

APPENDIX A

FIGURES

NASA-SONNY CARTER TRAINING FACILITY

EXECUTIVE SUMMARY

The Johnson Space Center Sonny Carter Training Facility (SCTF) Area Development Plan (ADP) provides analysis and planning to accommodate current and future mission capabilities and needs that align with the Ellington Field Planning Vision (below). Stakeholders attended a planning charrette from May 4-7, 2015 where they identified program requirements, analyzed the site, and developed a plan that provides flexibility, addresses needs, identifies attributes, and outlines a development carrying capacity of the land of 320,401sf which includes existing and proposed facilities.

Capacity Phase Calculations:

Existing Building Area: 278,401sf

Total New Building Area: 42,000sf

Total Demolished Building Area: 70sf

Net Building Area Capacity with Maximum Building Height: 320,401sf

Parking Calculations

Existing Parking: 489 spaces

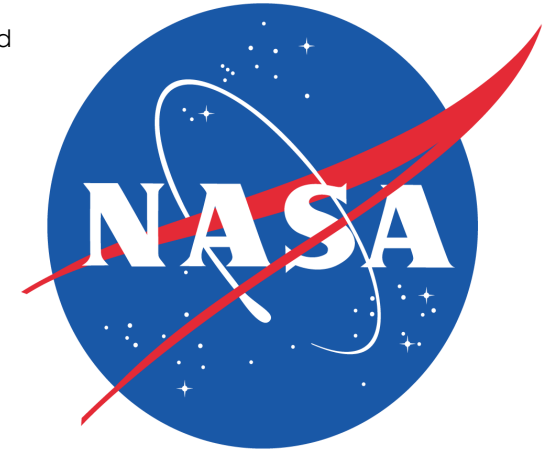
New Parking Spaces: 467 spaces

Demolished Parking: 489 spaces

Total Parking: 437 spaces

Current Required Parking: 437 spaces

Required Parking: 506 spaces



SONNY CARTER TRAINING FACILITY PLANNING VISION GOAL:

In support of the mission, Sonny Carter Training Facility will be a **flexible training and research complex with attractive workspaces, a unique environment for neutral buoyancy, and integrated labs and data centers.**

From this planning vision, four planning goals emerged to guide the development process:

