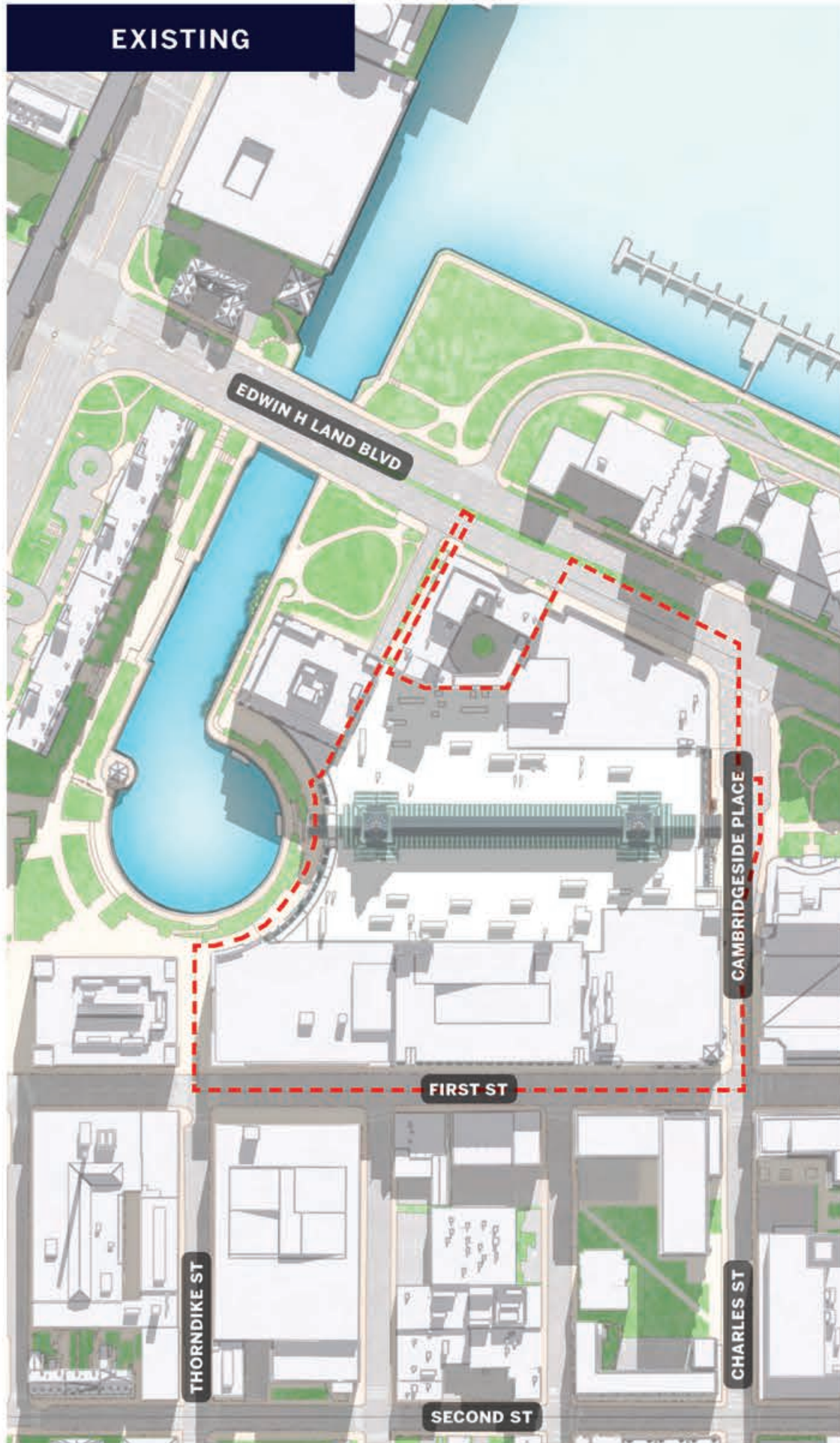
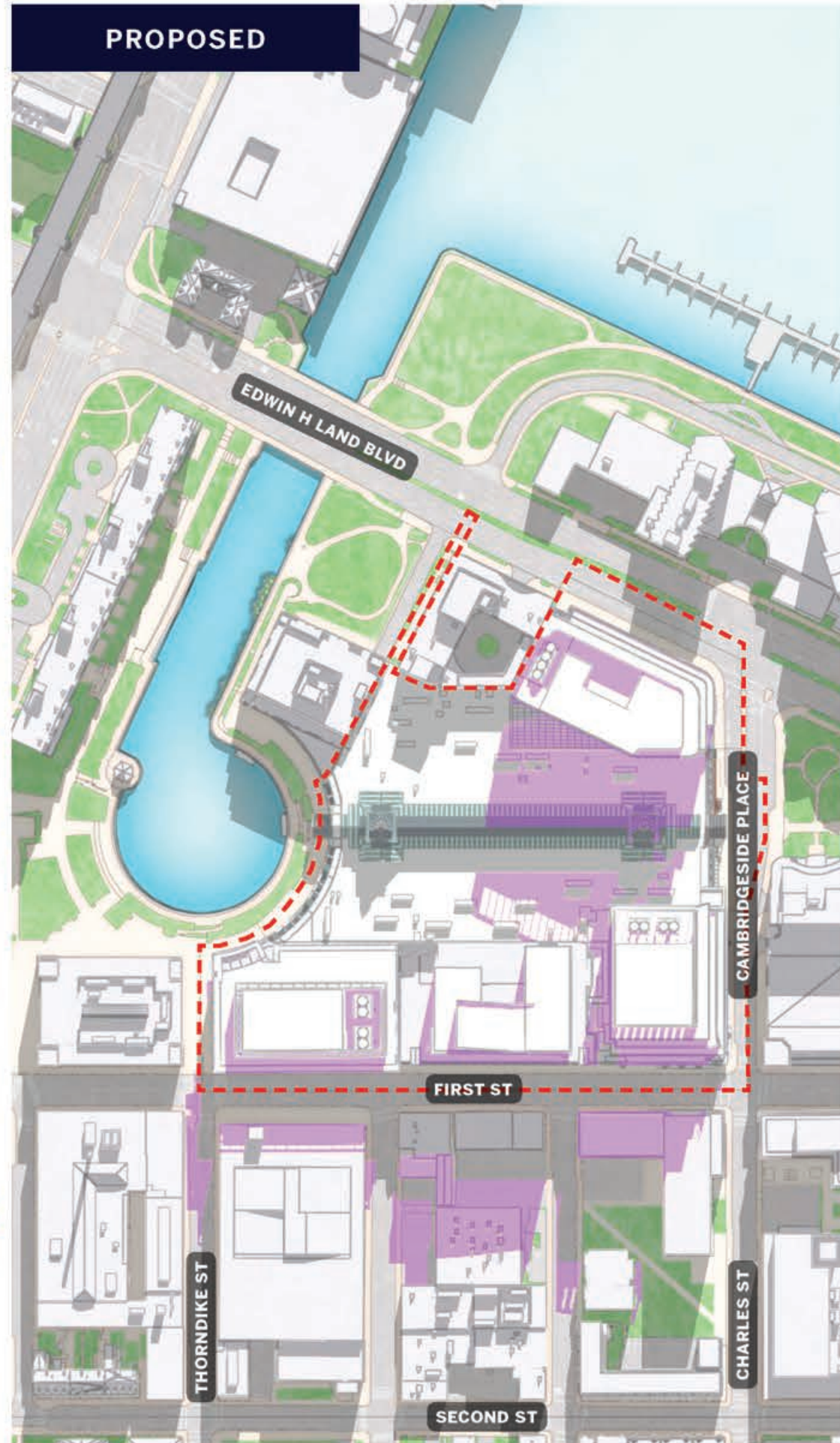


Shadow Study

EXISTING



PROPOSED

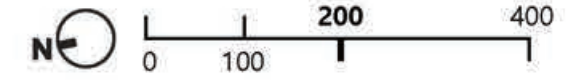


Site Massing Plan Shadow Study

March / September 21
09:00

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

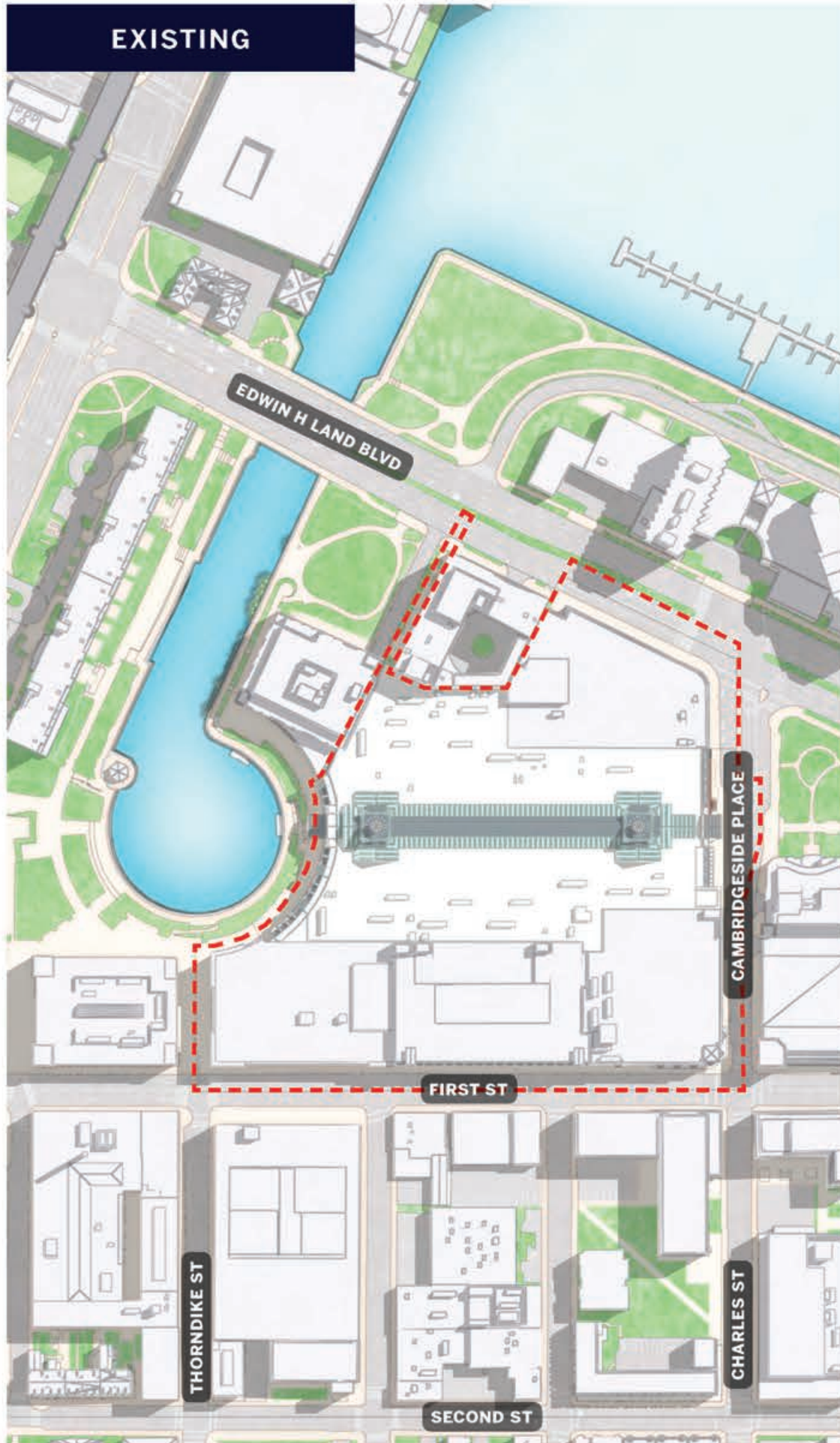
VOLUME II
EXHIBIT SMP.26



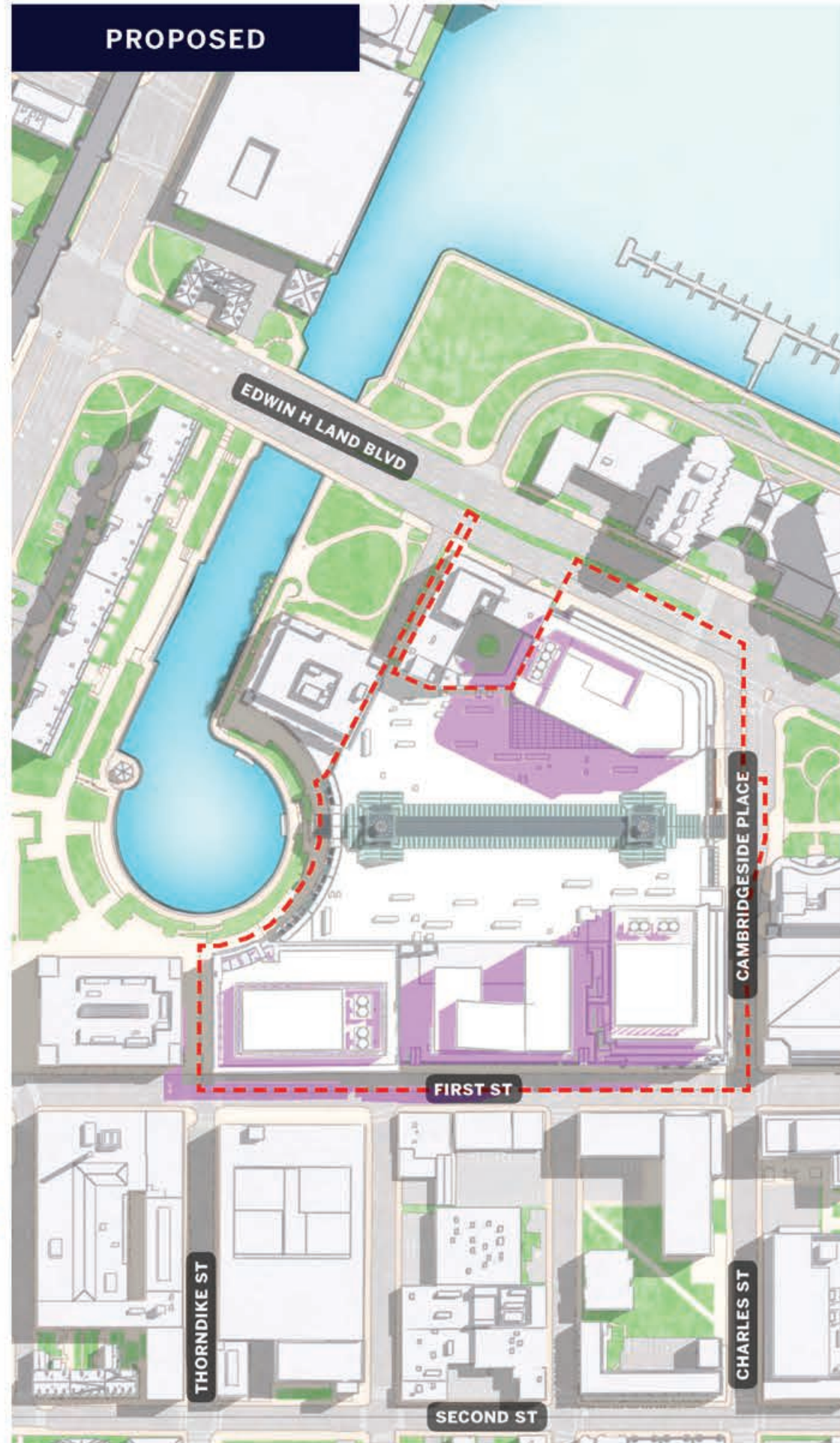
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- GREEN SPACE
- EXISTING SHADOW
- PROPOSED BUILDING SHADOW

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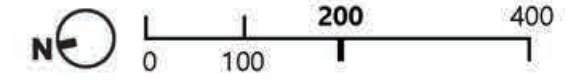
PROPOSED



Site Massing Plan
Shadow Study
 March / September 21
 12:00

PUD-8 Special Permit
 CambridgeSide
 Cambridge, MA

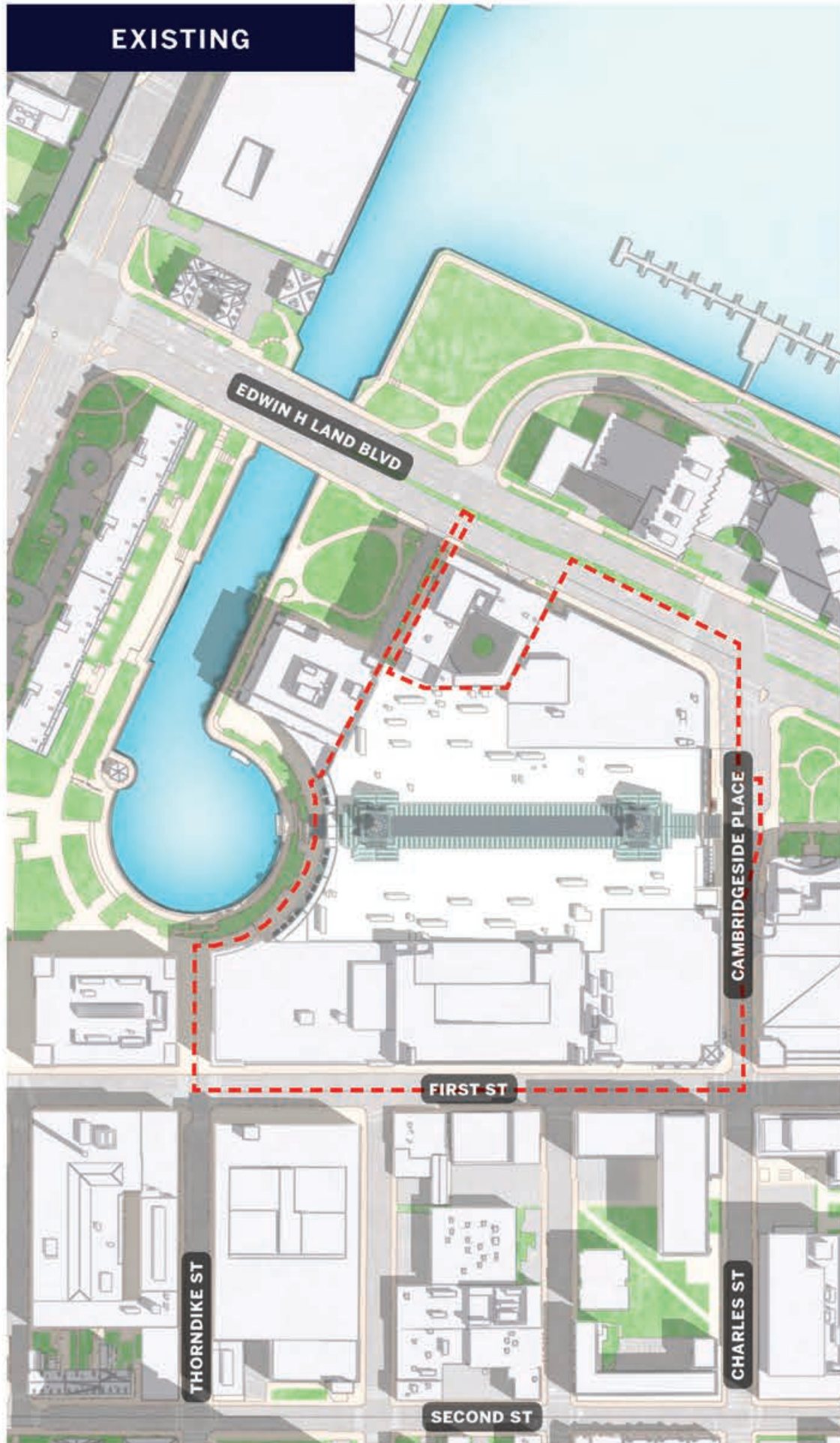
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EXHIBIT SMP.27



