Appendix 2-1

# Proposed Master Plan, Development Guidelines, and Standards

# BERKELEY SPACE CENTER

AT NASA RESEARCH PARK

# MASTERPLAN
# SPRING 2026

Berkeley UNIVERSITY OF CALIFORNIA SKS

# BERKELEY SPACE CENTER

## MASTER PLAN

Issued Spring 2026

## PROJECT TEAM

Berkeley University of California

SKS

h+k

fieldoperations

LANGAN

BKF

LMSA

eki environment & water

ARUP

Fehr & Peers

Sherwood Design Engineers

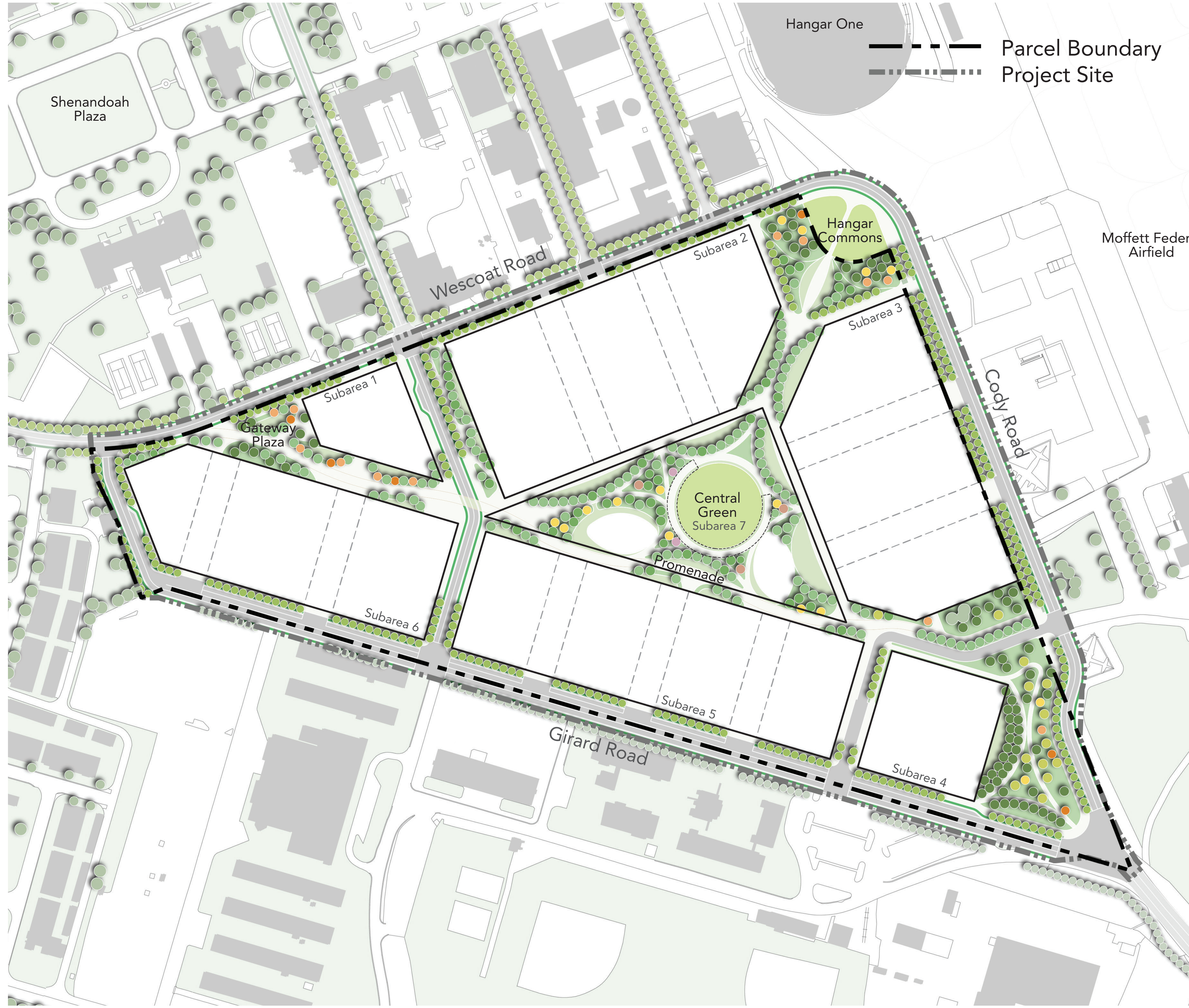
# TABLE OF CONTENTS

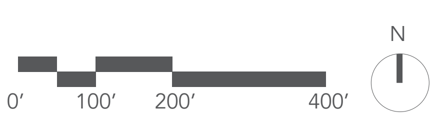
# EXECUTIVE SUMMARY

# PROJECT SITE PLAN

While there are a number of available development parcels throughout NASA ARC, the NASA Research Park (NRP) site stands out as the obvious location for the deployment of a new research and innovation-oriented development – the Berkeley Space Center at NASA Research Park. Beyond its strategic location adjacent to Shenandoah Plaza and Moffett Federal Airfield, there are a number of reasons for the site's desirability including its connectivity to U.S. 101 and the regional transit system; the fact that the parcel is currently publicly held; and its sheer size, with a 39-acre Project Site. However, perhaps the most appealing feature of the Project Site is its adjacency to both an established research campus at NASA ARC with remarkable, largest-of-their-kind facilities including wind tunnels and supercomputers, as well as a private-industry pioneer with Google's Planetary Ventures in Hangar One.

Indeed, what distinguishes the Berkeley Space Center from other global research developments is both physical and logistical. Every development of this type must offer state-of-the-art lab and office facilities; cultural and lifestyle amenities; adjacencies to recognized centers of innovation; partnerships with institutions of academic excellence; a defined industry cluster that provides the critical mass of infrastructure, facilities, people and amenities; and a location that offers attractive live/work options to draw global talent. The Master Plan provides a vision to achieve all of the above, by leveraging its strategic position within a growing aerospace cluster and providing a compelling spatial framework for a world-class research environment.




Site Context Illustrative Plan

EXECUTIVE SUMMARY

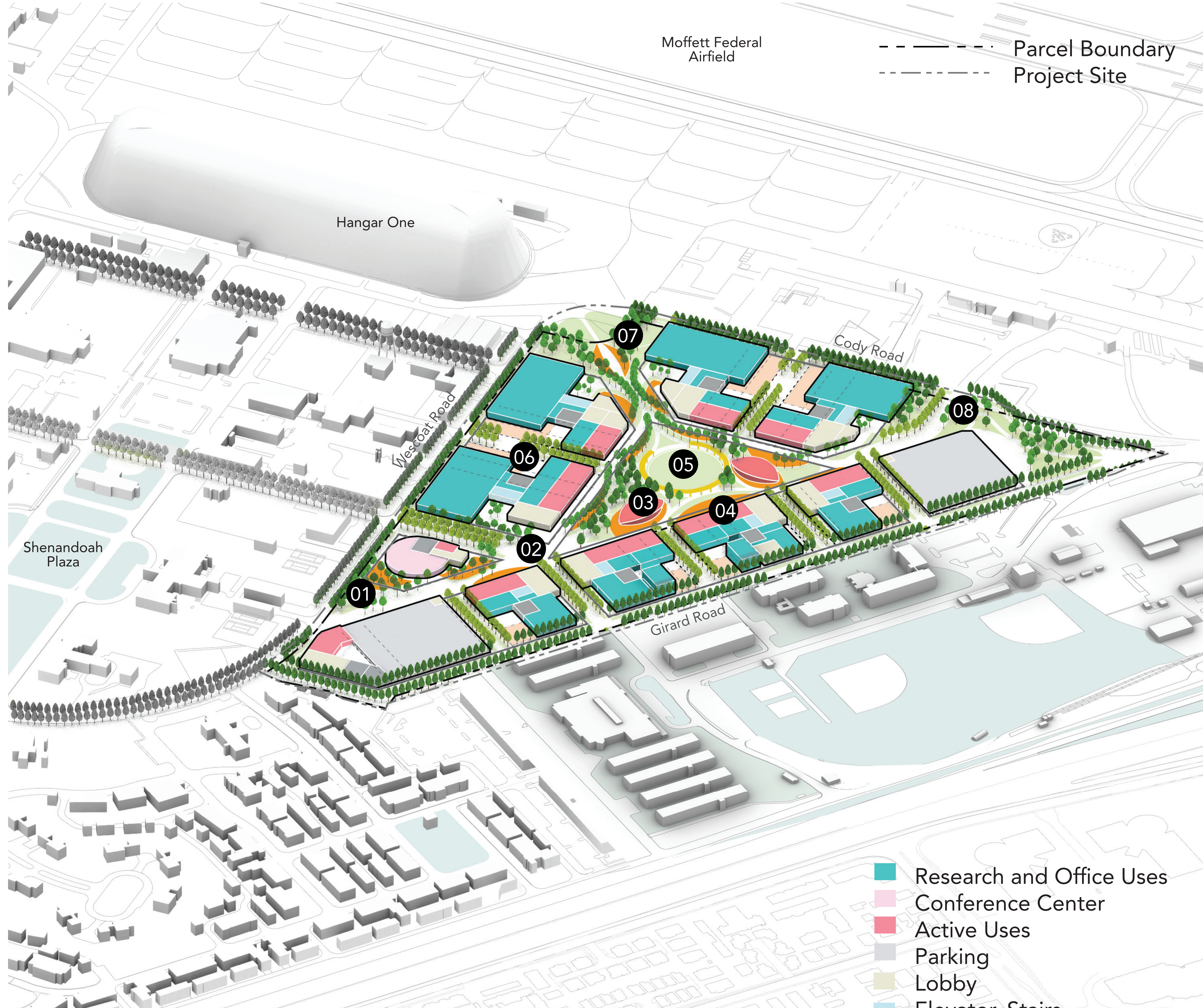
# PROGRAMMING & PLACEMAKING

The Berkeley Space Center is envisioned as part of a larger research and innovation ecosystem; therefore, any redevelopment will have a transformative effect on the broader social, intellectual and economic dynamics of NASA ARC and Moffett community. We believe that programming, in particular the ground level programming of interior and exterior spaces, is as much about creating a place as it is about organizing use, circulation and other logistics.

We hold that science and research work best in an environment that forces interaction. The Master Plan for Berkeley Space Center seeks to create such a place, with a critical mass of people that's needed for productive and innovative research.

## LEGEND

01. Welcoming Gateway Plaza is activated by conference facility.
02. Shaded pedestrian Promenade extends through the site to link buildings and program spaces.
03. Amenity pavilions animate the Central Green with retail, food and beverage, and exhibition functions.
04. Active ground floor uses extend outdoors into patios around the Central Green.
05. The open Central Green area, framed by a solar shade canopy, provides a flexible platform for activity and exhibition.
06. Outdoor, multi-purpose service yards adjacent to high bay facilities increase the site's functionality.
07. Hangar Commons provides necessary environmental functions and a striking view of Hangar One.
08. Strategic vehicular entrance and parking provide efficient access and ensure a pedestrian-oriented district.




Illustrative Ground Floor Uses Diagram

# THE PLACES

With the goal of fostering a collaborative "knowledge community" for advanced technological research and development, it is critical to note that state of the art offices and lab facilities alone cannot engender great research and promote the development of a strong collaborative culture. The setting in which cutting edge research and innovation takes place is as critical a component of a successful research community as the facilities themselves.

In this Master Plan, we outline a comprehensive vision, linking building, landscape, movement, environment, sustainability and larger social and intellectual missions into one. The Berkeley Space Center is much more than a research facility; it is a bustling hub of innovation, creativity, and inspiration. The design vision choreographs the environment for communal interaction, enhancing the possibility for new synergies and ideas and building a truly urban community.

As any research scientist can tell you, technological innovations rarely last more than a decade. Great public spaces and their impact though, can last a lifetime.

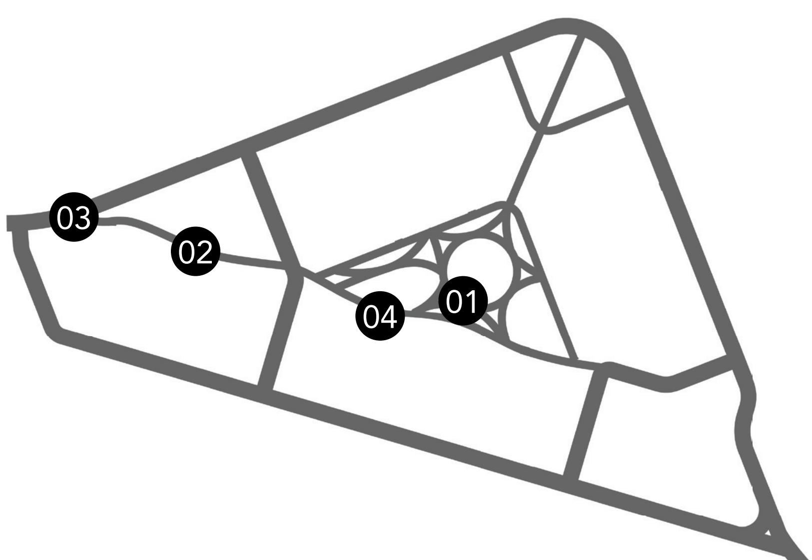

01: View from the Central Green to Hangar One


02: Looking east down the Promenade


03: Gateway Plaza


04: Native and Woodland Planting

Illustrative Renderings of Public Spaces




Public Spaces Key Map Diagram

# BERKELEY SPACE CENTER'S CENTRAL GREEN

The Central Green and Solar Canopy at Berkeley Space Center with Hangar One beyond

EXECUTIVE SUMMARY
# HANGAR VIEW AT THE CENTRAL GREEN

The Solar Canopy provides dappled shade over the walking path encircling the Central Green and opens up with views to Hangar One

EXECUTIVE SUMMARY

# HANGAR VIEW AT THE CENTRAL GREEN

The Solar Canopy provides activation and interest at night with a programmable or interactive display

# LAND USE

# LAND USE

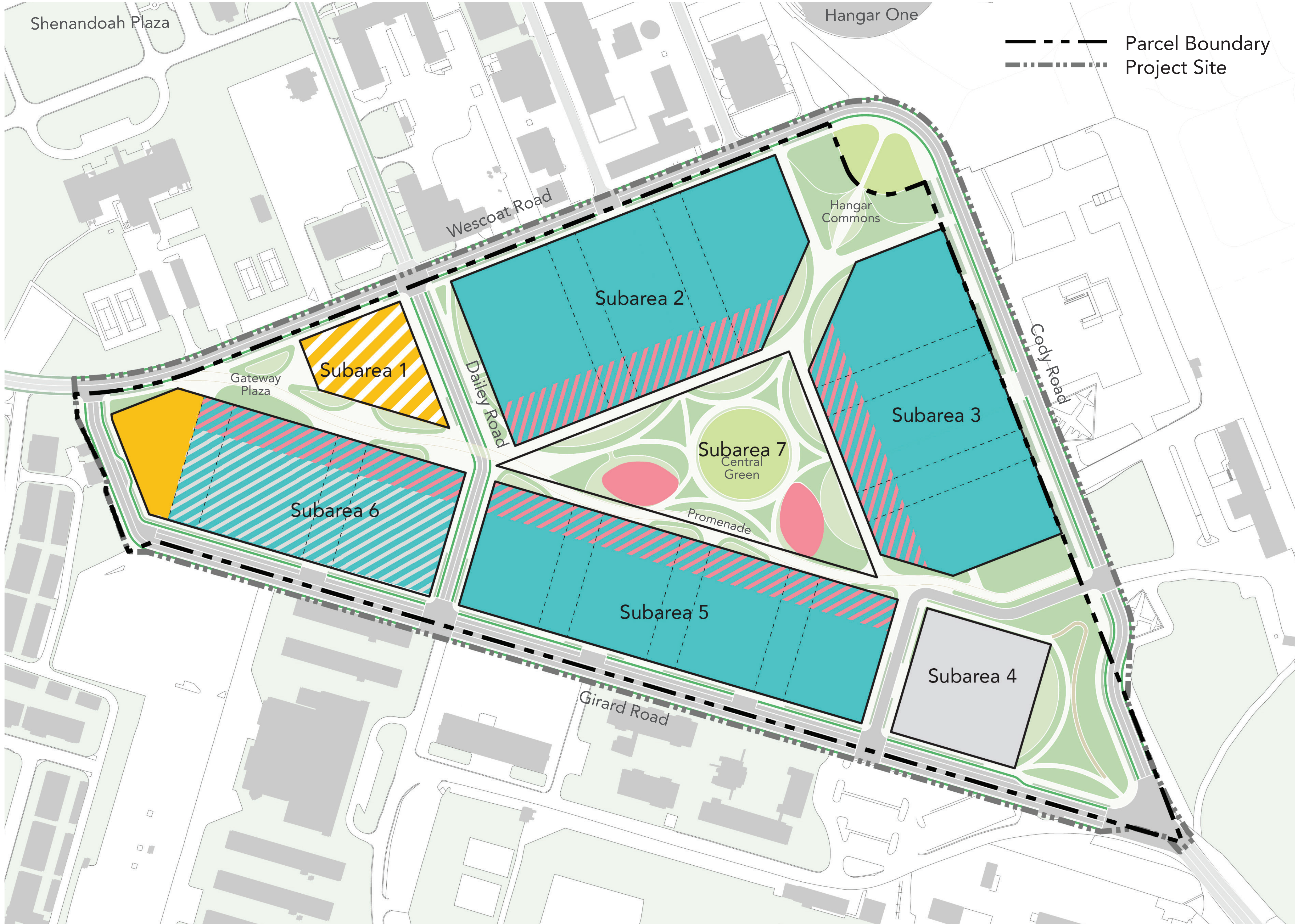
Research and Office Uses frame the Project Site, including along the north-western boundary with Shenandoah Plaza to create positive synergies. Active Uses are around the Central Green, with additional active uses located at the center to create a focal point for this large open space. Student /Faculty Housing is concentrated at the south-western corner of the Project Site.

## LEGEND

- Research and Office Uses
- Research and Office Uses and Parking
- Research and Office Uses and Ground Floor Active Uses
- Student / Faculty Housing
- Conference Uses and Short-term Lodging
- Active Uses
- Parking
- Open Space

0' 100' 200' 400'

N



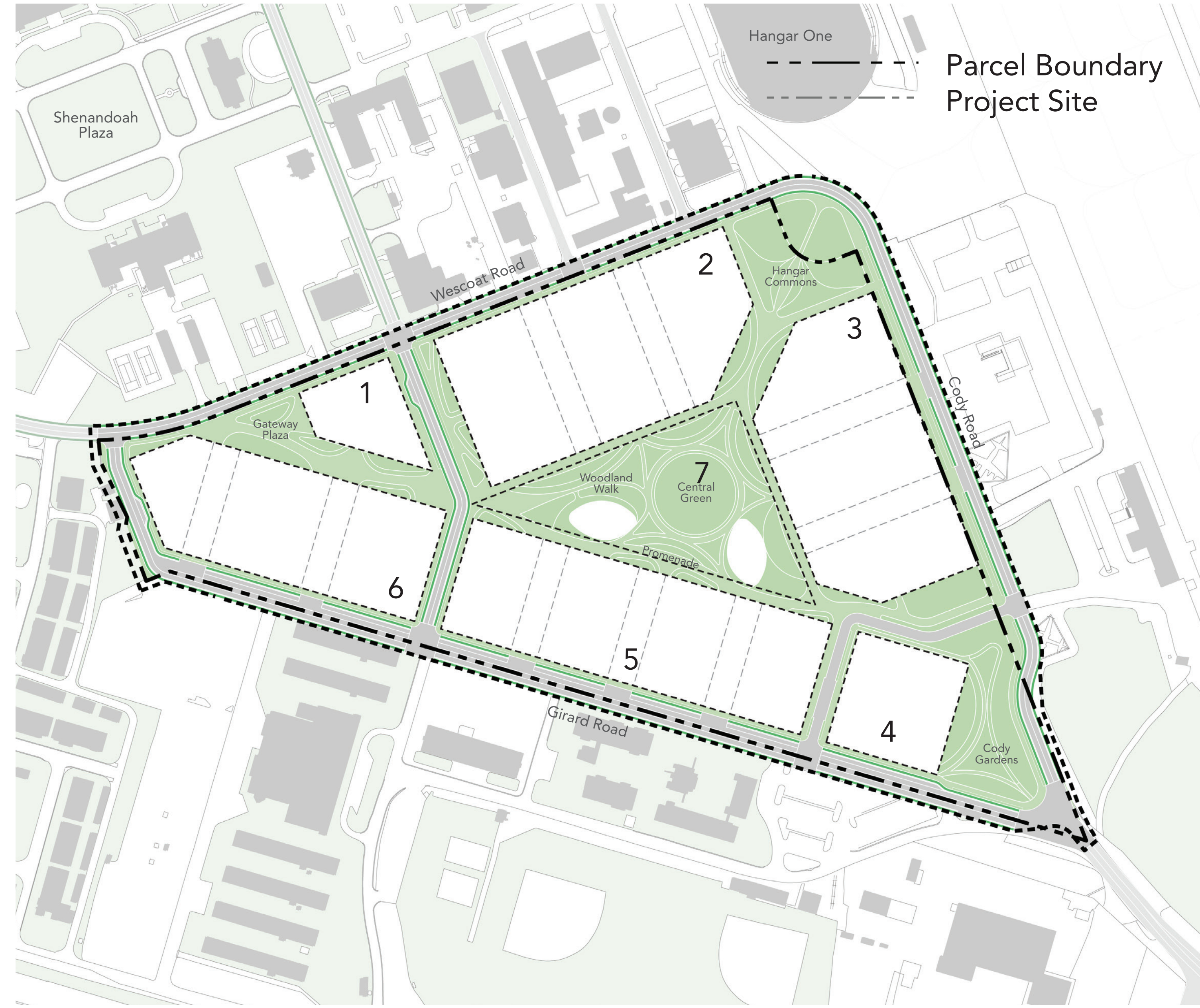

Conceptual Project Site Plan

## LAND USE
# PARCEL COVERAGE

| Site Area | Acres* | Square Feet | % |
|---|---|---|---|
| Subarea Area | 20.84 | 907,962 | 60% |
| Subareas 1-6 Coverage | | | 100% |
| Subareas 7 Coverage | | | 11% |
| Streets (Curb-Curb) | 3.19 | 138,941 | 9% |
| Open Space | 10.89 | 474,225 | 31% |

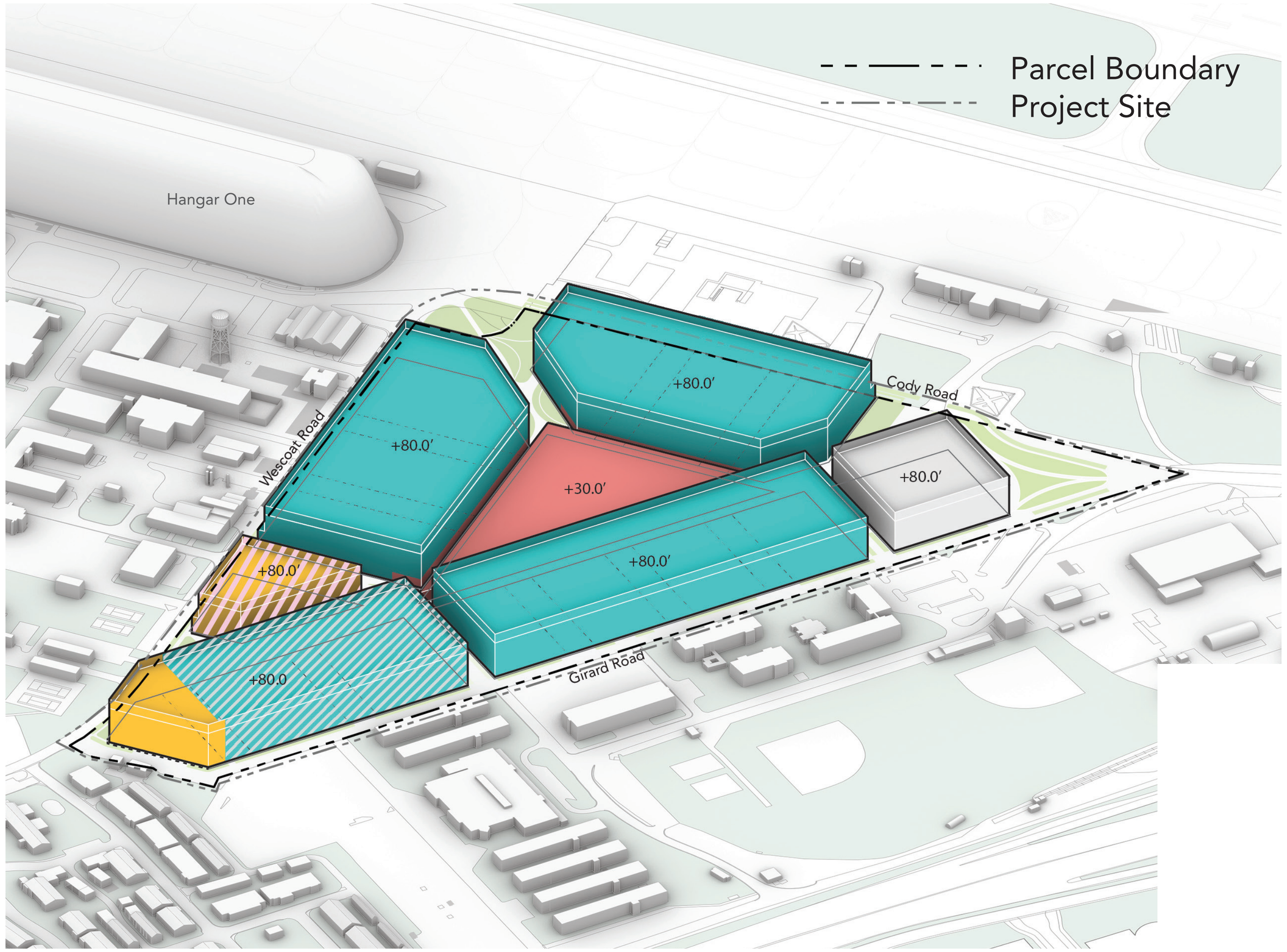
| Pervious Impervious Area | Acres* | Square Feet | % |
|---|---|---|---|
| Pervious Area<br>Includes Landscaping, Vegetation, Open Space, Permeable Paving, Rooftop Landscaping | 7.41 | 322,795 | 21% |
| Impervious Area<br>Includes building footprints, surface parking, infrastructure | 27.51 | 1,198,333 | 79% |

* 34.9 Acres used for Premise Calculations



Illustrative Project Site Plan

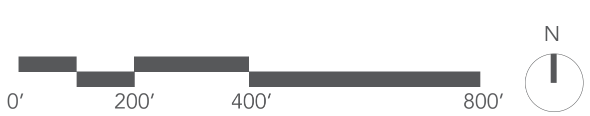
# DEVELOPMENT PROGRAM




Illustrative Full Development in Project Site

## LEGEND

- Research and Office Uses
- Research and Office Uses and Parking
- Research and Office Uses and Ground Floor Active Uses
- Student / Faculty Housing
- Conference Uses and Short-term Lodging
- Active Uses
- Parking




## PROPOSED PROJECT (BUILD ALTERNATIVE 1)

| DEVELOPMENT PROGRAM | TOTAL Gross Floor Area | % of Program | Total Net New Employees | Guests / Residents |
|---|---|---|---|---|
| Existing Employees or Tenants on the Project Site | | | 42 | |
| Research and Office Uses | 2,000,000 | 86% | 5,798 | |
| Office | *350,000* | *15%* | *1,254* | |
| Laboratory and R&D | *1,390,000* | *60%* | *3,432* | |
| Academic | *260,000* | *11%* | *1111 employees + 177 students* | |
| Conference Uses | 25,000 | 1% | 20 | |
| Active Uses | 90,000 | 4% | 180 | |
| Housing and Lodging | 205,000 | 9% | | 563 |
| Short-Term Lodging | *75,000* | *3%* | | *200* |
| Student/Faculty Housing | *130,000* | *6%* | | *363* |
| Parcel Buildable Area Total (Gross Square Feet) | 2,320,000 | 100% | 6,132 | 563 |

## REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

| DEVELOPMENT PROGRAM | TOTAL GFA | % of Program | Total Net New Employees | Guests / Residents |
|---|---|---|---|---|
| Existing Employees or Tenants on the Project Site | | | 42 | |
| Research and Office Uses | 1,080,000 | 77% | 3,131 | |
| Office | *190,000* | *14%* | *681* | |
| Laboratory and R&D | *750,000* | *54%* | *1,852* | |
| Academic | *140,000* | *10%* | *598 employees + 95 students* | |
| Conference Center | 25,000 | 2% | 20 | |
| Active Uses | 90,000 | 6% | 180 | |
| Housing and Lodging | 205,000 | 15% | | 563 |
| Short-Term Lodging | *75,000* | *5%* | | *200* |
| Student/Faculty Housing | *130,000* | *9%* | | *363* |
| Parcel Buildable Area Total (Gross Square Feet) | 1,400,000 | 100% | 3,384 | 563 |

LAND USE

# DATA BY SUBAREA - PROPOSED PROJECT (BUILD ALTERNATIVE 1)

| DEVELOPMENT PROGRAM | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | TOTAL Gross Floor Area | % of Program | Total Net New Employees | Guests / Residents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Existing Employees or Tenants on the Project Site | | | | | | | | | | 42 | |
| Research and Office Uses | 0 | 680,000 | 600,000 | 0 | 550,000 | 170,000 | 0 | 2,000,000 | 86% | 5,798 | |
| Office | 0 | 120,000 | 100,000 | 0 | 100,000 | 30,000 | 0 | *350,000* | *15%* | *1,254* | |
| Laboratory and R&D | 0 | 470,000 | 420,000 | 0 | 380,000 | 120,000 | 0 | *1,390,000* | *60%* | *3,432* | |
| Academic | 0 | 90,000 | 80,000 | 0 | 70,000 | 20,000 | 0 | *260,000* | *11%* | *1111 employees + 177 students* | |
| Conference Uses | 25,000 | 0 | 0 | 0 | 0 | 0 | 0 | 25,000 | 1% | 20 | |
| Active Uses | 5,000 | 15,000 | 15,000 | 0 | 30,000 | 10,000 | 15,000 | 90,000 | 4% | 180 | |
| Housing and Lodging | | | | | | | | 205,000 | 9% | | 563 |
| Short-Term Lodging | 75,000 | 0 | 0 | 0 | 0 | 0 | 0 | *75,000* | *3%* | | *200* |
| Student/Faculty Housing | 0 | 0 | 0 | 0 | 0 | 130,000 | 0 | *130,000* | *6%* | | *363* |
| Parcel Buildable Area Total (Gross Square Feet) | 105,000 | 695,000 | 615,000 | 0 | 580,000 | 310,000 | 15,000 | 2,320,000 | 100% | 6,132 | 563 |
| Parking GSF | 0 | 0 | 0 | 555,000 | 0 | 525,000 | 0 | 1,080,000 | | | |

| DATA | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | DATA (BY SITE) |
|---|---|---|---|---|---|---|---|---|
| Parcel Site Area (AC) | 0.9 | 5.1 | 4.6 | 1.5 | 4.7 | 3.7 | 0.3 | 20.8 |
| Parcel Site Area (SF) | 38,651 | 221,330 | 202,258 | 63,504 | 206,640 | 160,579 | 15,000 | 907,962 |
| Max. Height by Parcel (ft) | 80' | 80' | 80' | 80' | 80' | 80' | 30' | 80' |
| DU/AC by Parcel | 113 | 0 | 0 | 0 | 0 | 39 | 0 | 7.02 |

| POPULATION | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | Total Net New Employees | Guests / Residents | Ratio (BY SITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| Existing Employees or Tenants on the Project Site | | | | | | | | 42 | | |
| Research and Office Uses (Employees) | 0 | 1,975 | 1,737 | 0 | 1,596 | 489 | 0 | 5,797 | | |
| Office (Employees) | 0 | 430 | 358 | 0 | 358 | 108 | 0 | 1,254 | | |
| Laboratory and R&D (Employees) | 0 | 1,160 | 1,037 | 0 | 938 | 296 | 0 | 3,432 | | |
| Academic (Employees) | 0 | 385 | 342 | 0 | 299 | 85 | 0 | 1,111 | | |
| Conference Center (Employees) | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | | |
| Active Use (Employees) | 10 | 30 | 30 | 0 | 60 | 20 | 30 | 180 | | |
| Total Employees (Jobs) | 30 | 2,005 | 1,767 | 0 | 1,656 | 509 | 30 | 5,997 | | |
| Total Academic (Students) | 0 | 61 | 55 | 0 | 48 | 14 | 0 | 177 | | |
| Total Net New Employees and Students | 30 | 2,066 | 1,822 | 0 | 1,704 | 523 | 30 | 6,132 | | |
| Short-Term Lodging (Residents) | 200 | 0 | 0 | 0 | 0 | 0 | 0 | | 200 | |
| Student/Faculty Housing (Residents) | 0 | 0 | 0 | 0 | 0 | 363 | 0 | | 363 | |
| Total Residents | 200 | 0 | 0 | 0 | 0 | 363 | 0 | | 563.13 | |
| Open Space (Acres) / 1,000 Employees | | | | | | | | | | 1.82 |
| Open Space (Acres) / 1,000 Residents | | | | | | | | | | 19.33 |
| Total Population | 460 | 4,132 | 3,644 | 0 | 3,407 | 1,772 | 60 | **6,132** | **563** | |

# NARRATIVES: RESEARCH AND OFFICE USES

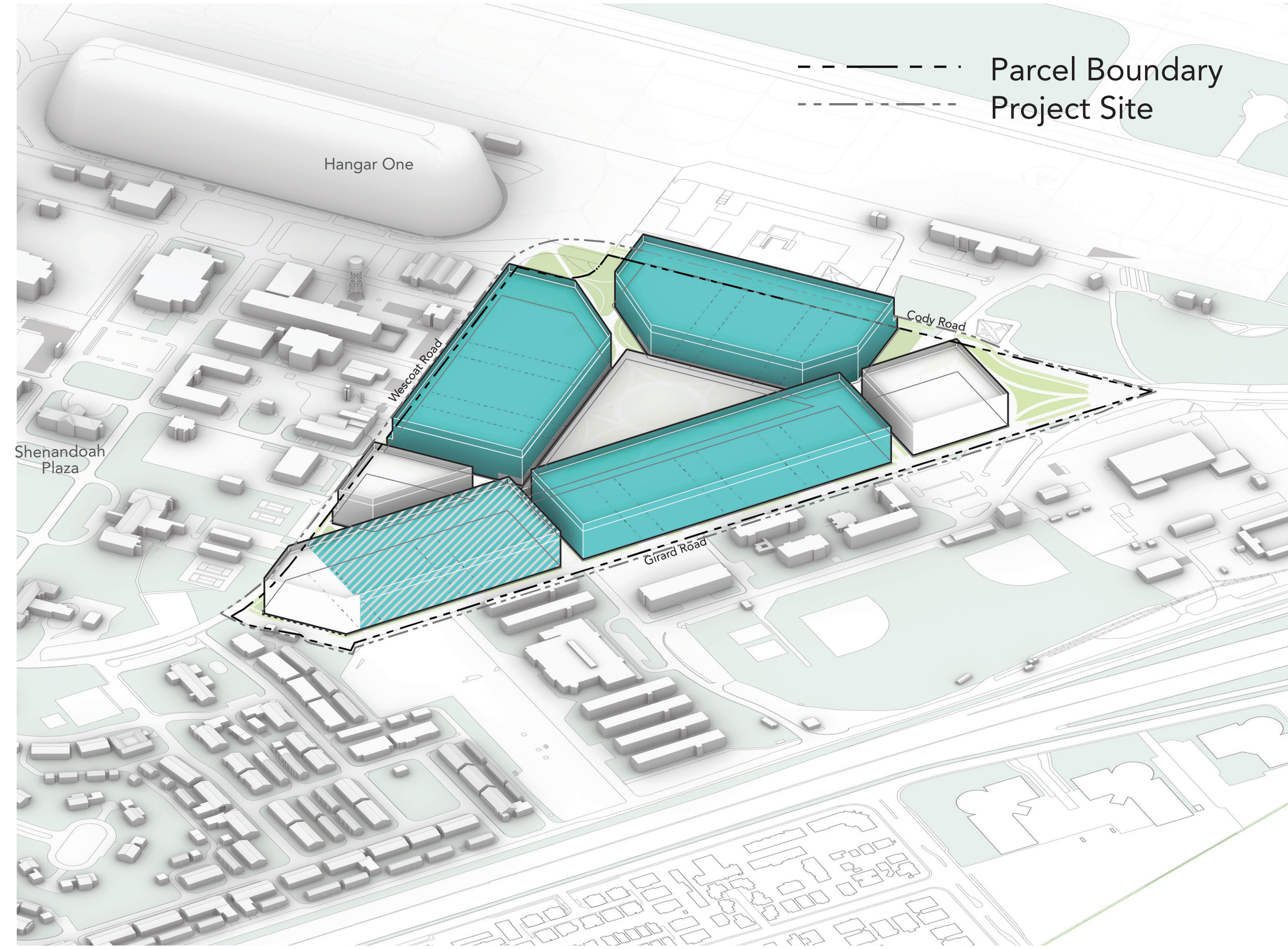
Intended to promote collaborative research and development activities among NASA ARC, UC Berkeley, private industry, and non-profit organizations.

## OFFICE

Corporate and general offices that include multi-tenant spaces for research and technology, administrative and professional office use.

## LABORATORY AND RESEARCH & DEVELOPMENT (R&D)

Specific types of businesses within this use category can vary significantly. Tenants are likely to be engaged in the pursuit of knowledge (advanced research and process design) or creation of products (prototyping, testing and development) in science, engineering and technology-intensive fields including but not limited to electric vehicles (manned and unmanned), telecommunications, remote sensing, space missions, defense and military, biology and physics, bioengineering and aerosciences. These activities are most likely to be aligned with on-going NASA and UC Berkeley research programs in support of scientific missions. Functional spaces may include labs, supportive administrative offices, meeting rooms and light manufacturing or fabrication spaces as part of the overall research and development use. Private lab and R&D activities will be conducted within high security zones due to for any number of reasons, up to and including air quality and/or other hazard containment, intellectual property protection, and property security, and will not be accessible to the general public.



Illustrative Research and Office Uses in the Project Site

## ACADEMIC

Educational space to be shared by different educational users and utilized for testing, analysis, instruction research or other academic pursuits.

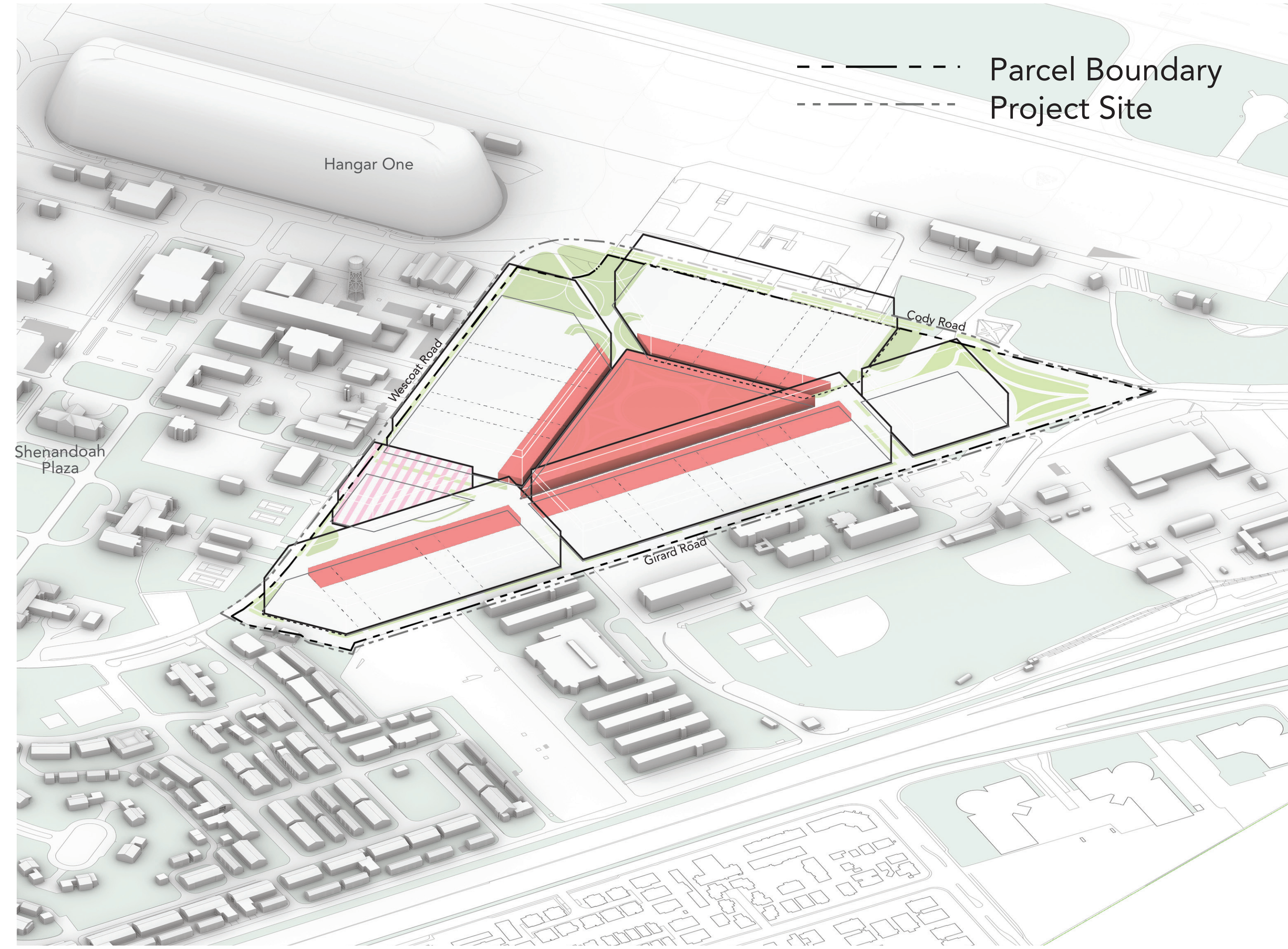
# NARRATIVES: DISTRICT SUPPORTING USES

## CONFERENCE CENTER

Temporary meeting space, shared by UC Berkeley, and other affiliated parties, other public agencies, private industry and non-profit organizations. Number of rooms and amount of space dedicated to meeting and presentation varies. The Conference Center could include active uses such as restaurants and a gym.

## ACTIVE USES

These ground floor Active Uses are occupied spaces that are accessible by pedestrians via sidewalk or other site pathway. Active Uses could include display or exhibit areas for research, lobbies and seating areas, food and beverage facilities, gym or other amenity facilities, shared maker spaces and fabrication workshops, co-working spaces, restaurants, community-serving retail, personal services, along with retail uses. The allocated square footage of active uses can occur anywhere in Subarea 7.



Illustrative Active Uses in the Site

# NARRATIVES: HOUSING AND LODGING

Intended to provide convenient academic year and short-term housing options to primarily support faculty, students and visiting researchers.

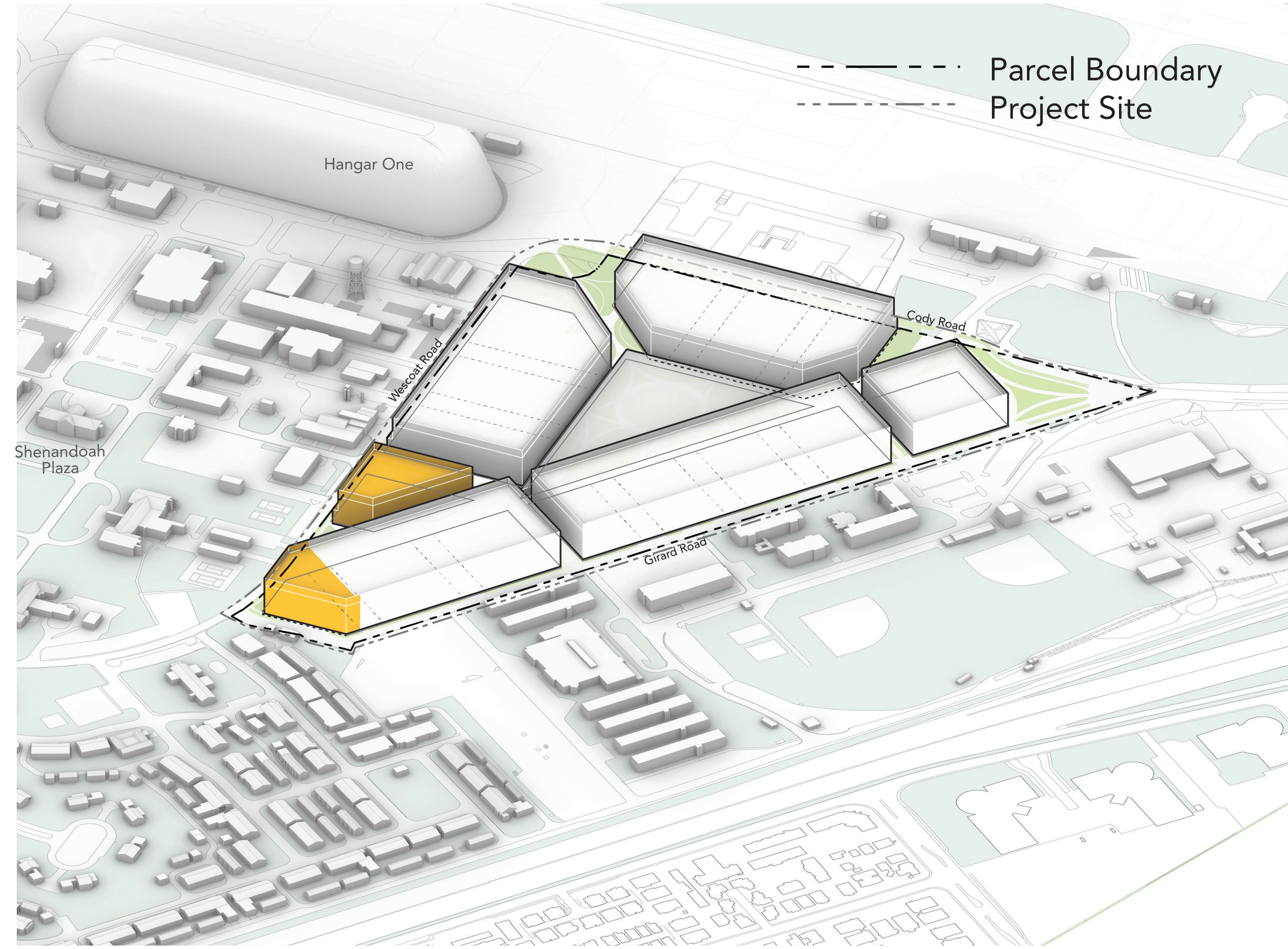
## SHORT-TERM LODGING

Short-Term Lodging rented on a short-term basis as temporary lodging for staff, researchers, academics, tenants, and their families. The Short-Term Lodging would be used as temporary lodging for staff, researchers, academics, tenants, and their families visiting the Project Site for conferences, meetings, research projects, and other short-term events.

The facility includes studio suite-style guest rooms, with a kitchen, ensuite bathroom, and small living area. Common area program includes a lobby, laundry, and support / back-of-house space, including management offices. This program would not share the amenities and active uses within the Conference Uses and with other users of the site, including restaurant and gym/fitness center uses. However, parking would be shared with the conference facility in a shared parking garage.

## STUDENT / FACULTY HOUSING

Student / Faculty Housing rented on an academic year basis to UC Berkeley students, faculty, as well as on-site federal employees and student interns on a short-term basis. The Student/Faculty Housing would include a mix of studio, one-bedroom, and two-bedroom apartments, as well as amenities, suitable primarily for graduate students, and faculty. Amenity space includes lobby, laundry, mail room, bike storage room, office, meeting space, game rooms, theaters, dog wash, gym and support / back-of-the house space. Additional amenities, like fitness centers, shared entertainment space with shared kitchen, business center, and leasing/administrative office space could be provided as part of the Student/Faculty Housing, and would not be shared with other campus facilities. Parking is located in the adjacent parking garage. Outdoor private and commong outdoor open space would be provided on the ground and on decks, balconies, porches and roofs podium level, roof, or balconies, or a combination thereof Nearby jurisdictions (San Francisco, Mountain View, and Sunnyvale) require private open space in a range from 40 square feet per unit to 80 square feet per unit; the project is recommended to include approximately 60 square feet per unit of common open space, which could include areas on the ground and on decks, balconies, porches and roofs that are safe and suitably surfaced and screened.



Illustrative Housing and Lodging Uses in Project Site

LAND USE

# DATA BY SUBAREA - REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

| DEVELOPMENT PROGRAM | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | TOTAL GFA | % of Program | Total Net New Employees | Guests / Residents |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Existing Employees or Tenants on the Project Site | | | | | | | | | | 42 | |
| Research and Office Uses | 0 | 340,000 | 310,000 | 0 | 310,000 | 120,000 | 0 | 1,080,000 | 77% | 3,131 | |
| Office | 0 | 60,000 | 55,000 | 0 | 55,000 | 20,000 | 0 | *190,000* | *14%* | *681* | |
| Laboratory and R&D | 0 | 235,000 | 215,000 | 0 | 215,000 | 85,000 | 0 | *750,000* | *54%* | *1,852* | |
| Academic | 0 | 45,000 | 40,000 | 0 | 40,000 | 15,000 | 0 | *140,000* | *10%* | *598 employees + 95 students* | |
| Conference Center | 25,000 | 0 | 0 | 0 | 0 | 0 | 0 | 25,000 | 2% | 20 | |
| Active Uses | 5,000 | 15,000 | 15,000 | 0 | 30,000 | 10,000 | 15,000 | 90,000 | 6% | 180 | |
| Housing and Lodging | | | | | | | | 205,000 | 15% | | 563 |
| Short-Term Lodging | 75,000 | 0 | 0 | 0 | 0 | 0 | 0 | *75,000* | *5%* | | *200* |
| Student/Faculty Housing | 0 | 0 | 0 | 0 | 0 | 130,000 | 0 | *130,000* | *9%* | | *363* |
| Parcel Buildable Area Total (Gross Square Feet) | 105,000 | 355,000 | 325,000 | 0 | 340,000 | 260,000 | 15,000 | 1,400,000 | 100% | 3,384 | 563 |
| Parking GSF | 0 | 0 | 0 | 555,000 | 0 | 525,000 | 0 | | | | |

| DATA | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | DATA (BY SITE) |
|---|---|---|---|---|---|---|---|---|
| Parcel Site Area (AC) | 0.9 | 5.1 | 4.6 | 1.5 | 4.7 | 3.7 | 0.3 | 20.8 |
| Parcel Site Area (SF) | 38,651 | 221,330 | 202,258 | 63,504 | 206,640 | 160,579 | 15,000 | 907,962 |
| Max. Height by Parcel (ft) | 80' | 80' | 80' | 80' | 80' | 80' | 30' | 80' |
| DU/AC by Parcel | 114 | 0 | 0 | 0 | 0 | 39 | 0 | 7.06 |

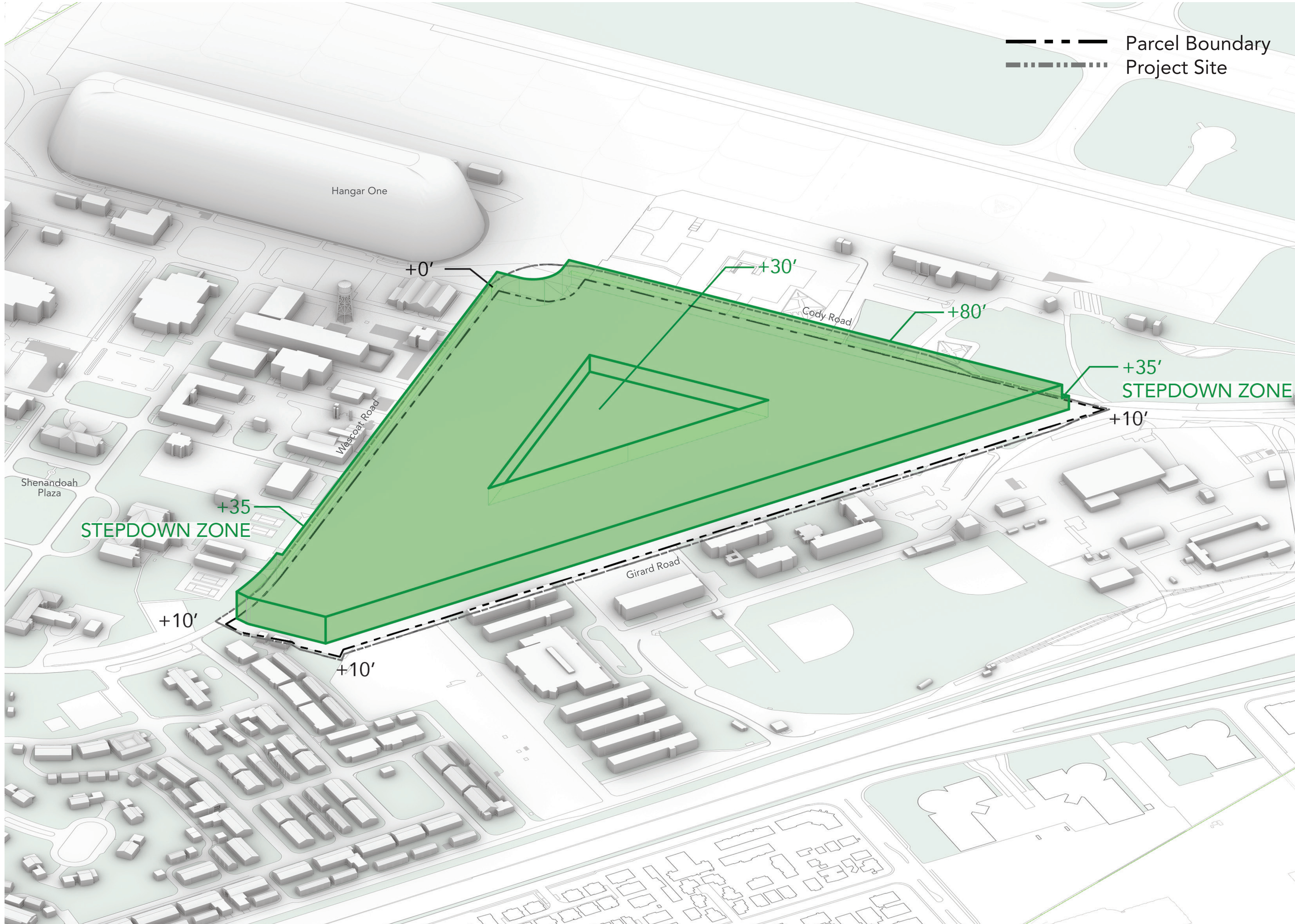
| POPULATION | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | Total Net New Employees | Guests / Residents | Ratio (BY SITE) |
|---|---|---|---|---|---|---|---|---|---|---|
| Existing Employees or Tenants on the Project Site | | | | | | | | 42 | | |
| Research and Office Uses (Employees) | 0 | 988 | 899 | 0 | 899 | 346 | 0 | 3,131 | | |
| Office (Employees) | 0 | 215 | 197 | 0 | 197 | 72 | 0 | 681 | | |
| Lab and R&D (Employees) | 0 | 580 | 531 | 0 | 531 | 210 | 0 | 1,852 | | |
| Academic (Employees) | 0 | 192 | 171 | 0 | 171 | 64 | 0 | 598 | | |
| Conference Center (Employees) | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | | |
| Active Use (Employees) | 10 | 30 | 30 | 0 | 60 | 20 | 30 | 180 | | |
| Total Employees (Jobs) | 30 | 1,018 | 929 | 0 | 959 | 366 | 30 | 3,331 | | |
| Total Academic (Students) | 0 | 31 | 27 | 0 | 27 | 10 | 0 | 95 | | |
| Total Net New Employees and Students | 30 | 1,048 | 956 | 0 | 986 | 376 | 30 | 3,426 | | |
| Short-Term Lodging (Residents) | 200 | 0 | 0 | 0 | 0 | 0 | 0 | | 200 | |
| Student/Faculty Housing (Residents) | 0 | 0 | 0 | 0 | 0 | 363 | 0 | | 363 | |
| Total Residents | 200 | 0 | 0 | 0 | 0 | 363 | 0 | | 563 | |
| Open Space (AC) / 1,000 Employees | | | | | | | | | | 3.27 |
| Open Space (AC) / 1,000 Residents | | | | | | | | | | 19.33 |
| Total Population | 460 | 2,097 | 1,913 | 0 | 1,973 | 1,478 | 60 | **3,384** | **563** | |

# LAND USE DEVELOPMENT ENVELOPE

LAND USE

# DEVELOPABLE ENVELOPE

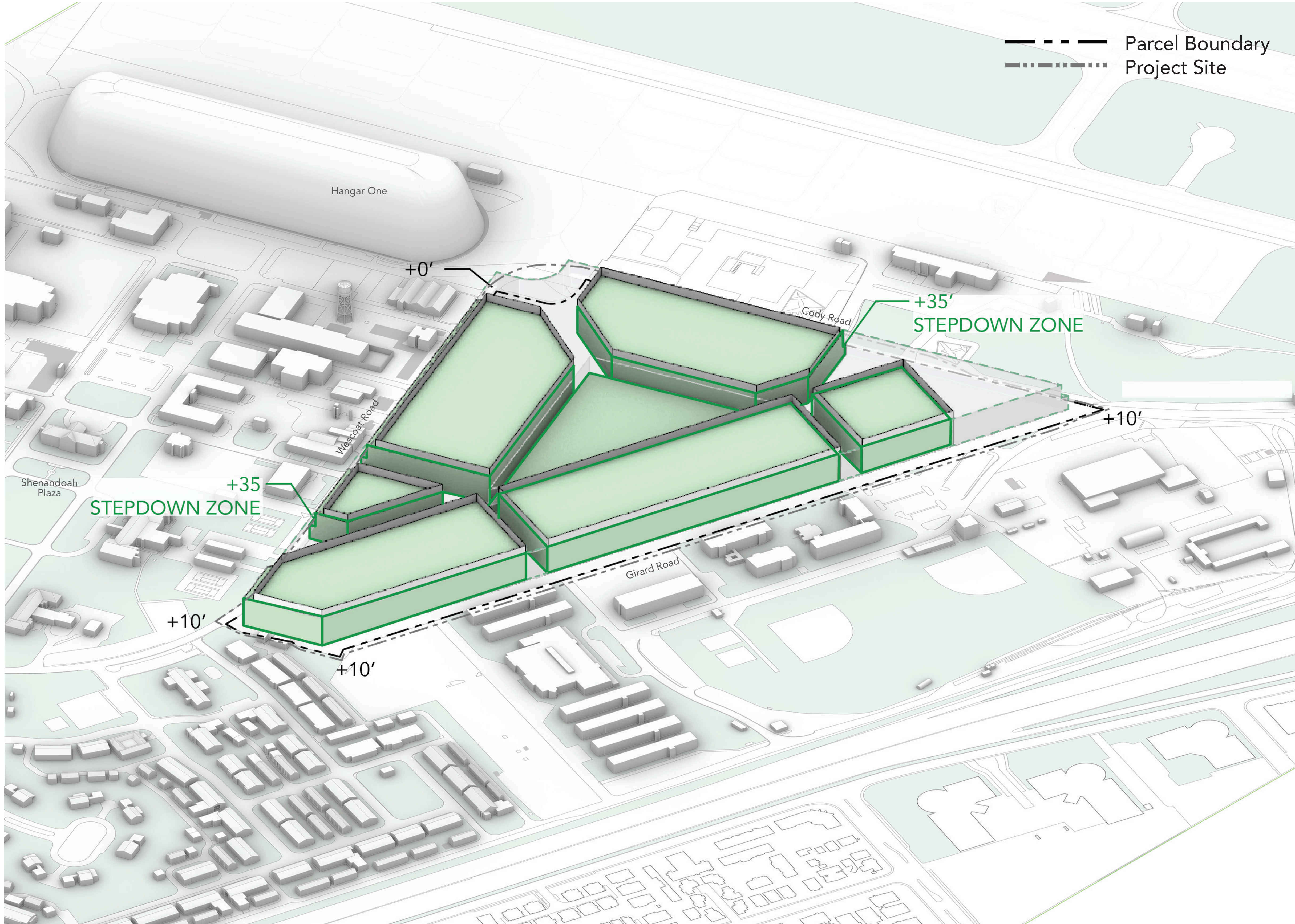
The Project Site's maximum development envelope is set at 80 feet in height. The stepdown zones along Wescoat Road and Cody Road are intended to relate to the historic fabric of Shenandoah Plaza and open up view corridors to Hangar One.




Illustrative Maximum Development Parameters of Entire Site

LAND USE
# BUILDABLE PARCELS

Illustrated here are each buildable parcel's maximum developable envelope set within the overall developable envelope of the project. Each Subarea allows for flexibility within the white mass shown to form architectural massing.

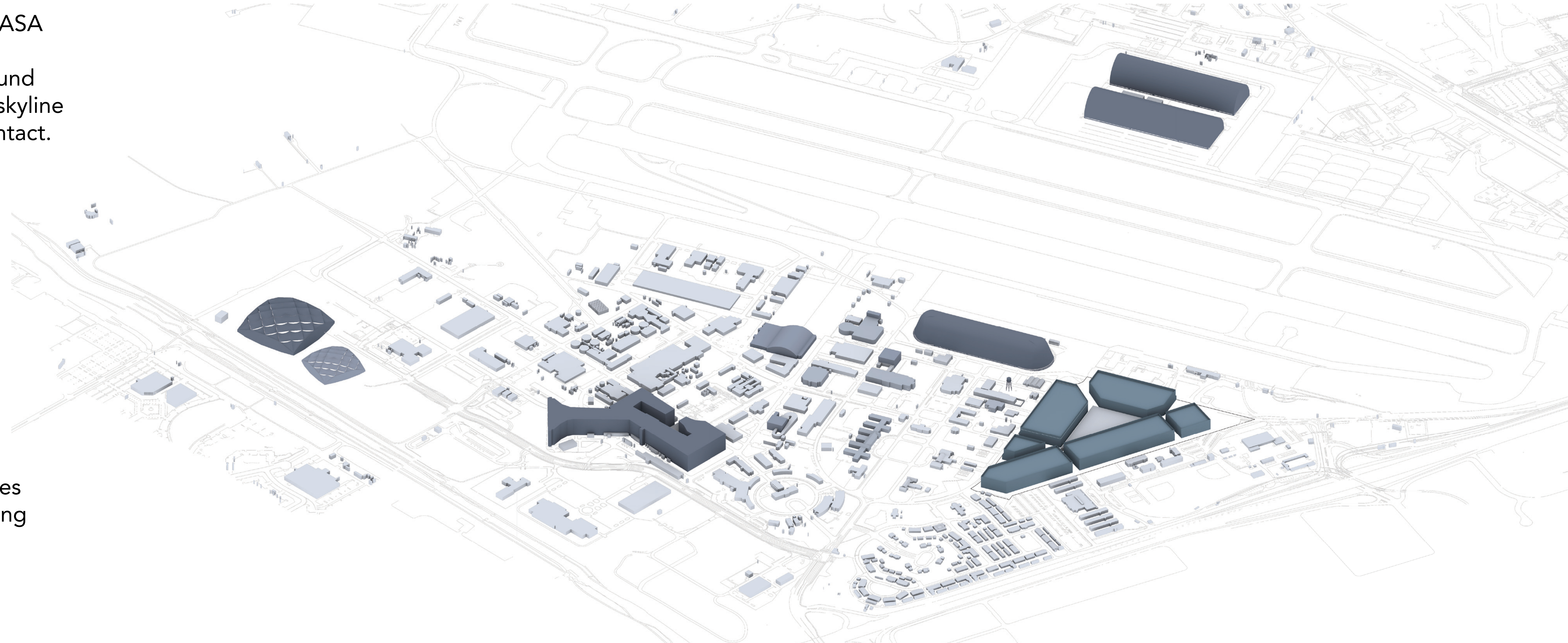



Conceptual Maximum Development Parameters of Each Subarea

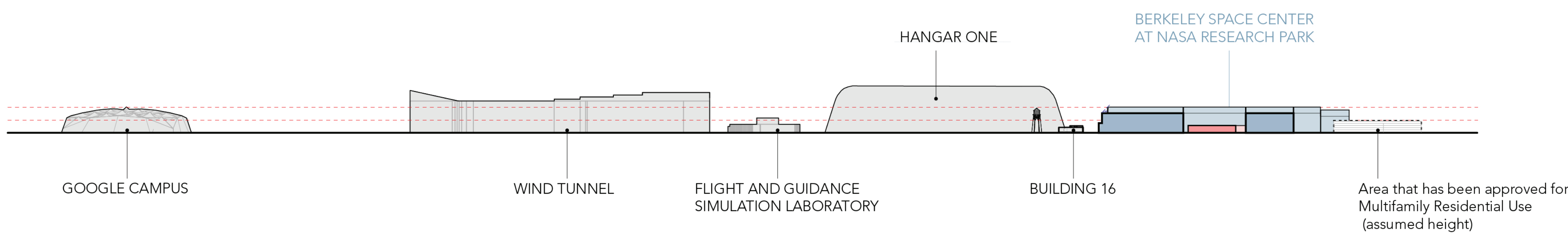
LAND USE

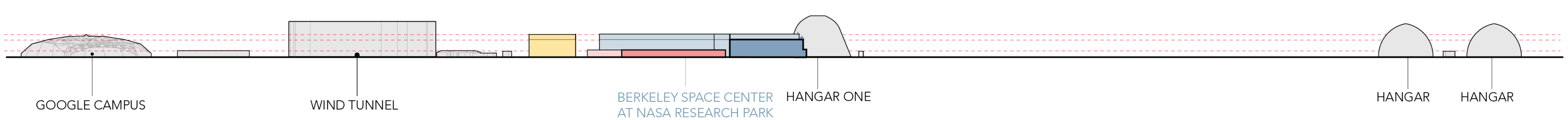
# RESPECTING CONTEXT BUILDING HEIGHTS

Berkeley Space Center at NASA Research Park respects the heights of the buildings around the site, so that the unique skyline of the NASA ARC remains intact.



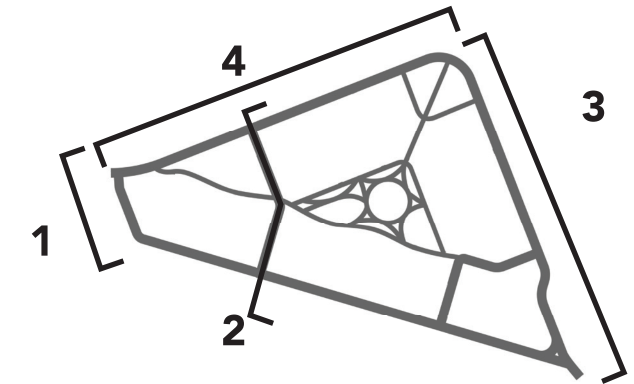
- Research and Office Uses
- Student / Faculty Housing
- Conference Uses
- Short-Term Lodging
- Active Uses
- Parking
- Maximum Development Parameters

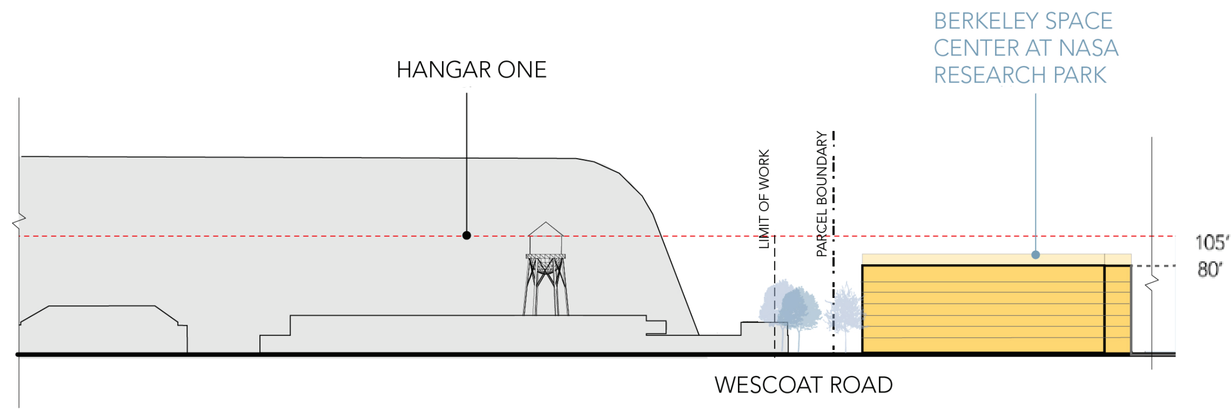


LAND USE

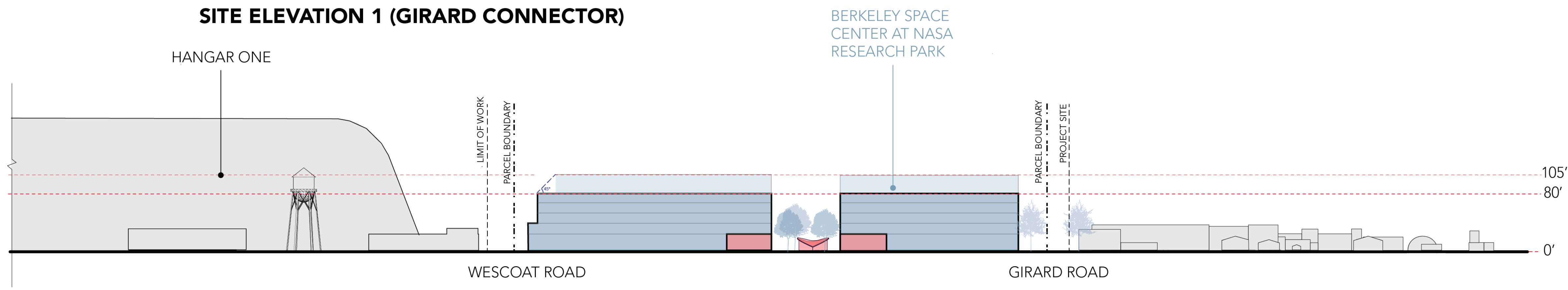
# DISTRICT ELEVATIONS



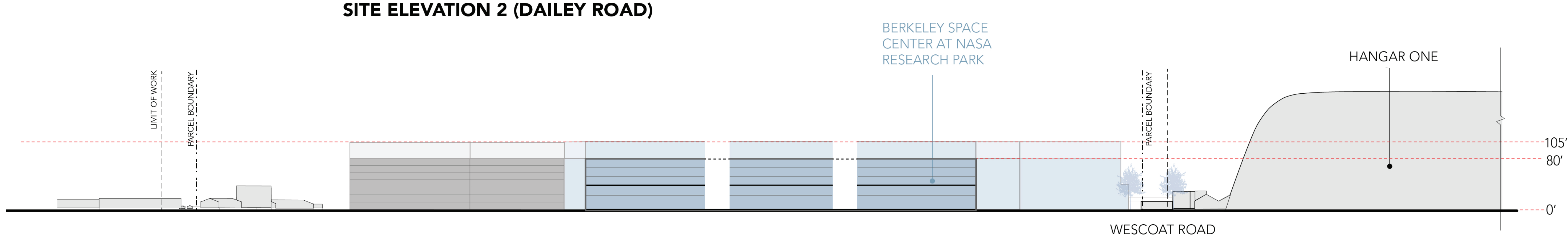




**SITE ELEVATION 1 (GIRARD CONNECTOR)**

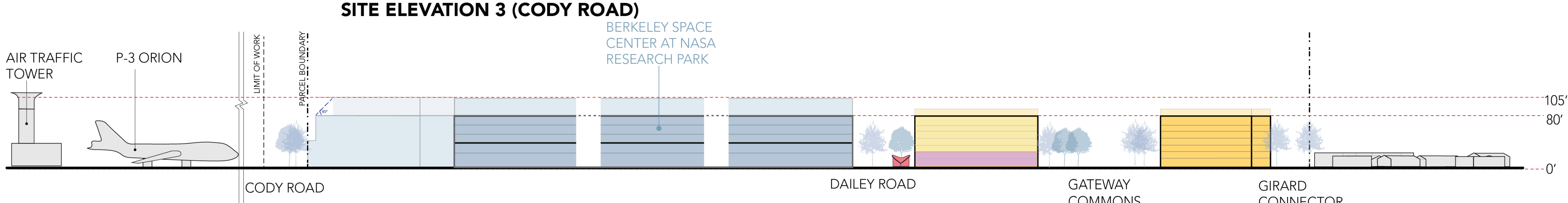
- Research and Office Uses
- Student / Faculty Housing
- Conference Uses
- Short-Term Lodging
- Active Uses
- Parking
- Maximum Development Parameters




**SITE ELEVATION 2 (DAILEY ROAD)**




**SITE ELEVATION 3 (CODY ROAD)**

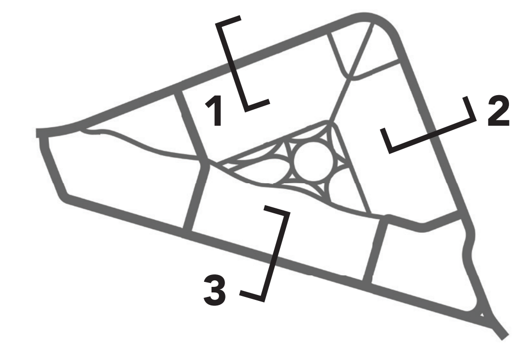



**SITE ELEVATION 4 (WESCOAT ROAD)**

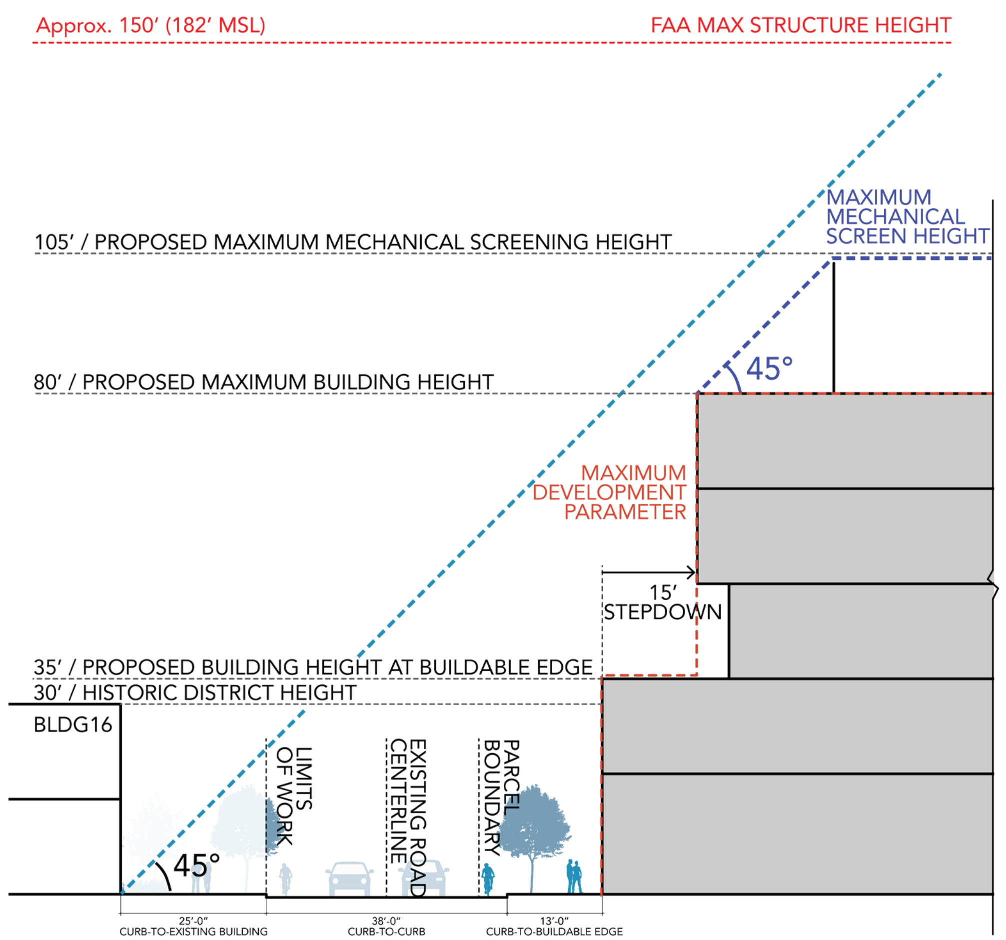
# DISTRICT EDGE MASSING HEIGHT AND STEPBACKS

## PROPOSED PROJECT (BUILD ALTERNATIVE 1)

The maximum development parameters has been studied in terms of height, setbacks, and stepbacks across the site to ensure compliance with FAA requirements while also respecting and complementing the existing historic scale and view corridors. Overall maximum building heights are well below FAA restrictions.