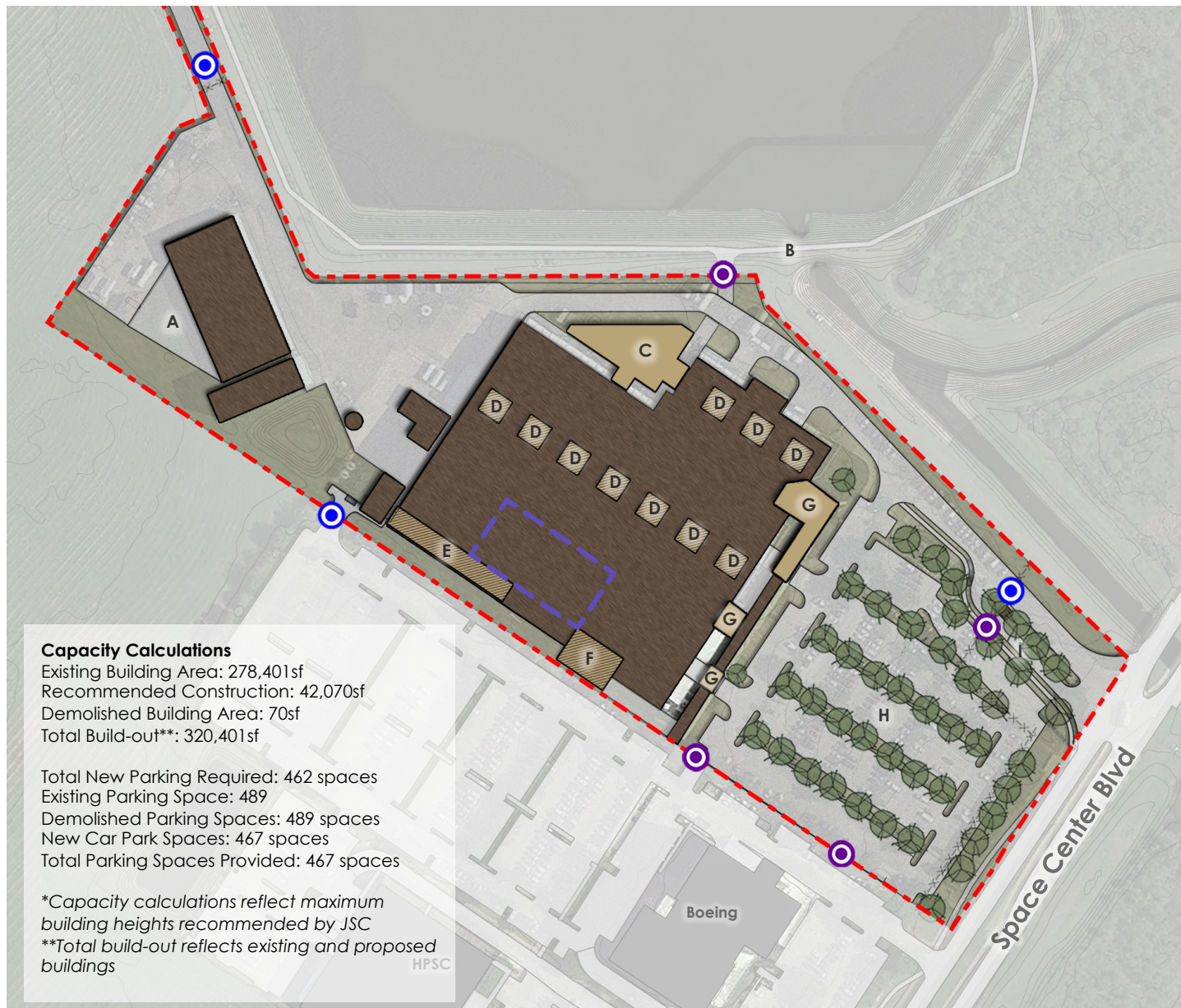
Goal 1: Flexible Training and Research Complex: Sonny Carter Training Facility needs a training and research complex that is flexible to meet the needs of today as well as future needs. This complex should be multi-story, with narrow wings, open floor plans, modular furniture, and covered walkways. Additionally the complex should provide adequate equipment and a large, adjacent laydown.

Goal 2: Attractive Workspaces: In order to provide attractive workspaces for the people at Sonny Carter Training Facility, new construction should incorporate views, natural lighting, arcades, varied workstations. Furthermore, buildings should have adequate HVAC and be ADA compliant with direct, efficient sidewalks. Amenities such as gyms and outdoor trails will also increase the appeal of these workspaces.

Goal 3: Unique Environment for Neutral Buoyancy: In order to preserve and improve the existing environment for neutral buoyancy at Sonny Carter Training Facility, the pool should be more water efficient through the use of more efficient boilers and reduced pumping hours. The pool also needs to maintain clarity for testing at significant depths. The structure to house the pool should be high enough to accommodate large cranes and humidity should be controlled to preserve electrical equipment and create a comfortable environment for the occupants.

Goal 4: Integrated Labs and Data Centers: New labs and data centers at Sonny Carter Training Facility should integrate raised floors to house cables, generators to provide stable power, and environmental controls to monitor humidity. The data centers should also include collaborative spaces, both inside and out, and provide transportation access to JSC.