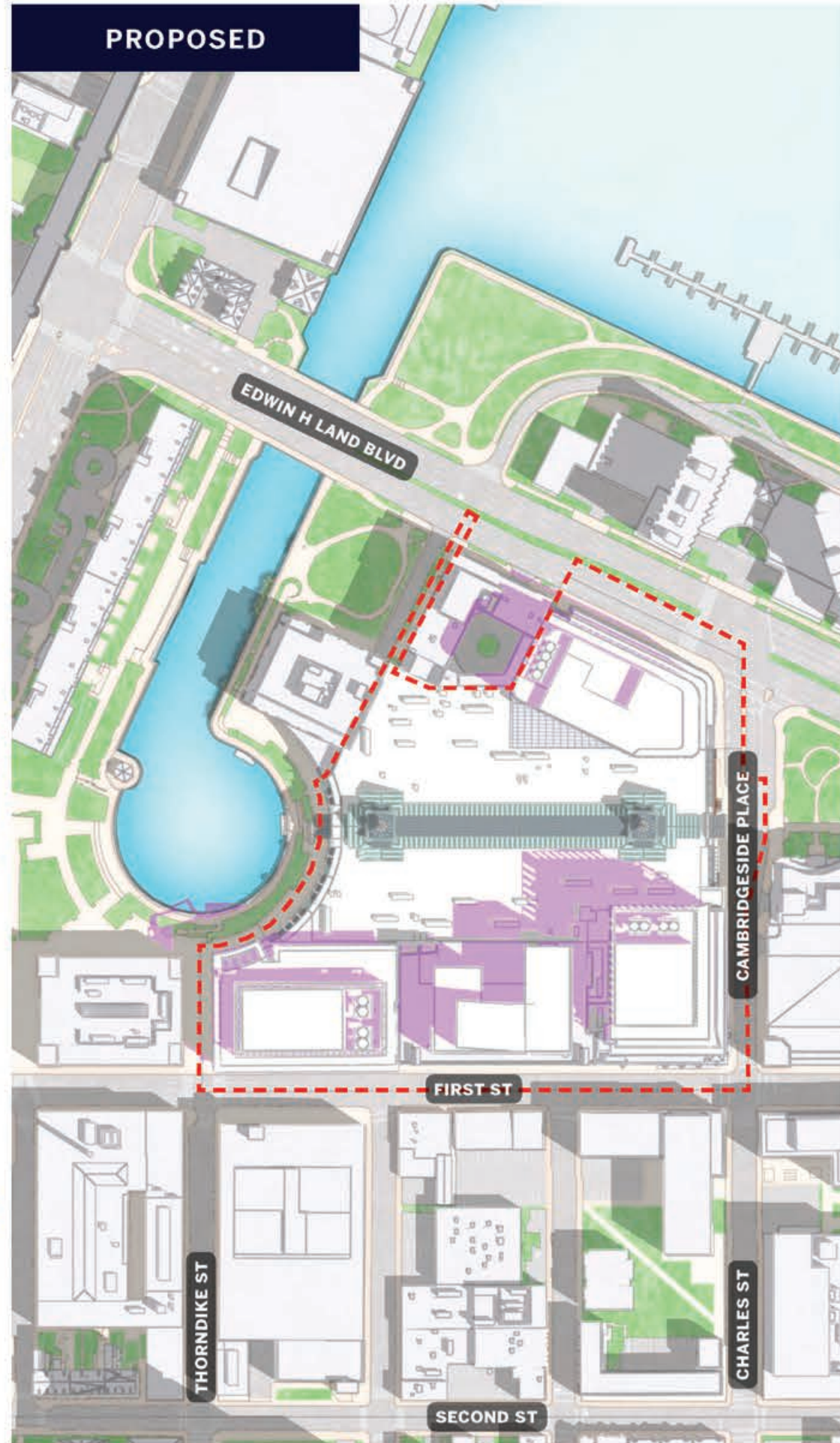
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- NET NEW SHADOW

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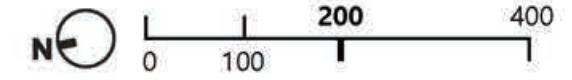
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Site Massing Plan
Shadow Study
 March / September 21
 15:00

PUD-8 Special Permit
 CambridgeSide
 Cambridge, MA

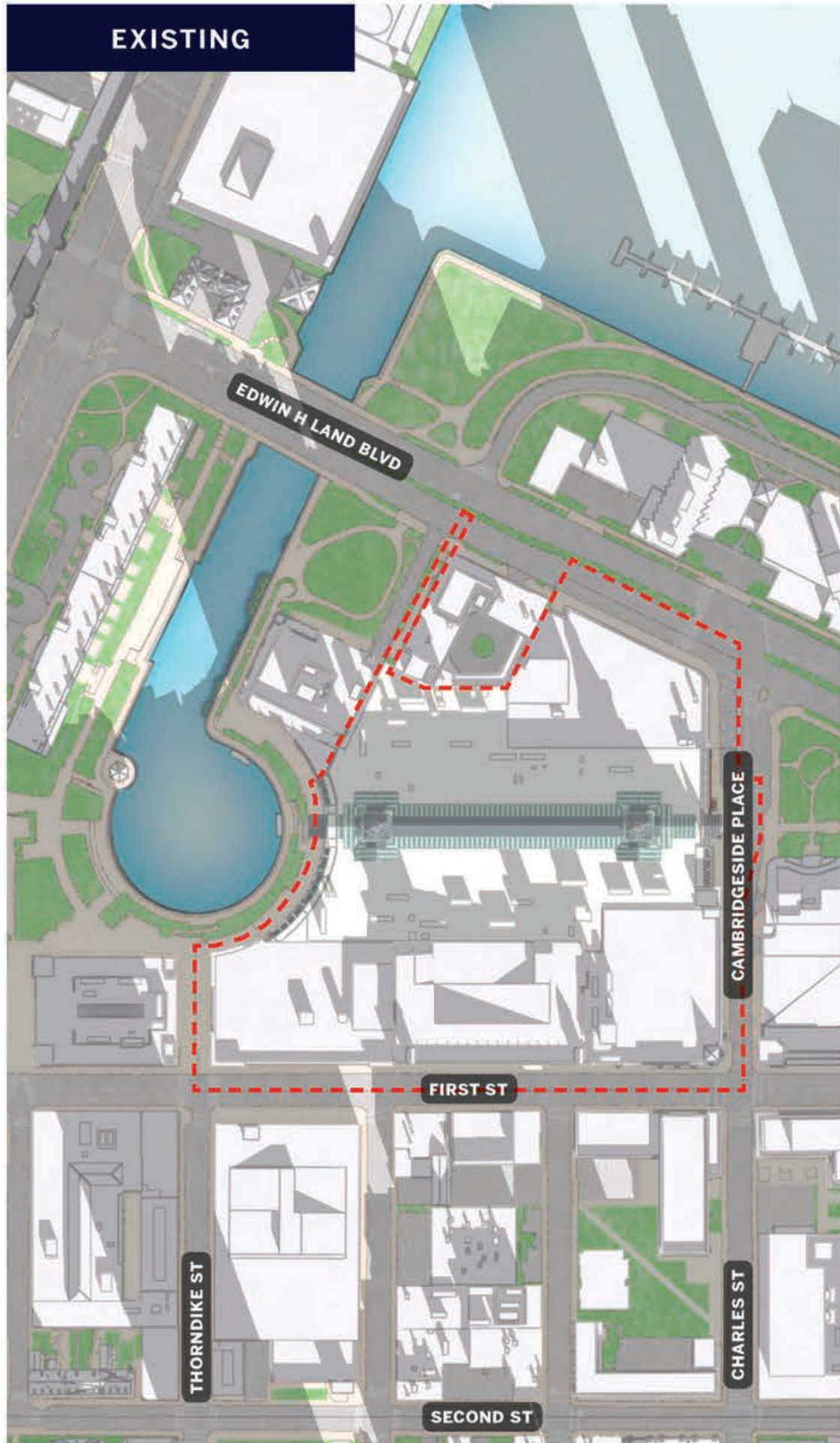
VOLUME II
EXHIBIT SMP.28



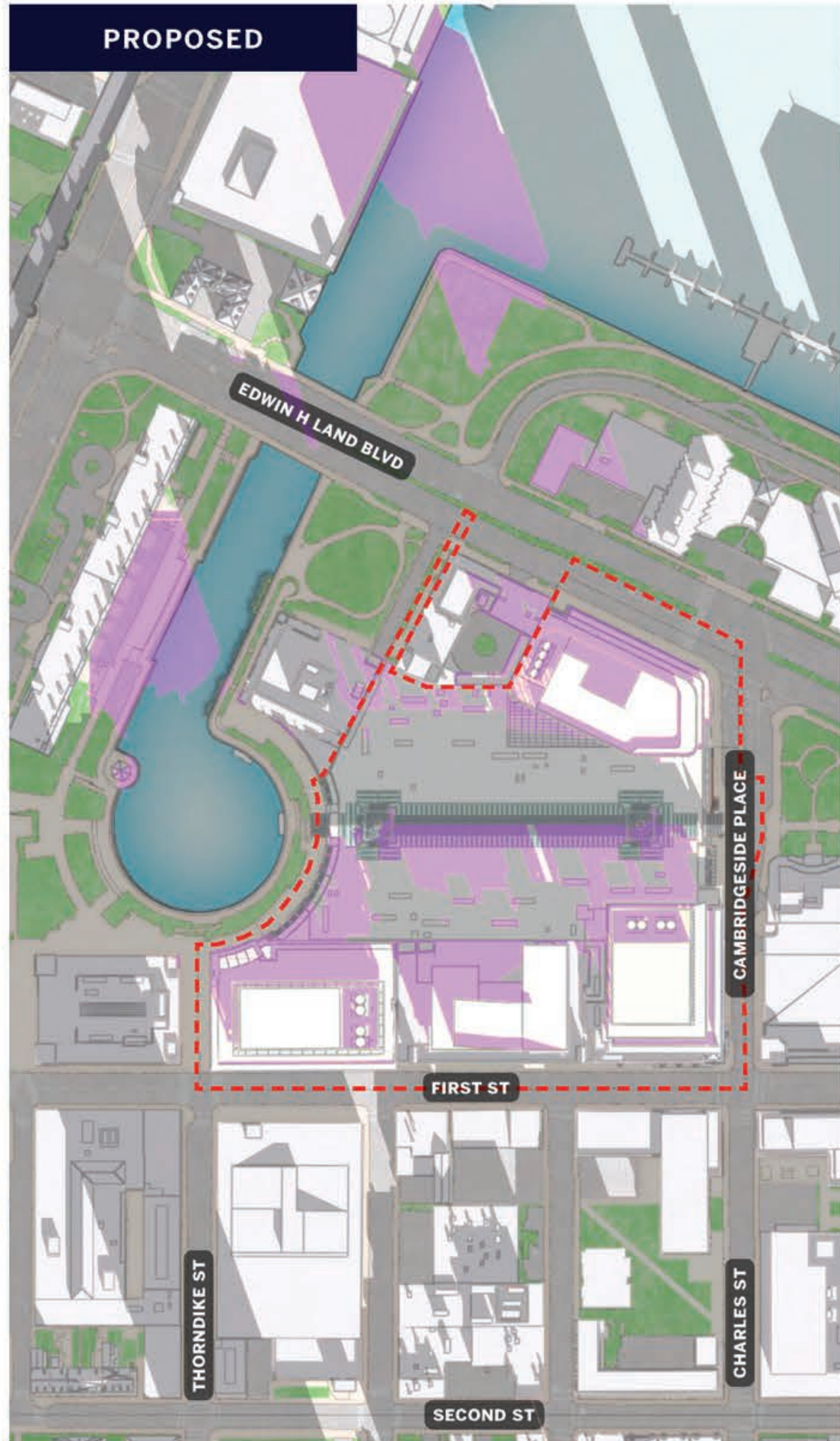
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-  NET NEW SHADOW

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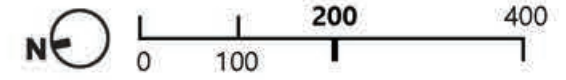
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Site Massing Plan
Shadow Study
 March / September 21
 18:00

PUD-8 Special Permit
 CambridgeSide
 Cambridge, MA

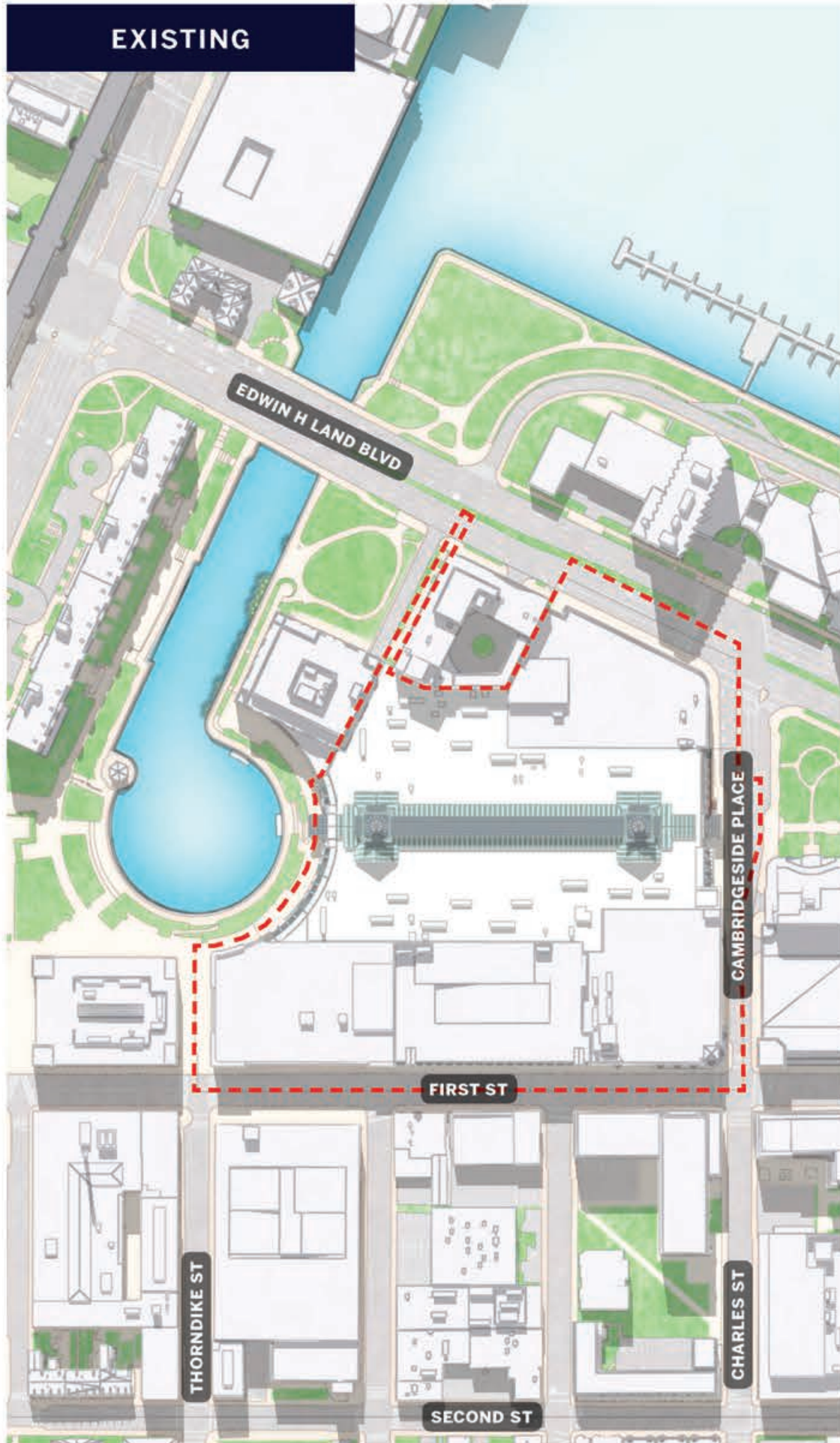
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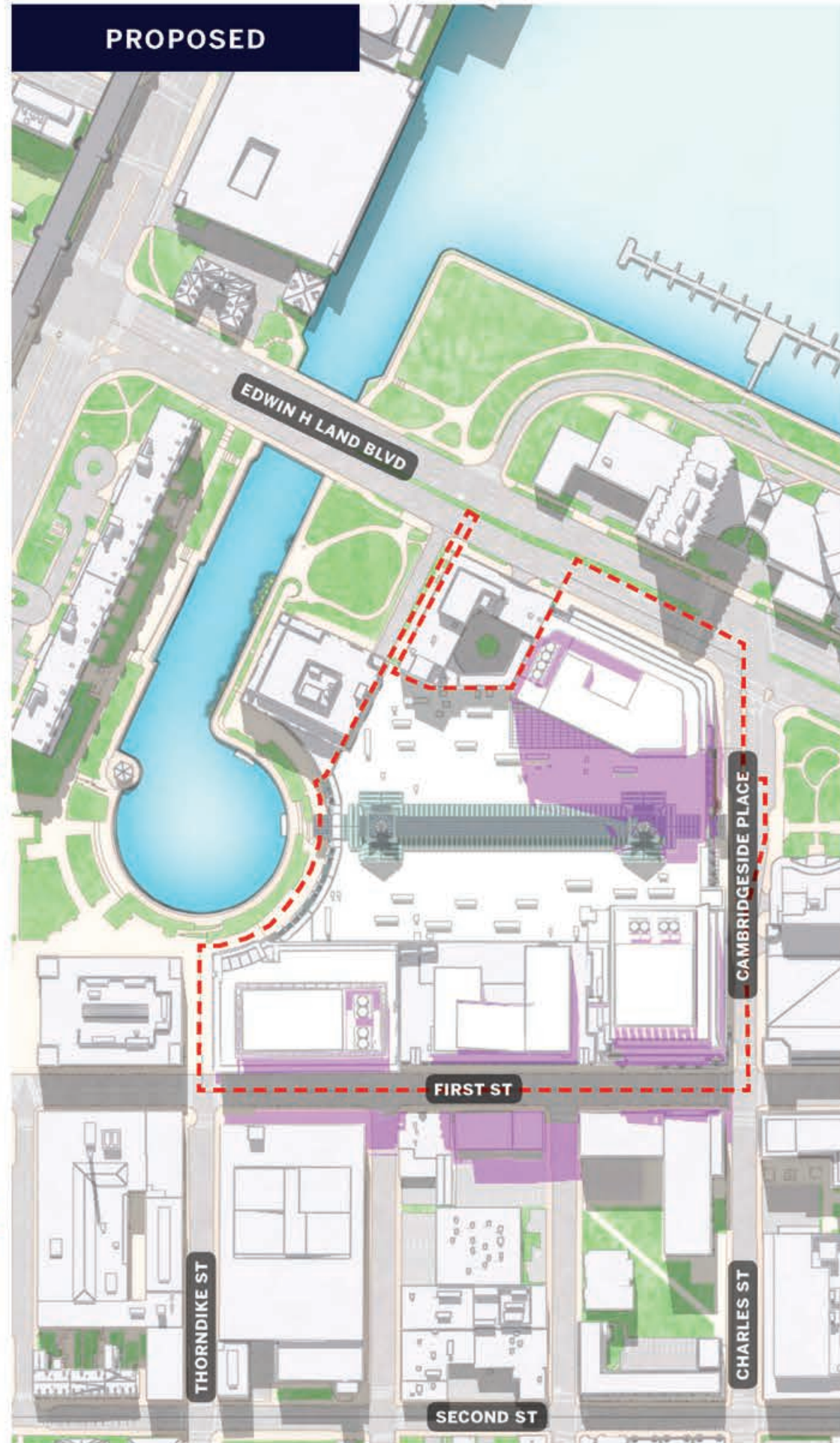
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-  EXISTING SHADOW
-  NET NEW SHADOW