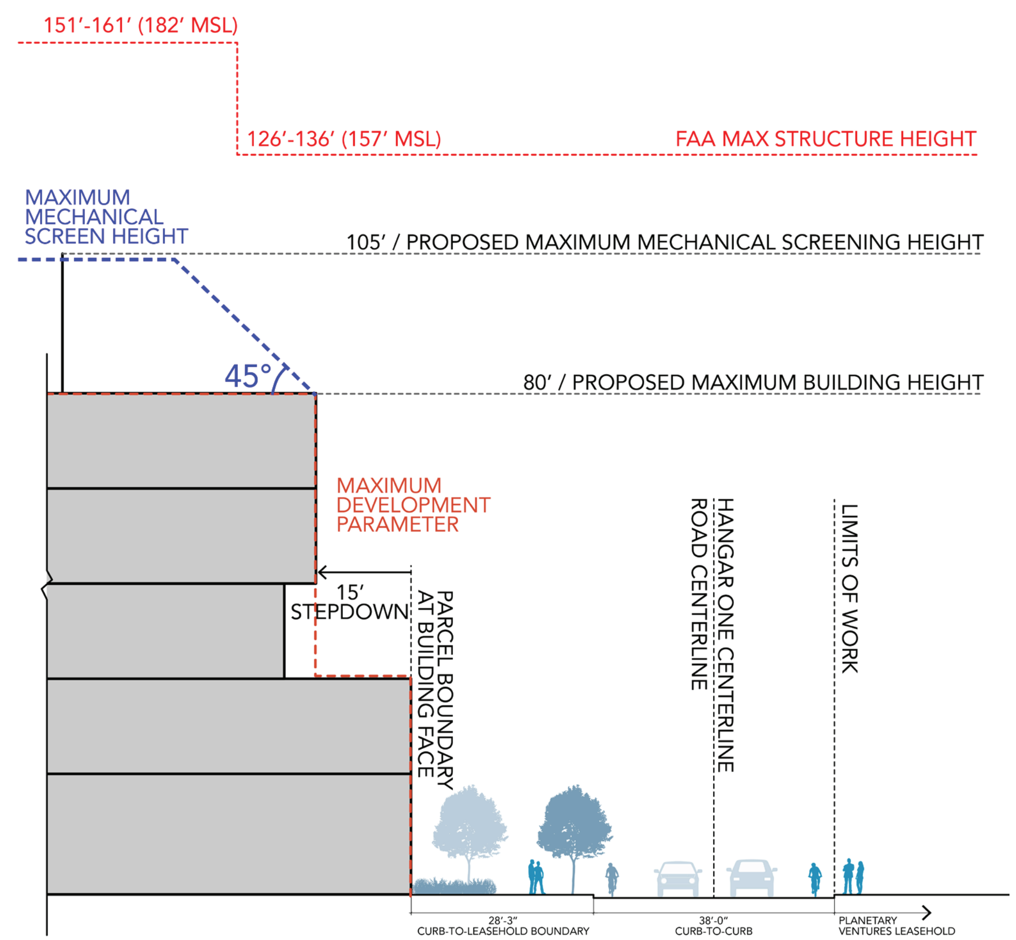



### 1. WESCOAT ROAD



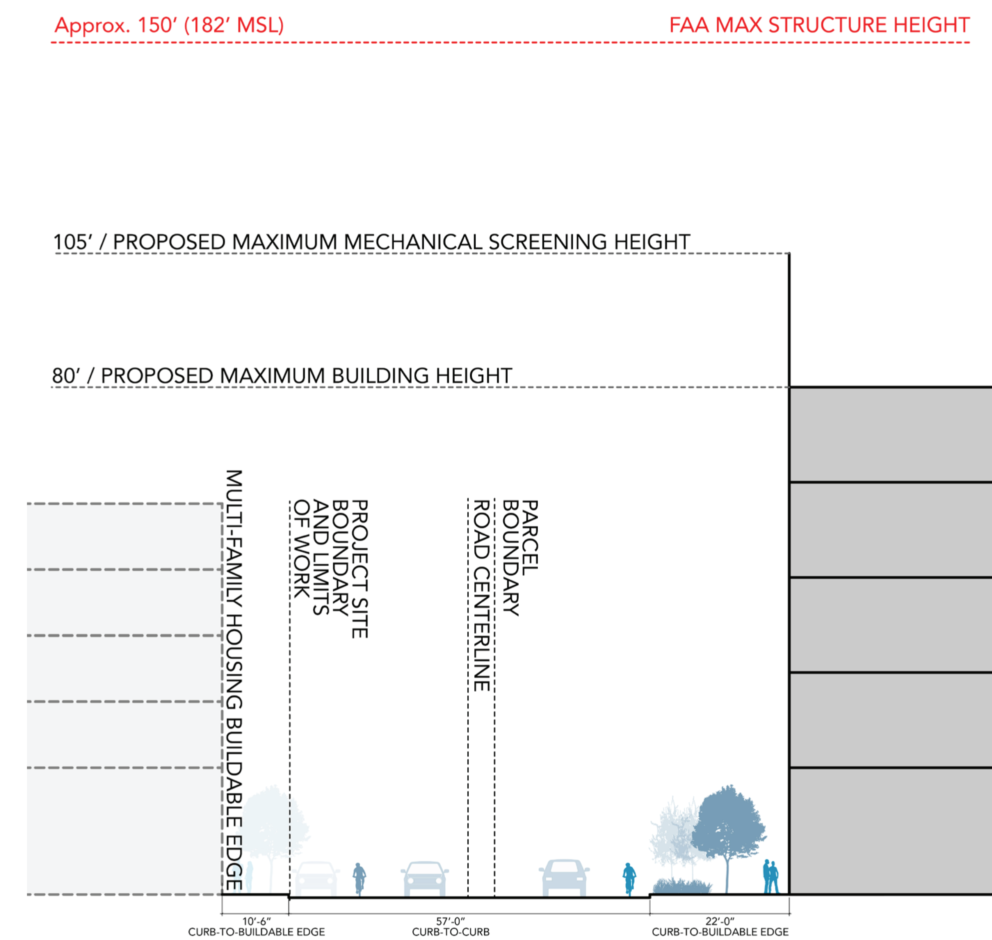

Wescoat Road is the threshold between the project and historic Shenandoah Plaza. The project defines a stepback zone to create a two story scale along the base of the buildings that relates directly to the scale of the buildings across the street.

### 2. CODY ROAD



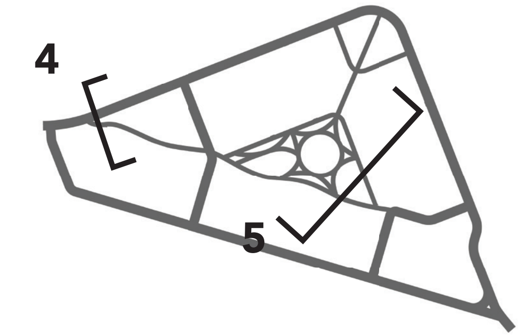

Cody Road has been realigned to be on axis with Hangar One, according to the 2001 NASA Research Park Design Guide. It serves as a primary visual corridor to Hangar One from the south-eastern entrance and separates the project and the airfield. The two story stepback zone continues from Wescoat Road around to Cody Road to maintain a cohesive scale along these two primary roads, while also serving to further open the view corridor to Hangar One.

### 3. GIRARD ROAD

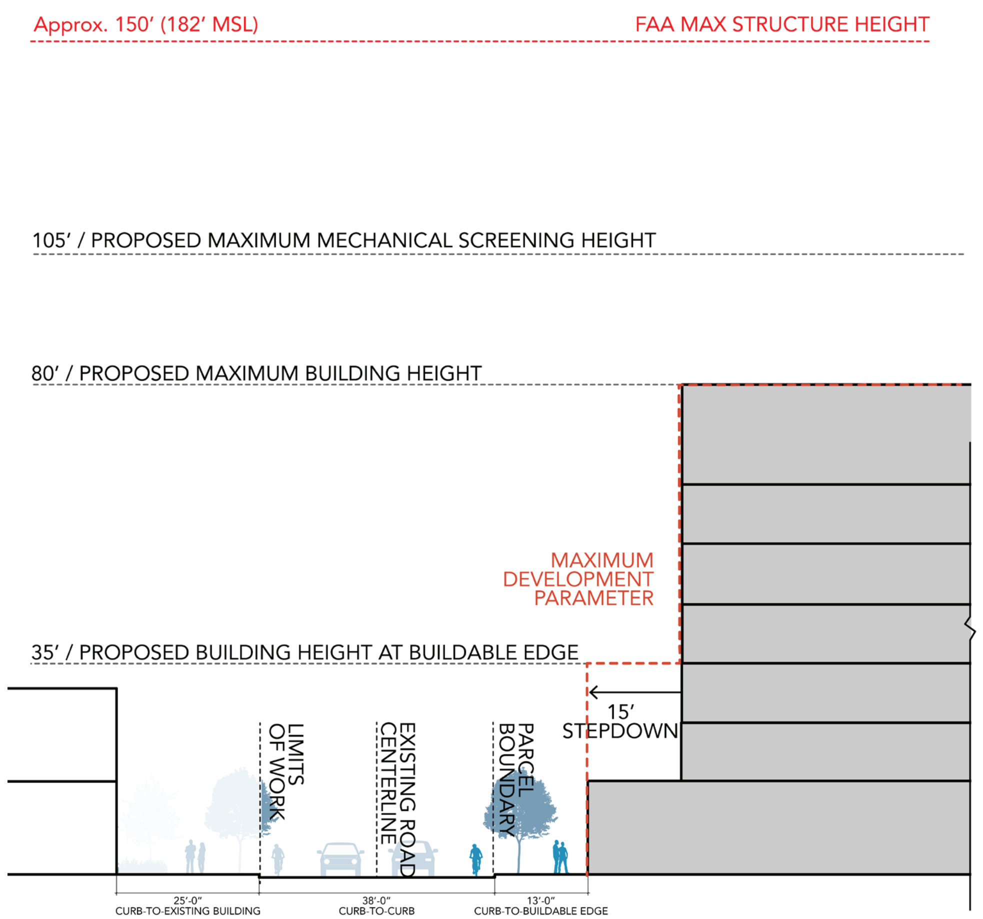



Along Girard Road buildable sites sit 22 feet back from the roadway, allowing for loading zones and generous planted bulbout zones. The generous right-of-way between the two proposed developments alleviates any need to prescribe stepbacks.

# DISTRICT EDGE MASSING HEIGHT AND STEPBACKS

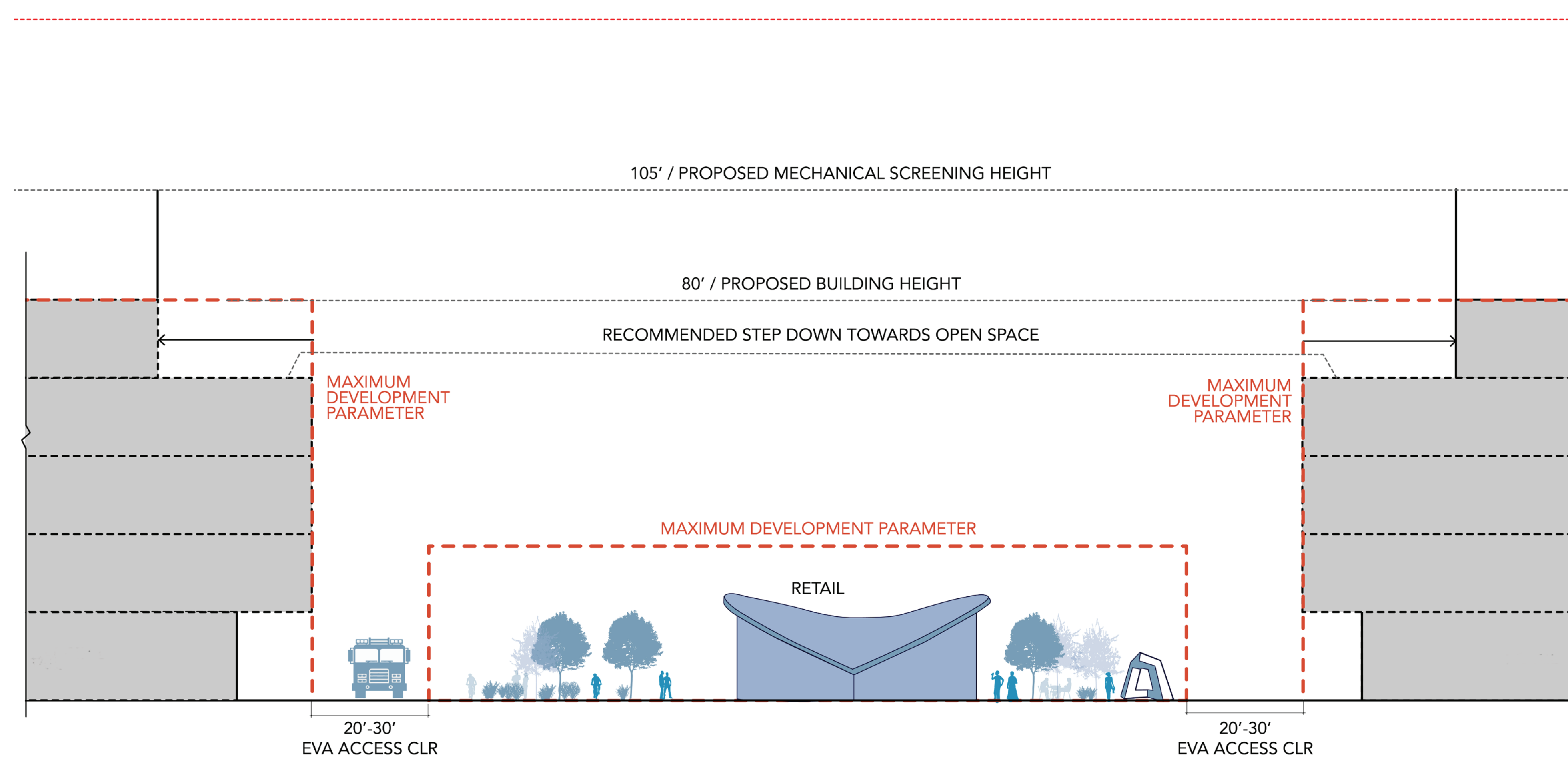



## 4. SECTION THROUGH RESIDENTIAL AT BLOCK 6




At the western corner of the project site where Wescoat Road begins to turn toward Shenandoah Plaza, our parcel boundary is held back in line with the rest of the frontage along Wescoat Road toward Hangar One. This opens up the view corridors at that arrival point, and given the wider view corridor, the residential development is allowed to build up to the parcel line with no stepback condition.

## 5. SECTION THROUGH CENTRAL GREEN




Along the Central Green, buildings front the open space, stepbacks are recommended to provide daylight access and soften the edge, providing a pedestrian scaled environment. The Central Green provides a space for active use pavilions, which are capped at 30 feet in height and 20 percent site coverage.

LAND USE

# DISTRICT EDGE MASSING HEIGHT AND STEPBACKS

## REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

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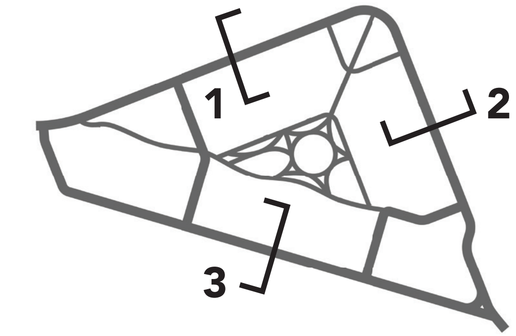


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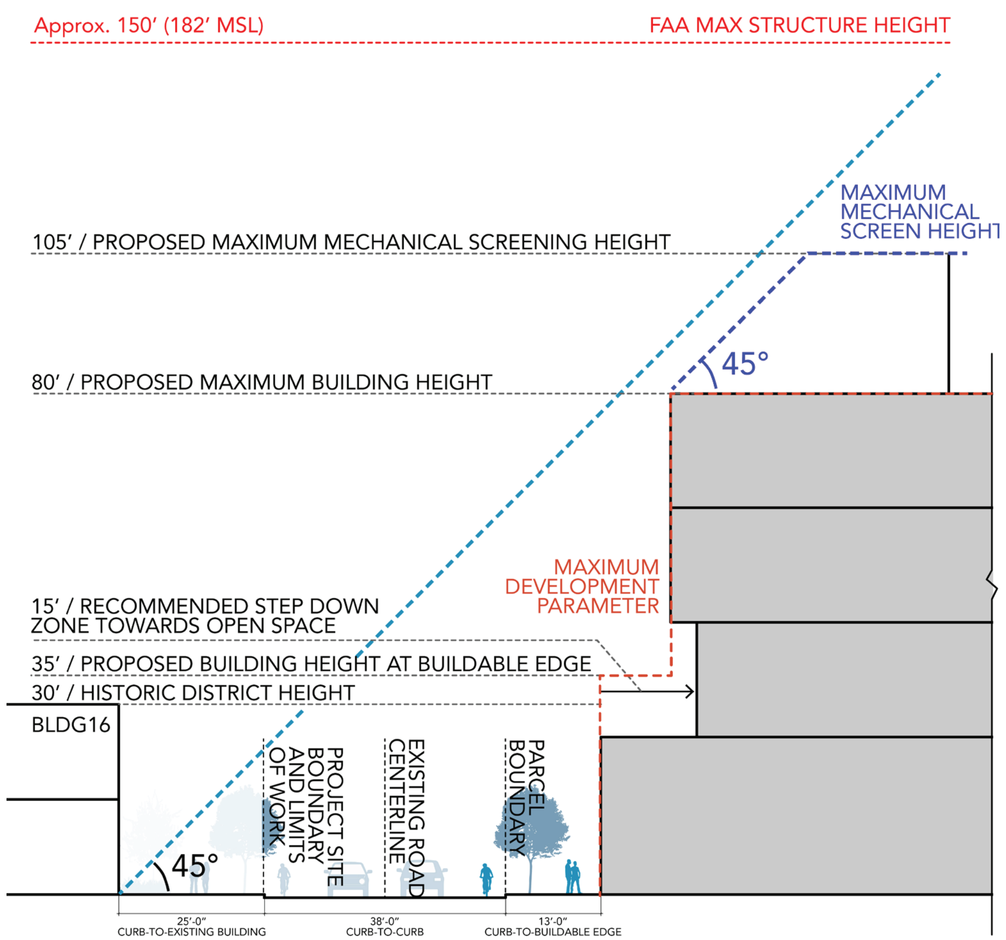


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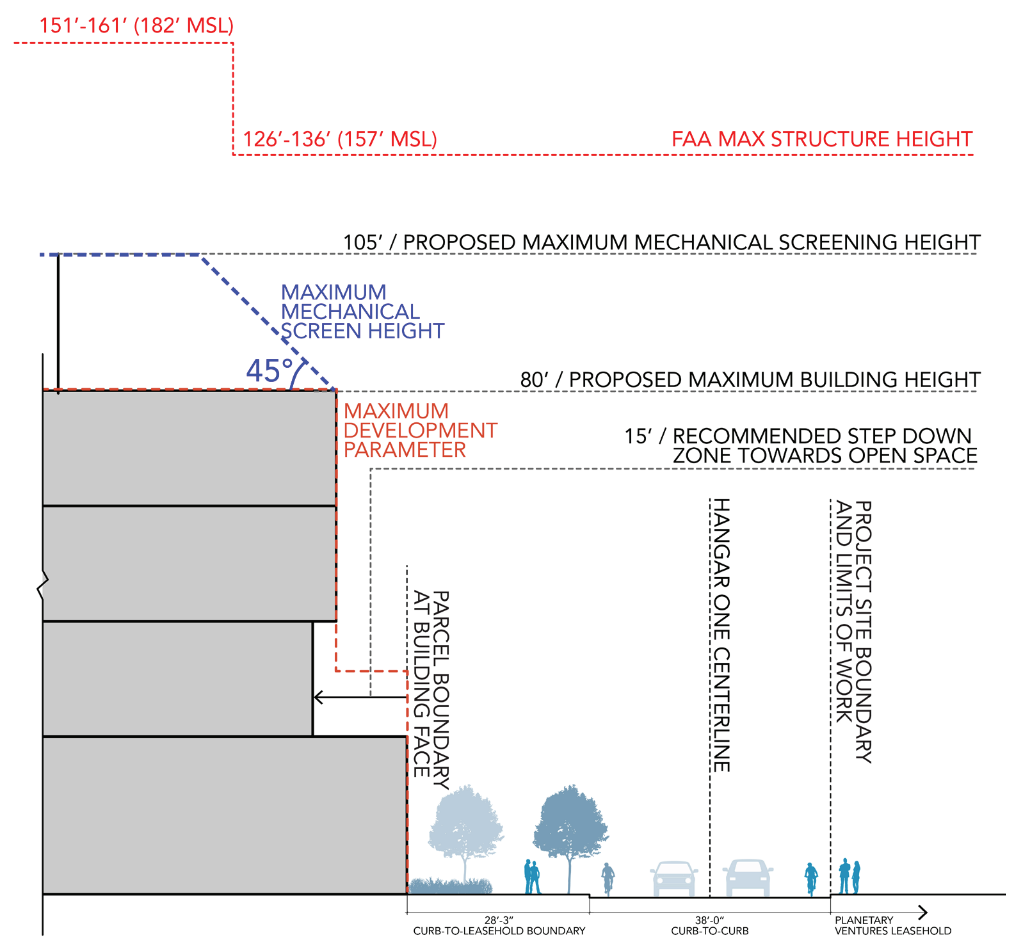


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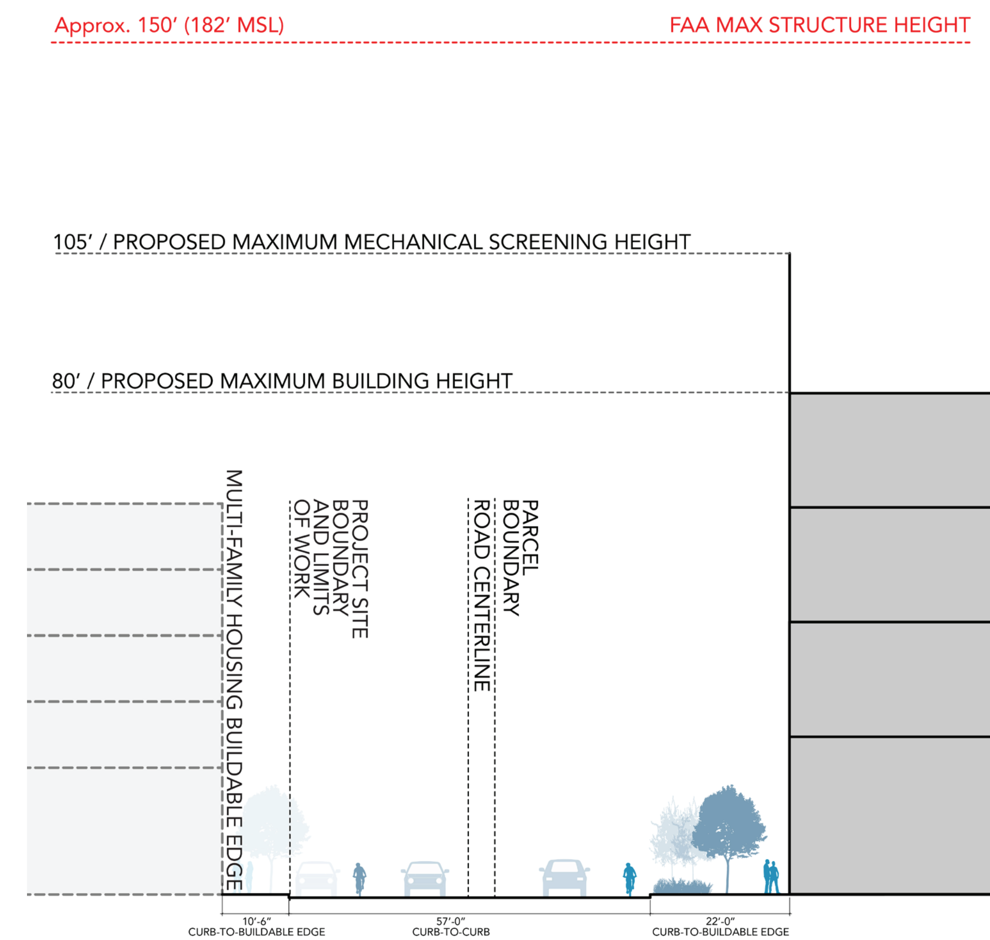


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LAND USE

# DISTRICT EDGE MASSING HEIGHT AND STEPBACKS

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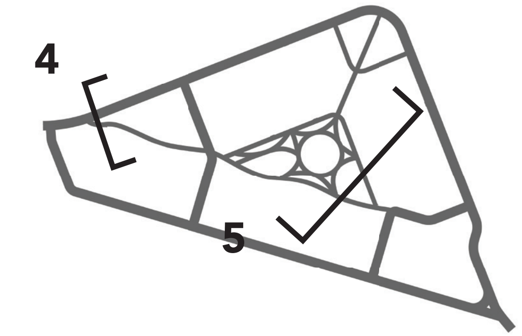


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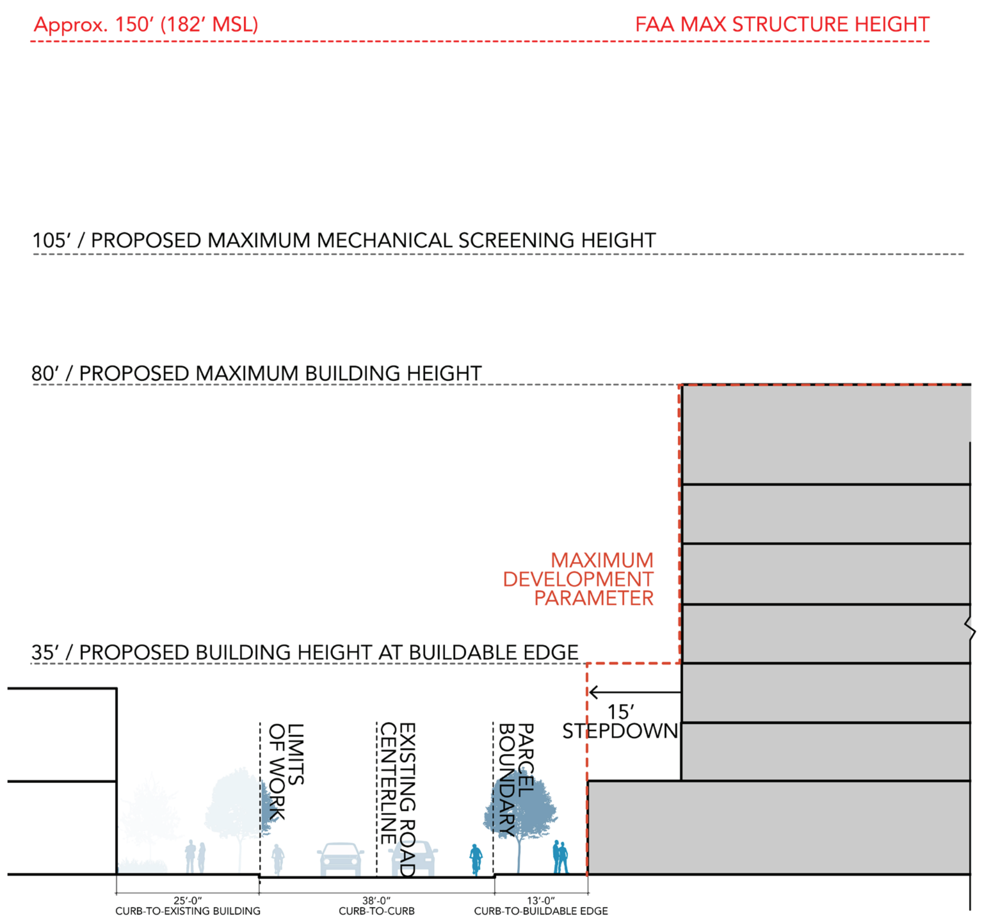


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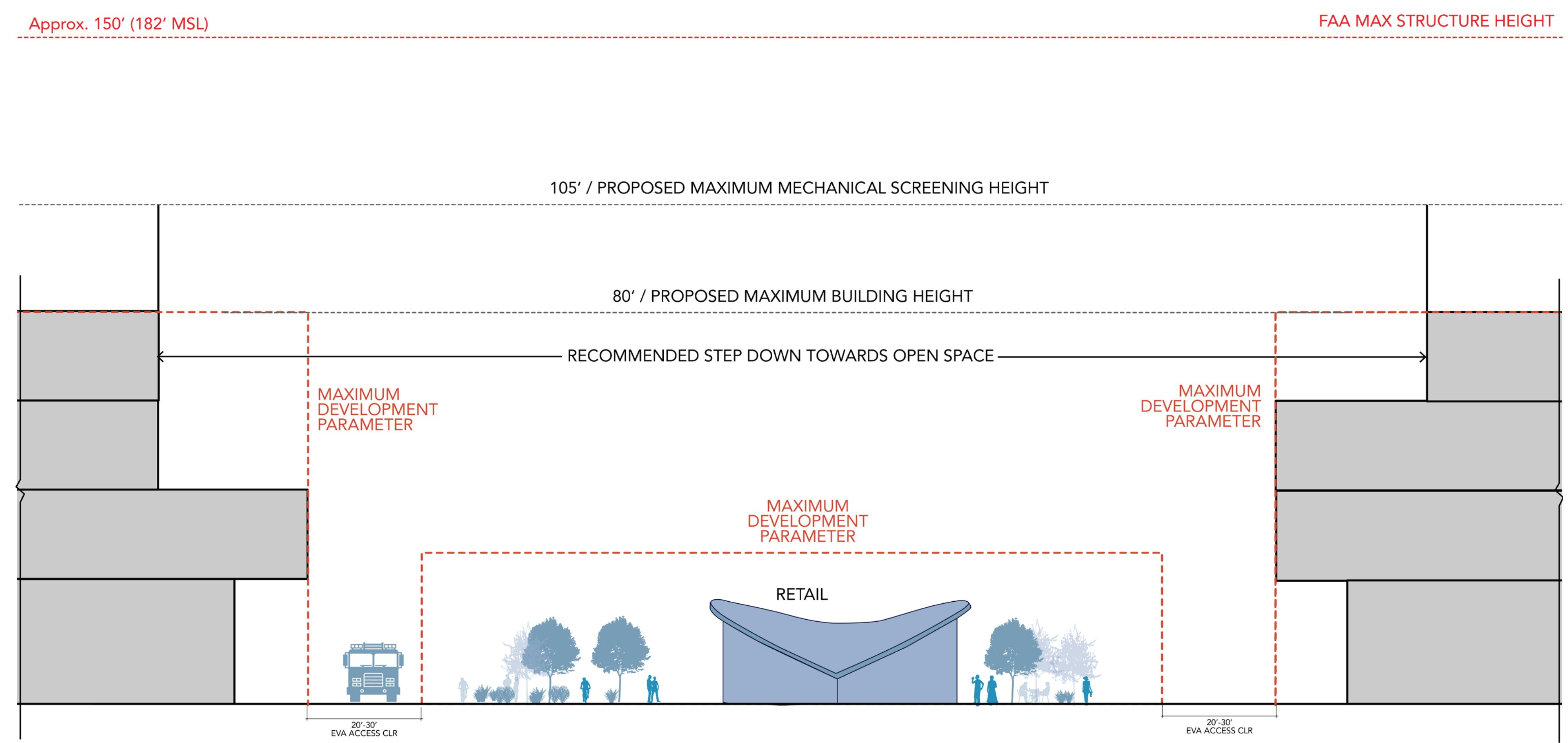


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# MOBILITY

MOBILITY

# CONNECTIVE NETWORK

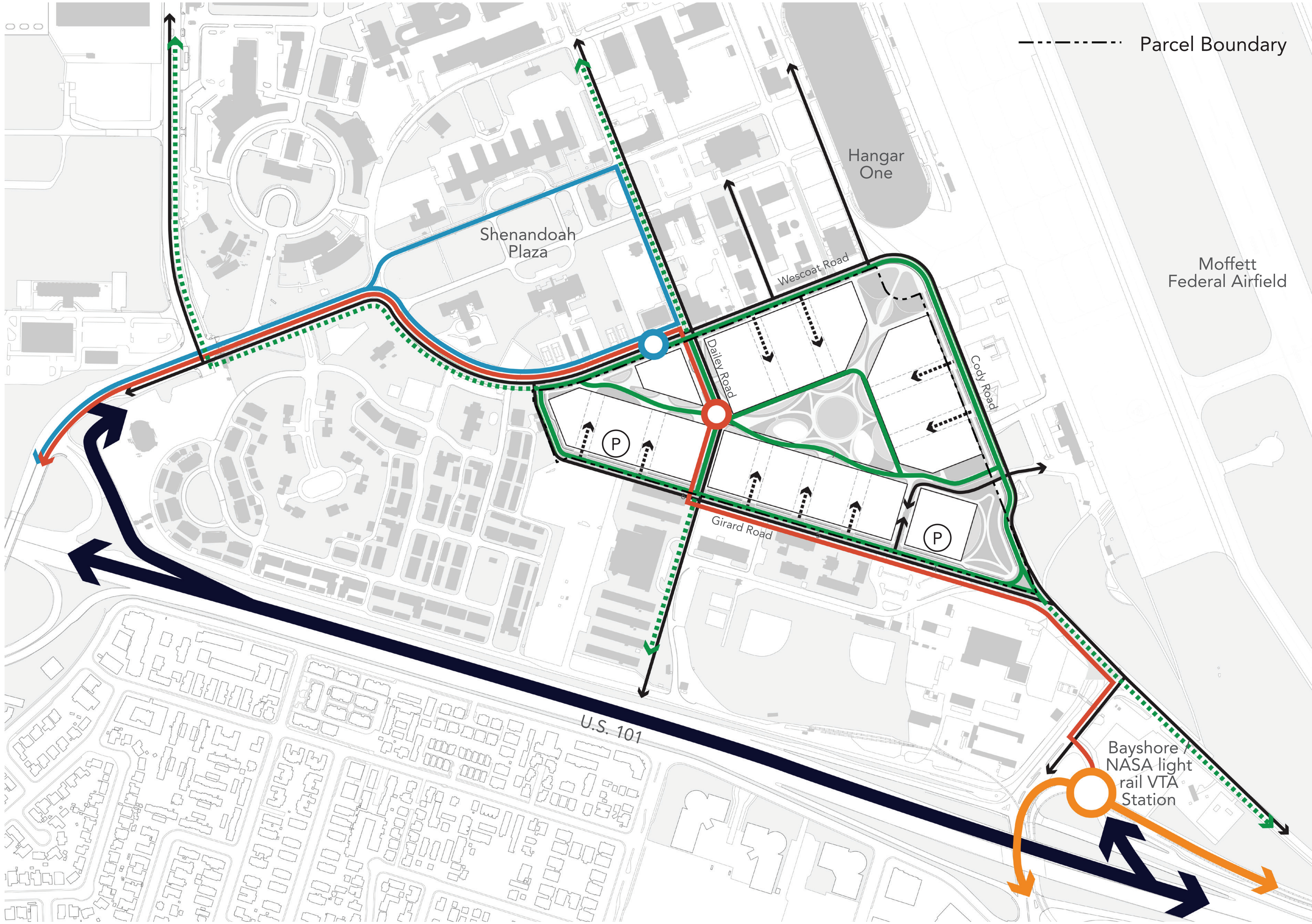
The proposed mobility network includes a variety of transportation modes and systems of interchange including VTA, regional highway connections, consolidated vehicular routes, and safe routes for pedestrians and cyclists. This network ties the proposed project to the broader NASA ARC district.

The proposed revisions to the hierarchy of movement and renovations to the system will transform the interconnectivity of the entire campus. These renovations will not only reconfigure vehicular traffic movement in the Research Park, but will also reinforce the importance of movement at the pedestrian scale, allowing for more connectivity and a richer experience of the district.

- Project Proposed Shuttle Stop
- Project Proposed Shuttle Route
- Project Proposed VTA Bus Stop
- Project Proposed VTA Bus Route
- Project Proposed Bicycle Route
- Proposed Bicycle Route, by others
- Existing VTA Stop
- VTA Orange Line
- P Parking
- Vehicular Route
- Potential Shared Use Road

0' 200' 400' 800'

N

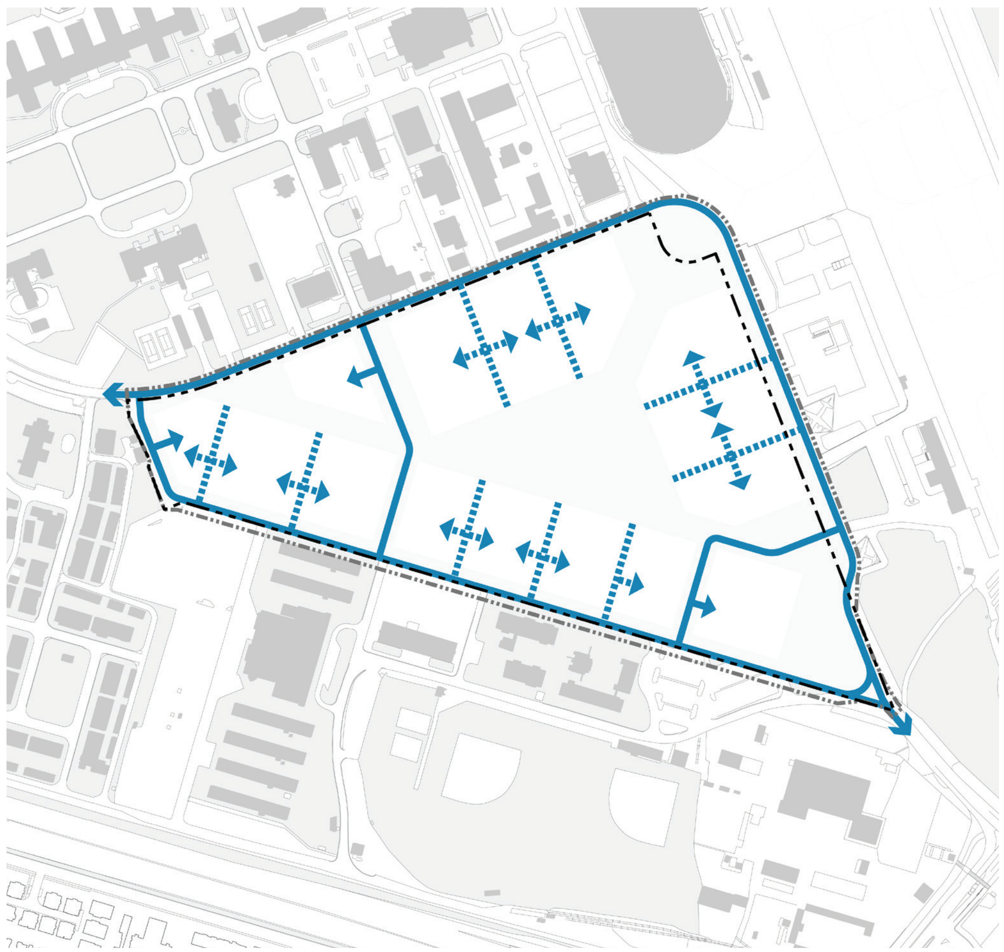



Connective Network Illustrative Diagram

MOBILITY
# SITE ACCESS & CIRCULATION

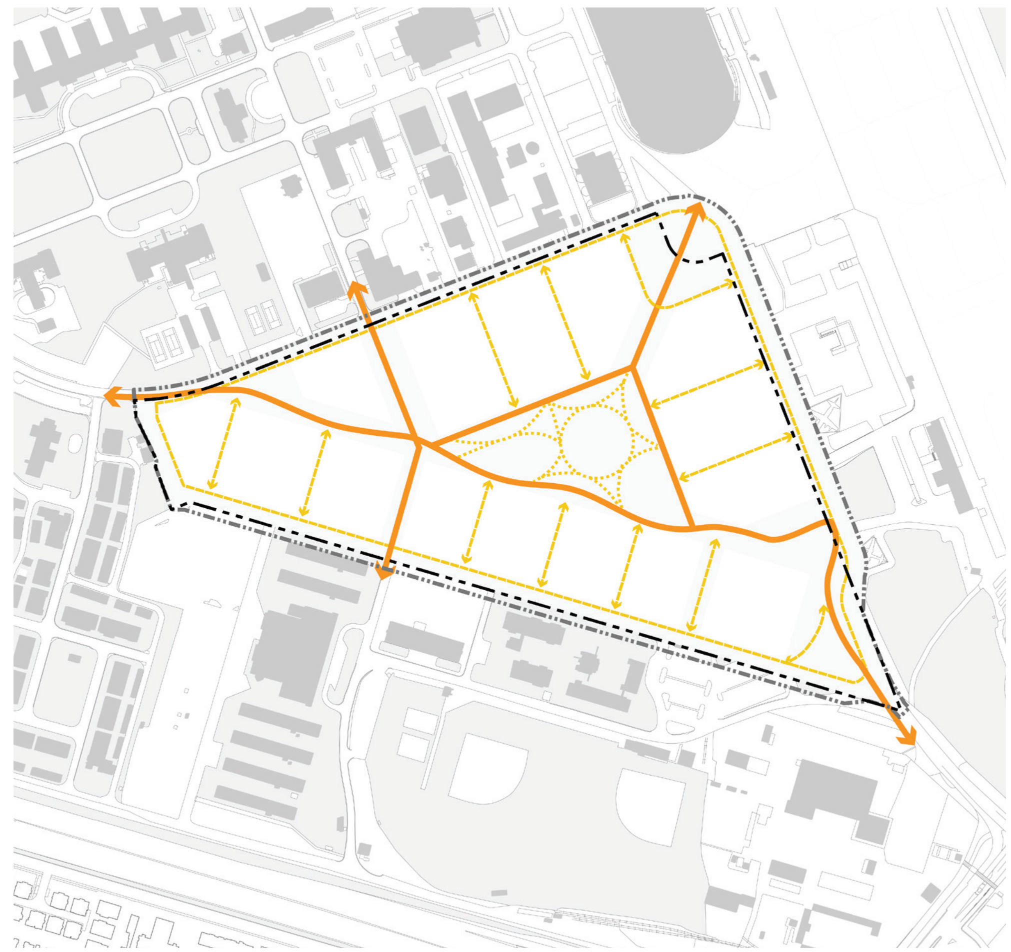
The mobility network provides physical connections and opportunities for intellectual interchange throughout NRP and the Project Site. The network prioritizes bicyclists and pedestrians at the heart of the Project Site, with vehicular access primarily along the perimeter.

## 1. VEHICLES



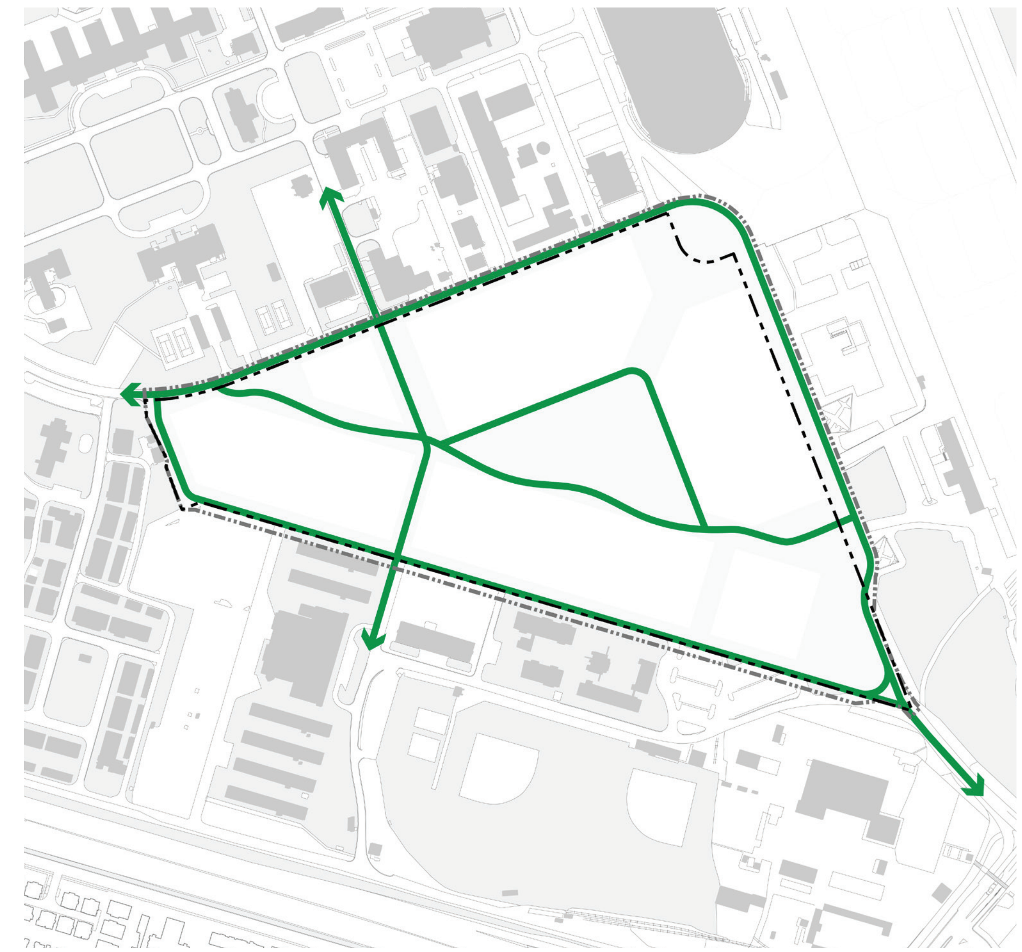
Main vehicular access to the Project Site is limited to the edges of the Project Site. Smaller side streets provide delivery and logistical nodes.

## 2. PEDESTRIANS



A network of pedestrianized green streets, trails, and occupiable landscapes defines the experience on the interior of the Project Site. This experience distinguishes Berkeley Space Center at NASA Research Park as a unique district within NRP by providing a memorable physicality – marking the territory as it transforms and grows. Primary pedestrian paths are shown in orange, and secondary routes are shown in yellow.

## 3. CYCLISTS



Connections for cyclists are made across the Project Site, as well as north to Shenandoah Plaza and NASA ARC, and south to the Bayshore / NASA light rail VTA Station shown on the connective network diagram on the previous page.

MOBILITY

# CURB USE & BUILDING ACCESS

As a project where people are prioritized over cars, the access, logistics, and curb use strategies are optimized for flexible and overlapping uses to reduce competition for curb space and respond to peak demand for different user types.

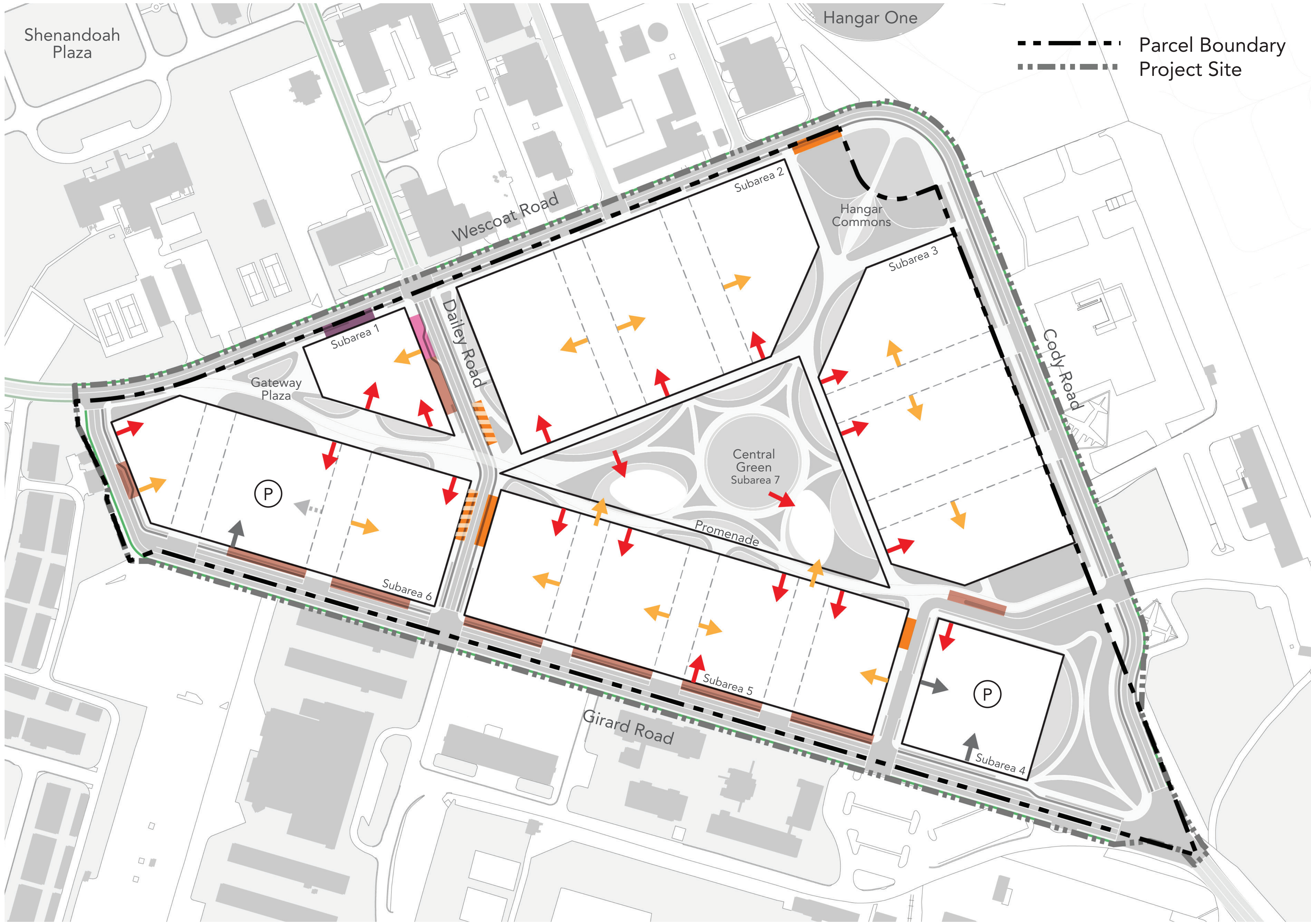
Primary building entrances and lobbies are located along the frontages facing the Central Green to activate this large open space. Service entrances are located away from the Central Green; instead, loading and delivery hubs are located closer to the outer ring roads (Wescoat Road, Cody Road, and Girard Road) to ensure easy access for service vehicles.

- Project Proposed VTA Bus Stop
- Passenger Pick Up/Drop Off with Project Proposed Shuttle Stop
- Passenger Pick Up/Drop Off*
- Flex Curb: Pick Up/Drop Off* or Loading
- Loading Dedicated Curb Cuts
- Potential Building Entrance
- Potential Service Entrance
- Potential Parking Entrance
- Potential Parking or Service Entrance

*including Ride Sharing

0' 100' 200' 400'

N

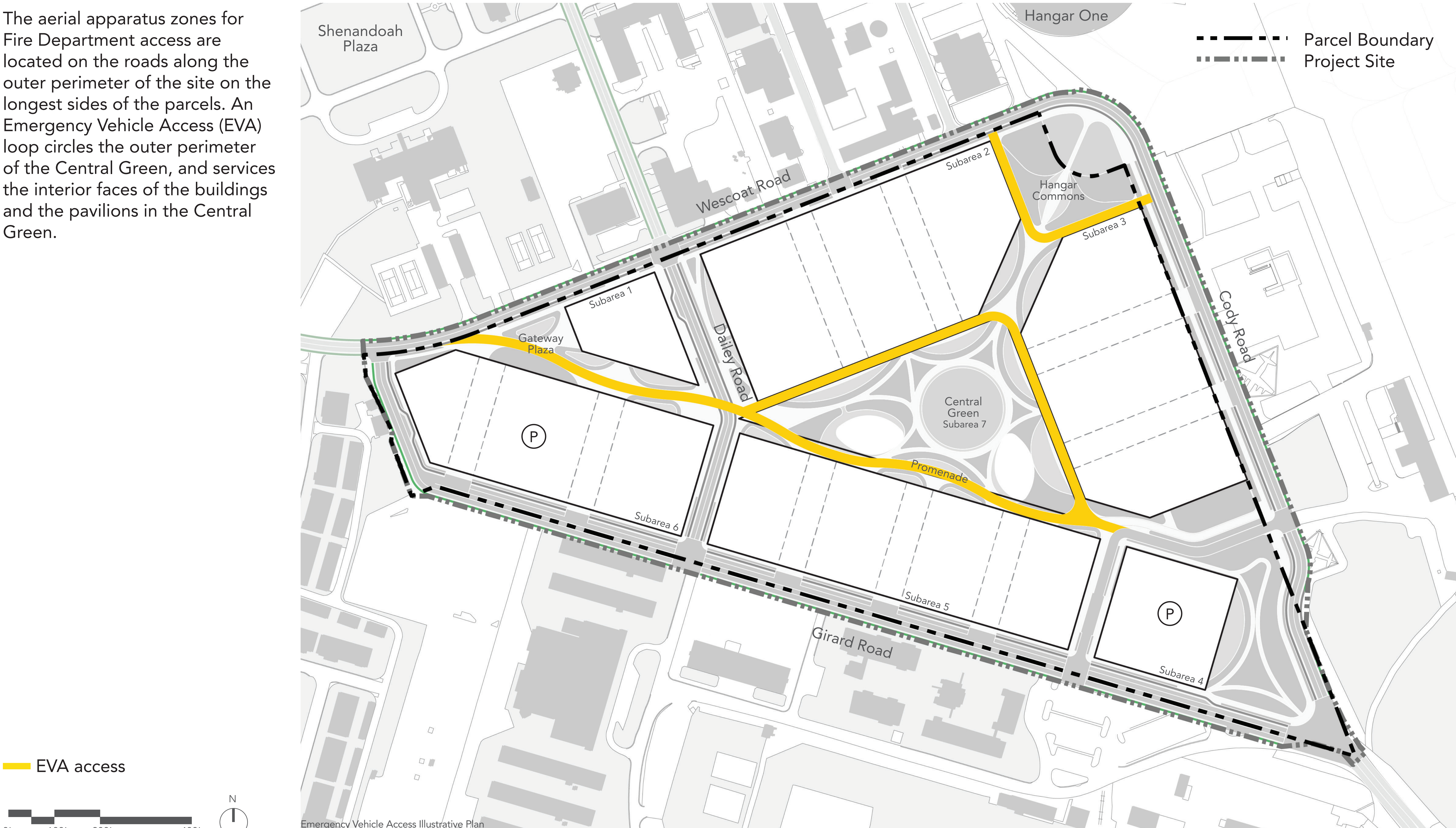


Curb Use and Building Access Illustrative Plan

MOBILITY

# EMERGENCY VEHICLE ACCESS

The aerial apparatus zones for Fire Department access are located on the roads along the outer perimeter of the site on the longest sides of the parcels. An Emergency Vehicle Access (EVA) loop circles the outer perimeter of the Central Green, and services the interior faces of the buildings and the pavilions in the Central Green.



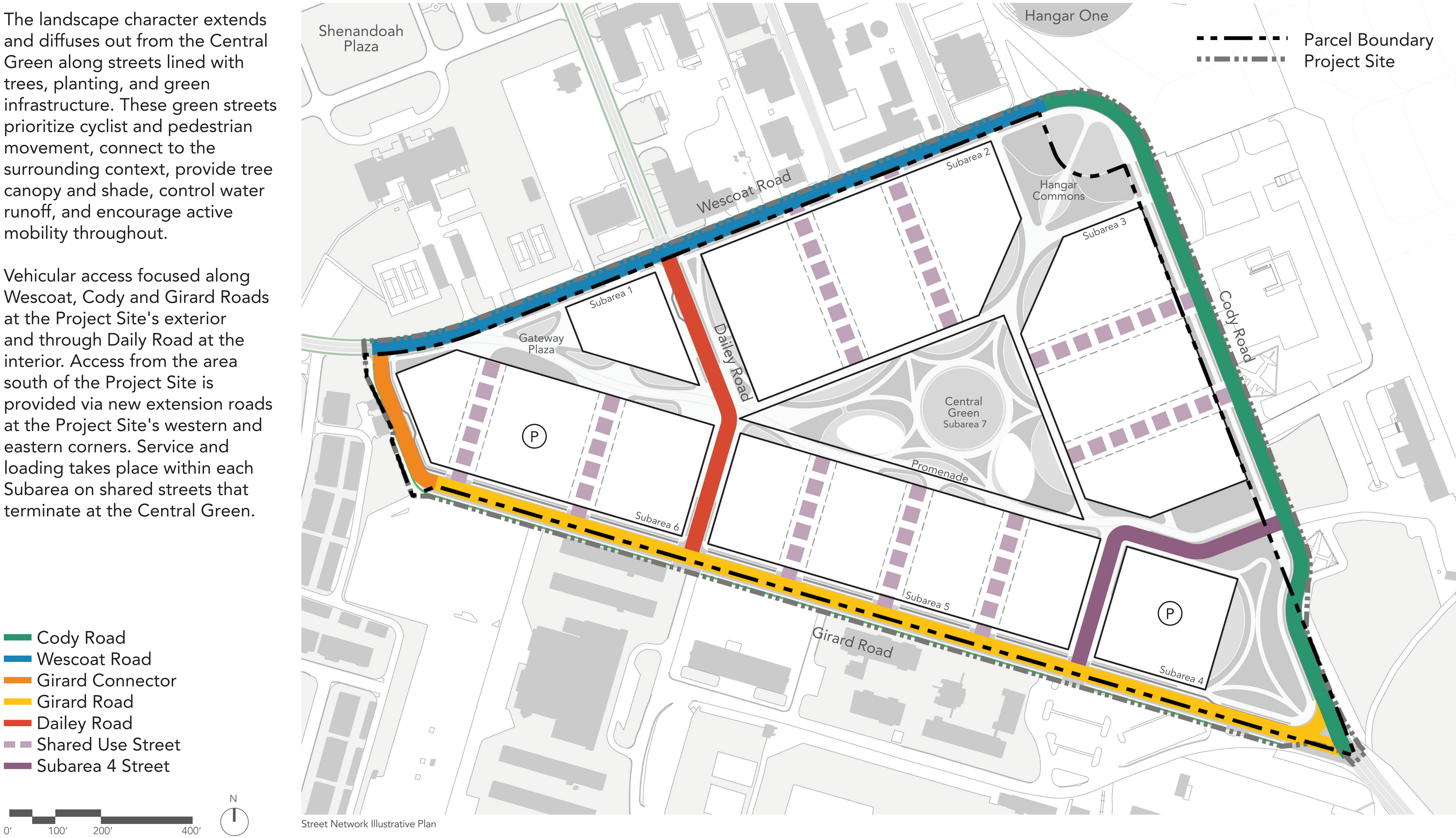

Emergency Vehicle Access Illustrative Plan

MOBILITY

# STREET NETWORK

The landscape character extends and diffuses out from the Central Green along streets lined with trees, planting, and green infrastructure. These green streets prioritize cyclist and pedestrian movement, connect to the surrounding context, provide tree canopy and shade, control water runoff, and encourage active mobility throughout.

Vehicular access focused along Wescoat, Cody and Girard Roads at the Project Site's exterior and through Daily Road at the interior. Access from the area south of the Project Site is provided via new extension roads at the Project Site's western and eastern corners. Service and loading takes place within each Subarea on shared streets that terminate at the Central Green.



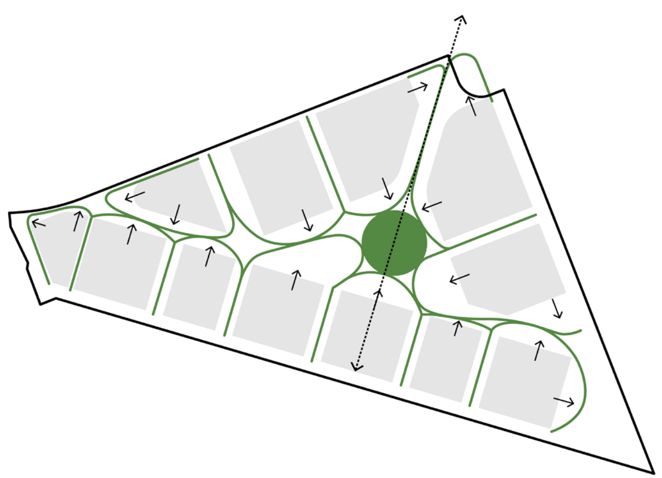
Street Network Illustrative Plan

# OPEN SPACE

OPEN SPACE
# ORGANIZING PRINCIPLES

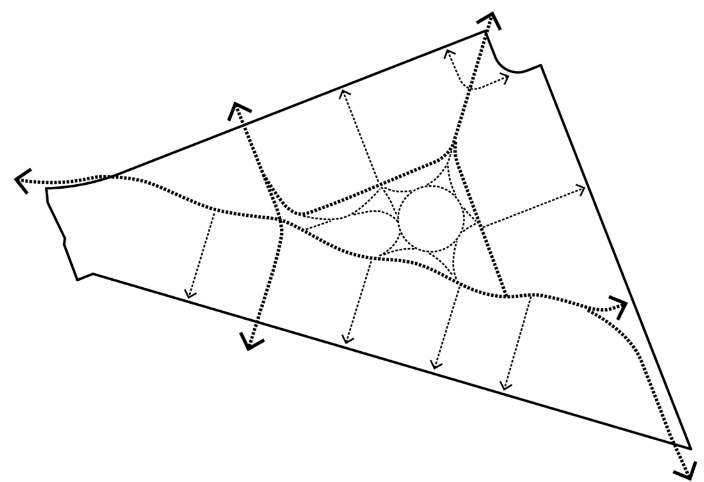
The social heart of the new district — the "Center-Point" — is achieved through the strategic choreography of urban fabric, site circulation, indoor-outdoor programming, and diverse planting environments that frame, shape and animate a central hub of activity.

## 1. CREATE THE CENTER-POINT



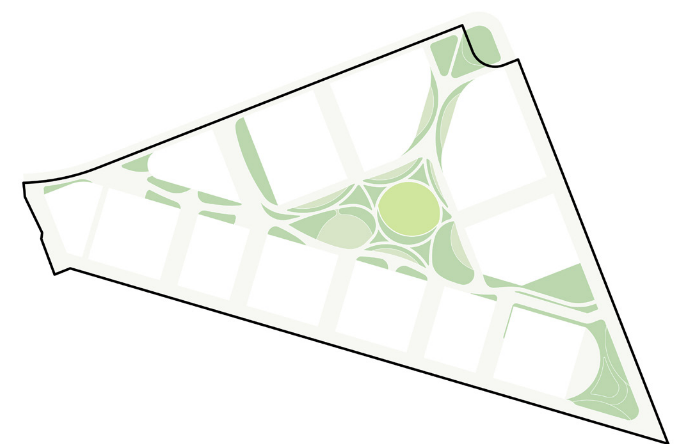
Building program and activity is intended to be pulled from the inside out to create a unique social environment in the landscape. An active center-point is created as a means to facilitate collisions of research, knowledge and innovation. The intent is for the central node of the project to be the active, shared heart.

## 2. MAXIMIZE CONNECTIVITY



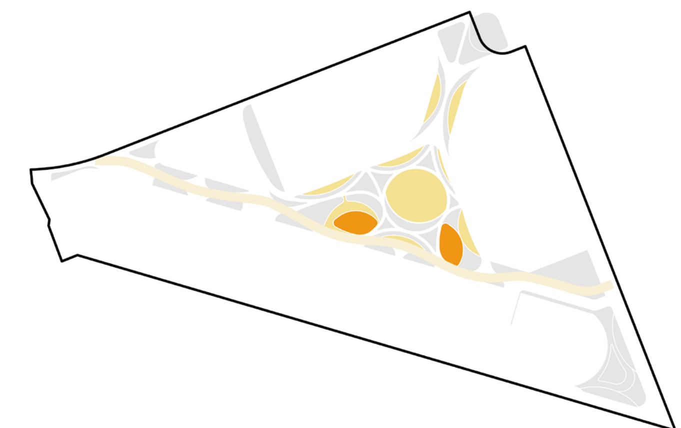
Connections are created around the site, and a direct relationship between the district's street network and Shenandoah Plaza/Berkeley Space Center at NASA Research Park is maintained.
View corridors to Hangar One and the Diablo Foothills are maintained and celebrated.

## 3. REGENERATE NATURE



Open space is clustered at the center and the north corner of the Project Site, with green fingers connecting out to the context. A meandering green promenade links the site to it's context at the east and west, and welcomes people in on both ends.

## 4. DIVERSIFY PROGRAMMING



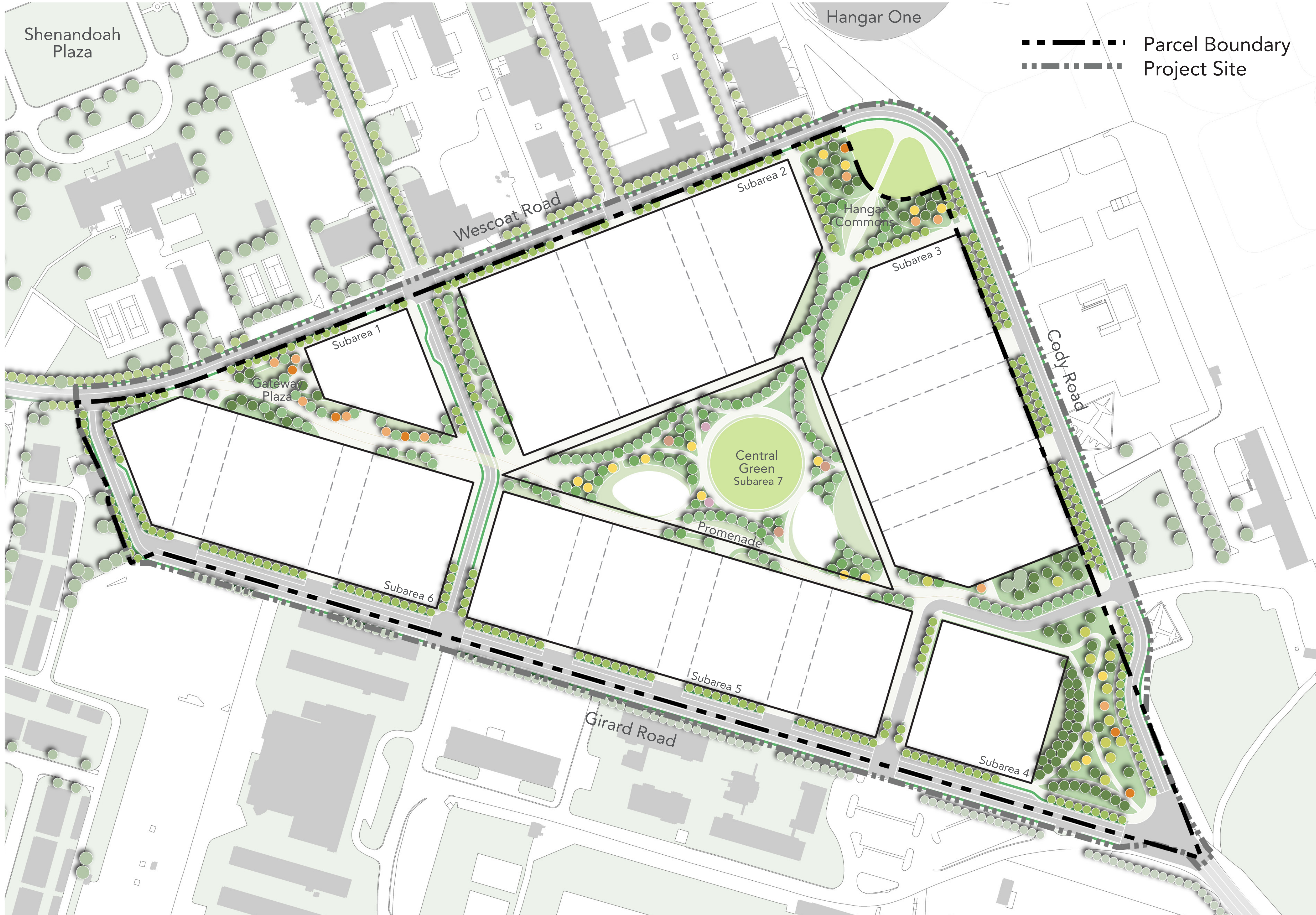
The car-free core is the social magnet and meeting point for the district and beyond. Active social nodes and spines are connected by a network of multimodal paths that prioritize pedestrians and cyclists. The social green and promenade are activated by two amenity pavilions and the building frontages. All Subareas have dedicated spill out zones into the Central Green or Promenade for more personalized programming opportunities.

# OPEN SPACE NETWORK

Great open spaces make great campuses. There is an especially strong desire today for people to have a closer and more intimate connection with nature. Exposure to nature and gardens has demonstrably proven significant benefits to mental health and well-being, as well as improving micro-climate, biodiversity and ecological function.

The green framework of the center-point scheme links Shenandoah Plaza to Moffett Federal Airfield through vegetated promenades, paseos, patios, gardens, bosques, and hedgerows. In addition, some buildable sites incorporate outdoor research “yards”, expanding the functional possibilities of the site.

The Central Green hosts the shared amenity features, and is a focal point for activity and innovation that acts as a nexus at which people can gather and recreate. This scheme envisions a development that fully integrates buildings with landscape, pulling nature and people through the site, and connecting our project interior to the greater area.




Illustrative Open Space Network Plan

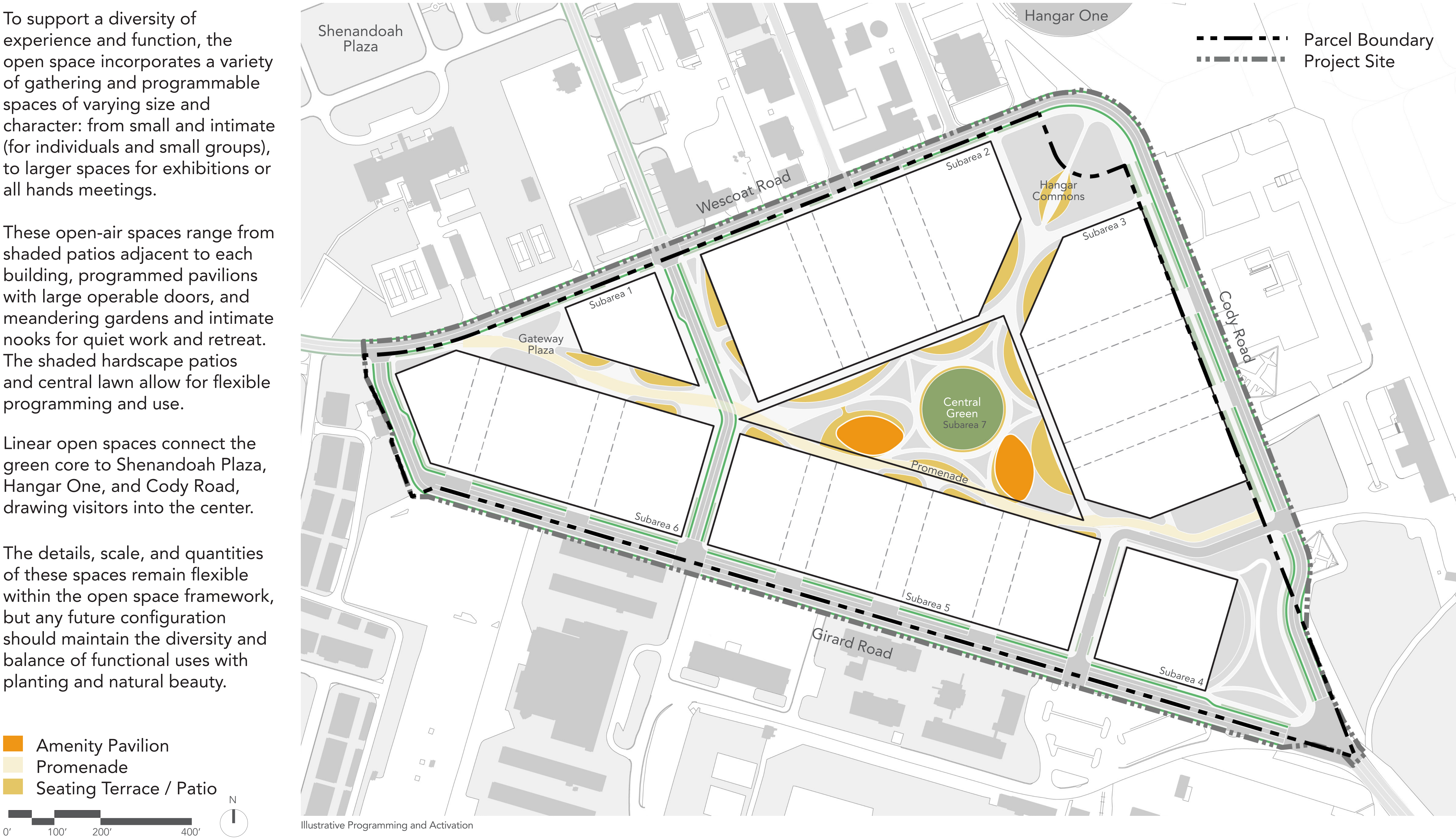
OPEN SPACE
# PROGRAMMING & ACTIVATION

To support a diversity of experience and function, the open space incorporates a variety of gathering and programmable spaces of varying size and character: from small and intimate (for individuals and small groups), to larger spaces for exhibitions or all hands meetings.

These open-air spaces range from shaded patios adjacent to each building, programmed pavilions with large operable doors, and meandering gardens and intimate nooks for quiet work and retreat. The shaded hardscape patios and central lawn allow for flexible programming and use.

Linear open spaces connect the green core to Shenandoah Plaza, Hangar One, and Cody Road, drawing visitors into the center.

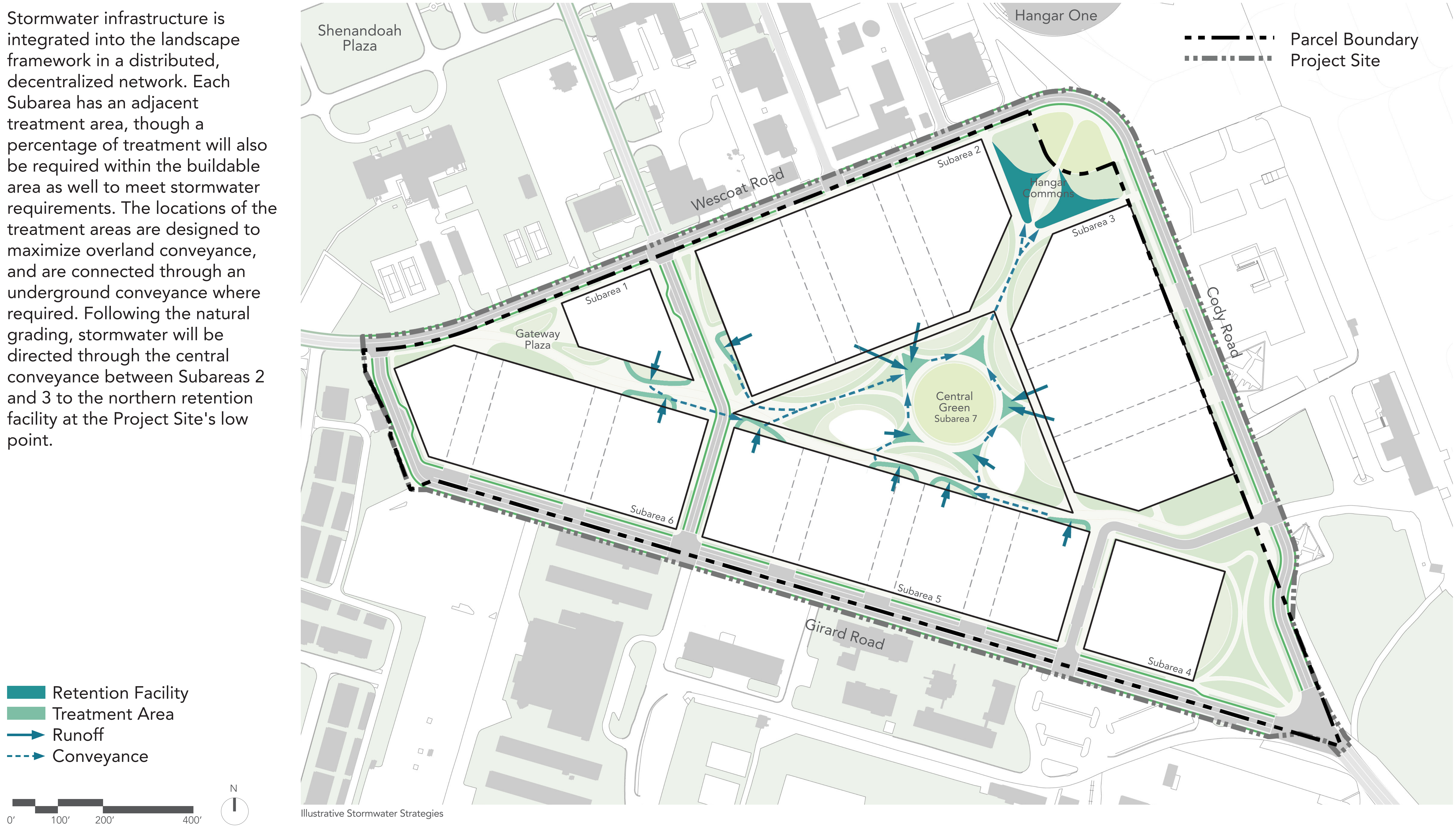
The details, scale, and quantities of these spaces remain flexible within the open space framework, but any future configuration should maintain the diversity and balance of functional uses with planting and natural beauty.