SCTF ILLUSTRATIVE PLAN



Sonny Carter Training Facility Illustrative

- Property Boundary
- Topography 1'
- x-x-x Fenceline
- Existing Building
- Renovated Building
- Proposed Building
- Existing Pavement
- Open Space
- Vehicle Entrance
- Pedestrian Entrance
- Neutral Buoyancy Lab

- A Laydown Yard
- B Retention Pond Trail
- C Innovation & Inclusion Facility: 10,000sf (3-4 flrs)
- D Skylight Retrofit
- E Renovate Mezzanine Office
- F Renovate & Expand Gym: 2,000sf (1 flr)
- G Covered Walkway
- H Renovate Car Park for Efficiency.
- I Update Entrance & Signage



ENVIRONMENTAL CONSTRAINTS



Sonny Carter Training Facility Environmental Constraints

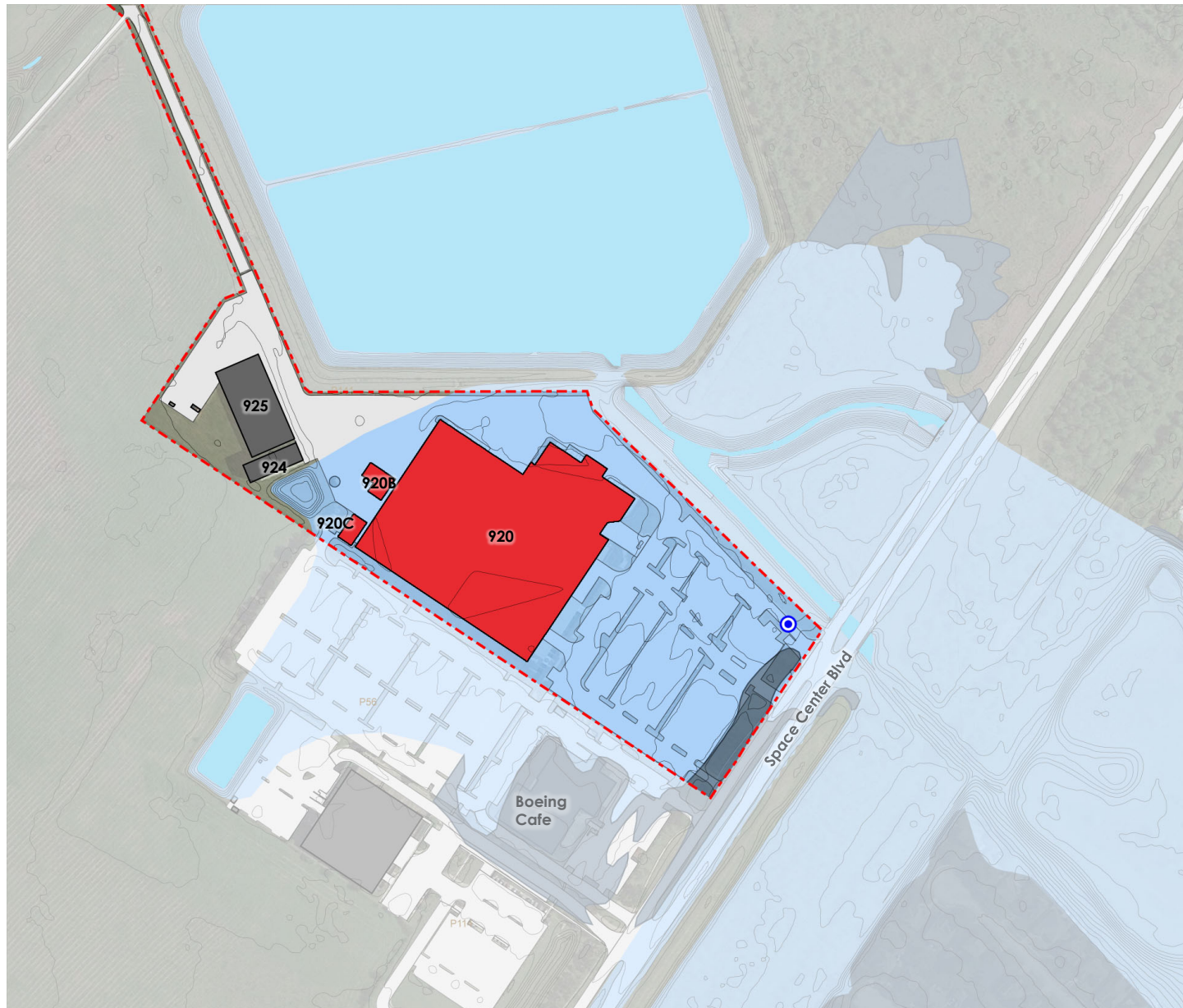
- Installation Boundary
- Topography 1'
- Existing Buildings
- Existing Pavement
- Surface Water
- Floodplain 100-year
- Floodplain 500-year
- Entry Gate

Flood events, wetlands, and protected areas affect where development is feasible within Sonny Carter Training Facility.