EXISTING



PROPOSED

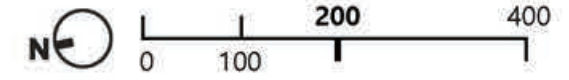


Site Massing Plan Shadow Study

June 21
09:00

PUD-8 Special Permit
CambridgeSide
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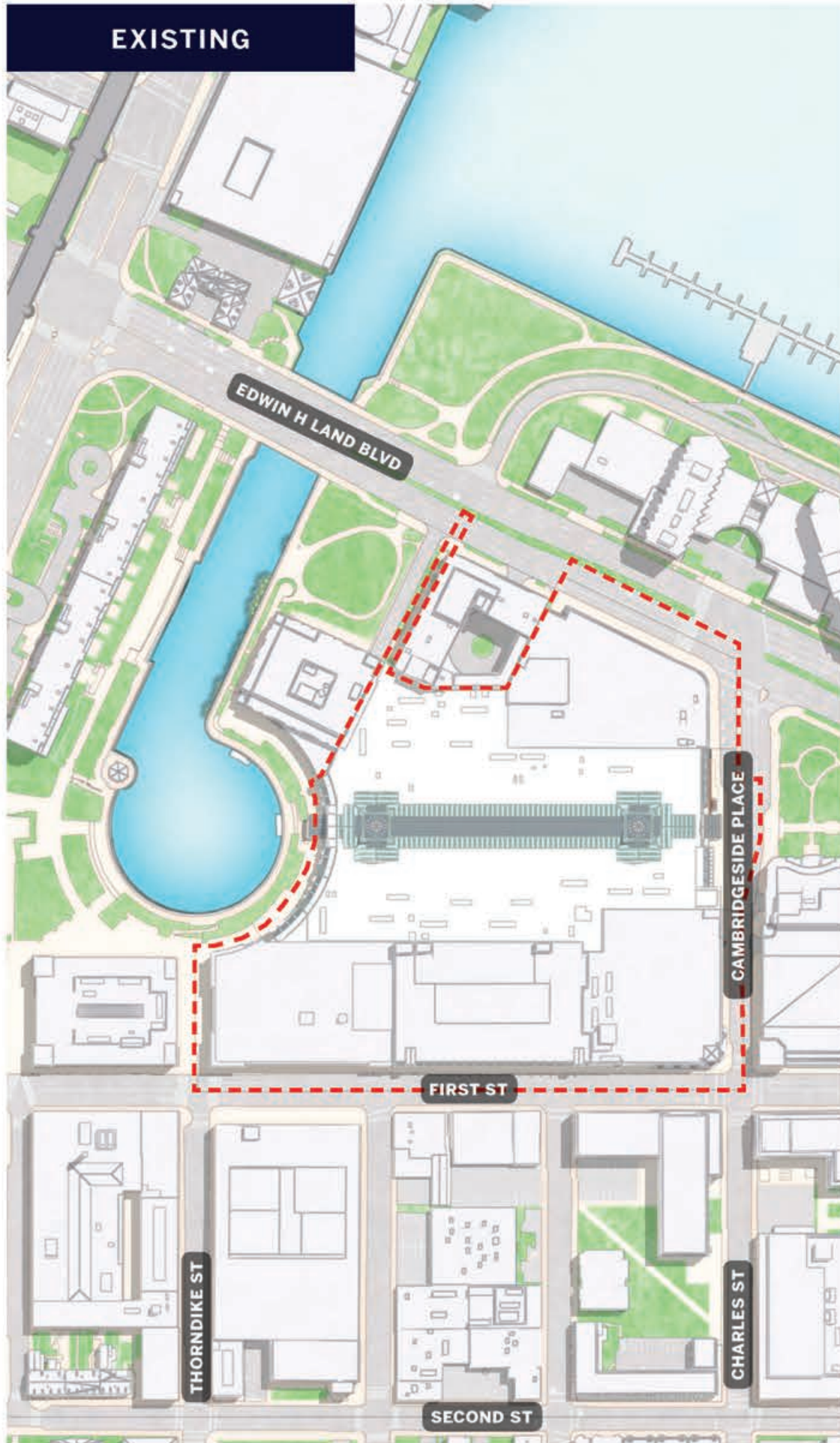
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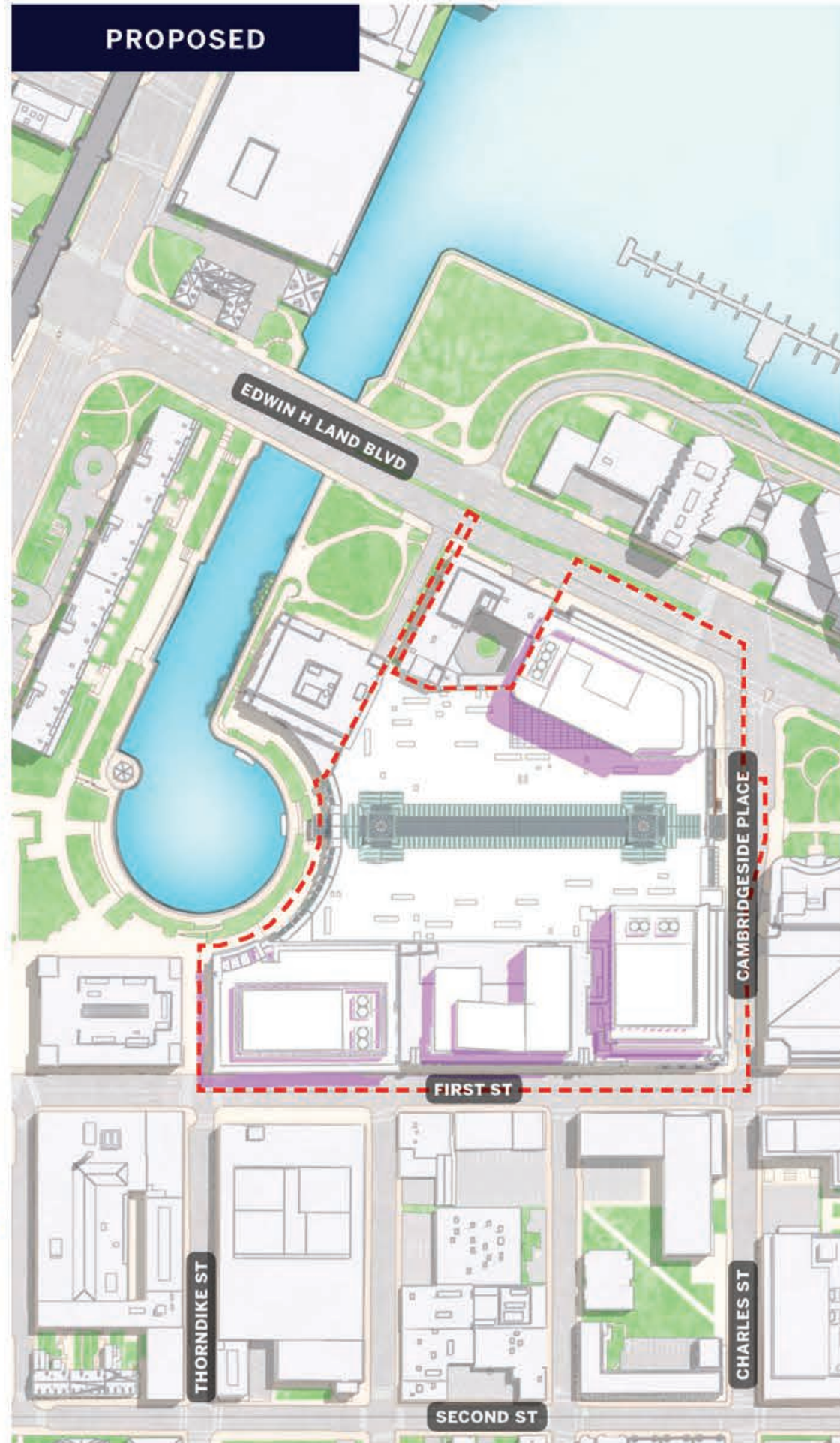
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- NET NEW SHADOW

EXISTING



PROPOSED

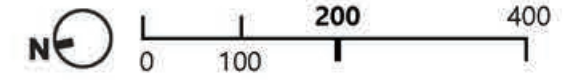


Site Massing Plan Shadow Study

June 21
12:00

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

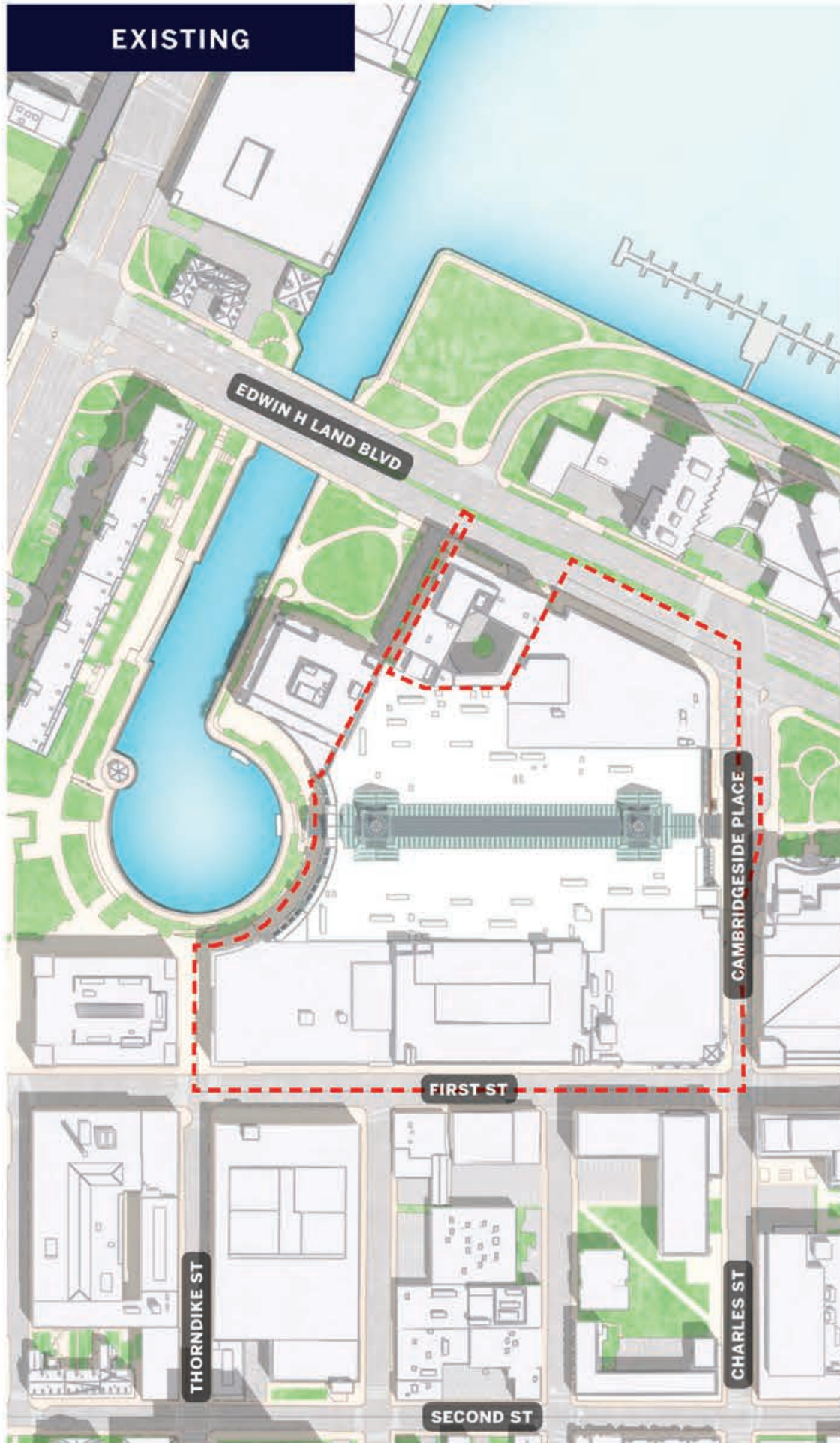
VOLUME II
EXHIBIT SMP.31



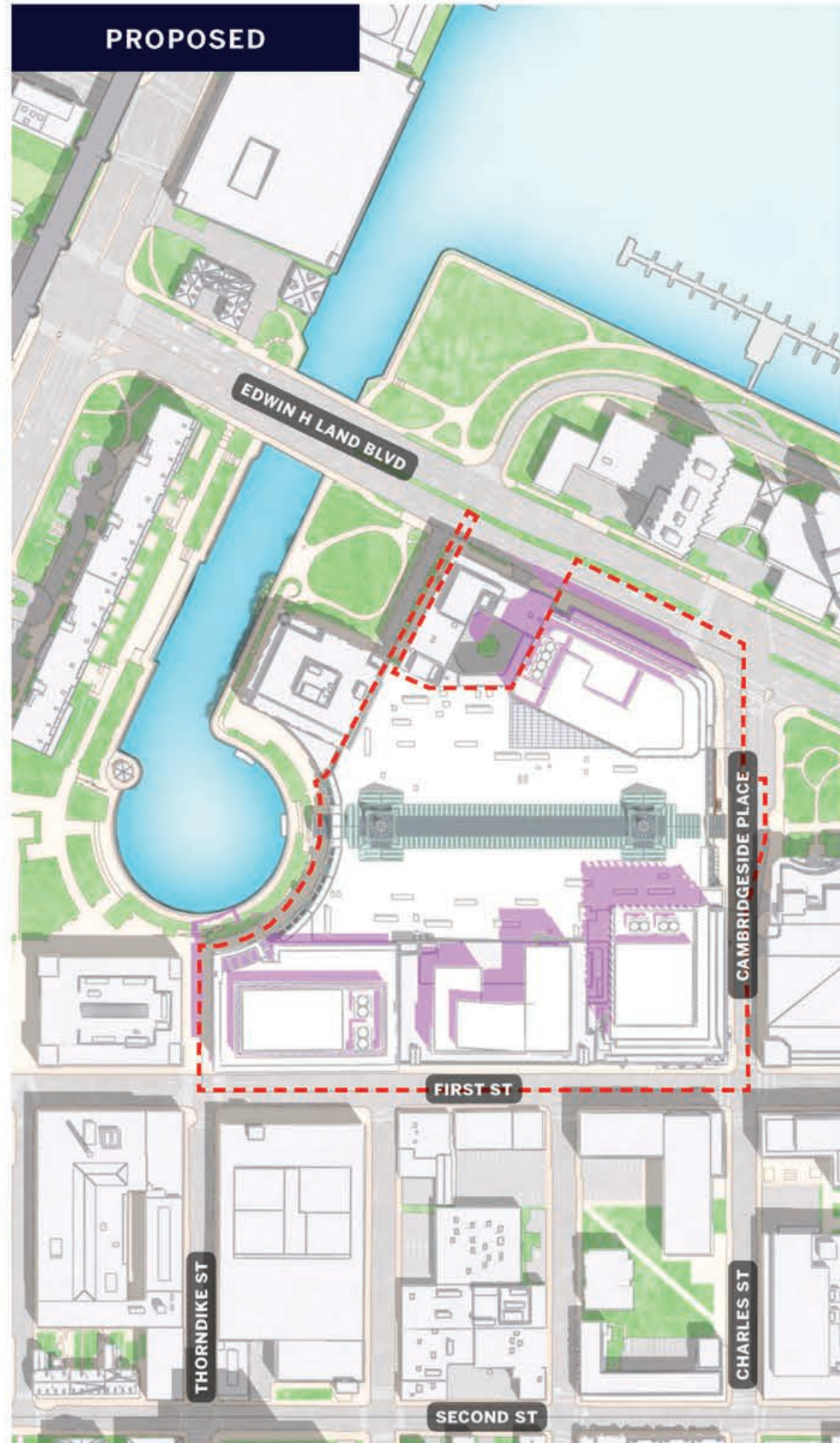
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- GREEN SPACE
- EXISTING SHADOW
- NET NEW SHADOW