Illustrative Programming and Activation

## OPEN SPACE
# STORMWATER STRATEGIES

Stormwater infrastructure is integrated into the landscape framework in a distributed, decentralized network. Each Subarea has an adjacent treatment area, though a percentage of treatment will also be required within the buildable area as well to meet stormwater requirements. The locations of the treatment areas are designed to maximize overland conveyance, and are connected through an underground conveyance where required. Following the natural grading, stormwater will be directed through the central conveyance between Subareas 2 and 3 to the northern retention facility at the Project Site's low point.




Illustrative Stormwater Strategies

OPEN SPACE

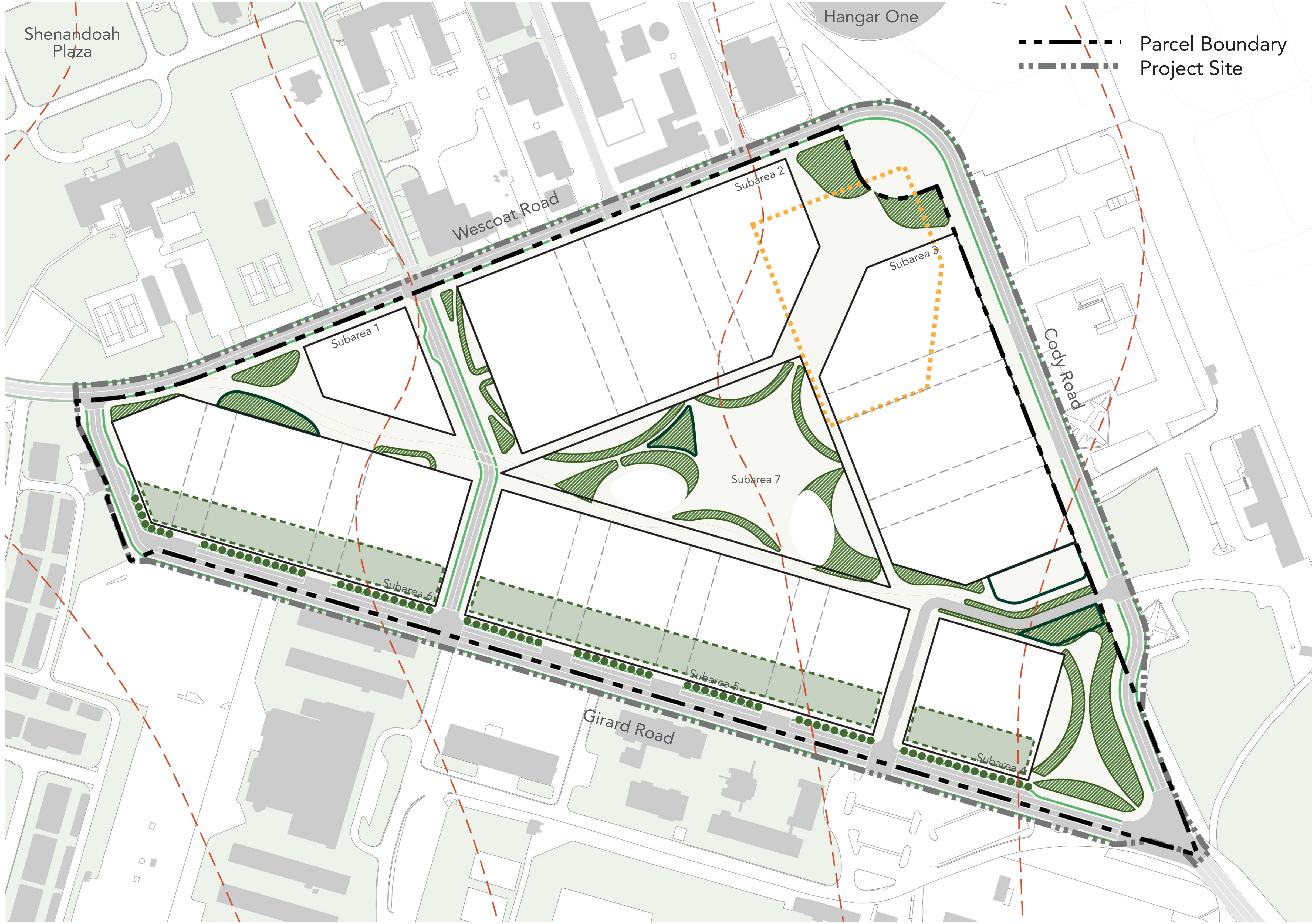
# PHYTOREMEDIATION STRATEGIES

Industrial uses adjacent to and within the project boundaries have left behind a legacy of residual chemicals in the soil and groundwater. The landscape framework is flexible to allow for the inclusion of phytoremediation strategies, including: the planting of phytoremediation band(s) along Girard Road to intersect the flow of the plume; mixing phytoremediation species such as poplar, willow, and cottonwood, into the overall species palette; and planting temporary dense groves of phytoremediation trees on future building plots to improve soil and water in the near-term. Some of these plantings may take the form of "micro-forests": fast-growing, densely planted gardens that support more wildlife, sequester more carbon, and provide more soil and water enrichment than traditional plantings.

Mixed Phyto Groves
Potential Micro-Forests
Phytoremediation Band
Temporary Phyto Groves
Isoconcentration Contour for Trichloroethylene (TCE) in Shallow Groundwater
Area of Environmental Concern

0' 100' 200' 400'

N




Illustrative Phytoremediation Strategies

OPEN SPACE

# PHYTOREMEDIATION TREE COUNTS

| Site Coverage | Acres | SF | | | | | |
|---|---|---|---|---|---|---|---|
| **Passive Use Areas** | 4.61 | 200,878 | **Trees/Acre** | **Tree TOTAL** | **% Phyto** | **Phyto TOTAL** | **Phyto ROUNDED** |
| Stormwater | 0.98 | 42,555 | 165 | 161 | 20% | 32 | 30 |
| Mixed Groves TOTAL | 2.36 | 102,955 | | | | | |
| Mixed Groves | 1.96 | 85,353 | 165 | 323 | 20% | 65 | 65 |
| Micro Forests | 0.40 | 17,602 | 1350 | 546 | 75% | 409 | 410 |
| **Amenity/Street** | **Linear Feet** | **Spacing (ft)** | **% of Frontage** | **Tree TOTAL** | **% Phyto** | **Phyto TOTAL** | **Phyto ROUNDED** |
| North | 4,000 | 25 | 80% | 128 | 10% | 13 | 15 |
| Shared-Use Streets | 1,450 | 20 | 90% | 65 | 30% | 20 | 20 |
| Girard Road | 1,500 | 20 | 80% | 60 | 100% | 60 | 60 |
| **TOTAL TREE COUNTS** | | | | **1,283** | | **598** | **600** |

Notes:

165 trees per acre is approximately 17.5’ spacing in triangular configuration; intent is to provide mix of clusters/groves and groundcover areas.
1350 trees per acre is approximately 6' spacing in a triangular configuration; intent is to max out the density in Micro-Forests and temporary Phyto Groves, which will be coordinated with surface parking requirements throughout the construction of all four phases of the development.

Minimum phytoremediation tree quantity to be determined by agreements with EPA.

OPEN SPACE
# PLANTING CHARACTER ZONES

A dynamic and varied planting palette enriches both the ecological and social functions of the landscape program. Iconic planting palettes strengthen the individual identities of landscape features within the site. A mix of native, climate adaptive, drought-tolerant, and memorable species provide flexibility for the palette to enrich one's experience across the site. All planting zones include phytoremediation species as part of the suggested palette.

## MICRO-FOREST STRATEGY

Micro-forest (Miyawaki Method) combined with phytoremediation Strategies.

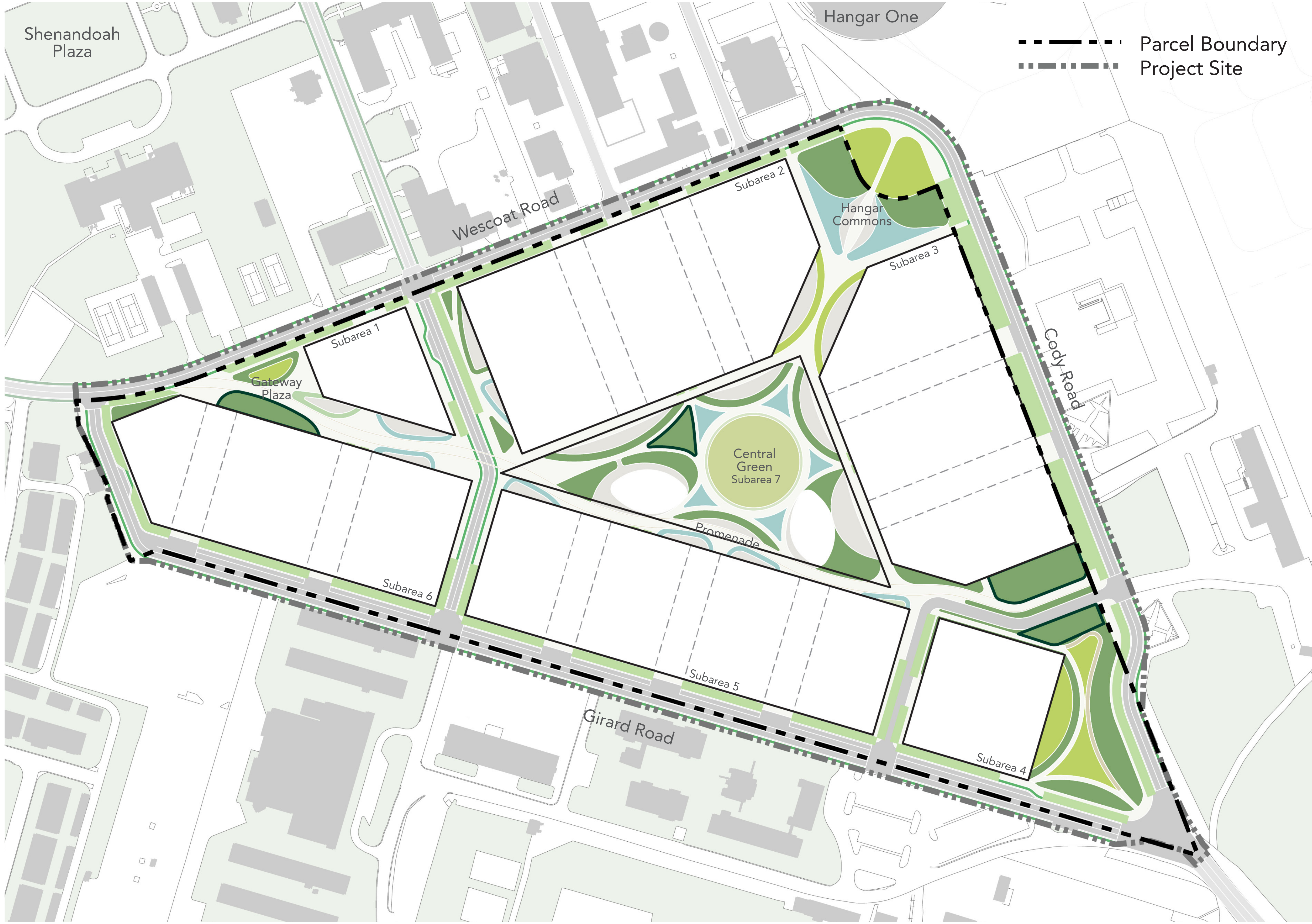
Year 0 | 3-5 Years | 15-20 Years

## LEGEND

- Woodlands
- Stormwater
- Gardens & Meadows
- Street Trees
- Lawn
- Potential Micro-Forest

0' 100' 200' 400'

N




Illustrative Planting Character Zones

# PLANTING CHARACTER ZONES




OPEN SPACE
# PLANTING PALETTE

The 'Woodlands' palette will tie our site back to its native planting heritage of being an oak landscape. Oak and willow hummocks will provide dappled shade, and create a natural atmosphere.

The stormwater gardens are integral to the landscape design of the entire site, and will be both functional and beautiful. Species like cottonwoods and willows provide both stormwater remediation and phytoremediation.

The 'Gardens and Meadows' will enrich seating areas and active landscapes, providing color and texture.

The street tree palette will connect the site to its context, greet visitors and invite people into the center-point.

Note: specific planting species are shown as suggestions; final planting palettes to be determined in future project phases.

**PHYTOREMEDIATION SPECIES**

## WOODLANDS

BLUE OAK · COAST LIVE OAK · TOYON · FUCHSIA-FLOWERED GOOSEBERRY · CHAPARRAL WHITETHORN · WOOLLYLEAF CEANOTHUS · CALIFORNIA POLYPODY · WILD BUCKWHEAT

PACIFIC MADRONE · BAY LAUREL · SCOULER'S WILLOW · PEPPERMINT WILLOW · GREENLEAF MANZANITA · HONEYLEAF CEANOTHUS · EVERGREEN FOUNTAIN GRASS · RED FESCUE

## STORMWATER

COAST LIVE OAK · COTTONWOOD · CALIFORNIA BUCKEYE · COFFEEBERRY · WESTERN SWORD FERN · CREEPING WILD RYE · TOYON · HEUCHERA 'SANTA ANA CARDINAL'

STRAWBERRY TREE · SCOULER'S WILLOW · ELDERBERRY · PACIFIC WAX MYRTLE · SEEP MONKEYFLOWER · CALIFORNIA GRAY RUSH · RED TWIG DOGWOOD · WILD BUCKWHEAT

## GARDENS & MEADOWS

INCENSE CEDAR · CANARY ISLAND PINE · BLUE BLOSSOM THYRSIFLORUS · CLEVELAND SAGE · SILVER TUSSOCK · CALIFORNIA POPPY · RED HOT POKER · KANGAROO PAW

POPLAR · ELDARICA PINE · MULBERRY · AUSTIN GRIFFITHS MANZANITA · COYOTE BRUSH · CALIFORNIA GOLDFIELDS · WILD BUCKWHEAT · SCARLET BUGLER

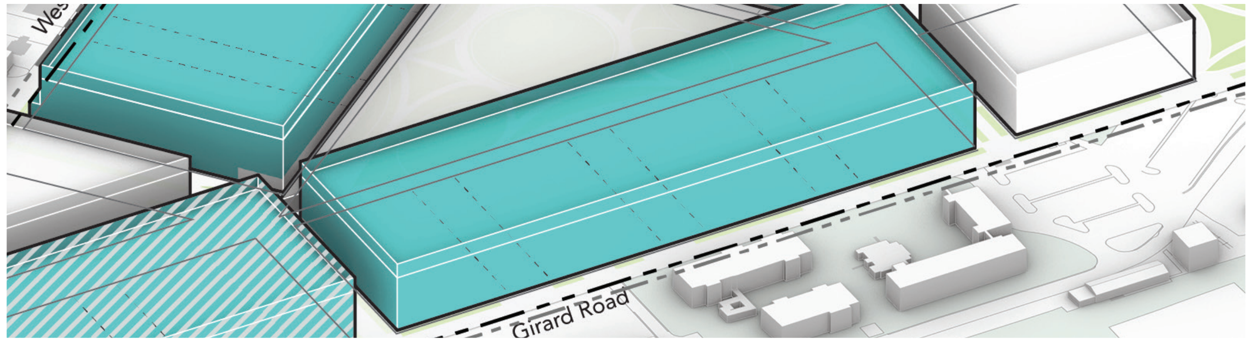
## STREET TREES

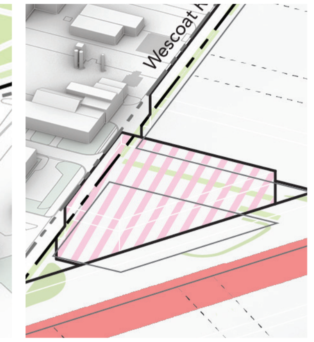
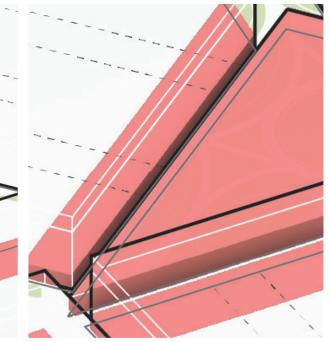
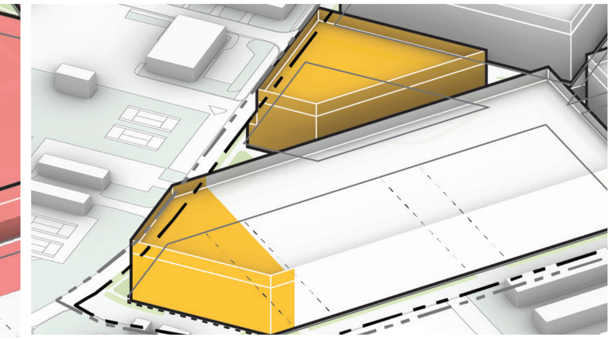
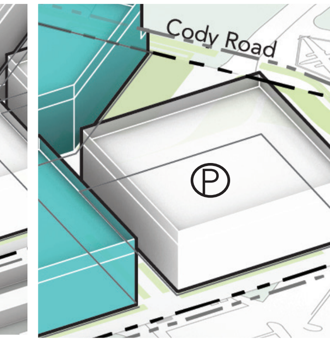
LONDON PLANE · SILVER LINDEN · AMERICAN ELM · CORK OAK · GINKGO · POPLAR

# BUILDING TYPOLOGIES

BUILDING TYPOLOGIES

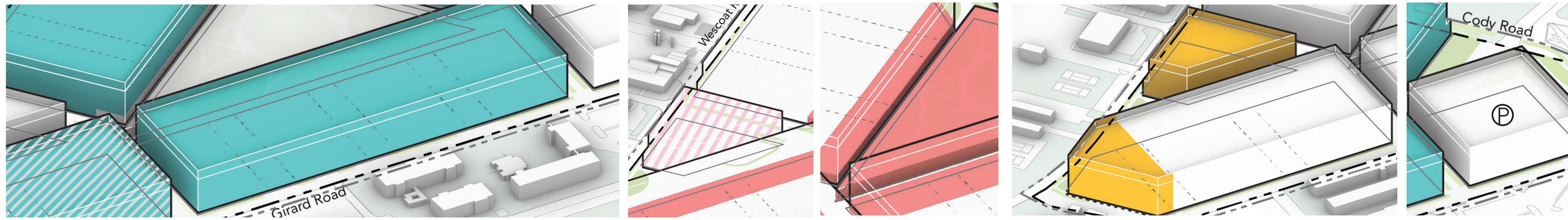
# PROJECT ASSUMPTIONS




| PROJECT ASSUMPTIONS | Research and Office Uses | | | Conference Center | Active Uses | Housing and Lodging | | Garage |
|---|---|---|---|---|---|---|---|---|
| | Office | Lab and R&D | Academic | | | Short-Term Lodging | Student/Faculty Housing | |
| POPULATION AND EMPLOYMENT PROJECTION FACTORS | 279 sqft per employee | 405 sqft per employee | 234 sqft per employee | 1 employee per room /1100sqft* *EIS 2002 (250 rooms mentioned for 275K conference GFA, which comes down to 1100sqft per room)* | 500 sqft per employee | 2.0 people per unit | 2.5* people per unit **Average of 2.5 occupants per unit is based on the= (2 occupants x 25 percent)+(2 occupants x 25 percent)+(3 occupants x 50percent) /100 percent* | N/A |
| TENANT ACTIVITIES AND HAZARD CONTAINMENT | N/A | For R&D purposes, the proposed research activities are not for commercial service shop purposes. There will be no production of parts or products for sales purposes by tenants. For negative externalities (i.e. noxious fumes), the R&D functions will be conducted within high security zones for multiple reasons such as air quality and/or other hazard containment, intellectual property protection, and property security and will not be accessible to the general public. | N/A | N/A | N/A | N/A | N/A | N/A |
| GENERATOR CAPACITY | ← Assume each building would likely not exceed 500kW of generator capacity, which is Tier 3 per BAAQMS BACT requirements. For testing, assume 2-4 hours per month (up to 50 hours per BAAQMS AQ recommended assumption). Size provided is for emergency only, standby loads and backup as requested by tenants may impact this size. → | | | N/A | N/A | N/A | N/A | N/A |
| PARCELS CAPACITY ASSUMPTIONS | Ground Plane: **10%** Working Yards, **90%** Building Footprint<br>Vertical: **75%** Massing, **25%** Sculpting Reduction | | | N/A | N/A | N/A | N/A | N/A |
| PROGRAM DISTRIBUTION | **30% office** and **70% Lab space** | | | N/A | 90% Mixed Amenities (retail, research, lobbies and seating area, small coffee bars, gym or other amenities, fabrication workshops, co-working spaces, etc.) Up to 10%kitchen (for utilities planning purposes) | | Faculty Housing (Apartment): **36%** Student Housing (Apartment): **64%** *Note: 4% / 36% split was based on the student housing vs student/faculty housing square footage targets that were given to at the beginning of the project (80k for student housing, 45k for faculty/student housing)* | N/A |
| UNIT SIZE / TYPE ASSUMPTIONS | N/A | | | N/A | N/A | **740 sqft per unit** (Gross) Assumes 2 occupants per unit, 100% studios. | **895 sqft per unit** (Gross) Assumes average of 2.5 occupants per unit, for a unit mix of 25% studios at 2 occupants, 25% one-bedrooms at 2 occupants, and 50% two-bedrooms. at 3 occupants. | N/A |
| TYPICAL FLOOR HEIGHTS | Typical Ground Floor Height: **20ft-26ft**<br>Typical Floor Height: **15ft-18ft**<br>Maximum Development Parameter: **80ft+25ft mechanical screening=105ft** | | | Typical Floor: **20ft** | Typical Floor: **20ft** | Typical Floor: **10ft** | | Typical Floor: **10ft**<br>75ft (7 stories / 8 Levels)+5ft parapet=80ft<br>65ft (6 stories / 7 Levels)+5ft Parapet=70ft |
| FLOOR PLATE / DEPTH | Optimized Daylight: **105ft wide**<br>Flexible Office/Lab: **125ft wide**<br>R&D: **140ft wide** | | | | Typical Depth: **60ft** | Typical Depth: **75ft** | Typical Depth: **64ft** | Typical Depth: **252ft** |
| CONSTRUCTION TYPE | Type 1 | | | Type 1 | Type 1 | Type 1 / Type 3 | | Type 1 |

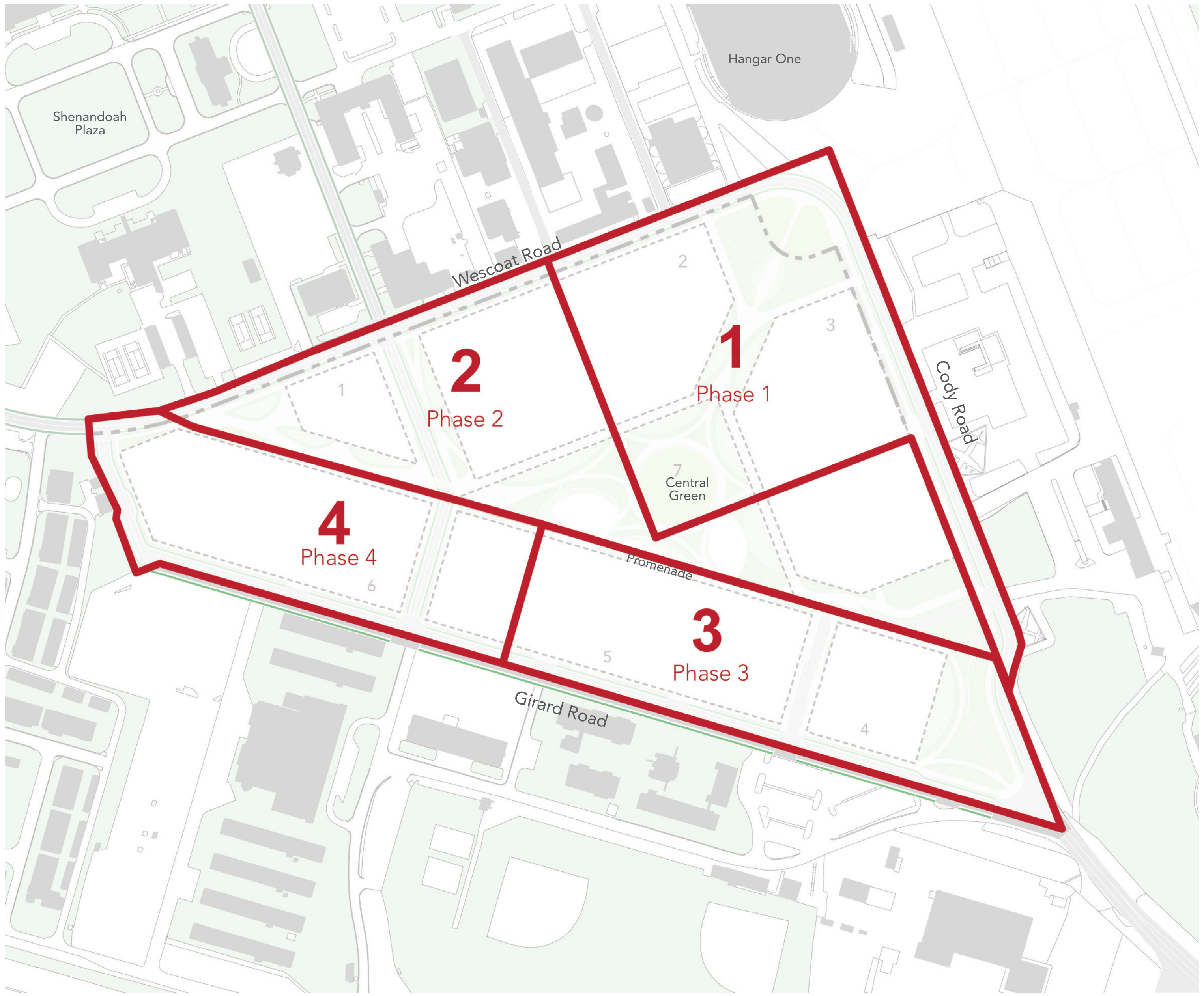
# PROJECT ASSUMPTIONS




| PARKING RATIOS | | Research and Office Uses | | | Conference Center | Active Uses | Housing and Lodging | | Garage |
|---|---|---|---|---|---|---|---|---|---|
| | | Office | Lab and R&D | Academic | | | Short-Term Lodging | Student/Faculty Housing | |
| MINIMUM BICYCLE PARKING | Long-Term Bicycle Parking (Class I) | 0.75 Spaces / 1,000 sf | 0.345 Spaces / 1,000 sf | 2.25 Spaces for each 10 employees plus 1.5 space for each 10 students | N/A | 0.15 Spaces / 1,000 sf | 1.5 Space / 1,000 sf | 1.5 Space / 1,000 sf | N/A |
| | Short-Term Bicycle Parking (Class II) | 0.1875 Spaces / 1,000 sf | 0.1875 Spaces / 1,000 sf | 1.5 Space / 10 students | N/A | 0.75 Spaces / 1,000 sf | 1.5 Space / 10 Unit | 1.5 Space / 10 Unit | N/A |
| MAXIMUM VEHICULAR PARKING | | 1.5 Spaces / 1,000 sf | 1.5 Spaces / 1,000 sf | 1.3 Spaces / 1,000 sf | 1.7 Spaces / 1,000 sf | 1.7 Spaces / 1,000 sf | 1.3 Spaces / Unit | 1 Spaces / Unit | N/A |

# PHASING

# OVERALL PHASING




Phasing Plan

The phasing strategy builds out majority of the Research Uses with Office, Laboratory and Research & Development (R&D), along with academic in the first two phases. Phase two also includes Conference Center and Short-Term Lodging as well as the completion of the Central Green.

Surface parking is provided for the development in the first two phases, while phase three and four add two garage buildings to the project. Student / Faculty Housing comes at last as part of phase four.

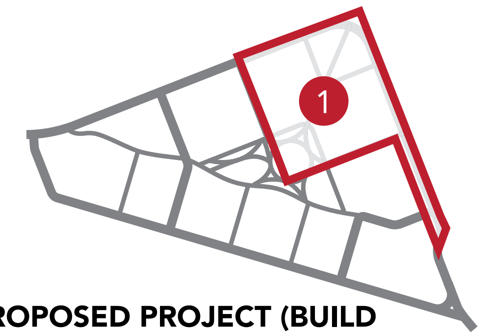
## PROPOSED PROJECT (BUILD ALTERNATIVE 1)

| DEVELOPMENT PROGRAM BY PHASE | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Total GFA (square feet) |
|---|---|---|---|---|---|
| Research and Office Uses | 640,000 | 640,000 | 412,500 | 307,500 | 2,000,000 |
| Office | 110,000 | 110,000 | 75,000 | 55,000 | *350,000* |
| Laboratory and R&D | 445,000 | 445,000 | 285,000 | 215,000 | *1,390,000* |
| Academic | 85,000 | 85,000 | 52,500 | 37,500 | *260,000* |
| Conference Center | 0 | 25,000 | 0 | 0 | 25,000 |
| Active Uses | 15,000 | 35,000 | 22,500 | 17,500 | 90,000 |
| Housing and Lodging | 0 | 0 | 0 | 0 | 205,000 |
| Short-Term Lodging | 0 | 75,000 | 0 | 0 | *75,000* |
| Student/Faculty Housing | 0 | 0 | 0 | 130,000 | *130,000* |
| Total GFA* (square feet) | 655,000 | 775,000 | 435,000 | 455,000 | 2,320,000 |

## REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

| DEVELOPMENT PROGRAM BY PHASE | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Total GFA |
|---|---|---|---|---|---|
| Research and Office Uses | 325,000 | 325,000 | 232,500 | 197,500 | 1,080,000 |
| Office | 57,500 | 57,500 | 41,250 | 33,750 | *190,000* |
| Laboratory and R&D | 225,000 | 225,000 | 161,250 | 138,750 | *750,000* |
| Academic | 42,500 | 42,500 | 30,000 | 25,000 | *140,000* |
| Conference Center | 0 | 25,000 | 0 | 0 | 25,000 |
| Active Uses | 15,000 | 35,000 | 22,500 | 17,500 | 90,000 |
| Housing and Lodging | 0 | 0 | 0 | 0 | |
| Short-Term Lodging | 0 | 75,000 | 0 | 0 | 75,000 |
| Student/Faculty Housing | 0 | 0 | 0 | 130,000 | 130,000 |
| Total GFA* (square feet) | 340,000 | 460,000 | 255,000 | 345,000 | 1,400,000 |

# PHASING
# PHASE 1




**PROPOSED PROJECT (BUILD ALTERNATIVE 1)**

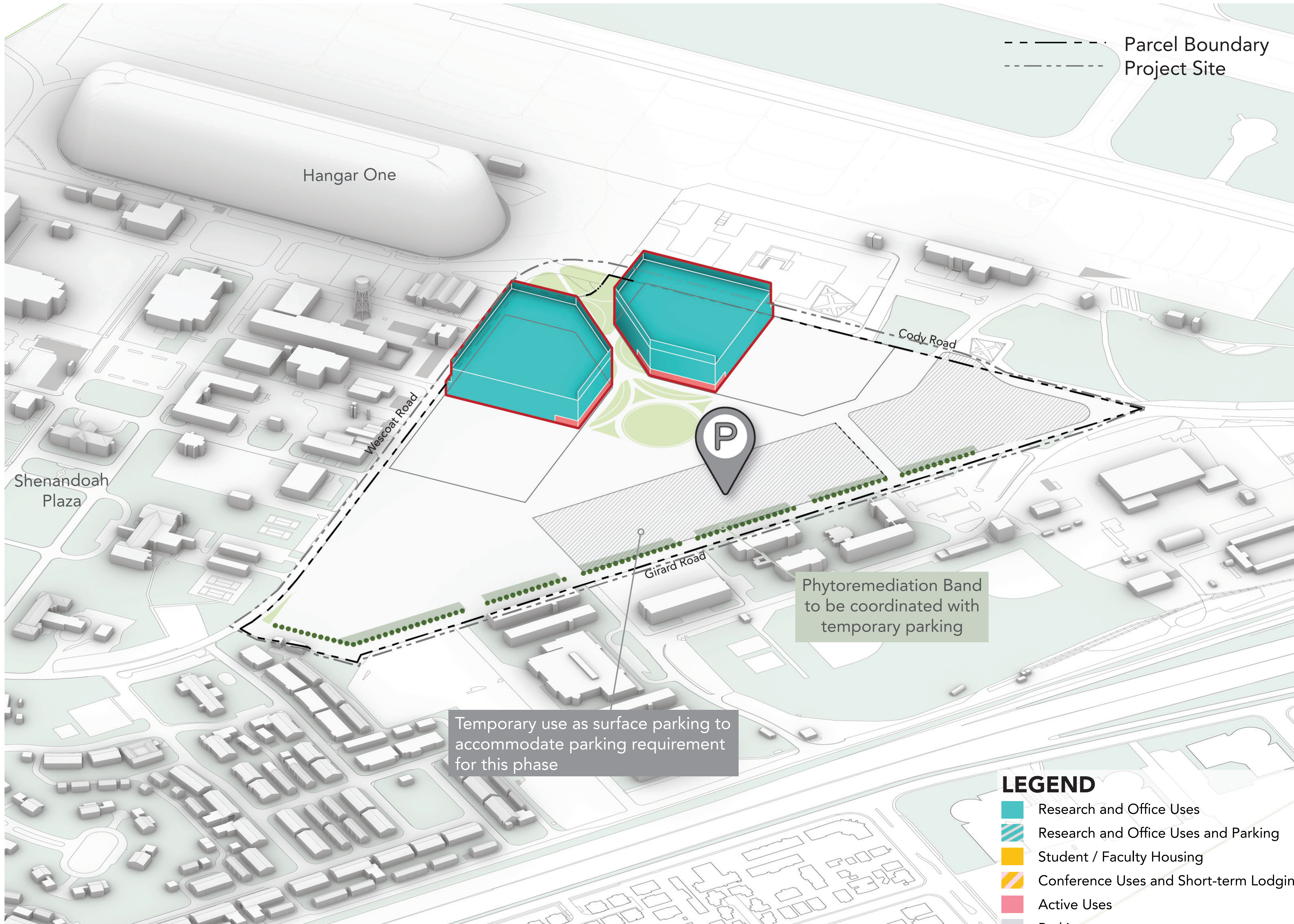
| DEVELOPMENT PROGRAM BY PHASE | Phase 1 |
|---|---|
| Research and Office Uses | 640,000 |
| Office | 110,000 |
| Laboratory and R&D | 445,000 |
| Academic | 85,000 |
| Conference Center | 0 |
| Active Uses | 15,000 |
| Housing and Lodging | 0 |
| Short-Term Lodging | 0 |
| Student/Faculty Housing | 0 |
| Total GFA* (square feet) | 655,000 |

| | |
|---|---|
| Total Jobs | 1,886 |
| Total Dwelling Units | 0 |
| Total Students | 58 |
| Total Residents | 0 |

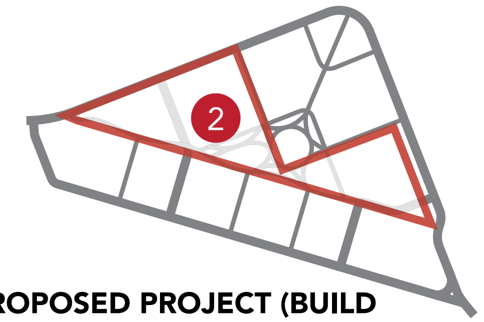
**REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)**

| DEVELOPMENT PROGRAM BY PHASE | Phase 1 |
|---|---|
| Research and Office Uses | 325,000 |
| Office | 57,500 |
| Laboratory and R&D | 225,000 |
| Academic | 42,500 |
| Conference Center | 0 |
| Active Uses | 15,000 |
| Housing and Lodging | 0 |
| Short-Term Lodging | 0 |
| Student/Faculty Housing | 0 |
| Total GFA* (square feet) | 340,000 |

| | |
|---|---|
| Total Jobs | 973 |
| Total Dwelling Units | 0 |
| Total Students | 29 |
| Total Residents | 0 |



PHASING
# PHASE 2




**PROPOSED PROJECT (BUILD ALTERNATIVE 1)**

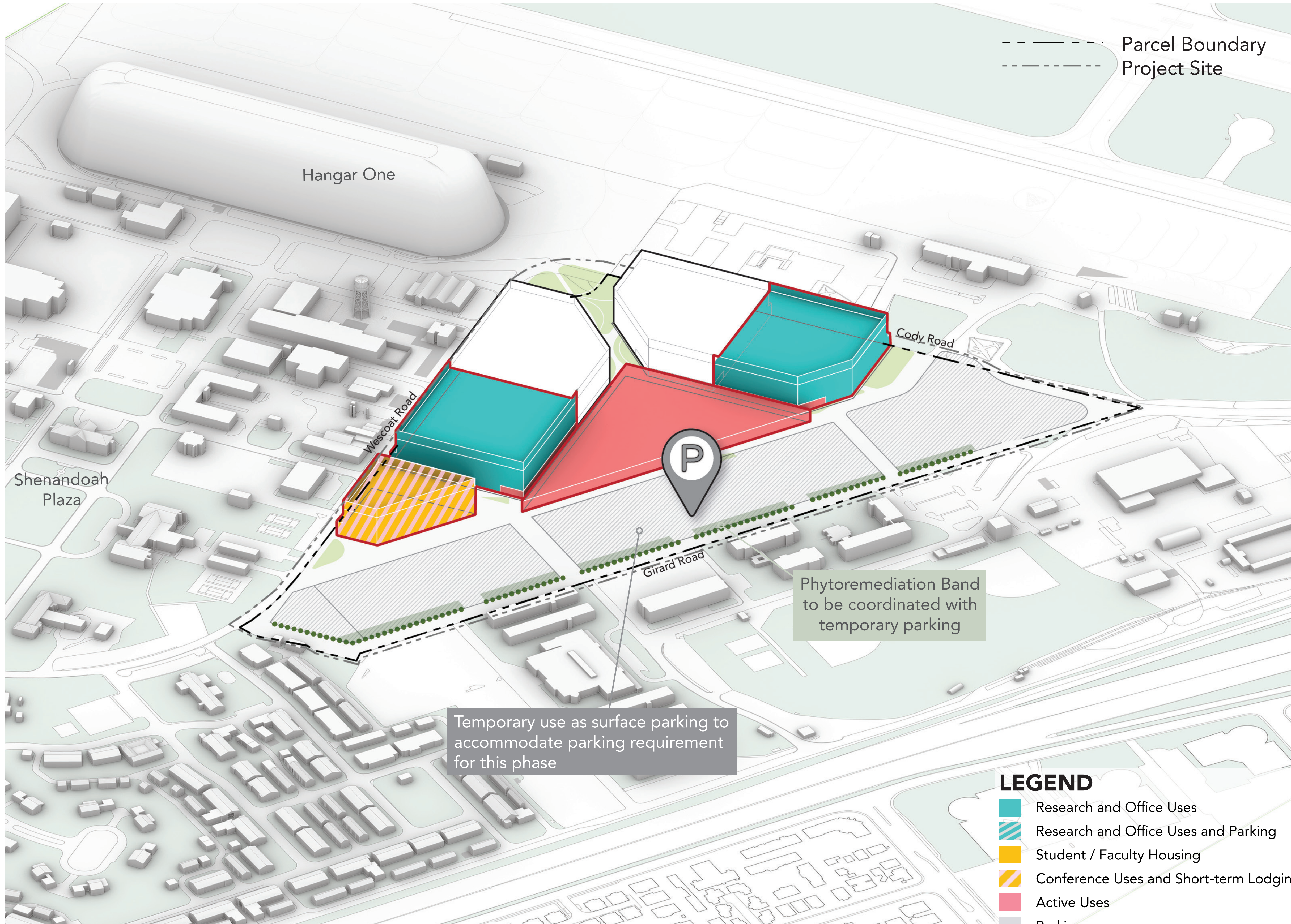
| DEVELOPMENT PROGRAM BY PHASE | Phase 2 |
|---|---|
| Research and Office Uses | 640,000 |
| Office | 110,000 |
| Laboratory and R&D | 445,000 |
| Academic | 85,000 |
| Conference Center | 25,000 |
| Active Uses | 35,000 |
| Housing and Lodging | 0 |
| Short-Term Lodging | 75,000 |
| Student/Faculty Housing | 0 |
| Total GFA* (square feet) | 775,000 |

| | |
|---|---|
| Total Jobs | 1,946 |
| Total Dwelling Units | 100 |
| Total Students | 58 |
| Total Residents | 200 |

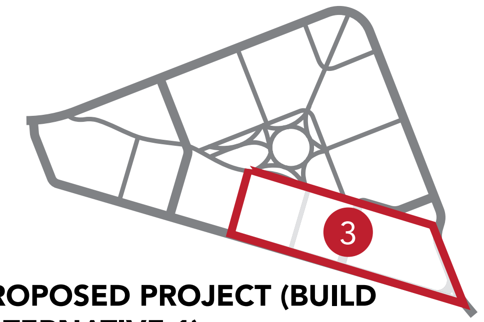
**REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)**

| DEVELOPMENT PROGRAM BY PHASE | Phase 2 |
|---|---|
| Research and Office Uses | 325,000 |
| Office | 57,500 |
| Laboratory and R&D | 225,000 |
| Academic | 42,500 |
| Conference Center | 25,000 |
| Active Uses | 35,000 |
| Housing and Lodging | 0 |
| Short-Term Lodging | 75,000 |
| Student/Faculty Housing | 0 |
| Total GFA* (square feet) | 460,000 |

| | |
|---|---|
| Total Jobs | 1,033 |
| Total Dwelling Units | 100 |
| Total Students | 29 |
| Total Residents | 200 |



PHASING
# PHASE 3




## PROPOSED PROJECT (BUILD ALTERNATIVE 1)

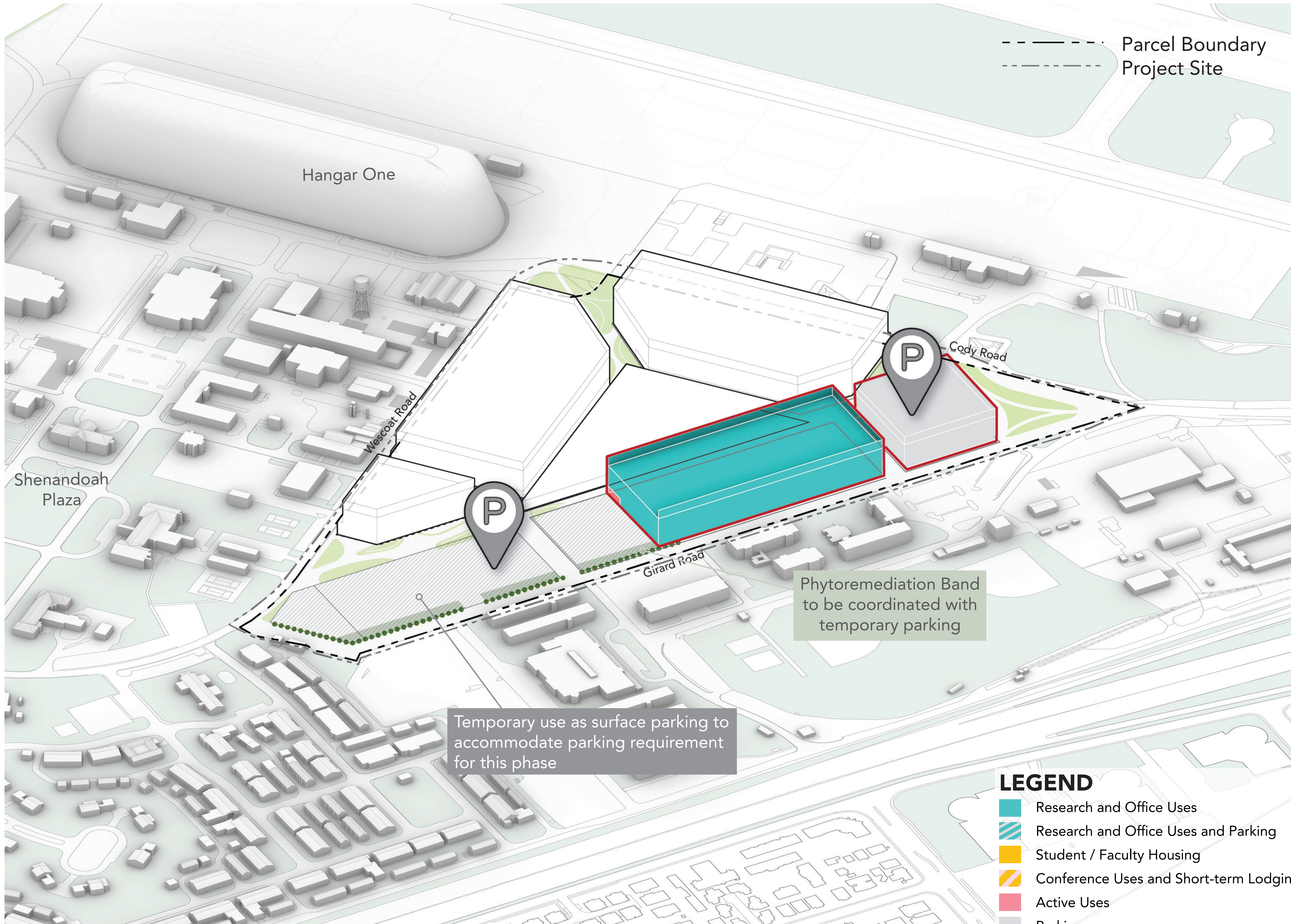
| DEVELOPMENT PROGRAM BY PHASE | Phase 3 |
|---|---|
| Research and Office Uses | 412,500 |
| Office | 75,000 |
| Laboratory and R&D | 285,000 |
| Academic | 52,500 |
| Conference Center | 0 |
| Active Uses | 22,500 |
| Housing and Lodging | 0 |
| Short-Term Lodging | 0 |
| Student/Faculty Housing | 0 |
| Total GFA* (square feet) | 435,000 |

| | |
|---|---|
| Total Jobs | 1,242 |
| Total Dwelling Units | 0 |
| Total Students | 36 |
| Total Residents | 0 |

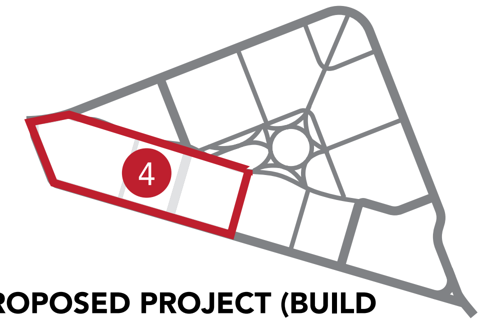
## REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

| DEVELOPMENT PROGRAM BY PHASE | Phase 3 |
|---|---|
| Research and Office Uses | 232,500 |
| Office | 41,250 |
| Laboratory and R&D | 161,250 |
| Academic | 30,000 |
| Conference Center | 0 |
| Active Uses | 22,500 |
| Housing and Lodging | 0 |
| Short-Term Lodging | 0 |
| Student/Faculty Housing | 0 |
| Total GFA* (square feet) | 255,000 |

| | |
|---|---|
| Total Jobs | 719 |
| Total Dwelling Units | 0 |
| Total Students | 21 |
| Total Residents | 0 |



PHASING
# PHASE 4




**PROPOSED PROJECT (BUILD ALTERNATIVE 1)**

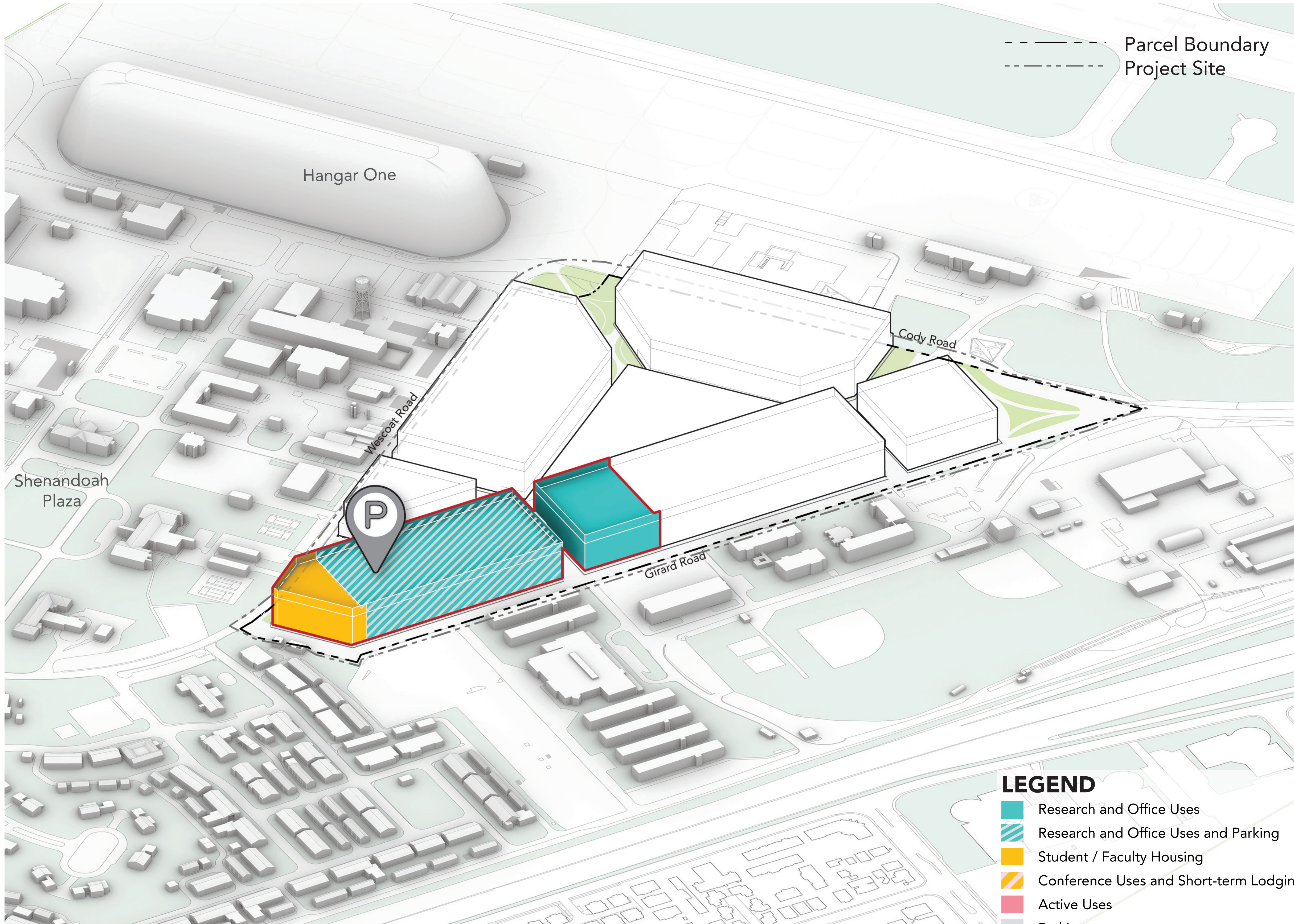
| DEVELOPMENT PROGRAM BY PHASE | Phase 4 |
|---|---|
| Research and Office Uses | 307,500 |
| Office | 55,000 |
| Laboratory and R&D | 215,000 |
| Academic | 37,500 |
| Conference Center | 0 |
| Active Uses | 17,500 |
| Housing and Lodging | 0 |
| Short-Term Lodging | 0 |
| Student/Faculty Housing | 130,000 |
| Total GFA* (square feet) | 455,000 |

| | |
|---|---|
| Total Jobs | 923 |
| Total Dwelling Units | 145 |
| Total Students | 26 |
| Total Residents | 363 |

**REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)**

| DEVELOPMENT PROGRAM BY PHASE | Phase 4 |
|---|---|
| Research and Office Uses | 197,500 |
| Office | 33,750 |
| Laboratory and R&D | 138,750 |
| Academic | 25,000 |
| Conference Center | 0 |
| Active Uses | 17,500 |
| Housing and Lodging | 0 |
| Short-Term Lodging | 0 |
| Student/Faculty Housing | 130,000 |
| Total GFA* (square feet) | 345,000 |

| | |
|---|---|
| Total Jobs | 605 |
| Total Dwelling Units | 145 |
| Total Students | 17 |
| Total Residents | 363 |

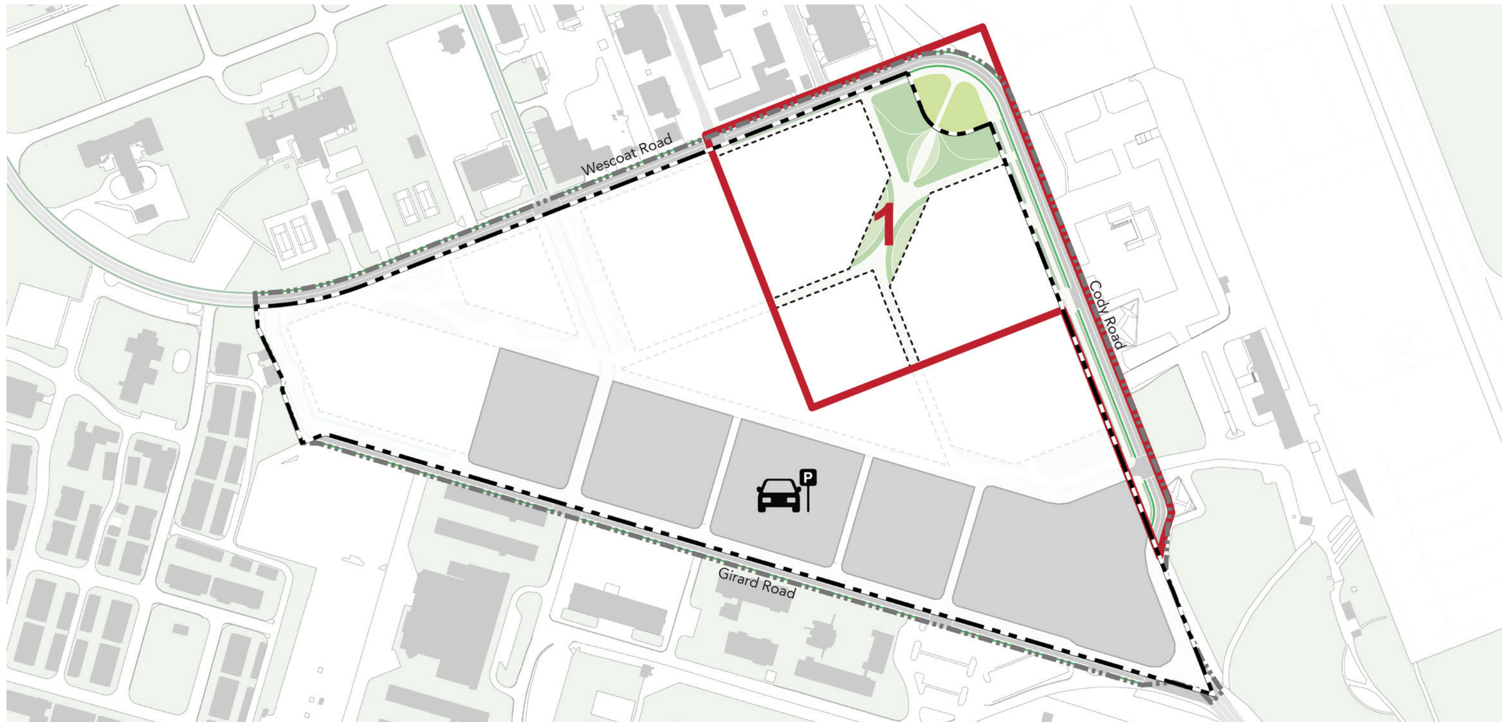


# PARKING

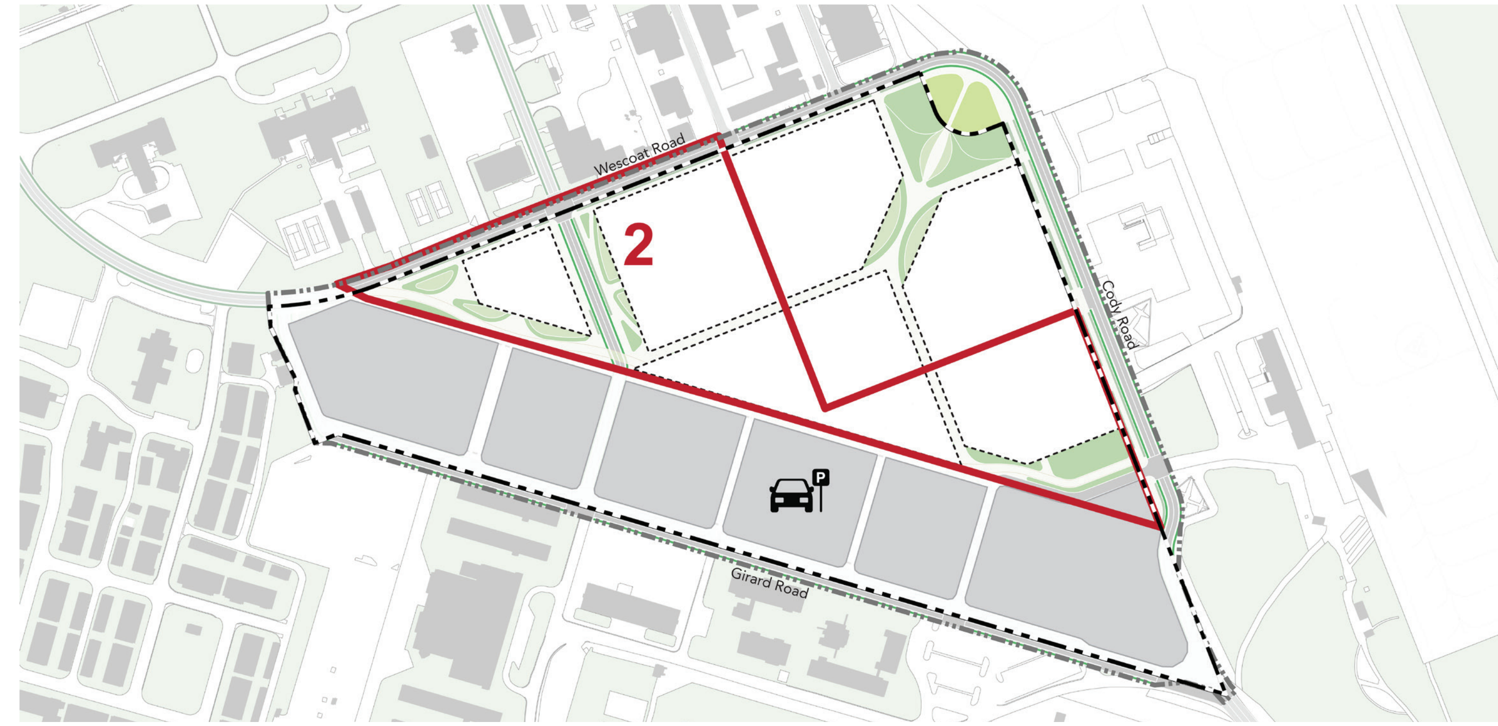
# SURFACE PARKING AND PHASING

Parcel Boundary
Project Site

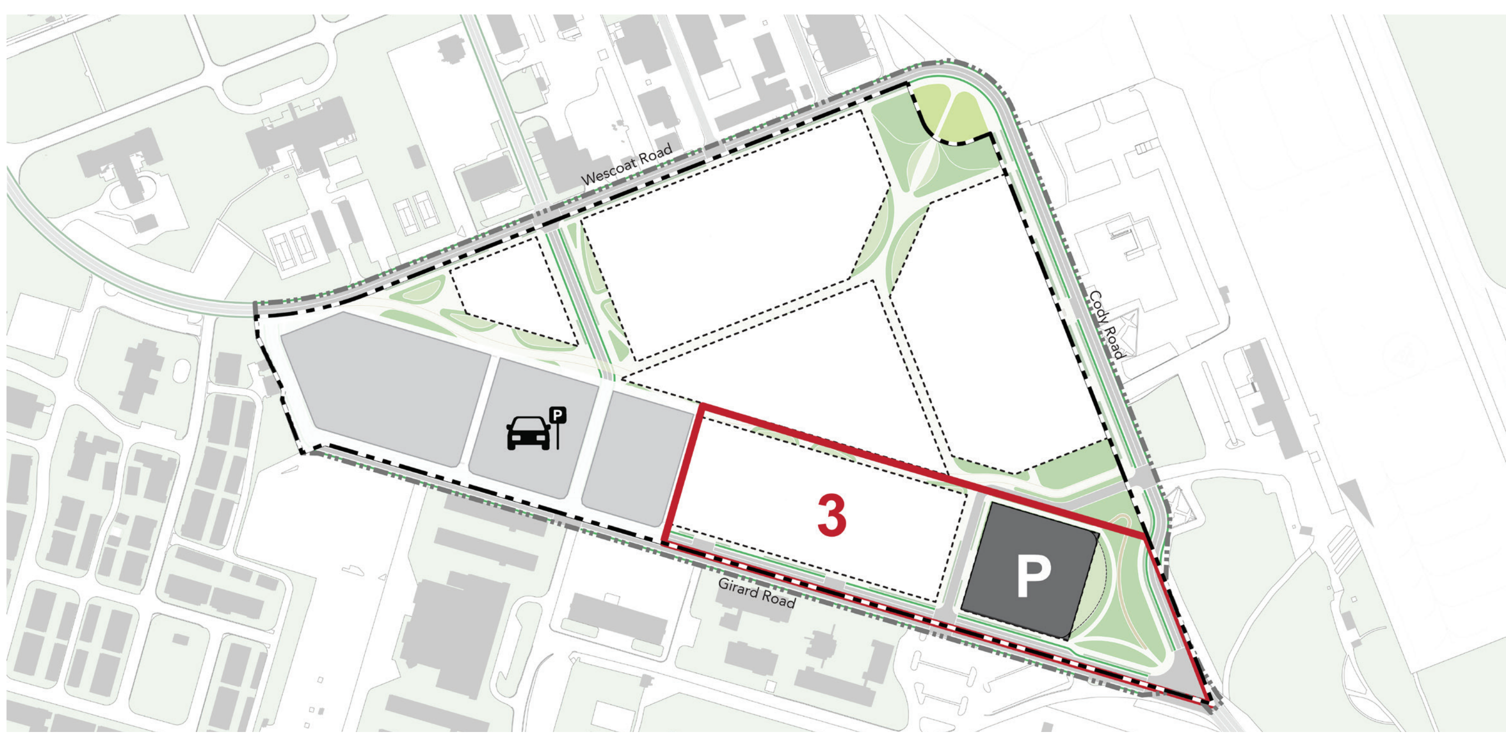
## PHASE 1



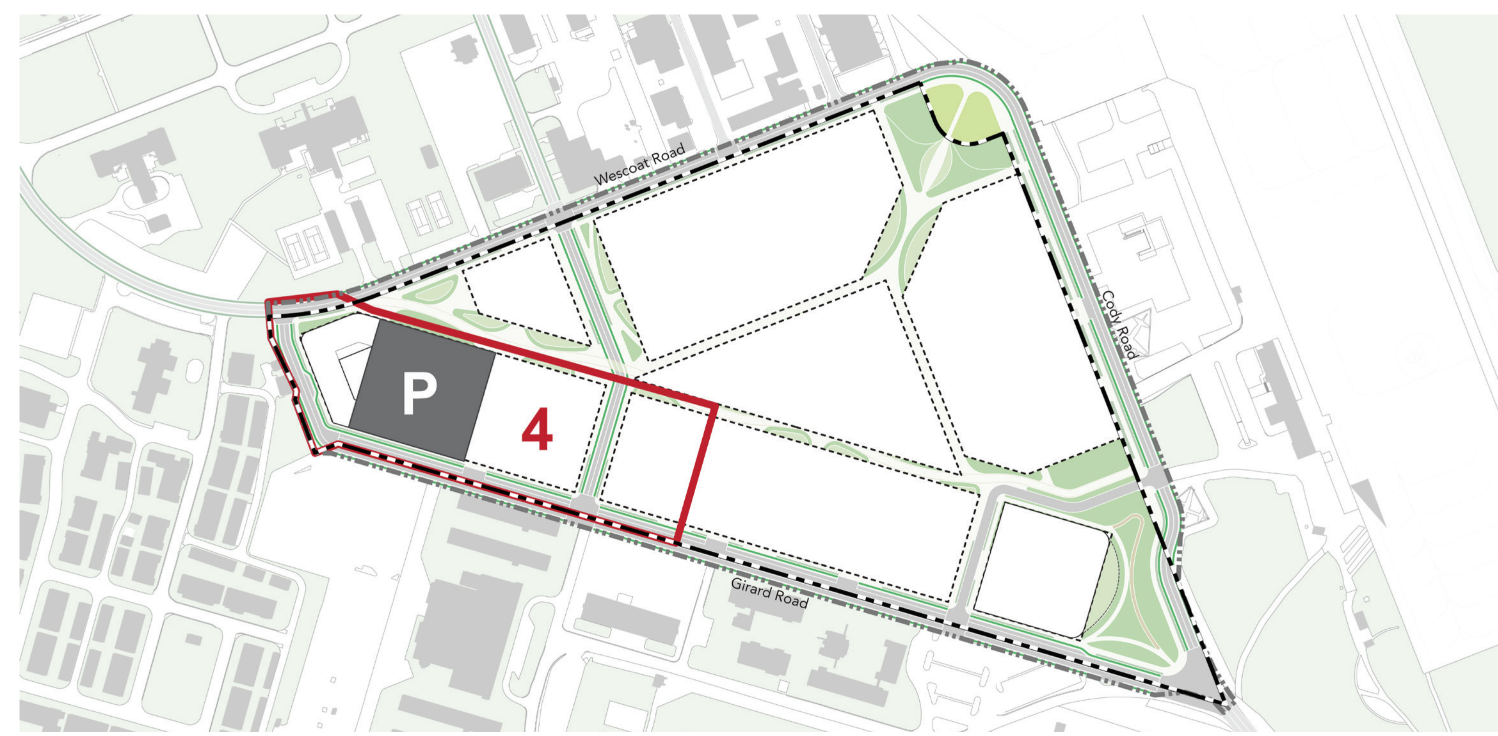

## PHASE 2




## PHASE 3



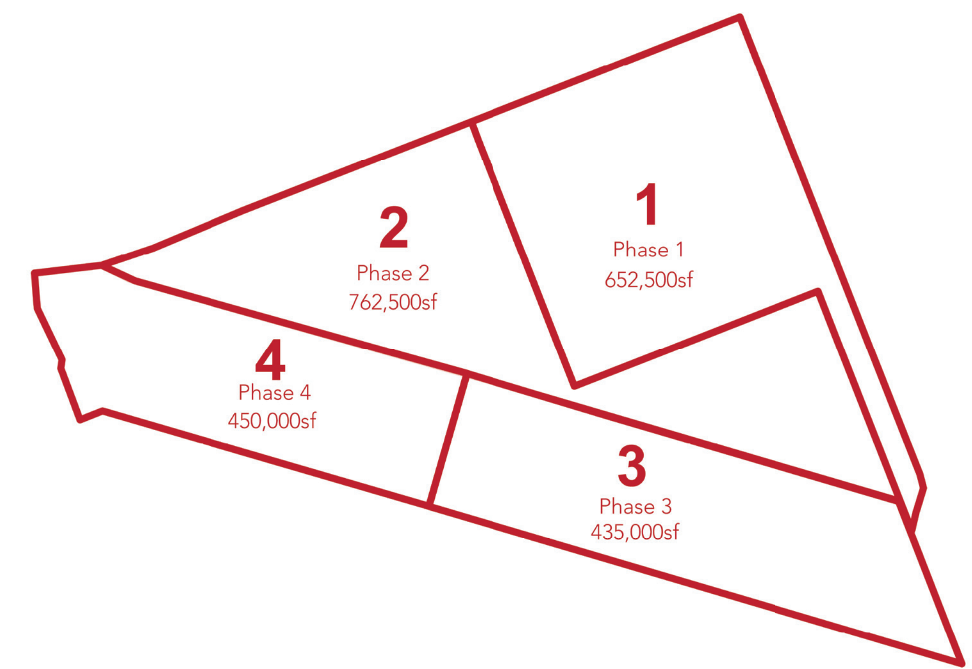

## PHASE 4



PARKING

# SURFACE PARKING AND PHASING - PROPOSED PROJECT (BUILD ALTERNATIVE 1)

| Parking by Phasing | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Total Maximum Number of Stalls |
|---|---|---|---|---|---|
| Parking Demand (Number of Stalls) | | | | | |
| Research and Office Uses | 943 | 943 | 608 | 454 | 2,948 |
| Office | 165 | 165 | 113 | 83 | 525 |
| Laboratory and R&D | 668 | 668 | 428 | 323 | 2,085 |
| Academic | 111 | 111 | 68 | 49 | 338 |
| Conference Center | 0 | 43 | 0 | 0 | 43 |
| Active Uses | 22 | 51 | 33 | 25 | 130 |
| Housing and Lodging | | | | | |
| Short Term Stay | 0 | 129 | 0 | 0 | 129 |
| Student Faculty Housing | 0 | 0 | 0 | 0 | 0 |
| Total Number of Stalls by Phase | 965 | 1,165 | 641 | 479 | 3,250 |
| Cumulative Total Number of Stalls | 965 | 2,130 | 2,771 | 3,250 | N/A |
| Parking Supply (Number of Stalls) | | | | | |
| Multi-Story Parking | | | | | |
| GSF | 0 | 0 | 555,000 | 525,000 | |
| Number of Stalls by Phase | 0 | 0 | 1,708 | 1,615 | |
| Cumulative Number of Stalls | 0 | 0 | | 3,323 | |
| Temporary Surface Parking | | | | | |
| Surface Parking Area (SF) | 415,000 | 529,000 | 254,000 | 0 | |
| Number of Stalls | 922 | 1,176 | 564 | | |
| Number of Stall (with Attendant Assist) | 1,227 | 1,563 | 751 | 0 | |
| Number of Stall (with Full Valet) | 1,614 | 2,057 | 988 | | |
| Total Number of Stalls by Phase | 922 | 1,176 | 2,272 | 3,323 | |
| Total Number of Stall with Attendant Assist (33% increase) | 1,227 | 1,563 | 2,458 | 0 | |
| Total Number of Stall with Full Valet(75% Increase) | 1,614 | 2,057 | 2,695 | | |
| | | | | | |
| Delta without valet | -42 | -954 | -498 | | |
| Delta with Attendant Assist | 262 | -566 | -312 | 0 | |
| Delta with Full Valet | | -73 | 0 | | |




| Surface Parking Valet Assumptions | |
|---|---|
| Attendant Assist Valet | Full Valet |
| 33% efficiency increase=new, standard surface lots are designed for traditional self-parking then converted to valet as needed. | 75% efficiency increase=new surface parking designed an built specific to valet use, no self-parking allowed. |

# PARKING SPACE TYPES - PROPOSED PROJECT (BUILD ALTERNATIVE 1)

## VEHICULAR PARKING

| VEHICULAR PARKING DEMAND (MAXIMUM) (w/ Share Reduction) | Subarea 1 | Subarea 2 | Subarea 3 | Subareal 4 | Subarea 5 | Subarea 6 | Subarea 7 | Parking Stall By Use MAXIMUM | Ratio* |
|---|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | per 1000 |
| Research and Office Uses | | | | | | | | | |
| Office | 0 | 180 | 150 | 0 | 150 | 45 | 0 | 525 | 1.5 |
| Laboratory and R&D | 0 | 705 | 630 | 0 | 570 | 180 | 0 | 2,085 | 1.5 |
| Academic | 0 | 117 | 104 | 0 | 91 | 26 | 0 | 338 | 1.3 |
| Conference Center | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 1.7 |
| Active Uses | 9 | 26 | 26 | 0 | 51 | 17 | 26 | 153 | 1.7 |
| Short-Term Lodging (By Unit) | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 1.3 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 145 | 0 | 145 | 1.0 |
| Total Vehicular Space Demand/Req'd (w/ Share Reduction) | | | | | | | | 3,419 | |

*Ratio includes 15% target shared parking reduction applied evenly to each use.