The 100-Year Flood Zone, or Base Flood Zone, has a 1% probability of a flood event occurring within any given year.



SCTF FLOODPLAIN



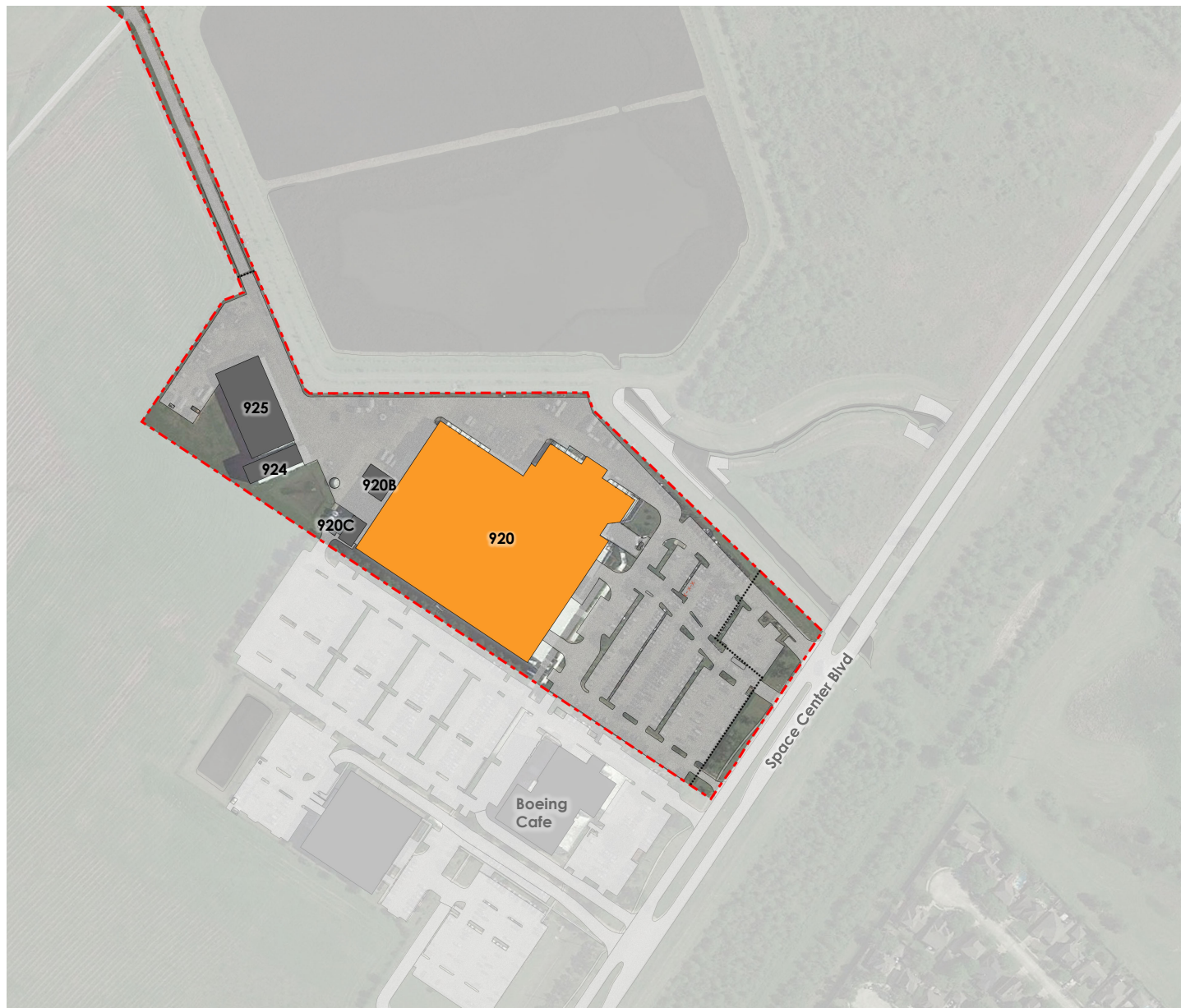
Sonny Carter Training Facility Floodplain