EXISTING



PROPOSED

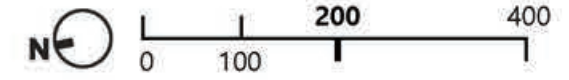


Site Massing Plan Shadow Study

June 21
15:00

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CambridgeSide
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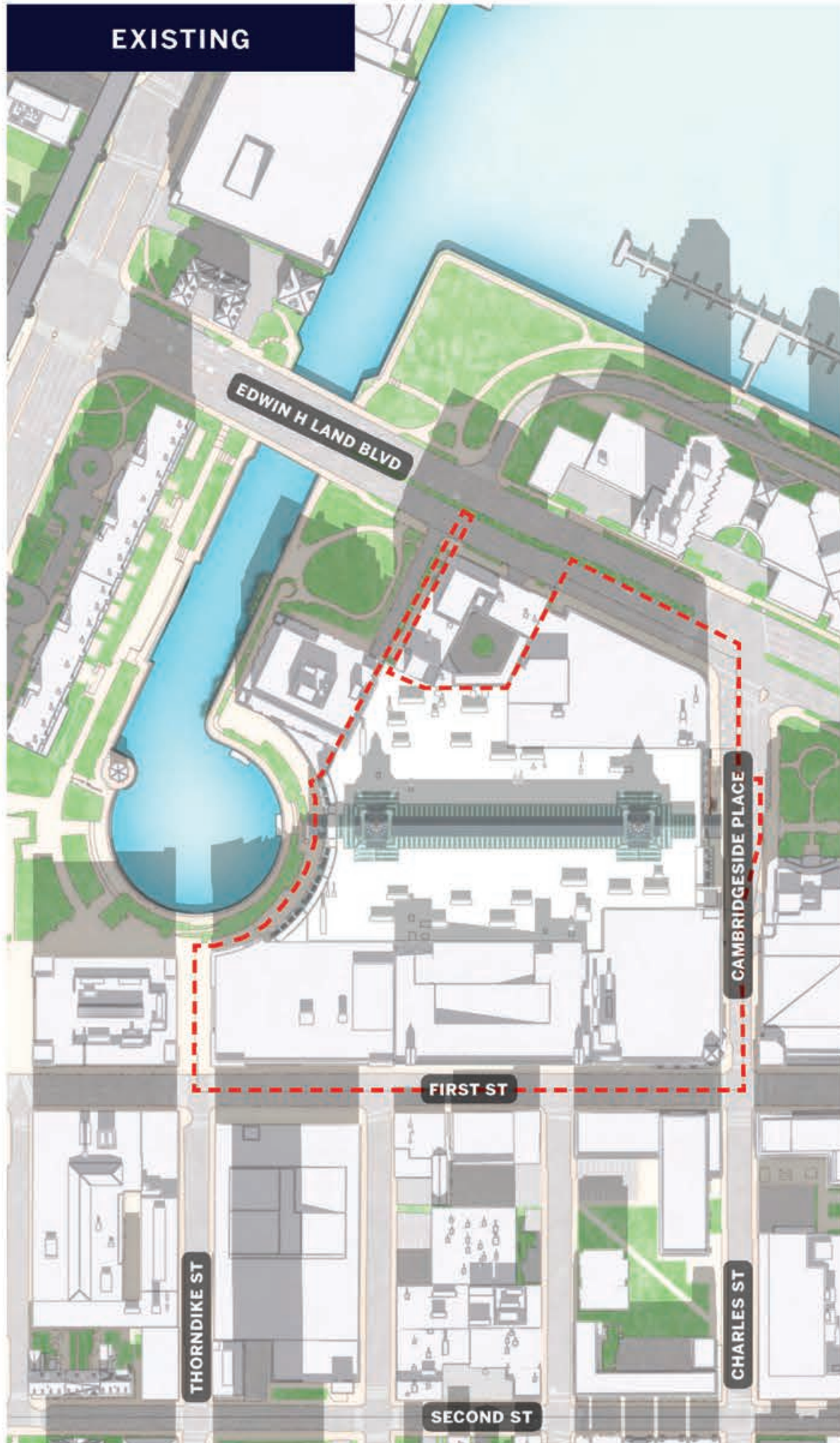
VOLUME II
EXHIBIT SMP.32



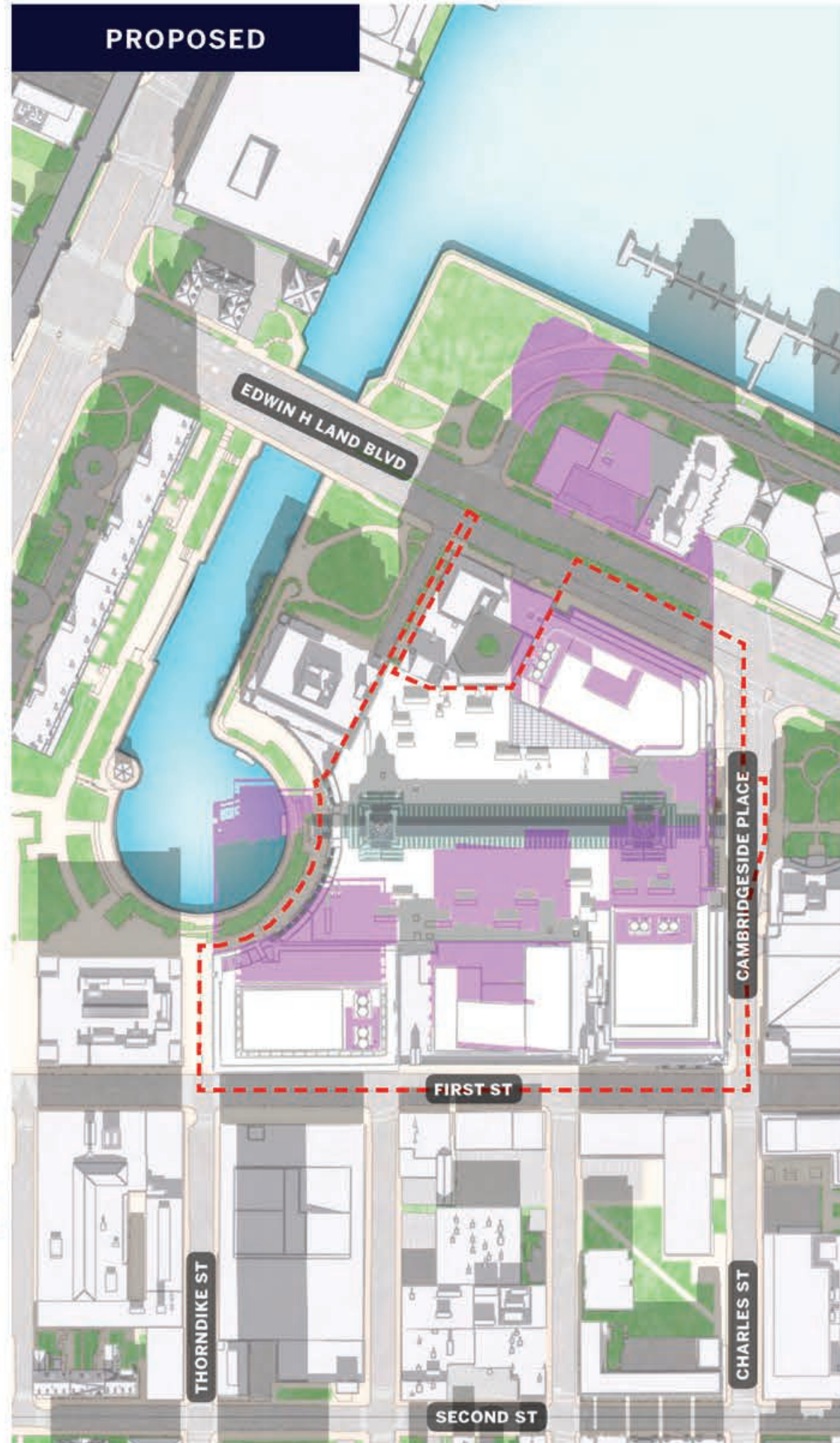
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- EXISTING SHADOW
- NET NEW SHADOW

EXISTING



PROPOSED

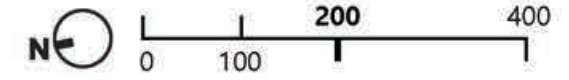


Site Massing Plan Shadow Study

June 21
18:00

PUD-8 Special Permit
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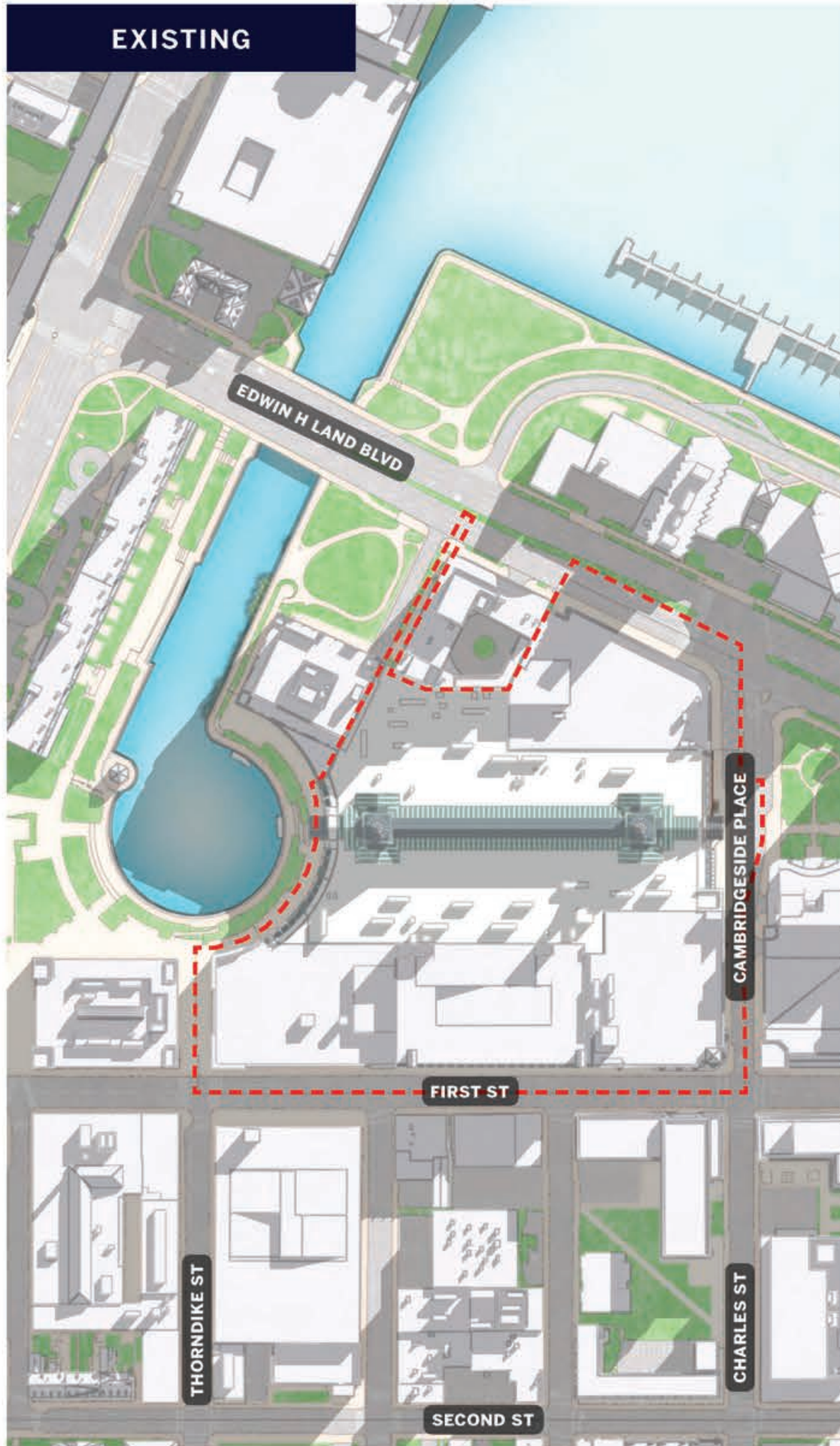
VOLUME II
EXHIBIT SMP.33



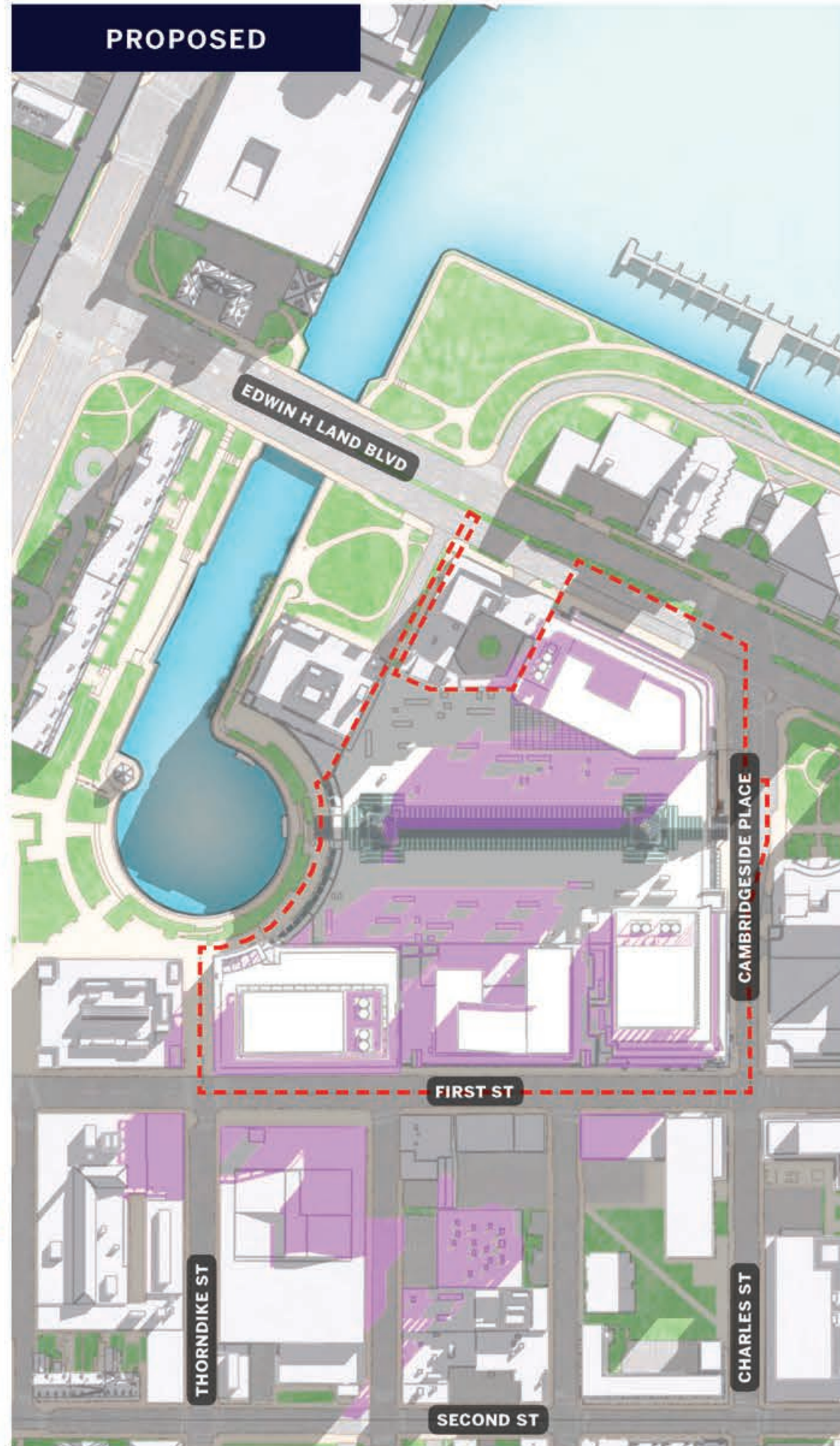
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EXISTING