## BICYCLE PARKING

| SHORT-TERM BICYCLE PARKING DEMAND (MINIMUM) | Subarea 1 | Subarea 2 | Subarea 3 | Subareal 4 | Subarea 5 | Subarea 6 | Subarea 7 | Short-Term Bicycle Parking Stall MINIMUM |
|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces |
| Research and Office Uses | 0 | 120 | 106 | 0 | 97 | 30 | 0 | 345 |
| Office | 0 | 23 | 19 | 0 | 19 | 6 | 0 | 66 |
| Laboratory and R&D | 0 | 88 | 79 | 0 | 71 | 23 | 0 | 261 |
| Academic | 0 | 9 | 8 | 0 | 7 | 2 | 0 | 27 |
| Conference Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Active Uses | 4 | 11 | 11 | 0 | 23 | 8 | 11 | 68 |
| Short-Term Lodging (By Unit) | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 |
| Total Short-Term Bicycle Space Demand/Req'd | | | | | | | | 459 |

| LONG-TERM BICYCLE PARKING DEMAND (MINIMUM) | Subarea 1 | Subarea 2 | Subarea 3 | Subareal 4 | Subarea 5 | Subarea 6 | Subarea 7 | Long-Term Bicycle Parking Stall MINIMUM |
|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces |
| Research and Office Uses | 0 | 348 | 305 | 0 | 281 | 85 | 0 | 1,019 |
| Office | 0 | 90 | 75 | 0 | 75 | 23 | 0 | 263 |
| Laboratory and R&D | 0 | 162 | 145 | 0 | 131 | 41 | 0 | 480 |
| Academic | 0 | 96 | 85 | 0 | 74 | 21 | 0 | 277 |
| Conference Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Active Uses | 1 | 2 | 2 | 0 | 5 | 2 | 2 | 14 |
| Short-Term Lodging (By Unit) | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 195 | 0 | 195 |
| Total Long-Term Bicycle Space Demand/Req'd | | | | | | | | 1,342 |

## SCOOTER AND CARGO E-BIKE PARKING

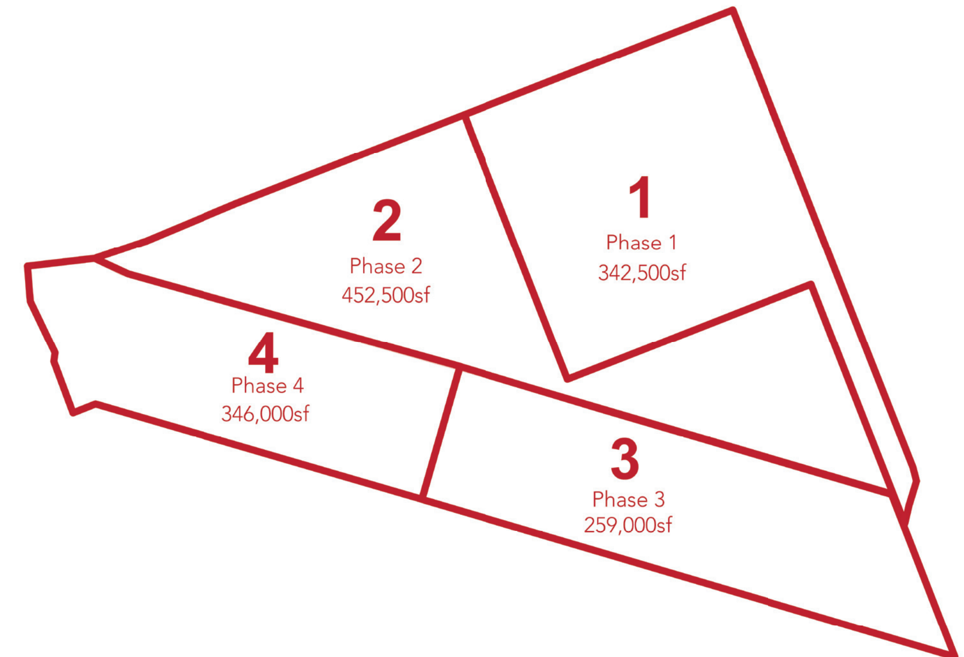
| SCOOTER PARKING DEMAND (MINIMUM) | Subarea 1 | Subarea 2 | Subarea 3 | Subareal 4 | Subarea 5 | Subarea 6 | Subarea 7 | Scooter Parking Stall MINIMUM |
|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces |
| Research and Office Uses | 0 | 94 | 82 | 0 | 76 | 23 | 0 | 274 |
| Office | 0 | 23 | 19 | 0 | 19 | 6 | 0 | 66 |
| Laboratory and R&D | 0 | 50 | 45 | 0 | 40 | 13 | 0 | 148 |
| Academic | 0 | 21 | 19 | 0 | 16 | 5 | 0 | 61 |
| Conference Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Active Uses | 1 | 3 | 3 | 0 | 5 | 2 | 3 | 16 |
| Short-Term Lodging (By Unit) | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 43 |
| Total Scooter Space Demand/Req'd | | | | | | | | 359 |

| CARGO E-BIKE PARKING DEMAND (MINIMUM) | Subarea 1 | Subarea 2 | Subarea 3 | Subareal 4 | Subarea 5 | Subarea 6 | Subarea 7 | Cargo E-Bike Parking Stall MINIMUM |
|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces |
| Research and Office Uses | 0 | 70 | 61 | 0 | 56 | 17 | 0 | 204 |
| Office | 0 | 18 | 15 | 0 | 15 | 5 | 0 | 53 |
| Laboratory and R&D | 0 | 32 | 29 | 0 | 26 | 8 | 0 | 96 |
| Academic | 0 | 19 | 17 | 0 | 15 | 4 | 0 | 55 |
| Conference Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Active Uses | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Short-Term Lodging (By Unit) | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 39 |
| Total Cargo E-Bike Space Demand/Req'd | | | | | | | | 268 |

PARKING

# SURFACE PARKING AND PHASING - REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

| Parking by Phasing | Phase 1 | Phase 2 | Phase 3 | Phase 4 | Total Maximum Number of Stalls |
|---|---|---|---|---|---|
| Parking Demand (Number of Stalls) | | | | | |
| Research and Office Uses | 479 | 479 | 343 | 291 | 1,592 |
| Office | 86 | 86 | 62 | 51 | 285 |
| Laboratory and R&D | 338 | 338 | 242 | 208 | 1,125 |
| Academic | 55 | 55 | 39 | 33 | 182 |
| Conference Center | 0 | 43 | 0 | 0 | 43 |
| Active Uses | 26 | 60 | 38 | 30 | 153 |
| Housing and Lodging | | | | | |
| Short-Term Lodging | 0 | 130 | 0 | 0 | 130 |
| Student/Faculty Housing | 0 | 0 | 0 | 145 | 145 |
| Total Number of Stalls by Phase | 505 | 711 | 381 | 466 | 2,063 |
| Cumulative Total Number of Stalls | 505 | 1,216 | 1,597 | 2,063 | N/A |
| Parking Supply (Number of Stalls) | | | | | |
| Multi-Story Parking | | | | | |
| GSF | 0 | 0 | 555,000 | 525,000 | |
| Number of Stalls by Phase | 0 | 0 | 1,708 | 1,615 | |
| Cumulative Number of Stalls | 0 | 0 | | 3,323 | |
| Temporary Surface Parking | | | | | |
| Surface Parking Area (SF) | 415,000 | 529,000 | 254,000 | 0 | |
| Number of Stalls | 922 | 1,176 | 564 | | |
| Number of Stall (with Attendant Assist) | 1,227 | 1,563 | 751 | 0 | |
| Number of Stall (with Full Valet) | 1,614 | 2,057 | 988 | | |
| Total Number of Stalls by Phase | 922 | 1,176 | 2,272 | 3,323 | |
| Total Number of Stall with Attendant Assist (33% increase) | 1,227 | 1,563 | 2,458 | 0 | |
| Total Number of Stall with Full Valet(75% Increase) | 1,614 | 2,057 | 2,695 | | |
| | | | | | |
| Delta without valet | 418 | -40 | 676 | | |



# PARKING SPACE TYPES - REDUCED DENSITY ALTERNATIVE (BUILD ALTERNATIVE 2)

## VEHICULAR PARKING

| VEHICULAR PARKING DEMAND (MAXIMUM) (w/ Share Reduction) | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | Parking Stall By Use MAXIMUM | Ratio* |
|---|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | per 1000 |
| Research and Office Uses | | | | | | | | | |
| Office | 0 | 90 | 83 | 0 | 83 | 30 | 0 | 285 | 1.5 |
| Laboratory and R&D | 0 | 353 | 323 | 0 | 323 | 128 | 0 | 1,125 | 1.5 |
| Academic | 0 | 59 | 52 | 0 | 52 | 20 | 0 | 182 | 1.3 |
| Conference Center | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 1.7 |
| Active Uses | 9 | 26 | 26 | 0 | 51 | 17 | 26 | 153 | 1.7 |
| Short-Term Lodging (By Unit) | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 130 | 1.3 per unit |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 145 | 0 | 145 | 1 per unit |
| **Total Vehicular Space Demand/Req'd (w/ Share Reduction)** | **181** | **527** | **483** | **0** | **508** | **339** | **26** | **2,063** | |

*Ratio includes 15% target shared parking reduction applied evenly to each use

## BICYCLE PARKING

| SHORT-TERM BICYCLE PARKING DEMAND (MINIMUM) | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | Short-Term Bicycle Parking Stall MINIMUM |
|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces |
| Research and Office Uses | 0 | 60 | 55 | 0 | 55 | 21 | 0 | 191 |
| Office | 0 | 11 | 10 | 0 | 10 | 4 | 0 | 36 |
| Laboratory and R&D | 0 | 44 | 40 | 0 | 40 | 16 | 0 | 141 |
| Academic | 0 | 5 | 4 | 0 | 4 | 2 | 0 | 14 |
| Conference Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Active Uses | 4 | 11 | 11 | 0 | 23 | 8 | 11 | 68 |
| Short-Term Lodging (By Unit) | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 22 |
| Total Short-Term Bicycle Space Demand/Req'd | | | | | | | | 296 |

| LONG -TERM BICYCLE PARKING DEMAND (MINIMUM) | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | Long-Term Bicycle Parking Stall MINIMUM |
|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces |
| Research and Office Uses | 0 | 174 | 158 | 0 | 158 | 60 | 0 | 550 |
| Office | 0 | 45 | 41 | 0 | 41 | 15 | 0 | 143 |
| Laboratory and R&D | 0 | 81 | 74 | 0 | 74 | 29 | 0 | 259 |
| Academic | 0 | 48 | 43 | 0 | 43 | 16 | 0 | 149 |
| Conference Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Active Uses | 1 | 2 | 2 | 0 | 5 | 2 | 2 | 14 |
| Short-Term Lodging (By Unit) | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 113 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 195 | 0 | 195 |
| Total Long-Term Bicycle Space Demand/Req'd | | | | | | | | 873 |

## SCOOTER AND CARGO E-BIKE PARKING

| SCOOTER PARKING DEMAND (MINIMUM) | Parcel 1 | Parcel 2 | Parcel 3 | Parcel 4 | Parcel 5 | Parcel 6 | Parcel 7 | Scooter Parking Stall MINIMUM |
|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces |
| Research and Office Uses | 0 | 47 | 43 | 0 | 43 | 16 | 0 | 148 |
| Office | 0 | 11 | 10 | 0 | 10 | 4 | 0 | 36 |
| Laboratory and R&D | 0 | 25 | 23 | 0 | 23 | 9 | 0 | 80 |
| Academic | 0 | 11 | 9 | 0 | 9 | 4 | 0 | 33 |
| Conference Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Active Uses | 1 | 3 | 3 | 0 | 5 | 2 | 3 | 16 |
| Short-Term Lodging (By Unit) | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 43 |
| Total Scooter Space Demand/Req'd | | | | | | | | 234 |

| CARGO E-BIKE PARKING DEMAND (MINIMUM) | Subarea 1 | Subarea 2 | Subarea 3 | Subarea 4 | Subarea 5 | Subarea 6 | Subarea 7 | Cargo E-Bike Parking Stall MINIMUM |
|---|---|---|---|---|---|---|---|---|
| Units | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces | Spaces |
| Research and Office Uses | 0 | 35 | 32 | 0 | 32 | 12 | 0 | 110 |
| Office | 0 | 9 | 8 | 0 | 8 | 3 | 0 | 29 |
| Laboratory and R&D | 0 | 16 | 15 | 0 | 15 | 6 | 0 | 52 |
| Academic | 0 | 10 | 9 | 0 | 9 | 3 | 0 | 30 |
| Conference Center | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Active Uses | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| Short-Term Lodging (By Unit) | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 23 |
| Student/Faculty Housing (by Unit) | 0 | 0 | 0 | 0 | 0 | 39 | 0 | 39 |
| Total Cargo E-Bike Space Demand/Req'd | | | | | | | | 174 |

# BERKELEY SPACE CENTER

AT NASA RESEARCH PARK

Berkeley
UNIVERSITY OF CALIFORNIA

SKS

BERKELEY SPACE CENTER

AT NASA RESEARCH PARK

# DEVELOPMENT GUIDELINES
# SPRING 2026

Berkeley
UNIVERSITY OF CALIFORNIA

SKS

## DRAFT DEVELOPMENT GUIDELINES

Issued Spring 2026

## PROJECT TEAM

# TABLE OF CONTENTS

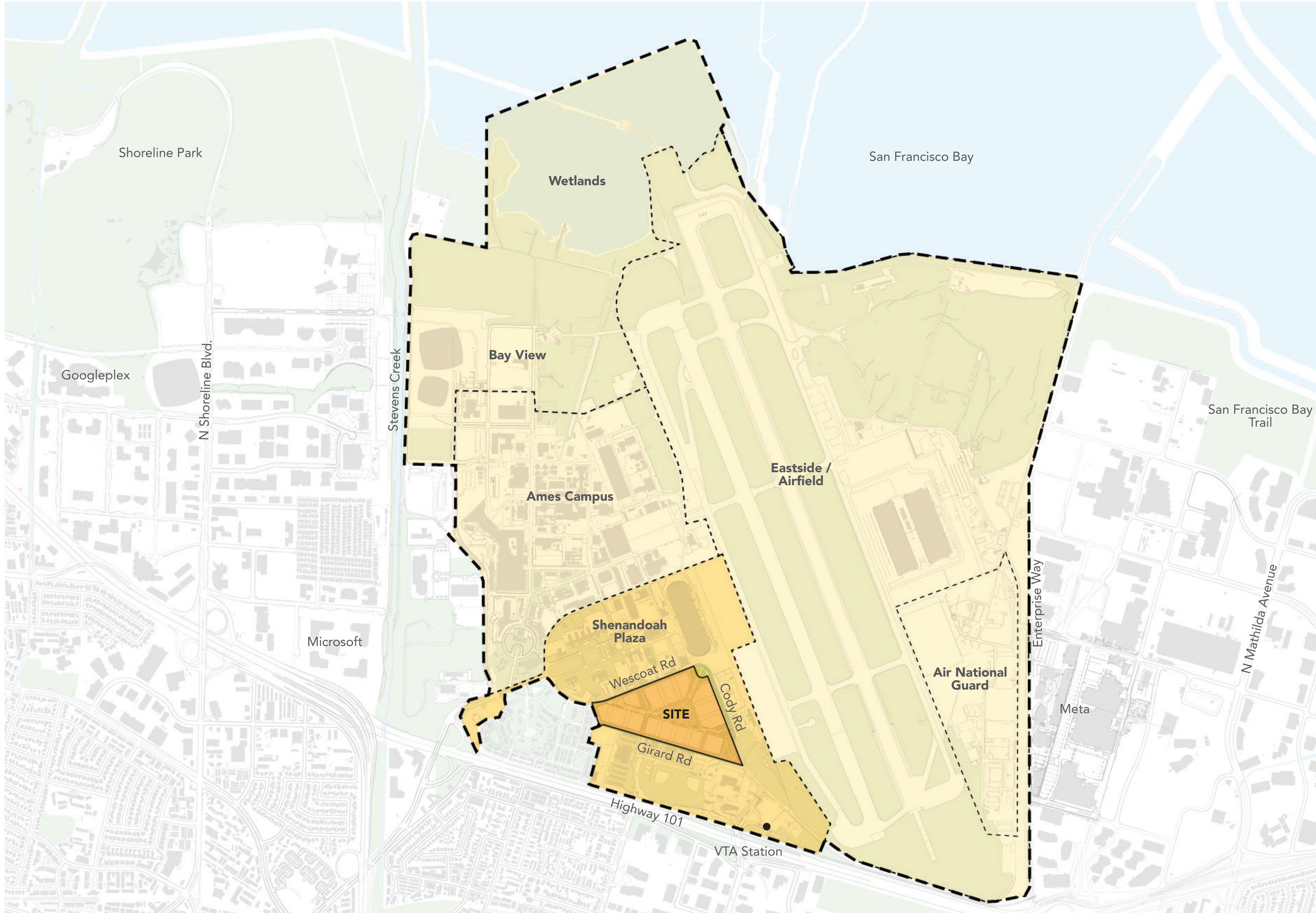
# EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

# SITE IN INNOVATION DISTRICT CONTEXT

The Berkeley Space Center at NASA Research Park is a part of the greater National Aeronautics and Space Administration Ames Research Center (NASA ARC) in Silicon Valley.

The Berkeley Space Center is boarded by Shenandoah Plaza to the north and the Moffett Federal Airfield to its east. North of NASA Research Park (NRP) district is the Ames Campus, Bay View and Wetlands, and U.S. 101 to its south to the NRP district.



Site Context

- Site (Berkeley Space Center at NASA Research Park)
- NASA Research Park
- NASA Ames Research Center
- Other Districts within the NASA Ames Research Center

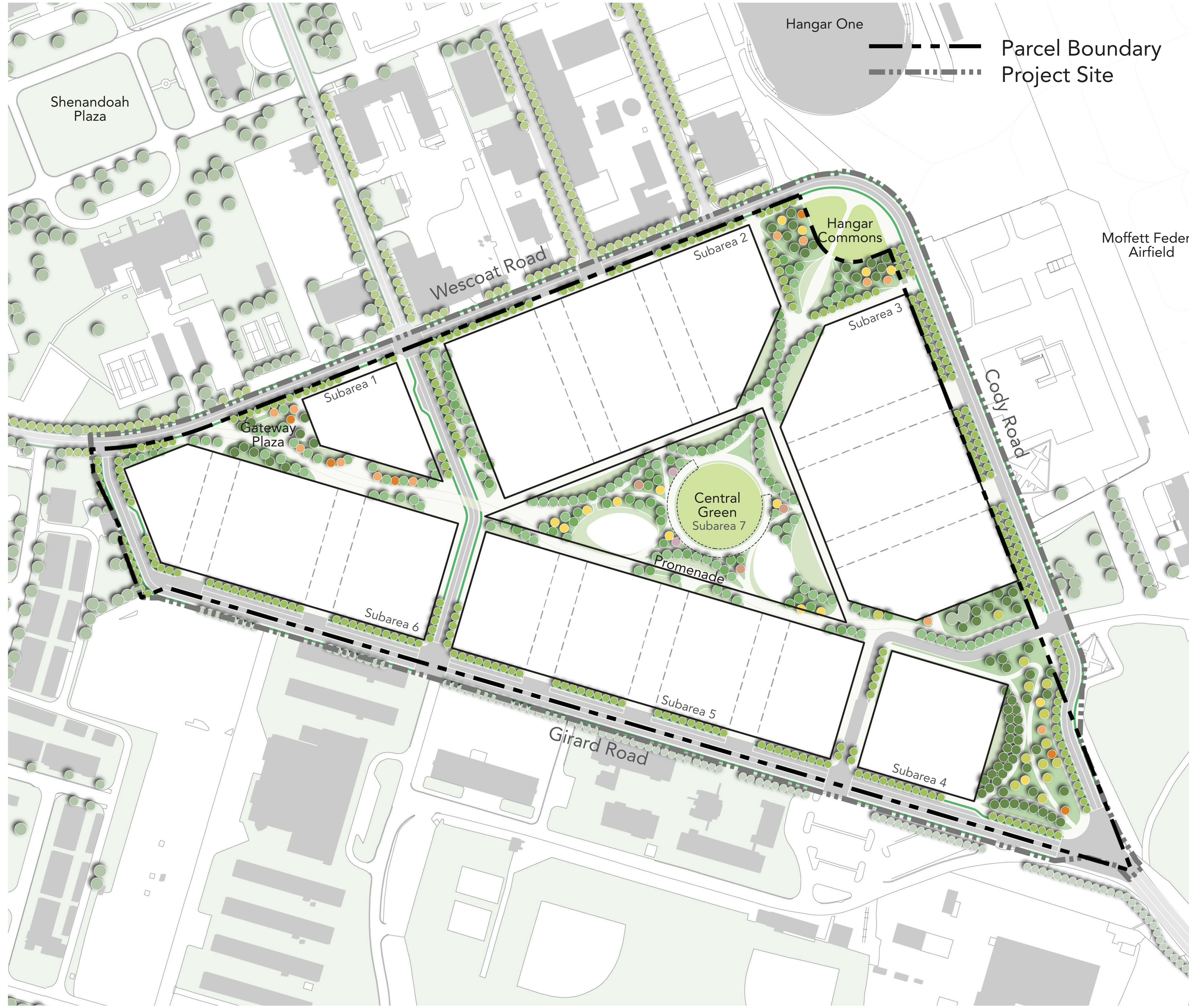
0' 500' 1000' 3000'

N

# PROJECT SITE PLAN

While there are a number of available development parcels throughout NASA ARC, the NASA Research Park (NRP) site stands out as the obvious location for the deployment of a new research and innovation-oriented development – the Berkeley Space Center at NASA Research Park. Beyond its strategic location adjacent to Shenandoah Plaza and Moffett Federal Airfield, there are a number of reasons for the site's desirability including its connectivity to U.S. 101 and the regional transit system; the fact that the parcel is currently publicly held; and its sheer size, with a 39-acre Project Site. However, perhaps the most appealing feature of the Project Site is its adjacency to both an established research campus at NASA ARC with remarkable, largest-of-their-kind facilities including wind tunnels and supercomputers, as well as a private-industry pioneer with Google's Planetary Ventures in Hangar One.

Indeed, what distinguishes the Berkeley Space Center from other global research developments is both physical and logistical. Every development of this type must offer state-of-the-art lab and office facilities; cultural and lifestyle amenities; adjacencies to recognized centers of innovation; partnerships with institutions of academic excellence; a defined industry cluster that provides the critical mass of infrastructure, facilities, people and amenities; and a location that offers attractive live/work options to draw global talent. The Master Plan provides a vision to achieve all of the above, by leveraging its strategic position within a growing aerospace cluster and providing a compelling spatial framework for a world-class research environment.




Site Context Illustrative Plan

# VISION & GOALS

## BERKELEY SPACE CENTER AT NASA RESEARCH PARK

After nearly a century of fostering remarkable research achievements, National Aeronautics and Space Administration Ames Research Center (NASA ARC) in Silicon Valley is at once a place of historic significance and a nexus for collaborative, groundbreaking research, education and development. The research at NASA ARC has provided leadership in astrobiology; small satellites; robotic lunar exploration; the search for habitable planets; supercomputing; intelligent/adaptive systems; advanced thermal protection and airborne astronomy.

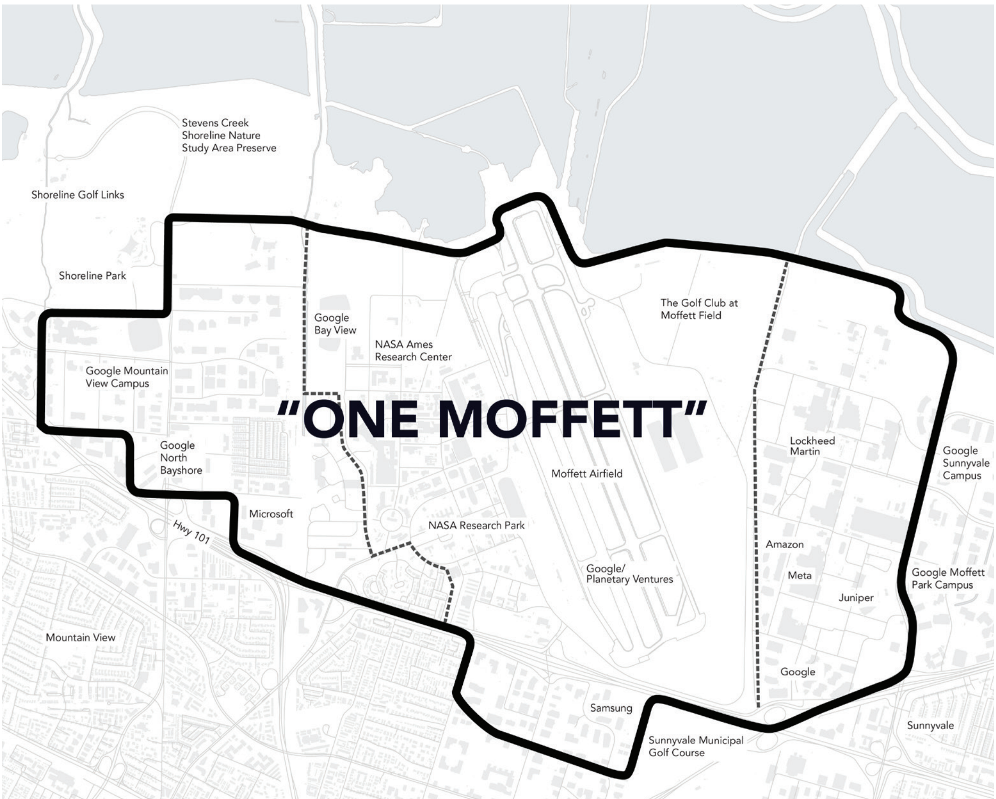
Now, with the introduction of the Berkeley Space Center Master Plan, NASA ARC and the NASA Research Park (NRP) are poised to further bolster the district's position as a global center of aerospace and technological research and a model for collaborative research and education.

Note: The typology massing shown is for illustrative and informational purposes only, these are not building and landscape designs. They illustrate that the Subareas are capable of meeting the project metrics, while performing well from a daylighting, multi-tenanting,and functional perspective. The dimensions are guided by past experience with research buildings of similar program and site specific solar analysis.

Illustrative District Aerial Rendering

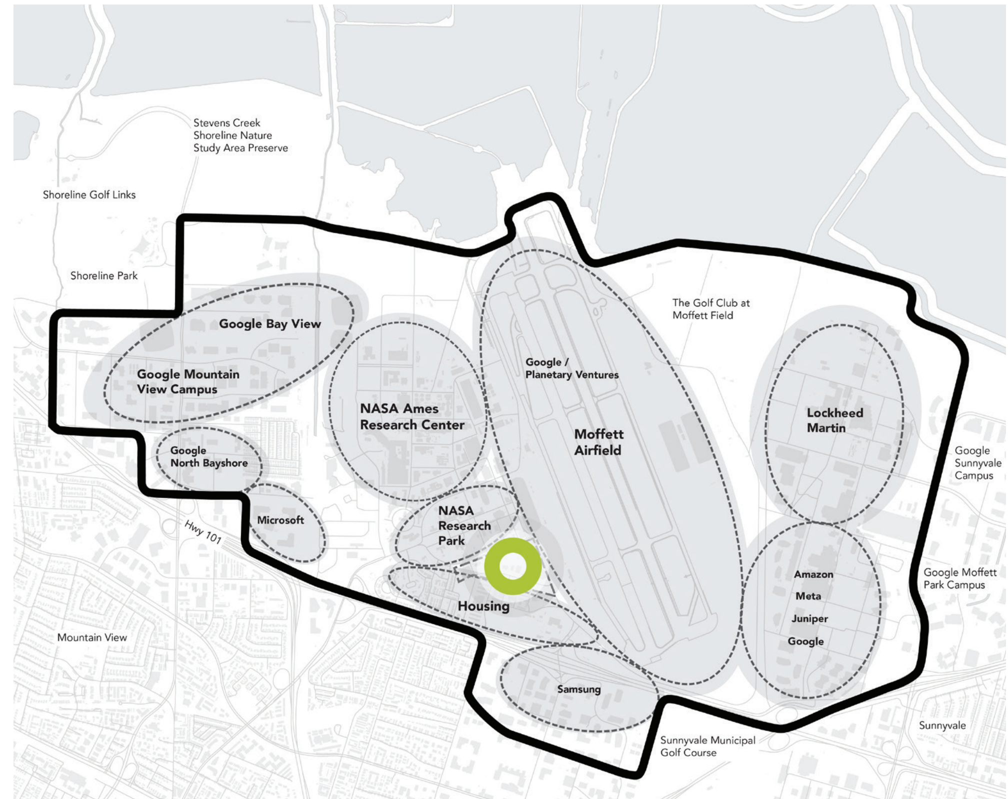
# GUIDING PRINCIPLES - TOWARDS A KNOWLEDGE COMMUNITY

## "ONE MOFFETT"



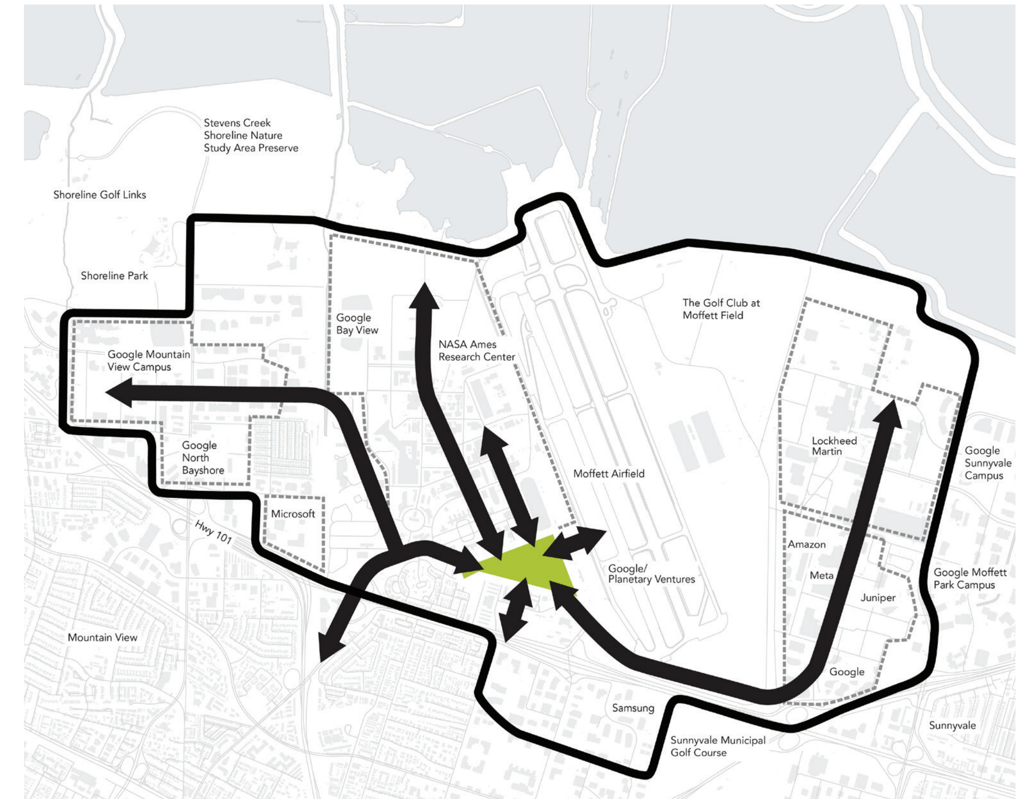

A major goal of the Berkeley Space Center is to adopt a comprehensive approach encompassing the entire district, merging detailed analysis with imaginative vision. This offers the opportunity to integrate architecture, landscape, transportation, environmental considerations, sustainability efforts, and broader social and intellectual goals into a unified concept known as a connected "Knowledge Community" or "One Moffett."

## "CENTER-POINT"




Berkeley Space Center has an opportunity to become the de facto "center-point" of this broader knowledge community of NASA Research Park, with its open framework and protocols relative to the greater NASA ARC and the nearby private campuses.

## "OPEN BORDERS"

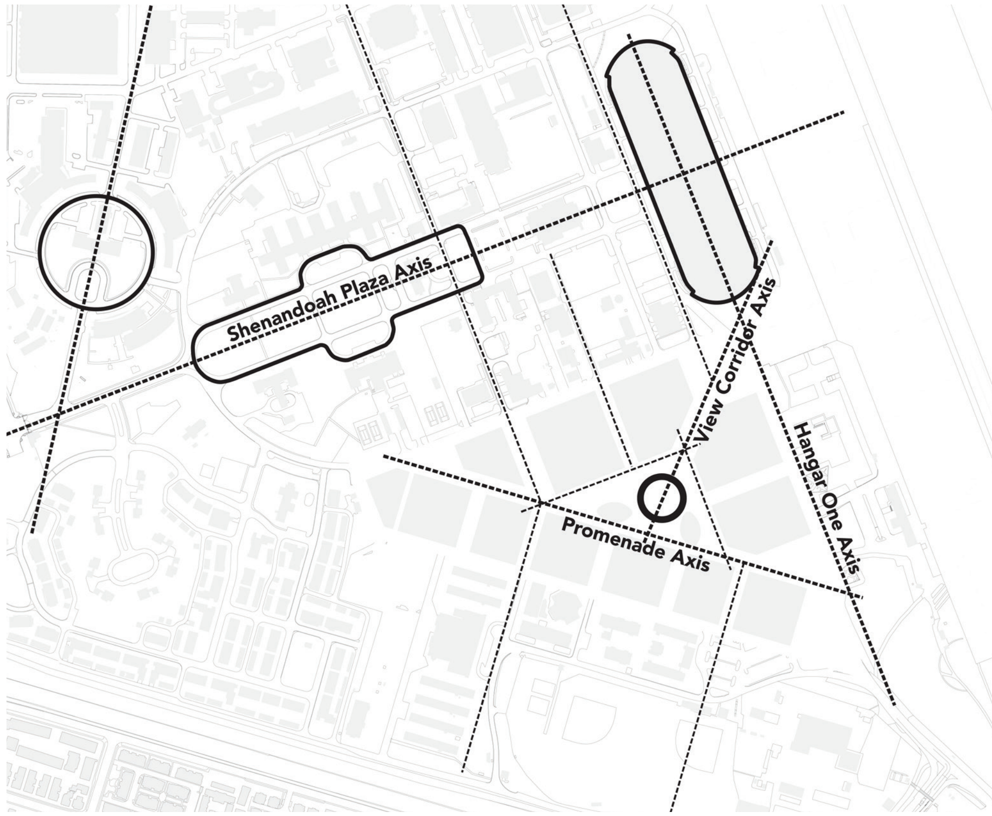



Berkeley Space Center presents an exciting prospect as the university partnership allows the Project Site to transform into a neutral and inclusive meeting place for the knowledge community. It can become a hub where industry, university, and government organizations come together to collaborate, exchange research, and push the boundaries of knowledge, fostering the development of fresh relationships and connections.

The Project Site and its immediate surroundings offer a remarkable opportunity to be envisioned as a "super-connector" of innovation. It can be a distinctive spatial and intellectual framework that effectively links individuals, technology, infrastructure, and knowledge, facilitating seamless interactions and advancements in various fields.

EXECUTIVE SUMMARY
# GUIDING PRINCIPLES - CONNECTION AND INTEGRATION

## CLASSICAL CONNECTIONS

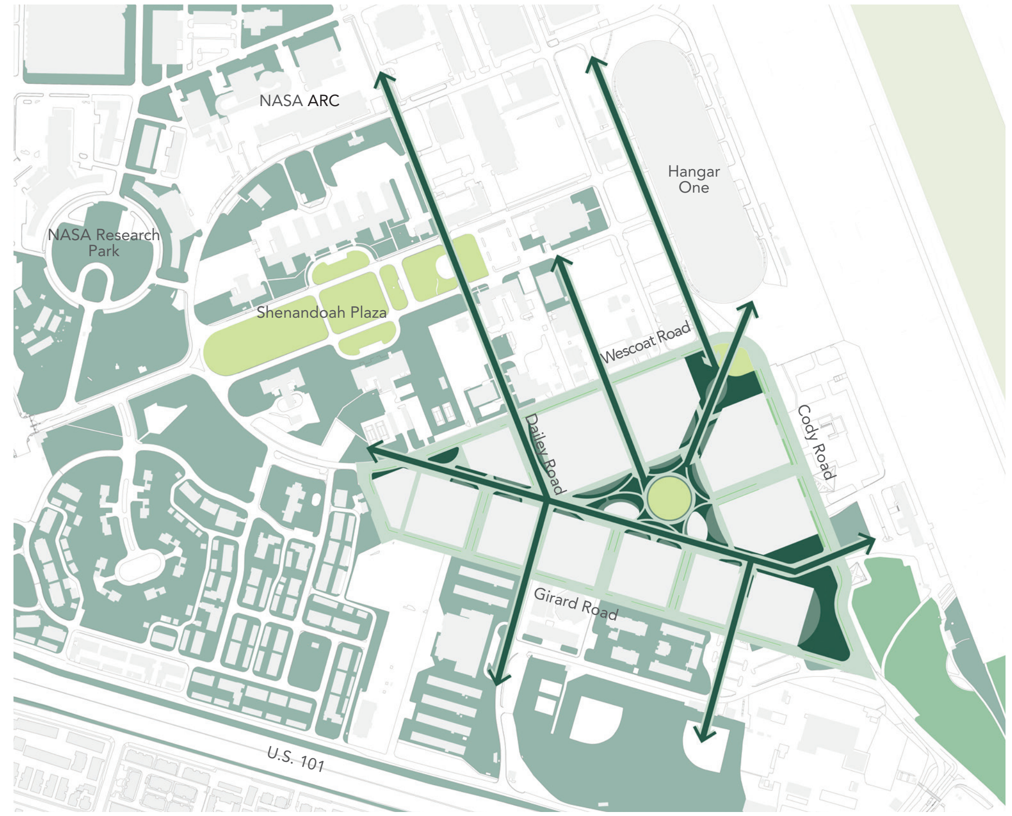



The Project Site is informed by its context spatially by historic iconic features like Hangar One, Moffett Federal Airfield, and Shenandoah Plaza.

Our Project Site can act as an iconic bridge to its context, layering in additional axial connections and acting as a center-point for new innovations and a new district hub.

By embracing and engaging with neighboring iconic structures, we can create a distinct place visually, programmatically, and socially.

## PICTURESQUE CONNECTIONS

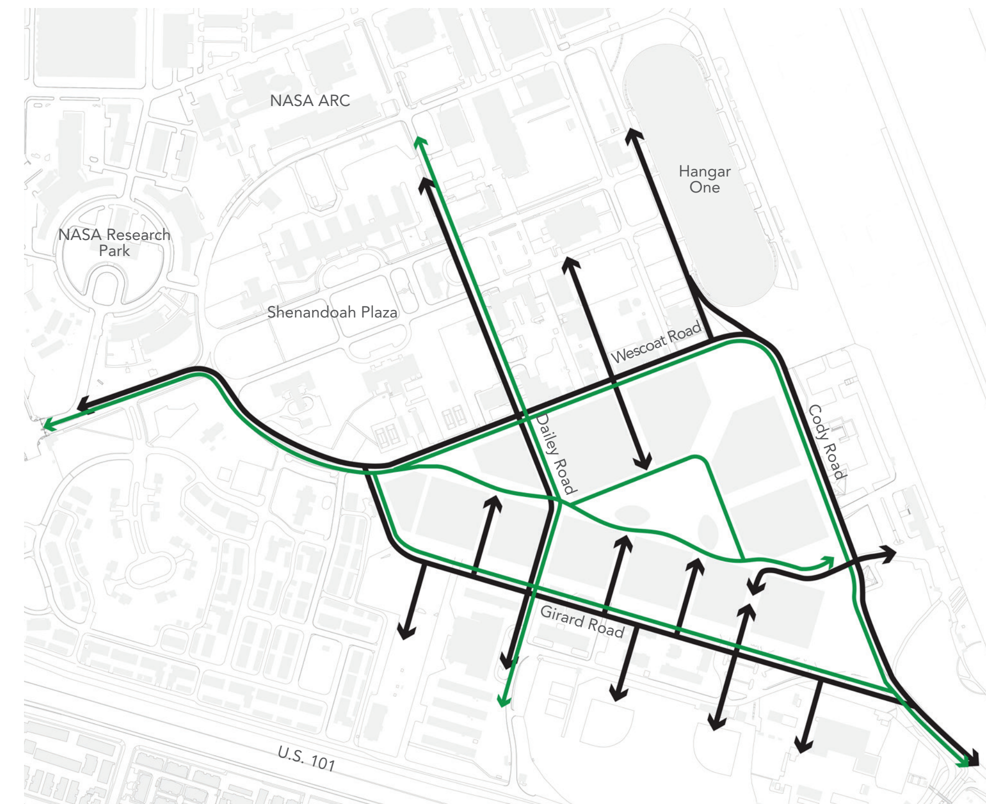



There is an opportunity to connect ecological corridors and remediate the Project Site using natural systems while also using the site to remediate the larger environmental context.

Nature can be a connector linking the project to its surrounds, and facilitating community access and interactions.

In doing this, we honor the Project Site's natural heritage and support the surrounding area’s future by increasing resilience. Biodiversity is encouraged on the Project Site to establish a mutually beneficial relationship where living systems provide us ecological services.

## PRACTICAL CONNECTIONS

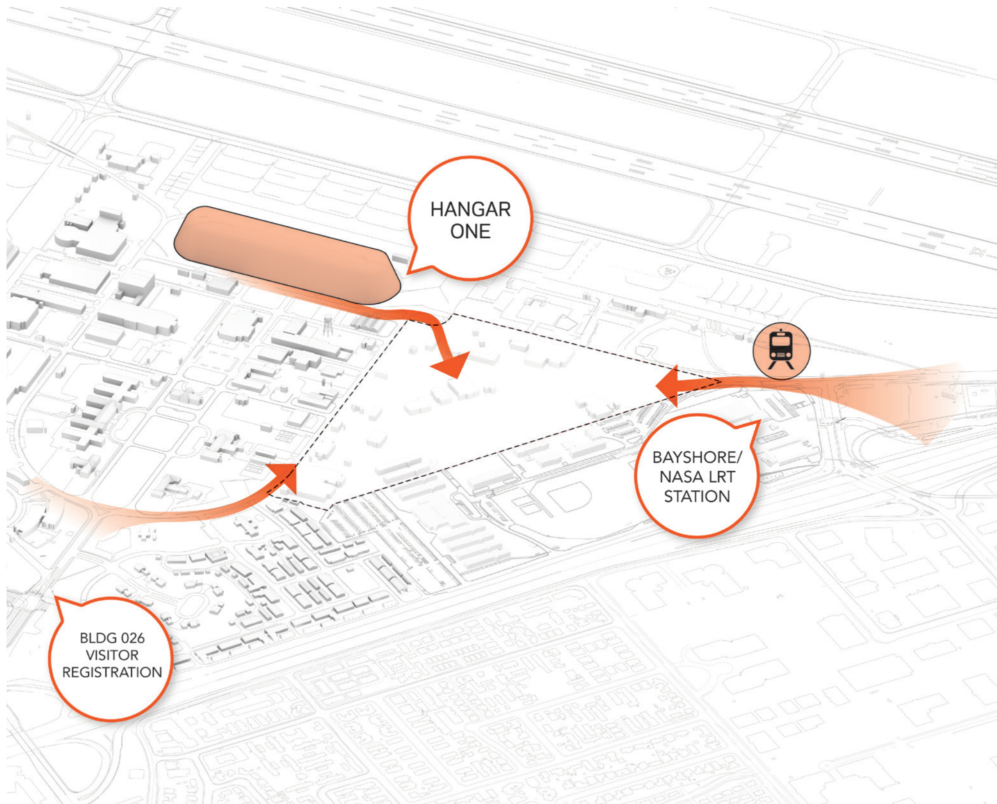



The orientation of the Master Plan strives to provide direct through connections for easy access on foot, bicycle, transit, or vehicle to the surrounding context.

On a district scale, the Project Site provides an additional and convenient connection between Mountain View and Sunnyvale, and aims to collaborate with neighboring stakeholders to encourage a regional network of connectivity that supports and encourages alternative and active transportation modes.

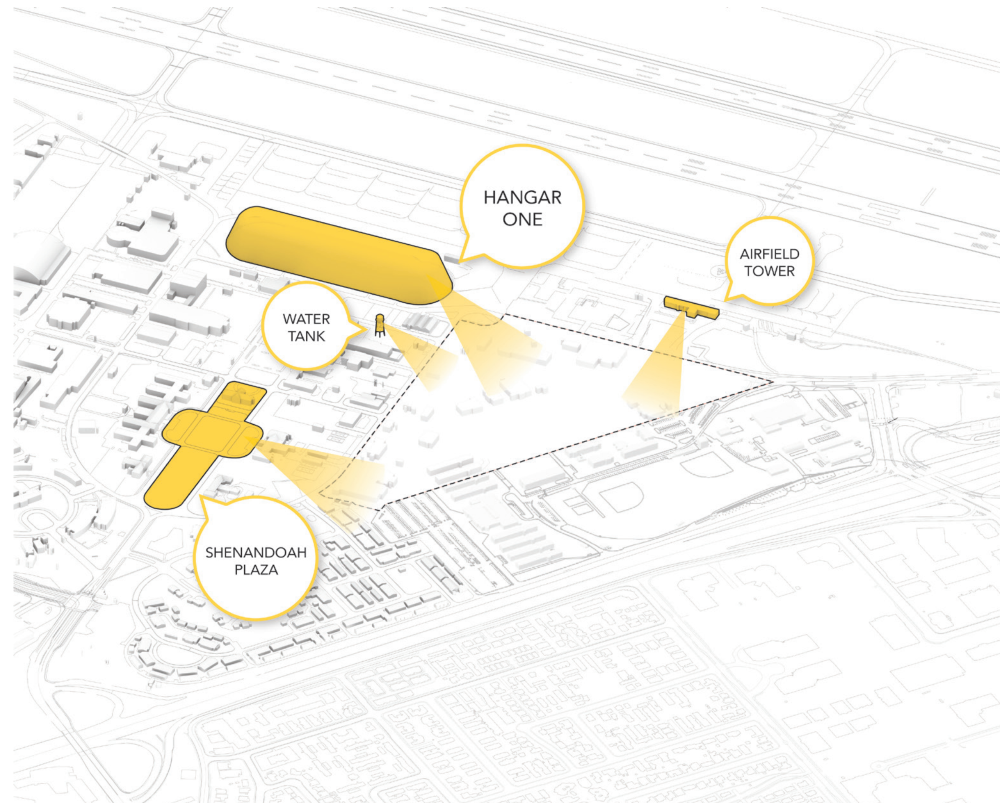
# GUIDING PRINCIPLES - COHESIVE PLACEMAKING

## GATEWAYS



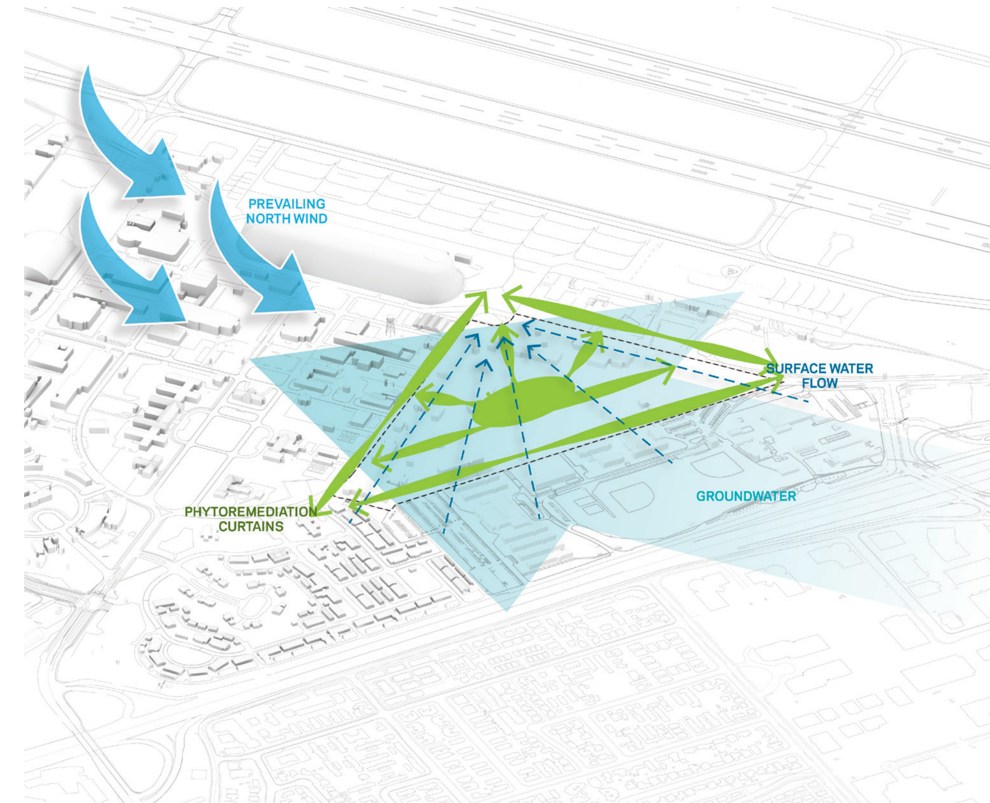

Building on the concept of "One Moffett," the design utilizes the Project Site's gateways to encourage an open environment. Extending beyond physical entrances, gateways encapsulates introducing visitors at arrival to the unique identity, cultural and historical significance of the Berkeley Space Center at NASA Research Park and creating a memorable first impression. The Project Site's plan responds to it's three gateways – two physical (at the intersection of Cody Road / Girard Road proximate to the Bayshore / NASA Light Rail Transit (LRT) Station and the intersection of Wescoat Road / Girard Road proximate to the NASA Visitor Registration building along Clark Road) and one vista (Hangar One) – to establish a strong sense of arrival.  These gateways support an open, accessible, and inclusive site with a Central Green, pedestrian and cyclist friendly pathways, and amenities to catalyze social and collaborative research interactions.

## HISTORY




Respecting the extensive physical and research history of the greater NASA ARC and NASA Research Park district, the Master Plan intends to build on the surrounding architectural, landscape, and archeological resources to enhance the proposed development's sense of place and better integrate it with its surrounds. Both individual resources and the collective district character, view corridors, and landscapes are intended to inform the visual and functional character of the proposed project.

## REGENERATIVE NATURE




Capturing opportunities to remediate the site using natural systems while using the site to remediate the wider environmental context.

# PURPOSE OF THIS DOCUMENT

## HIGH PERFORMANCE AND CONTEXTUAL DESIGN

**Purpose of the Development Guidelines**
The Berkeley Space Center Development Guidelines aim to create a cohesive framework that honors the rich history of the site, integrates high-performance design strategies, and allows for flexibility to accommodate future needs. The guidelines focus on three elements: the Project Site's historic functions and context, high performance strategies for new buildings and landscapes, and a flexible framework for development.

**1. Site Historic Research Functions and Context**
NASA ARC, established in 1939 at Moffett Federal Airfield, is deeply rooted in early aviation and situated in California's Silicon Valley – the world's preeminent hub for technology and global byword for innovation. Initially focused on wind tunnel analysis for propeller-driven aircraft, NASA ARC's research scope has since expanded to include spaceflight, exploration and information technology, remote sensing, engineering, defense and inter-orbit communications. As part of the National Advisory Committee for Aeronautics, the laboratory became NASA Ames Research Center when NASA was formed in 1958 and encompasses uniquely large-scale research facilities such as Hangar One, the Flight and Guidance Simulation Laboratory and the National Full-Scale Aerodynamics Complex (world's largest wind tunnel) within a short walk or bike distance to the Project Site. The Berkeley Space Center at NASA Research Park draws inspiration from this legacy of research and innovation, intending to create development guidelines for a collaborative and world-class research facility.

**2. High-Performance Design Strategies for Buildings and Landscape**
To ensure sustainability and comfort, the Berkeley Space Center incorporates various high-performance environmental systems strategies for both buildings and landscapes. These strategies focus on adapting to native environmental and climatic conditions, creating a sustainable and bioclimatic approach to habitat and environmental performance. Key design considerations include:

- Comfort: Utilizing thermal mass, courtyards, and radiant cooling for optimal indoor environments.
- Solar: Incorporating shading, daylight, and solar energy generation to reduce energy consumption.
- Wind: Balancing protection from gusts with access to fresh air and outdoor thermal comfort.
- Water: Using natural systems like bioswales for groundwater retention and phytoremediation gardens to improve soil and water quality.
- Habitat: Encouraging native canopy and understory species to support local wildlife and pollinators.

Sustainability is a core focus throughout these guidelines, both as reinforcing University of California, Berkeley (UC Berkeley)'s commitment to exceptional research and education and the Moffett Partners LLC (Project Proponent)'s commitment to ensuring resilient and sustainable practices. This approach contributes to improved health and well-being for all stakeholders and fostering a vibrant research environment that supports NASA ARC's ongoing mission.

**3. Framework for Flexibility**
The development guidelines are designed with flexibility in mind, taking cues from the diverse architecture formed by the spirit of continual evolution and reinvention at NASA ARC. By avoiding overly prescriptive styles, they allow for future creative architectural solutions to meet the evolving needs of a range of potential user groups, including researchers, short-term residents, visitors, private development tenants, startups, educators and students. The balance between control and flexibility ensures that the development stays true to the Project Site's identity while adapting to future technologies and research needs.

# PURPOSE OF THIS DOCUMENT

## COMPLIANCE WITH STATE AND FEDERAL LAW

**Project Entities**
Moffett Partners, LLC (Project Proponent), a joint venture of The Regents of the University of California and SKSP NRP, LLC, is proposing a mixed-use academic and research project, referred to as the Berkeley Space Center at NASA Research Park, on a site at NASA ARC.

**Final Document**
These Development Guidelines are draft until after the certification of the final environmental entitlement documents, at which time this document will be adopted by NASA for the Project Site.

## MASTER PLAN DESCRIPTION

**Conceptual plans** serve as guidelines for the general site orientation and placement of land uses, open spaces, transportation, and infrastructure, as well as the general scale and massing of development, and overall architectural themes.

**Illustrative renderings** depict one possible example of development that would substantially conform to the applicable standards and be materially consistent with the vision and design intent conveyed by the conceptual plans. Illustrative renderings are not determinative of the ultimate configuration, building orientation, massing, architectural, landscaping details, or parking.

**Definition of the Types of Development Controls Contained within this Document**
This document contains a series of “development controls” that are categorized as principles, standards, and guidelines.

- **Principles** are aspirational targets that convey the design intent of the Master Plan. Where not mandated by federal, state, or local jurisdiction, principles are not required. However, vertical developers are encouraged to adhere to these principles to advance the concepts of the Master Plan. Principles are found at the beginning of each chapter.
- **Standards** are mandatory requirements that must be met by all development. Standards generally contain the word “shall,” which indicates that they are required. Within the body of the document text, standards are generally presented before guidelines.
- **Guidelines** are measures that are not required to be implemented for the proposed project but are advised or strongly encouraged. These advisory statements that should be carried out if feasible and generally contain the word “should." Vertical developers may propose alternative methods to achieve the goals of a guideline or may demonstrate why compliance is not feasible. Guidelines are typically presented after standards.

Future development shall comply with mandatory requirements stipulated in California Building Standards Code, Title 24, and/or local ordinances adopted by NASA or other Authorities Having Jurisdiction (AHJs).

EXECUTIVE SUMMARY

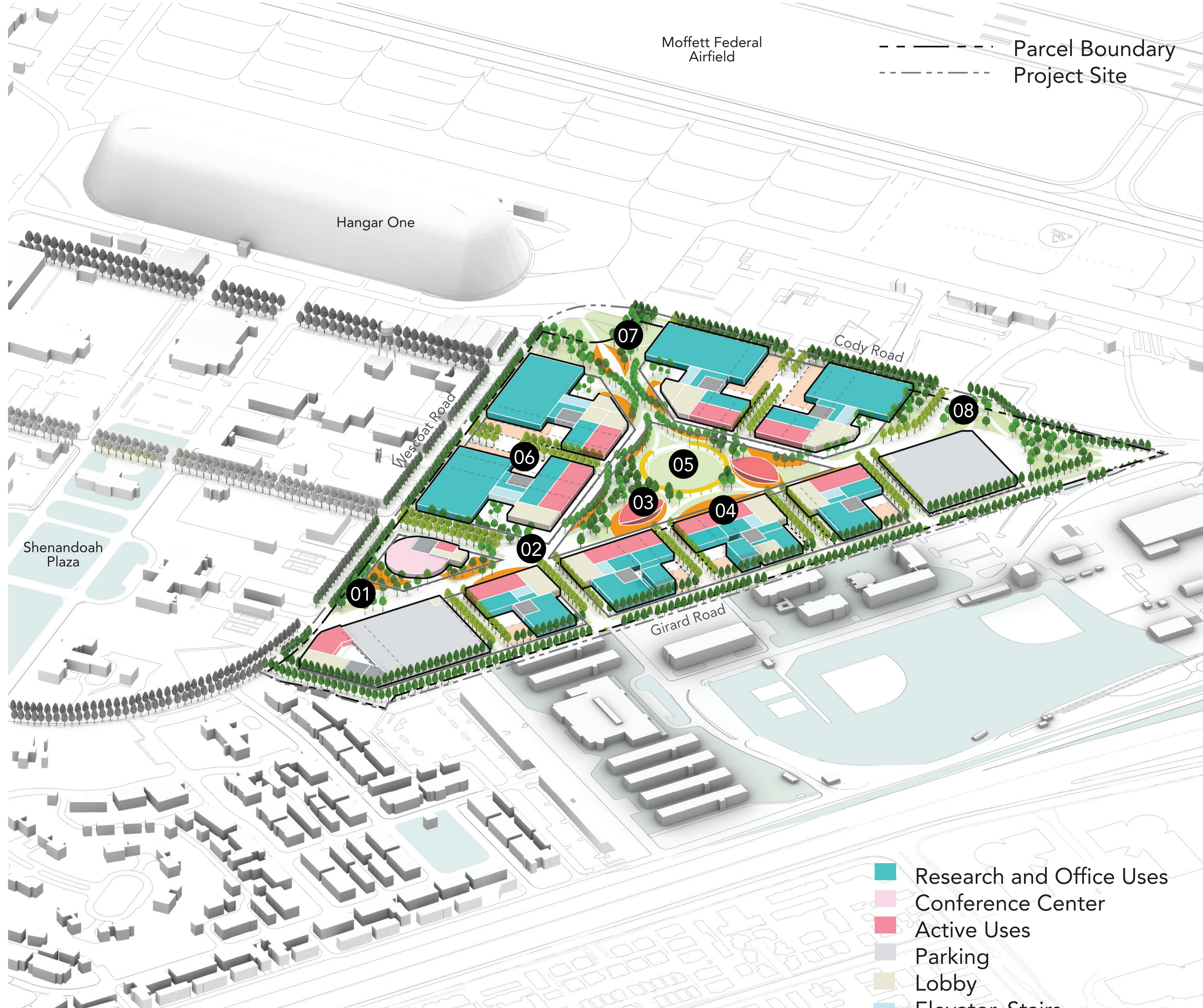
# PROGRAMMING & PLACEMAKING

The Berkeley Space Center is envisioned as part of a larger research and innovation ecosystem; therefore, any redevelopment will have a transformative effect on the broader social, intellectual and economic dynamics of NASA ARC and Moffett community. We believe that programming, in particular the ground level programming of interior and exterior spaces, is as much about creating a place as it is about organizing use, circulation and other logistics.

We hold that science and research work best in an environment that forces interaction. The Master Plan for Berkeley Space Center seeks to create such a place, with a critical mass of people that's needed for productive and innovative research.

## LEGEND

01. Welcoming Gateway Plaza is activated by conference facility.
02. Shaded pedestrian Promenade extends through the site to link buildings and program spaces.
03. Amenity pavilions animate the Central Green with retail, food and beverage, and exhibition functions.
04. Active ground floor uses extend outdoors into patios around the Central Green.
05. The open Central Green area, framed by a solar shade canopy, provides a flexible platform for activity and exhibition.
06. Outdoor, multi-purpose service yards adjacent to high bay facilities increase the site's functionality.
07. Hangar Commons provides necessary environmental functions and a striking view of Hangar One.
08. Strategic vehicular entrance and parking provide efficient access and ensure a pedestrian-oriented district.



Illustrative Ground Floor Uses Diagram

# THE PLACES

With the goal of fostering a collaborative "knowledge community" for advanced technological research and development, it is critical to note that state of the art offices and lab facilities alone cannot engender great research and promote the development of a strong collaborative culture. The setting in which cutting edge research and innovation takes place is as critical a component of a successful research community as the facilities themselves.

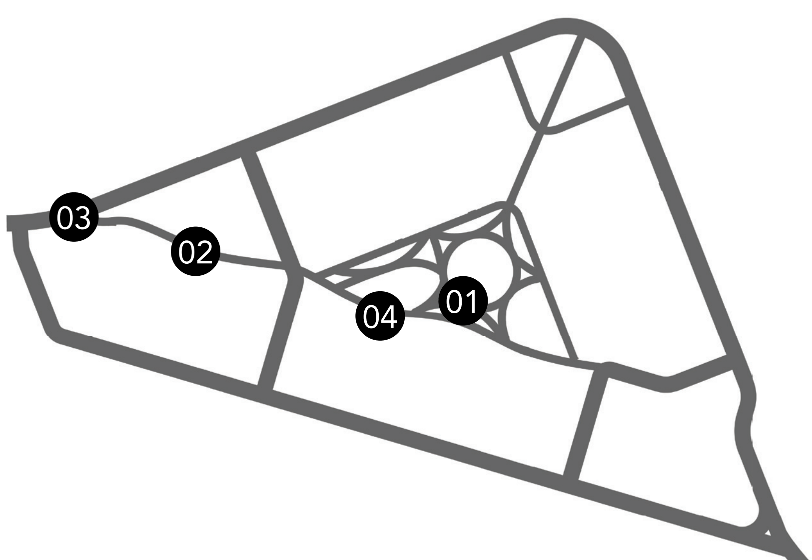
In this Master Plan, we outline a comprehensive vision, linking building, landscape, movement, environment, sustainability and larger social and intellectual missions into one. The Berkeley Space Center is much more than a research facility; it is a bustling hub of innovation, creativity, and inspiration. The design vision choreographs the environment for communal interaction, enhancing the possibility for new synergies and ideas and building a truly urban community.

As any research scientist can tell you, technological innovations rarely last more than a decade. Great public spaces and their impact though, can last a lifetime.





Illustrative Renderings of Public Spaces



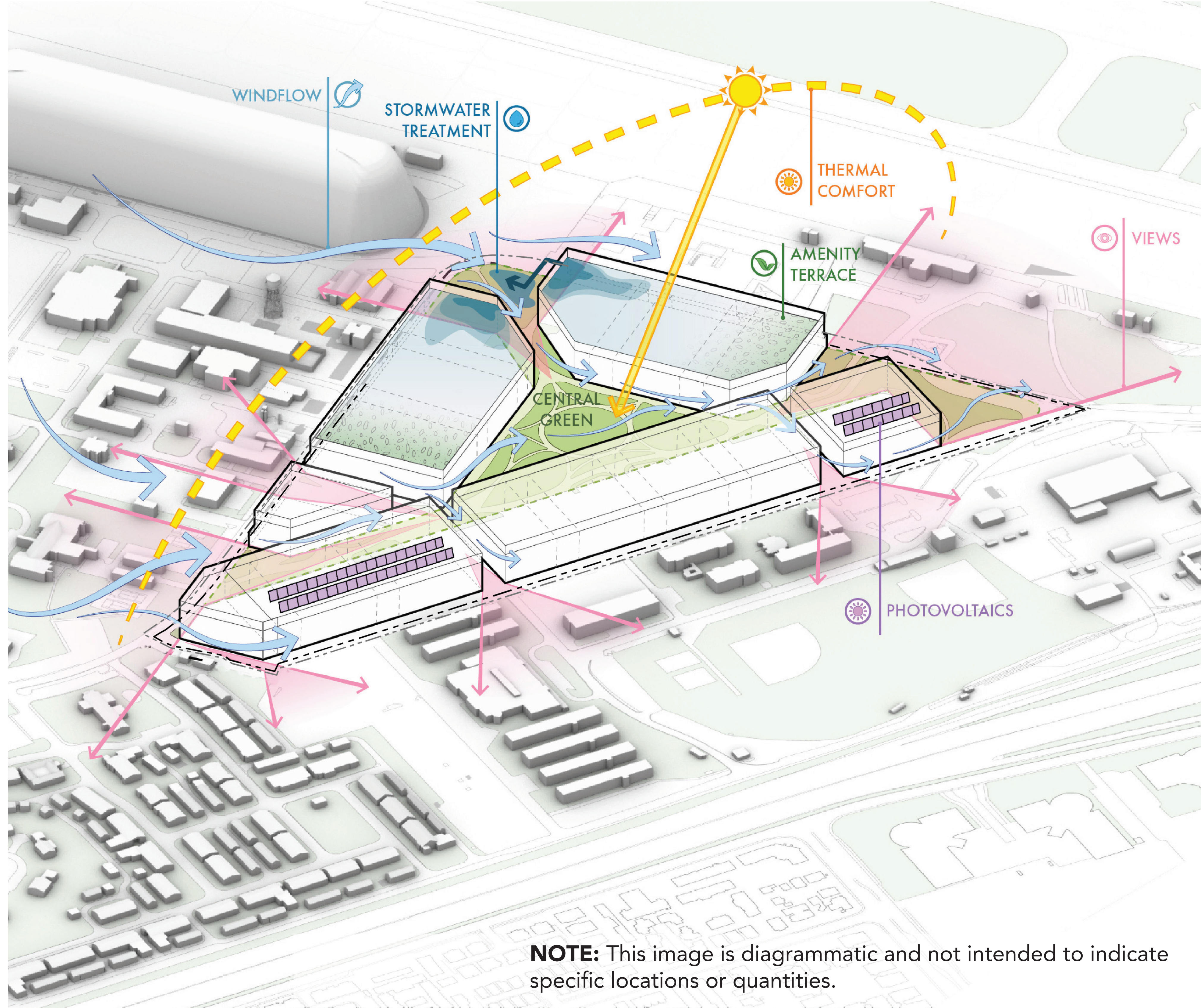

Public Spaces Key Map Diagram

# 2 SUSTAINABILITY

SUSTAINABILITY
# INTRODUCTION

The Berkeley Space Center at NASA Research Park intends to create spaces that enrich communities and renew the earth through regenerative design which enhances the site's ecosystem performance beyond the native habitat. The development may remediate the site using natural systems and use the site to remediate the wider environmental context. Healthier soil enables storm water management and the resulting water quality can support landscape growth to mitigate the winds of the site, clean the air, and increase biodiversity through ecological corridors to support long-term ecosystem growth.

A healthy ecosystem provides social benefits of health and wellbeing for people, and enable a comfortable environment outdoors to support work and play. As buildings develop and the forested areas of the site mature, a balance can be achieving in sequestering the carbon of construction and operations that enable the best management of a delicate climate.




**NOTE:** This image is diagrammatic and not intended to indicate specific locations or quantities.

Illustrative Sustainability Features

SUSTAINABILITY
# CLIMATE AND CONTEXTUAL DESIGN RESPONSES

## BAY FLATS AND TERRACES

The Project Site lies between the Bay Flats and Terraces ecoregion of Northern California which includes the near-water flats at the southern end of San Francisco Bay. Elevations are sea level to about 10 feet on Quaternary bay fill of silt and clay. High tides inundate most of the area.

The Bay Terraces/Lower Santa Clara Valley ecoregion is an urbanized area on alluvial plains that wrap around San Francisco Bay. Soil temperature regimes are mostly thermic, with some isomesic. Soil moisture regimes are xeric with some aquic. Common vegetation historically included coast live oak, California oatgrass, and needlegrass grasslands, although land use now is nearly all urban and residential. All but the larger streams are dry through most of the summer.

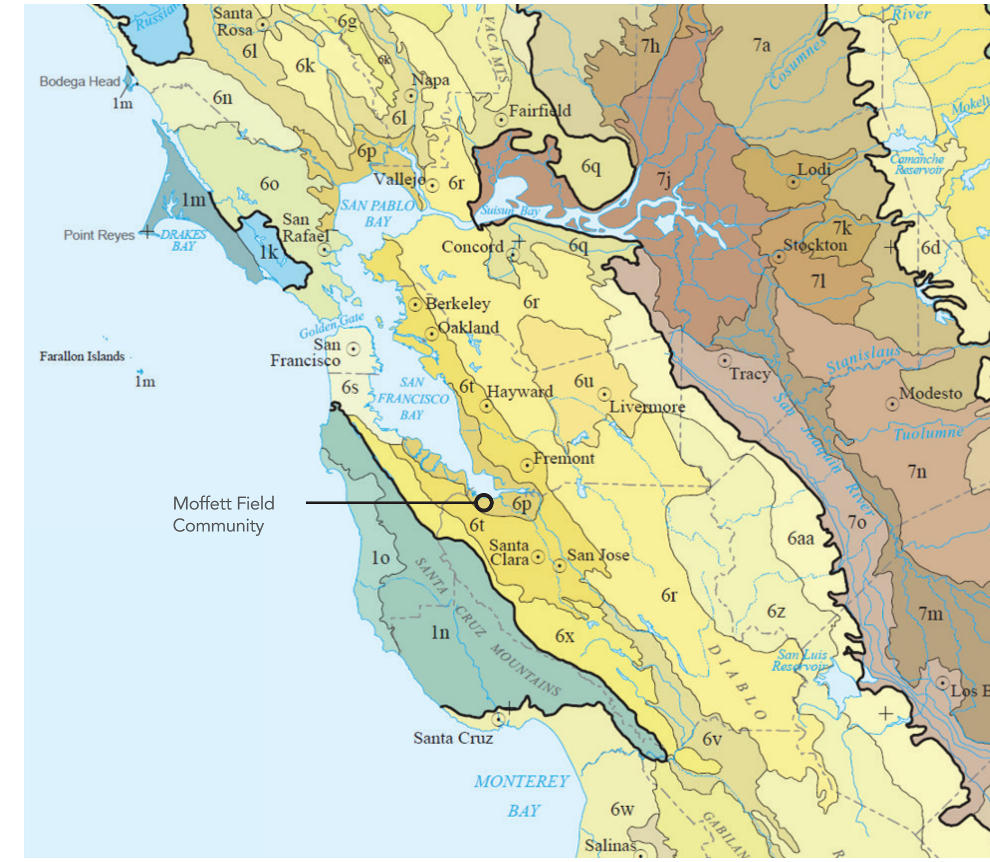
Several salt evaporation ponds are found in the southern Bay Flats, where saltwater is impounded within levees in the former tidelands.

## CLIMATE ANALYSIS

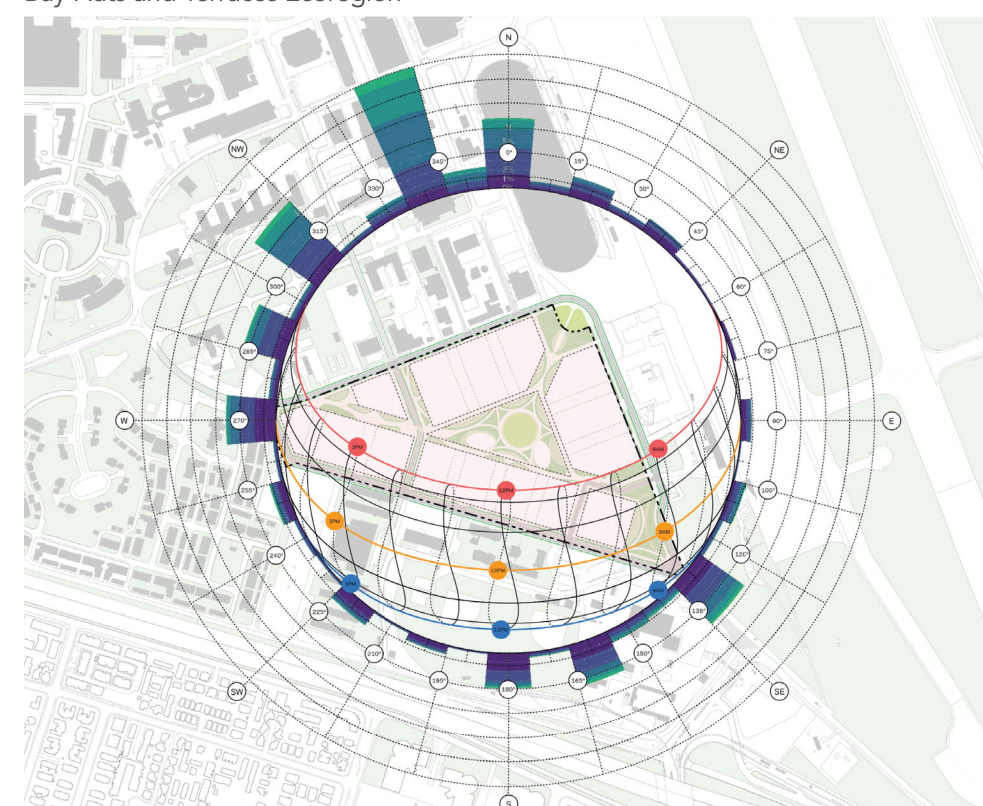
In the vicinity of the Project Site, the summers are long, warm, arid, and mostly clear. The winters are short, cold, wet and partly cloudy. Over the course of the year, the temperature typically varies from 44°F to 77°F and is rarely below 36°F or above 87°F. The hottest month of the year is August, with an average high of 77°F and low of 60°F.

The coldest day of the year is December, with an average low of 45°F and high of 59°F. The perceived humidity level in Moffett Field community does not vary significantly over the course of the year, remaining a virtually constant 0% throughout.

The most comfortable period of the year occurs from May to October, when conditions are most conducive to outdoor activity. With appropriate shading, balanced solar design and landscaping, the range of comfort may extend into mid-March and mid-November.



Bay Flats and Terraces Ecoregion

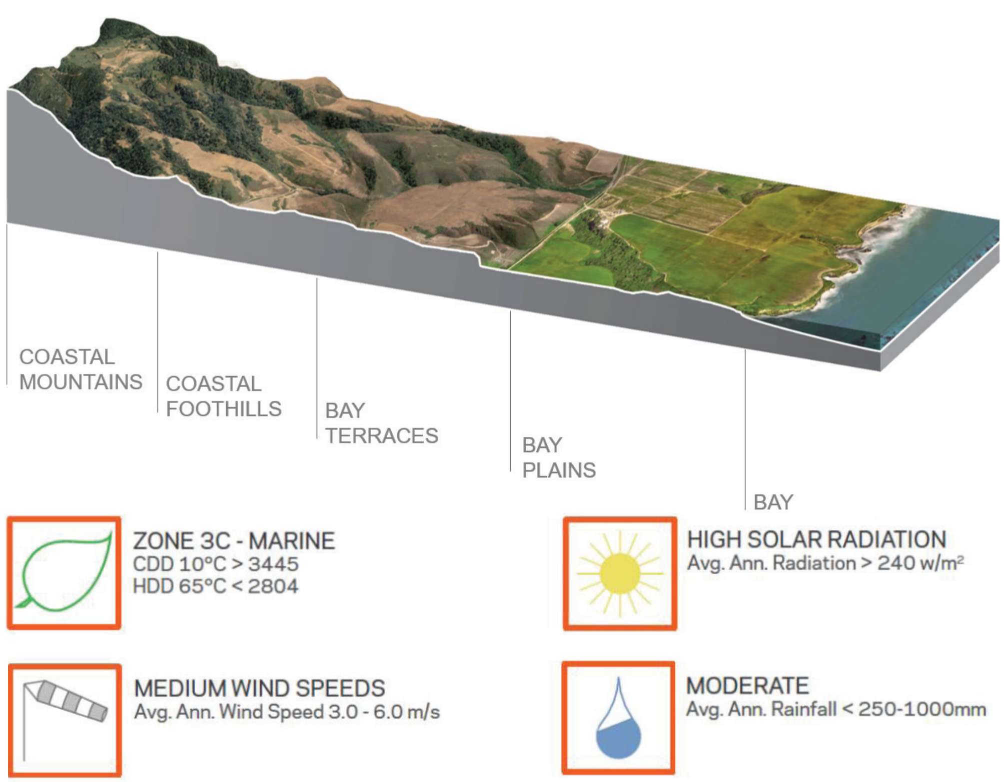

Climate Analysis

# CLIMATE AND CONTEXTUAL DESIGN RESPONSES

## BIOCLIMATIC FACTORS

This bioclimatic approach for habitat, comfort and performance is founded in long standing environmental principles that have been championed in vernacular approaches and are being applied in California to respond to its climatic conditions.

- Biome: Thermal mass, courtyards and radiant cooling
- Solar: Shading, daylight and solar energy generation
- Wind: Protection from gusts, fresh air and outdoor thermal comfort
- Water: Bioswales, bioretention treatment and ground water revitalization




Bioclimatic Factors

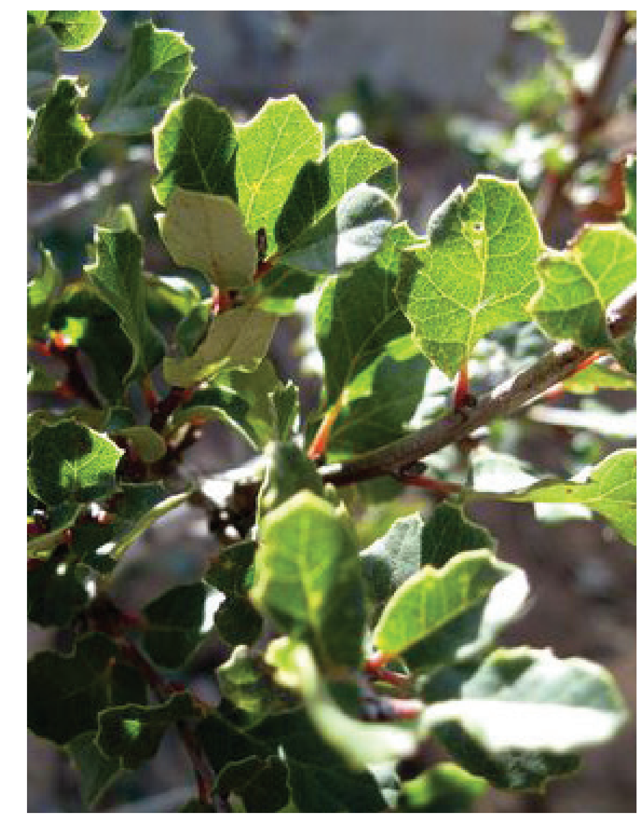
## FLORA AND FAUNA

NASA ARC community features one of the most biologically diverse ecosystems in California. The most widespread and characteristic natural communities of this ecoregion are oak woodland and chaparral. Valleys are dominated by foothill pine, blue oak, and chaparral species such as California buckeye, several species of manzanita, chamise, redbud, and scrub oak. NASA ARC's landscape includes tree species such as coast live oak, white alder, and Fremont cottonwood, alongside the famed coast redwood.

The dynamic Mountain View shoreline provides an estuary environment and varied ecosystems for wildlife and many species of birds including the resident Species of Special Concern, the Burrowing Owl. Grey foxes, black-tailed jackrabbits, California slender salamanders, pond sliders, and brown pelicans are also found in the area.

