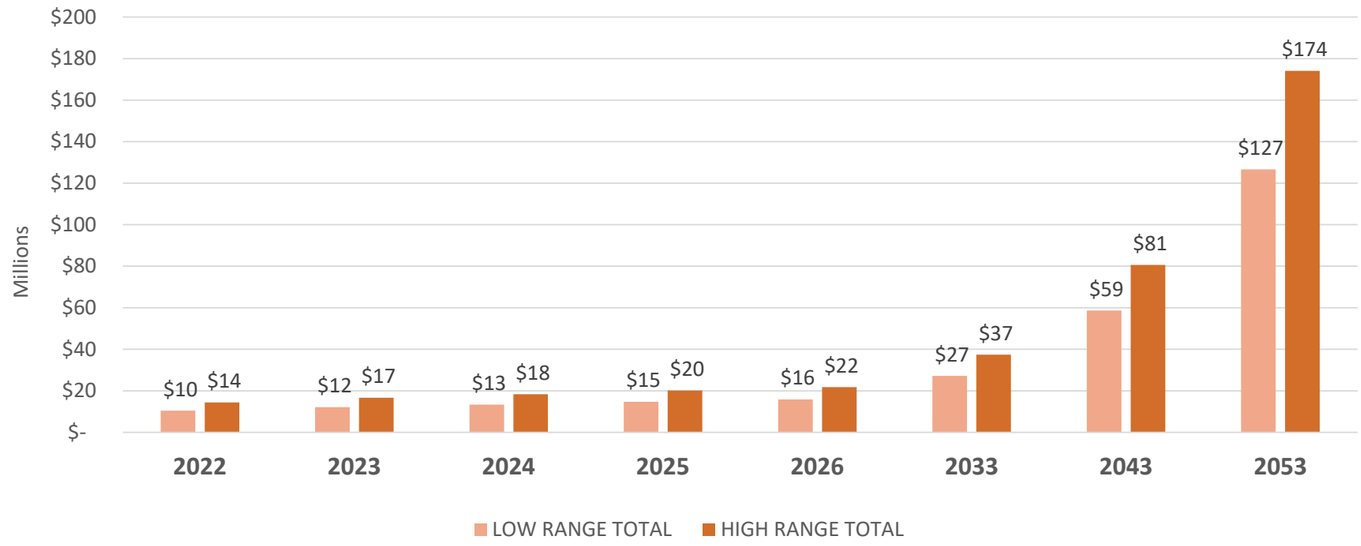




PHASE 6 COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.



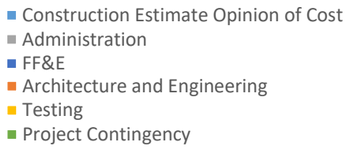
PHASE 7 COST ESTIMATE SUMMARY

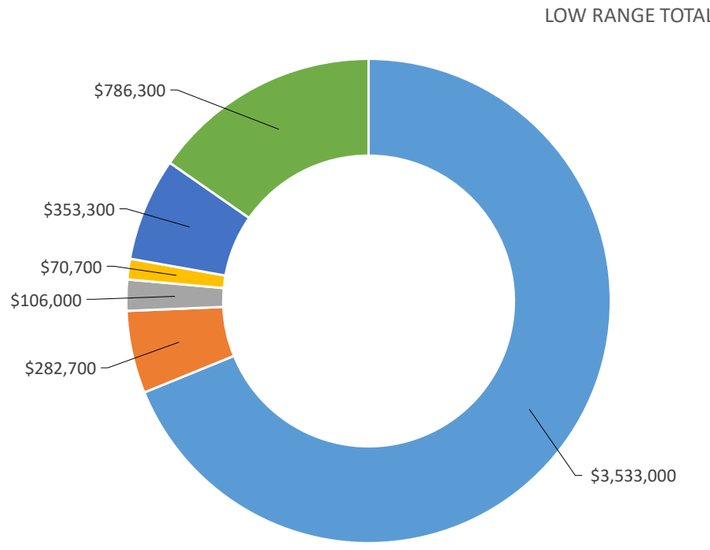
Please Note: Prices shown in 2022 dollars.