PROPOSED

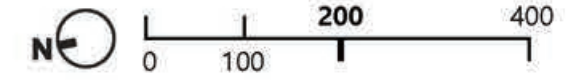


Site Massing Plan Shadow Study

December 21
09:00

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

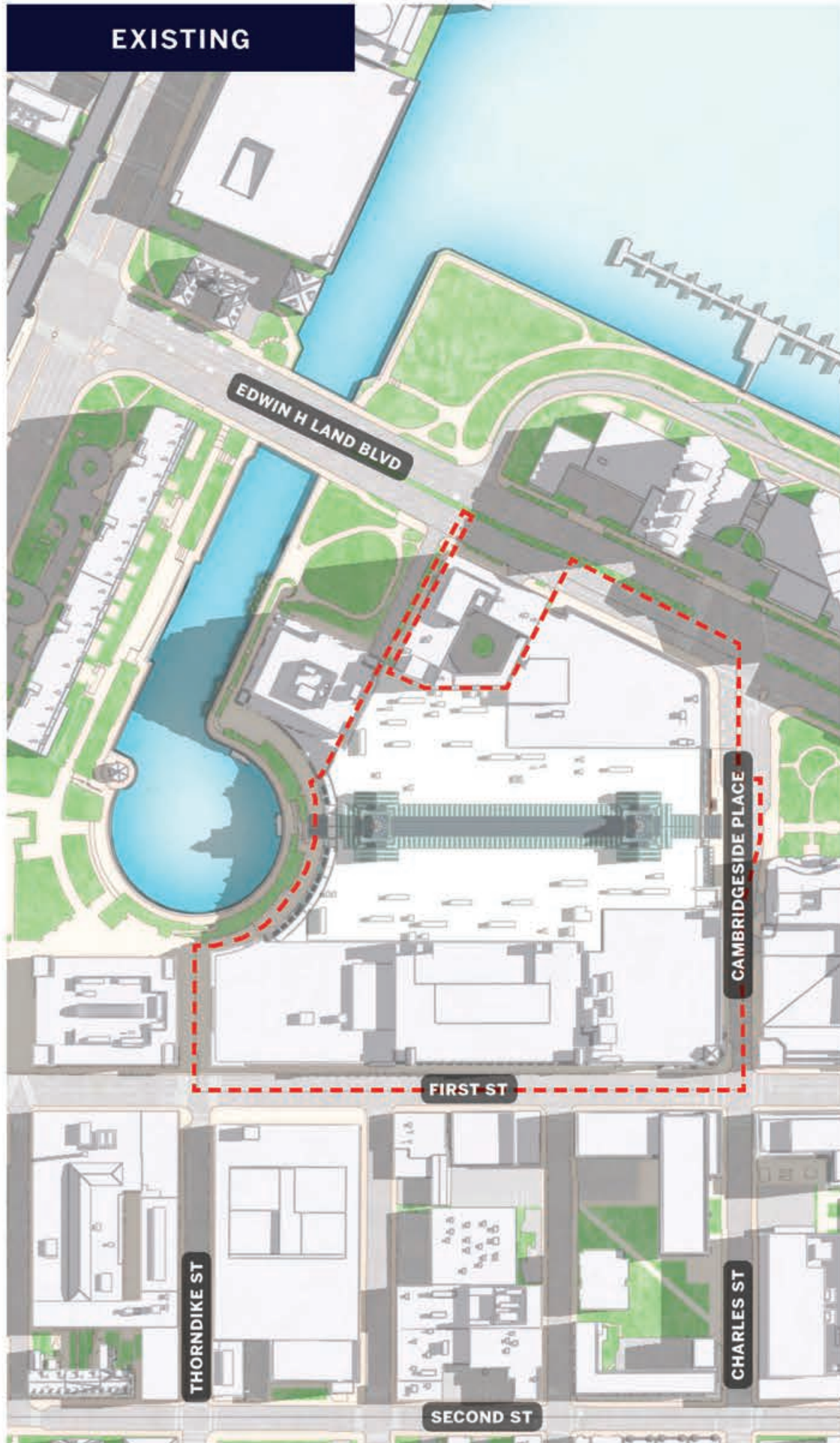
VOLUME II
EXHIBIT SMP.34



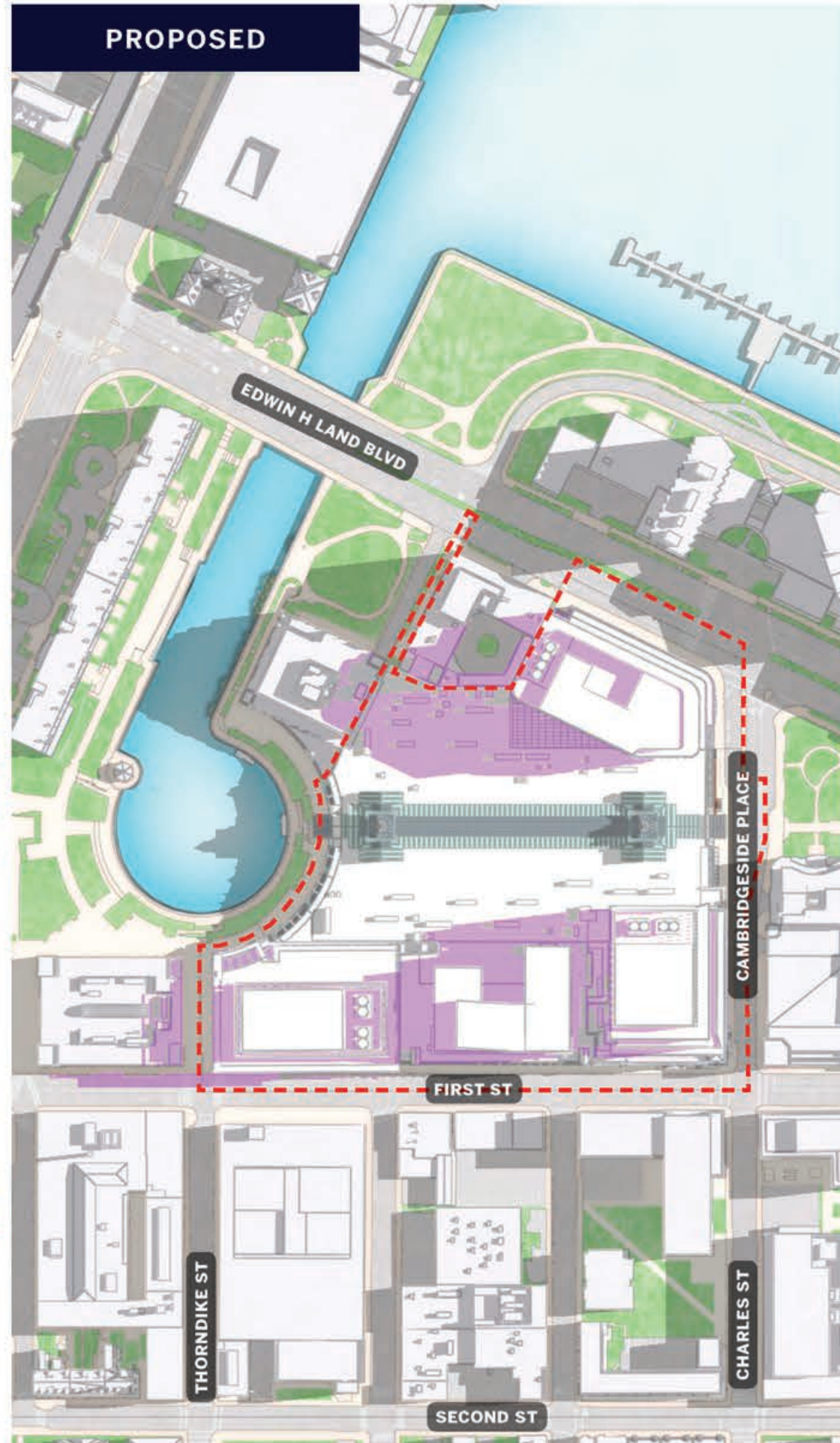
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- NET NEW SHADOW

EXISTING



PROPOSED

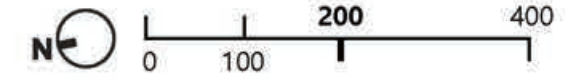


Site Massing Plan Shadow Study

December 21
12:00

PUD-8 Special Permit
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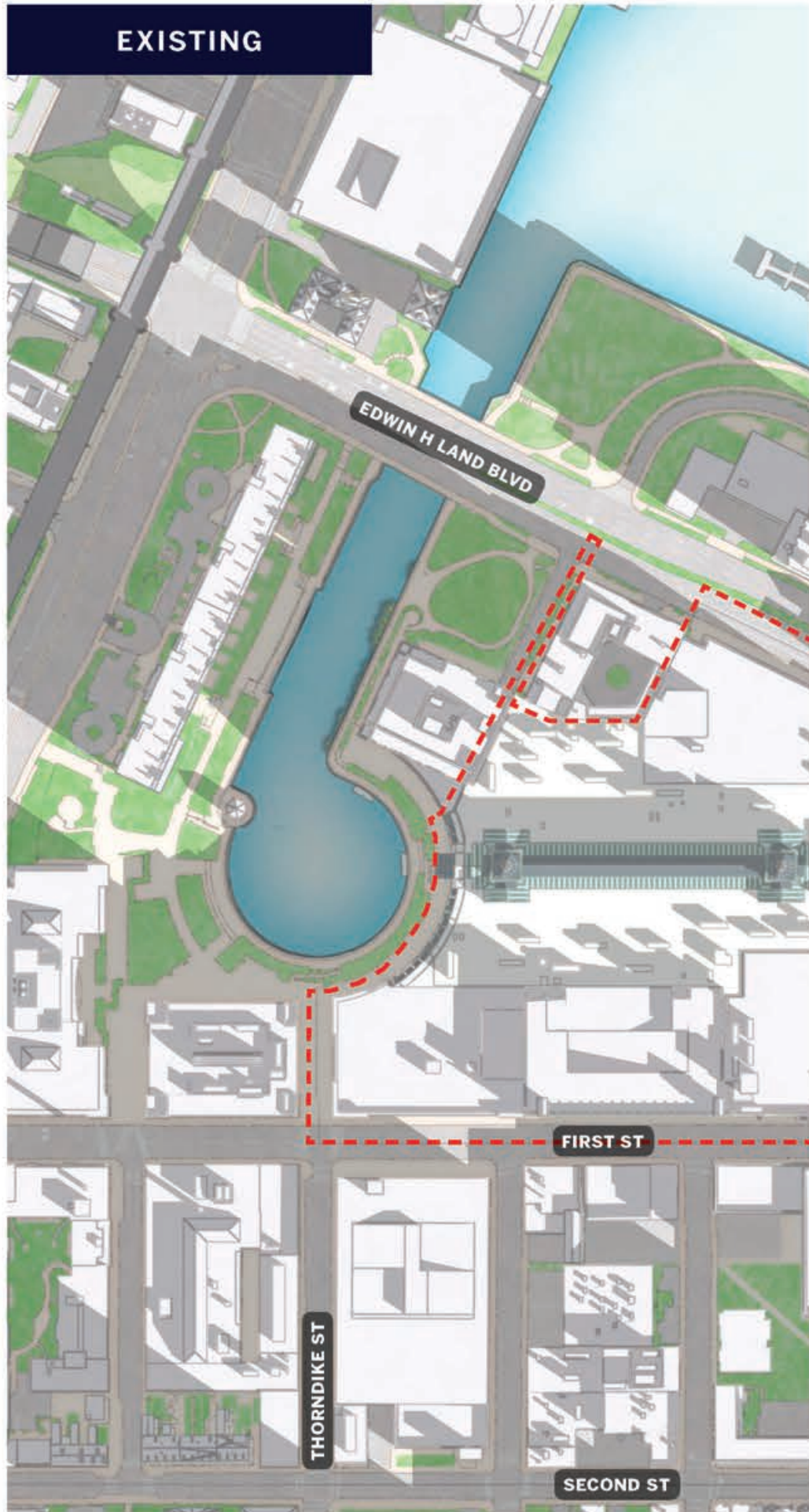
VOLUME II
EXHIBIT SMP.35



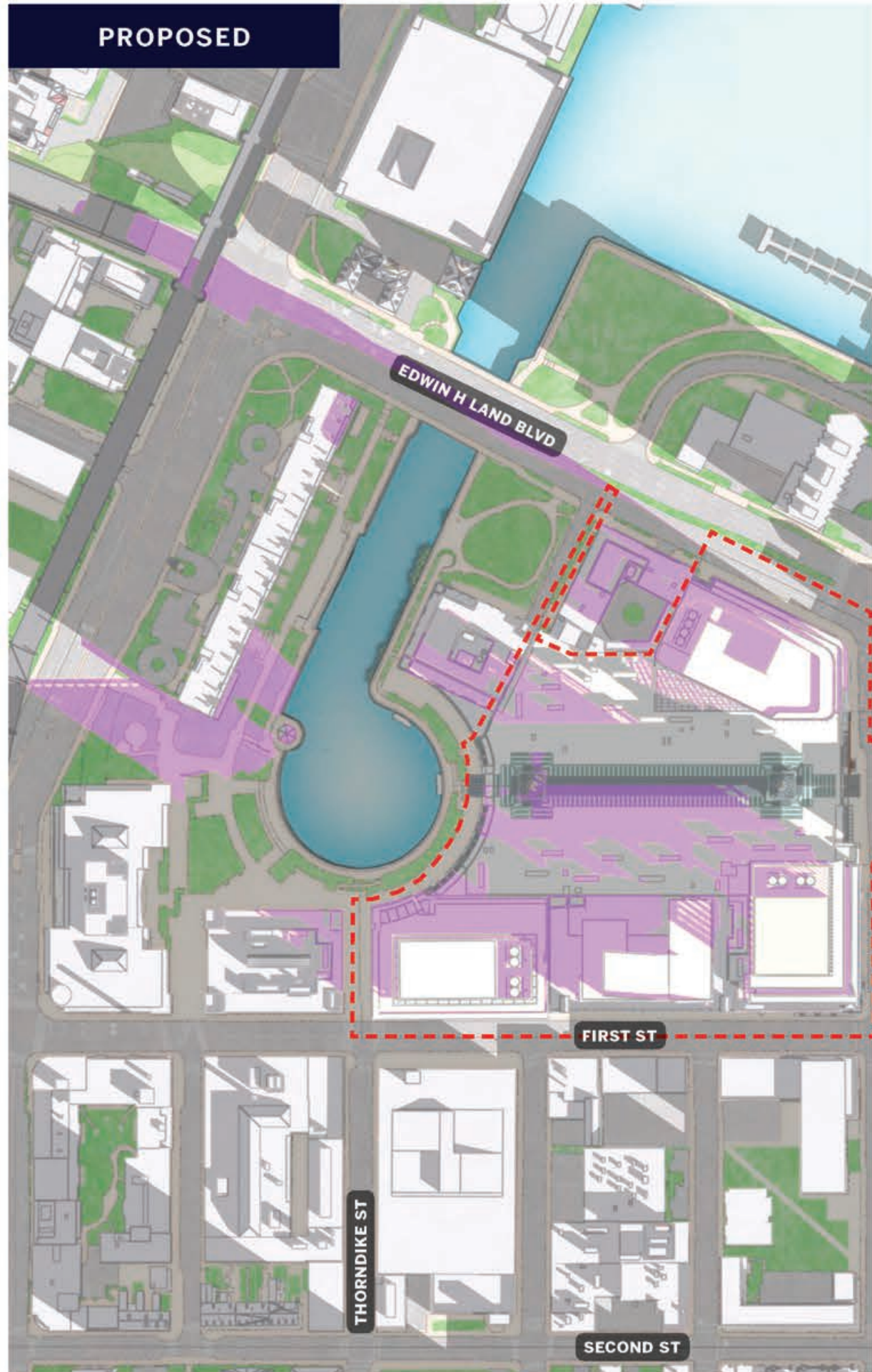
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- NET NEW SHADOW

EXISTING



PROPOSED

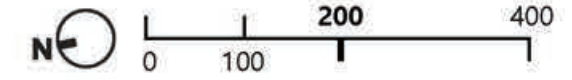


Site Massing Plan Shadow Study

December 21
15:00

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Legend

- PUD BOUNDARY
- GREEN SPACE
- EXISTING SHADOW
- NET NEW SHADOW

Please see attached behind an excerpt of the Wind Study that was prepared for the Project. The full Wind Study (including figures and tables) is attached as Appendix C.

Wind Study

**Please see attached behind an excerpt of the Wind Study
that was prepared for the Project.
The full Wind Study (including figures and tables)
is attached as Appendix C.**



EXECUTIVE SUMMARY

Rowan Williams Davies & Irwin Inc. (RWDI) was retained to conduct a pedestrian wind assessment for the proposed CambridgeSide 2.0 in Cambridge, MA (Image 1). The potential wind conditions have been assessed based on wind tunnel testing of the project under the No Build, Build and Full Build configurations (Images 2A through 2C), and the local wind records (Image 3) and compared to the Mean Speed and Effective Gust pedestrian wind criteria. The results of the assessment are shown on site plans in Figures 1A through 2C, and the associated wind speeds are listed in Table 1. The key findings are summarized as follows:

Effective Gust

- For all tested configurations, wind speeds at all locations on an annual basis are predicted to meet the effective gust criterion used to evaluate pedestrian wind safety.
- Seasonally, wind speeds at one location along Edwin H Land Blvd during the winter is predicted to exceed the effective gust criterion for the Build and Full Build configurations.

Mean Speed

- No dangerous mean wind speeds are predicted for the three configurations assessed.
- Relatively low mean speeds around the existing site are observed on an annual basis, with slightly higher wind activity to the south of the project site.
- With the addition of the proposed developments, mean wind speeds on an annual basis along the streets bounding the project site are predicted to remain relatively similar to the No Build configuration. Exceptions include elevated mean speeds along Charles St and Edwin H Land Blvd.
- With the anticipated future surrounding buildings included, comparable mean speeds to the Build configuration are anticipated.
- Conceptual wind control measures have been presented for select entrances where mean wind speeds are higher than desired.

1 INTRODUCTION

Rowan Williams Davies & Irwin Inc. (RWDI) was retained to conduct a pedestrian wind assessment for the proposed CambridgeSide 2.0 in Cambridge, MA. This report presents the project objectives, background and approach, discusses the results from RWDI's assessment and provides conceptual wind control measures, where necessary.

1.1 Project Description

The project (site shown in Image 1) is located on the north side of Charles St between First St and Edwin H Land Blvd. It is currently an existing retail shopping complex with a central mall, three retail anchor tenants, and an above-grade parking garage. It is proposed to replace these four existing structures with four new buildings.

1.2 Objectives

The objective of the study was to assess the effect of the proposed development on local conditions in pedestrian areas on and around the study site and provide recommendations for minimizing adverse effects, if needed. This quantitative assessment was based on wind speed measurements on a scale model of the project and its surroundings in one of RWDI's boundary-layer wind tunnels. These measurements were combined with the local wind records and compared to appropriate criteria for gauging wind comfort and safety in pedestrian areas. The assessment focused on critical pedestrian areas, including the main entrances and public sidewalks.



Image 1: Aerial View of Site and Surroundings (Photo Courtesy of Google™ Earth)

2 BACKGROUND AND APPROACH

2.1 Wind Tunnel Study Model

To assess the wind environment around the proposed project, a 1:400 scale model of the project site and surroundings was constructed for the wind tunnel tests of the following configurations:

- A - No Build: Existing site with existing surroundings (Image 2A),
- B - Build: Proposed project with existing surroundings (Image 2B), and,
- C - Full Build: Proposed project with existing and future surroundings (Image 2C).

The wind tunnel model included all relevant surrounding buildings and topography within an approximately 1600 ft radius of the study site. The wind and turbulence profiles in the atmospheric boundary layer beyond the modelled area were also simulated in RWDI's wind tunnel. The wind tunnel model was instrumented with 119 specially designed wind speed sensors to measure mean and gust speeds at a full-scale height of approximately 5 ft above local grade in pedestrian areas throughout the study site. Wind speeds were measured for 36 directions in a 10-degree increment. The measurements at each sensor location were recorded in the form of ratios of local mean and gust speeds to the mean wind speed at a reference height above the model. The placement of wind measurement locations was based on our experience and understanding of the pedestrian usage for this site and was reviewed by the design team.



Image 2A: Wind Tunnel Study Model - No Build Configuration

Image 2B: Wind Tunnel Study Model - Build Configuration

Image 2C: Wind Tunnel Study Model - Full Build Configuration

2.2 Meteorological Data

The data from the wind tunnel test were combined with long-term meteorological data, recorded during the years 1995 through 2018 at Boston Logan International Airport to predict full scale wind conditions. The analysis was performed separately for the entire year and for each of the four seasons. Images 3 and 4 present "wind roses", summarizing the annual and seasonal wind climates in the Boston area, respectively.

For example, the wind rose in image 3, summarizes the annual wind data which in general, indicates the most common wind directions are those between north-northwest and south-southwest. Winds from the east-northeast to the east-southeast are also relatively common. In the case of strong winds, northeast, northwest, west and southwest are the dominant wind directions.

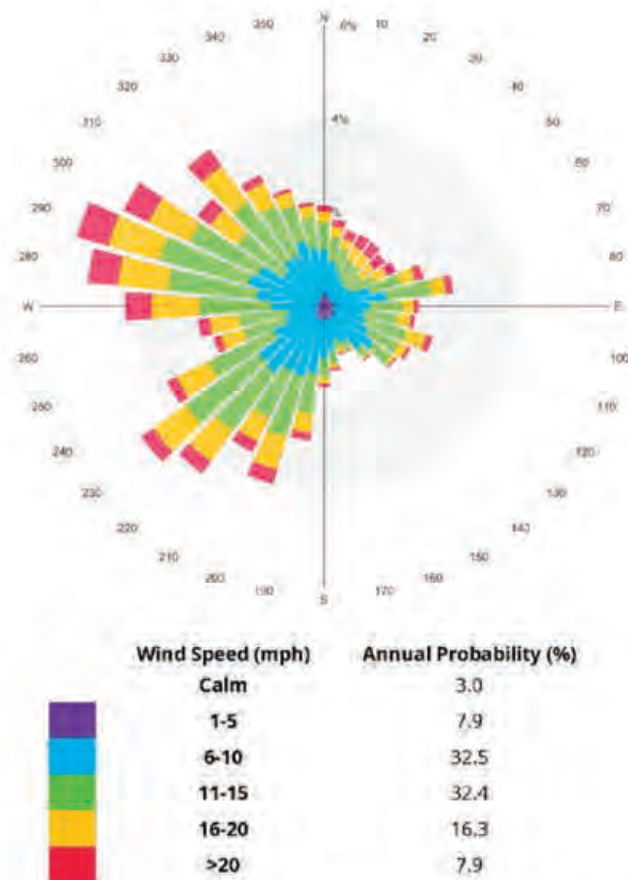


Image 3: Annual Directional Distribution of Winds Approaching Boston Logan International Airport from 1995 to 2018