Mountain View Shoreline

Burrowing Owl



Scrub Oak

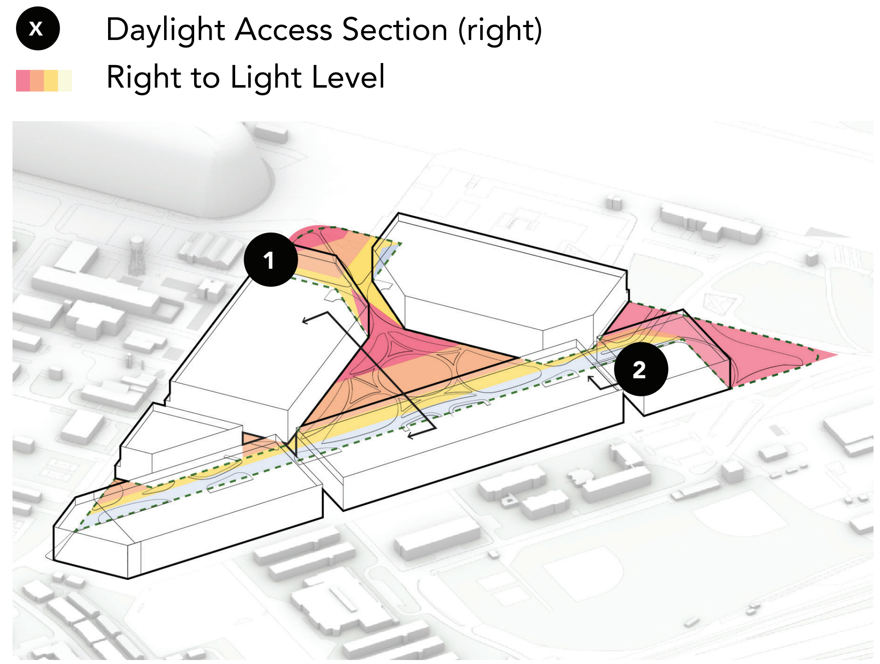
# SUSTAINABILITY
# SITE DRIVERS

## PUBLIC REALM DAYLIGHT ACCESS STRATEGIES

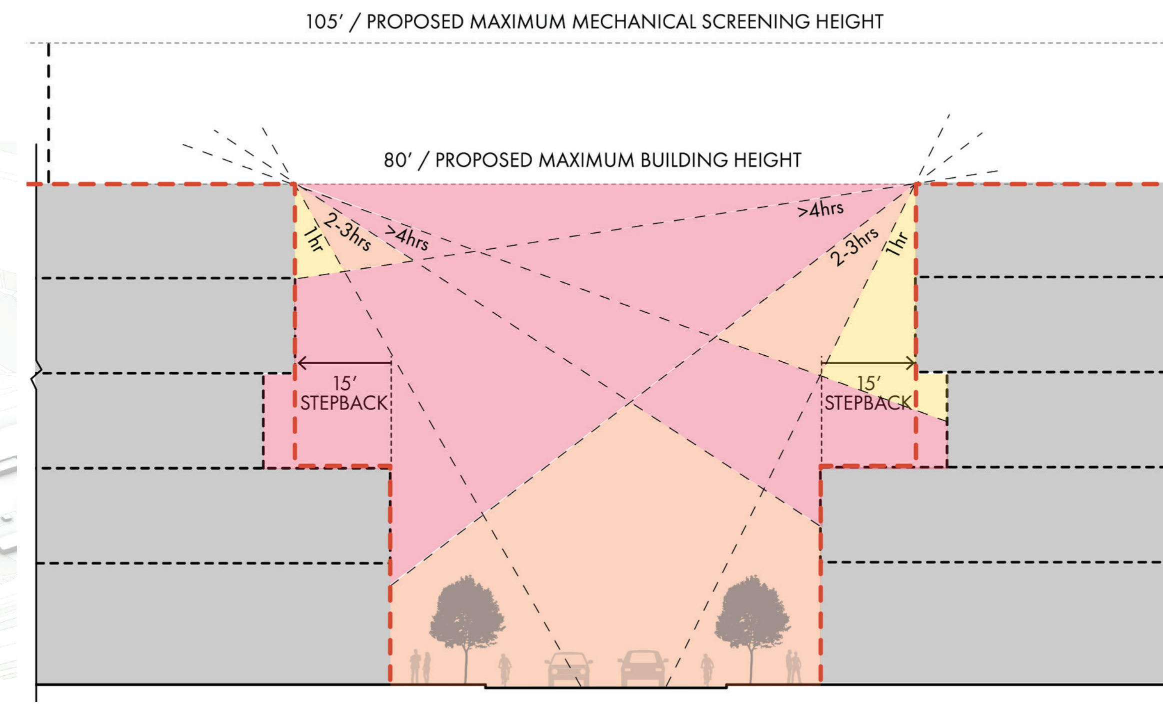
Right to light is an important part of maintaining general solar exposure across the site as well as creating thermally comfortable areas. In an educational setting, daylight access is also proven to be highly beneficial for users of the Berkeley Space Center at NASA Research Park, making it a critical consideration in the development of the plan.

**Guidelines:**

- All public corridors (open spaces and street right of ways) with pedestrian activity: 2 hrs min on the winter solstice each year
- Public outdoor recreational areas: 4 hrs min on the winter solstice each year

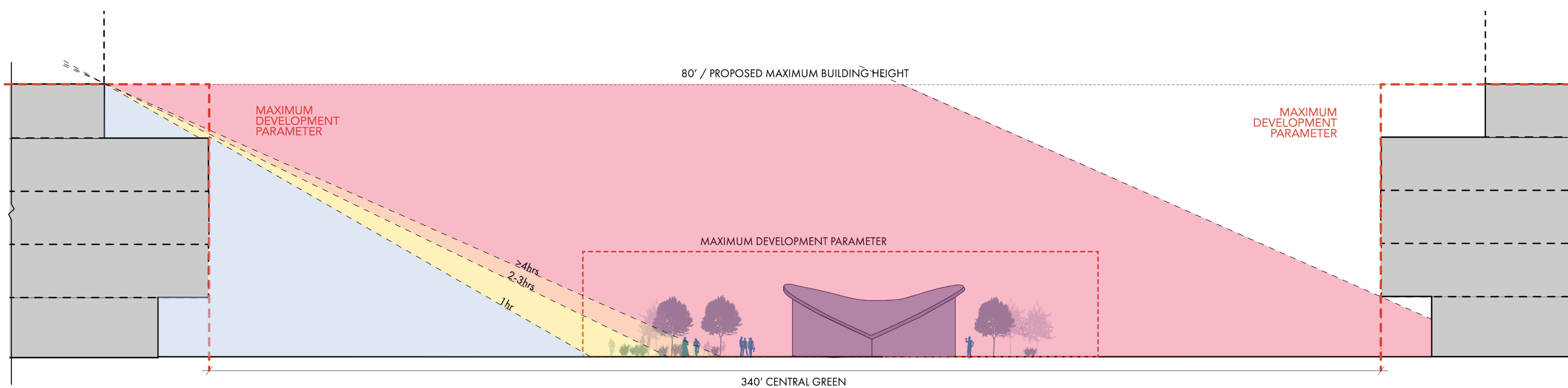



Right to Light Diagram




Internal Street Section (E/W)

**Sun Angle Diagram -** Winter Solstice 12/21




Internal Section through Central Green (N/S)

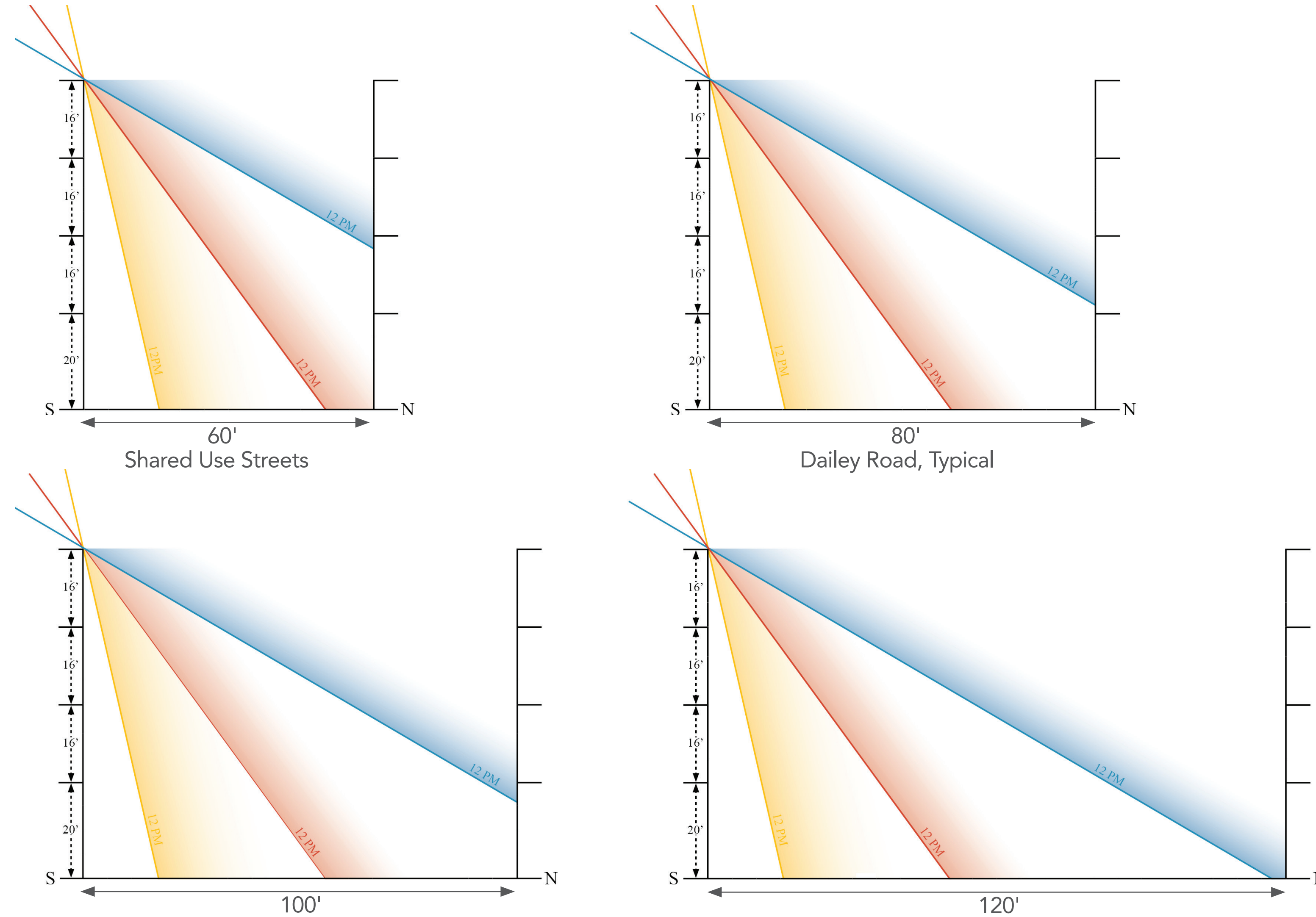
**Sun Angle Diagram -** Winter Solstice 12/21

SUSTAINABILITY
# SITE DRIVERS

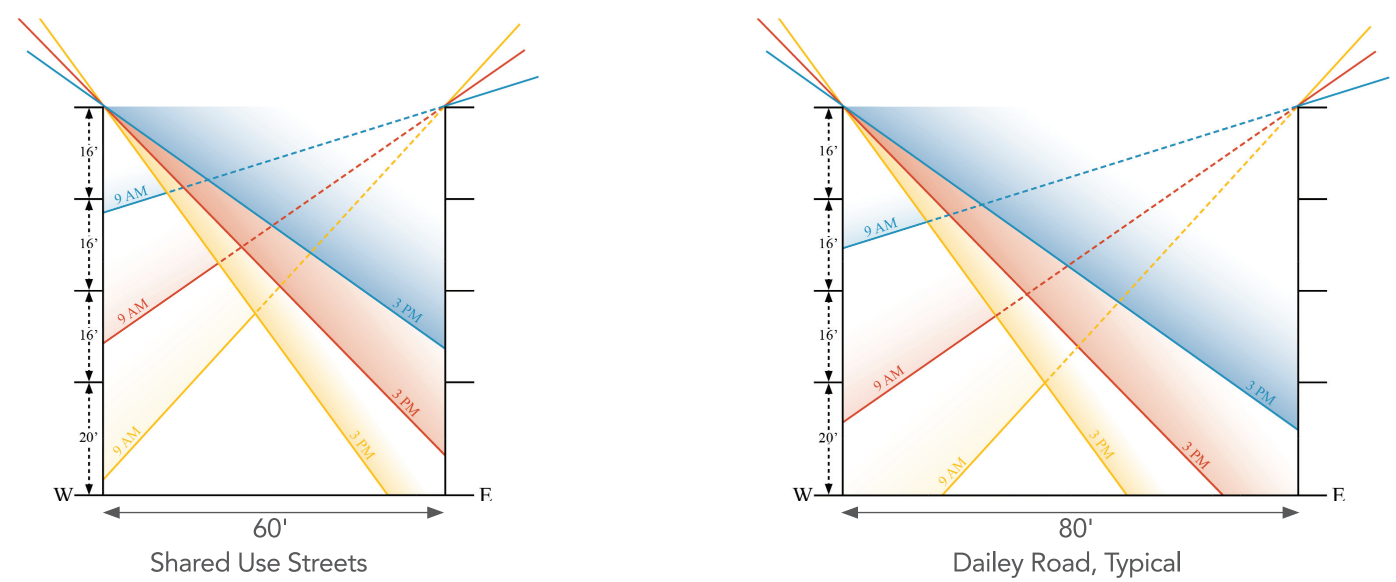
## PUBLIC REALM DAYLIGHT ACCESS STRATEGIES

**Solar Access and Building Height**
Sunlight is essential for human health and well-being. Proper access to it has been linked to improved sleep, reduced stress, increased productivity and strengthening one's immune system amongst other benefits. With the Project Site's exposure to high wind speeds and cool temperatures, it becomes important to enhance outdoor comfort.

The street sections have been designed with consideration to how deep sunlight may activate the pedestrian realm, illuminating streets, sidewalks and outdoor amenity spaces. The circulation pathways and open spaces allow for natural light to be available at locations throughout the site.



SOLAR ACCESS (S-N)



SOLAR ACCESS (E-W)

Winter
Spring / Fall
Summer

# SITE DRIVERS

## OUTDOOR COMFORT STRATEGIES

Urban Heat Island occurs when an area experiences much warmer temperatures than the surrounding parcels of land. Urban building materials are one of the primary reasons that urban areas trap heat, though impervious surfaces that restrict water flow also contribute. Buildings set in these areas work harder to stay cool, and release hot exhaust air. All of these factors contribute to rising temperatures in the direct vicinity.

Berkeley Space Center at NASA Research Park proposes to alleviate urban heat island effects through a significant increase in natural open space (through removal of surface parking and hardscape), incorporating street tree and canopy standards (see "Planting guidelines" on page 68), considering green roofs and high albedo materials and other sustainable building practices.

**Guidelines:**
Shade and Shelter: Incorporate trees, awnings, and/or shelters along sidewalks to provide shade and protection from the elements in order to enhance comfort, especially during inclement weather.

Street Tree Species: Street trees should be selected to provide shade during the summer months. Street trees should have non-invasive root systems to reduce impact on sidewalks, curbs, and utilities.

Landscape Materials: to consider permeable surfaces and increased flora to provide an evapotranspiration effect that lowers temperatures in the surrounding area.

Combined with energy efficient buildings, the conceptual master plan intends to showcase how responsible development can reverse urban heat island risk.


Permeable Surfaces


Green Roofs


Bioswales


High Albedo Materials


Reduced Parking Footprints & Low Impact Design


Outdoor Workplace

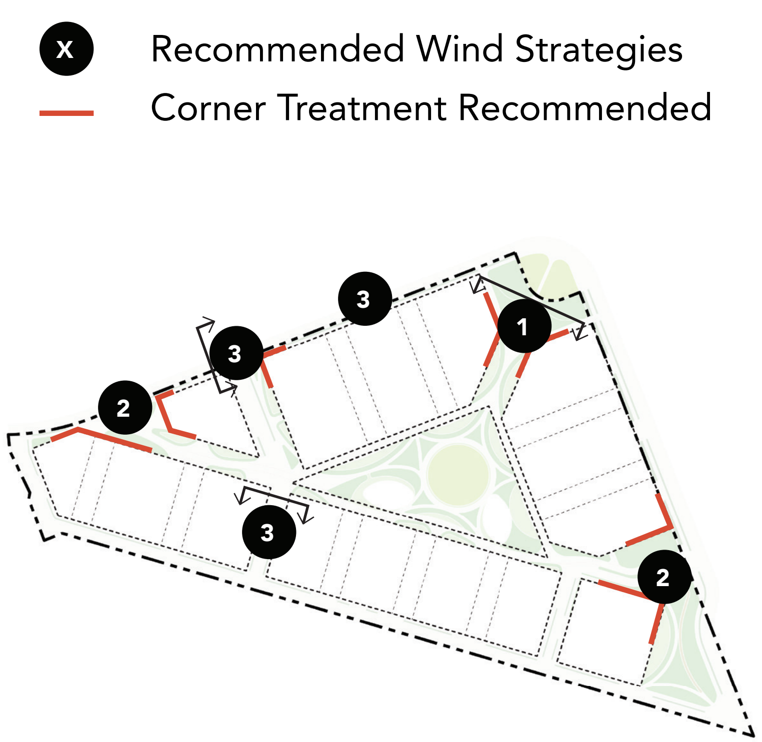
# SITE DRIVERS

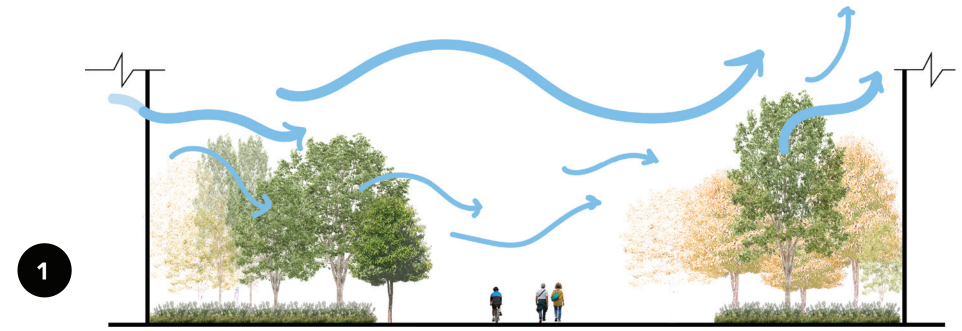
## WIND STRATEGIES

Wind strategies in landscape design aim to minimize the impact of wind on outdoor spaces, buildings, and plants, enhancing comfort and functionality while providing protection against potential damage. Typical strategies include windbreaks, strategic tree placement, hedgerows, berms, fencing, wind-resistant plants, and windscreens.

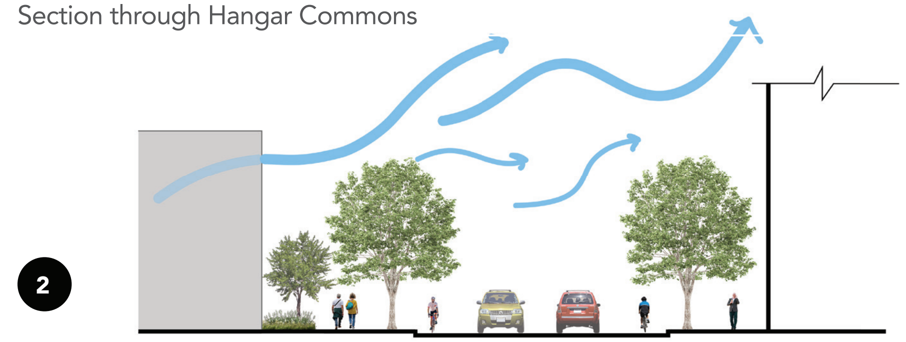
To break up oncoming winds at corner conditions of the Project Site, architectural treatments are recommended. Without addressing the building corners, incoming winds turn the sharp corner and accelerate as they proceed further into the site.

**Guideline:** Consider macro (A), messo (B), and/or micro (C) treatments to the exposed corners of the buildings to break up the incoming winds and reduce speeds to create a comfortable environment.

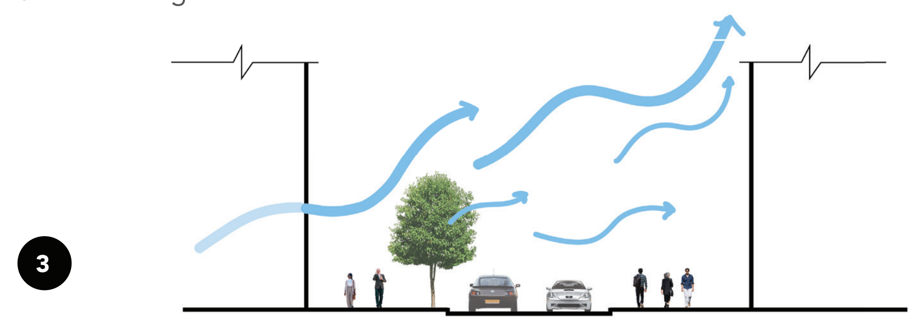


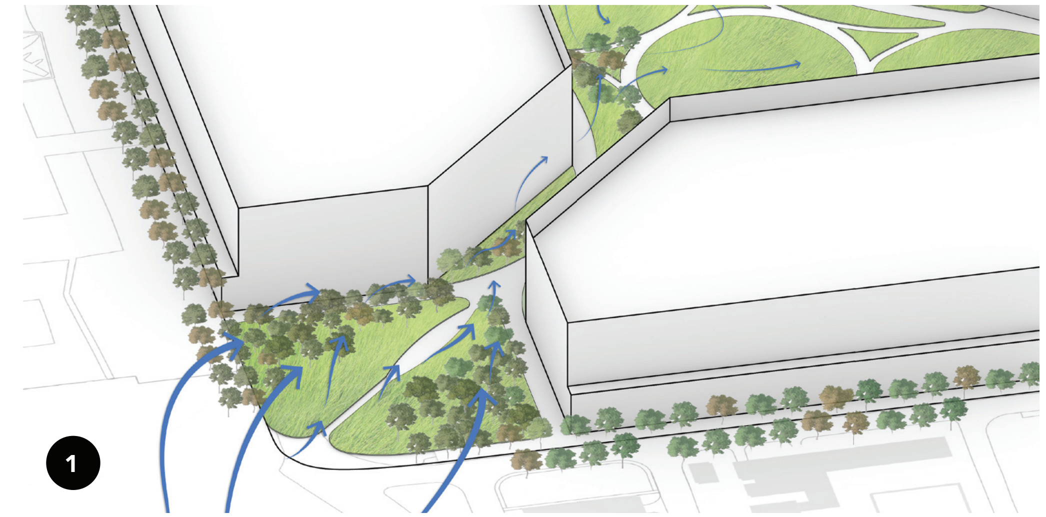

Section through Hangar Commons

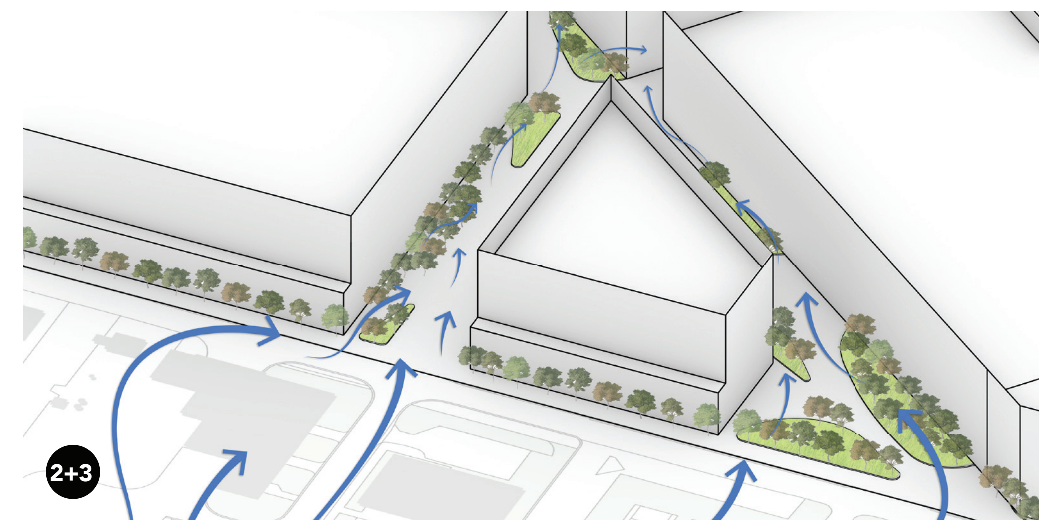


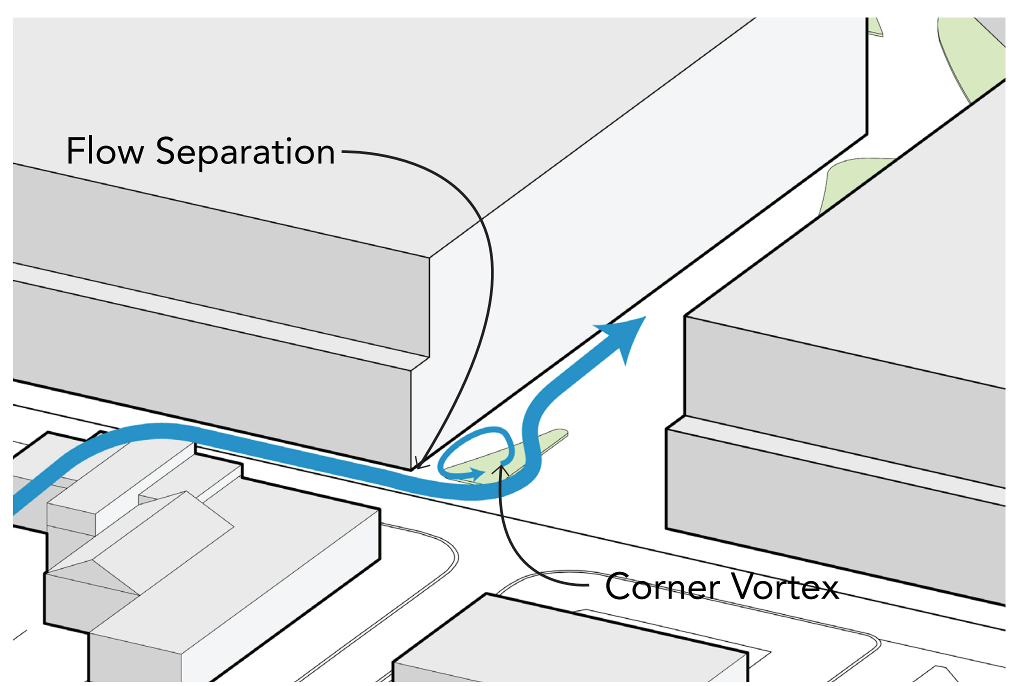

Section through Wescoat Road

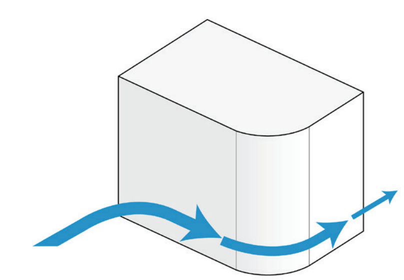



Section through Dailey Road

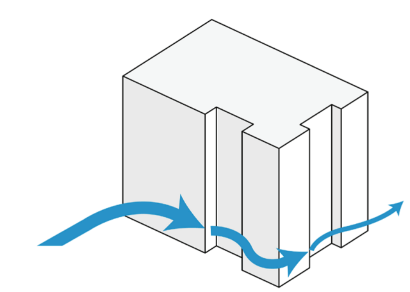


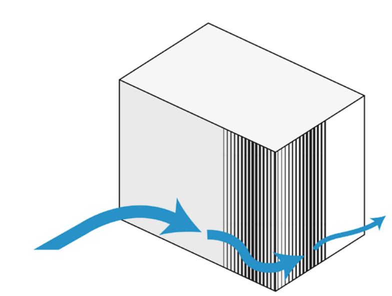



A. Macro Treatment



B. MessoTreatment



C. Micro-Scale Treatment

# 3 SITE

SITE
# PRINCIPLES

The Berkeley Space Center at NASA Research Park is envisioned as part of a larger research and innovation ecosystem - a new keystone for the wider NASA ARC community - that integrates site, district, center, region, state and country in a sustainable and innovative natural and built system. As such, determining the right mix and quantum of land uses is key to ensuring positive synergies both within the site and with its greater neighbors is paramount.

The overarching project principles for site and land use at the Berkeley Space Center as follows:

**Contextual Response**
Respect existing historic artifacts as recognizable icons that identify the focus of the district (including Hangar One and Shenandoah Plaza), while introducing new specialized features as the next generation of identifying landmarks.

**Key Views**
Ensure that the proposed building layout preserves and enhances view corridors, especially to Hangar One. The new street layout should also respect view corridors to key heritage buildings and character areas, such as Shenandoah Plaza and the airfields.

**Maximum Development Parameters**
The massing of the proposed development should relate to the surrounding historic fabric and open up new view corridors. Mitigate the visual effect of the new development on the surrounding heritage areas through height limits, landscaping, and overall site design.

**Open District aka 'Scientific Switzerland'**
Create a place where industry, university and government organizations can commingle, share research and drive advances in knowledge, while also ensuring privacy in certain areas for secure R&D.

**Reinforce District Identity**
Create an environment that celebrates core competencies, milestone achievements, and reinforces the identity of Berkeley Space Center as well as its place in the wider NASA ARC community.

**Foster Collaborations**
Create an innovation district that supports the transfer of knowledge. Considerations include strategic positioning of retail and amenity offerings, introducing attractors such as a conference center, and creation of indoor and outdoor demonstration/exhibition spaces.

**Ground Floor Activation**
Activate the ground plane with publicly accessible and/or visible uses, and design circulation paths from parking/drop-offs to lobby to desk to amenities to intentionally increase opportunities for encounters.

**Ideas to Invention**
Ensure all types of R&D activity can be supported within the innovation district - from independent research to collaborative idea sharing, and prototyping to testing.

**Flexibility**
Create a phased development strategy that allows the innovation district to evolve over time, with each phase given flexibility to best target the evolving needs for growth and expansion.

**Activate Open Spaces**
Utilize outdoor spaces for public-facing uses and functions - such as for exhibitions and events - to create a total environment that celebrates the sharing of ideas.

# PRIORITIZED INTERIOR VIEWS

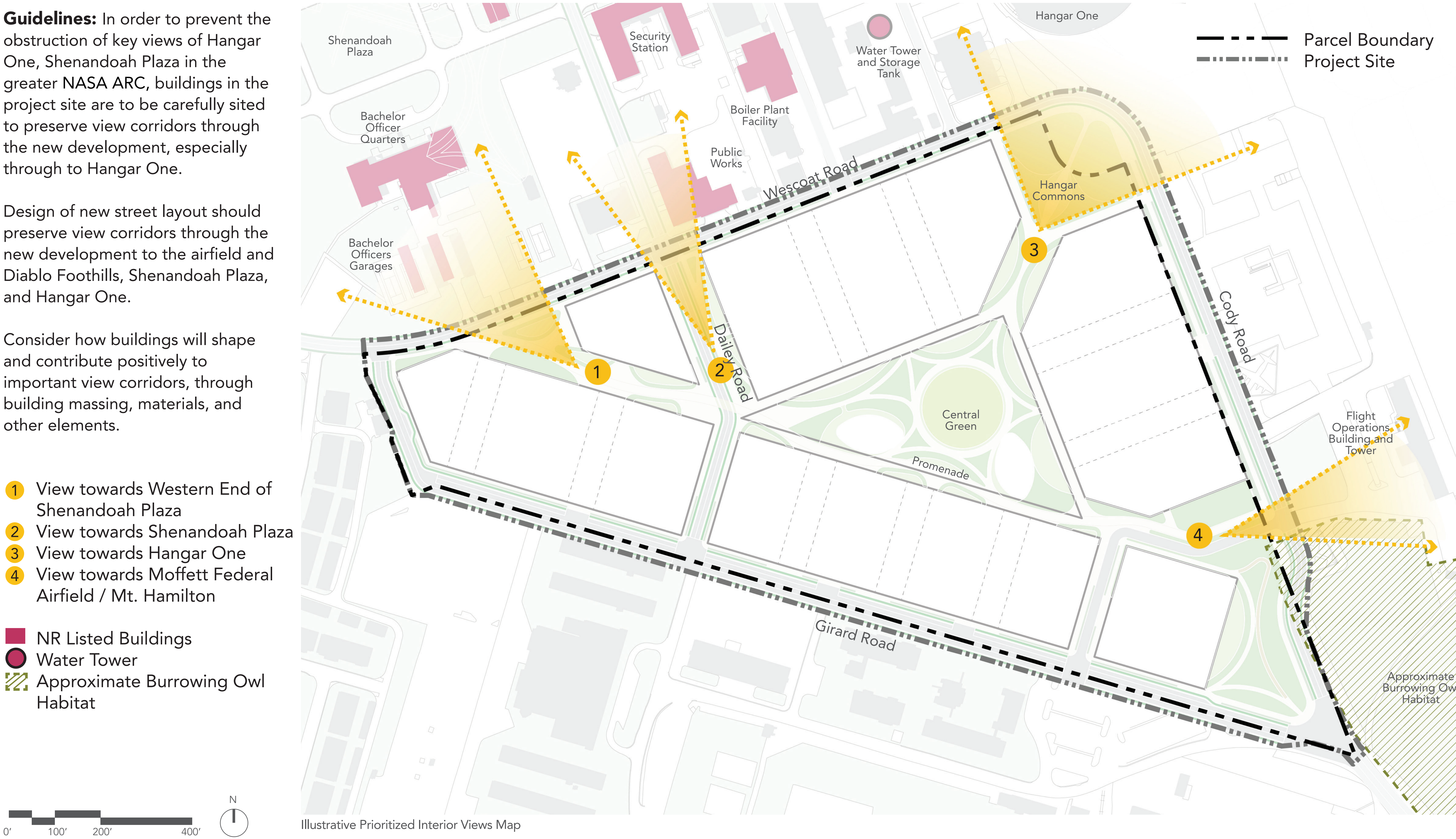
**Guidelines:** In order to prevent the obstruction of key views of Hangar One, Shenandoah Plaza in the greater NASA ARC, buildings in the project site are to be carefully sited to preserve view corridors through the new development, especially through to Hangar One.

Design of new street layout should preserve view corridors through the new development to the airfield and Diablo Foothills, Shenandoah Plaza, and Hangar One.

Consider how buildings will shape and contribute positively to important view corridors, through building massing, materials, and other elements.

1 View towards Western End of Shenandoah Plaza
2 View towards Shenandoah Plaza
3 View towards Hangar One
4 View towards Moffett Federal Airfield / Mt. Hamilton

NR Listed Buildings
Water Tower
Approximate Burrowing Owl Habitat




Illustrative Prioritized Interior Views Map

# PRIORITIZED INTERIOR VIEWS

1 Site Frontage: Wescoat Road towards Western End of Shenandoah Plaza

2 Site Frontage: Wescoat Road towards Shenandoah Plaza [Source: Google Earth]


3 Site Frontage: View towards Hangar One

4 Site Frontage: View towards Moffett Federal Airfield / Burrowing Owl Nesting Habitat Preserve

SITE

# PRIORITIZED EXTERIOR VIEWS

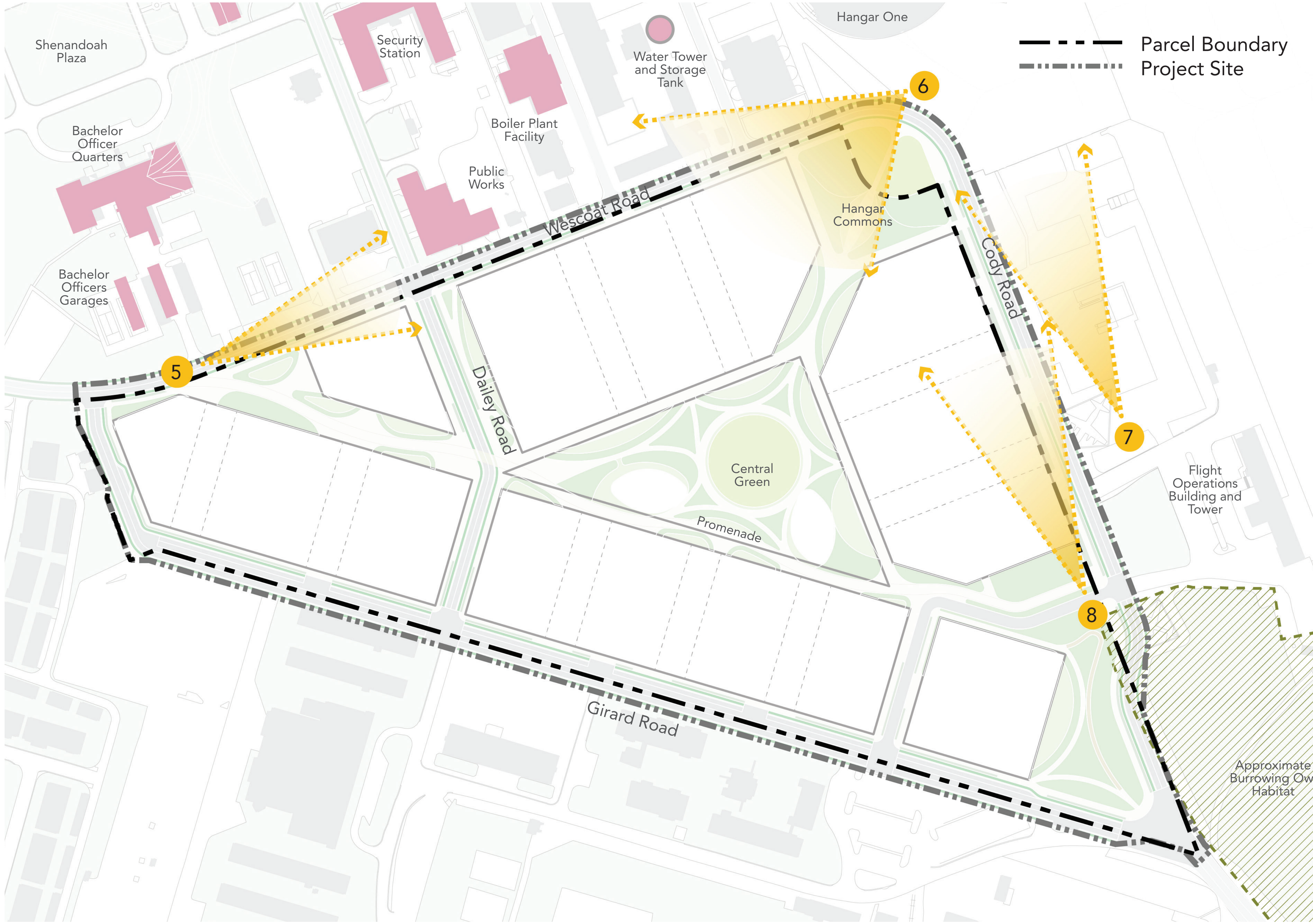
**Guidelines:** In order to prevent the obstruction of key views of Hangar One, Shenandoah Plaza and the Burrowing Owl Preserve in the greater NASA ARC buildings in the site area are to be carefully sited to preserve view corridors through the new development, especially through to Hangar One. Design of new street layout should preserve view corridors through the new development to the airfield and burrowing owl preserve, Shenandoah Plaza, and Hangar One. Consider how buildings will shape and contribute positively to important view corridors, through building massing, materials, and other elements.

- 5 View from Wescoat Road towards Hangar One
- 6 View from Hangar One down Wescoat Road
- 7 View from Existing Cody Road towards Hangar One
- 8 View from Proposed Cody Road towards Hangar One

- NR Listed Buildings
- Water Tower
- Approximate Burrowing Owl Habitat

0' 100' 200' 400'

N




Illustrative Prioritized Exterior Views Map

SITE
# PRIORITIZED EXTERIOR VIEWS


5 Site Frontage: Cody Road towards Hangar One

6 Site Frontage: View from Hangar One down Wescoat Road

7 Site Frontage: View from Realigned Cody Road towards Hangar One

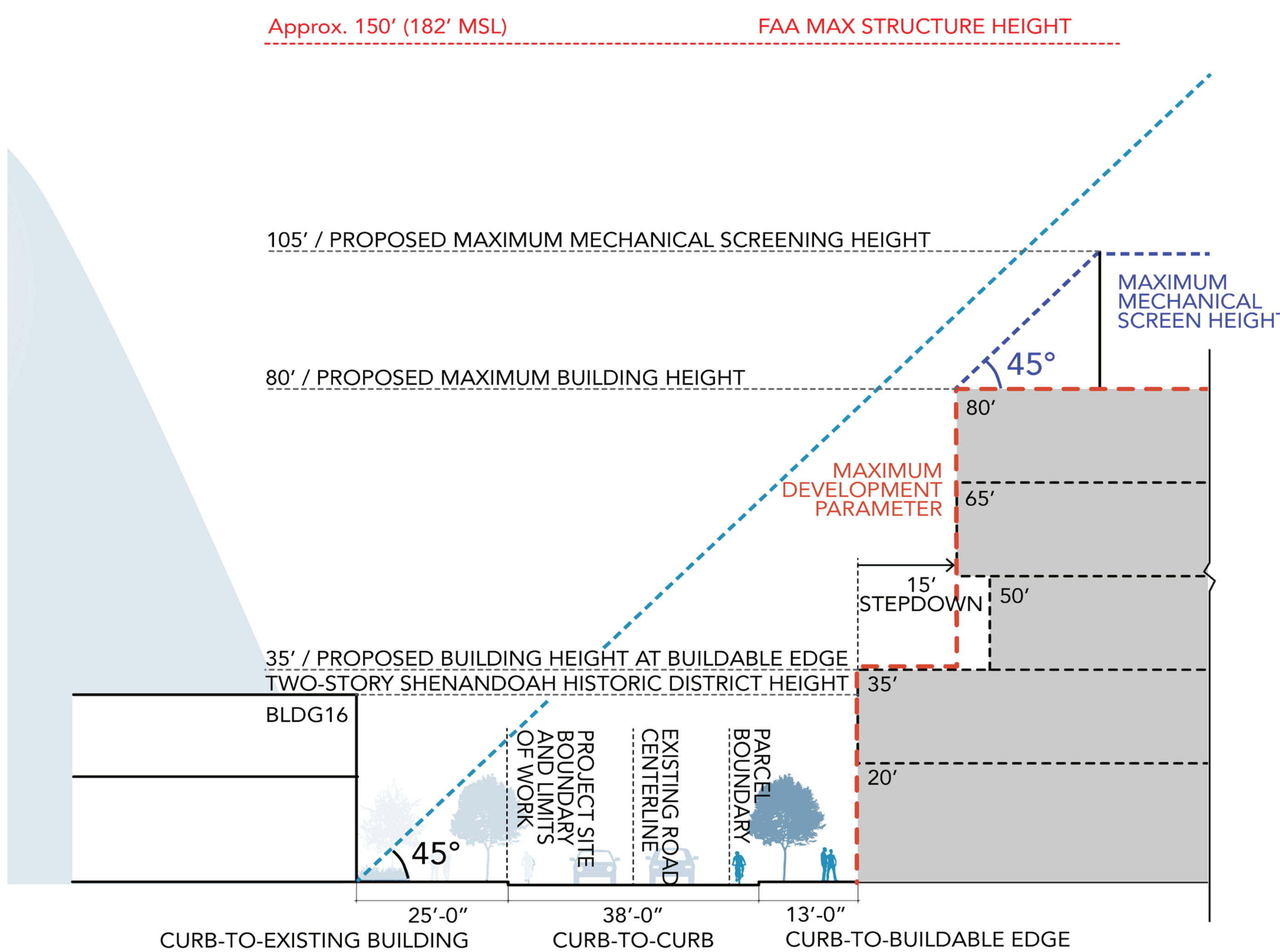
8 Site Frontage: View from Existing Cody Road towards Hangar One

# PRIORITIZED EXTERIOR VIEWS

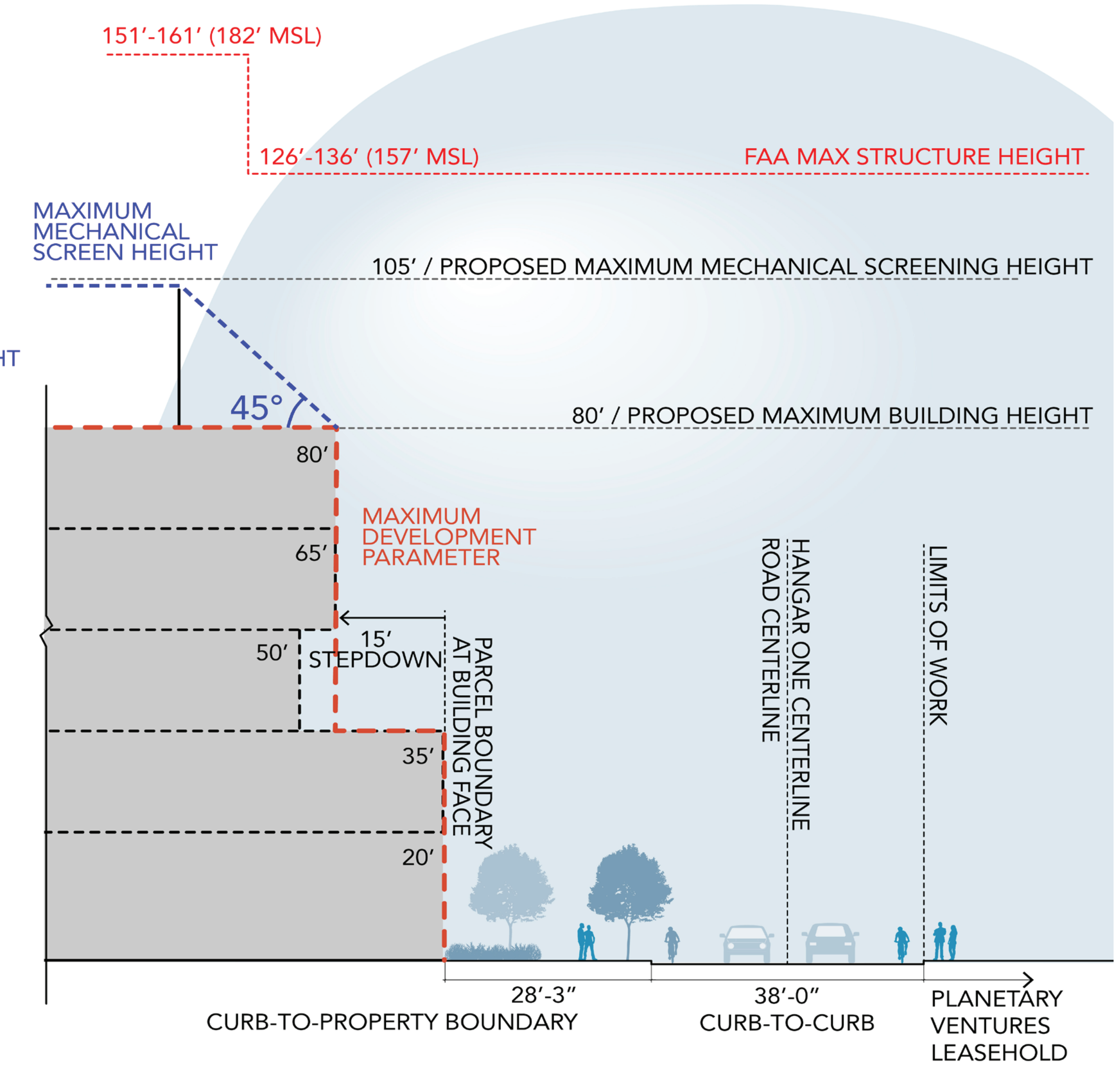
## HANGAR ONE

**Guidelines:** Views from Cody Road and Wescoat Road to Hangar One should be preserved and even emphasized.

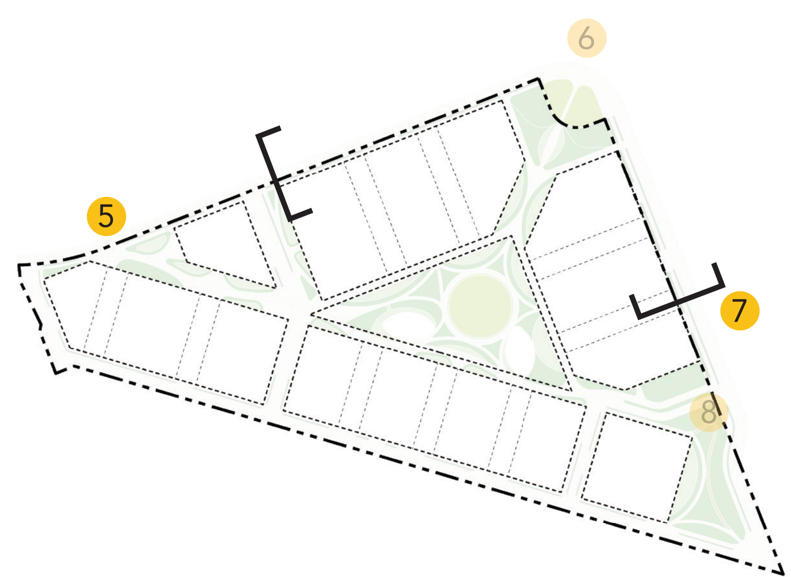
Importantly, Wescoat Road provides the seam between the historic district on the north side of the street and the new development that will occur on the south side of the street. Therefore, future developments within this district must carefully merge the requirements of the two areas.




5 Site Frontage: Wescoat Road towards Hangar One




7 Site Frontage: Cody Road towards Hangar One

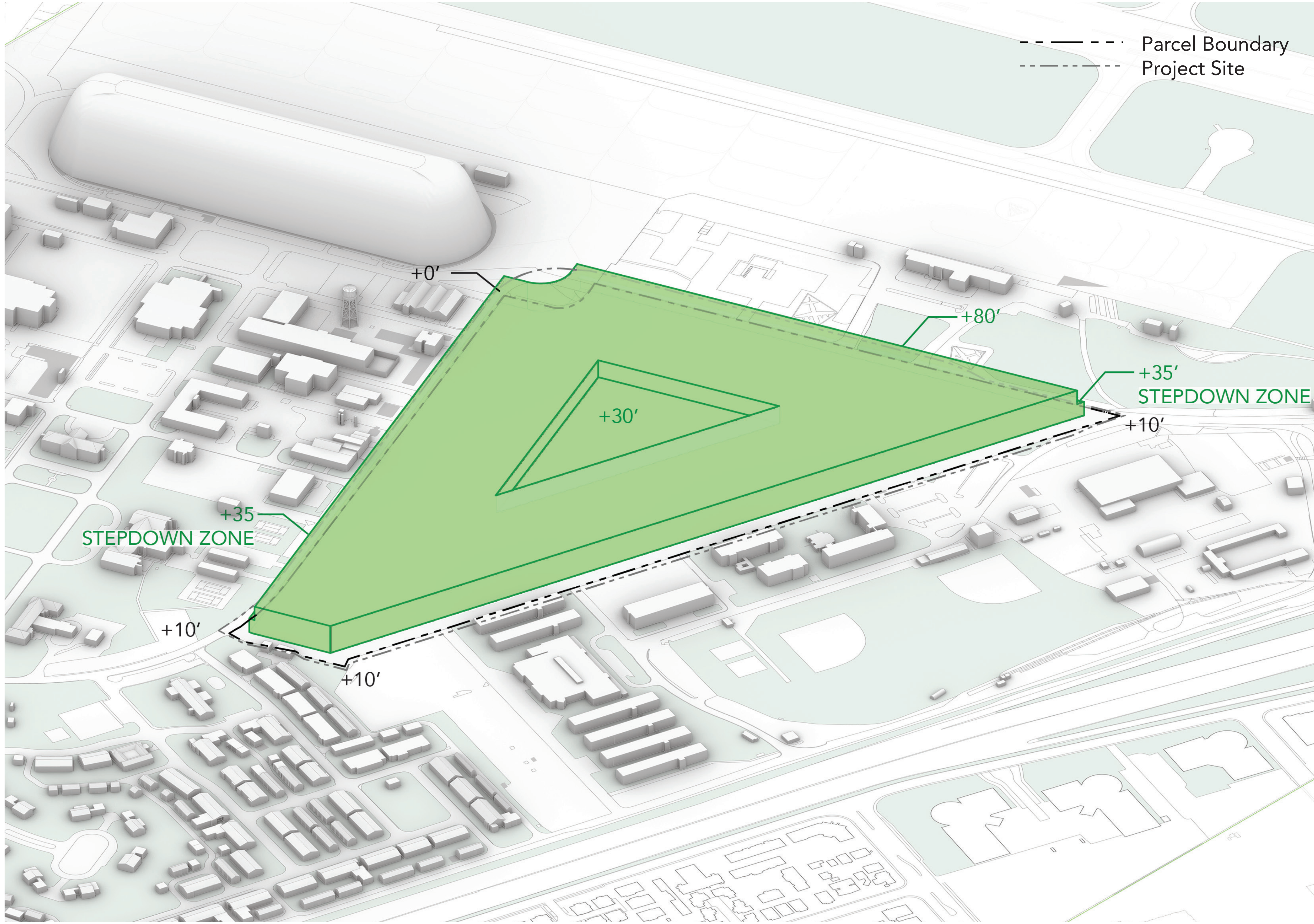


SITE
# MAXIMUM DEVELOPMENT PARAMETERS

## SITE

The Project Site's maximum development envelope is set at 80 feet in height. The stepdown zones along Wescoat Road and Cody Road are intended to relate to the historic fabric of Shenandoah Plaza and open up view corridors to Hangar One.

New development's visual effect against those two assets will be moderated through a combination of height limits, massing, landscape, screening and overall site design within these maximum development parameters.



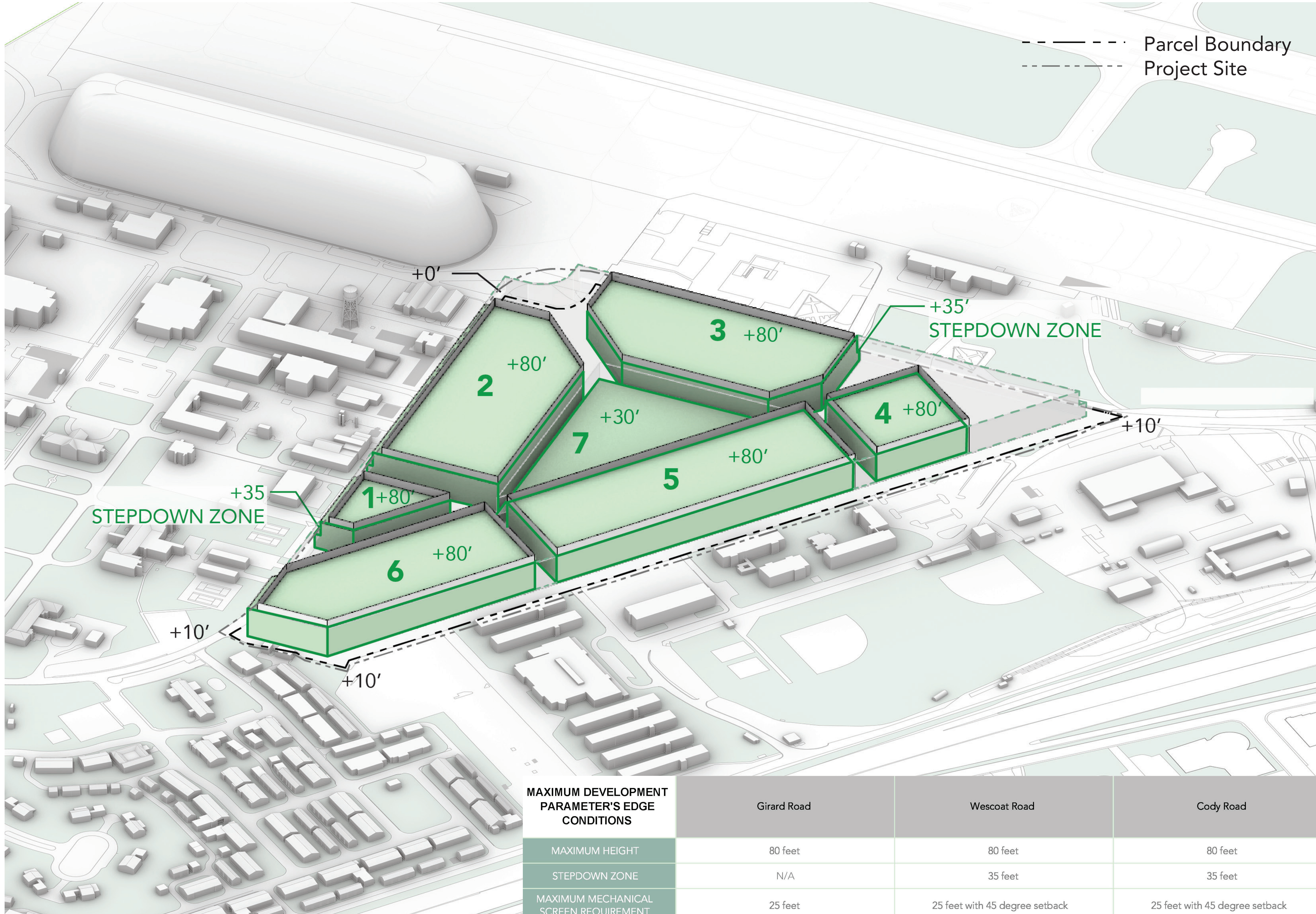
Illustrative Maximum Development Parameters of Entire Site

# MAXIMUM DEVELOPMENT PARAMETERS

## SUBAREAS

Illustrated here are each Subarea's maximum development parameters. Each Subarea allows for flexibility within the extruded mass shown, to form their own architectural massing solutions.

Image is a conceptual layout depicting the horizontal and vertical dimensions of the proposed development based on the proposed project's maximum and minimum development standards for each Subarea. Because the proposed project would not be required to be developed to reach the maximum dimensions in each Subarea, image represents a conservative depiction of the project's conceptual layout.




| MAXIMUM DEVELOPMENT PARAMETER'S EDGE CONDITIONS | Girard Road | Wescoat Road | Cody Road |
|---|---|---|---|
| MAXIMUM HEIGHT | 80 feet | 80 feet | 80 feet |
| STEPDOWN ZONE | N/A | 35 feet | 35 feet |
| MAXIMUM MECHANICAL SCREEN REQUIREMENT | 25 feet | 25 feet with 45 degree setback | 25 feet with 45 degree setback |

Conceptual Maximum Development Parameters of Each Subarea

SITE
# LAND USE PLAN

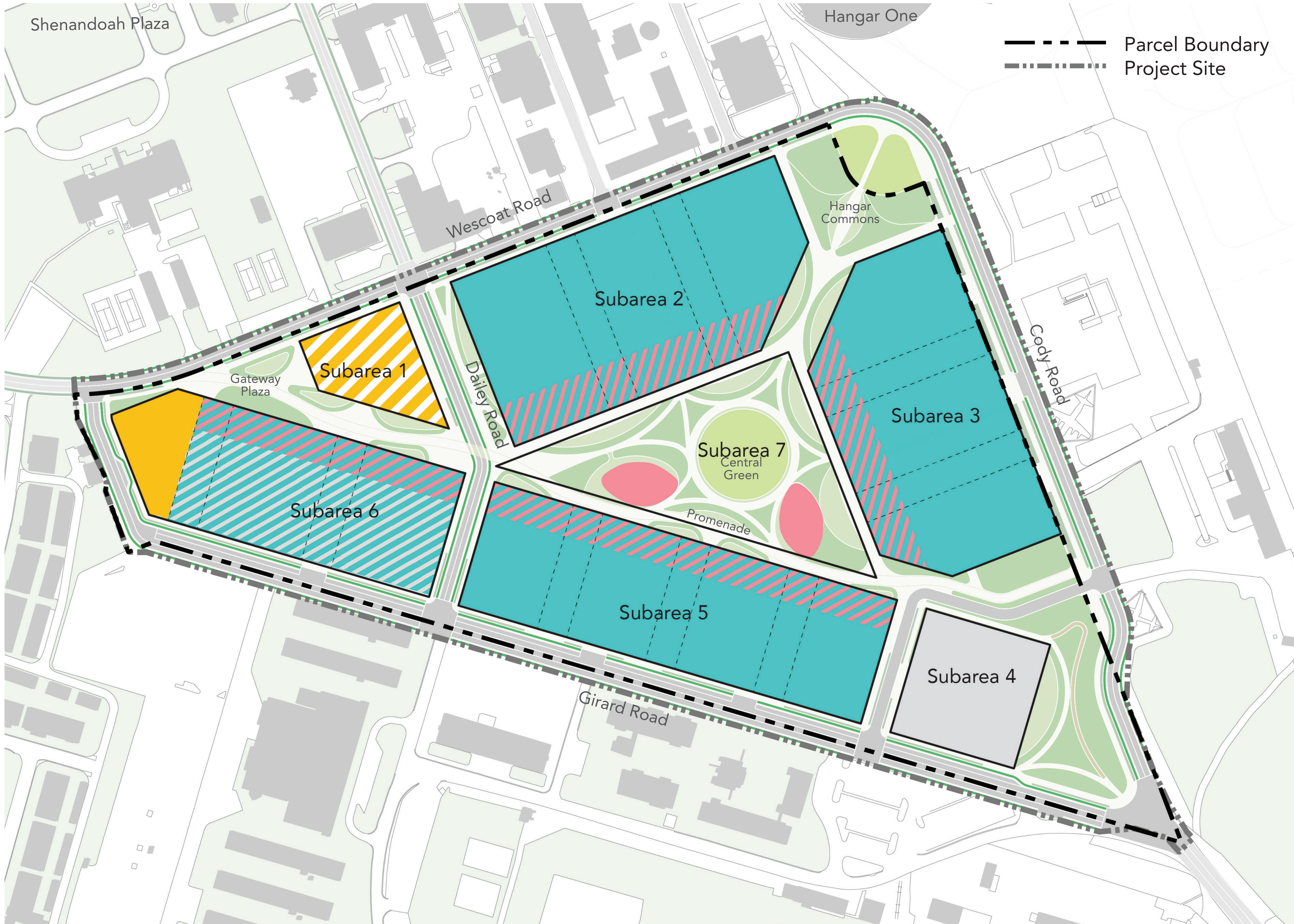
Research and Office Uses programs frame the edges of the project site. Active Uses are proposed along the perimeter edges of the Central Green, with additional active uses located within the Central Green itself as pavilions.
Student / Faculty Housing, Conference Uses and Short-Term Lodging uses are concentrated at the south-western corner of the site, acting as a welcoming entry from the Wescoat Road approach.

## LEGEND

- Research and Office Uses
- Research and Office Uses and Parking
- Research and Office Uses and Ground Floor Active Uses
- Student / Faculty Housing
- Conference Uses and Short-term Lodging
- Active Uses
- Parking
- Open Space

0' 100' 200' 400'

N




Illustrative Land Use Plan

SITE

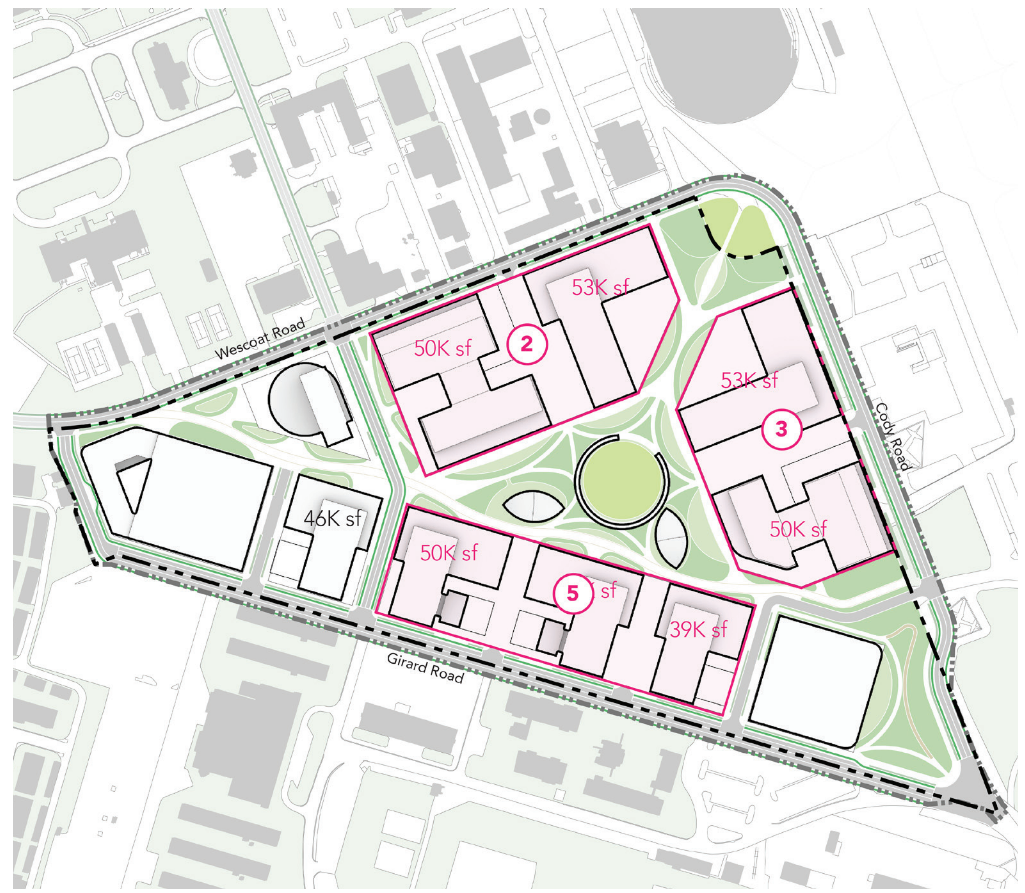
# FLEXIBILITY OF SUBAREAS

## ILLUSTRATIVE EXAMPLE CONFIGURATIONS

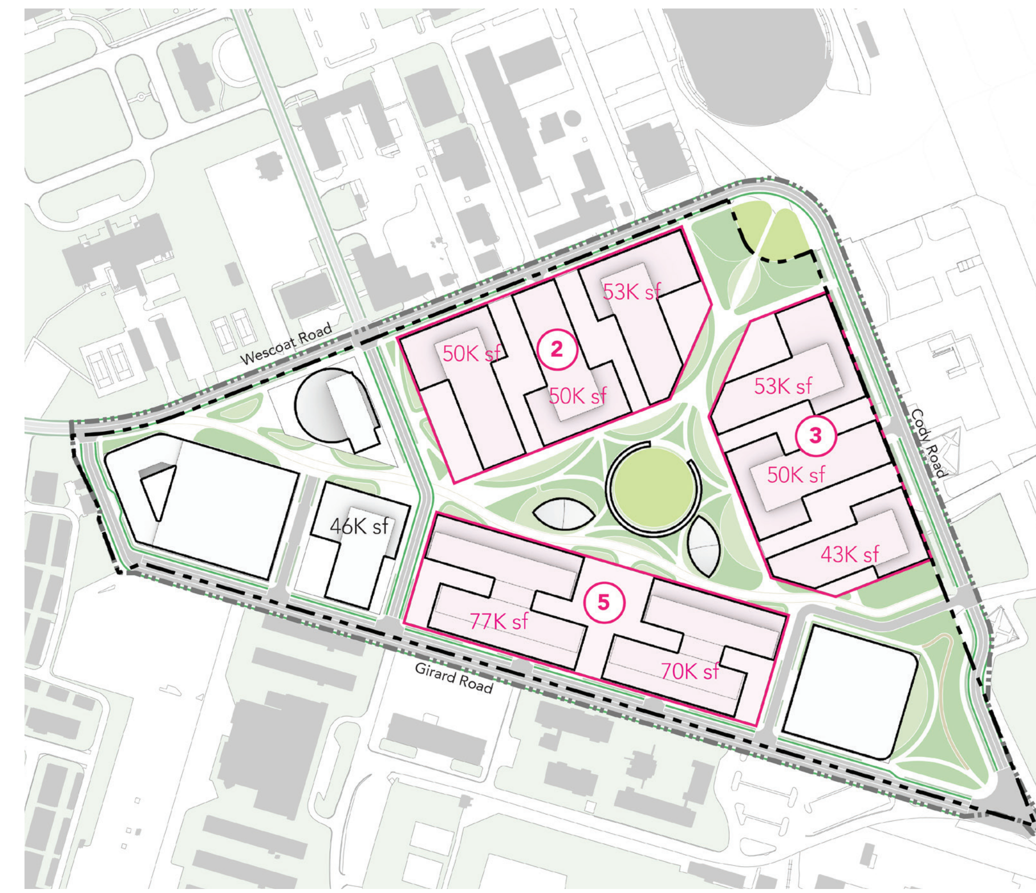
In order to illustrate how the conceptual master plan allows for flexibility of number and size of Subareas, the project studied several alternate configurations. Each reconfigures at least one of the Subareas 2, 3 and 5 and the implications of such massing moves within the Subareas are summarized below.

Parcel Boundary
Project Site


Three alternating T-shaped building typologies are shown in Subareas 2 and 3 for a finer grain and scale relationship to the Shenandoah Plaza Historic District. Subarea 5 splits into four T-shaped building typologies.




Two Z-shaped building typologies are shown in Subareas 2 and 3 for consolidated research opportunities, aligning with the street fabric of the Shenandoah Plaza Historic District. Subarea 5 splits into three T-shaped building typologies.

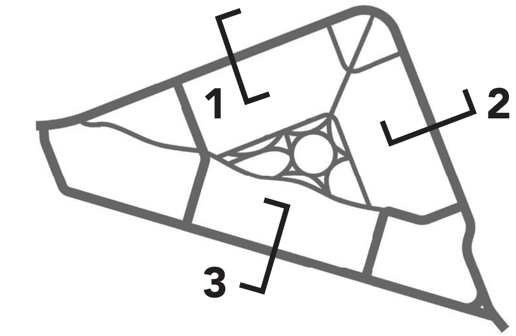



Three alternating T-shaped building typologies are shown in subareas 2 and 3 for a finer grain and scale relationship to the Shenandoah Plaza Historic District. Subarea 5 splits into two Z-shaped building typologies for consolidated research opportunities, leaving a view corridor through the site to Hangar One.

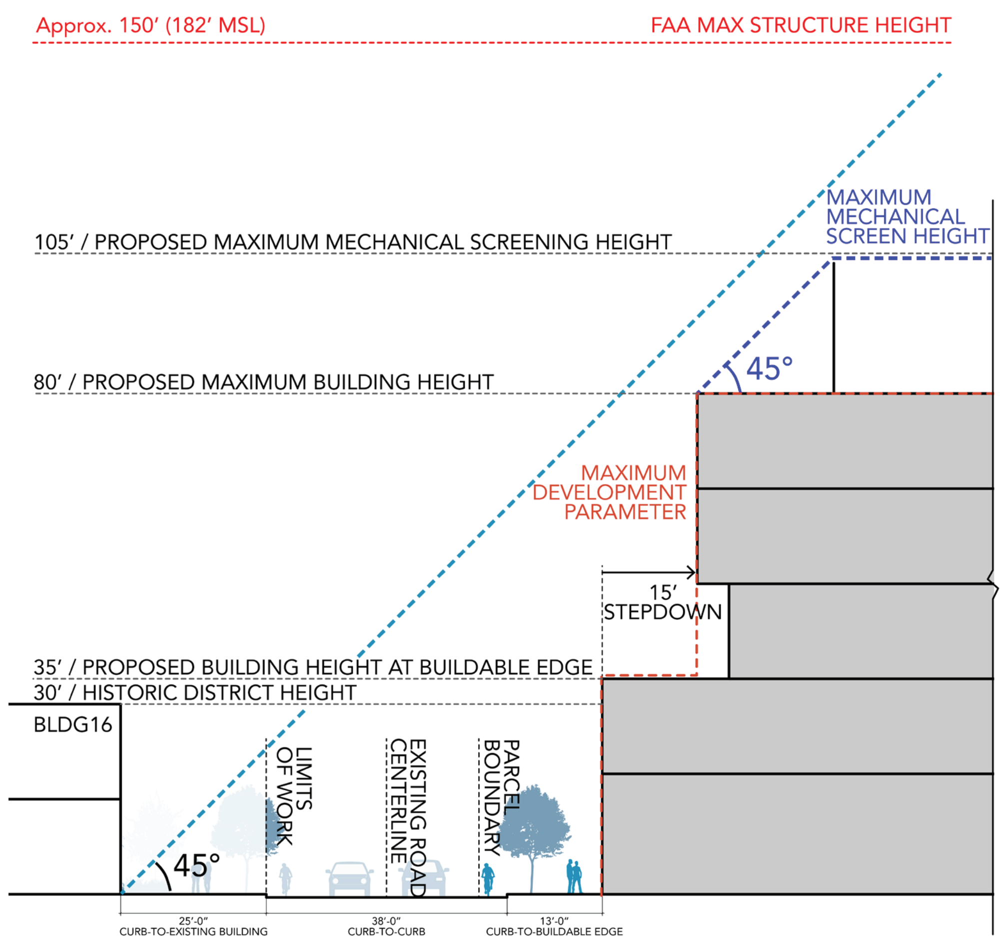
SITE

# DISTRICT EDGE HEIGHT, SETBACKS AND STEPBACKS

The Subarea's maximum development parameters have been studied in terms of height, setbacks, and stepbacks across the site to ensure compliance with FAA requirements while also respecting and complementing the existing historic scale and view corridors. Overall building heights are below FAA restrictions.

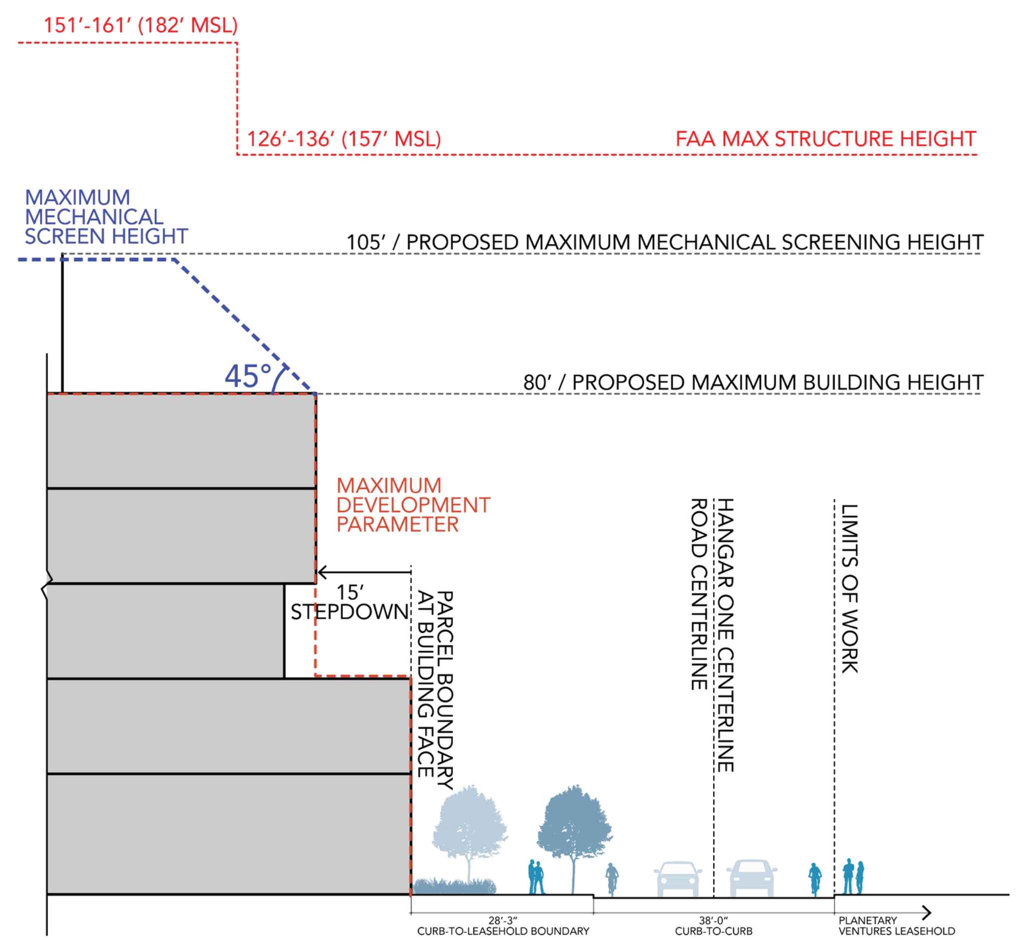



## 1. WESCOAT ROAD



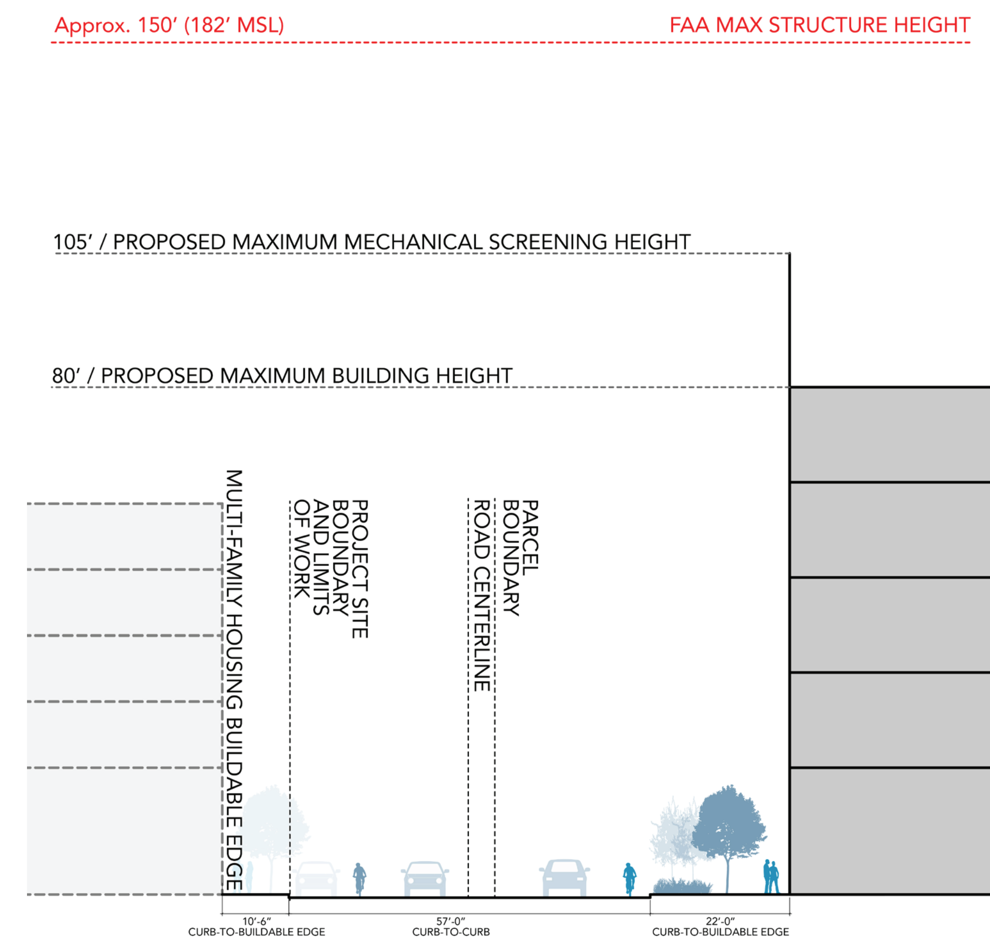

Wescoat Road is the threshold between the project and historic Shenandoah Plaza. The project defines a stepback zone to create a two story scale along the base of the buildings that relates directly to the scale of the buildings across the street.