- Installation Boundary
- Topography 1'
- Existing Buildings
- Existing Pavement
- Surface Water
- Floodplain 100-year
- Floodplain 500-year
- Building in 100 year Floodplain
- Entry Gate

This drawings identifies existing buildings located within the 100-year floodplain. In an ideal world, these buildings would be removed if at all possible or barriers would be created to protect them from potential floods.



HISTORIC CONSTRAINTS



Sonny Carter Training Facility Historic Constraints

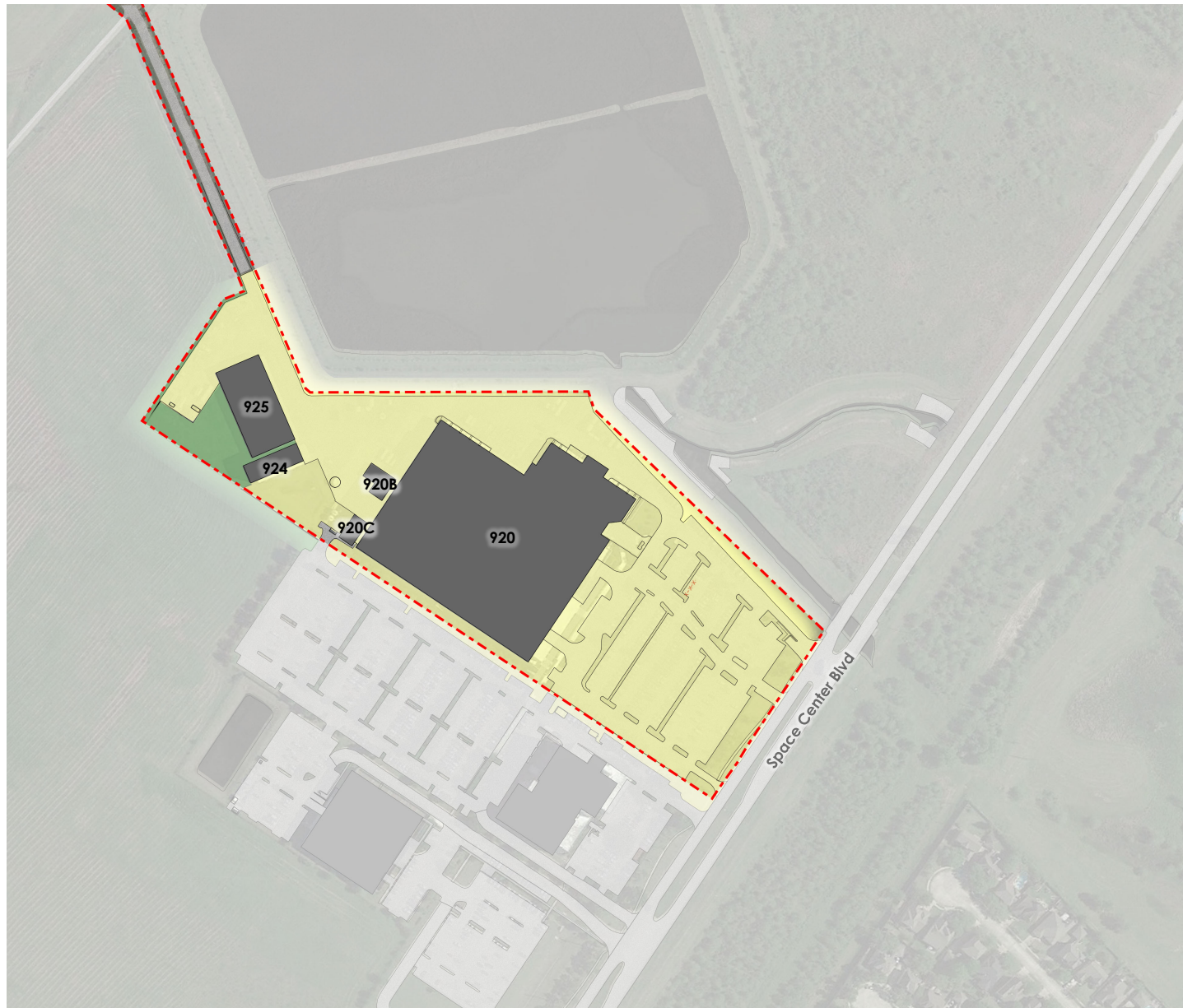
- Property Boundary
- Topography 1'
- x-x-x Fenceline
- Existing Buildings
- Existing Pavement
- Historic Eligible