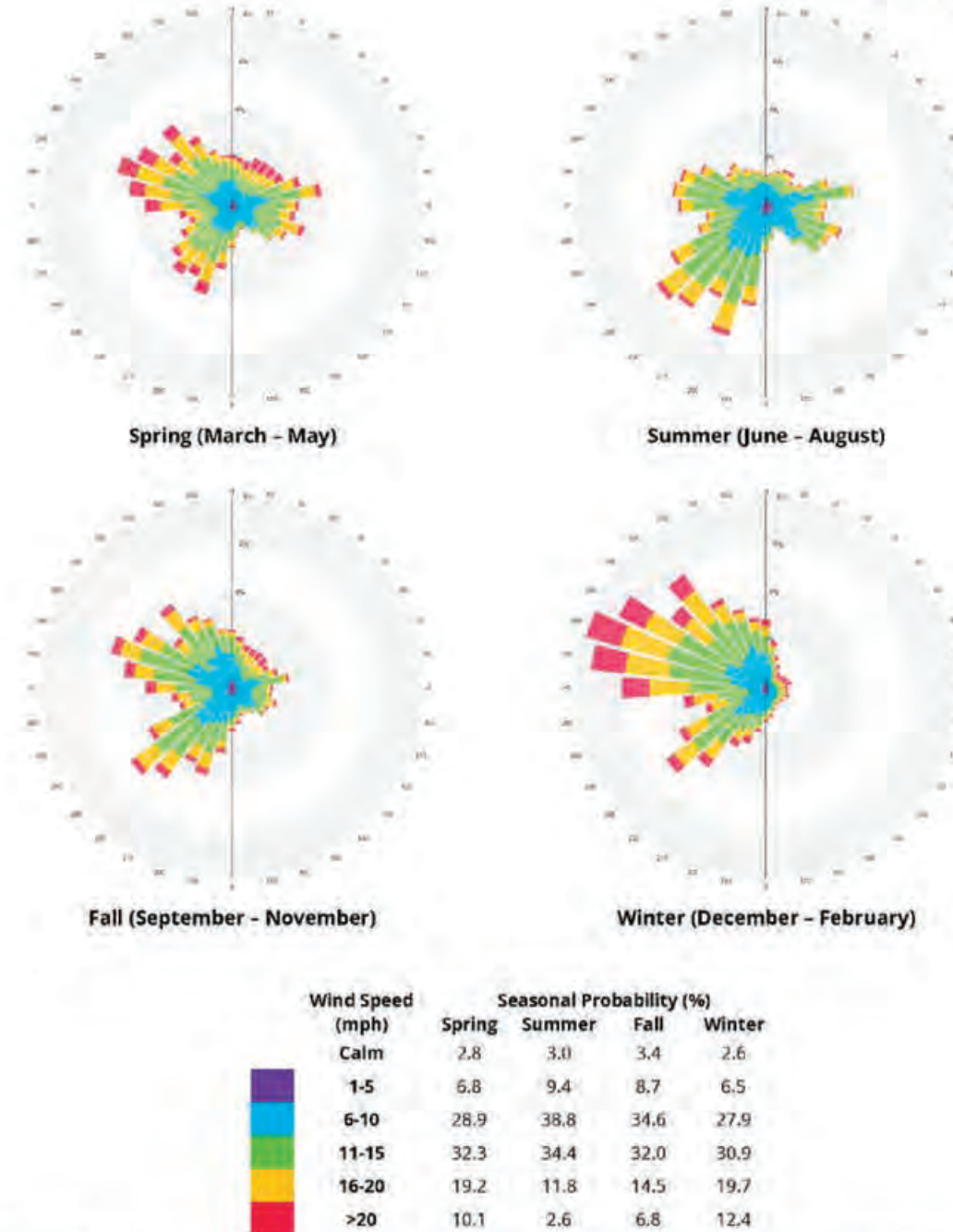


Image 4: Seasonal Directional Distribution of Winds Approaching Boston Logan International Airport from 1995 to 2018

2.3 Pedestrian Wind Criteria

The pedestrian wind criteria implemented for the current study uses two standards for assessing the relative wind comfort of pedestrians. First, the wind design guidance criterion states that an effective gust velocity (hourly mean wind speed +1.5 times the root-mean-square wind speed) of 31 mph should not be exceeded more than one percent of the time.

Wind Acceptability	Effective Gust Speed (mph)
Acceptable	≤ 31
Unacceptable	> 31

1% exceedance or 99 percentile wind speeds

The second set of criteria used to determine the acceptability of specific locations is based on the work of Melbourne. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing, or walking. The criteria are expressed in terms of benchmarks for the 1-hour mean wind speed exceeded 1% of the time.

Comfort Category	Mean Wind Speed (mph)
Dangerous	> 27
Uncomfortable for Walking	> 19 and ≤ 27
Comfortable for Walking	> 15 and ≤ 19
Comfortable for Standing	> 12 and ≤ 15
Comfortable for Sitting	< 12

1% exceedance or 99 percentile wind speeds

The consideration of wind in planning outdoor activity areas is important since high winds in an area tend to deter pedestrian use. For example, winds should be light or relatively light in areas where people would be sitting, such as outdoor cafes or playgrounds. For bus stops and other locations where people would be standing, somewhat higher winds can be tolerated. For frequently used sidewalks, where people are primarily walking, stronger winds are acceptable. For infrequently used areas, the wind comfort criteria can be relaxed even further. The actual effects of wind can range from pedestrian inconvenience, due to the blowing of dust and other loose material in a moderate breeze, to severe difficulty with walking due to the wind forces on the pedestrian.

The wind climate found in Cambridge is generally comfortable for the pedestrian use of sidewalks and thoroughfares and meets the effective gust velocity criterion of 31 mph. However, without any mitigation measures, this wind climate is likely to be frequently uncomfortable for more passive activities such as sitting.

This study involved state-of-the-art measurement and analysis techniques to predict wind conditions. Nevertheless, some uncertainty remains in predicting wind comfort, and this must be kept in mind. For example, the sensation of comfort among individuals can be quite variable. Variations in age, individual health, clothing, and other human factors can change a particular response of an individual. The comfort limits used in this report represent an average for the total population. Also, unforeseen changes in the project area, such as the construction or removal of buildings, can affect the conditions experienced at the site. Finally, the prediction of wind speeds is necessarily a statistical procedure. The wind speeds reported are for the frequency of occurrence stated (1% of the time). Higher wind speeds will occur but on a less frequent basis.

3 RESULTS AND DISCUSSION

The predicted wind conditions in terms of mean and effective gust speeds pertaining to the tested configurations are graphically depicted on site plans in Figures 1A through 2C located in the "Figures" section of this report. These conditions and the associated wind speeds are presented in Tables 1 and 2, located in the "Tables" section of this report. The following summary of pedestrian wind comfort is based on the annual winds for each configuration tested. Typically, the summer and fall winds tend to be more comfortable than the annual winds while the winter and spring winds are less comfortable than the annual winds.

Wind conditions comfortable for walking are appropriate for sidewalks and walkways as pedestrians will be active and less likely to remain in one area for prolonged periods of time. Lower wind speeds conducive to standing are preferred at main entrances where pedestrians are apt to linger. Wind speeds comfortable for sitting are ideal during the summer for areas intended for passive activities, such as plaza spaces or outdoor dining areas.

3.1 No Build Configuration

In general, the mean wind speeds on an annual basis for the existing site are comfortable for sitting or standing, with a few locations categorized for walking to the south of the proposed developments along Edwin H Land Blvd (Figure 1A). Wind speeds at no areas around the site are dangerous on an annual or seasonal basis for the existing site.

The effective gust criterion used to evaluate pedestrian wind safety is met at all sensor locations around the existing site (Figure 2A).

3.2 Build Configuration

In general, with the addition of the proposed developments, low to moderate mean wind speeds on an annual and seasonal basis are expected. The following is a detailed discussion of the suitability of the predicted wind conditions for the anticipated pedestrian use of each area of interest.

3.2.1 Main Entrances

Main entrances to the proposed developments are located near Locations 21, 22, 98, 101, 105, 109 and 110 in Figure 1B. Predicted mean speeds at the majority of these entrances are predicted to be appropriate for the intended use (sitting or standing) on an annual basis. Exceptions are near Locations 22 and 105 where higher than desired wind speeds categorized as uncomfortable and walking are predicted (Figure 1B).

Both entrances near Locations 22 and 105 are recessed into the building façades which is a positive design strategy in reducing door operability issues. However, wind speeds directly in front of the entrances are higher than desired for pedestrians to linger. For Location 22 specifically, these elevated wind speeds are a result of easterly and westerly winds accelerating around the corner of Charles St and Edwin H Land Blvd. Reduced wind speeds at this location may be achieved by implementing localized hard and/or soft vertical features (i.e. wind screens and dense shrubs or trees) near both sides of the entrance. Additionally, consideration should be given to extending the

Site Massing Plan Pedestrian Wind Study CRITERIA AND RESULTS

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overhead canopy to provide more overhead protection. For Location 105, slightly elevated mean speeds are a result of exposure to westerly winds and winds downwashing off the proposed building façade. To reduce wind speeds near this location, it is recommended that features be placed on the west side of the entrance along First St.

For wind screens to be effective, they should be a minimum of 6.5 ft tall and approximately 80% solid and for landscaping being considered, the species should be marcescent or evergreen which are able to retain their foliage year-round and provide protection during the winter when the strongest prevailing winds occur. Examples of wind screens and landscaping features near entrances are provided in Image 5.



Image 5: Examples of Windscreens (Top) and Landscaping (Bottom) Near Entrances

3.2.2 Sidewalks and Walkways

With the addition of the proposed developments, mean wind speeds on an annual basis along the streets bounding the project site are predicted to remain relatively similar to the No Build configuration with the majority of locations suitable for standing or more passive use (Figure 1B). Exceptions include uncomfortable wind speeds on annual basis along Charles St (Locations 22 and 95 in Figure 1B) and east of Charles Park along Edwin H Land Blvd (Locations 14 and 19 in Figure 1B). If improved conditions are desired for these areas by the design team, wind control measures can be developed with RWDI's team. Mean wind speeds along the Lechmere Canal are predicted to be similar to those observed in the No Build configuration and no dangerous wind conditions are expected in the Build configuration on an annual or seasonal basis (Figure 1B).

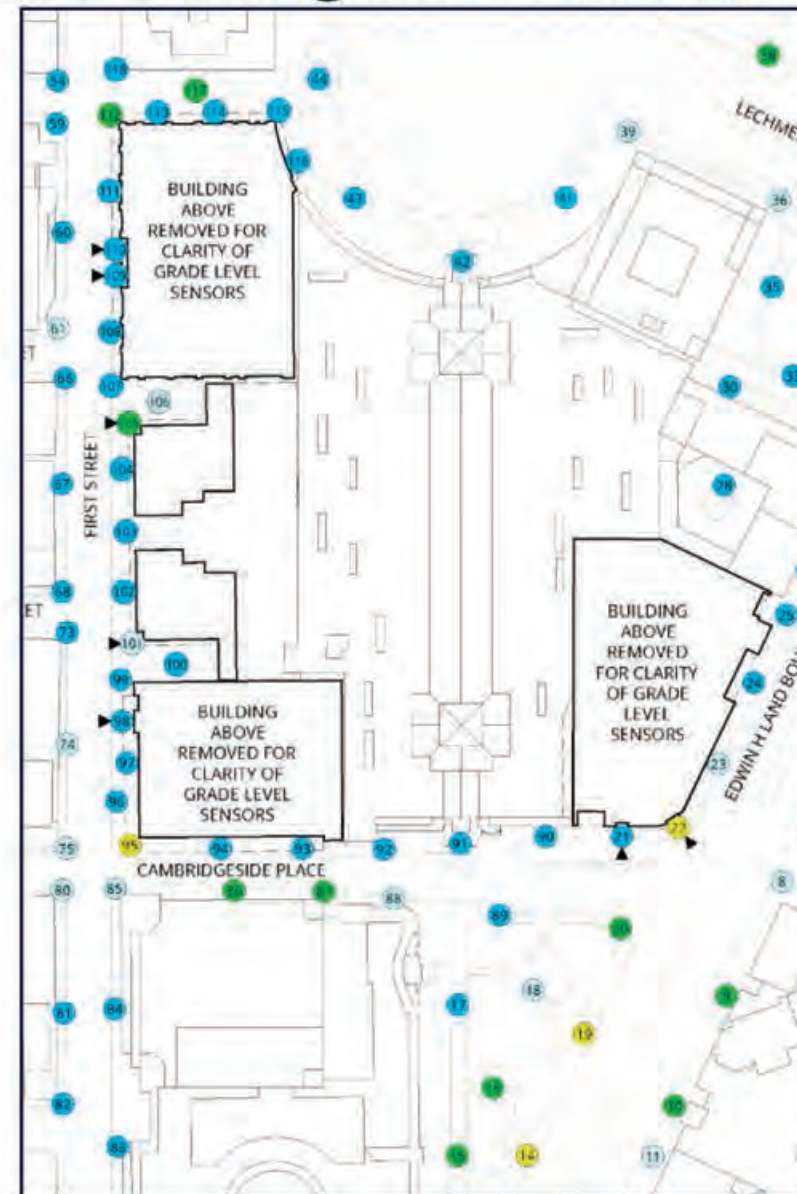
On an annual basis, the effective gust criterion is anticipated to still be met at all sensor locations with the proposed developments in place (Figure 2B). Seasonally, the effective gust criterion is predicted to be exceeded at one location along Edwin H Land Blvd during the winter, defined from December to February (Location 19 in Table 2).

3.3 Full Build Configuration

With the anticipated future surrounding buildings included (shown in green in Image 2C), comparable mean speeds to the Build configuration are anticipated and similarly, no dangerous mean wind speeds are expected on an annual or seasonal basis (Figure 1C).

On an annual basis, the effective gust criterion is anticipated to be met at all sensor locations with the future developments in place (Figure 2C). Seasonally, the effective gust criterion is predicted to be exceeded at one location along Edwin H Land Blvd during the winter (Location 19 in Table 2).

Build Configuration - Annual Mean Speed



COMMENTARY:
LOCATIONS 14 AND 19 ARE ON A SIDEWALK ADJACENT TO CHARLES PARK. EXISTING PLANTINGS IN THE PARK MAY PROVIDE A BUFFER FROM THE SEASONAL GUSTS.
THERE IS NO PROPOSED ENTRY AT LOCATION 22.
LOCATIONS 95 AND 105 MAY REQUIRE FURTHER STUDY DURING DESIGN REVIEW FOR THOSE SUBSEQUENT DEVELOPMENTS.



Table 2: Mean Speed and Effective Gust Categories - Seasonal

Location	Configuration	Mean Wind Speed (mph)				Effective Gust Wind Speed (mph)			
		Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter
14	No Build	18	13	17	20	27	19	25	30
	Build	20	14	18	22	28	21	26	31
	Full Build	18	13	16	20	26	19	24	28
19	No Build	17	13	16	19	27	19	24	30
	Build	20	15	18	22	29	21	27	32
	Full Build	18	15	17	22	26	20	24	32
22	No Build	13	11	12	14	20	17	19	21
	Build	21	17	19	21	28	23	26	29
	Full Build	21	18	18	21	29	24	26	29
95	No Build	-	-	-	-	-	-	-	-
	Build	22	16	20	24	28	21	26	31
	Full Build	21	15	18	23	28	21	26	30
105	No Build	-	-	-	-	-	-	-	-
	Build	18	14	17	20	25	19	24	28
	Full Build	18	14	16	19	25	19	24	28

Seasons	Months	Mean Wind Criteria Speed (mph)	Effective Gust Criteria (mph)
Spring	March - May	12 - 19	Comfortable for Sitting
Summer	June - August	13 - 15	Comfortable for Standing
Fall	September - November	16 - 19	Comfortable for Walking
Winter	December - February	20 - 27	Uncomfortable for Walking
Annual	January - December	17 - 22	Dangerous Conditions

Configurations

- No Build: Existing site and surroundings
- Build: Proposed development and existing surroundings
- Full Build: Build including future developments



NEW ENGLAND
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2.3 Parking and Loading Plan

(Section 13.102.3(c))

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2.3.1 Vehicular Parking

The existing Mall is served by the existing aboveground “Upper Garage”, which is accessed by a driveway on First Street, and the underground “Lower Garage”, which is accessed by driveways on Land Boulevard, Cambridgeside Place and First Street. The Upper Garage will be replaced with the new 80 & 90 First Street building, whereas the Lower Garage, which contains 1,695 parking spaces, will remain in its existing configuration to support the Project¹.

2.3.2 Restrictions and Commitments Applicable to Parking Facilities

The Parking Study included in the Appendix G describes the existing Commercial Parking Permit applicable to the Project site, as well as ongoing lease agreements and programs to make parking spaces available to third-party users.

The Lower Garage provides three levels of parking with the top level providing approximately 300 spaces and the lower levels providing approximately 700 spaces each. There are long-term leases in place with three entities, the Royal Sonesta hotel, the Hotel Marlowe, and a neighboring commercial tenant, PegaSystems. Together, these “committed spaces” account for 362 spaces that are reserved for these intended users. However, only the Sonesta Hotel spaces are “corralled”, i.e., separated from the available general parking. As described in the TIS, the three existing long-term lease agreements will be maintained until their stated expiration and programs to make parking spaces available to third-party users will be modified over time to reflect demand and usage. Overall, the TIS indicates that the Lower Garage will have adequate capacity to support the Project and any long-term lease or third-party user agreements that will remain in place.

The Commercial Parking Facility Permit for CambridgeSide was last amended in 2000 and provides certain restrictions on users, such as a limit on parking spaces available before 10:00 AM and a number of spaces that must be available to courthouse employees that will be further amended as part of the Project. As

allowed by the Permit, certain off-site users have been allowed to park in the garage, including any Cambridge employees, existing off-street spaces that are permanently eliminated elsewhere, and temporary construction personnel parking. The Permit also includes a number of TDM measures that CambridgeSide has implemented such as shuttle bus service, membership in the Charles River TMA, and the provision of bike spaces, all of which will be strengthened and enhanced as part of the Project. The Parking Study details proposed amendments to the existing Commercial Parking Permit, which would allow the Lower Garage to operate in a manner consistent with serving the Project and the neighborhood’s needs.

2.3.3 Bicycle Parking

In compliance with the bicycle parking requirements of Section 6.100 of the Ordinance, the Project proposes to increase the number of long-term bicycle storage spaces from 46 to 450. Bike storage facilities will be accessed at grade in the proposed 60 and 110 First buildings, or will be accessed via elevator service to the Lower Garage bicycle storage facility in 20 CambridgeSide or to the second floor of 80 & 90 First Street. The number of short-term bicycle storage spaces will increase from 85 to 175, with an additional 15 bikes provided by the Blue Bikes service. New bike racks will be located near prominent building entries and distributed throughout the public realm.