## 2. CODY ROAD



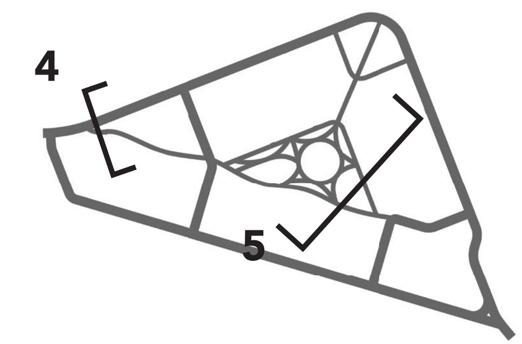

Cody Road has been realigned to be on axis with Hangar One. It serves as a primary visual corridor to Hangar One from the south-eastern entrance and separates the project and the airfield. The two story stepback zone continues from Wescoat Road around to Cody Road to maintain a cohesive scale along these two primary roads, while also serving to further open the view corridor to Hangar One.

## 3. GIRARD ROAD

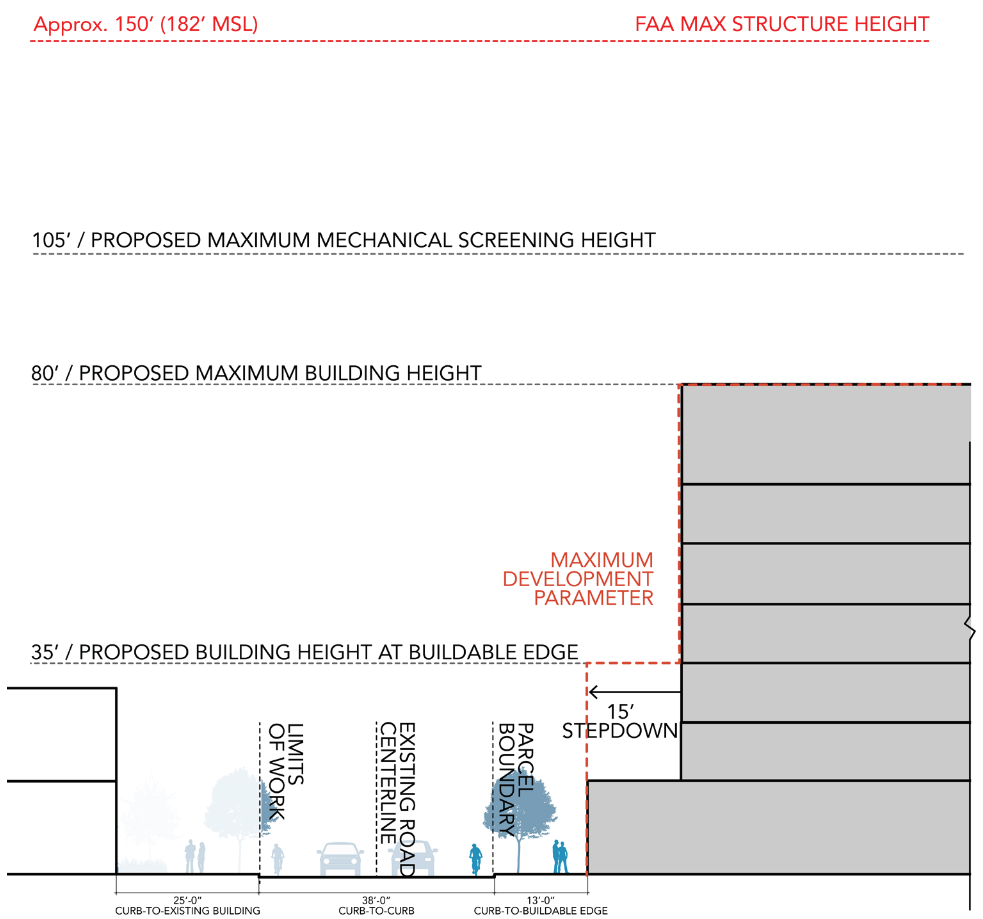



Along Girard Road buildable sites sit back 12'-6" minimum from the roadway, allowing for loading zones and generous planted bulbout zones. The generous ROW between the two proposed developments alleviates any need to prescribe stepbacks.

# DISTRICT EDGE HEIGHT, SETBACKS AND STEPBACKS

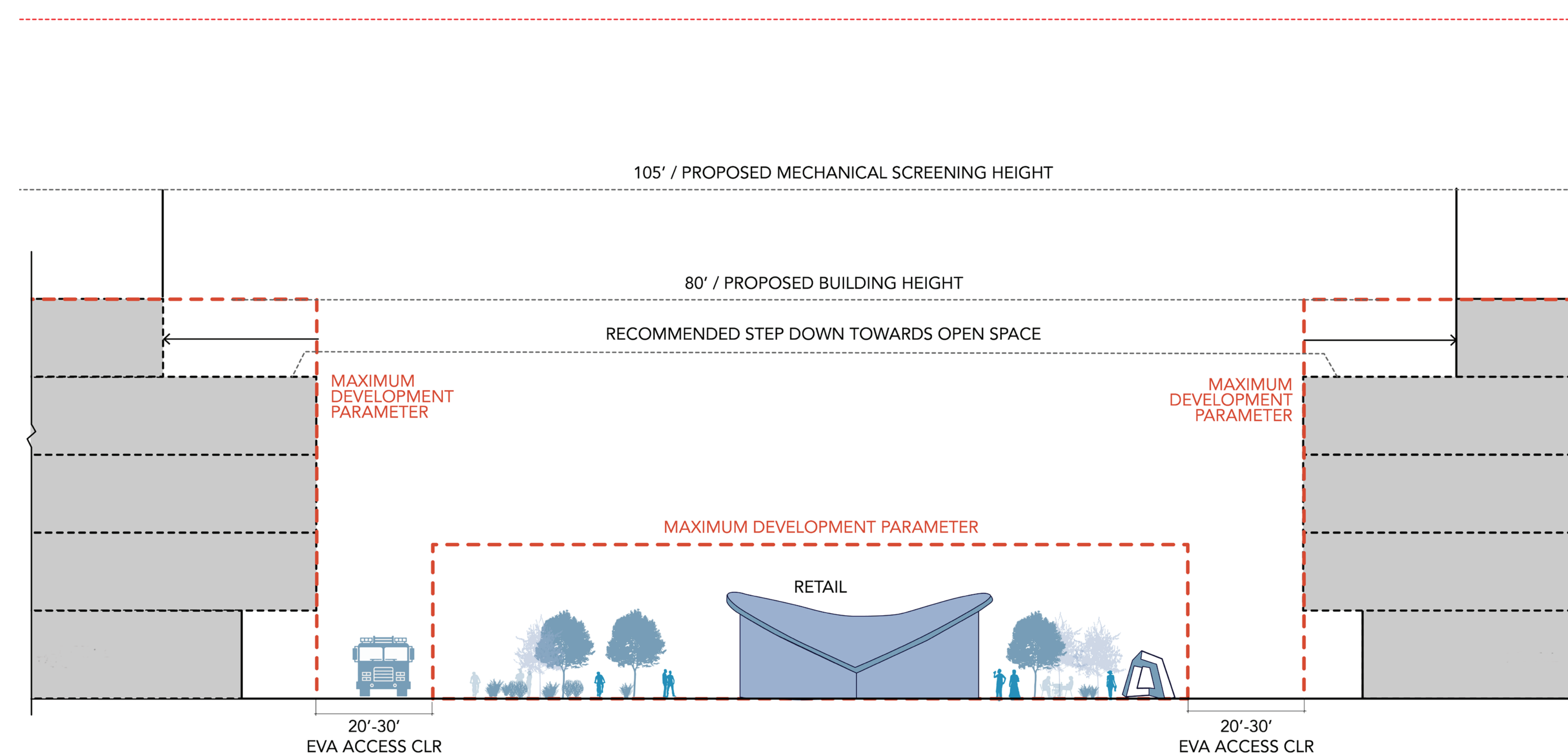



## 4. SECTION THROUGH RESIDENTIAL AT SUBAREA 6




At the western corner of the project site where Wescoat Road begins to turn toward Shenandoah Plaza, our subarea boundary is held back in line with the rest of the frontage along Wescoat Road toward Hangar One. This opens up the view corridors at that arrival point, and given the wider view corridor, the residential development is allowed to build up to the subarea line with no stepback condition.

## 5. SECTION THROUGH CENTRAL GREEN

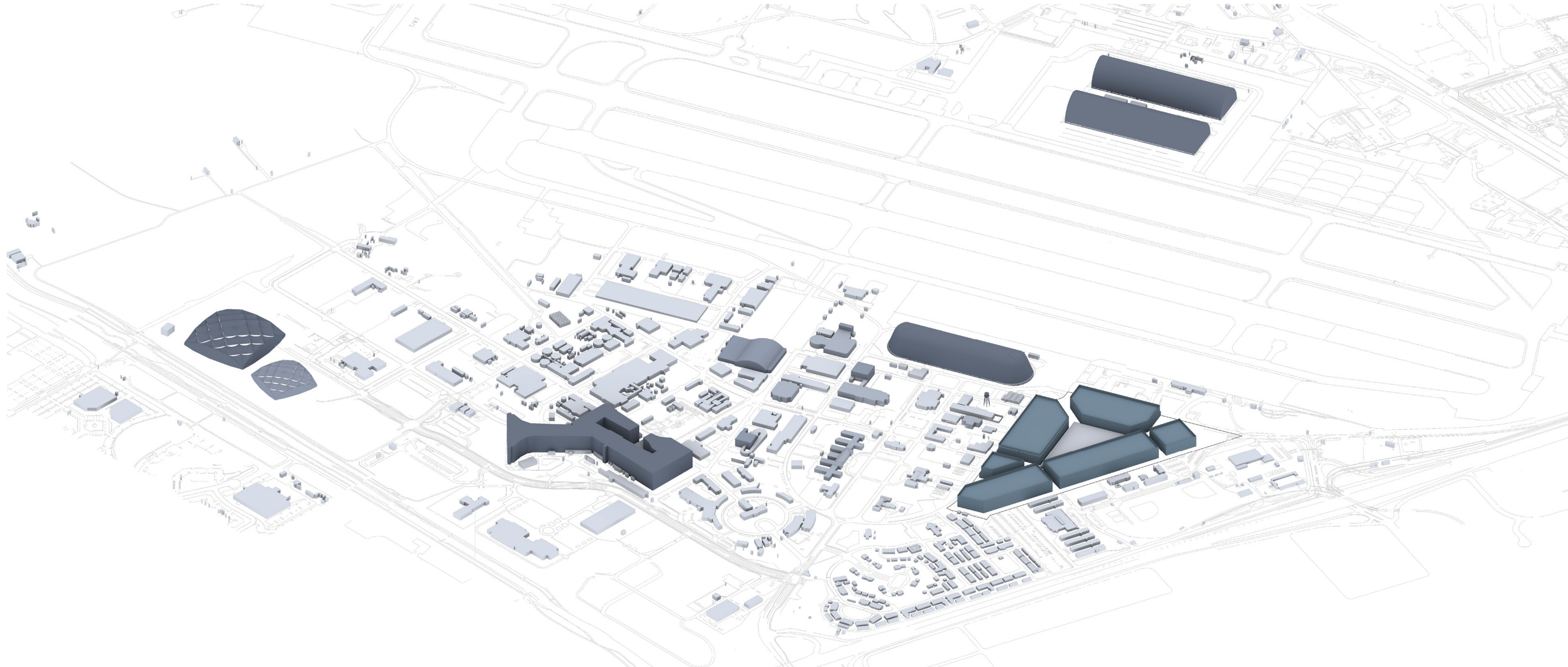



Since buildings front the open space along the Central Green, stepbacks are recommended to provide daylight access and soften the edge, providing a pedestrian scaled environment. The Central Green provides a space for active use pavilions, which are capped at 30 feet in height and in order to maintain open space.

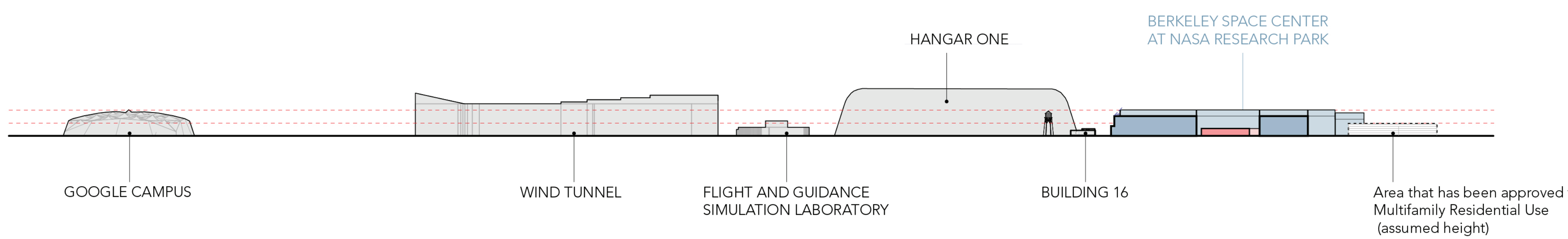
SITE
# RESEARCH BUILDING HEIGHTS

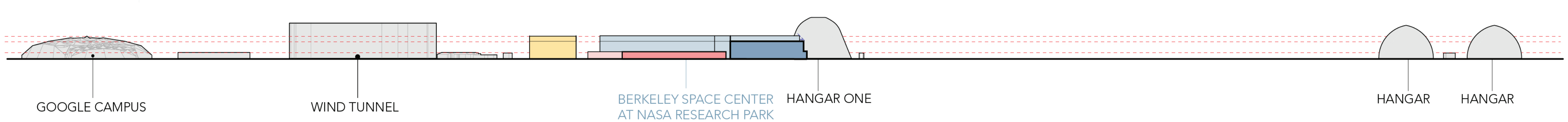
Berkeley Space Center at NASA Research Park maximum development parameters reflect the heights of many of the existing research buildings, so that the unique skyline of the NASA ARC remains intact.

Image is a conceptual layout depicting the horizontal and vertical dimensions of the proposed development based on the proposed project's maximum and minimum development standards for each Subarea. Because the proposed project would not be required to be developed to reach the maximum dimensions in each Subarea, image represents a conservative depiction of the project's conceptual layout.



- Research and Office Uses
- Student / Faculty Housing
- Conference Uses
- Short-Term Lodging
- Active Uses
- Parking
- Maximum Development Parameters



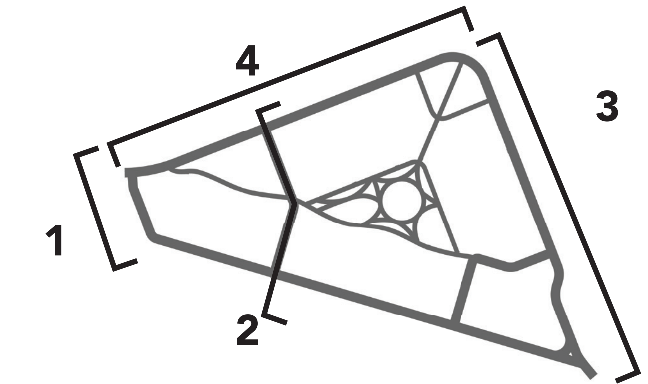



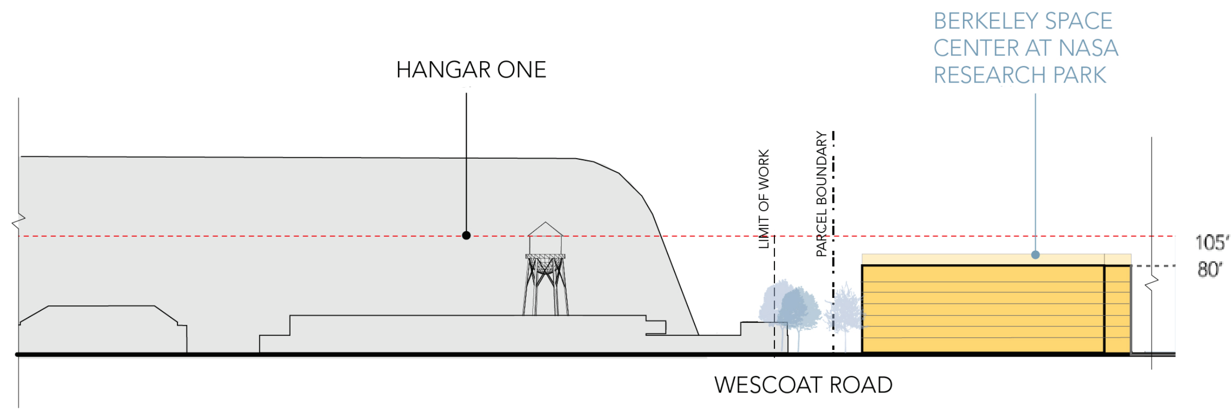
SITE

# MAXIMUM DEVELOPMENT PARAMETER ELEVATIONS

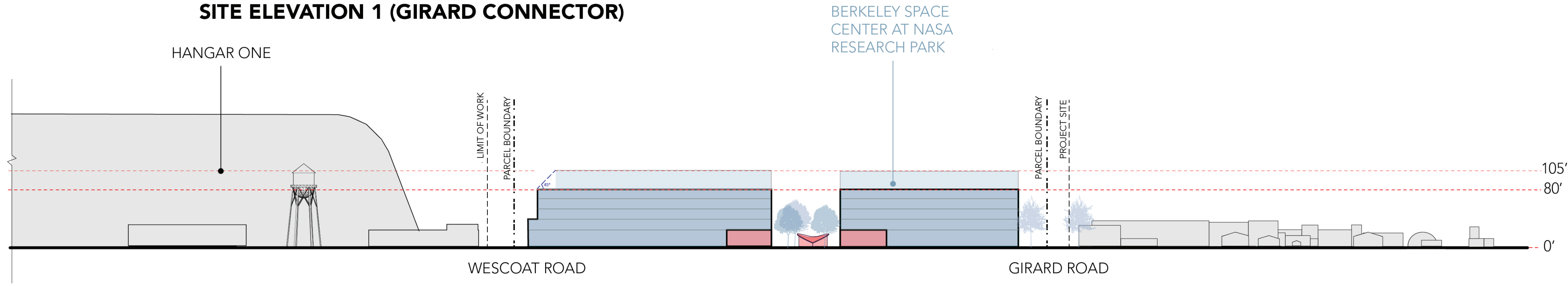
Image is a conceptual layout depicting the horizontal and vertical dimensions of the proposed development based on the proposed project's maximum and minimum development standards for each Subarea. Because the proposed project would not be required to be developed to reach the maximum dimensions in each Subarea, image represents a conservative depiction of the project's conceptual layout.

- Research and Office Uses
- Student / Faculty Housing
- Conference Uses
- Short-Term Lodging
- Active Uses
- Parking
- Maximum Development Parameters

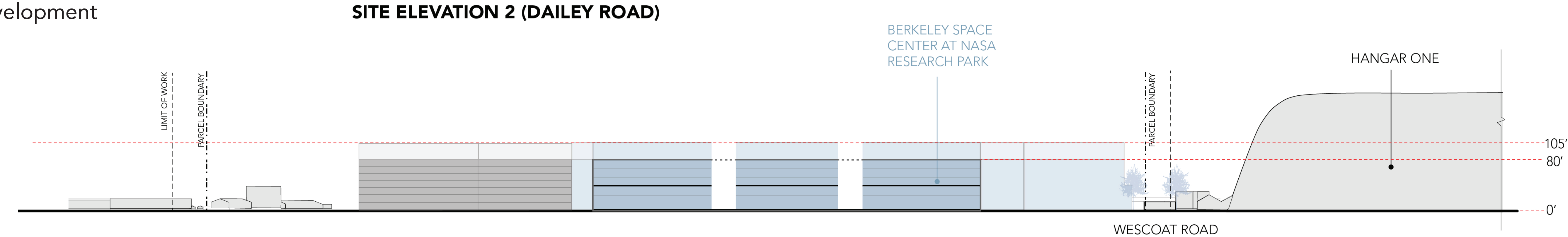


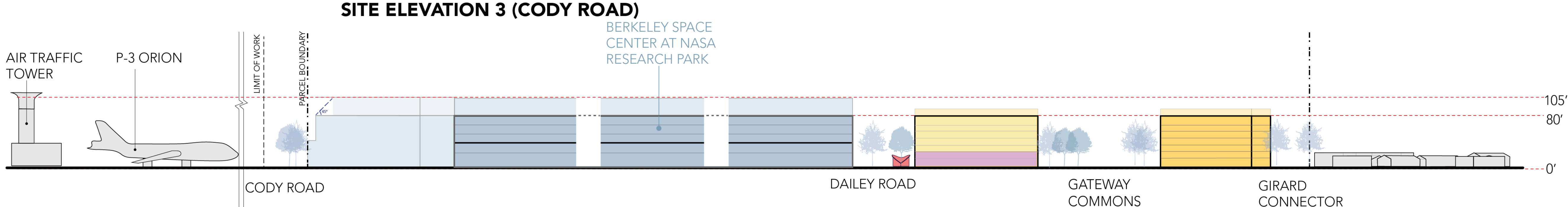

**SITE ELEVATION 1 (GIRARD CONNECTOR)**




**SITE ELEVATION 2 (DAILEY ROAD)**




**SITE ELEVATION 3 (CODY ROAD)**




**SITE ELEVATION 4 (WESCOAT ROAD)**

# 4 MOBILITY

# PRINCIPLES / GOALS

In keeping with its overall vision to become a leading research and innovation campus, the Berkeley Space Center at NASA Research Park's mobility strategy aims to encourage active and innovative modes of transport over traditional private vehicles. The Transportation Demand Management (TDM) plan aims to achieve trip reduction by promoting bicycle, scooter, and pedestrian facilities, while reducing single occupant vehicle trips and containing vehicular access to the perimeter of the Project Site.

The overarching project principles for mobility at the Berkeley Space Center as follows:

**Wider Connectivity**
Opportunity to leverage proximity to U.S. 101, Caltrain, Bay Area Rapid Transit (BART), and Valley Transit Authority (VTA) to connect to San Francisco Airport (SFO), University of California, Berkeley (UC Berkeley), industry leaders throughout Silicon Valley, and the greater Bay Area.

**Convenience**
Opportunity for mobility to be a joyful, interesting and positive experience, both on site and at the district scale. Opportunity to create a “15-minute neighborhood” via human- or electric-powered devices.

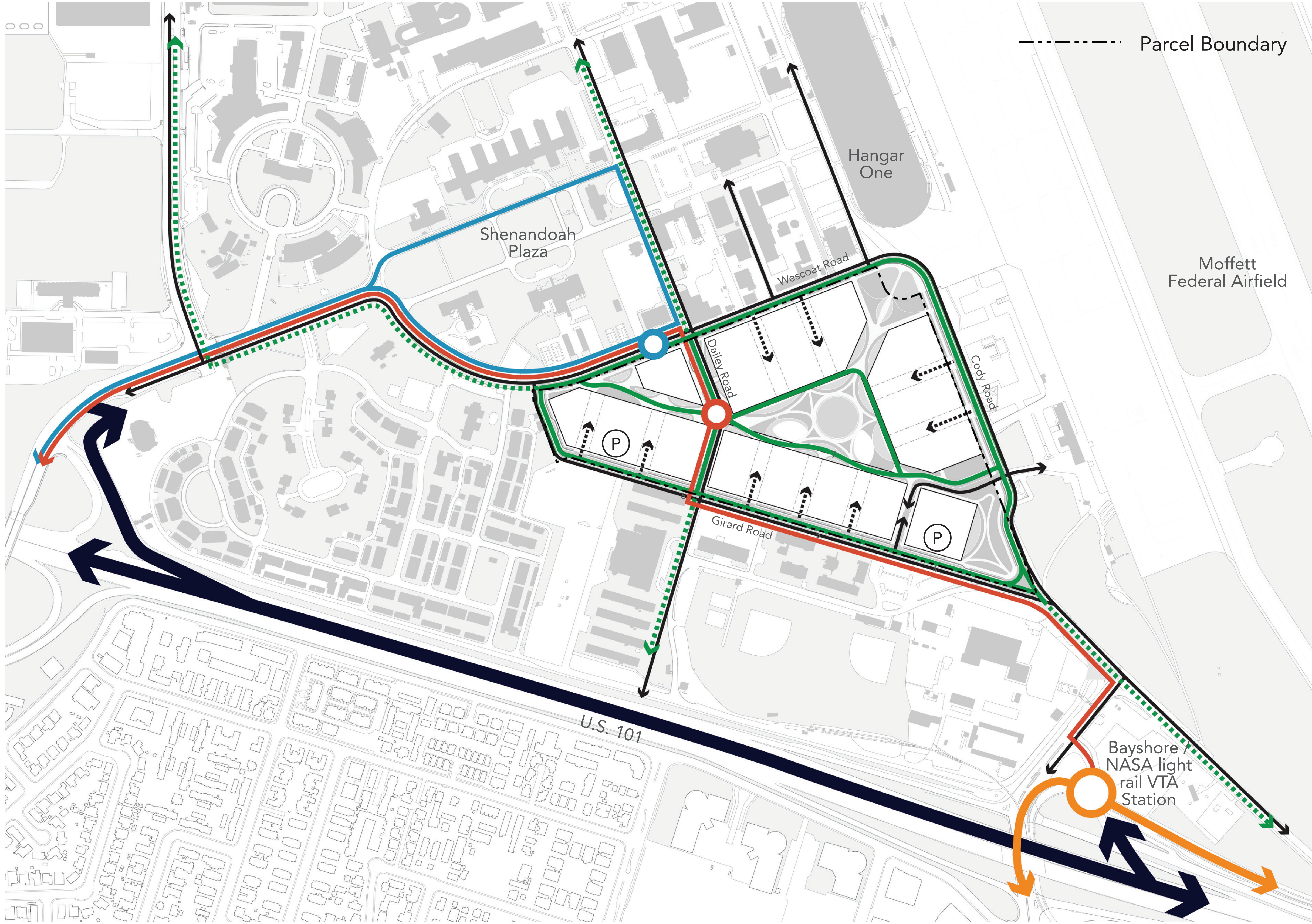
**Beacon**
Opportunity for mobility to be a part of the Project Site's distinctive identity.

**Formative**
Opportunity for an improved pedestrian, cyclist, and alternative mobility experience through an innovative transportation demand management program. Opportunity for mobility to be a site-driver rather than solely responsive to other site considerations.

MOBILITY
# CONNECTIVE NETWORK

The mobility network for the Project Site is composed of a variety of transportation modes and systems of interchange including VTA, regional highway connections, consolidated vehicular routes, and safe and pleasant conditions for pedestrians and cyclists. This network physically ties the site to the broader NASA ARC district.

There are a number of locations within NASA ARC where revisions to the hierarchy of movement and renovations to the system will transform the interconnectivity of the entire campus.




- Project Proposed Shuttle Stop
- Project Proposed Shuttle Route
- Project Proposed VTA Bus Stop
- Project Proposed VTA Bus Route
- Project Proposed Bicycle Route
- Proposed Bicycle Route, by others
- Existing VTA Stop
- VTA Orange Line
- P Parking
- Vehicular Route
- Potential Shared Use Road

0' 200' 400' 800'

N

Connective Network Illustrative Diagram

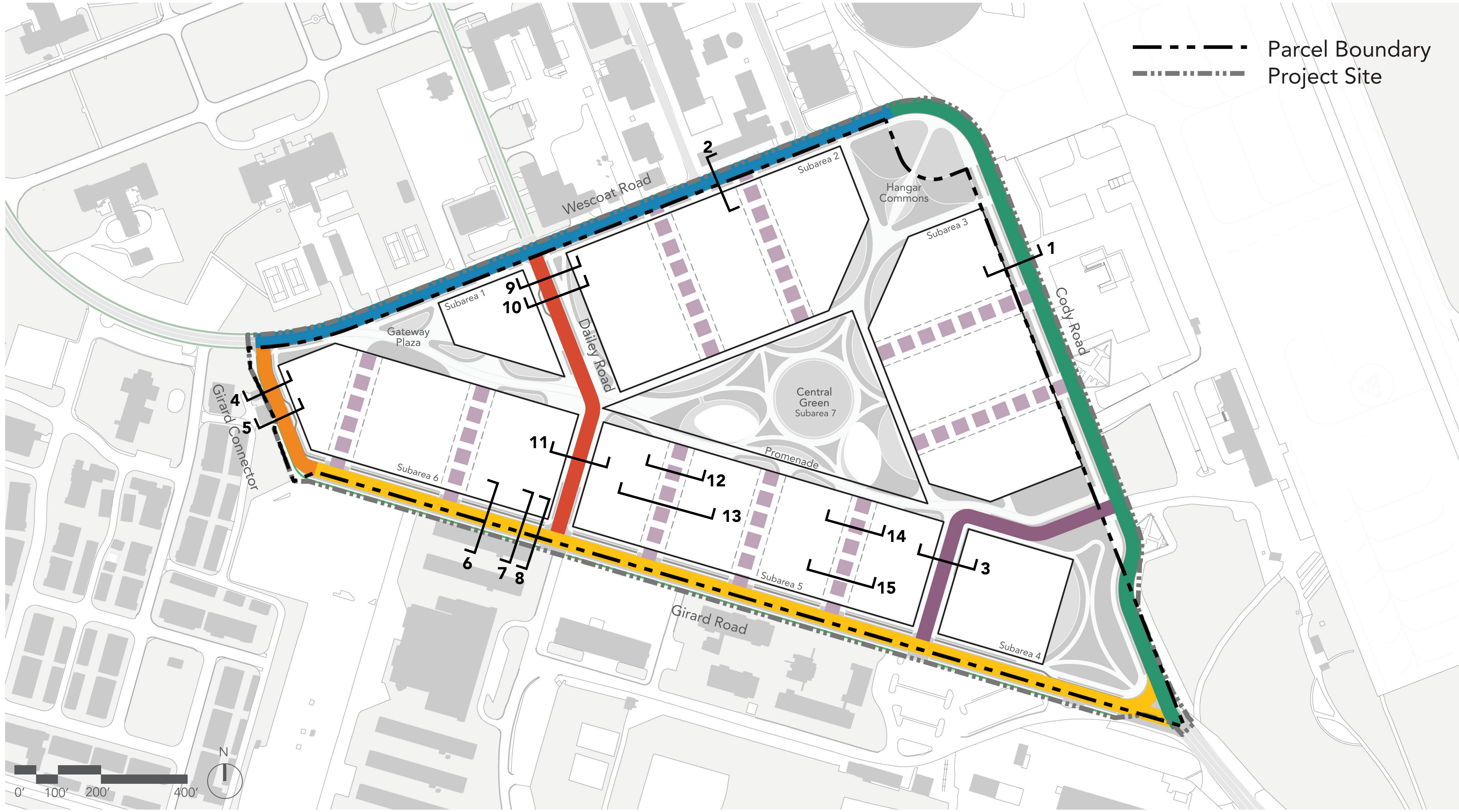
MOBILITY
# STREET NETWORK

All streets have two travel lanes, including one lane for each direction of traffic. Girard Road additionally includes a center turn lane as shown in Sections 6-8.

**Guidelines**
To reduce speeds and increase pedestrian and cyclist safety, travel lanes should be the minimum width feasible and include bulb-outs where possible.

Where there is sufficient width for both, amenity bands with street trees should be included between the back of curb and the sidewalk. The character of these amenity zones is flexible, and may have planting or may include hardscape materials to accommodate street furnishings and other elements.

- Cody Road
- Wescoat Road
- Girard Connector
- Girard Road
- Dailey Road
- Shared Use Street
- Subarea 4 Street



Street Network Illustrative Plan

| Proposed Street Network Typical Width Guidelines | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Section # | Street Name | Travel Lanes | Bike Infrastructure | Flex Curb/Loading | Pick Up/Drop Off | Back of Curb to Back of Curb | Amenity Zone | Sidewalk | Non-Vehicular Area Width |
| 1 | Cody Road | 11'-0" | 8'-0"Bike Lanes with Buffer | | | 39'-0" | 6'-0" (west side, continuous) | 9'-0" | 28'-3" (west side only, inc. add'l planting to leasehold boundary) |
| 2 | Wescoat Road | 11'-0" | 8'-0"Bike Lanes with Buffer | | 9'-0" where required | 39'-0" to 48'-0" | 6'-0" (south side, except at PU/DO) | 8'-6" (5'-6" at PU/DO) | 5'-6" to 14'-6" (south side only) |
| 3 | Subarea 4 Street | 11'-0" | | 9'-0" where required | | 23'-0" to 32'-0" | 6'-0" (as feasible) | 9'-6" to 18'-6" | 19'-0" to 28'-0" (both sides combined total) |
| 4-5 | Girard Connector | 11'-0" | 8'-0"Bike Lanes with Buffer | 9'-0" where required | | 39'-0" to 48'-0" | 5'-0" (east side, except at Flex Curb) | 9'-6" (5'-6"at Flex Curb) | 5'-6" to 14'-6" (east side only) |
| 6-8 | Girard Road | 11'-0" | 8'-0"Bike Lanes with Buffer | 9'-0" where required | | 50'-0" to 59'-0" | 5'-0" to 14'-0" (inc. bulb-out) | 7'-6" | 12'-6" to 21'-6" (north side only) |
| 9-11 | Dailey Road | 10'-6" | 8'-0"Bike Lanes with Buffer | 9'-0" where required | 9'-0" where required | 38'-0" to 47'-0" | 4'-6" to 6'-0" (as feasible) | 6'-0" to 14'-0" | 12'-0" to 70'-0" (both sides combined total, inc. add'l open space to buildable area) |
| 12-15 | Shared-Use Streets | 10'-0" to 13'-0" | Shared-Use Markings | | | 20'-0" to 26'-0" | 6'-0" to 11'-0" (as feasible) | 10'-0" | 40'-0" to 44'-0" (both sides combined total) |

MOBILITY

# CURB USE & BUILDING ACCESS

As a project where people are prioritized over cars, the access, logistics, and curb use strategies are optimized for flexible and overlapping uses to reduce competition for curb space and respond to peak demand for different user types.

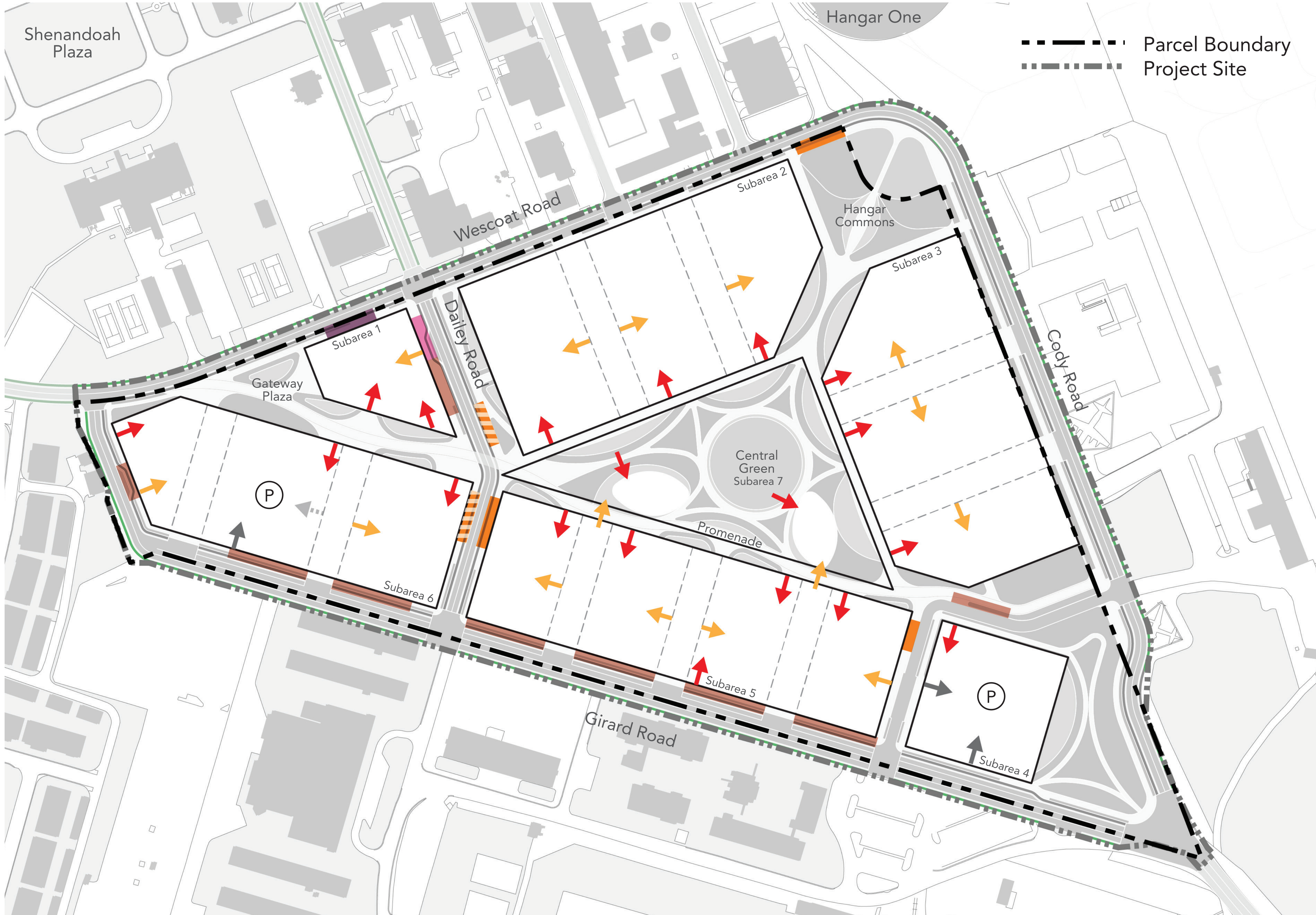
Primary building entrances and lobbies are located along the frontages facing the Central Green to activate this large open space. Service entrances are located away from the Central Green; instead, loading and delivery hubs are located closer to the outer ring roads (Wescoat Road, Cody Road, and Girard Road) to ensure easy access for service vehicles.

- Project Proposed VTA Bus Stop
- Passenger Pick Up/Drop Off with Project Proposed Shuttle Stop
- Passenger Pick Up/Drop Off*
- Flex Curb: Pick Up/Drop Off* or Loading
- Loading Dedicated Curb Cuts
- Potential Building Entrance
- Potential Service Entrance
- Potential Parking Entrance
- Potential Parking or Service Entrance

*including Ride Sharing

0' 100' 200' 400'

N




Curb Use and Building Access Illustrative Plan

# MASTER PLAN STREET SECTIONS

## 1. CODY ROAD

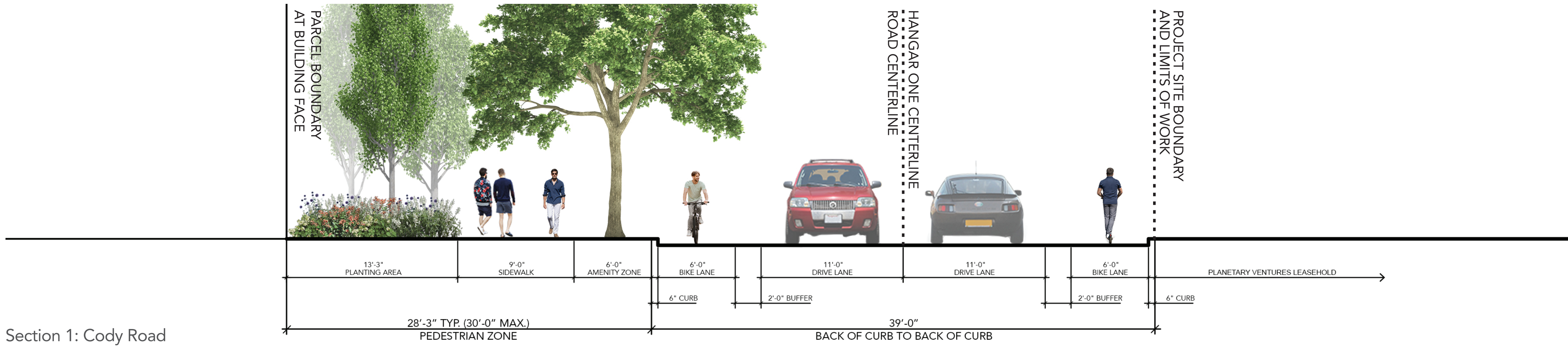
The proposed reconfiguration of Cody Road aligns the road centerline with the axis of Hangar One. The building setback along the parcel boundary is limited by the distance for aerial fire access.

## 2. WESCOAT ROAD

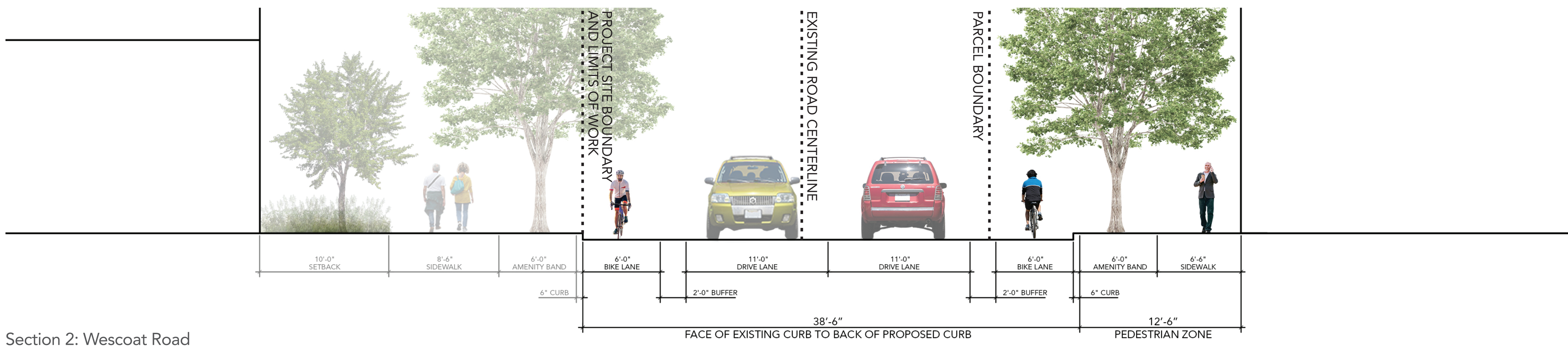
The proposed design for Wescoat Road shifts the existing road centerline approximately two feet to the south and adds Class II Bicycle Lanes to the roadway. On the south side of the street, an amenity band with street trees is included except at the pick-up/drop-off area. No improvements beyond the face of curb are proposed on the north side of the street by this project, but may be pursued by others in the future.

## 3. SUBAREA 4 STREET

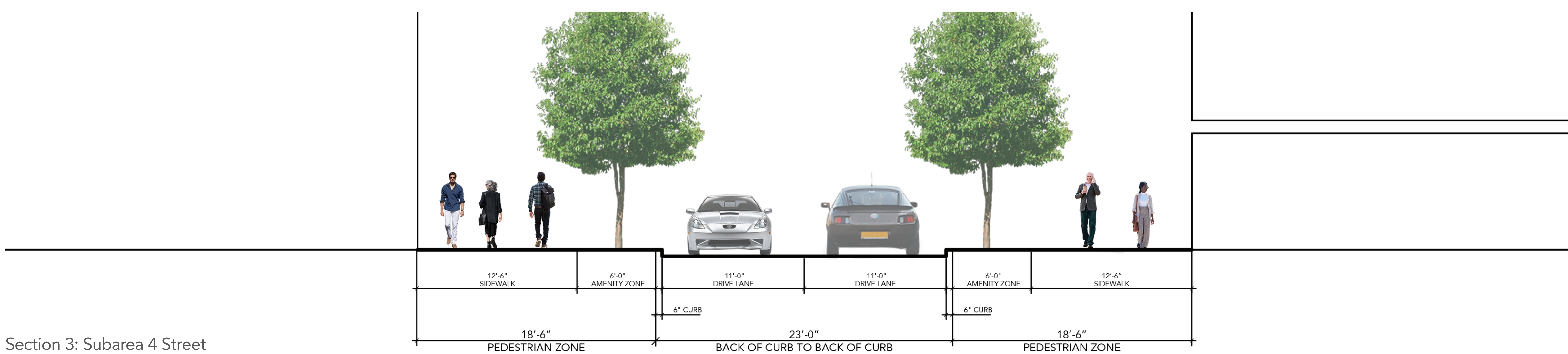
To accommodate multiple entrances or exits from Berkeley Space Center's parking garage, a 60-foot wide street is proposed.



Section 1: Cody Road



Section 2: Wescoat Road



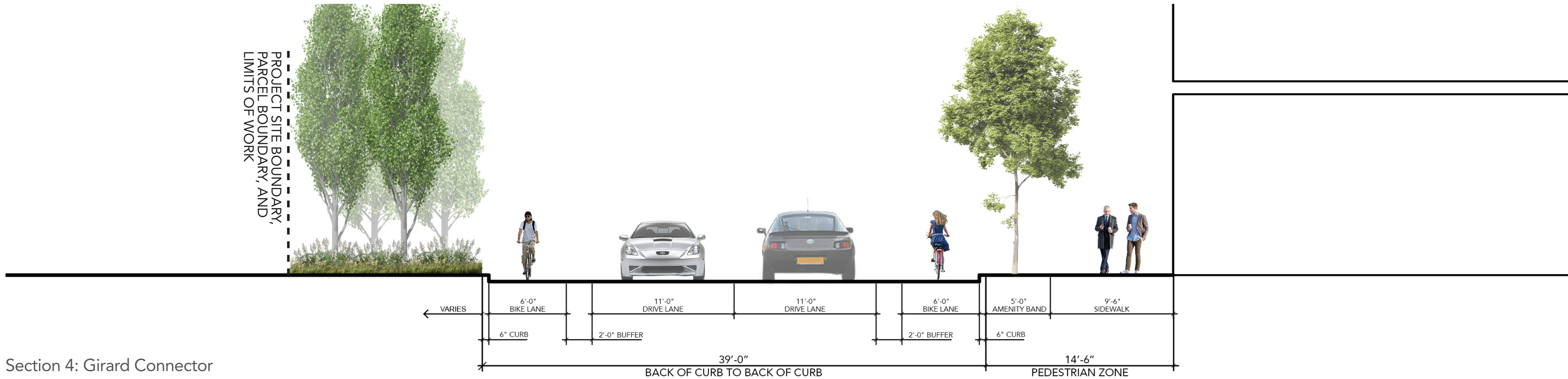
Section 3: Subarea 4 Street

# MASTER PLAN STREET SECTIONS

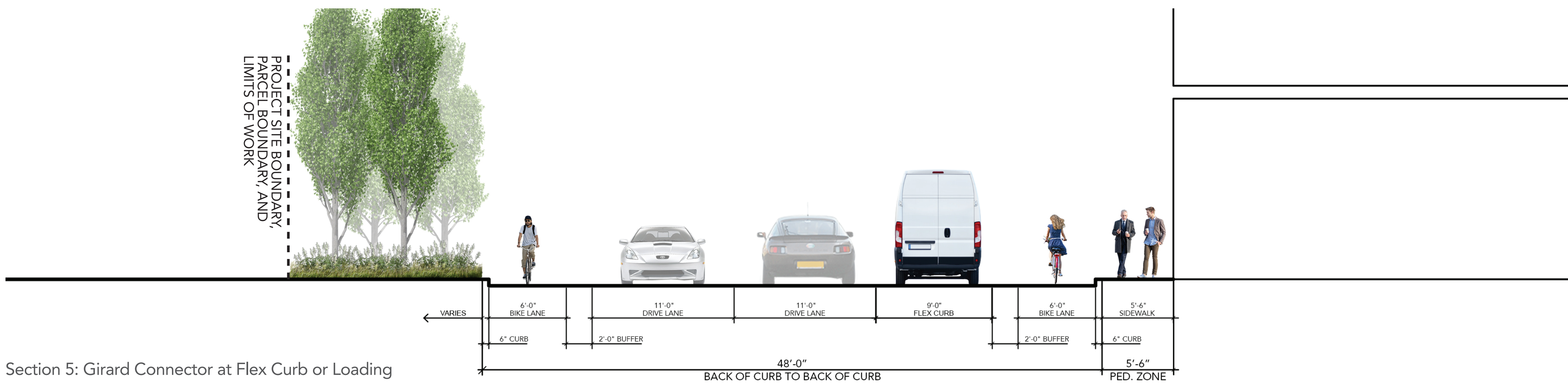
## 4/5. GIRARD CONNECTOR

A new connector street should link Girard Road and Wescoat Road on the western edge of the Project Site.

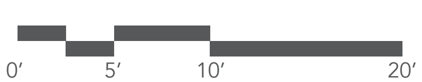
**Guidelines:** Flex curbs and loading zones should be provided only where required.




Section 4: Girard Connector




Section 5: Girard Connector at Flex Curb or Loading



# MASTER PLAN STREET SECTIONS

## 6. GIRARD ROAD AT FLEX CURB

Girard Road is proposed to be shared with the adjacent development area to the south of the Project Site. **Guidelines:** Flex curbs and/or loading should be provided only where required.

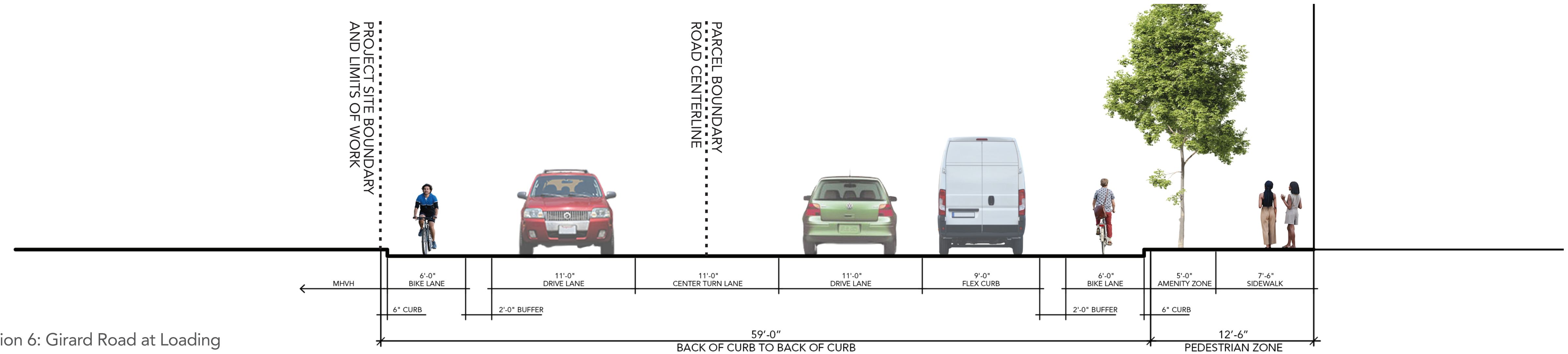
## 7. GIRARD ROAD AT BULB-OUT

**Guidelines:** Where flex curbs and curb-side loading are not required, bulb-outs should be added. Where possible, these bulb-outs should be planted.

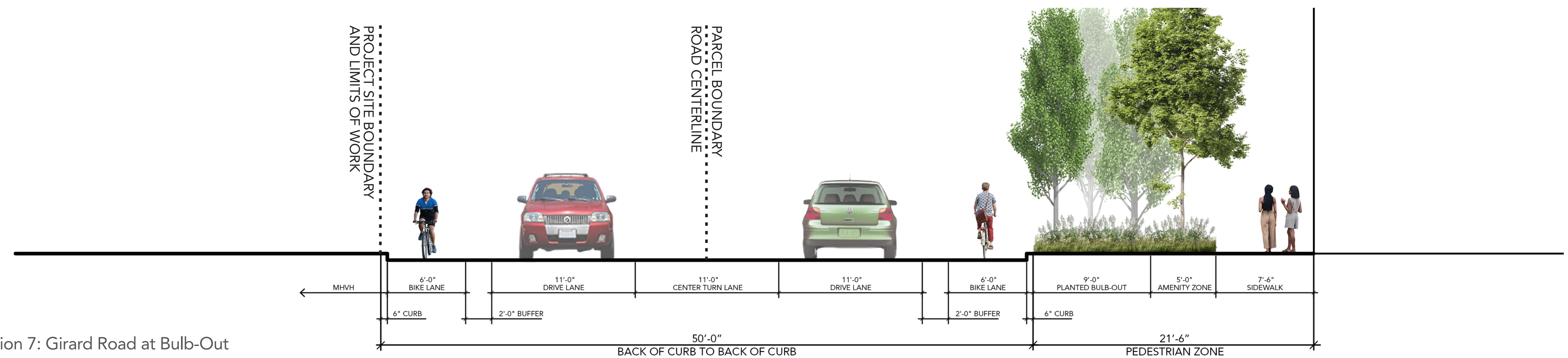
## 8. GIRARD ROAD AT SETBACK

**Guidelines:** Where the buildings are setback from Girard Road, additional planting should be considered to provide further phytoremediation curtaining to capture groundwater as it flows onto the site.

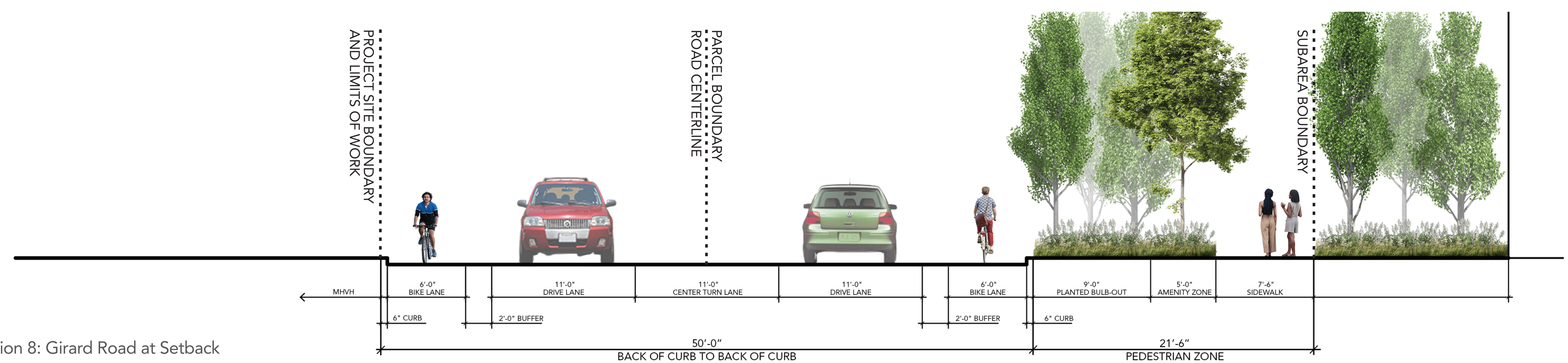
Note: the phytoremediation strategy will be reviewed and approved by the EPA; see more information about permitting and review processes under "Purpose of This Document" on page 8.


Section 6: Girard Road at Loading




Section 7: Girard Road at Bulb-Out




Section 8: Girard Road at Setback

# MASTER PLAN STREET SECTIONS

## 9. DAILEY ROAD NORTH

The northern leg of Dailey Road continues the existing centerline of McCord Avenue to connect the adjacent development area south of the Project Site to Shenandoah Plaza. To maintain setbacks from existing critical infrastructure, Subarea 2 is setback from Dailey Road with an area for additional planting and occupiable spill-out terraces.

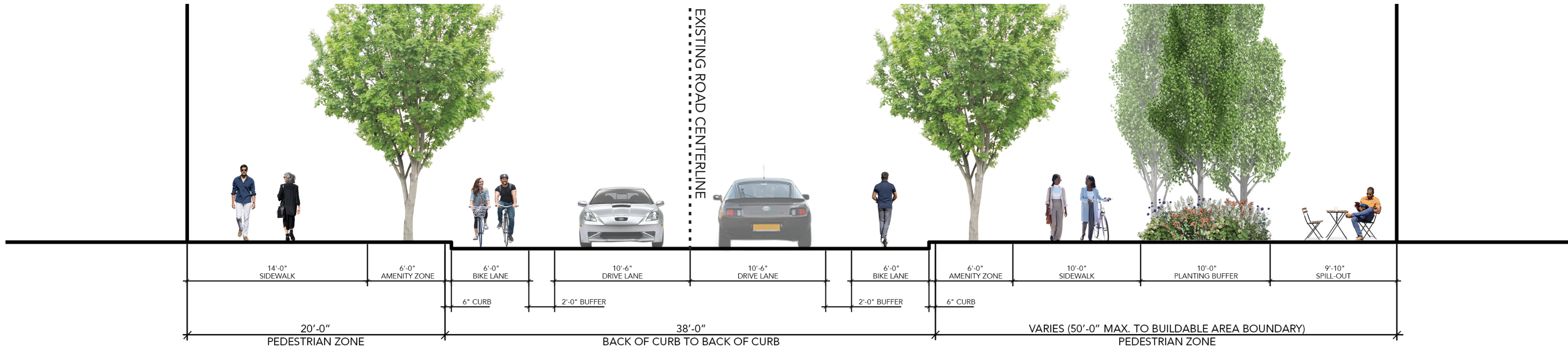
**Guidelines:** Travel lane widths along Dailey Road should be narrowed to slow traffic across the promenade.

## 10. DAILEY ROAD AT LOADING/FLEX CURB

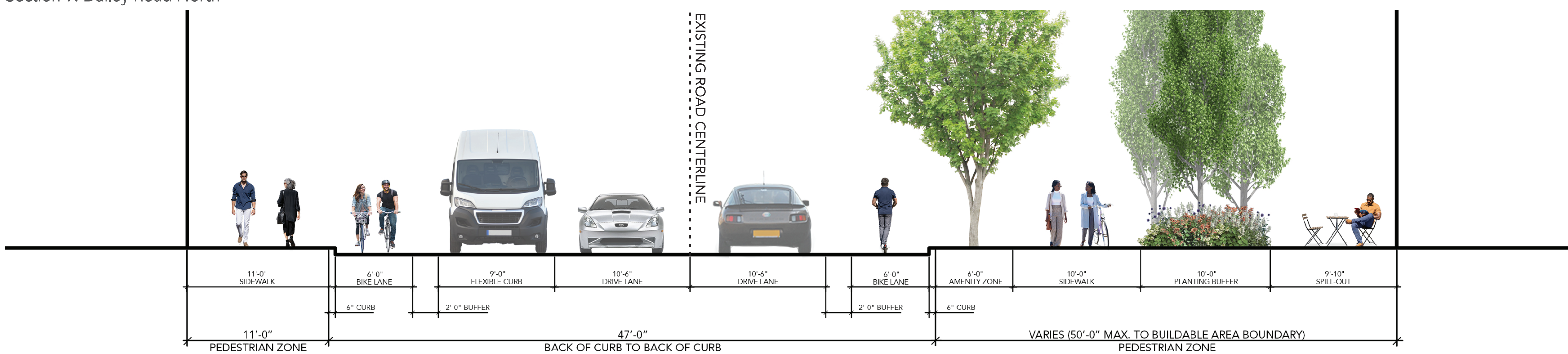
**Guidelines:** Dailey Road should include flex curbs and loading zones only where required.

## 11. DAILEY ROAD SOUTH

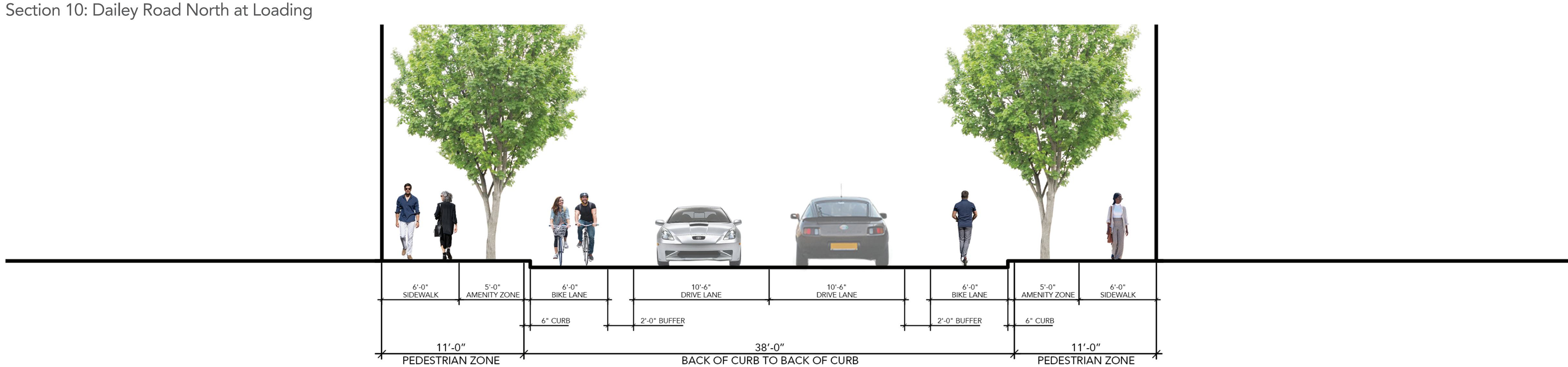
**Guidelines:** Travel lane widths along Dailey Road should be narrowed to slow traffic across the promenade.

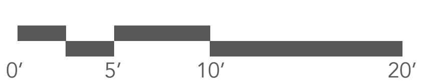



Section 9: Dailey Road North




Section 10: Dailey Road North at Loading




Section 11: Dailey Road South

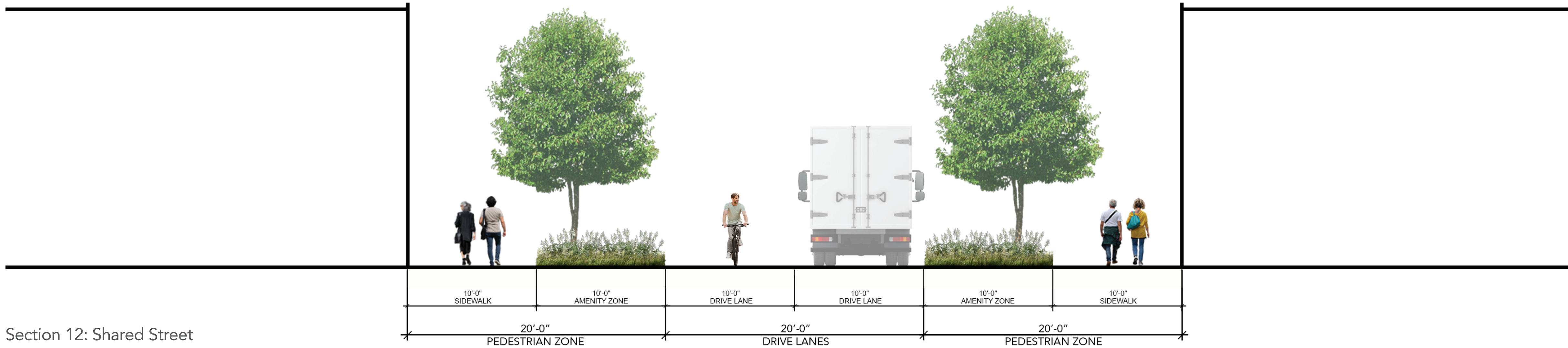
# SHARED STREET SECTIONS

## 12. SHARED STREET

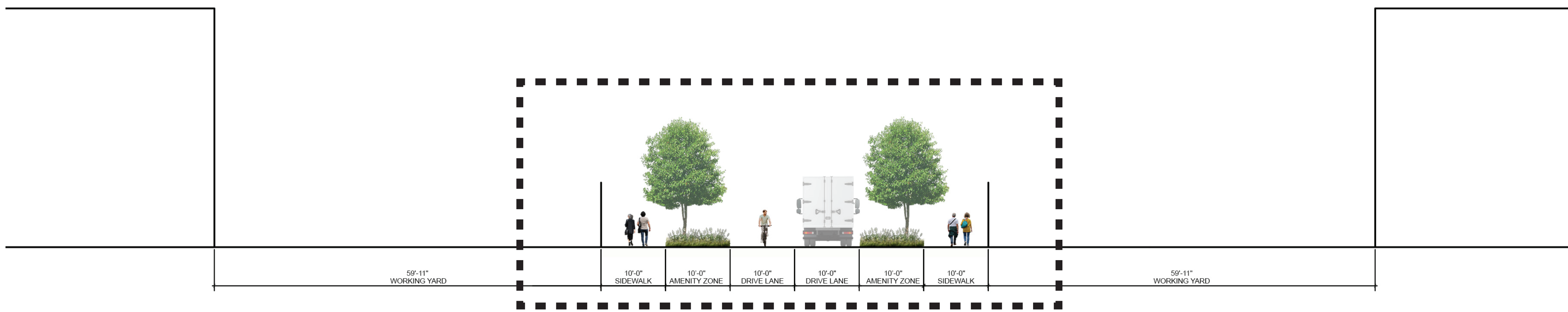
**Guidelines:** Shared streets should include shared-use roadway markings for cyclists.

## 13A/B. SHARED STREETS AT WORKING YARDS

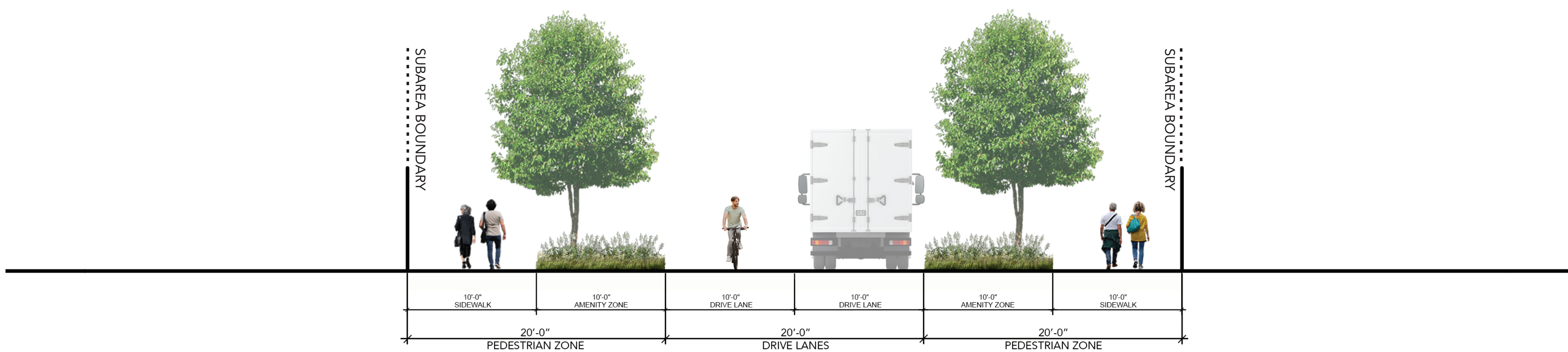
Working yards typically face the shared streets, with generous setbacks to accommodate a variety of different outdoor testing labs or research spaces.




Section 12: Shared Street




Section 13a: Shared Street at Working Yards



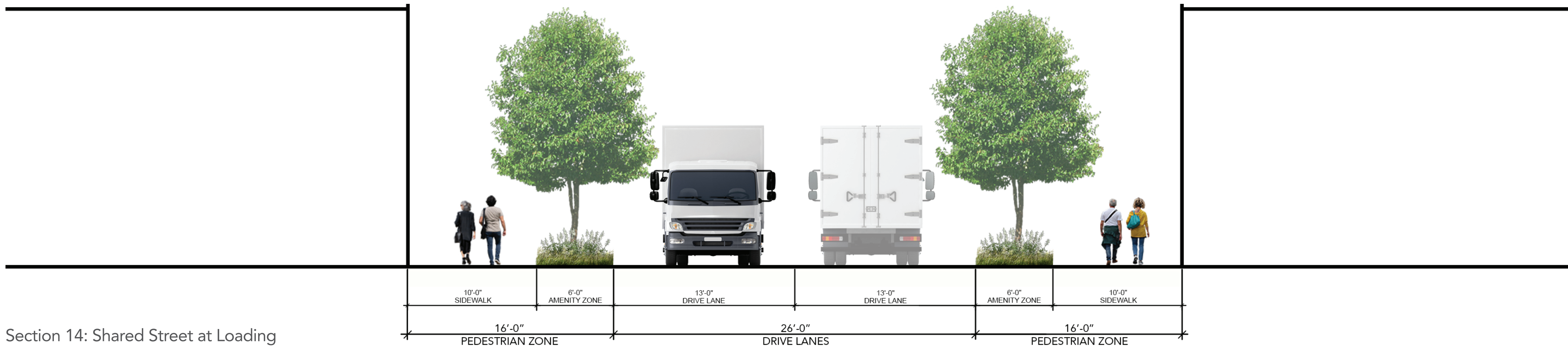

Section 13b: Shared Street at Working Yards Enlargement

MOBILITY

# SHARED STREET SECTIONS

## 14. SHARED STREET AT LOADING

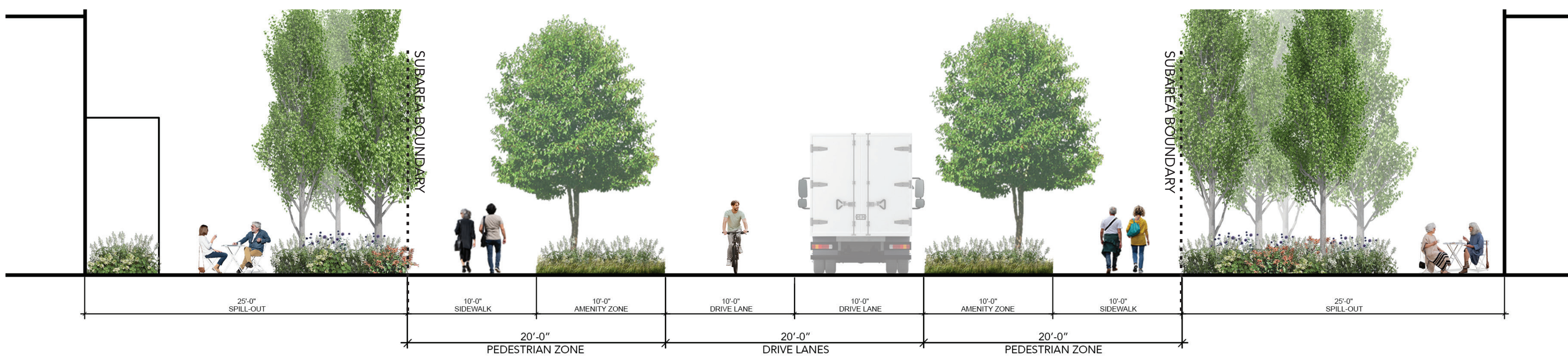
Where required, the shared street lane width should be increased to provide turning radii and clearances to the building loading docks. **Guidelines:** These wider lanes should be limited in length to provide maximum planting and to reduce overall travel speeds on these dead-end streets.



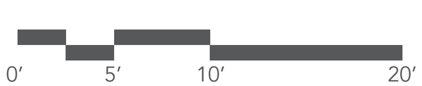

Section 14: Shared Street at Loading

## 15. SHARED STREET AT SETBACKS

**Guidelines:** Where the buildings are set back from the Subarea boundary, open terraces and additional planting should be provided for additional shade and privacy screening.




Section 15: Shared Street at Setbacks



# 5 OPEN SPACE

OPEN SPACE
# PRINCIPLES / GOALS

The social heart of the Berkeley Space Center at NASA Research Park is the "Center-Point"— a shared open space at the center of the development site, with green fingers connecting out to the north, west, east and south to the context. The underlying principle for this approach is that great open spaces make great innovation districts: the scheme envisions a development that fully integrates buildings with landscape and connects the project interior to the greater area, with open spaces used to host shared amenity features that act as the focal points for activity and innovation.

The overarching project principles for open space at the Berkeley Space Center at NASA Research Park are as follows:

**Center-Point**
Create an active center-point that pulls activity from within buildings to the outside — blurring the boundaries between interior and exterior environments to facilitate collisions of knowledge throughout the campus.

**Maximize Connectivity**
Ensure that the public realm creates safe and convenient connections throughout the site. Creating car-free zones can foster spontaneous interactions of people and ideas, create amenity spaces, and improve connections to nature.

**Regenerating Nature**
Opportunity to remediate the site using natural systems while using the site to remediate the larger environmental context.

**Diversify Programming**
Activate open spaces using programming, amenities, and dedicated flexible spill out zones that can be used for personalized programming opportunities.

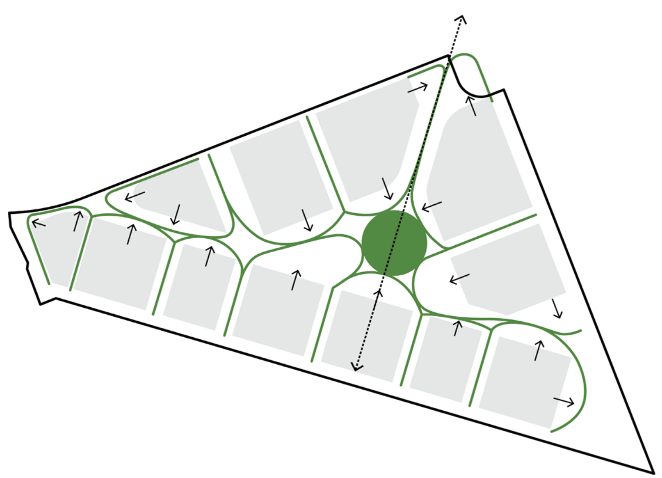
**Green Infrastructure**
Opportunity to utilize nature as a model for intelligent systems planning and as a performative system that works for the Project Site. Stormwater management should be integrated into the landscape.

**Nature as Innovation**
Design elements within the public realm should reflect the innovative spirit of space exploration and space-inspired technology.

OPEN SPACE
# ORGANIZING FRAMEWORK

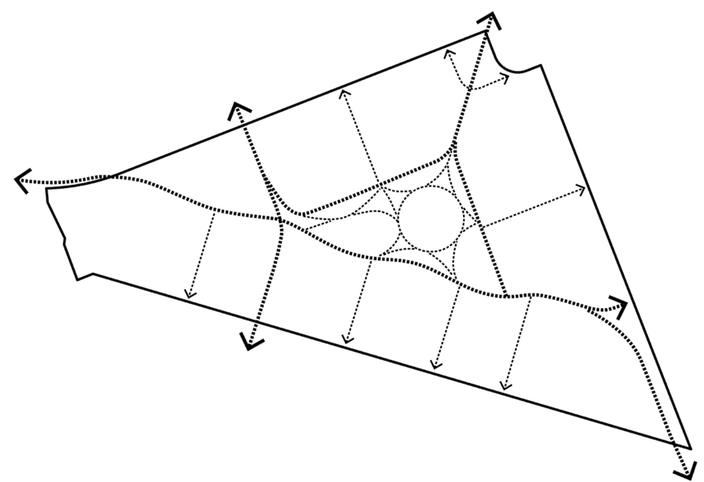
The social heart of the new district — the “Center-Point” — is achieved through the strategic choreography of urban fabric, site circulation, indoor-outdoor programming, and diverse planting environments that frame, shape, and animate a central hub of activity.

### 1. CREATE THE CENTER-POINT



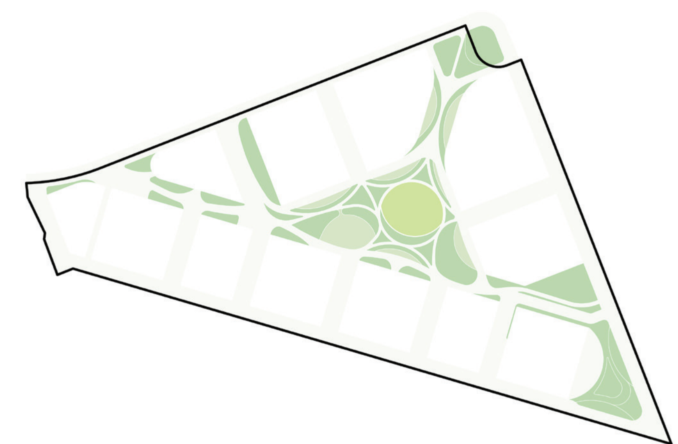
Building program and activity is intended to be pulled from the inside out to create a unique social environment in the landscape. An active center-point is created as a means to facilitate collisions of research, knowledge and innovation. The intent is for the central node of the Project Site to be the active, shared heart.

