

# **APPENDIX A**

## **FIGURES**

# **NASA-JSC MAIN CAMPUS**

# EXECUTIVE SUMMARY

The Johnson Space Center Main Area Development Plan (ADP) provides analysis and planning for future growth capacity to accommodate current and future mission capabilities and needs that align with the JSC Planning Vision (below). Stakeholders attended a planning charrette from January 12-15, 2015 where they identified program requirements, analyzed the site, and developed a plan that provides flexibility, addresses needs, identifies attributes, and outlines a substantial development carrying capacity of the land. The at capacity Illustrative Plan identifies a total of 3,819,379sf total, including existing buildings that remain and newly proposed buildings.

## **Capacity Calculations**

Existing Building Area: 3,982,675sf

Recommended Construction: 636,819sf

Demolished Building Area: 800,115sf

Total Build-out: 3,819,379sf

Total New Parking Required: 6,164 spaces

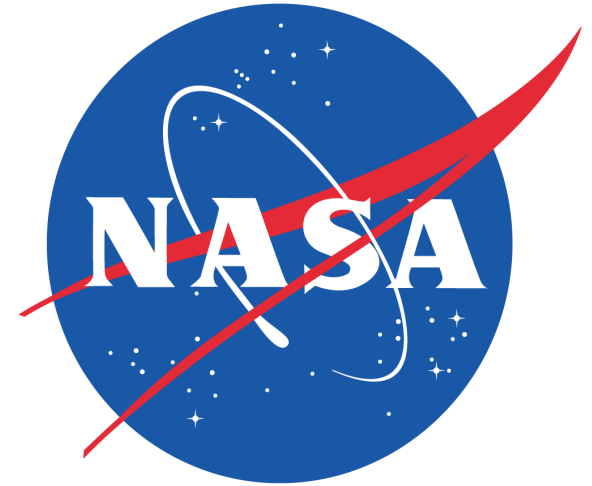
New Car Park Spaces: 6,554 spaces

New On-Street Parking Spaces: 95 spaces

Total Parking Spaces Provided: 6,649 spaces

Demolished Parking Spaces: 4,085 spaces

Net Parking Spaces Added: 2,564 spaces



## **NASA-JSC's PLANNING VISION:**

The Johnson Space Center Master Plan shall further Human Spaceflight by developing **resilient buildings, reliable infrastructure, safe and secure access, and a livable campus.**

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

**Goal 1: Resilient Buildings:** JSC will build durable, energy efficient facilities that are flexible, accommodate multiple uses, and are conducive to modern workforce needs. They will provide natural lighting and views to foster a connection to the environment.

**Goal 2: Reliable Infrastructure:** JSC will create and maintain a reliable and efficient infrastructure which will minimize disruption to its mission and to those utilizing the facilities. JSC's infrastructure shall incorporate technologies to enable savings and minimize repairs.

**Goal 3: Safe & Secure Access:** JSC will host safe and secure multi-modal transit routes that connect the campus to support a healthy workplace. JSC will ensure that the campus is accessible and secure for walking, biking, and driving.

**Goal 4: Livable Campus:** JSC is a sustainable work space that creates functional neighborhoods and collaborative spaces connected through enhanced green space pathways that are pedestrian and bike friendly. The planned campus creates opportunities for employees to recharge and collaborate while preserving ecosystems and biodiversity.