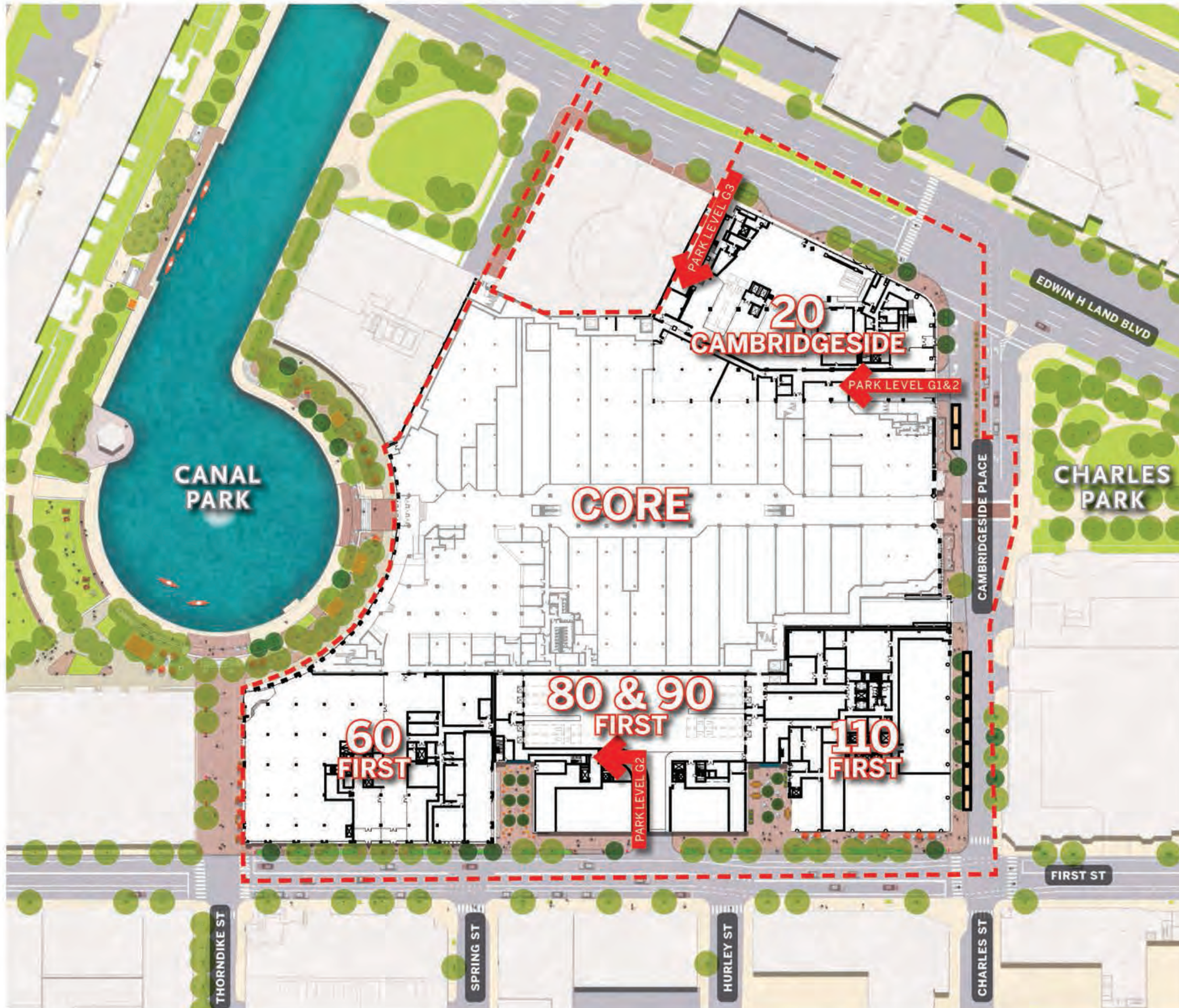
2.3.4 Loading and Service Areas

The existing Mall is loaded from two service areas with multiple loading docks, located on First Street and Land Boulevard, which will continue to serve the site once redeveloped. The two service areas are anticipated to remain in their existing locations on Land Boulevard and First Street, but will be reconditioned or rebuilt as a part of the Project.

The exhibits that follow in this Section 2.3 supplement the information above and identify:

- Location and number of vehicular parking spaces;
- Location and number of loading bays; and
- Location and number of short- and long-term bicycle spaces.

¹ It is currently anticipated that parking spaces at the Project will be reduced over time from 2,490 spaces to approximately 1,695 parking spaces at full buildout, which number may increase or decrease depending on final design and construction conditions. In all cases, the Project will provide adequate parking to serve the Project’s uses and will not exceed the maximum parking requirements set forth in Section 13.106.4 of the Ordinance.

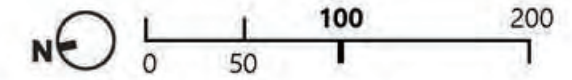


Parking and Loading Plan

Location of Vehicular Parking

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT PkP.1



Legend

- PUD-8 DEVELOPMENT PARCEL
- ← EXISTING OFF-STREET BELOW GRADE "LOWER GARAGE" LEVELS G1, G2 AND G3 UNDER CORE, 20 CAMBRIDGESIDE, 60 FIRST AND 80 & 90 FIRST
- ON-STREET SHORT-TERM PARKING (ON PROPERTY)

Notes

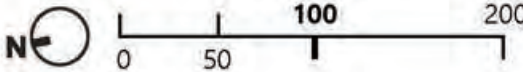
- THERE ARE NO OFF-STREET PARKING SPACES AT GRADE
- THERE ARE NO OFF-STREET PARKING SPACES ABOVE GRADE UPON COMPLETION OF THE PROJECT
- THERE ARE NO LONG-TERM ON-STREET PARKING SPACES ON THE PROPERTY
- THERE ARE NO CHANGES PROPOSED TO EXISTING ON-STREET PARKING SPACES ON FIRST STREET

Parking and Loading Plan Parking Plan

LOWER GARAGE LEVEL G3

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT PkP.2



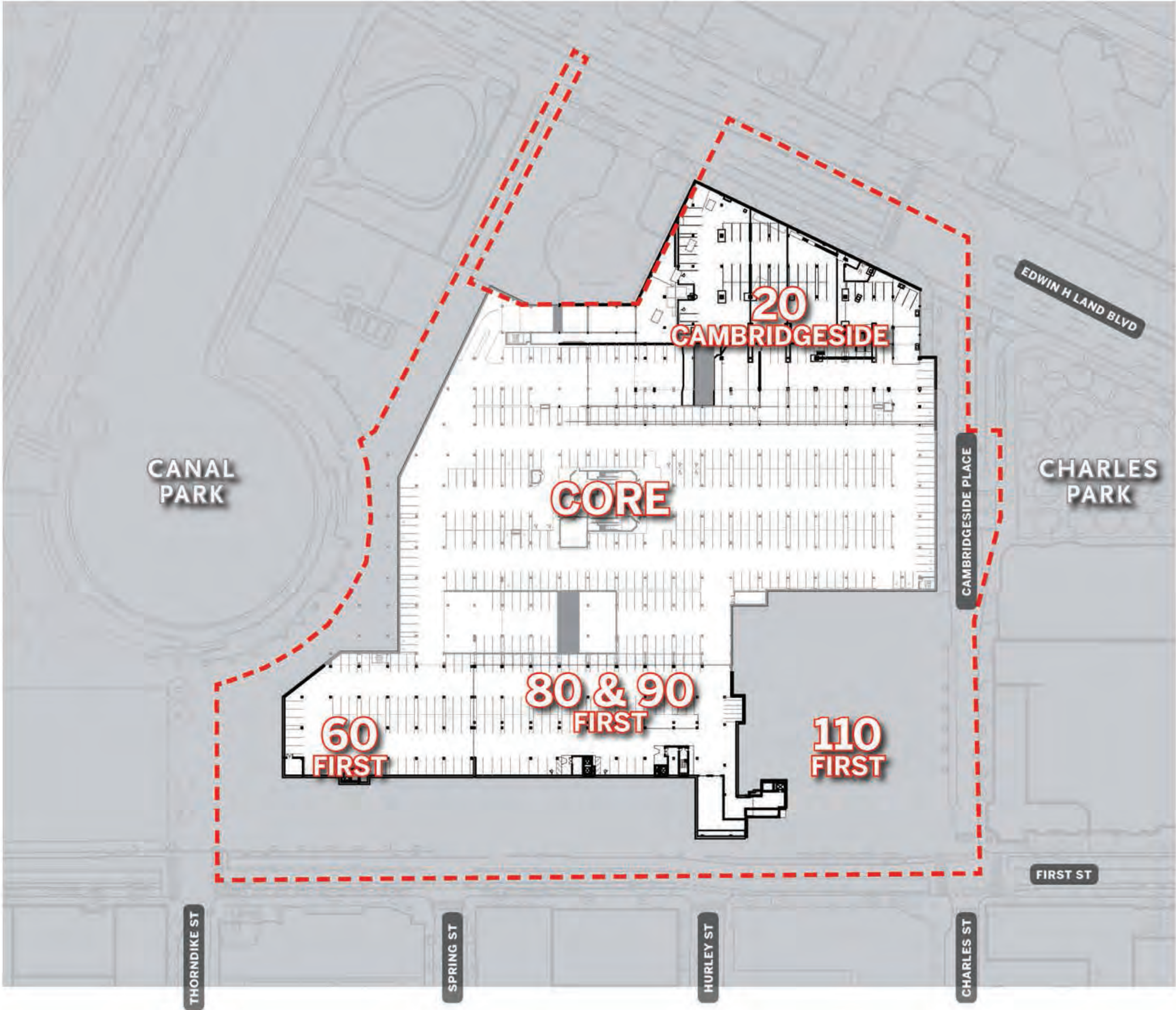
Legend

PUD-8 DEVELOPMENT PARCEL

Approximate Parking Count: 604

Notes

PARKING SPACE NUMBERS ARE APPROXIMATE AND MAY BE SHIFTED SLIGHTLY BETWEEN LEVELS THROUGHOUT THE LIFE OF THE PROJECT AS A RESULT OF RE-STRIPING, CONSTRUCTION, ETC.

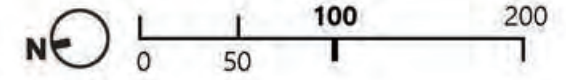


Parking and Loading Plan Parking Plan

LOWER GARAGE LEVEL G2

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT PkP.3



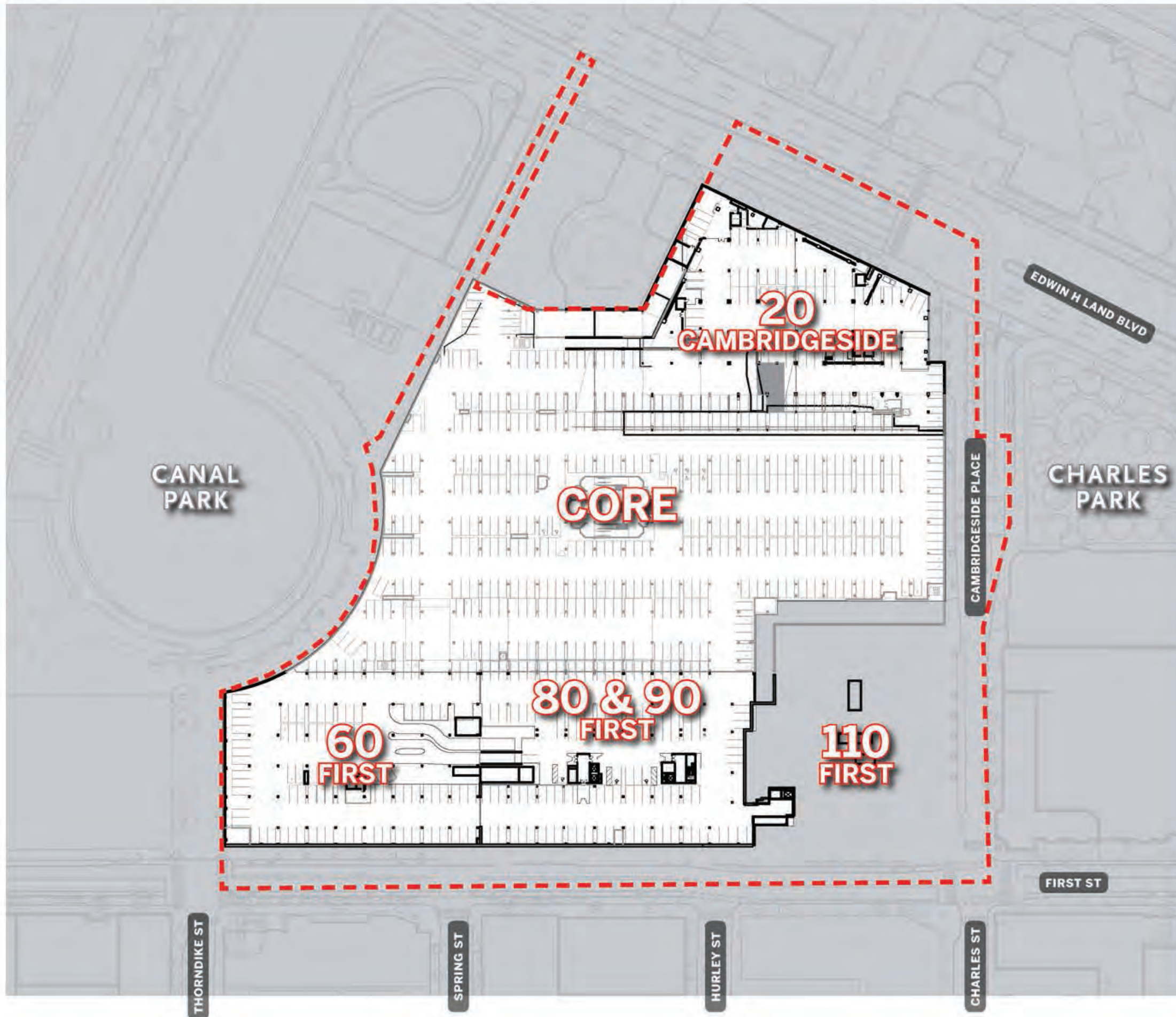
Legend

PUD-8 DEVELOPMENT PARCEL

Approximate Parking Count: 762

Notes

PARKING SPACE NUMBERS ARE APPROXIMATE AND MAY BE SHIFTED SLIGHTLY BETWEEN LEVELS THROUGHOUT THE LIFE OF THE PROJECT AS A RESULT OF RE-STRIPING, CONSTRUCTION, ETC.

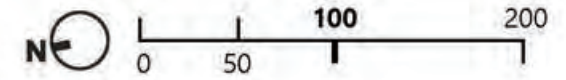


Parking and Loading Plan Parking Plan

LOWER GARAGE LEVEL G1

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT PkP.4



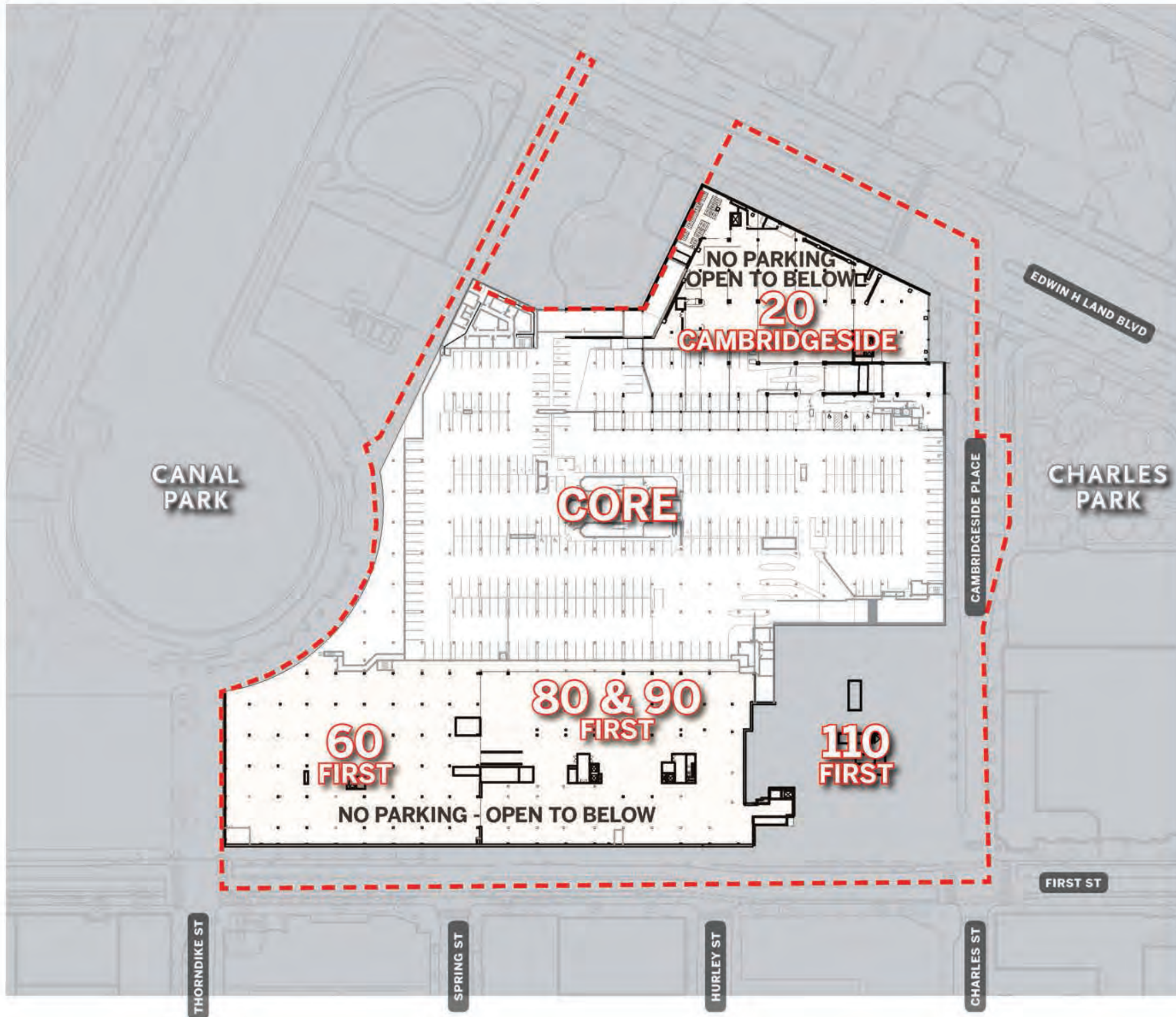
Legend

PUD-8 DEVELOPMENT PARCEL

Approximate Parking Count: 329

Notes

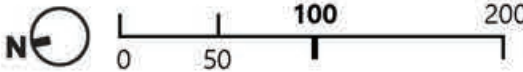
PARKING SPACE NUMBERS ARE APPROXIMATE AND MAY BE SHIFTED SLIGHTLY BETWEEN LEVELS THROUGHOUT THE LIFE OF THE PROJECT AS A RESULT OF RE-STRIPING, CONSTRUCTION, ETC.