### 2. MAXIMIZE CONNECTIVITY



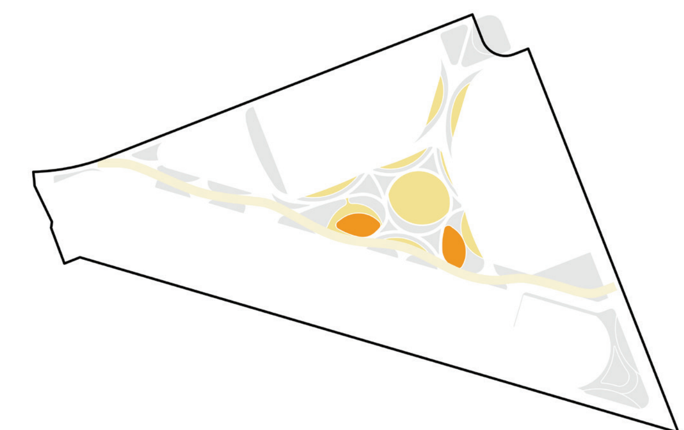
Connections are created around the site, and a direct relationship between the district’s street network and Shenandoah Plaza/Berkeley Space Center at NASA Research Park is maintained. View corridors to Hangar One and the Diablo Foothills are maintained and celebrated.

### 3. REGENERATE NATURE



Open space is clustered at the center and the north corner of the Project Site, with green fingers connecting out to the context. A meandering green promenade links the Project Site to its context at the east and west, and welcomes people in on both ends.

### 4. DIVERSIFY PROGRAMMING



The car-free core is the social magnet and meeting point for the district and beyond. Active social nodes and spines are connected by a network of multimodal paths that prioritize pedestrians and cyclists. The Central Green and Promenade may be activated by garden amenity pavilions and the building frontages. All Subareas have dedicated spill out zones into the Central Green or Promenade for more personalized programming opportunities.

# OPEN SPACE NETWORK

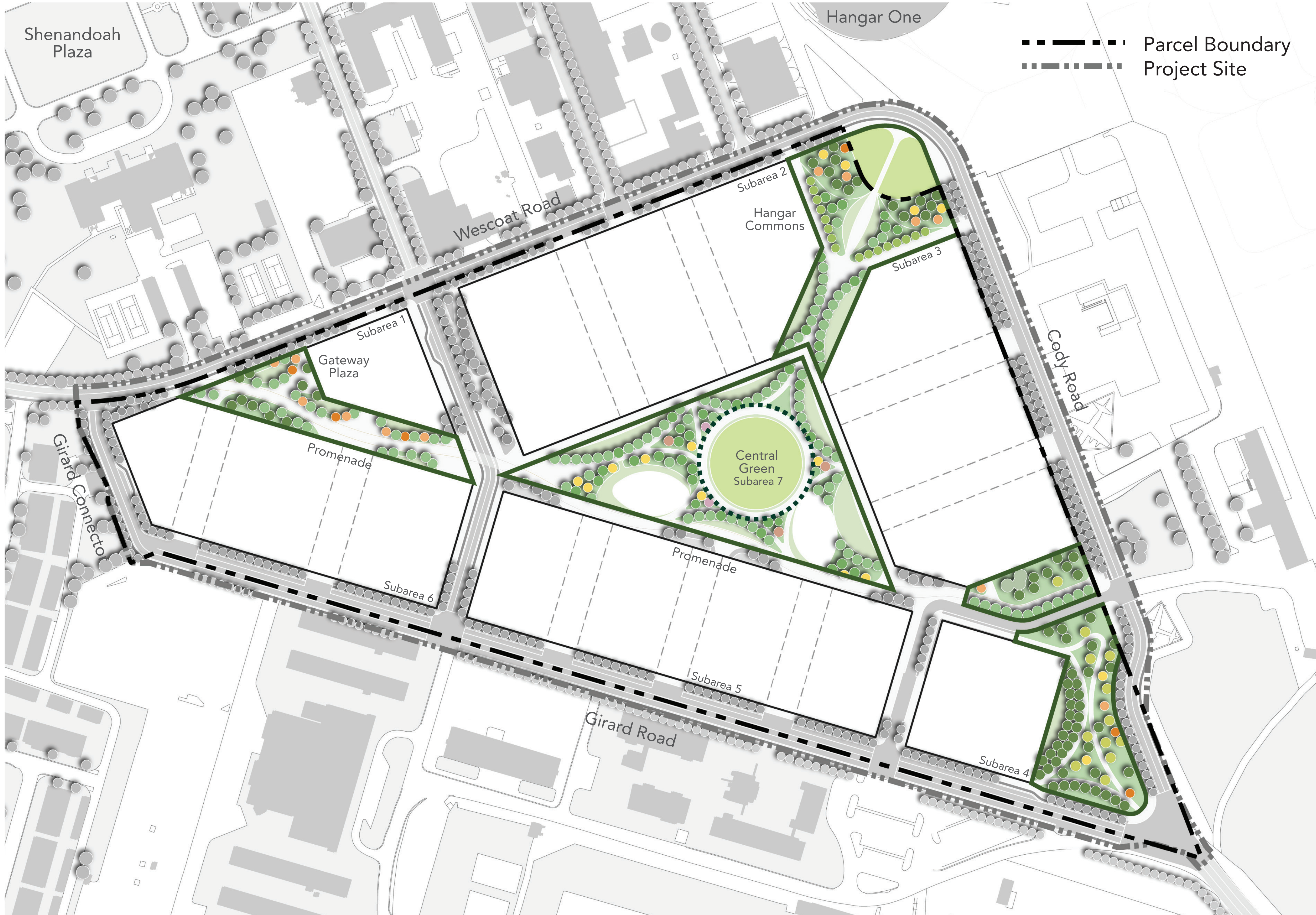
Berkeley Space Center's open space network includes a mix that range from highly programmed to passive recreation gardens.

**Standards:** Hangar Commons shall be a minimum of 10 acres, and its planting layout and palette shall maintain a clear view corridor from the Central Green to Hangar One.

Planting outside of Berkeley Space Center's Parcel Boundary shall comply with NASA height requirements to accommodate Hangar One door opening and aircraft movement.

**Guidelines:** The Central Green, Promenade, and Gateway Plaza should be the most activated.

Planting at the southeast corner of the Project Site provides a secondary gateway experience, as well as an important green buffer between Berkeley Space Center and sensitive habitat areas to the east of Cody Road.




Illustrative Open Space Network

OPEN SPACE

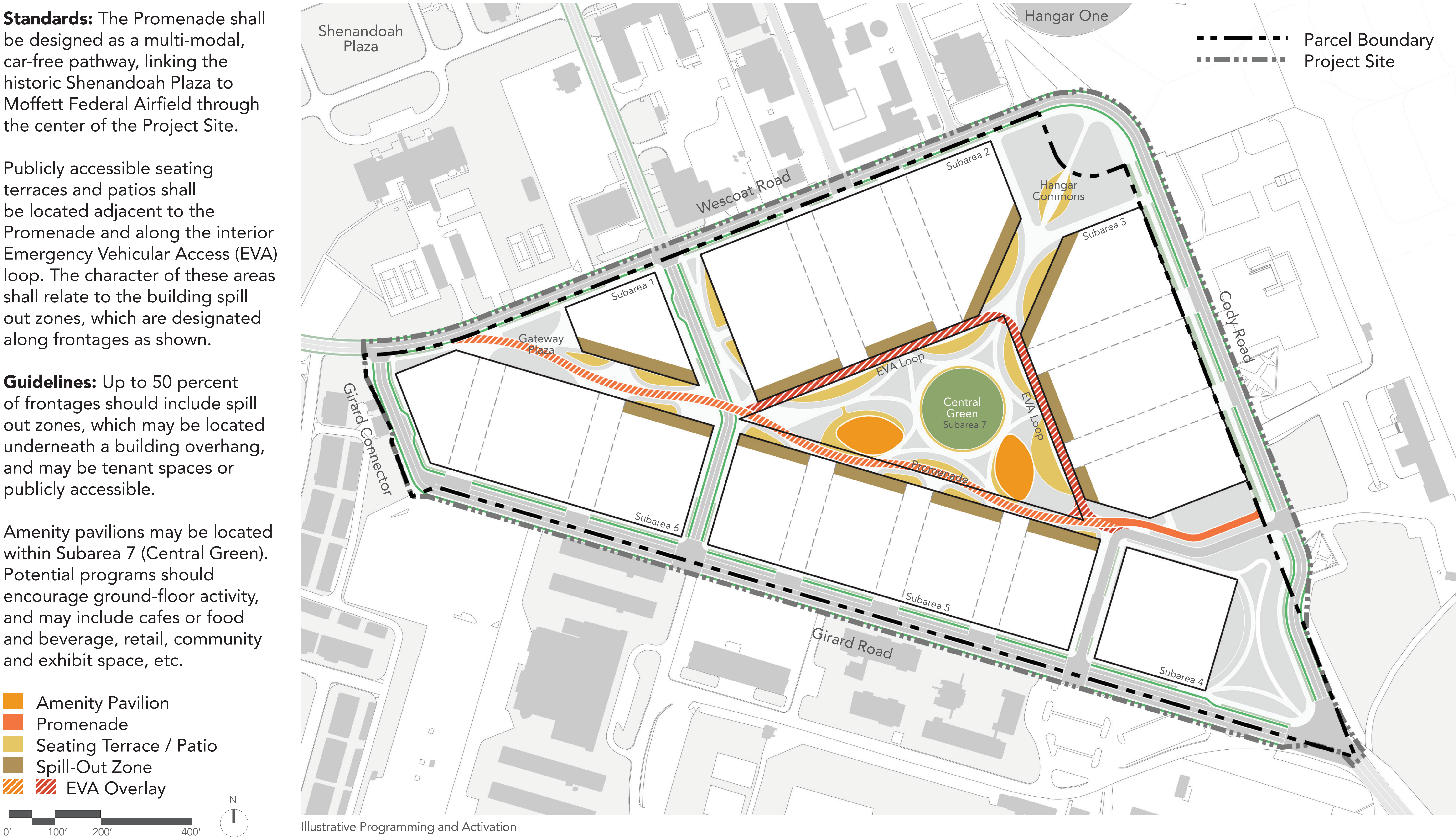
# PROGRAMMING & ACTIVATION

**Standards:** The Promenade shall be designed as a multi-modal, car-free pathway, linking the historic Shenandoah Plaza to Moffett Federal Airfield through the center of the Project Site.

Publicly accessible seating terraces and patios shall be located adjacent to the Promenade and along the interior Emergency Vehicular Access (EVA) loop. The character of these areas shall relate to the building spill out zones, which are designated along frontages as shown.

**Guidelines:** Up to 50 percent of frontages should include spill out zones, which may be located underneath a building overhang, and may be tenant spaces or publicly accessible.

Amenity pavilions may be located within Subarea 7 (Central Green). Potential programs should encourage ground-floor activity, and may include cafes or food and beverage, retail, community and exhibit space, etc.

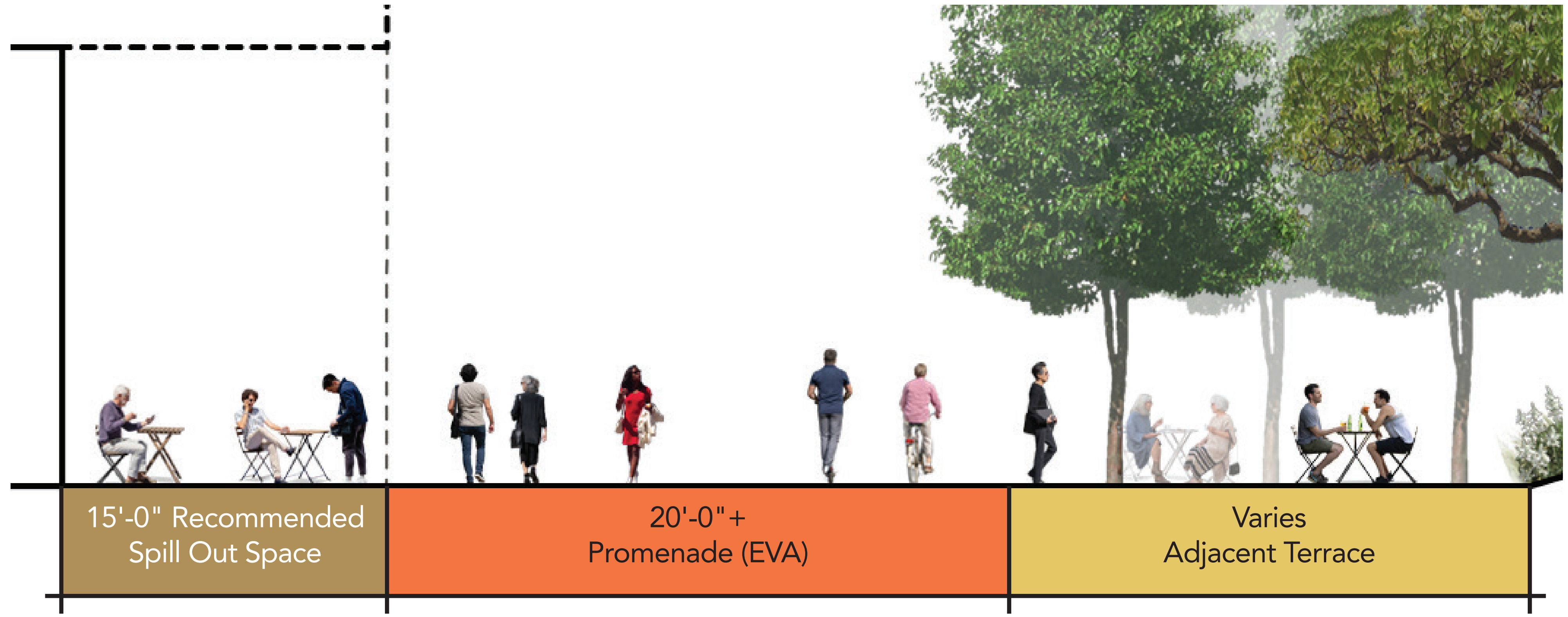



Illustrative Programming and Activation

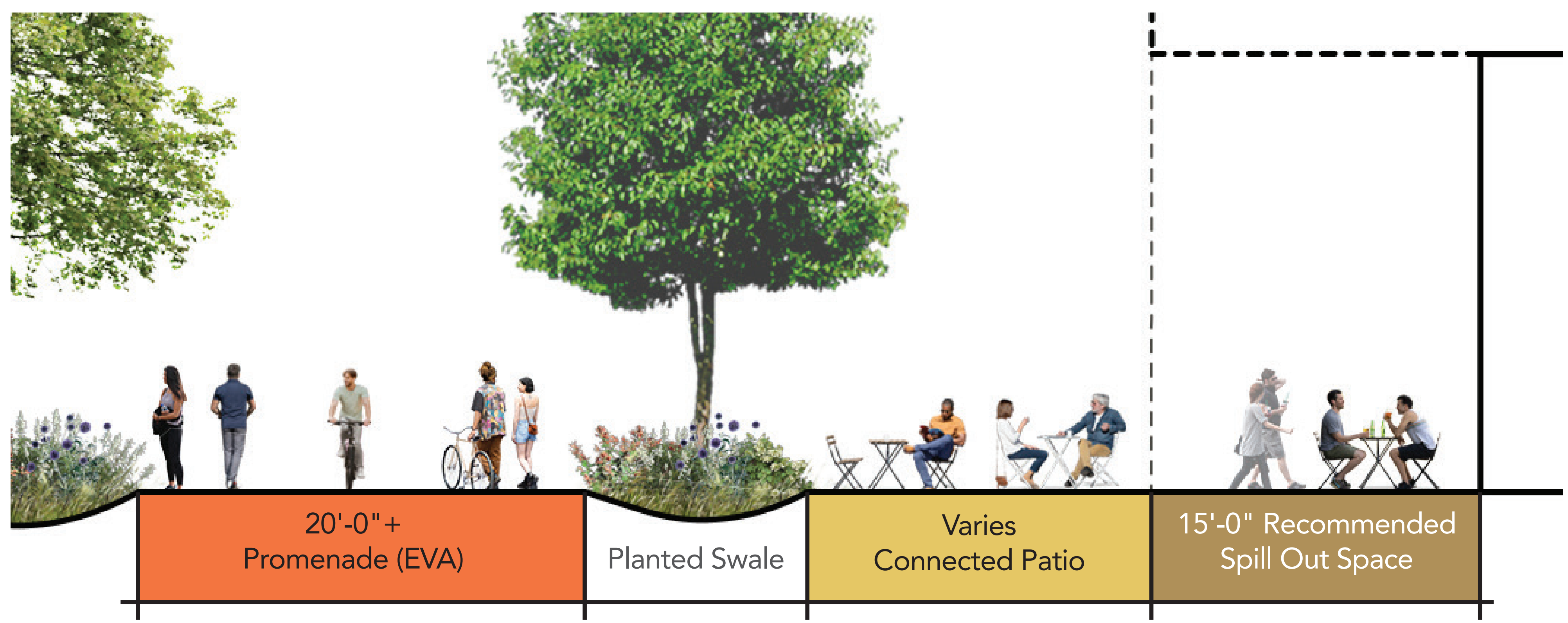
# SOCIAL ROOMS: TERRACES, PATIOS, & SPILL OUT AREAS

These social rooms may be diverse in character and should cater to different uses, from quiet individual work to larger gatherings, and from collaboration sessions to more casual catch-ups. These areas may be fully or partially covered by building articulation/overhang, trellises, and tree canopy.

**Guidelines:** Terraces, patios, and spill out areas have a recommended 15-foot width to accommodate seating for small to medium groups. This minimum distance may be combined where different gathering space types are physically connected.




Spill Out + Terrace (With EVA Access) Conceptual Section




Spill Out + Connected Patio Conceptual Section

# HARDSCAPE MATERIALS & CHARACTER

**Standards:** The character of the hardscape materials, including grain, color and texture, shall reflect the industrial history and qualities of the site, while maintaining a cohesive relationship with the architectural material palette and avoiding false historicism.

All paving surfaces shall use materials that can withstand daily use and wear and tear. Materials shall be durable, made with natural materials, and utilize predominantly warm-tones.

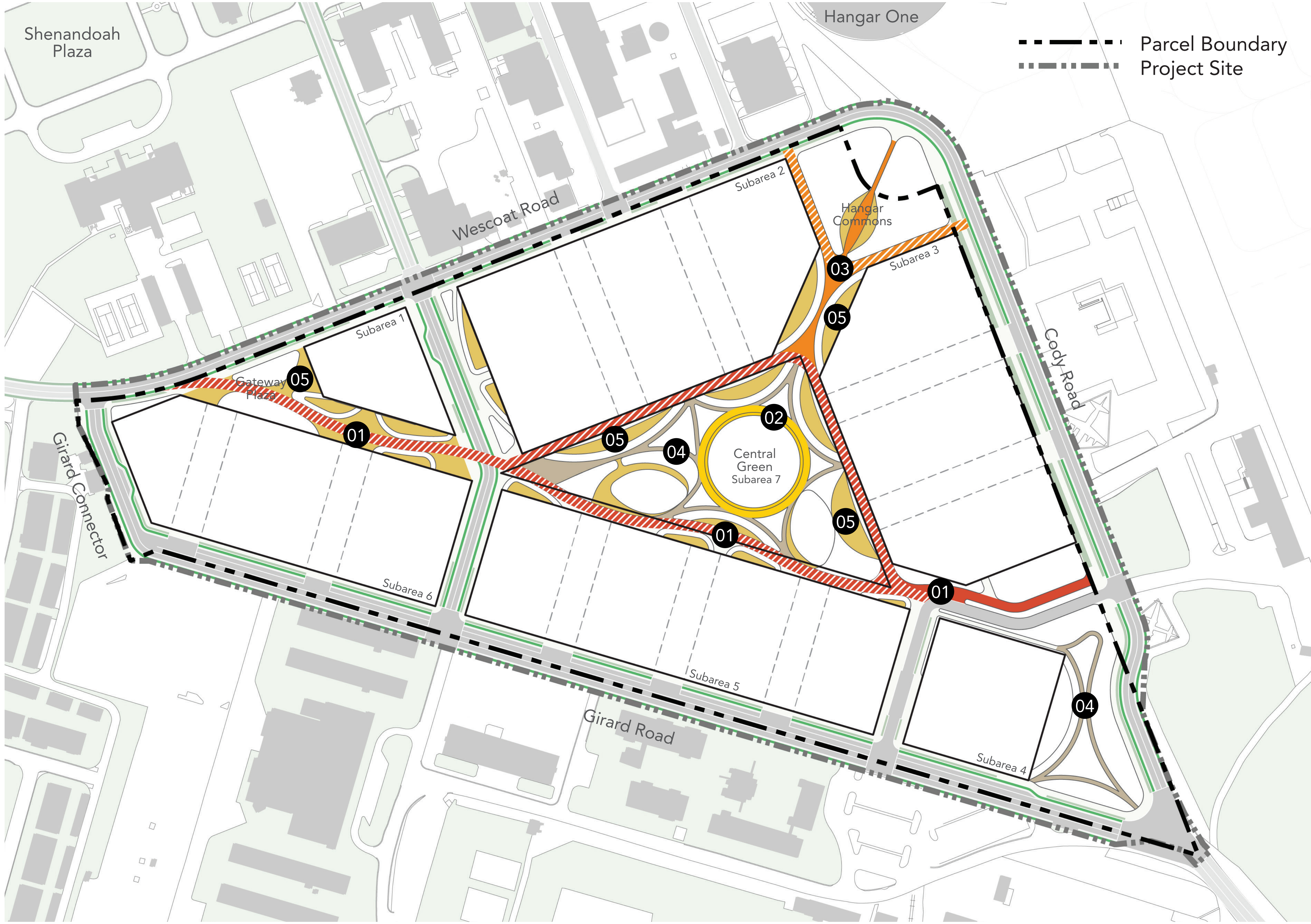
**Guidelines:** All paving should be slip-resistant, heel-proof, and have sufficient strength to meet applicable loading requirements.

Note: Specific materials to be studied in future project phases; see more information about permitting and review processes under "Purpose of This Document" on page 8.

- 01. Promenade
- 02. Loop Walk
- 03. Primary Pathways
- 04. Secondary Pathways
- 05. Plazas and Terraces
- EVA Overlay

0' 100' 200' 400'

N




Hardscape Materials and Character

OPEN SPACE

# HARDSCAPE MATERIALS & CHARACTER

## THE PROMENADE, PRIMARY PATHWAYS, AND LOOP WALK

**Guidelines:**

- Primary material: warm or gray tone cast-in-place concrete or oversize pavers
- Secondary material: a band of contrasting edging material, such as stone or precast pavers, for clear identification
- At the Promenade, provide large joint spacing where possible to accommodate cyclist comfort
- Consider daily pedestrian use, as well as loading requirements for emergency vehicles
- Character images represent a range of recommended options, but are not exclusive or comprehensive


Exposed Aggregate Cast-in-Place Concrete


Honed Cast-in-Place Concrete


Acid Wash Cast-in-Place Concrete

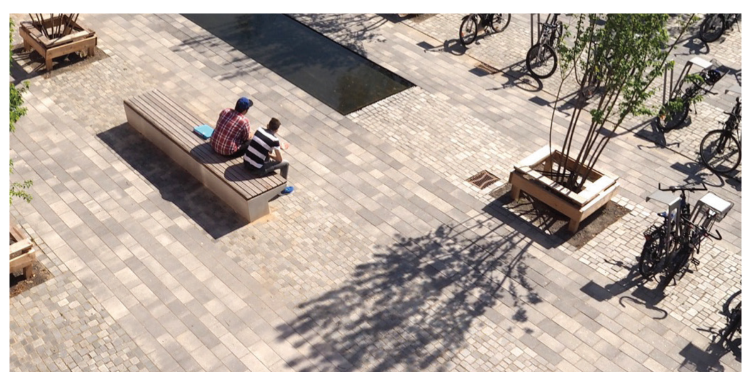

Stone Paver


Smooth Precast Concrete Paver

## PLAZAS AND TERRACES

**Guidelines:**

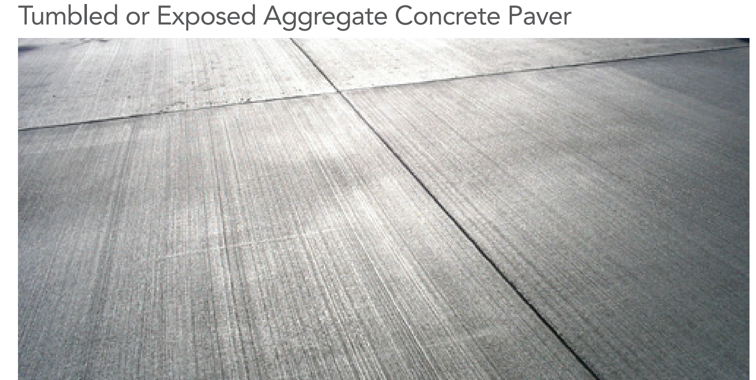
- Paving material should emphasize tactile qualities to enrich the pedestrian experience
- Unit pavers, such as cobble, brick, and precast concrete are recommended
- Cast-in-place concrete that is distinct from the Promenade may also be used
- Material should compliment but be visually distinct from the Promenade and other project areas
- Permitted color palette may be warm or cool tones, ranging from grays to sandy tans
- Character images represent a range of recommended options, but are not exclusive or comprehensive


Smooth Precast Concrete Paver


Tumbled or Exposed Aggregate Concrete Paver


Combination of Paver Sizes


Exposed Aggregate Cast-in-Place Concrete


Smooth Cast-in-Place Concrete

# HARDSCAPE MATERIALS & CHARACTER

## SECONDARY PATHWAYS

**Guidelines:**

- Paving material should emphasize natural materials and aggregates
- Opportunity for a special moment in landscape materials that do not occur elsewhere on the project, including stabilized aggregate paving or wood decking
- Material should compliment but be visually distinct from the Promenade and other project areas
- Permitted color palette is warm or cool tones, ranging from grays to warm browns to sandy tans
- Character images represent a range of recommended options, but are not exclusive or comprehensive


Stabilized Aggregate Paving


Stone Paver


Wood Boardwalk


Exposed Aggregate Cast-in-Place Concrete


Seeded Aggregate Cast-in-Place Concrete


Smooth Cast-in-Place Concrete

OPEN SPACE

# SITE LIGHTING, FURNISHINGS, & FEATURES

**Standards:** Site elements, including streetlights, pedestrian lightpoles, bollards, litter bins, bicycle racks, benches, special features, etc., shall maintain a cohesive identity that compliments the overall landscape and architectural material palettes and avoids false historicism.

**Guidelines:** Simple elements that do not compete with their surroundings or call attention to themselves are preferred over elements with overly ornamental forms and detailing.

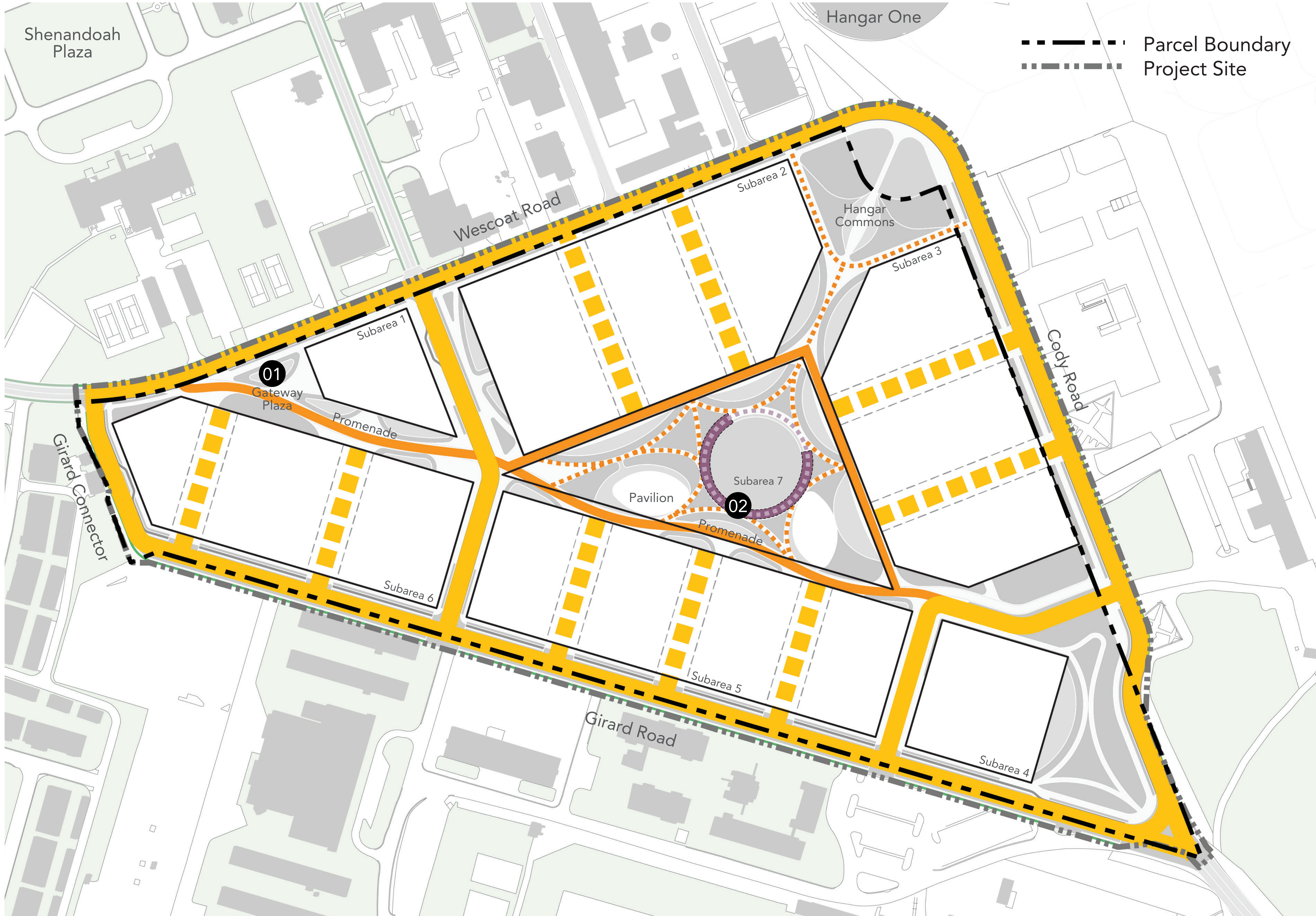
Note: Site furnishing locations not shown in plan; to be studied in future project phases; see more information about permitting and review processes under "Purpose of This Document" on page 8.

01. Gateway Sculpture
02. Canopy

Street and Sidewalk Lighting
Potential Street and Sidewalk Lighting
Primary Path Lighting
Secondary Path Lighting
Special Lighting Opportunity

0' 100' 200' 400'

N




Site Lighting, Furnishings, and Features Overview

# SITE LIGHTING, FURNISHINGS, & FEATURES

## GENERAL SITE LIGHTING, FURNISHINGS, AND FEATURES GUIDELINES

- Products should be made from durable materials that can withstand the exterior site conditions and undergo periodic maintenance
- All elements should be anchored to a foundation or a hardscape paving surface
- Elements should not block sightlines or impede the flow of movement
- Litter and recycling containers should feature covered lids that resist animal scavenging

## SITE LIGHTING AND DARK SKY OBJECTIVES

**Standards:**

- Lighting shall illuminate roadways, sidewalks, and primary pathways, while minimizing impacts to nearby wildlife habitat and avoiding unnecessary light pollution
- Consistent with the 2001 Design Guidelines, lighting shall be provided at the minimum levels required by the Illumination Engineering Society of North America (IESNA) lighting guidelines and relevant local code requirements, using no more light than is necessary
- Minimize impacts of necessary lighting by choosing low-glare sources
- Lighting standards and fixtures shall use efficient lighting technologies, including but not limited to LED technology
- Direct lighting away from native habitats by employing directional lighting with baffles, non-reflective tinting on windows, and other mechanisms
- Lighting fixtures should comply with dark sky principles outlined by the International Dark-Sky Association (IDA), which involve incorporating shielding to restrict light emission beyond a 90-degree angle
- Lighting design and fixtures should follow a clear hierarchy and be in scale with the context and surroundings

**Guidelines:**

- Site lighting elements should provide a sense of safety and security, assist in wayfinding and navigation, and contribute to the comfort, mood, and character of the site
- Accent lighting intended for artistic expression to accentuate architectural features or illuminate artwork may be exempt from these dark sky principles
- See "Bird Friendly Design" on page 80 for additional lighting requirements

## SPECIAL FEATURES

The Master Plan has identified two opportunities for special site features that should contribute to the project identity, heighten the arrival experience, and make the Central Green an iconic destination.

**Gateway Sculpture at Gateway Plaza Guidelines:**

- Distinctive identifying element
- Opportunity to tie into UC Berkeley identity/branding
- Visible from the approach on Wescoat Road
- Element shall be constructed from a durable material that can withstand wear and tear of public environment

**Canopy at the Central Green Guidelines:**

- Surrounding the Central Green along the Loop Walk, the Canopy should frame the view to Hangar One
- Supporting informal activities and specific programming
- Potential structure for site furnishings such as swings
- Opportunity for multi-media installation on the underside of the canopy
- Opportunity to integrate solar generation or stormwater catchment

Gateway Plaza with Gateway Sculpture

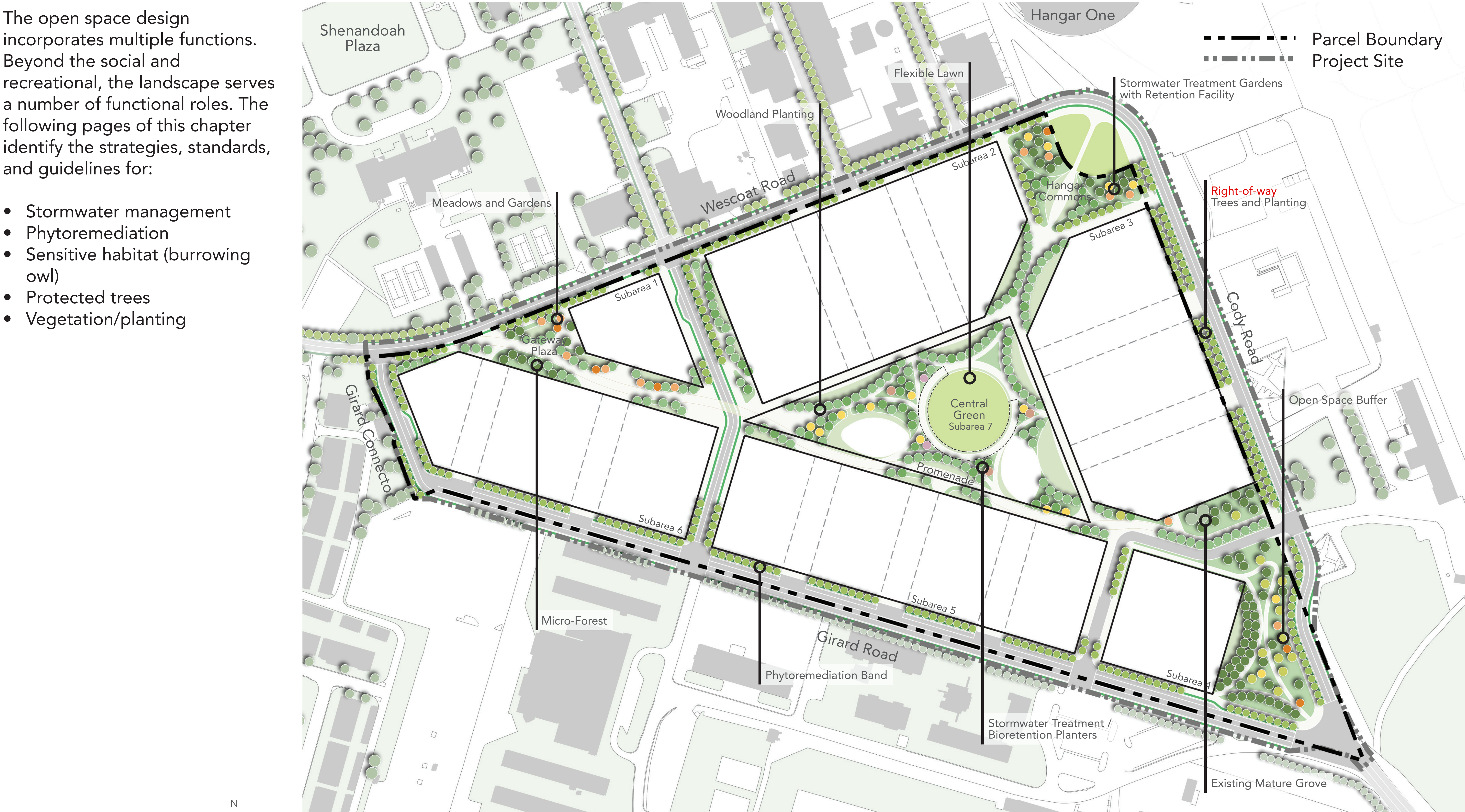
Canopy at Central Green could provide stormwater capture, and/or solar generation

Canopy at Central Green could incorporate multi-media installations and seating

# OPEN SPACE STRATEGIES

The open space design incorporates multiple functions. Beyond the social and recreational, the landscape serves a number of functional roles. The following pages of this chapter identify the strategies, standards, and guidelines for:

- Stormwater management
- Phytoremediation
- Sensitive habitat (burrowing owl)
- Protected trees
- Vegetation/planting




Illustrative Open Space Strategies

# STORMWATER STRATEGIES

**Guidelines:** Stormwater infrastructure is integrated into the landscape framework in a distributed, decentralized network. Each Subarea has an adjacent treatment area. A percentage of treatment will also be required within the Subareas as well. Treatment areas should maximize overland conveyance, and can be connected through an underground conveyance where required. Following the natural grading, stormwater will be directed to the northern retention facility at the Project Site's low point.

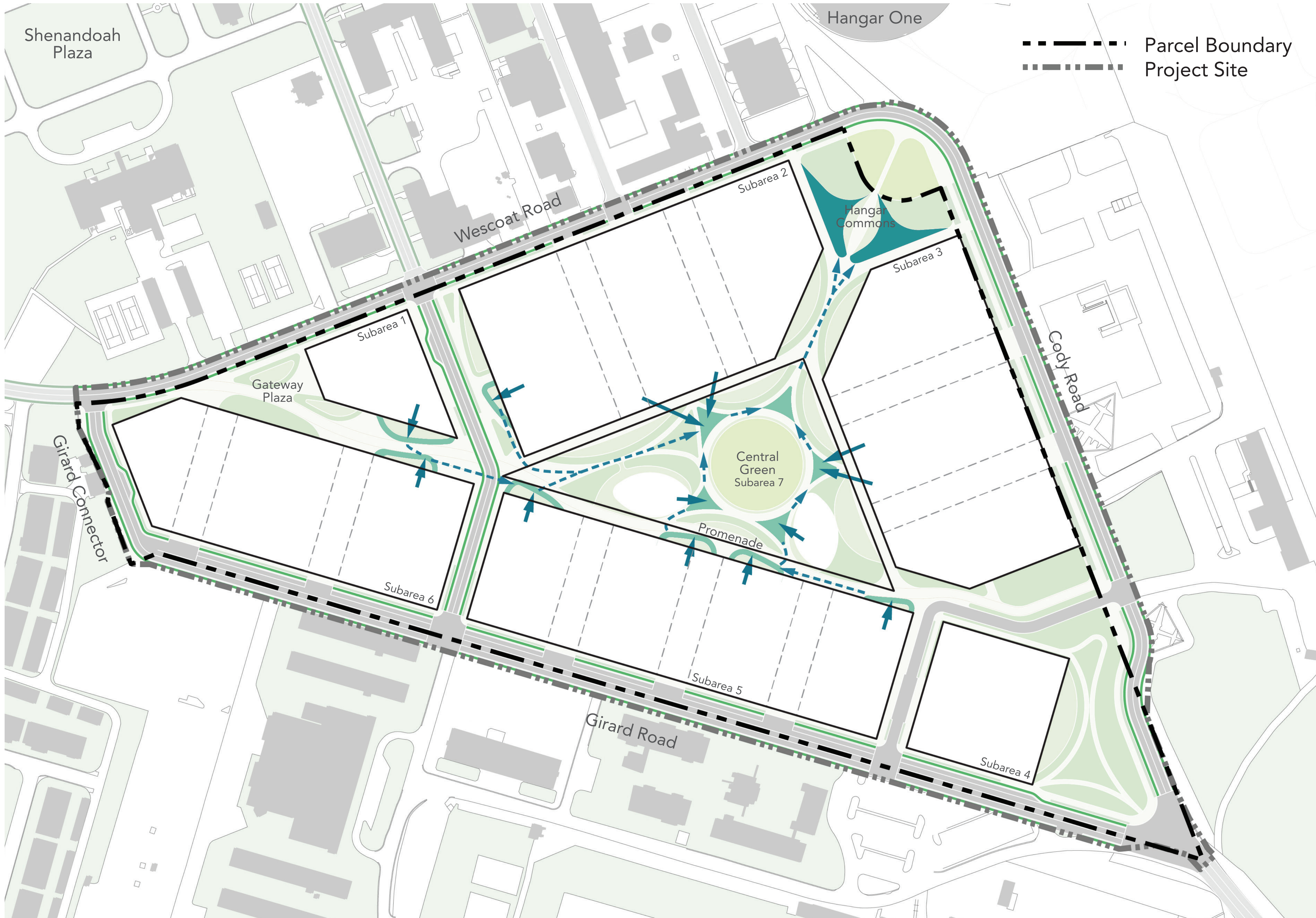
Approximately 25,000 square feet of retention is required at 3 ft ponding depth. A deeper facility with a smaller footprint would also be acceptable. Approximately 30,000 square feet of on-site and district treatment area provided within the area that drains to the retention facility.

Note that treatment areas are diagrammatic and may not show actual sizing requirements.

Retention Facility
Treatment Area
Runoff
Conveyance

0' 100' 200' 400'

N

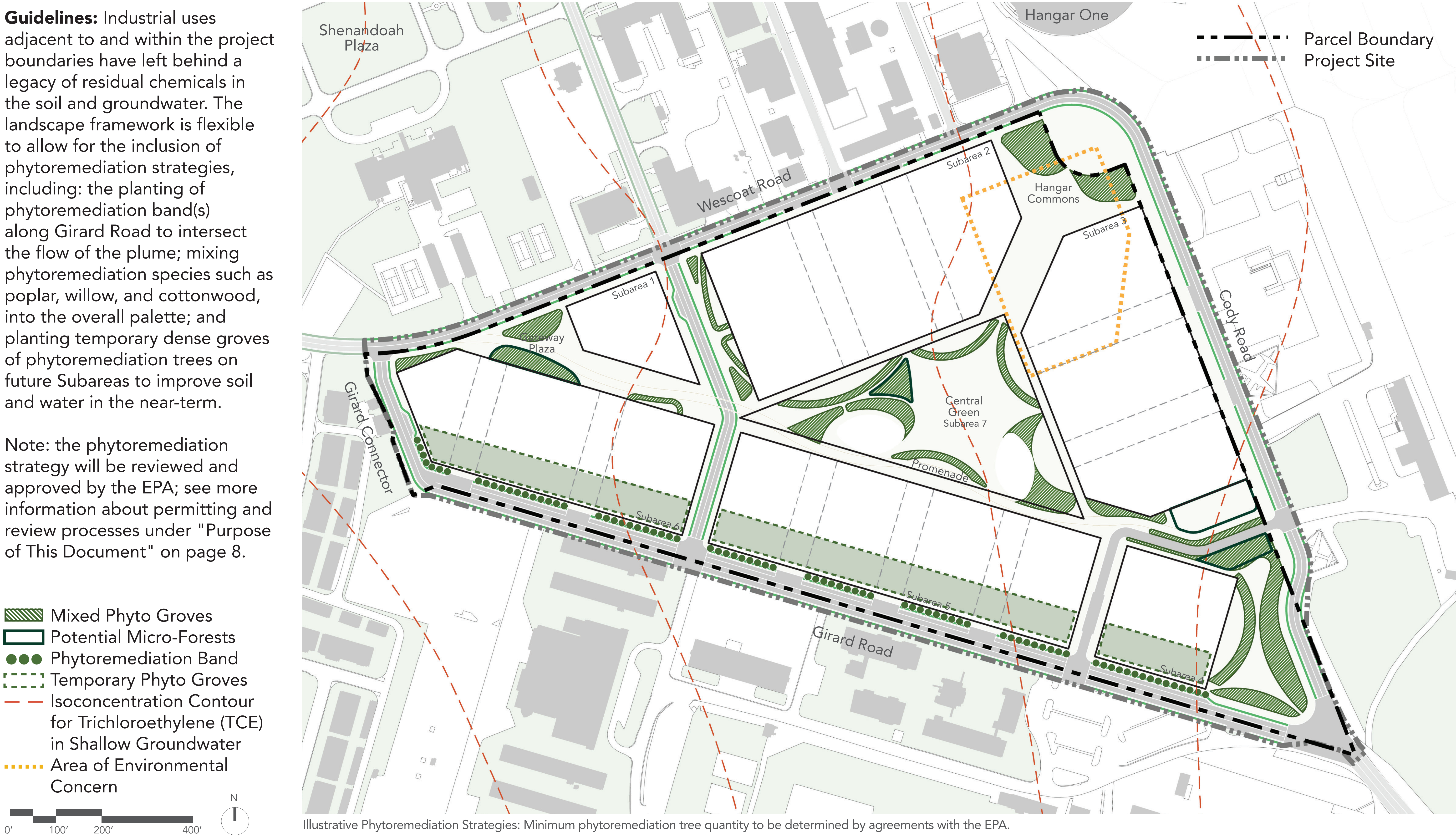


Illustrative Stormwater Strategies

OPEN SPACE
# PHYTOREMEDIATION STRATEGIES

**Guidelines:** Industrial uses adjacent to and within the project boundaries have left behind a legacy of residual chemicals in the soil and groundwater. The landscape framework is flexible to allow for the inclusion of phytoremediation strategies, including: the planting of phytoremediation band(s) along Girard Road to intersect the flow of the plume; mixing phytoremediation species such as poplar, willow, and cottonwood, into the overall palette; and planting temporary dense groves of phytoremediation trees on future Subareas to improve soil and water in the near-term.

Note: the phytoremediation strategy will be reviewed and approved by the EPA; see more information about permitting and review processes under "Purpose of This Document" on page 8.




Illustrative Phytoremediation Strategies: Minimum phytoremediation tree quantity to be determined by agreements with the EPA.

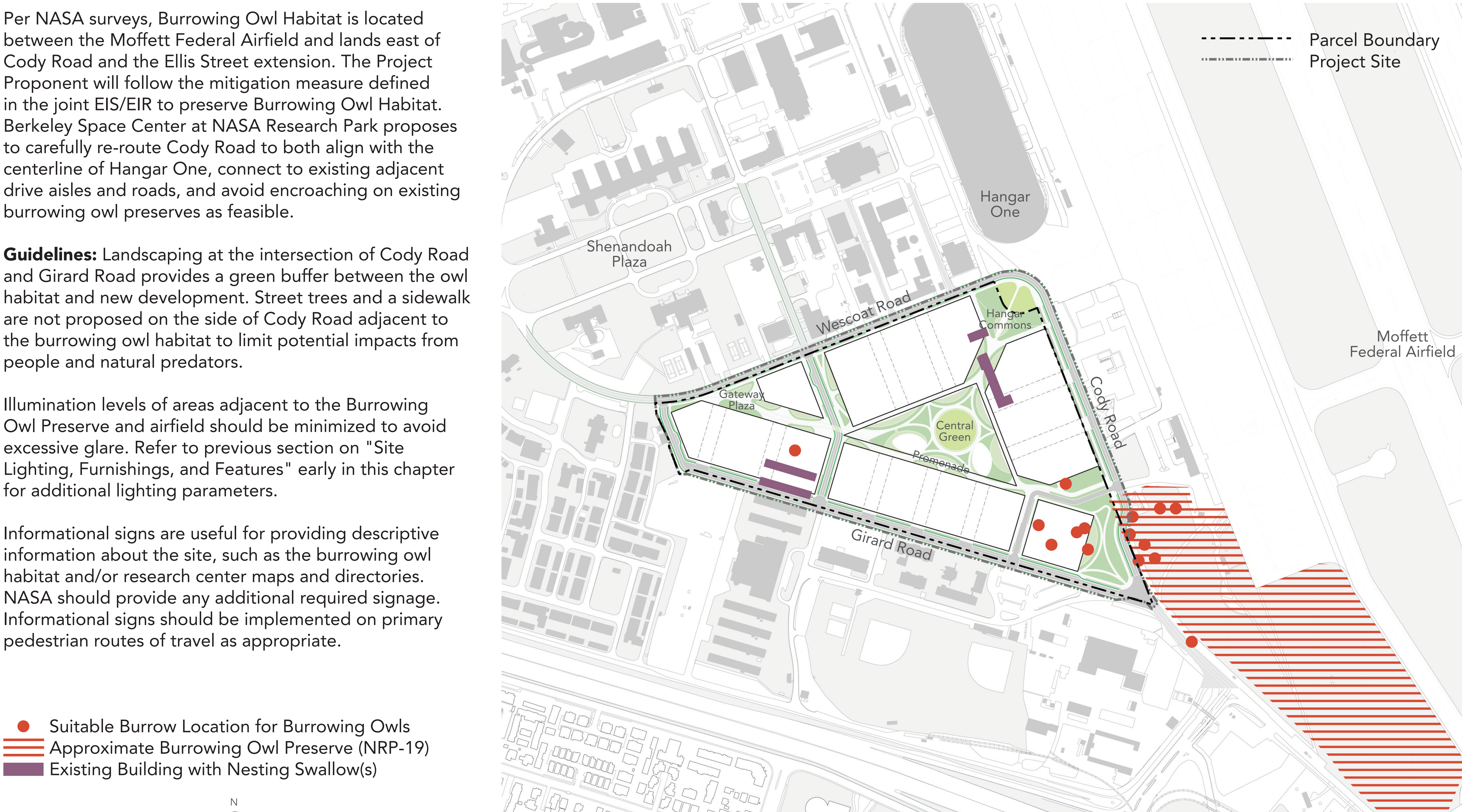
OPEN SPACE
# SENSITIVE HABITAT GUIDELINES

Per NASA surveys, Burrowing Owl Habitat is located between the Moffett Federal Airfield and lands east of Cody Road and the Ellis Street extension. The Project Proponent will follow the mitigation measure defined in the joint EIS/EIR to preserve Burrowing Owl Habitat. Berkeley Space Center at NASA Research Park proposes to carefully re-route Cody Road to both align with the centerline of Hangar One, connect to existing adjacent drive aisles and roads, and avoid encroaching on existing burrowing owl preserves as feasible.

**Guidelines:** Landscaping at the intersection of Cody Road and Girard Road provides a green buffer between the owl habitat and new development. Street trees and a sidewalk are not proposed on the side of Cody Road adjacent to the burrowing owl habitat to limit potential impacts from people and natural predators.

Illumination levels of areas adjacent to the Burrowing Owl Preserve and airfield should be minimized to avoid excessive glare. Refer to previous section on "Site Lighting, Furnishings, and Features" early in this chapter for additional lighting parameters.

Informational signs are useful for providing descriptive information about the site, such as the burrowing owl habitat and/or research center maps and directories. NASA should provide any additional required signage. Informational signs should be implemented on primary pedestrian routes of travel as appropriate.




Illustrative Sensitive Habitat Site Plan. Source: Adapted from ICF survey 2025, and NASA surveys.

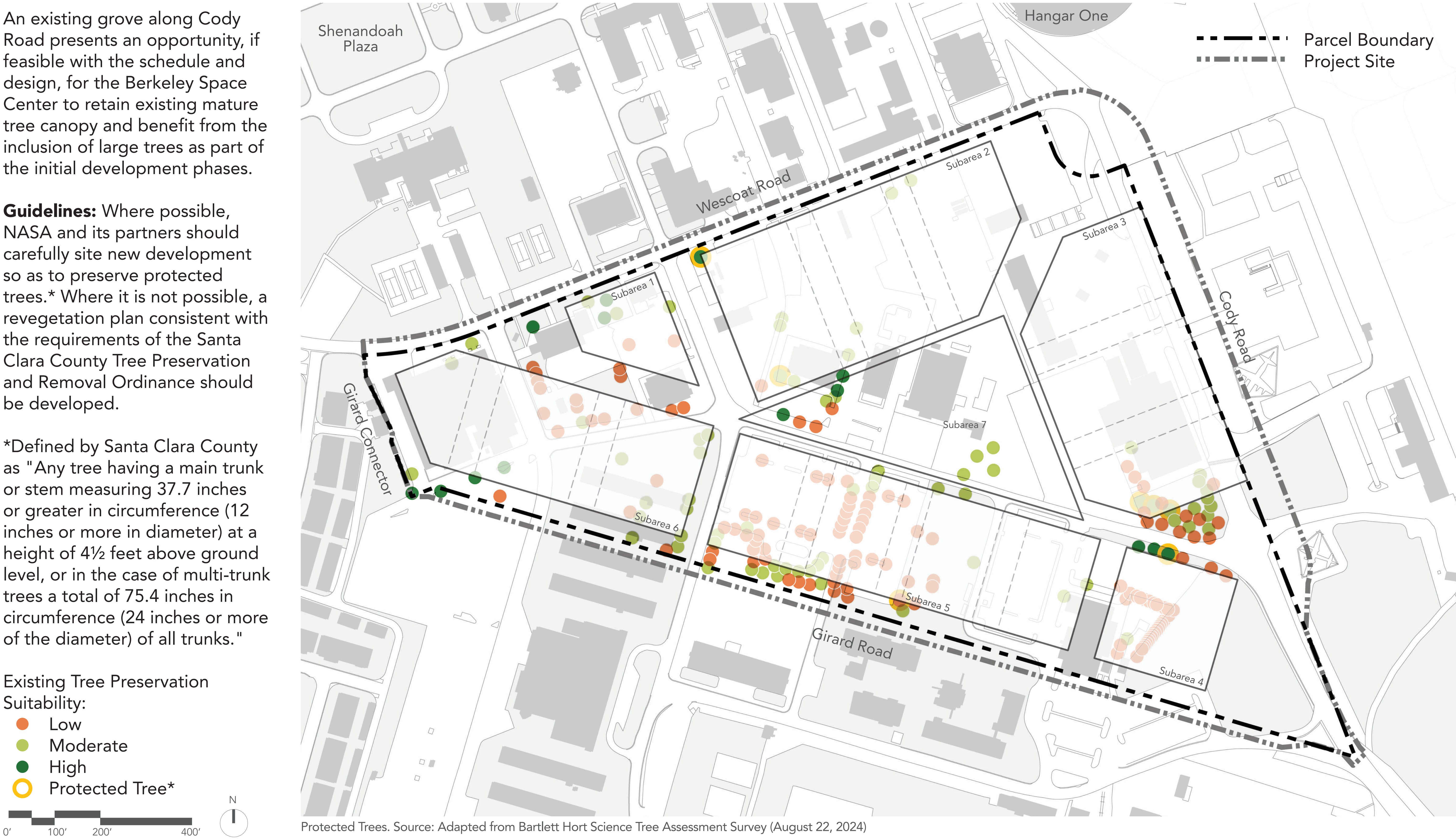
OPEN SPACE

# PROTECTED TREES

An existing grove along Cody Road presents an opportunity, if feasible with the schedule and design, for the Berkeley Space Center to retain existing mature tree canopy and benefit from the inclusion of large trees as part of the initial development phases.

**Guidelines:** Where possible, NASA and its partners should carefully site new development so as to preserve protected trees.* Where it is not possible, a revegetation plan consistent with the requirements of the Santa Clara County Tree Preservation and Removal Ordinance should be developed.

*Defined by Santa Clara County as "Any tree having a main trunk or stem measuring 37.7 inches or greater in circumference (12 inches or more in diameter) at a height of 4½ feet above ground level, or in the case of multi-trunk trees a total of 75.4 inches in circumference (24 inches or more of the diameter) of all trunks."




Protected Trees. Source: Adapted from Bartlett Hort Science Tree Assessment Survey (August 22, 2024)

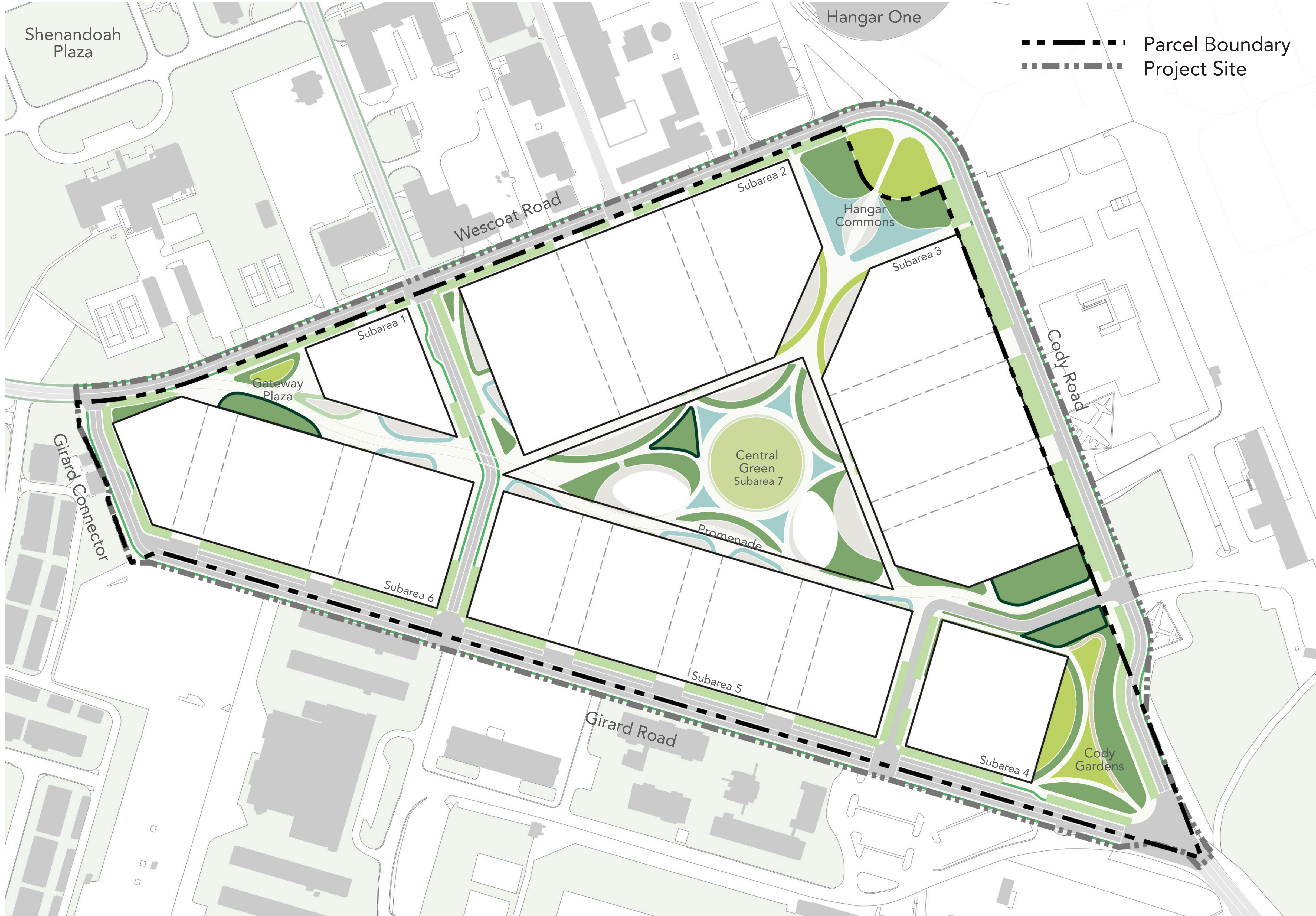
OPEN SPACE

# PLANTING CHARACTER

A dynamic and varied planting palette enriches both the ecological and social functions of the landscape program. Iconic planting palettes strengthen the individual identities of landscape features within the site. A mix of native, climate adaptive, drought-tolerant and memorable species provide flexibility for the palette to enrich one's experience across the site. All planting zones include phytoremediation species as part of the suggested palette. See "Phytoremediation Strategies" on page 59 for additional information.

**Standard:** The palette and irrigation shall comply with all local relevant regulatory requirements.

**Guideline:** The planting strategy should support the project's LEED and sustainability goals, where feasible, reducing the urban heat island effect, providing shade and shelter from the prevailing winds.


Planting Character Zones

OPEN SPACE
# PLANTING CHARACTER

This palette not only provides an opportunity to connect Berkeley Space Center with the wider NASA ARC campus, but also with the University of California, Berkeley Campus. It reflects the Bay Terraces ecoregion and regional ecology to ensure water conservation, with the goal to connect people to nature, provide future resiliency, and maximize social and environmental benefits.

**Guidelines:** The planting palette should relate to the broader site's dual characters and celebrate both its industrial history and its sense of campus idyll. It is encouraged, where appropriate, to incorporate plant species that are found on both the greater NASA ARC campus and the UC Berkeley Campus.

The project's vegetation should be comprised of an "enhanced native" palette, combining Bay Area natives along with adapted, non-native, non-invasive and drought-tolerant species that are appropriate for the Project Site both today and in future climate scenarios.

Note: specific planting species are shown as suggestions; final planting palettes to be determined in future project phases.

**PHYTOREMEDIATION SPECIES**

## WOODLANDS


## STORMWATER


## GARDENS & MEADOWS


## STREET TREES

OPEN SPACE
# PLANT PALETTE GUIDELINES

| Stage 3 | NRP | Scientific Name/ Common Name | Type | Cal Native | Growth Rate | Height x Spread | Sun | Water | Dormancy | Color | Flowering | Soil Drainage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | x | *Abies concolor*<br>White Fir | Tree | Yes | Slow | 80-200 ft tall | Full Sun, Partial Shade, Deep Shade | Moderate | E | N/A | N/A | Fast, Medium |
| | x | *Acer circinatum*<br>Vine Maple | Tree | Yes | Moderate, Slow | 15-30 ft tall x 3-6 ft wide | Partial Shade, Deep Shade | Moderate, High | D | Green, Red, Yellow | Spring | Fast, Medium, Slow |
| | x | *Acer macrophyllum*<br>Bigleaf Maple | Tree | Yes | Fast | 30-100+ ft tall x 60 ft wide | Full Sun, Partial Shade | Moderate, High | D | Yellow, Pink | Winter, Spring | Fast, Medium, Slow |
| x | | *Agonis flexuosa*<br>Peppermint Willow | Tree | No | Fast | 25-40 ft tall x 15-25 ft wide | Full Sun | Low | E | White | Spring, Summer | Fast, Medium |
| x | (s) | *Arbutus* 'Marina'<br>Strawberry Tree | Tree | No | Fast | 25-50 ft tall x 25-40 ft wide | Full Sun | Low | E | Pink | Year-round | Fast |
| x | x | *Arbutus menziesii*<br>Pacific Madrone | Tree | Yes | Slow | 15-100 ft tall x 5-25 ft wide | Partial Shade | Low | E | White, Red | Spring | Fast, Medium |
| x | (s) | *Arctostaphylos* 'Austin Griffiths'<br>Austin Griffiths Manzanita | Tree | Yes (cultivar) | Moderate | 8-15 ft tall x 6-10 ft wide | Full Sun, Partial Shade | Low | E | White, Pink | Winter | Medium |
| x | x | *Calocedrus decurrens*<br>Incense Cedar | Tree | Yes | Moderate, Slow | 12-100+ ft tall x 50 ft wide | Full Sun, Partial Shade | Moderate | E | Yellow | Spring | Medium |
| x | | *Ginkgo biloba*<br>Ginkgo | Tree | No | Slow | 50-80 ft tall x 30-40 ft wide | Full Sun | Moderate | D | Green | Spring | Fast, Medium |
| | (s) | *Lyonothamnus floribundus subsp. aspleniifolius*<br>Santa Cruz Island Ironwood | Tree | Yes | Fast | 40 ft tall x 15-20 ft wide | Full Sun | Low | E | White, Cream | Spring, Summer | Fast, Medium |
| | x | *Picea sitchensis*<br>Sitka Spruce | Tree | Yes | Moderate | 40-200+ ft tall | Full Sun, Partial Shade | Moderate, High | E | Yellow | Spring | Medium |
| x | | *Pinus brutia* var. *eldarica*<br>Afghan Pine | Tree | No | Fast | 30-60 ft tall x 20-30 ft wide | Full Sun | Low | E | | | Fast, Medium |
| x | | *Pinus canariensis*<br>Canary Island Pine | Tree | No | Fast | 50-80 ft tall x 20-35 ft wide | Full Sun | Low, Moderate | E | | | Fast |
| | | *Pinus sabiniana*<br>Gray Pine/Foothill Pine | Tree | Yes | Slow | 20-80 ft tall x 40-40 ft wide | Full Sun, Partial Shade | Very Low, Low | E | Yellow | Winter, Spring | Fast, Medium |
| | x | *Pinus torreyana*<br>Torrey Pine | Tree | Yes | Fast, Moderate, Slow | 25-100+ ft tall x 25-50 ft wide | Full Sun | Low, Moderate | E | Red, Yellow | Winter, Spring | Fast, Medium |
| x | x | *Platanus × acerifolia*<br>London Plane | Tree | No | Fast, Moderate | 70-90 ft tall x 60-70 ft wide | Full Sun, Partial Shade | Moderate | D | | | Fast, Medium |
| x | x | **Populus* hybrids<br>Cottonwoods/Poplars | Tree | No | Fast | 40-80 ft tall x 30-50 ft wide | Full Sun | Low, Moderate | D | | | Fast, Medium |
| x | x | *Quercus agrifolia*<br>Coast Live Oak | Tree | Yes | Moderate, Slow | 25-80 ft tall x 15-35 ft wide | Full Sun, Partial Shade | Very Low, Low, Moderate | E | Yellow, Cream, Green | Winter, Spring | Medium |
| x | x | *Quercus douglasii*<br>Blue Oak | Tree | Yes | Slow | 16-80 ft tall x 30 ft wide | Full Sun, Partial Shade | Very Low, Low | S-D | Yellow, Cream, Green | Winter, Spring | Fast |
| x | | *Quercus suber*<br>Cork Oak | Tree | No | Fast | 60-90 ft tall x 60 ft wide | Full Sun | Low | E | Yellow-Green, Brown | Spring | Fast, Medium |
| x | | *Tilia tomentosa*<br>Silver Linden | Tree | No | Moderate | 50-70 ft tall x 30-50 ft wide | Full Sun, Partial Shade | Moderate | D | Yellow | Summer | Fast, Medium |
| x | | *Ulmus americana* 'Valley Forge'<br>American Elm | Tree | No | Fast, Moderate | 60-80 ft tall x 40-70 ft wide | Full Sun | Moderate | D | | | Fast, Medium |
| x | x | *Umbellularia californica*<br>California Bay Laurel | Tree | Yes | Moderate | 8-80 ft tall x 3-30 ft wide | Full Sun, Partial Shade | Low, Moderate | E | Yellow, Cream, White, Green | Spring | Medium, Slow |
| x | x | *Aesculus californica*<br>California Buckeye | Shrub, Tree | Yes | Moderate | 13-39 ft tall x 40 ft wide | Full Sun, Partial Shade | Very Low, Low | D | White, Cream | Spring, Summer | Medium, Slow |

Symbols: *Phytoremediation species, (s) similar, E evergreen, D deciduous, S-D semi-deciduous

## OPEN SPACE
# PLANT PALETTE GUIDELINES

| Stage 3 | NRP | Scientific Name/ Common Name | Type | Cal Native | Growth Rate | Height x Spread | Sun | Water | Dormancy | Color | Flowering | Soil Drainage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | (s) | *Cornus sericea* Red Osier Dogwood | Shrub, Tree | Yes | Fast | 4-13 ft tall, 9-15 ft wide | Full Sun, Partial Shade, Deep Shade | High | D | White, Purple, Red | Summer | Medium,Slow, Standing |
| | x | *Fraxinus dipetala* California Ash | Shrub, Tree | Yes | Moderate | 20 ft tall x 15 ft wide | Full Sun, Partial Shade | Low | D | Yellow, White | Spring | Fast, Medium, Slow |
| x | | *Morus alba* White Mulberry | Shrub, Tree | No | Fast | 30-50 ft tall | Full Sun | Medium | D | | | Fast, Medium |
| x | | **Salix scouleriana* Scouler's Willow | Shrub, Tree | Yes | Fast | 7 - 50 ft tall | Full Sun, Partial Shade | High | D | Yellow, Cream, White | Winter, Spring | High |
| x | (s) | *Sambucus mexicana* Blue Elderberry | Shrub, Tree | Yes | Fast | 20-30 ft tall x 20-30 ft wide | Full Sun, Partial Shade, Deep Shade | Low, Moderate | D | Cream, Yellow, Purple | Spring, Summer | Fast, Medium |
| x | | *Arctostaphylos patula* Greenleaf Manzanita | Shrub | Yes | Slow | 3-7 ft tall x 9 ft wide | Full Sun, Partial Shade | Low | E | White, Pink | Winter, Spring | Fast |
| | | *Arctostaphylos uva-ursi* 'Wood's Compact' Dwarf Manzanita | Shrub | Yes (cultivar) | Fast | 6-8 in tall x 6-8 ft wide | Full Sun, Partial Shade | Moderate | E | Pink | Winter, Spring | |
| | | *Artemisia californica* California Sagebrush | Shrub | Yes | Fast | 1-8 ft tall x 4 ft wide | Full Sun | Very Low, Low | D | Cream, White, Yellow | Spring, Summer, Fall | Fast, Medium, Slow |
| x | x | *Baccharis pilularis* Coyote Brush | Shrub | Yes | Fast, Moderate | 2-10 ft tall x 12 ft wide | Full Sun, Partial Shade | Very Low, Low | E | Yellow, Cream, White | Year round | Fast, Medium, Slow |
| x | (s) | *Ceanothus crassifolius* Hoaryleaf Ceanothus | Shrub | Yes | Slow | 5-14 ft tall x 5-10 ft wide | Full Sun, Partial Shade | Very Low | E | White | Winter, Spring | Fast |
| x | (s) | *Ceanothus leucodermis* Chaparral Whitethorn | Shrub | Yes | Fast | 6-13 ft tall x 3-7 ft wide | Full Sun, Partial Shade | Very Low, Low | E | Blue, Lavender, White | Winter, Spring | Fast |
| x | x | *Ceanothus thyrsiflorus* Blueblossom Ceanothus | Shrub | Yes | Fast, Moderate | 2-30 ft tall x 2-40 ft wide | Partial Shade | Low | E | Blue, White | Winter, Spring | Fast, Medium, Slow |
| x | (s) | *Ceanothus tomentosus* Woollyleaf Ceanothus | Shrub | Yes | Fast | 6-13 ft tall x 6-20 ft wide | Full Sun, Partial Shade | Very Low | E | Blue, Lavender, White | Winter, Spring | Fast, Medium |
| x | x | *Frangula californica* Coffeeberry | Shrub | Yes | Moderate | 6-15 ft tall x 5-15 ft wide | Full Sun, Partial Shade | Very Low, Low | E | Cream, Green, White | Spring, Summer | Fast, Medium |
| x | x | *Heteromeles arbutifolia* Toyon | Shrub | Yes | Fast, Moderate | 6-30 ft tall x 10-15 ft wide | Full Sun, Partial Shade | Very Low, Low | E | White | Summer | Fast, Medium, Slow |
| x | x | *Myrica californica* Pacific Wax Myrtle | Shrub | Yes | Fast, Moderate | 6-33 ft tall x 20 ft wide | Full Sun, Partial Shade | Low, Moderate | E | Yellow | Summer | Medium |
| x | x | *Ribes speciosum* Fuchsia-Flowered Gooseberry | Shrub | Yes | Fast | 6-10 ft tall x 3-8 ft wide | Partial Shade, Deep Shade | Very Low, Low, Moderate | D | Red, Pink | Winter, Spring | Medium, Slow |
| | | *Salvia apiana* Californian White Sage | Shrub | Yes | Fast, Moderate | 3-5 ft tall x 3-8 ft wide | Full Sun | Very Low, Low | S-D | White | Winter, Spring, Summer | Fast, Medium |
| x | x | *Salvia clevelandii* Cleveland Sage | Shrub | Yes | Fast, Moderate | 3-4 ft tall x 8 ft wide | Full Sun, Partial Shade | Very Low | E | Blue, Purple, Lavender | Spring, Summer | Medium |
| | | *Abronia latifolia* Sand Verbena | Perennial | Yes | Fast | 6 in tall x 6 in wide | Full Sun | Very low | S-D | Yellow | Spring, Summer, Fall | Fast |
| | | *Achillea millefolium* Yarrow | Perennial | Yes | Fast, Moderate | 1-3 ft tall x 1-2 ft wide | Full Sun | Low | E, S-D | White | Spring, Summer | Fast, Medium, Slow |
| | | *Agastache urticifolia* Nettle Leaf Giant Hyssop | Perennial | Yes | Fast | 1-5 ft tall x 1-3 ft wide | Partial Shade, Deep Shade | Moderate | E | Red | Spring | Fast |
| x | | *Anigozanthos* spp. Kangaroo Paw | Perennial | No | Fast, Moderate | 1-6 ft tall x 1-3 ft wide | Full Sun | Low, Moderate | E | Red, Yellow, Orange, Pink, Purple | Spring, Summer, Fall | Fast |
| | x | *Armeria maritima* Thrift Seapink | Perennial | Yes | Moderate | 6-12 in tall x 4-12 in wide | Full Sun, Partial Shade | Moderate | E | Purple, Pink | Spring | Fast |

Symbols: *Phytoremediation species, (s) similar, E evergreen, D deciduous, S-D semi-deciduous

OPEN SPACE

# PLANT PALETTE GUIDELINES

| Stage 3 | NRP | Scientific Name/ Common Name | Type | Cal Native | Growth Rate | Height x Spread | Sun | Water | Dormancy | Color | Flowering | Soil Drainage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Asclepias spp.*<br>Milkweed | Perennial | Yes | Slow, Moderate | 2-3 ft tall x 1-3 ft wide | Full Sun | Very Low, Low | S-D | Lavender, Pink, White | Summer, Fall | Fast, Medium, Slow |
| | | *Dichelostemma capitatum*<br>Blue Dicks | Perennial, Bulb | Yes | Moderate | 2 ft tall x 2 in wide | Full Sun, Partial Shade | Low | S-D | Blue, Lavender | Winter, Spring | Fast, Medium, Slow |
| | x | *Epilobium californica*<br>California Fuchsia | Perennial | Yes | Fast | 3-18 in tall x 2-3 ft wide | Full Sun, Partial Shade | Very Low, Low | S-D | Red | Summer, Fall | Fast, Medium, Slow |
| | | *Erigeron glaucus*<br>Seaside Daisy | Perennial | Yes | Fast | 1-2 in tall x 1-2 ft wide | Full Sun, Partial Shade | Low, Moderate | E | Lavender, Yellow | Winter, Spring, Summer | Fast, Medium, Slow |
| x | x | *Eriogonum fasciculatum*<br>California Buckwheat | Perennial | Yes | Fast, Slow | 1-7 ft tall x 3 ft wide | Full Sun | Very Low, Low | E | Yellow, Cream, Pink, White | Spring, Summer, Fall | Fast, Medium, Slow |
| x | (s) | *Eriogonum latifolium*<br>Wild Buckwheat | Perennial | Yes | Moderate | 2 ft tall x 2-3 ft wide | Full Sun, Partial Shade | Low | S-D | Cream, Pink, White | Summer, Fall | Fast, Medium |
| | | *Eurybia radulina*<br>Rough Leaved Aster | Perennial | Yes | Moderate | 2 ft tall x 1-2 ft wide | Partial Shade | Low | S-D | Purple | Summer, Fall | Medium, Slow |
| x | | *Erythranthe guttata*<br>Seep Monkeyflower | Perennial | Yes | Fast | 2-5 ft tall x 7 in wide | Full Sun, Partial Shade | Moderate, High | D | Yellow | Winter, Spring | Slow, Standing |
| x | x | *Eschscholzia californica*<br>California Poppy | Perennial | Yes | Fast, Moderate | 2-24 in tall x 1-2 ft wide | Full Sun | Very Low | D | Orange, Yellow | Spring, Summer, Fall | Fast, Medium, Slow |
| | | *Grindelia camporum*<br>Great Valley Gumweed | Perennial | Yes | Moderate | 2-7 ft tall x 3 ft wide | Full Sun | Very Low, Low | S-D | Yellow | Spring, Summer, Fall | Fast, Medium, Slow |
| | x | *Heuchera maxima*<br>Island Alum Root | Perennial | Yes | Moderate | 1-2' tall x 2 ft wide | Partial Shade, Deep Shade | Low, Moderate | E | Pink, White | Winter, Spring | Fast, Medium |
| x | (s) | *Heuchera* 'Santa Ana Cardinal'<br>Santa Ana Coral Bells | Perennial | Yes (cultivar) | Fast | 6-12 in tall x 1-2 ft wide | Partial Shade, Deep Shade | Low, Moderate | E | Pink, Red | Spring, Summer | Fast, Medium, Slow |
| x | | *Kniphofia uvaria*<br>Red Hot Poker | Perennial | No | Fast | 3-4 ft tall x 2-3 ft wide | Full Sun, Partial Shade | Moderate | E | Yellow, Orange, Red | Summer, Fall | Fast, Medium |
| | | Lupinus albifrons<br>Silver Lupine | Perennial, Annual | Yes | Fast | 2-5 ft tall x 2-3 ft wide | Full Sun | Very Low, Low | E | Blue, Lavender, Purple | Winter, Spring, Summer | Fast |
| | x | *Mimulus* hybrids<br>Monkey Flower | Perennial | Yes | Fast | 2-3 ft tall x 2-3 ft wide | Full Sun, Partial Shade | High | D | Orange, Yellow, Red, Pink, White, Cream | Spring | Fast |
| | | *Monardella villosa*<br>Coyote Mint | Perennial | Yes | Moderate | 2 ft tall x 3 ft wide | Full Sun, Partial Shade | Very Low, Low | E | Pink, Lavender | Summer | Medium |
| x | x | *Penstemon centranthifolius*<br>Scarlet Bugler | Perennial | Yes | Fast | 2-4 ft tall x 1 ft wide | Full Sun, Partial Shade | Low | D | Red | Spring, Summer | Fast, Medium, Slow |
| | x | *Sidalcea malviflora*<br>Checkerbloom | Perennial | Yes | Fast | 4-18 in tall x 3-6 in wide | Full Sun, Partial Shade | Low, Moderate | S-D | Pink, Green | Spring, Summer | Fast, Medium, Slow |
| | x | *Sisyrinchium bellum*<br>Blue-eyed Grass | Perennial | Yes | Moderate | 1-2 ft tall x 3 in wide | Full Sun, Partial Shade | Low | S-D | Blue, Lavender, Purple | Winter, Spring | Fast, Medium, Slow |
| | | *Solidago velutina ssp. californica*<br>California Goldenrod | Perennial | Yes | Fast | 2-5 ft tall x spreading | Full Sun, Partial Shade | Very Low, Low | E | Yellow | Summer, Fall | Medium |
| | | *Symphyotrichum chilense*<br>California Aster | Perennial | Yes | Fast | 1-3 ft tall x 3 ft wide | Full Sun, Partial Shade | Very Low, Low | S-D | Yellow, Blue, Lavender | Summer | Medium, Slow, Standing |
| | | *Bouteloua gracilis* 'Blonde Ambition'<br>Blonde Ambition Blue Grama | Grass | Yes (cultivar) | Fast, Moderate | 6-24 in tall x 2 ft wide | Full Sun, Partial Shade | Very Low | S-D | Yellow | Summer | Fast, Medium |
| | | *Carex pansa*<br>Dune Sedge | Grass | Yes | Fast | 8-16 in tall | Full Sun | Moderate | E | Cream, Brown | | Fast, Medium |
| x | (s) | **Elymus triticoides*<br>Creeping Wild Rye | Grass | Yes | Fast | 2-4 ft tall | Partial Shade | Low | D | Green | Summer | Medium, Slow |

Symbols: *Phytoremediation species, (s) similar, E evergreen, D deciduous, S-D semi-deciduous

OPEN SPACE
# PLANT PALETTE GUIDELINES

| Stage 3 | NRP | Scientific Name/ Common Name | Type | Cal Native | Growth Rate | Height x Spread | Sun | Water | Dormancy | Color | Flowering | Soil Drainage |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| x | | **Festuca rubra*<br>Red Fescue | Grass | Yes | Fast, Moderate | 1-3 ft tall | Full Sun, Partial Shade | Low, Moderate, High | S-D | Yellow | Spring | Medium |
| x | | *Juncus patens*<br>California Gray Rush | Grass | Yes | Moderate | 1-3 ft tall x 3 ft wide | Full Sun | Moderate, High | E | Red, Brown | Spring, Summer, Fall | Slow, Standing |
| | x | *Muhlenbergia rigens*<br>Deer Grass | Grass | Yes | Fast, Moderate | 4-5 ft tall x 4 ft wide | Full Sun | Low, Moderate | E | Yellow, Cream | Spring | Fast, Medium, Slow |
| x | | *Pennisetum* 'Fairy Tails'<br>Evergreen Fountain Grass | Grass | No | Moderate | 2-4 ft tall x 2-4 ft wide | Full Sun | Low, Moderate | E | Pink, Cream | Summer, Fall | Fast, Medium |
| x | | *Poa cita*<br>Silver Tussock | Grass | No | Fast | 2-3 ft tall x 1-2 ft wide | Full Sun | Low | E | Brown | Summer | Fast, Medium |
| x | | *Polypodium californicum*<br>California Polypody | Fern | Yes | Slow | 2 ft tall x 3 ft wide | Partial Shade, Deep Shade | Very Low | E | N/A | N/A | Slow |
| x | | *Polystichum munitum*<br>Western Sword Fern | Fern | Yes | Moderate | 2-6 ft tall x 2-3 ft wide | Partial Shade, Deep Shade | Moderate, High | E | N/A | N/A | Medium, Slow |
| | | *Helianthus annuus*<br>Sunflower | Annual | Yes | Fast | 5-10 ft tall x 2 ft wide | Full Sun | Low | N/A | Orange, Yellow, Brown | Summer | Fast, Medium, Slow |
| x | | *Lasthenia californica*<br>California Goldfields | Annual | Yes | Fast | 6-16 in tall x 6 in wide | Full Sun, Partial Shade | Very Low, Low | N/A | Yellow | Winter, Spring | Medium |

Symbols: *Phytoremediation species, (s) similar, E evergreen, D deciduous, S-D semi-deciduous

# PLANTING GUIDELINES

## GROUNDCOVER AND GENERAL PLANTING

**Standards**
- In accordance with California requirements, all groundcover and tree planting areas shall receive three inches of mulch to retain soil moisture

**Guidelines**
- Plants should be specified, grouped, and sited according to wind speed/direction, solar orientation, and designation of hydrozone areas
- Where possible, planting installation and maintenance plans should minimize the use of chemicals including herbicides, pesticides, and fertilizers

## STORMWATER

**Standards**
- Stormwater design shall be in compliance with all relevant local regulations and guidelines
- The project shall achieve required rate and volume of stormwater runoff during the design-level event through best management practices, including green infrastructure, storage, and local treatment

**Guidelines**
- Soil cells, a modular suspended pavement system, may also be used to support tree growth and provide on-site stormwater management; trees planted in hardscape would additionally benefit from this system
- Green roof systems may also be explored to meet stormwater needs

## LAWN

**Guidelines**
- The use of traditional lawn should be minimized except in high-use, formal areas, such as at the Central Green
- Lawn planting grass species should be:
    - Low maintenance
    - Low or medium water needs
    - Allow for a variety of programming and daily pedestrian use

## TREES

**Guidelines**
- Tree massing should incorporate regular spacing along the public rights-of-way where feasible
- Tree species should be used to define key roadways, with different species used along different streets within the district to provide interest, diversity, and identity
- Street trees should be selected for spreading canopies with a 36-inch box size at installation preferred (minimum 24-inch box size at installation)
- Street trees should be located in the amenity band between the sidewalk, providing tree canopy cover and shade over both the roadway and the sidewalk
- Trees within all plazas, terraces/patios, and the lawn of the Central Green should be limbed up to preserve sightlines to buildings and Hangar One
- Trees planted in pavement should be planted within a minimum cubic soil volume that corresponds with the mature size of the species
- Where possible, use tree canopies, trellises, or other shade devices in front of building entrances to facilitate pedestrian movement

## PHYTOREMEDIATION TREES

**Guidelines**
- Phytoremediation species should be selected based on best practices, including water uptake capacity and fast growth rate
- Phytoremediation trees may be planted as bare root stock
- Plant density for temporary phytoremediation groves and micro-forests should be maximized, see micro-forest strategy
- Where feasible, trees from temporary phytoremediation groves should be planted elsewhere on site to provide larger trees upon installation

## MICRO-FOREST STRATEGY

**Guidelines**
- Micro-forest (Miyawaki Method) may be combined with phytoremediation strategies
- Plant multiple layers of species, from shrub to canopy, densely, at approximately three to five plants per meter (or 18- to 24-inch on-center spacing in a triangular configuration)
- For tree count applications, assume approximately 1350 trees per acre, or approximately 6 foot on-center spacing in a triangular configuration

# 6 BUILDINGS

BUILDINGS
# PRINCIPLES

The building typologies at Berkeley Space Center at NASA Research Park are a key driver of its success as a center for research and innovation. The development Subareas are broken down into efficient building typologies that can accommodate the split between Academic, Innovation and Industry. The principal aim is to meet and exceed best practice principles for innovative district design, while also respecting the historical character of the surrounding site.