Existing buildings, roads and paving are important man-made constraints. Depending on their efficiency, quality, and historical significance at the Sonny Carter Training Facility, they should be maintained to maximize use of past investments. Built elements at the pedestrian scale, such as sidewalks, play an important role in shaping how personnel view and experience a Center's outdoor space. Sonny Carter's Training Facility primary built constraints are its historically eligible buildings.



The Urban Collaborative, LLC

DEVELOPABLE AREA MAP



Sonny Carter Training Facility Developable Area Map

- Property Boundary
- Topography 1'
- x-x-x Fenceline
- Existing Buildings
- Existing Pavement
- Developable Area 1
- Developable Area 2
- Developable Area 3

Developable Area 1 is comprised of zones that are currently ready to be developed with little to no impact to the existing site. Considering only Developable Area 1 as sites primed for new construction represents the most conservative and feasible development approach.

Developable Area 2 is comprised of zones that are ready to be developed after minor mitigation. When added to the previous established Developable Area 1, this stage represents a moderately conservative approach to future development.

Developable Area 3 is comprised of zones that are in need of significant alteration in order to be developed. Combined with earlier stages of developable areas, this stage illustrates the most aggressive approach to new development with respect to environmentally sensitive areas and steep topography.

Total Study Area:	14.68 acres
Total Developable Area 1:	0.63 acres
Total Developable Area 2:	9.05 acres
Total Developable Area 3:	5.00 acres

Total Development Potential: 14.68 acres
Percent of Study Area: 100%



EXISTING CONDITIONS



**Sonny Carter Training Facility
Existing Conditions**

- Property Boundary
- Topography 1'
- x-x-x Fenceline
- Existing Building
- Renovated Building
- Proposed Building
- Existing Pavement
- Open Space
- Vehicle Entrance
- Pedestrian Entrance
- Neutral Buoyancy Lab



SHORT-TERM (2016-2026)



Sonny Carter Training Facility Short-Term Plan (0-10 Years)