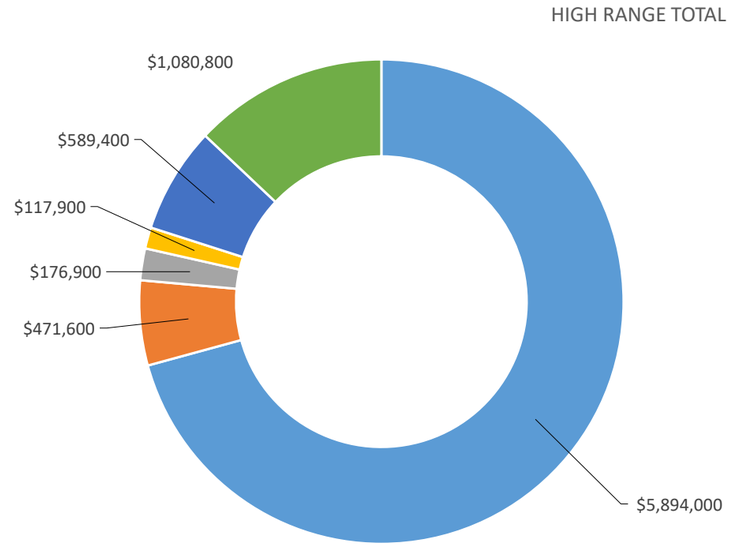
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
7.1	Demolition	Demo of Fleet Building, Line Maintenance Portion	9,100	SF	$7 - $12	$ 63,700	$ 109,200	
7.2	Demolition	Remove Existing Building, Traffic	8,600	SF	$7 - $12	$ 60,200	$ 103,200	
7.3	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	18,000	SF	$245 - $275	$ 4,410,000	$ 4,939,000	
7.4	New Construction	New Maintenance Building Space - No Crane, Tilt Up	18,000	SF	$225 - $300	$ 4,050,000	$ 5,388,000	*High range shown in total*
7.5	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	18,000	SF	$180 - $225	$ 3,240,000	$ 4,041,000	*Low range shown in total*
7.6	Contingency	Construction / Estimating Contingency	--	--	5%	$ 168,200	$ 280,700	
		RANGE TOTALS				**$ 3,533,000**	**$ 5,894,000**	