# ILLUSTRATIVE PLAN



## Johnson Space Center (JSC) Illustrative Plan (20+ years)

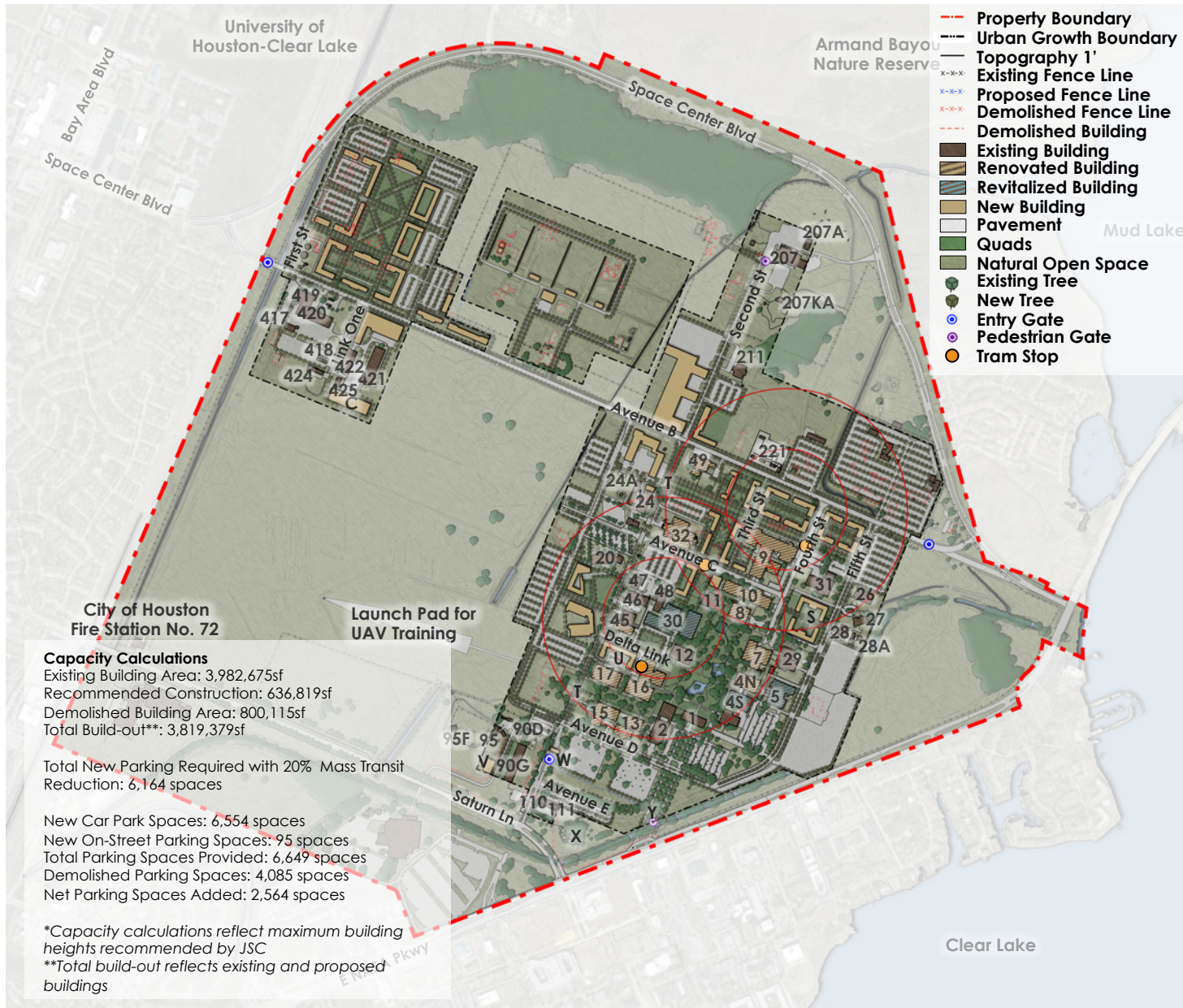
- Property Boundary
- Urban Growth Boundary
- Topography 1'
- x-x-x- Existing Fence Line
- x-x-x- Proposed Fence Line
- x-x-x- Demolished Fence Line
- Demolished Building
- Existing Building
- Renovated Building
- Revitalized Building
- New Building
- Pavement
- Quads
- Natural Open Space
- Existing Tree
- New Tree
- Entry Gate
- Pedestrian Gate
- Tram Stop
- 5-Minute & 10-Minute Walk