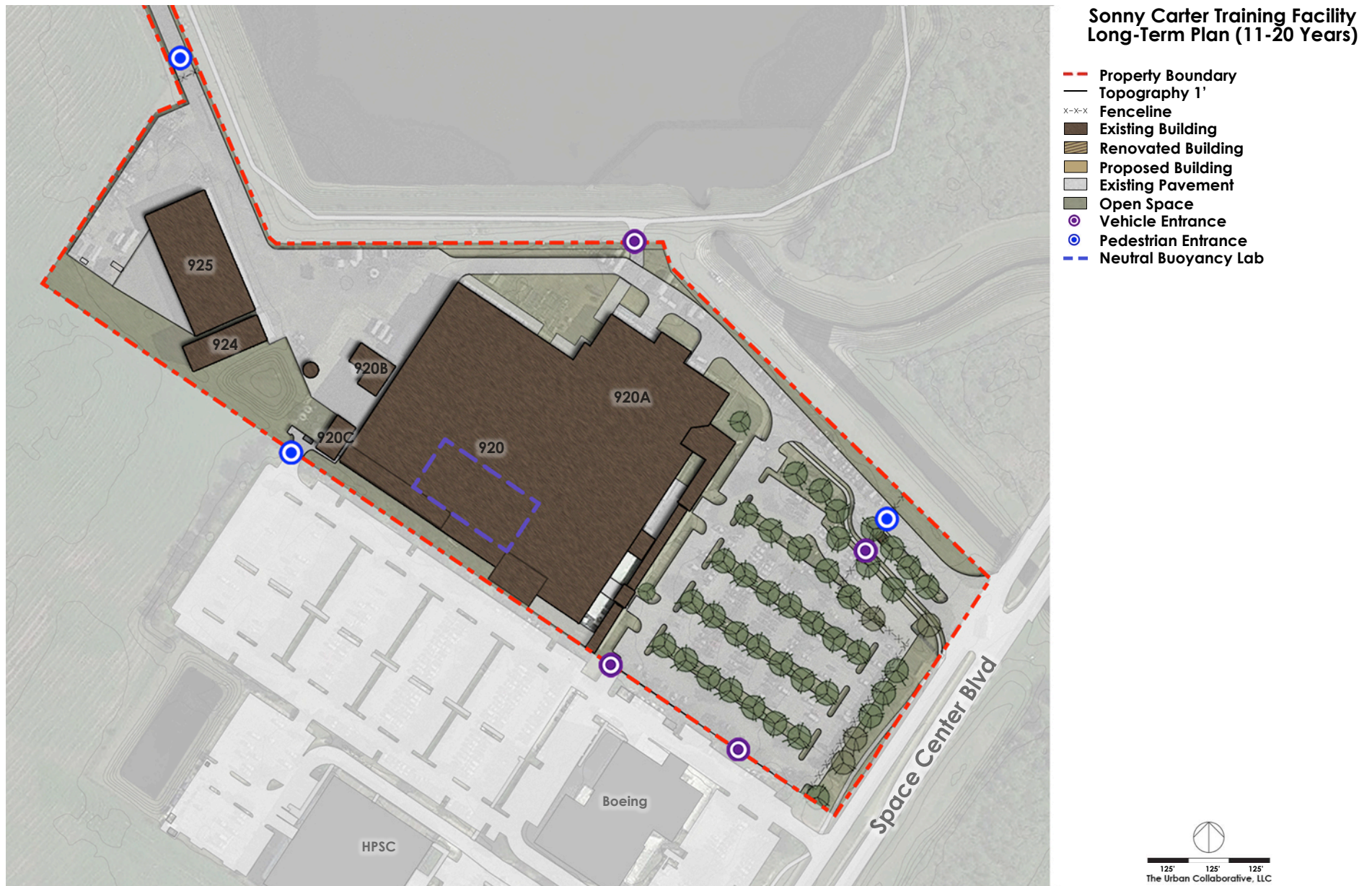
- Property Boundary
- Topography 1'
- x-x-x Fenceline
- Existing Building
- Renovated Building
- Proposed Building
- Existing Pavement
- Open Space
- Vehicle Entrance
- Pedestrian Entrance
- Neutral Buoyancy Lab

- A Laydown Yard
- B Retention Pond Trail
- C Renovate Mezzanine Office
- D Renovate and Expand Gym: 2,000sf (1 flr)
- E Covered Walkway
- F Renovate Car Park for Efficiency
- G Update Entrance and Signage
- H Turnstile Pedestrian Entrance

Note: above square foot calculations represent footprint of the building.



LONG-TERM (2027-2036)



CAPACITY PLAN (2037+)



Sonny Carter Training Facility Capacity Plan (20+ years)

- Property Boundary
- Topography 1'
- x-x-x Fenceline
- Existing Building
- Renovated Building
- Proposed Building
- Existing Pavement
- Open Space
- Vehicle Entrance
- Pedestrian Entrance
- Neutral Buoyancy Lab

- A Innovation & Inclusion Facility: 10,000sf (3-4 flrs)
- B Skylight Retrofit

Note: above square foot calculations represent footprint of the building.