PHASE 7 PROJECT BUDGET WITH SOFT COSTS

BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%



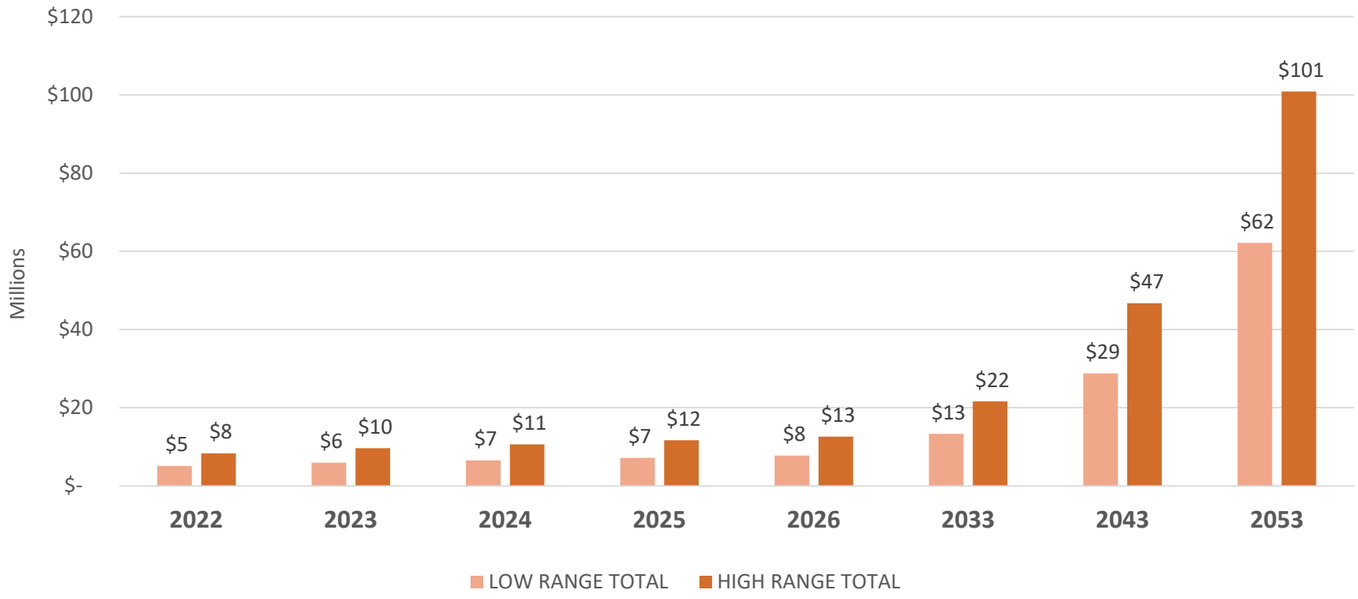




PHASE 7 COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.



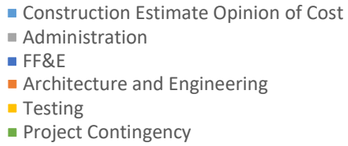
PHASE 8 COST ESTIMATE SUMMARY

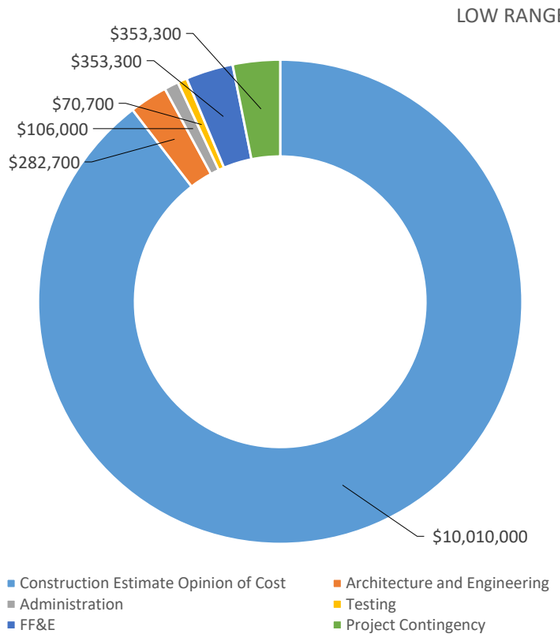
Please Note: Prices shown in 2022 dollars.