- A Notional Collaboration Campus: 375,000sf (2-4 flrs) 11 bldgs
- B Consolidated Logistics Warehouse: 90,000sf (1-2 flrs)
- C Consolidated Logistics Warehouse: 61,000sf (1-2 flrs)
- D Consolidated Environmental Complex: 61,000sf (2-4 flrs) 3 bldgs
- E ESTA STAR Lab Consolidation: 37,000sf (1-2flrs) 6 bldgs
- F Notional Logistics Building: 235,000sf (1-2 flrs)
- G Notional Logistics Building: 35,000sf (2-4 flrs)
- H Consolidated Operations and Maintenance Site: 76,000sf (2-4 flrs)
- I Building 24 Expansion (CHP): 5,500sf (2-4 flrs)
- J Campus Greenway
- K Notional Buildings: 232,000sf(2-4 flrs) (12 bldgs)
- L Additional Car Park: 2,500 Spaces
- M Scientific Curation Facility: 16,000sf (2-4 flrs)
- N Move 2nd Street Traffic Outside Campus Core
- O Engineering Innovation Complex: 71,000sf (2-4 flrs) 3 bldgs
- P Notional Bldg: 37,000sf (2-4 flrs)
- Q Building 21: 117,878sf Total
- R Building 10 Addition: 19,000 (2-4 flrs)





# ILLUSTRATIVE PLAN (cont.)



## Johnson Space Center (JSC) Illustrative Plan (20+ years)

- S** Notional Courtyard Building: 63,000sf (2-4 flrs) 2 bldgs
- T** 2nd Street Pedestrian Mall
- U** Notional Building: 34,000 (2-4 flrs)
- V** Scientific Curation and Robotics: 13,000sf (2-3 flrs)
- W** Gate Upgrade & Relocation
- X** Publicly Accessible Astronaut Grove
- Y** Historic Entry Pedestrian Mall

**Revitalize Buildings:** 4S, 5, 9, 10, 30M  
**Refurbish Buildings:** 4N, 7, 8, 9, 10, 13, 15, 16, 17, 32, 45, 49

**Demolished Buildings:** 14, 18, 19, 32M, 32Q, 33, 35, 36, 36D, 37, 37A, 37AA, 37B, 37J, 39A, 39B, 41, 42, 43, 44, 50, 52, 56, 57, 59, 105, 220, 222, 222A, 222B, 222F, 222K, 222M, 227, 227B, 228, 229, 230, 231, 232, 260, 261, 262A, 62B, 263, 263A, 264, 266, 267, 272, 304, 304A, 321, 323, 323H, 325, 325A, 325B, 326, 326A, 326C, 326D, 326E, 326J, 326L, 326N, 326P, 327, 328, 328D, 328E, 329, 329A, 329C, 330, 331, 333, 333A, 334, 335, 336, 337, 338, 342, 342A, 343, 347, 348, 349, 350, 350FD, 351, 351A, 352, 352A, 352B, 353, 353H, 354, 354A, 354B, 354D, 354DA, 354DB, 354K, 354M, 354P, 355, 356A, 356AA, 356AJ, 356B, 356BA, 356BD, 356C, 356D, 356E, 357, 358AA, 358A, 358E, 358F, 358H, 358J, 358K, 358L, 358M, 359, 360, 361, 380, 381, 382, 383, 412, 413, 416, T588