The overarching project principles for buildings at the Berkeley Space Center as follows:

**Performance and Function**
Organize functions within the building around the R&D process - creating seamless and efficient workflows. Key support functions should be located close to where they are needed.

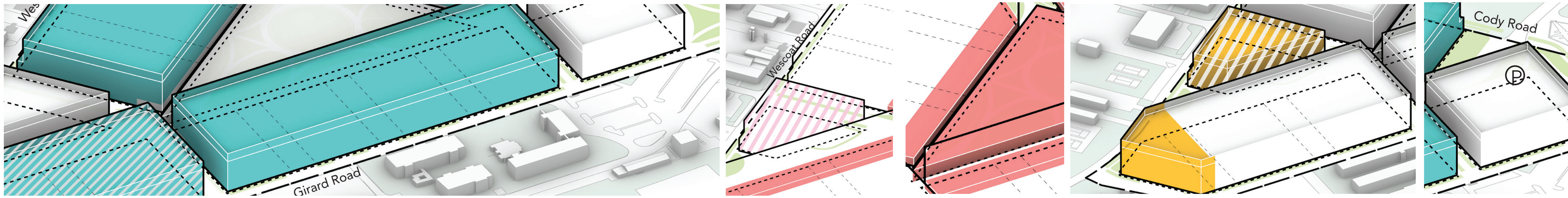
**Incubate Collisions**
Support the transfer of knowledge, operational synergies and consolidations by strategically locating collaboration spaces where they are most useful.

**Safety & Security**
Carefully consider the number and location of access points to ensure privacy for certain R&D functions.

**Future-Proof Design**
Design for convertibility of buildings to transition between uses according to market demand and equipment and product development.

**Cohesive Character**
Create an iconic and cohesive built character that looks to the future, while also respecting its past and historic neighbors.

# LAND USE AND PARKING STANDARDS SUMMARY




| PROJECT ASSUMPTIONS | Research and Office Uses | | | Conference Center | Active Uses | Housing and Lodging | | Garage |
|---|---|---|---|---|---|---|---|---|
| | Office | Lab and R&D | Academic | | | Short-Term Lodging | Student/Faculty Housing | |
| PARCELS CAPACITY ASSUMPTIONS | Ground Plane: 10% Working Yards, 90% Building Footprint<br>Vertical: 75% Massing, 25% Sculpting Reduction | | | N/A | N/A | N/A | N/A | N/A |
| TYPICAL FLOOR HEIGHTS | Typical Ground Floor Height: 20ft-26ft<br>Typical Floor Height: 15ft-18ft<br>Maximum Development Parameter: 80ft+25ft mechanical screening=105ft | | | Typical Floor: 20ft | Typical Floor: 20ft | Typical Floor: 10ft | | Typical Floor: 10ft<br>75ft (7 stories / 8 Levels)+5ft parapet=80ft<br>65ft (6 stories / 7 Levels)+5ft Parapet=70ft |

| PARKING RATIOS | | Research and Office Uses | | | Conference Center | Active Uses | Housing and Lodging | | Garage |
|---|---|---|---|---|---|---|---|---|---|
| | | Office | Lab and R&D | Academic | | | Short-Term Lodging | Student/Faculty Housing | |
| MINIMUM BICYCLE PARKING | Long-Term Bicycle Parking (Class I) | 0.75 Spaces / 1,000 sf | 0.345 Spaces / 1,000 sf | 2.25 Spaces for each 10 employees plus 1.5 space for each 10 students | N/A | 0.15 Spaces / 1,000 sf | 1.5 Space / 1,000 sf | 1.5 Space / 1,000 sf | N/A |
| | Short-Term Bicycle Parking (Class II) | 0.1875 Spaces / 1,000 sf | 0.1875 Spaces / 1,000 sf | 1.5 Space / 10 students | N/A | 0.75 Spaces / 1,000 sf | 1.5 Space / 10 Unit | 1.5 Space / 10 Unit | N/A |
| MAXIMUM VEHICULAR PARKING | | 1.5 Spaces / 1,000 sf | 1.5 Spaces / 1,000 sf | 1.3 Spaces / 1,000 sf | 1.7 Spaces / 1,000 sf | 1.7 Spaces / 1,000 sf | 1.3 Spaces / Unit | 1 Spaces / Unit | N/A |

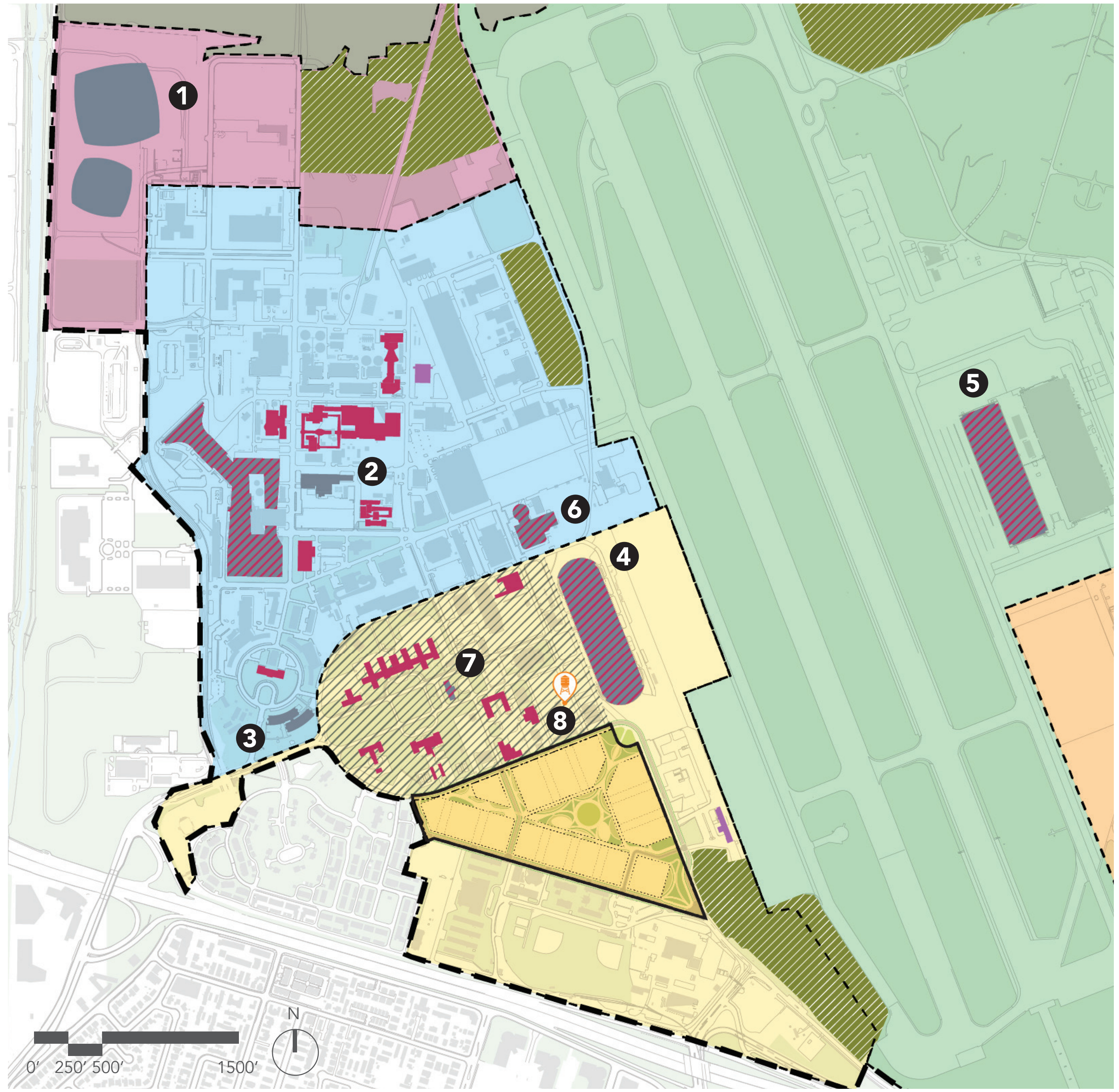
# ARCHITECTURAL CHARACTER

## UNDERSTANDING THE NASA AMES CONTEXT

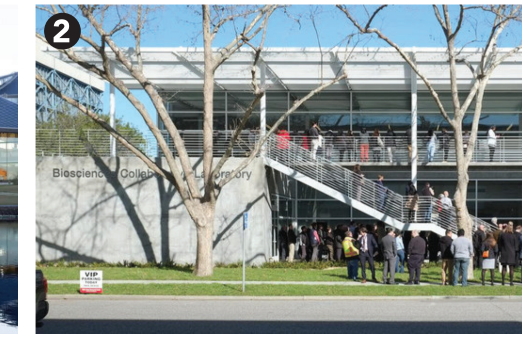
NASA ARC has, as a result of incremental planning and development since the 1930's, developed a significant diversity of architectural forms, styles and materials.

Each building built in its own time, for its own time and uniquely built for its own purpose has established a place defined by a spirit of continual evolution and reinvention.

**Standards:** The architectural character of Berkeley Space Center at NASA Research Park shall reflect its own time and the unique purposes of the research buildings, conveying a keen sense of place and identity, both for the immediate Berkeley Space Center area and within the broader NASA ARC, complementing the historic buildings and avoiding simulacrum.

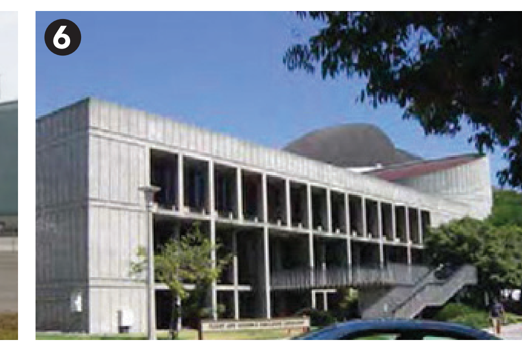














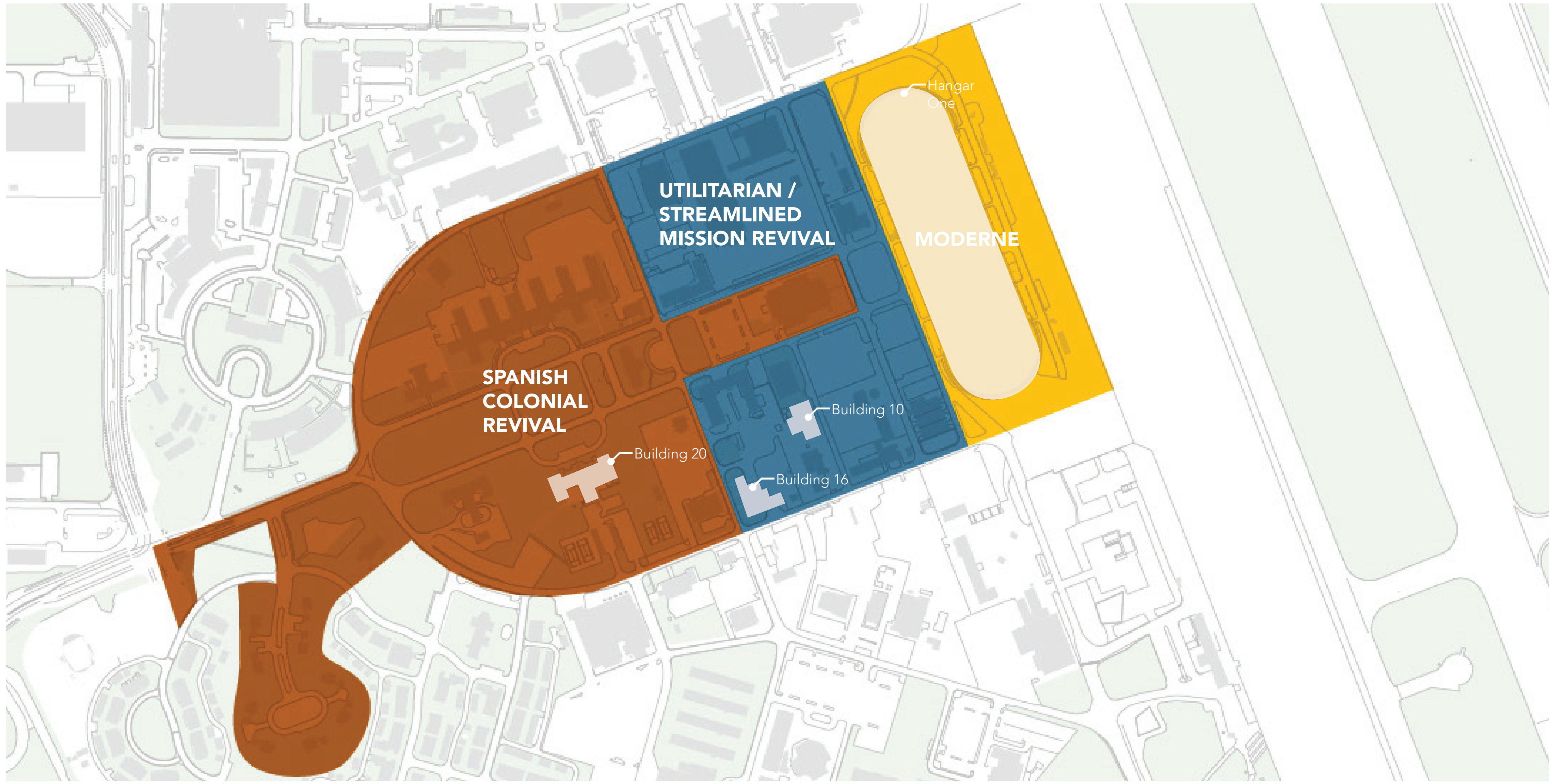

- Berkeley Space Center at NASA Research Park
- Wetlands
- Eastside / Airfield
- Bay View
- Ames Campus
- Shenandoah Plaza
- Air National Guard
- NASA Research Park
- NR Listed Buildings
- NR Eligible Buildings
- Historic Water Tower
- Key Neighboring Buildings
- Approximate Burrowing Owl Habitat
- NASA Ames Research Center

1. Google Bay View
2. NASA Ames Biosciences Research Facility
3. NASA Sustainability Base
4. Hangar One
5. Hangar Two
6. NASA Flight and Guidance Simulation Laboratory
7. Shenandoah Plaza
8. US Geological Survey Lab

# ARCHITECTURAL CHARACTER

## HISTORIC ARCHITECTURAL CHARACTER ALONG WESCOAT ROAD

Shenandoah Plaza Historic District has three architectural character zones within the NAS Sunnyvale Historic District (Shenandoah Plaza): spanish colonial revival, utilitarian / streamlined mission revival, and moderne.




Architectural Style Zones within the NAS Sunnyvale Historic District


New Development within Utilitarian/ Streamlined Mission Revival Area

Building 10

Building 16

Building 20

Hangar One

# ARCHITECTURAL CHARACTER

## PROJECT ARCHITECTURAL CHARACTER ALONG WESCOAT ROAD

Respecting the massing and historic character of the architecture along the northern edge of Wescoat road while also following the spirit of continual evolution and reinvention of NASA ARC creates opportunities for inspired, well crafted and scaled architecture that will enrich Berkeley Space Center and NASA ARC as a whole.

**Standard:** Architectural character shall both complement the historic character of Shenandoah Plaza Historic District and provide a contemporary response to the new development as an urban research district.

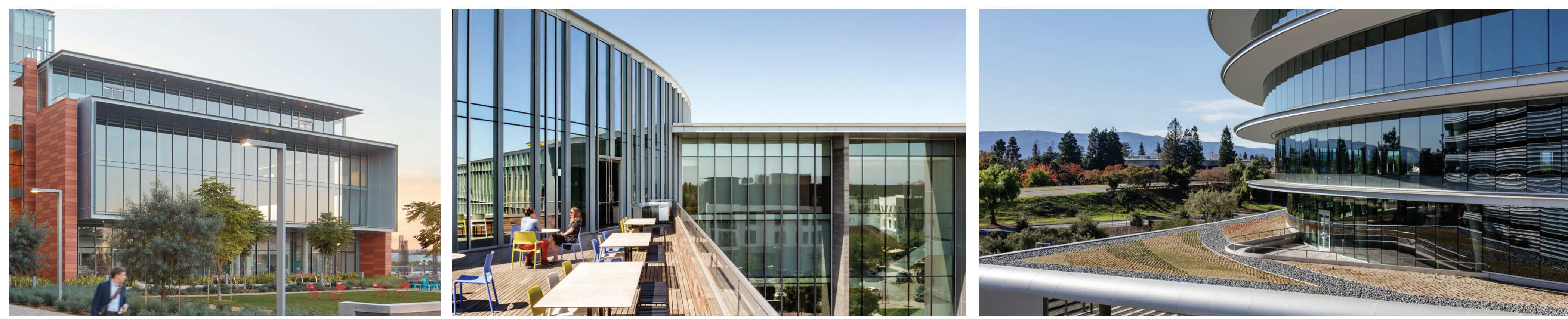
Facades shall be articulated to convey a sense of human scale, denote building entries and reinforce the streetwall.

**Guidelines:** New development should consider architectural character that considers future focused design that speaks to the space science focuses of the program.

New development should consider massing and facade strategies that break buildings into a traditional triad of base, middle and top:

- Base corresponds to the two story height limit of the Shenandoah Plaza Historic District.
- Step back creates middle zone.
- Top zone of the building (top floor and/ or mechanical penthouse) articulated to address the relationship to the sky.

Building Massing Response - Base/Middle/Top



Step Back Creates Roof Terraces

Materials Respond to Historic Character

BUILDINGS
# ARCHITECTURAL CHARACTER

## OVERALL PROJECT BUILDING MATERIALS

According to the spirit of continual evolution and reinvention at NASA ARC, the significant diversity of existing material and color palettes enable the Berkeley Space Center to create its own material and color identity, while still being complementary to the existing district.

**Standards:** Utilize durable building materials and systems that minimize long-term maintenance operations and costs, while contributing positively to the innovation district's character and sustainability goals.

Massing, material, and color shall be modulated to create a human-scaled public realm that minimizes the appearance of building bulk and mass and avoids visual clutter.

**Guidelines:** Within Berkeley Space Center at NASA Research Park, materials should relate to its purpose and research uses, providing an inspirational and energizing backdrop for the hub of activity.

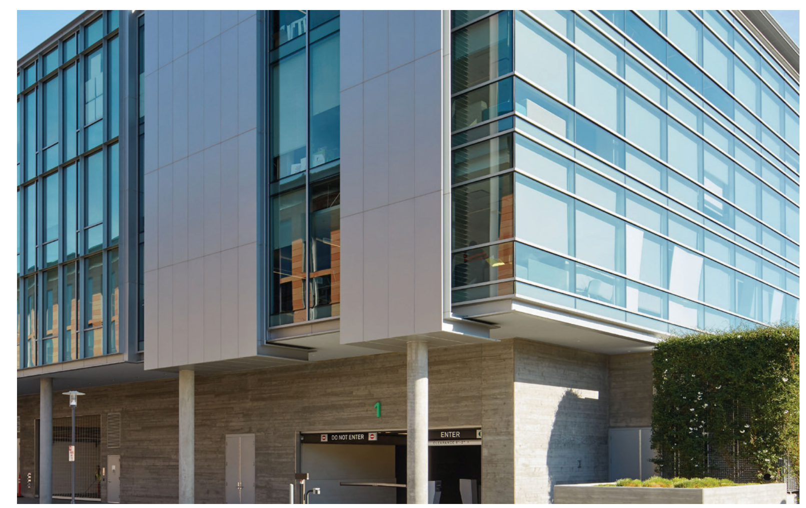
Materials such as metal panel, exposed and painted structural steel, cast concrete, glass curtain wall, glazing with frit inlay or colors, terracotta, aluminum frames, plaster soffit and natural wood soffits are likely to inform material selection.

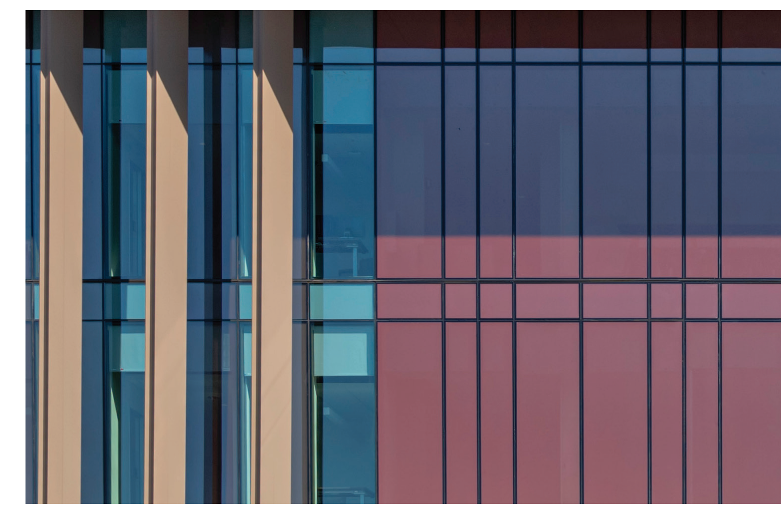

Natural Wood Soffit


Metal Panel, Glass Curtain Wall with Aluminium Extrusions


Glass Curtain Wall

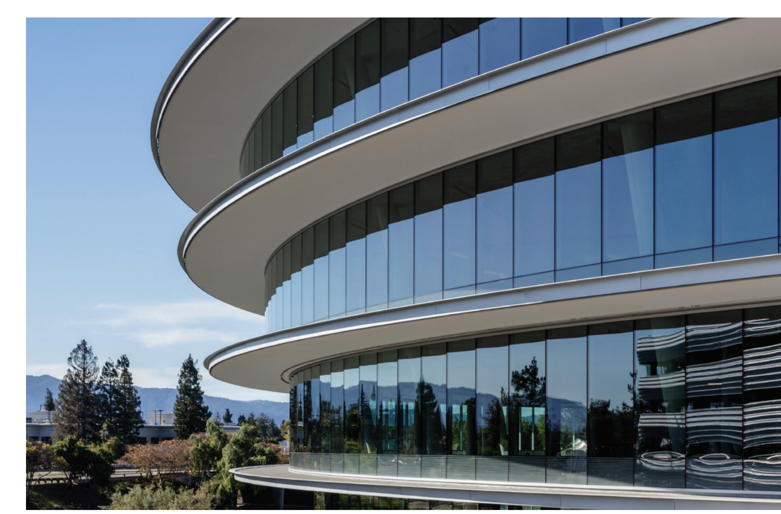

Cast-in-Place Concrete, Glass Curtain Wall, Painted Structural Steel


Metal Panel


Terracotta Colored Glazing


Cast Concrete, Glass Curtain Wall


Painted Aluminium Extrusions


Plaster Soffit, Metal Fascia

# ARCHITECTURAL CHARACTER

## OVERALL PROJECT FACADE ARTICULATION

The form and articulation of facades seeks to support the project principles for building design through thoughtful, and innovative design that shapes a vibrant public realm, while supporting and expressing the functions within each building.

**Standards:** Facades shall be articulated to convey a sense of human scale, denote building entries and reinforce the design of streetwall.

Material, color and texture use changes can create visual diversity through varied facade treatments.

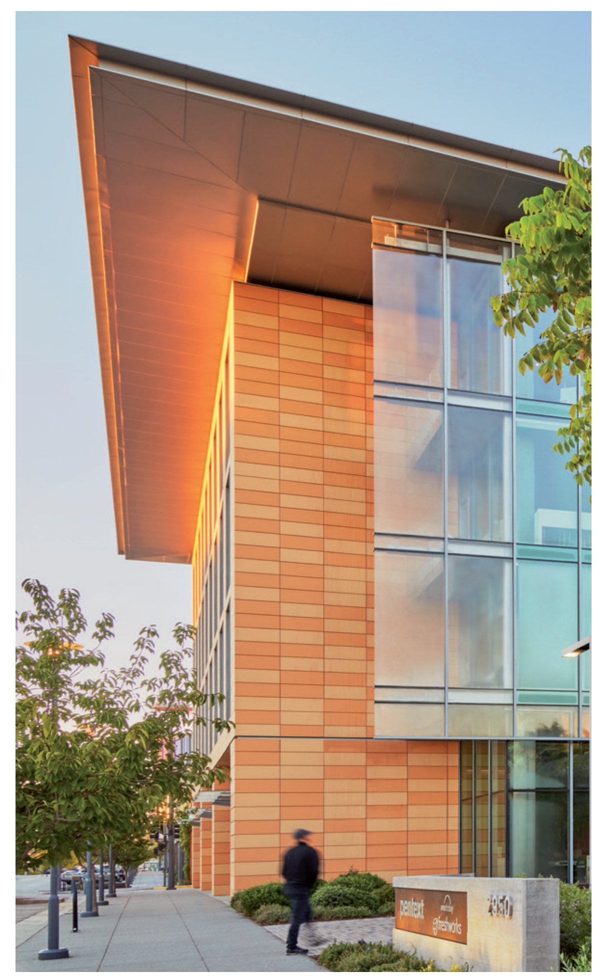
**Guidelines:** Consider utilizing facade depth to shade glazing, improve interior thermal comfort and reduce glare.

- Wall and solid mass wall should be carefully studied to create the most energy-efficient envelope. Curtain walls of all glass are not recommended.
- Natural light is encouraged in all spaces and natural light harvesting strategies should be implemented whenever possible. For example, areas facing north or shaded by surrounding buildings, trees, and topography can introduce more glazing. Increasing ceiling height at the perimeter or using light interior materials can harvest more natural light.
- When possible, windows should be strategically placed to introduce desirable exterior views from interior spaces. Both panoramic and carefully framed views of nature are desired.
- Views into the interior of the buildings are encouraged at the ground floor, especially when there are active program uses such as lobbies or circulation. Large areas of highly reflective glass are not recommended, as this prevents views directly into spaces.
- All windows should have glare protection strategies. When necessary, privacy strategies and blackouts should also be added. If mini-blinds, shades, or curtains are used, they should look purposeful and cohesive when viewed from outside.
- Operable windows or other methods of natural ventilation are encouraged.

Utilizing Facade Depth to Shade Glazing

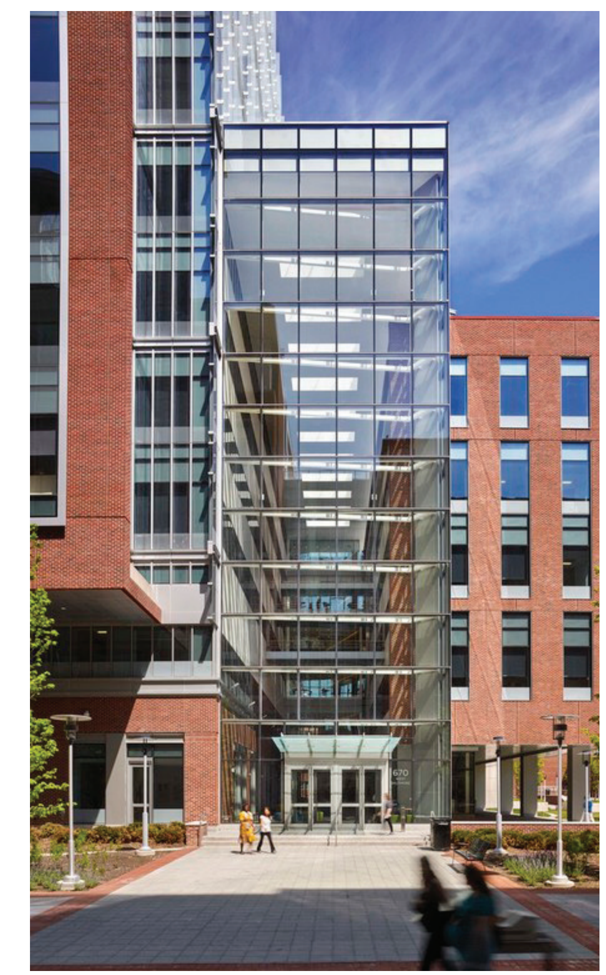
Utilizing Facade Depth to Shade Glazing

Material, Color and Texture Use Changes



Reinforce Streetwall

Denote Building Entry through Articulation



Denote Building Entry through Material Shifting

# ARCHITECTURAL CHARACTER

## OVERALL PROJECT FENESTRATION

Introducing transparency to interior spaces can change how they are experienced. Strategically placed windows enhance a healthy environment with connections to nature. Proper sun control with shading devices enhances human comfort.

Fenestration can be vertical, horizontal, universal (curtain wall) or punched. For all fenestration designs, it is important for design teams to consider the aesthetic of the exterior as well as the quality of interior spaces.

**Guidelines:**

- Wall and solid mass wall should be carefully studied to create the most energy-efficient envelope. Curtain walls of all glass are not recommended.
- Natural light is encouraged in all spaces and natural light harvesting strategies should be implemented whenever possible. For example, areas facing north or shaded by surrounding buildings, trees, and topography can introduce more glazing. Increasing ceiling height at the perimeter or using light interior materials can harvest more natural light.
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- Operable windows or other methods of natural ventilation are encouraged.


Vertical


Universal Grid


Horizontal


Punched Window

BUILDINGS
# BIRD FRIENDLY DESIGN

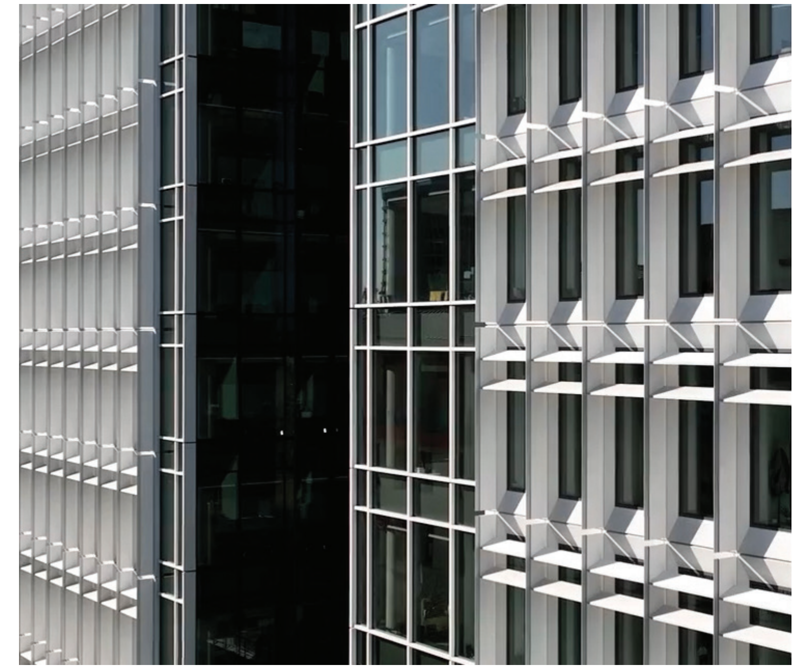
Tidal marshes are highly productive ecosystems that support migratory birds as roosting and over-wintering habitats on the Pacific Flyway. NASA ARC's proximate location to the Stevens Creek Shoreline Nature Study Area Preserve and other shoreline open spaces create challenges related to bird safety. New developments should consider best practices for bird-friendly building design.

**Standard:** As required, all building facades shall be designed with depth of shading members, fitted glass, and solid materials. Building Designs shall comply with the California Green Building Standards Code (CALGreen) Non-Residential Voluntary Measure : A5-107 Bird-friendly Building Design.

**Guidelines:** Going beyond CALGreen, incorporate the following bird-friendly strategies to a height of 60 feet above grade:

Lighting
- For office and commercial buildings, interior light "pollution" should be reduced during evening hours through the use of a lighting control system programmed to shut off during non-work hours and between 10 p.m. and sunrise; where interior lighting is used at night, window coverings should be closed to block light transmission adequately.
- Exterior lighting should be directed downward and screened to minimize illuminating the exterior of the building at night, except as needed for safety and security.


Fritted glazing


Building Shading


Limited Window-to-wall Ratio

Glazing
- Glazing shall not appear clear to birds. Untreated glass skyways or walkways, freestanding glass walls, and transparent building corners should be avoided; if any such features are included in the project design, all glazing used in any such features shall be 100% treated with a bird-friendly glazing treatments.
- Avoid the use of highly reflective glass as an exterior treatment, which appears to reproduce natural habitat and can be attractive to some birds.
- Limit reflectivity and prevent exterior glass from attracting birds in building plans by utilizing low-reflectivity glass (15% or lower).
- Use low-reflectivity glass or other bird safe glazing treatments for the majority of the building's glass surface, not just the lower levels.

Building Envelope
- Building envelope design should aim to prevent birds from flying into glass. Strategies can include architectural elements such as screens, overhangs, louvers, and sun shades. A limited window-to-wall ratio or limits to large sections of clear glass can also reduce bird collisions.

# MECHANICAL SCREENING

**Standards:**
Mechanical screening shall extend up to 25 feet with 45 degree setback above the maximum building height limit for the development along Cody Road and Wescoat Road.

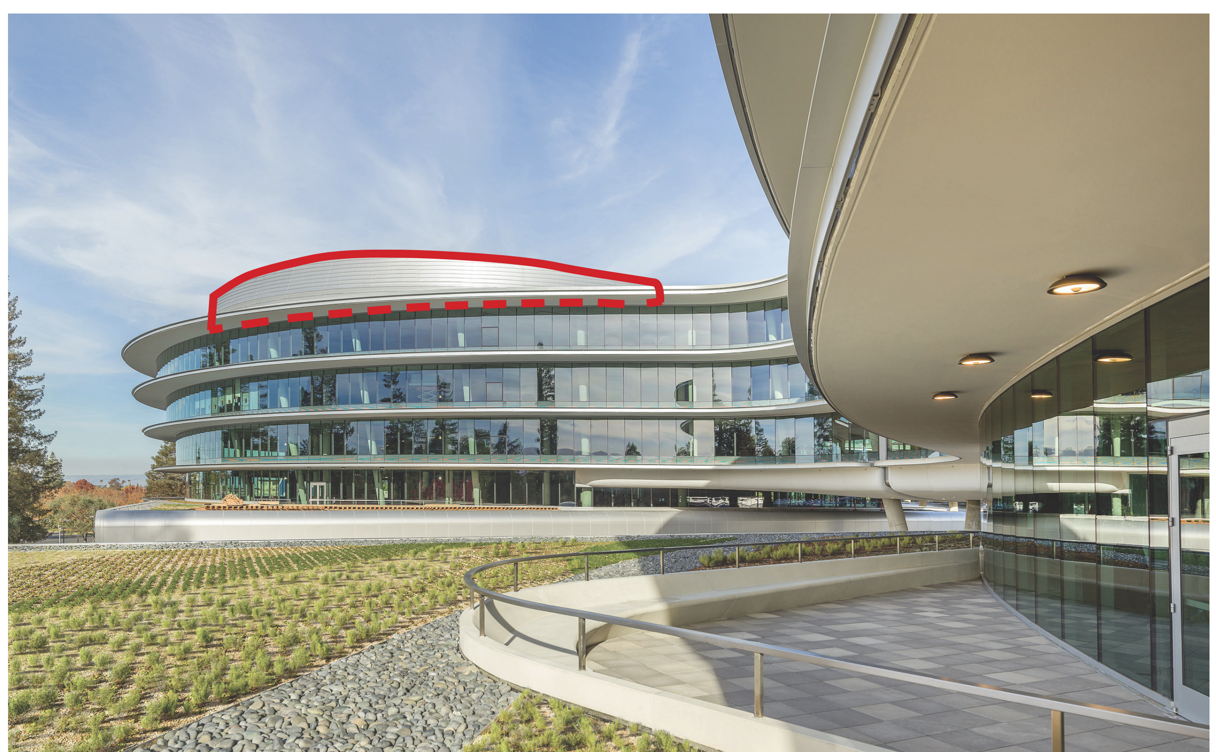
Mechanical equipment and rooftop appurtenances must be screened. Mechanical equipment must not be visible from the street level and views from adjacent, taller buildings shall be minimized.

**Guidelines:**
Mechanical equipment placed on the roof should be fully screened from view of the public streets, with a limited amount of minor protrusions allowed for exhaust fans and other small appurtenances. The shape and massing of the mechanical penthouse enclosure should be designed as part of the whole building and should create a balanced composition with the whole building massing.

Use appropriate acoustical design strategies to prevent noise from mechanical equipment placed on the roof from migrating to occupiable spaces below. Examples are spring dampers or floating slabs.


Vertical Extension of Building Facade, Integral to Building Form


Integrated into the Facade Design


Set Back but Integrated into the Design of the Overall Building Form


Follows the Geometric Form of the Building

# SERVICE ENTRIES AND LOADING

It is important to screen back of house areas, such as loading docks and service areas, from main public spaces and public view.

**Standards:** Service, security, or garage doors shall not be placed along facades adjacent to public streetscapes, plazas, and parks. If this cannot be avoided, the doors may be placed in a manner that reduces their visibility by recess or other methods that incorporate them into the greater architecture of the building.

**Guidelines:**
Interior loading docks with overhead coiling doors are aesthetically preferred if possible within programmatic, technical, and spatial constraints.

As part of the walkable environment, back of house area exterior walls should be designed with attention to human scale, details, and materials. Since activation through transparency is not possible in these areas, use of texture change, screening landscape, green walls, and warm facade lighting to create a more welcoming environment is encouraged.


Screened Loading Dock


Recessed Service / Parking Entry


Recessed Service Entry Designed as Part of the Building Facade


Loading Dock Recessed into Building Facade

# WORKING YARDS

Working yards are expected, though not required, within the development as tenants are engaged in the pursuit of knowledge (advanced research and process design) and/or creation of products (prototyping, testing and development) and may need larger, exterior laydown and maneuvering space. Research is expected in science, engineering and technology intensive fields, including but not limited to, electric vehicles (manned and unmanned), telecommunications, remote sensing, space missions, defense and military, biology and physics, bioengineering and aerosciences, and will most likely be aligned with on-going tenant research programs in support of scientific missions.

**Guidelines:**
Building Interface: Working yards are partially enclosed by the building envelope, just outside a high-bay extended building space and partially enclosed by privacy screening. Functionally located adjacent to the building's service entrance and loading docks allows for ease of access.

Security: Tenant's private research and development activities will be conducted within high security zones due to for any number of reasons, up to and including air quality and /or other emission containment, intellectual property protection, and property security and safety, and will not be accessible to the general public. Intentionally limited access points to the working yards will be provided.

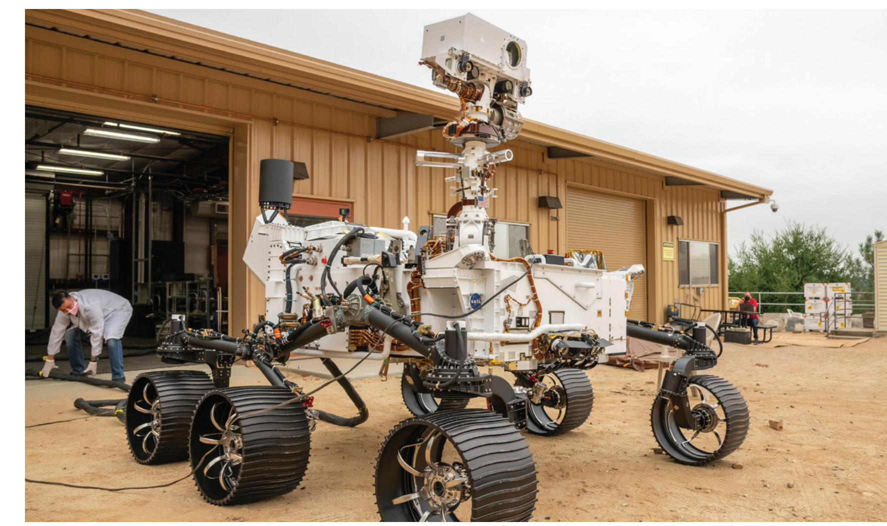
**Standards:** Screening: On their sidewalk edge, working yards shall be screened from direct public view based on tenant needs, security, and/or safety for passers-by. If programmatic constraints prevent the use of semi-transparent vertical screens, vegetated screen walls and/or building material textural variation shall create a visually engaging environment.

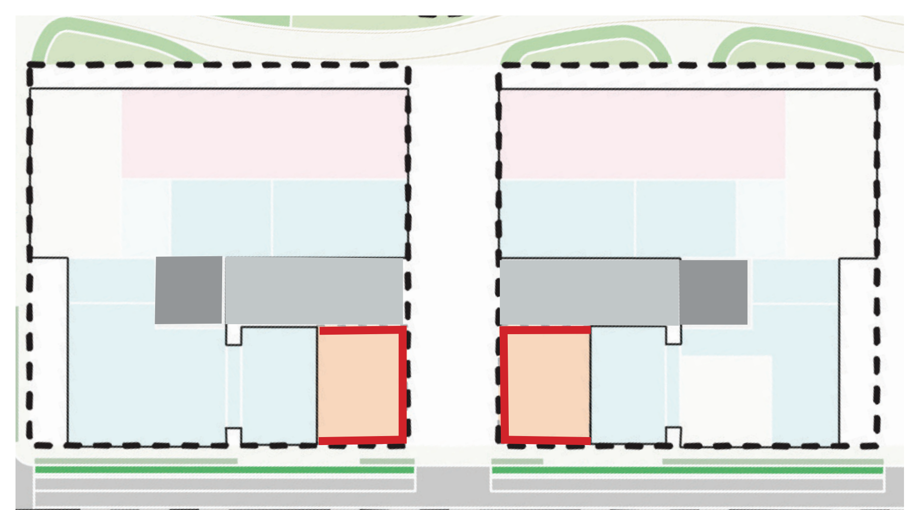
Working Yard
Loading Zone
Security Fence
Loading Dock
Buildable Area Boundary
Parcel Boundary

Zoox Robotaxi Testing, California


Tank Storage, Generators, Service Yard


UMich Drone Testing Facility


JPL Mars Rover Yard


Illustrative Working Yards in Project Site Plan

Illustrative Working Yards in Project Site Axonometric

# VEHICULAR PARKING

**Standards:**
Driveways shall be minimized to the extent feasible on the primary bike network to minimize conflicts between bikers and vehicles.

Typical floor height shall be 10 feet.

Off-street parking shall be designed so that a vehicle will not have to back into a public right-of-way when exiting.

Ramping: The maximum slope of any driveway or ramp shall be 20 percent.

Ramps and ramped floors shall not face a street or publicly accessible open space.

No off-street parking shall be located in required front or street-side yards.

Screening: All parapet edges and/or facades shall be designed to screen or reduce the visual impact of vehicles from public view at all levels

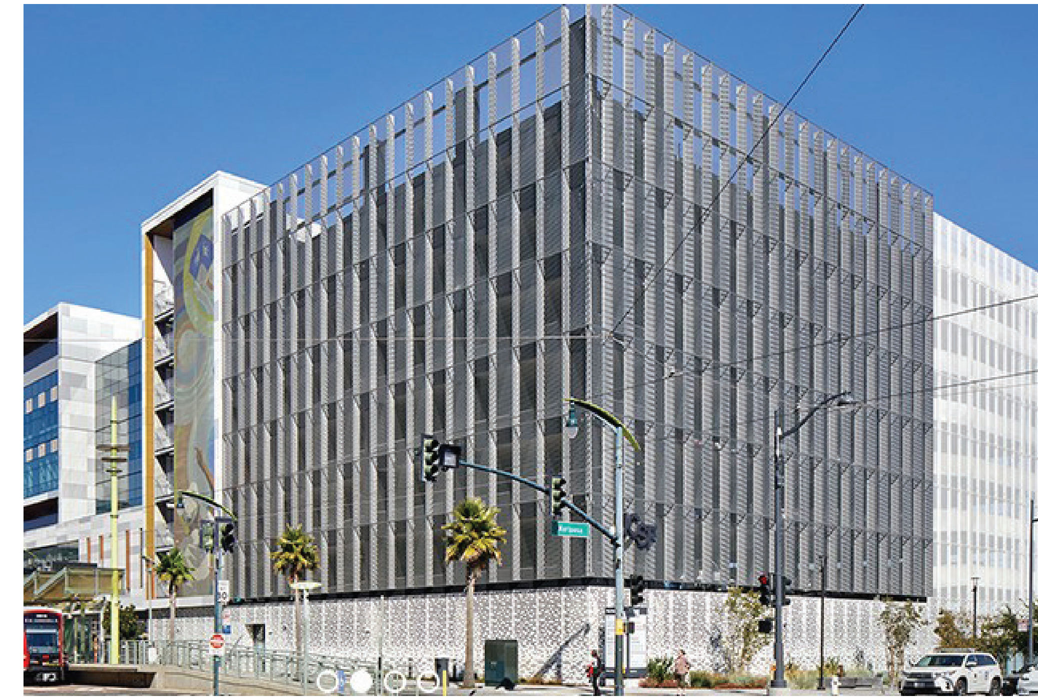
Lighting: Interior lighting fixtures of parking levels shall not be directly visible from outside of the parking facility.

**Guidelines:**
Stand-alone parking structures should encourage the following:
Level floors
Ramps are at the center of the garage or external to the garage.

Design of the parking structures should use building massing, articulation, and other facade treatments that are consistent with neighboring buildings.

Where pedestrians and cyclists need access to parking areas, provide clear and convenient routes from the sidewalk.

Encourage the construction of parking structures that can be redeveloped or repurposed in the future.



Parking Structure with facade treatments

# BIKE AND SCOOTER PARKING

**Class I Bike Parking:**
Class I bike parking offers higher-security, longer-term bicycle parking. This class usually includes bike lockers, secure rooms, or staff bike stations. Given their higher-security nature, access can be controlled by keys, card access, or other secure methods.

**Class II Bike Parking:**
Class II bike parking is meant for short-term bicycle parking. These racks provide a point of contact to lock the bicycle frame but are less secure compared to Class I facilities.

**Standards:**
Convenient access to bicycle parking facilities shall be provided. Where access is via a sidewalk or pathway, curb ramps shall be installed where appropriate.

Lighting shall be provided in all bicycle parking areas. In both exterior and interior locations, lighting of not less than one foot-candle of illumination at ground level shall be provided.

**Guidelines:**
Some Class I and Class II parking should be designed to accommodate larger or non-standard bikes, such as cargo bikes, bikes with trailers, and e-bikes.

Approximately 75% of the designated bicycle parking spaces can be allocated to Class I (long-term) facilities, while the remaining 25% can be designated for Class II (short-term) usage. The desirable breakdown between Class I and II parking can vary depending on type of land use. Bicycle parking facilities and access aisles should be designed such that columns, walls, or other obstructions do not interfere with normal bicycle parking maneuvers and with parked bicycles.

Parking facilities should support bicycles in a stable position without damage to wheels, frame, paint, or components.

Bicycle and vehicle parking areas should be separated by a physical barrier or sufficient distance to protect parked bicycles from damage by vehicles.

Where bicycle parking areas are not clearly visible to approaching bicyclists, signs should be posted to direct cyclists to the facilities.

**Scooter Parking:**
Because many shared scooters do not operate with docks, scooter parking is often designated as a painted "corral" near to existing or planned Class II bike parking. Dimensions for scooter corrals are typically about 4' by 10', which can accommodate about 10 scooters (about 4 square feet/ scooter, excluding circulation). In case where there are locking requirements or charging needs, scooter racks can be placed adjacent to Class II bike racks. Scooter can also be collocated with Class II e-bike racks and/ or Class II bike parking that accommodates e-bike charging.

# SHUTTLE STOP AND BIKE LANE CONFIGURATION

**Guidelines:**
Key features of shuttle stops include:
Multi-modal Integration: Shuttle stops integrate multiple forms of transportation, such as buses and shuttles. Access to other modes like bicycles and shared vehicles, with convenient connecting pedestrian pathways, allows users to easily transfer between them.

Amenities: To enhance user experience, these stops can provide amenities such as waiting areas, real-team transportation information displays, WI-FI, and close access to nearby retail services like coffee shops.

Shared Mobility Services: Beyond traditional public connections, shuttle stops often connect to shared mobility services like car-sharing, bike-sharing, ridesharing, and e-scooters.

Bus and shuttle stops will likely be on streets with on street bikeways. This includes bus/shuttle stops on Bailey Road at the pedestrian promenade, as well as a potential VTA bus stop on Wescoat Road at Bailey Road.

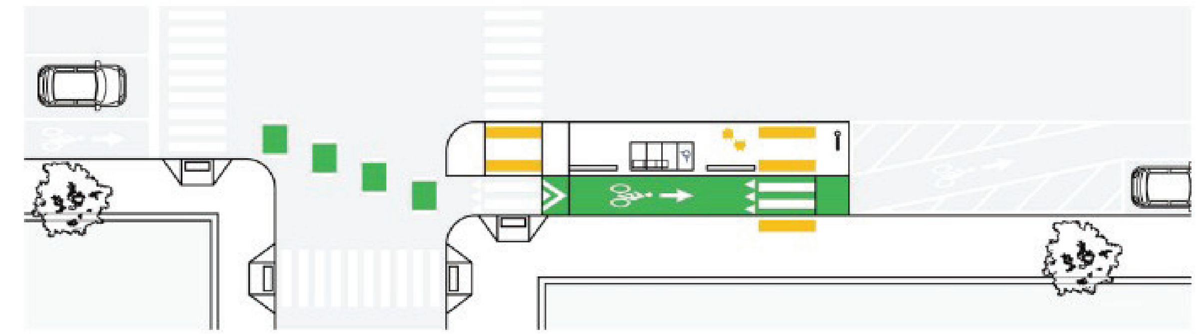
Typical design practice is to allow bike facilities to "wrap around" behind the bus stop to reduce conflicts.

Depending on the street cross section, design options include:

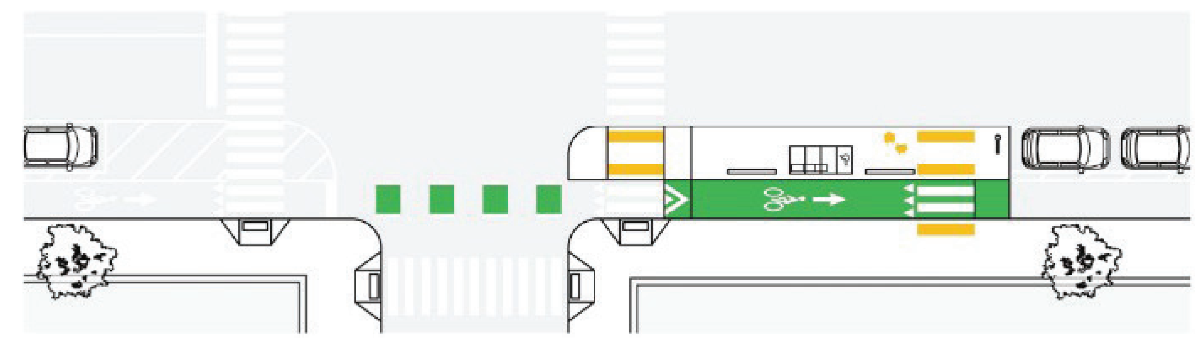
**On-street Parking/Loading at Curb:** Under this configuration, buses would stop in the travel lane (if appropriate given traffic volumes and speeds) and bicyclists would weave behind the bus stop and then return biking to the left of parked cars and the vehicle travel lane. This configuration is generally suitable for Class II bike facilities.

**On-street Parking/Loading Adjacent to Travel Lanes:** Under this configuration, buses would stop in the travel lane (if appropriate given traffic volumes and speeds), and the bikeway would remain in between parked cars and the curb. This configuration is generally suitable for Class IV separated bike facilities.

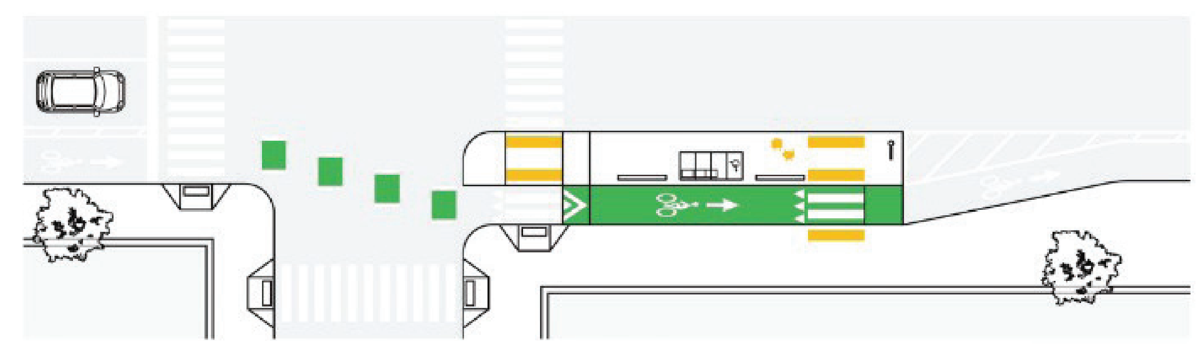
**No On-street Parking or Loading:** When no on-street parking or loading exists, bicyclists would weave behind the bus stop. This configuration would require a slightly wider curb to curb cross section at the stop compared to the rest of the street. This configuration is generally suitable for buffered Class II bike facilities



Bike lane and Shuttle Stop with Curbside On-Street Parking



Bike lane and Shuttle Stop with On-Street Parking Adjacent to Travel Lanes



Bike lane and Shuttle Stop with No On-Street Parking

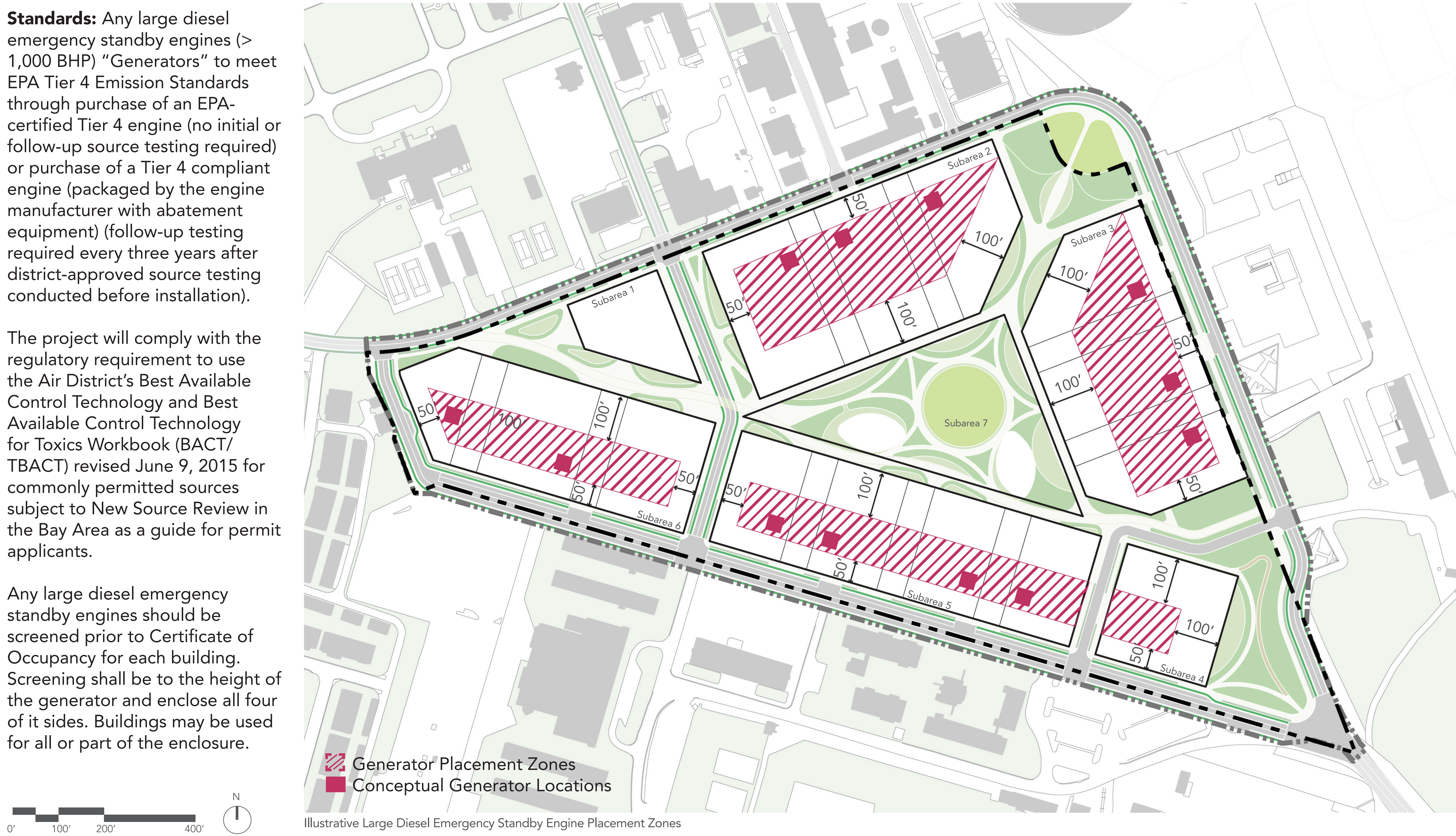
BUILDINGS

# LARGE DIESEL EMERGENCY STANDBY ENGINES

**Standards:** Any large diesel emergency standby engines (> 1,000 BHP) “Generators” to meet EPA Tier 4 Emission Standards through purchase of an EPA-certified Tier 4 engine (no initial or follow-up source testing required) or purchase of a Tier 4 compliant engine (packaged by the engine manufacturer with abatement equipment) (follow-up testing required every three years after district-approved source testing conducted before installation).

The project will comply with the regulatory requirement to use the Air District’s Best Available Control Technology and Best Available Control Technology for Toxics Workbook (BACT/ TBACT) revised June 9, 2015 for commonly permitted sources subject to New Source Review in the Bay Area as a guide for permit applicants.

Any large diesel emergency standby engines should be screened prior to Certificate of Occupancy for each building. Screening shall be to the height of the generator and enclose all four of it sides. Buildings may be used for all or part of the enclosure.




Illustrative Large Diesel Emergency Standby Engine Placement Zones

# PHOTOVOLTAIC AND BATTERY SYSTEMS

**Photovoltaic Systems:**

Minimum Prescriptive Approach:

Per 2022 California Code of Regulations, Title 24, Section 140.10, the development will install photovoltaic (PV) systems meeting or exceeding the minimum qualification requirements of Reference Joint Appendix JA11. The PV capacity in kW shall meet or exceed the PV system size determined by Equation 140.10-A.

Or the total of all available Solar Access Roof Areas (SARA) multiplied by 14 W/ft2, to be determined in later design stages.

Performance Approach:

Energy code compliance may be demonstrated through on whole building energy performance, which may supersede the prescriptive requirement for PV Array, to be determined in later design stages. PV system will be connected to the BESS system.

**Battery Storage Systems:**

Minimum Prescriptive Approach:

Per 2022 California Code of Regulations, Title 24, Section 140.10, the development will also have a battery storage system meeting the minimum qualification requirements of Reference Joint Appendix JA12. The rated energy capacity and the rated power capacity shall be not less than the values determined by Equation 140.10-B and Equation 140.10-C;

Performance Approach:

Energy code compliance may be demonstrated through on whole building energy performance, which may supersede the prescriptive requirement for BESS, to be determined in later design stages.


Photovoltaic System Capacity

| Subarea | PV Capacity (kW) | BESS Energy (kWh) | BESS Power (kW) |
|---|---|---|---|
| 1 | 41.80 | 40.98 | 9.61 |
| 2 | 516.82 | 936.67 | 221.06 |
| 3 | 459.26 | 833.54 | 196.72 |
| 4 | 0.00 | 0.00 | 0.00 |
| 5 | 431.04 | 776.39 | 183.22 |
| 6 | 412.18 | 513.83 | 120.89 |
| 7 | 6.60 | 6.47 | 1.52 |
| **Total** | **1,868** | **3,108** | **733** |

Minimum Prescriptive Approach Values

# APPENDIX

**Table 2-4. Summary of Proposed Maximum and Minimum Development Parameters and Standards in Proposed Development Guidelines for the CEQA Proposed Project and the CEQA Reduced Density Alternative**

| Topic/Page | Standard | Minimum Development Parameter (if applicable) | Maximum Development Standard (if applicable) |
|---|---|---|---|
| Site: maximum development parameters | • Building height<br>• Mechanical screens<br>• Setbacks in stepdown zone along Wescoat Road and Cody Road in Subareas 1, 2, 3, and 6 | n/a | • 80-foot building height in all Subareas except Subarea 7<br>• 30-foot building height in Subarea 7<br>• 105-foot mechanical screens<br>• 15-foot set back required at 35-foot stepdown zone |
| Open space: acreage | • Required open space | 10 acres | n/a |
| Open space: open space network | • Hangar Commons planting layout and palette shall maintain a clear view corridor from the Central Green to Hangar One.<br>• Planting outside of Berkeley Space Center's leasehold boundary must comply with NASA height requirements to accommodate Hangar One door opening and aircraft movement. | n/a | n/a |

# STANDARDS SUMMARY

| Topic/Page | Standard | Minimum Development Parameter (if applicable) | Maximum Development Standard (if applicable) |
|---|---|---|---|
| Open space: program activation | • The Promenade shall be designed as a multi-modal, car-free pathway, linking the historic Shenandoah Plaza to the airfield through the center of the project.<br>• Publicly accessible seating terraces and patios shall be located adjacent to the Promenade and along the interior emergency vehicle access (EVA) loop.<br>• The character of these areas shall relate to the building spill-out zones.<br>• Spill-out zones for terraces and patios are designated as shown along frontages. | n/a | n/a |
| Open space: hardscape | • The character of the hardscape materials, including grain, color and texture, shall reflect the industrial history and qualities of the site while maintaining a cohesive relationship with the architectural material palette and avoiding false historicism.<br>• All paving surfaces shall use materials that can withstand daily use and wear and tear.<br>• Materials shall be durable, made with natural materials, and utilize predominantly warm tones. | n/a | n/a |
| Open space: site lighting | • Site elements, including streetlights, pedestrian poles, bollards, litter bins, bicycle racks, benches, special features, etc., shall maintain a cohesive identity that complements the overall landscape and architectural material palettes and avoids false historicism.<br>• Lighting shall be provided at the minimum levels required by the Illumination Engineering Society of North America (IESNA) lighting guidelines and relevant local code requirements, using no more light than is necessary.<br>• Minimize impacts of necessary lighting by choosing low-glare sources.<br>• Lighting standards and fixtures shall use efficient lighting technologies, including, but not limited, to LED technology. | n/a | n/a |

# STANDARDS SUMMARY

| Topic/Page | Standard | Minimum Development Parameter (if applicable) | Maximum Development Standard (if applicable) |
|---|---|---|---|
| | • Direct lighting away from native habitats by employing directional lighting with baffles, non-reflective tinting on windows, and other mechanisms.<br>• Lighting fixtures shall comply with dark sky principles outlined by the International Dark-Sky Association (IDA), which involve incorporating shielding to restrict light emission beyond a 90-degree angle.<br>• Lighting design and fixtures shall follow a clear hierarchy and be in scale with the context and surroundings. | | |
| Open space: planting characteristics | The palette and irrigation shall comply with all local relevant regulatory requirements. | n/a | n/a |
| Buildings: land use and parking | • Location within the Subareas<br>• Bike parking ratio<br>• Vehicular parking ratio | n/a<br>X | n/a<br>n/a<br>X |
| Buildings: architectural characteristics | • The architectural character of Berkeley Space Center shall reflect its own time and the unique purposes of the research buildings, conveying a keen sense of place and identity, both for the immediate Berkeley Space Center area and within the broader NASA Ames Research Center, complementing the historic buildings and avoiding simulacrum.<br>• Façades shall be articulated to convey a sense of human scale, denote building entries, and reinforce the design of streetwall. Material, color and texture use changes can create visual diversity through varied façade treatments. | n/a | n/a |

| Topic/Page | Standard | Minimum Development Parameter (if applicable) | Maximum Development Standard (if applicable) |
|---|---|---|---|
| | • Architectural character shall both complement the historic character of Shenandoah Plaza Historic District and provide a contemporary response to the new development as an urban research district. Façades shall be articulated to convey a sense of human scale, denote building entries and reinforce the design of the streetwall.<br>• Durable building materials and systems that minimize long-term maintenance operations and costs shall be used, contributing positively to the innovation district's character and sustainability goals. Massing, material, and color shall be modulated to create a human-scaled public realm that minimizes the appearance of building bulk and mass and avoids visual clutter. | | |
| Buildings: bird friendly design | As required, all building façades shall be designed with depth-of-shading members, fritted glass, and solid materials. Building designs shall comply with the California Green Building Standards Code (CALGreen) Non-Residential Voluntary Measure: A5-107 Bird-friendly Building Design. | n/a | n/a |
| Buildings: mechanical screening | • Mechanical screening height above the maximum building height. | n/a | 25 feet |
| | • Mechanical equipment and rooftop appurtenances must be screened. Mechanical equipment must not be visible from the street level and views from adjacent, taller buildings shall be minimized. | n/a | n/a |
| | • Setback for mechanical screens measured from the maximum development parameters along Wescoat Road and Cody Road | n/a | 45-degree setback |
| Building: loading docks | Service, security, or garage doors shall not be placed along façades adjacent to public streetscapes, plazas, and parks. If this cannot be avoided, the doors shall be placed in a manner that reduces their visibility by recess or other methods that incorporate them into the greater architecture of the building. | n/a | n/a |
| Building: work yards | Screening: On their sidewalk edge, working yards shall be screened from direct public view, based on tenant needs, security, and/or safety for passers-by. If programmatic constraints prevent the use of semi-transparent vertical screens, | n/a | n/a |

| Topic/Page | Standard | Minimum Development Parameter (if applicable) | Maximum Development Standard (if applicable) |
|---|---|---|---|
| | vegetated screen walls and/or building material textural variation are recommended to create a visually engaging environment. | | |
| Building: generators | Any large diesel emergency standby engines (> 1,000 brake horsepower) "Generators" to meet EPA Tier 4 Emission Standards through purchase of an EPA-certified Tier 4 engine (no initial or follow-up source testing required) or purchase of a Tier 4-compliant engine (packaged by the engine manufacturer with abatement equipment) (follow-up testing required every 3 years after district-approved source testing conducted before installation). The project shall comply with the regulatory requirement to use the Air District's Best Available Control Technology and Best Available Control Technology for Toxics (BACT/TBACT) workbook, revised June 9, 2015, for commonly permitted sources subject to New Source Review in the Bay Area as a guide for permit applicants. | n/a | n/a |
| Buildings: solar and battery storage | Minimum prescriptive approach code requirements. | Minimum Prescriptive Code Requirements | n/a |
| Vehicular Parking | Driveways shall be minimized to the extent feasible on the primary bike network to minimize conflicts between bikers and vehicles.<br><br>Typical floor height shall be 10 feet.<br><br>Off-street parking shall be designed so that a vehicle will not have to back into a public right-of-way when exiting.<br><br>Ramping: The maximum slope of any driveway or ramp shall be 20 percent.<br><br>Ramps and ramped floors shall not face a street or publicly accessible open space. | n/a<br><br>n/a | n/a<br><br>n/a |

| Topic/Page | Standard | Minimum Development Parameter (if applicable) | Maximum Development Standard (if applicable) |
|---|---|---|---|
| Bike and Scooter Parking | No off-street parking shall be located in required front or street-side yards.<br><br>Screening: All parapet edges and/or facades shall be designed to screen or reduce the visual impact of vehicles from public view at all levels<br><br>Lighting: Interior lighting fixtures of parking levels shall not be directly visible from outside of the parking facility.<br><br>Convenient access to bicycle parking facilities shall be provided. Where access is via a sidewalk or pathway, curb ramps shall be installed where appropriate.<br><br>Lighting shall be provided in all bicycle parking areas. In both exterior and interior locations, lighting of not less than one foot-candle of illumination at ground level shall be provided. | n/a | n/a |

Source: Proposed Berkeley Space Center Development Guidelines, Spring 2026.
Notes:
n/a = not applicable

BERKELEY SPACE CENTER

AT NASA RESEARCH PARK

Berkeley
UNIVERSITY OF CALIFORNIA

SKS