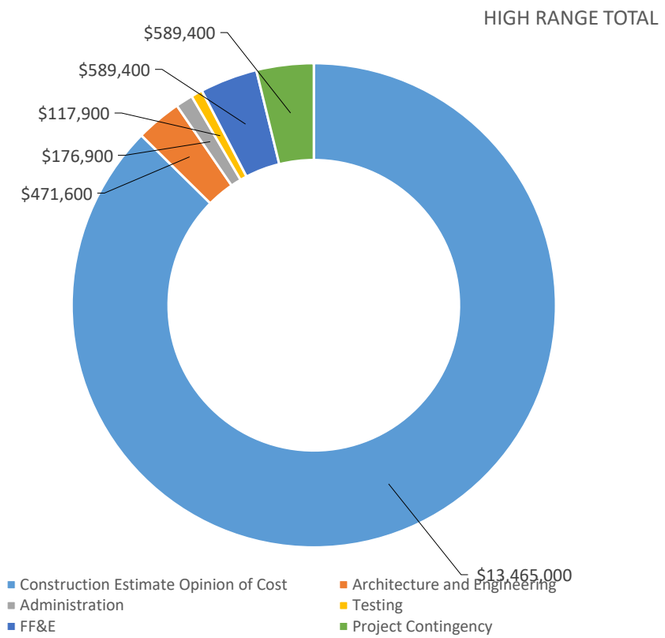
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
8.1	Demolition	Demo existing paving	7,500	SY	$30 - $40	$ 225,000	$ 300,000	
8.2	Demolition	Demo existing ancillary storage buildings	12,700	SF	$6 - $14	$ 76,200	$ 177,800	
8.3	New Construction	New Class A Office Space, Conventional Framed	30,000	SF	$325 - $400	$ 9,750,000	$ 12,000,000	*High range shown in total*
8.4	New Construction	New Class A Office Space, Tilt Up	30,000	SF	$300 - $375	$ 9,000,000	$ 11,250,000	*Low range shown in total*
8.5	New Construction	New Class A Office Space, Pre-Engineered	30,000	SF	$280 - $345	$ 8,400,000	$ 10,350,000	
8.6	Site + Site Utilities	Install Slab Sod	45,000	SF	$0.65 - $0.8	$ 29,300	$ 36,000	
8.7	Site + Site Utilities	Install Irrigation	45,000	SF	$1 - $1.35	$ 45,000	$ 60,800	
8.8	Site + Site Utilities	Install New Trees	50	EA	$400 - $800	$ 20,000	$ 40,000	
8.9	Site + Site Utilities	Install New Landscaping	1,250	EA	$7 - $9	$ 8,800	$ 11,300	
8.10	Site + Site Utilities	Covered Parking Structures	5	EA	$2750 - $3500	$ 13,800	$ 17,500	*Does not include solar panel on roof in estimate*
8.11	Site + Site Utilities	EV Parking	3	EA	$25000 - $40000	$ 75,000	$ 120,000	
8.12	Site + Site Utilities	Dumpster Enclosures	2	EA	$20000 - $30000	$ 40,000	$ 60,000	
8.13	Contingency	Construction / Estimating Contingency	--	--	5%	$ 476,700	$ 641,200	
		RANGE TOTALS				**$ 10,010,000**	**$ 13,465,000**	