\*See Demolition Plan for location of demolished facilities





# HISTORIC CONSTRAINTS



## Johnson Space Center (JSC) Historic Constraints

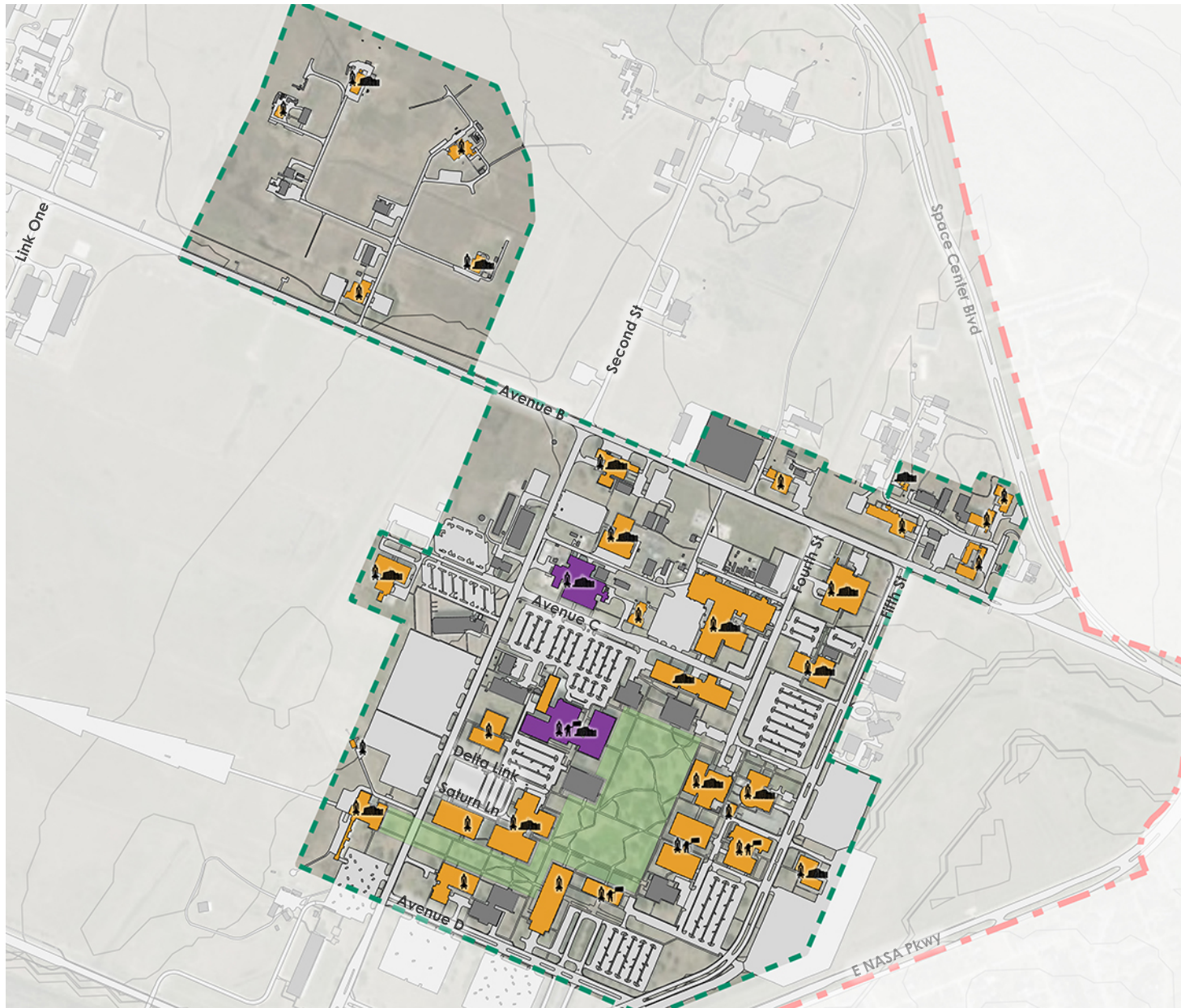
- Property Boundary
- Urban Growth Boundary
- Topography 1'
- Existing Building
- Existing Pavement
- Historic Landmark
- Historic Eligible

Existing buildings, roads and paving are important man-made constraints. Depending on their efficiency, quality, and historical significance at Johnson Space Center, 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. JSC Main's primary built constraints are its historically eligible buildings and its historic buildings.





# HISTORIC CONSTRAINTS



## Johnson Space Center (JSC) Historic Buildings & Landmarks

- Property Boundary
- Urban Growth Boundary
- Topography 1'
- Existing Building
- Existing Pavement
- Historic District
- National Historic Landmark
- Historic Eligible (NRHP)
- Historic Quad
- Event Historic - Criterion A
- Person Historic - Criterion B
- Design/Construction Historic - Criterion C

Buildings are evaluated as they meet criteria for the National Register of Historic Places (NRHP) as follows:

Criterion A, "Events," The property must make a contribution to the major pattern of American history. (Space Exploration)

Criterion B, "Person," is associated with significant people of the American past.

Criterion C, "Design/Construction," concerns the distinctive characteristics of the building by its architecture and construction, including having great artistic value or being the work of a master

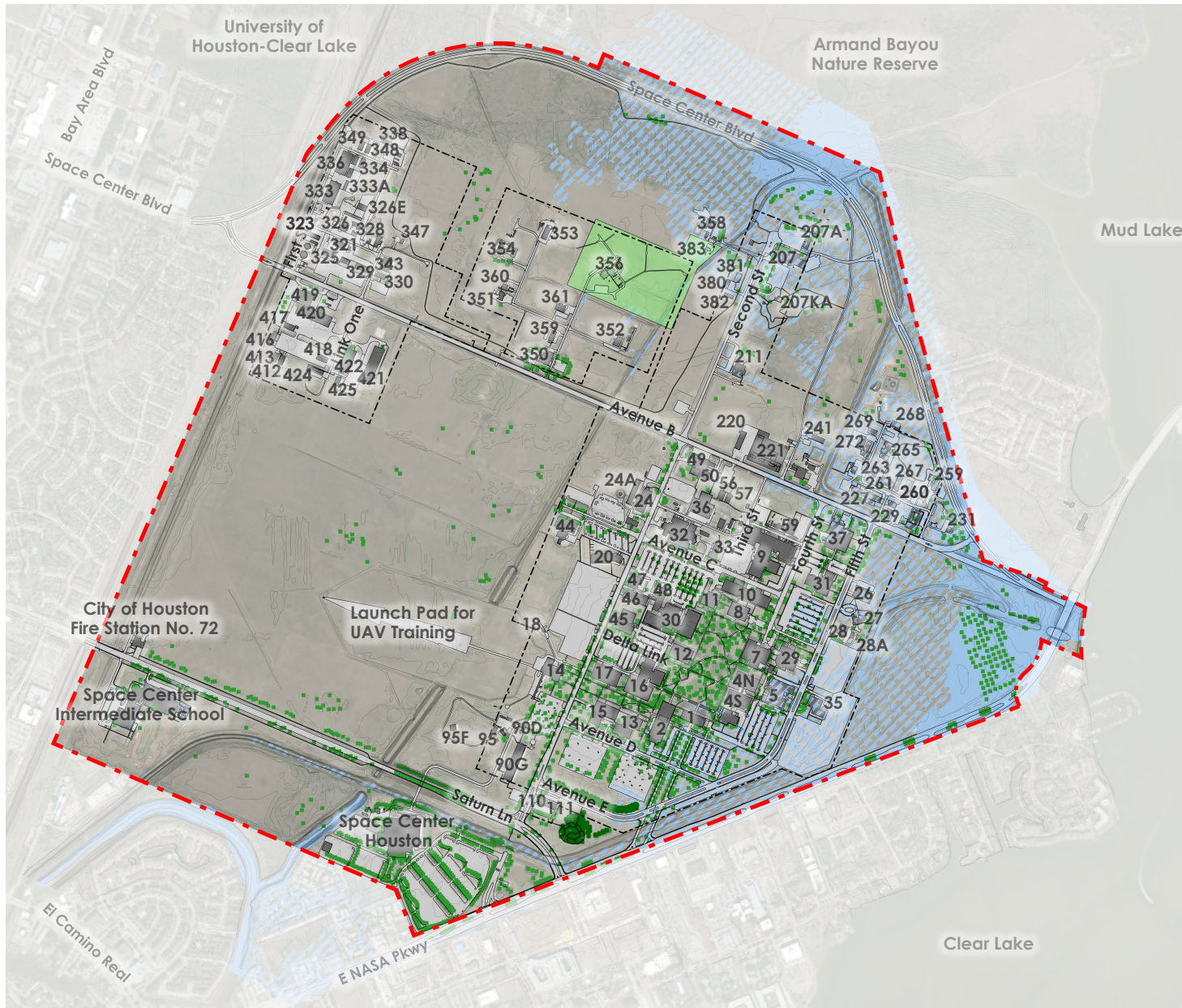
NRHP establishes a system for identifying and registering such resources