PHASE 8 PROJECT BUDGET WITH SOFT COSTS

BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%



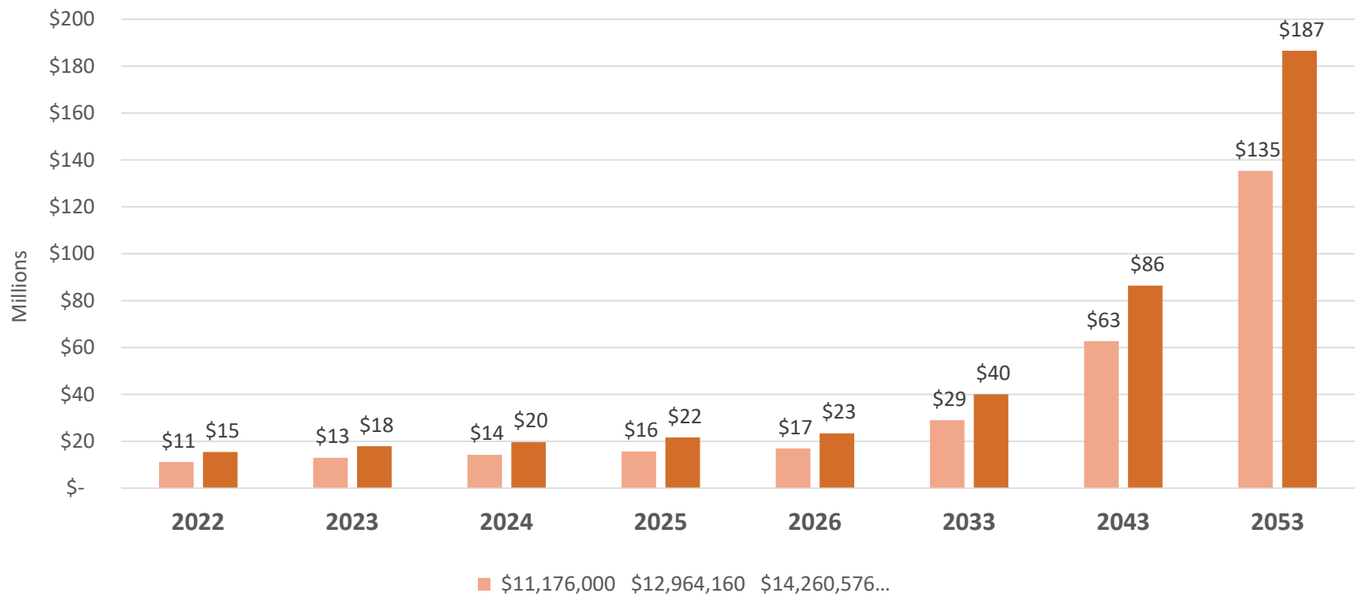




PHASE 8 COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

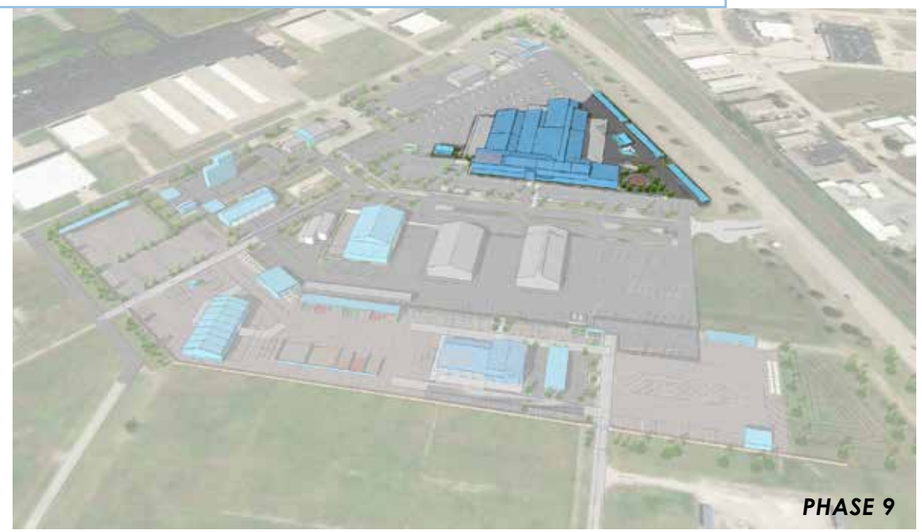
Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.



PHASE 9 COST ESTIMATE SUMMARY

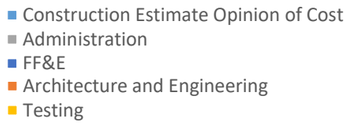
Please Note: Prices shown in 2022 dollars.