The analysis teams photographed all streets and measured their dimensions and quality. The quality of the street was determined based on whether or not the street had all, some or none of the following qualities: curbs, planting strips, sidewalks, and adequate pavement. All parking lots and on-street parking spaces were identified and documented. The analysis teams counted every space to ensure that the appropriate number of parking spaces are available to support development in the area.





# JSC MAIN ENVIRONMENTAL CONSTRAINTS



## Johnson Space Center (JSC) Environmental Constraints

- Property Boundary
- Urban Growth Boundary
- Topography 1'
- Species Sites
- Memorial Trees
- ▨ 500-year Floodplain
- 100-year Floodplain
- ESTA Environmental Cleanup

The Johnson Space Center faces unique natural and built constraints due to its location. Primary environmental constraints include the 100 and 500 year floodplain and numerous mature trees, which are clearly assets to be preserved.



# JSC MAIN DEVELOPABLE AREA



## Johnson Space Center (JSC) Developable Area

- Property Boundary
- Urban Growth Boundary
- Topography 1'
- Existing Building
- Existing Pavement
- Developable Area 1
- Developable Area 2
- Developable Area 3
- Historic Eligible

**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.

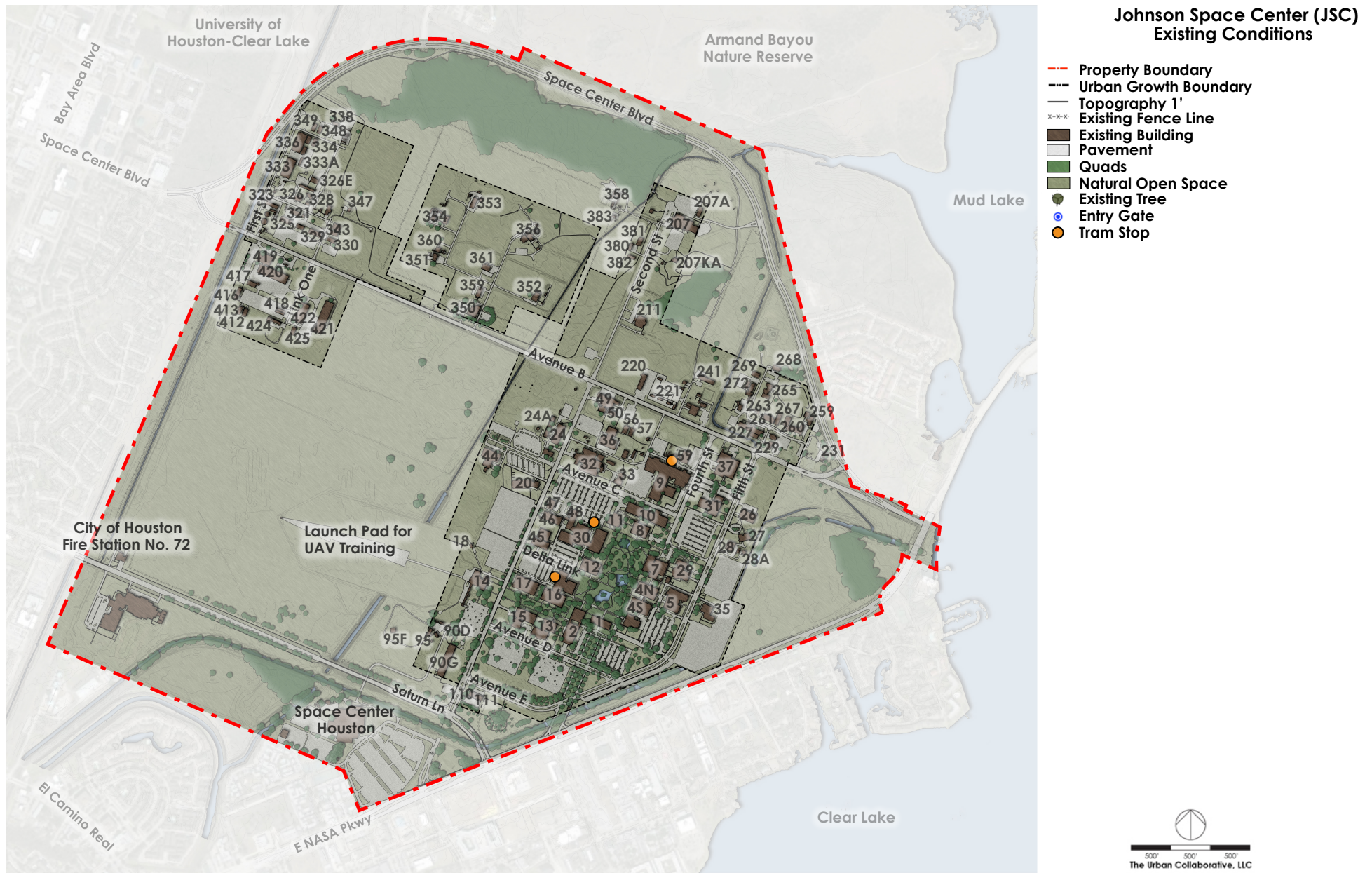
<b>Total Study Area:</b>	<b>436 acres</b>
<b>Total Developable Area 1:</b>	<b>178.4 acres</b>
<b>Total Developable Area 2:</b>	<b>201.6 acres</b>
<b>Total Developable Area 3:</b>	<b>8.5 acres</b>

<b>Total Development Potential:</b>	<b>388.5 acres</b>
<b>Percent of Study Area:</b>	<b>89.1%</b>





# EXISTING CONDITIONS





# SHORT-TERM (2016-2026)



## Johnson Space Center (JSC) Short-Term (0-10 Years)

- Property Boundary
- Urban Growth Boundary
- Topography 1'
- - - Existing Fence Line
- - - Proposed Fence Line
- - - Demolished Fence Line
- Demolished Building
- Existing Building
- Renovated Building
- Revitalized Building
- New Building
- Pavement
- Quads
- Natural Open Space
- Existing Tree
- New Tree
- Entry Gate
- Pedestrian Gate
- Tram Stop
- A** Consolidated Operations and Maintenance Site: 76,000sf (2-4 flrs)
- B** Building 24 Expansion (CHP): 5,500sf (2-4 flrs)
- C** Engineering Innovation Complex, Phase 1: 80,000sf (2-4 flrs)
- D** Revitalize Buildings 9 and 10 as Design, Development, Testing, And Evaluation Manufacturing (DDT&E)
- E** Building 21: 117,878sf Total
- F** Gate Upgrade & Relocation
- G** Historic Entry Pedestrian Mall
- H** Publicly Accessible Astronaut Grove
- I** Additional Car Park: 460 spaces