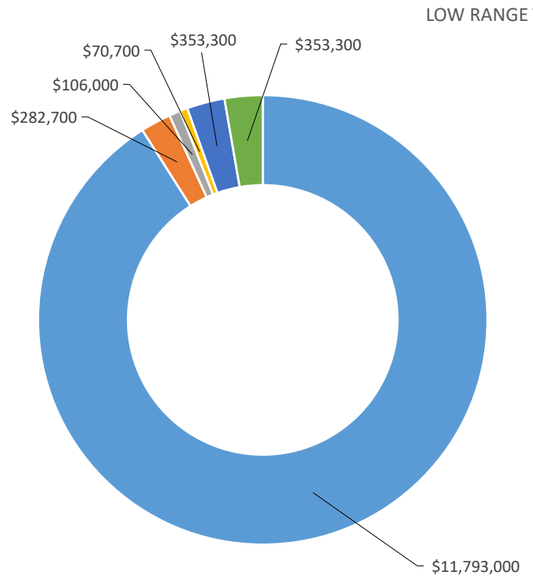
ITEM ID	CATEGORY	ITEM	QTY	UNIT	RANGE	LOW RANGE, TOTAL	HIGH RANGE, TOTAL	NOTES
9.1	Demolition	Demo of Fleet Building, Fleet Portion	20,500	SF	$7 - $12	$ 143,500	$ 246,000	
9.2	New Construction	New Class A Office Space, Conventional Framed	25,000	SF	$325 - $400	$ 8,125,000	$ 10,000,000	*High range shown in total*
9.3	New Construction	New Class A Office Space, Tilt Up	25,000	SF	$300 - $375	$ 7,500,000	$ 9,375,000	*Low range shown in total*
9.4	New Construction	New Class A Office Space, Pre-Engineered	25,000	SF	$280 - $345	$ 7,000,000	$ 8,625,000	
9.5	New Construction	New Maintenance Building Space - No Crane, Conventional Framed	18,000	SF	$245 - $275	$ 4,410,000	$ 4,939,000	
9.6	New Construction	New Maintenance Building Space - No Crane, Tilt Up	18,000	SF	$225 - $300	$ 4,050,000	$ 5,388,000	
9.7	New Construction	New Maintenance Building Space - No Crane, Pre-Engineered	18,000	SF	$180 - $225	$ 3,240,000	$ 4,041,000	
9.8	Site + Site Utilities	Install Slab Sod	15,000	SF	$0.65 - $0.8	$ 9,800	$ 12,000	
9.9	Site + Site Utilities	Install Irrigation	15,000	SF	$1 - $1.35	$ 15,000	$ 20,300	
9.10	Site + Site Utilities	Install New Trees	15	EA	$400 - $800	$ 6,000	$ 12,000	
9.11	Site + Site Utilities	Install New Landscaping	250	EA	$7 - $9	$ 1,800	$ 2,300	
9.12	Site + Site Utilities	Covered Parking Structures	80	EA	$2750 - $3500	$ 220,000	$ 280,000	*Does not include solar panel on roof in estimate*
9.13	Site + Site Utilities	EV Parking	5	EA	$25000 - $40000	$ 75,000	$ 120,000	
9.14	Site + Site Utilities	Dumpster Enclosures	1	EA	$20000 - $30000	$ 20,000	$ 30,000	
9.15	Contingency	Construction / Estimating Contingency	--	--	5%	$ 561,600	$ 806,200	
		RANGE TOTALS				**$ 11,793,000**	**$ 16,929,000**	

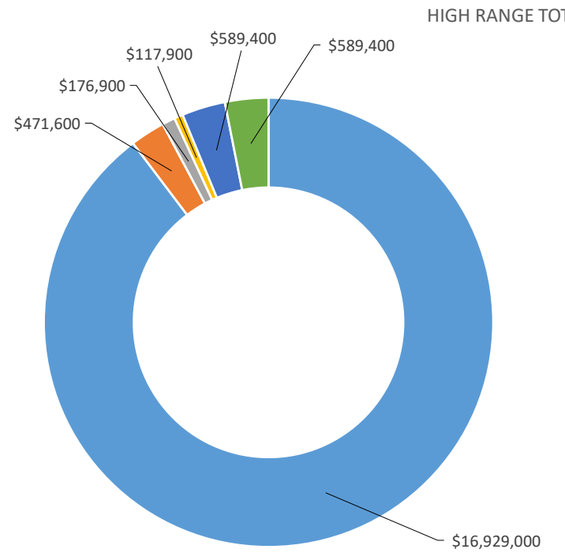


PHASE 9 PROJECT BUDGET WITH SOFT COSTS

BUDGET CATEGORY	% OF BUDGET
Construction Estimate Opinion of Cost	
Architecture and Engineering	8%
Administration	3%
Testing	2%
FF&E	10%
Project Contingency	10%







PHASE 9 COST ESCALATION PROJECTIONS

YEAR	ANNUAL ESCALATION RATE
2022	-
2023	16%
2024	10%
2025	10%
2026	8%
2033	8%
2043	8%
2053	8%

Please Note: In case of a recession, the annual escalation rate will be reduced to 0%.