**Revitalized Buildings:** 4S, 9, 10, 30M

**Renovated Building:** 4N

**Demolished Buildings:** 18, 35, 36, 36D, 37, 37A, 37AA, 37B, 37J, 105, 222, 222A, 222B, 222F, 222K, 222M, 228, 229, 230, 231, 232, 261, 262A, 262B, 263, 263A, 264, 266, 267, 272, 304, 304A, 321, 325, 325A, 325B, 326, 326A, 326C, 326D, 326E, 326J, 326L, 326N, 326P, 327, 328, 328D, 328E, 329, 329A, 329C, 330, 331, 333, 333A, 334, 335, 336, 337, 338, 342, 342A, 348, 349, 356A, 356AA, 356B, 356BA, 356BD, 356C, 356D, 356E





# LONG-TERM (2027-2036)



## Johnson Space Center (JSC) Long-Term (11-20 Years)

- Property Boundary
- Urban Growth Boundary
- Topography 1'
- - - Existing Fence Line
- - - Proposed Fence Line
- - - Demolished Fence Line
- - - Demolished Building
- - - Existing Building
- - - Renovated Building
- - - Revitalized Building
- - - New Building
- - - Pavement
- - - Quads
- - - Natural Open Space
- - - Existing Tree
- - - New Tree
- - - Entry Gate
- - - Pedestrian Gate
- - - Tram Stop

- A Consolidated Logistics Warehouse: 61,000sf (1-2 flrs)
- B Consolidated Environmental Facility: 13,000sf (2-4 flrs)
- C ESTA STAR Lab Consolidation: 37,000sf (1-2flrs) 6 bldgs
- D Move 2nd Street Traffic Outside Campus Core
- E 2nd Street Pedestrian Mall
- F Campus Greenway
- G Engineering Innovation Complex, Phase 2: 140,000sf (2-4 flrs)
- H Renovate Mezzanine in Bldg 9 and 10
- I Additional Car Park: 2094 spaces Total
- J Scientific Curation Facility: 16,000sf (2-4 flrs)
- K Scientific Curation and Robotics: 27,000sf (2-3 flrs)

### Revitalized Building: 5

Renovated Buildings: 8, 9, 10, 17, 45

**Demolished Buildings:** 19, 32M, 32Q, 39A, 39B, 41, 42, 43, 50, 52, 220, 227, 227B, 260, 323, 323H, 350, 350F, 351, 351A, 352, 352A, 352B, 353, 353H, 354, 354A, 354B, 354D, 354DA, 354DB, 354K, 354M, 354P, 355, 357, 358AA, 358A, 358E, 358F, 358H, 358J, 358K, 358L, 358M, 359, 360, 361, 380, 381, 382, 383, 412, 413, 416, T588





# CAPACITY PLAN (2037+)



## Johnson Space Center (JSC) Capacity (20+ Years)

- Property Boundary
- Urban Growth Boundary
- Topography 1'
- x-x-x- Existing Fence Line
- x-x-x- Proposed Fence Line
- x-x-x- Demolished Fence Line
- Demolished Building
- Existing Building
- Renovated Building
- Revitalized Building
- New Building
- Pavement
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- Natural Open Space
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- Entry Gate
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- Tram Stop

- A Notional Collaboration Campus: 375,000sf (2-4 flrs) 11 bldgs
- B Consolidated Logistics: 90,000sf (1-2 flrs)
- C Environmental Complex Expansion: 18,000sf (2-4 flrs)
- D Environmental Complex Expansion: 30,000sf (2-4 flrs)
- E Notional Consolidated Logistics Facility: 235,000sf (1-2 flrs)
- F Notional Logistics Facility: 35,000sf (2-4 flrs)
- G Notional Buildings: 243,000sf (2-4 flrs) (13 bldgs)
- H Additional Car Park: 335 spaces
- I Building 10 Addition: 19,000 (2-4 flrs)
- J Notional Courtyard Building: 63,000sf (2-4 flrs) 2 bldgs
- K Notional Bldg: 37,000sf (2-4 flrs)
- L Notional Building: 34,000sf (2-4 flrs)

**Renovated Buildings:** 7, 13, 15, 16, 32, 35, 49

**Demolished Buildings:** 14, 33, 44, 56, 57, 59, 343, 347