Parking and Loading Plan Location of Loading

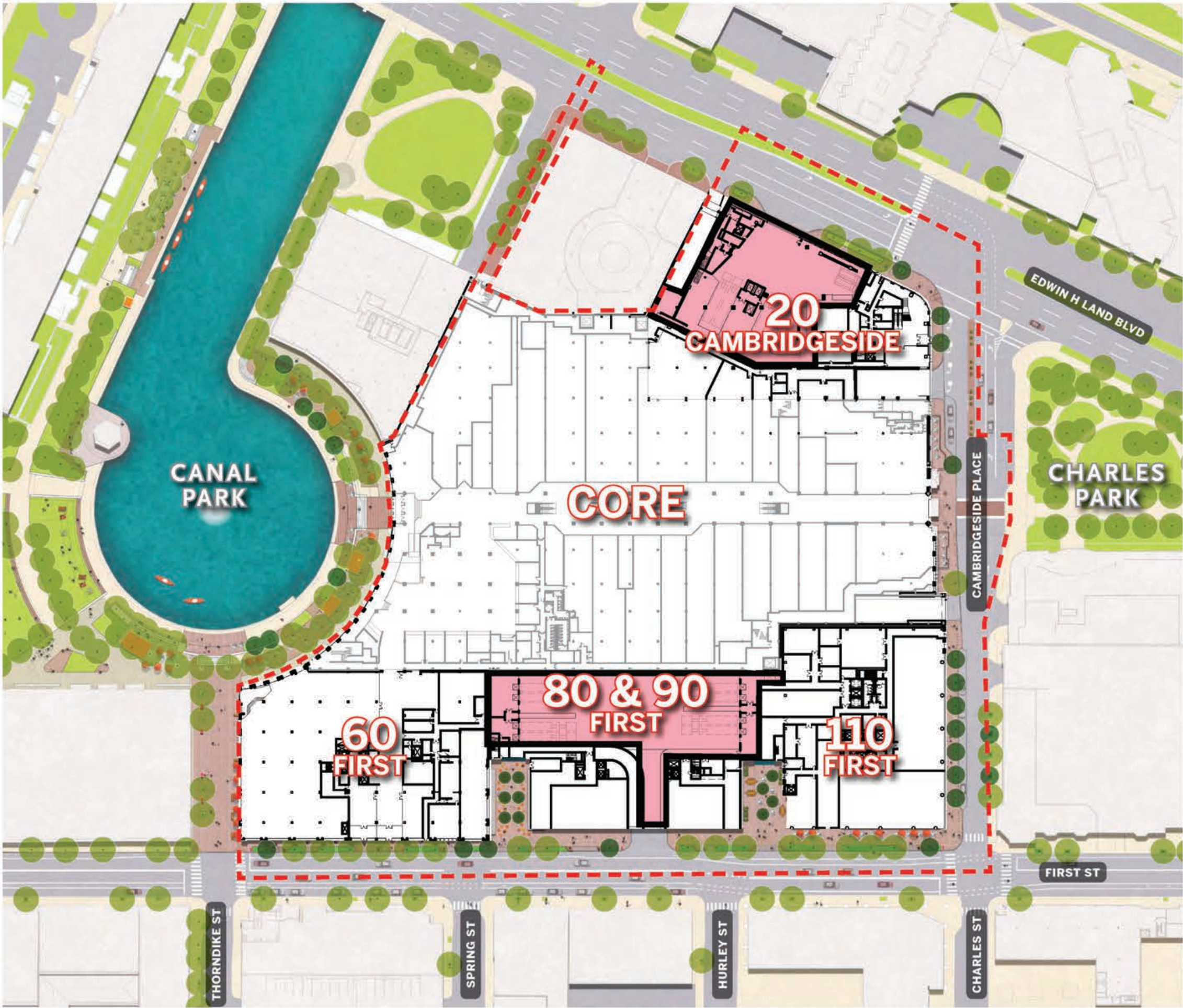
PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT PkP.5



Legend

- PUD-8 DEVELOPMENT PARCEL
- LOADING

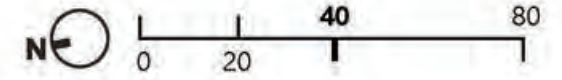


Parking and Loading Plan Loading Plan

LAND BOULEVARD

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT PkP.6

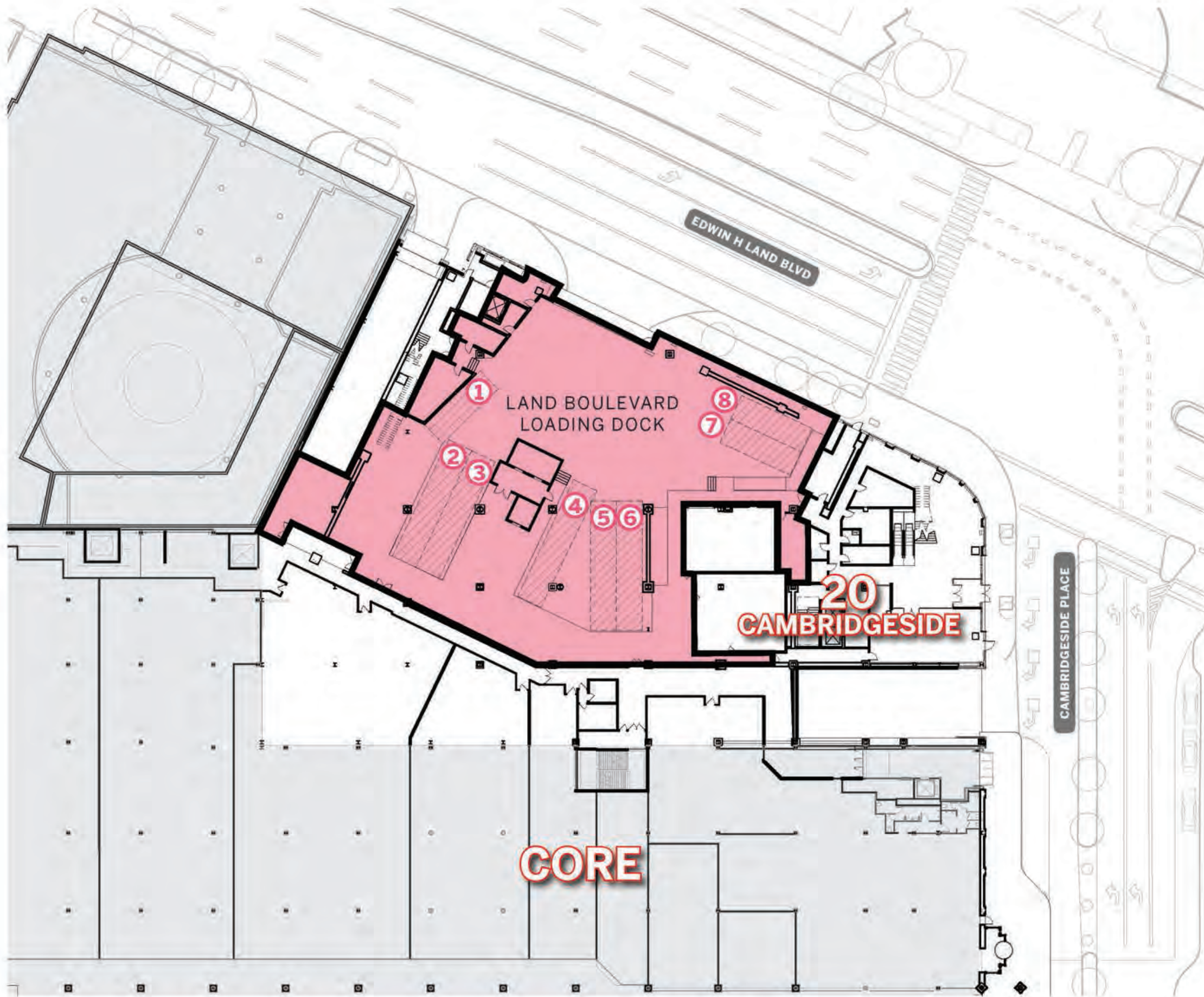


Legend

LOADING

10' X 30' BAY

10' X 50' BAY

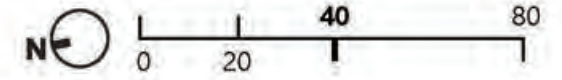


Parking and Loading Plan Loading Plan

FIRST STREET

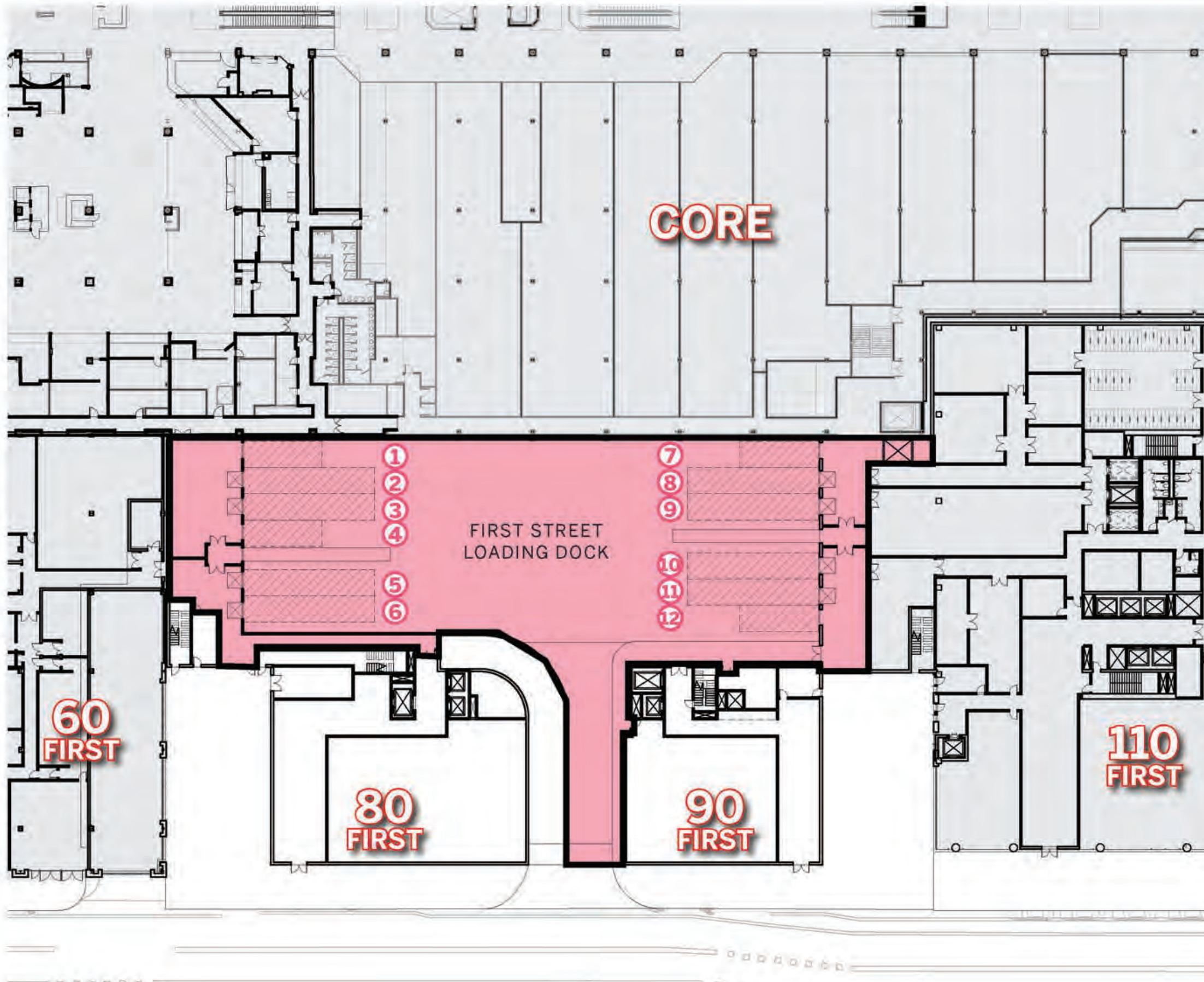
PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT PkP.7



Legend

- LOADING
- 10' X 30' BAY
- 10' X 50' BAY

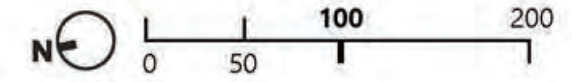


Parking and Loading Plan

Location and Number of Bike Parking Spaces

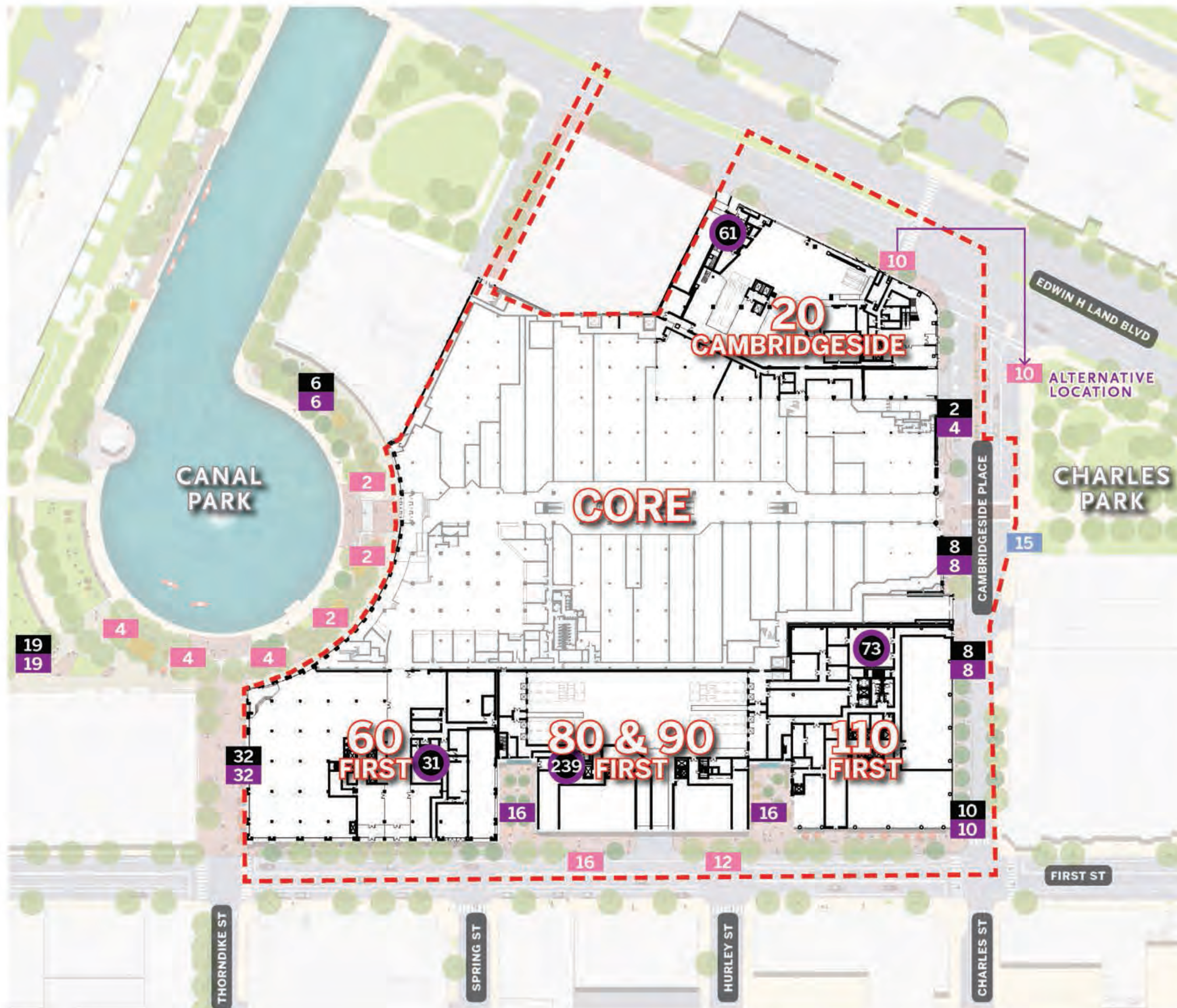
PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT PkP.8



Legend

- PUD-8 DEVELOPMENT PARCEL
- ## PROPOSED LONG-TERM BIKE STORAGE (ESTIMATED)
- ## EXISTING ON-SITE SHORT-TERM BIKE STORAGE
- ## PROPOSED ON-SITE SHORT-TERM BIKE STORAGE
- ## PROPOSED OFF-SITE SHORT-TERM BIKE STORAGE
- ## EXISTING BLUE BIKE STATION



2.4 Connectivity Plan

(Section 13.102.3(d))

**PUD-8 Special Permit
CambridgeSide
Cambridge, MA**

2.4.1 Pedestrian and Bicycle Connectivity

As shown on Exhibits CP.1 through CP.4, the Project is served by an existing network of streets and sidewalks consistent with its urban setting, and benefits from the network of pedestrian and bicycle paths that connect through Canal Park and onto the Charles River. The Project is unique given its direct pedestrian connection between Charles Park and Canal Park through the interior Mall atrium, which has been a critical pedestrian connection for the East Cambridge neighborhood since the opening of the existing Mall in 1990. This interior publicly-accessible network will be expanded through construction of the 60 First Street building by way of the proposed interior gallery connection from First Street through this new building to the Mall food court, which will include dynamic Active Uses, as shown on Exhibit AP.1 in Section 2.6 of this Volume II. This enclosed connection from First Street into the ground floor of the mall is being provided in response to ongoing interest expressed by the East Cambridge neighborhood.

The available pedestrian and bike connections through and around the Project site on Cambridgeside Place, First Street and Thorndike Way provide direct links through Canal Park to the entire DCR Charles River Basin network of pedestrian and bicyclist pathways. These pathways are important not only for recreation but also increasingly as commuter routes relieving highway and transit systems.

The Project's proposed landscaping and streetscape improvements and incorporation of ground-floor Active Uses along First Street, Cambridgeside Place, Land Boulevard and Thorndike Way promote enhanced pedestrian and bicycle connections to the adjacent community and open space network. Canal Park improvements include enhanced pedestrian and bike circulation through upgrading of paving materials and lighting along the water's edge. Informal seating and passive use will be enhanced by simplifying circulation to create better access to open space amenities.

The Project's transformation of First Street, activation of Thorndike Way and Canal Park and new enclosed entry from First Street to the mall's ground floor collectively create a much more welcoming pedestrian and bicycle environment than exists at the Project site today.

The Connectivity Plans included in this Section 2.4 illustrate approximate pedestrian and bicycle access and egress points through the Project.

2.4.2 Vehicular and Public Transit Connectivity

The Project is bordered by Land Boulevard, Cambridgeside Place and First Street and is served by this existing City street network. As shown on Exhibits CP.5 and CP.6, the Project is served by an existing public transit network that includes access to a variety of public transportation modes, including the red and green lines and MBTA and private shuttle buses, connecting the Project site to the greater Cambridge and Boston communities. Accordingly, the Project site is very well situated to encourage alternative modes of transportation and reduce single occupancy vehicle use given its proximity to such an extensive public transit network.

The Connectivity Plans attached as Exhibits CP.5 and CP.6 illustrate approximate vehicular access and egress points through the Project.

The exhibits that follow in this Section 2.4 supplement the information above and illustrate:

- Pedestrian circulation routes;
- Pedestrian access and egress points to buildings and parking facilities within the PUD-8 Development Parcel;
- Bicycle circulation routes;
- Bicycle access and egress points to buildings and parking facilities within the PUD-8 Development Parcel;
- Connections to nearby public transit; and
- Vehicular access and egress points to buildings and parking facilities within the PUD-8 Development Parcel.

Proposed pedestrian and bicycle improvements can be summarized as follows:

- Increased sidewalk widths where possible
- Safe and improved universal accessibility
- Improved pedestrian and bike connections to public transportation creating a greener project

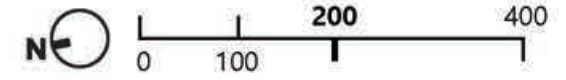
Improvements and enhancements will be made to the existing bike network which runs along First Street and has connections to the Canal Park. These improvements will:

- Assist cyclists with safe routes along the Project edge
- Will be separate from pedestrian walkways
- Provide clearly defined access points to the canal park
- Provide on-street and on-site parking opportunities (see bike parking diagram)

Connectivity Plan Pedestrian Circulation Plan

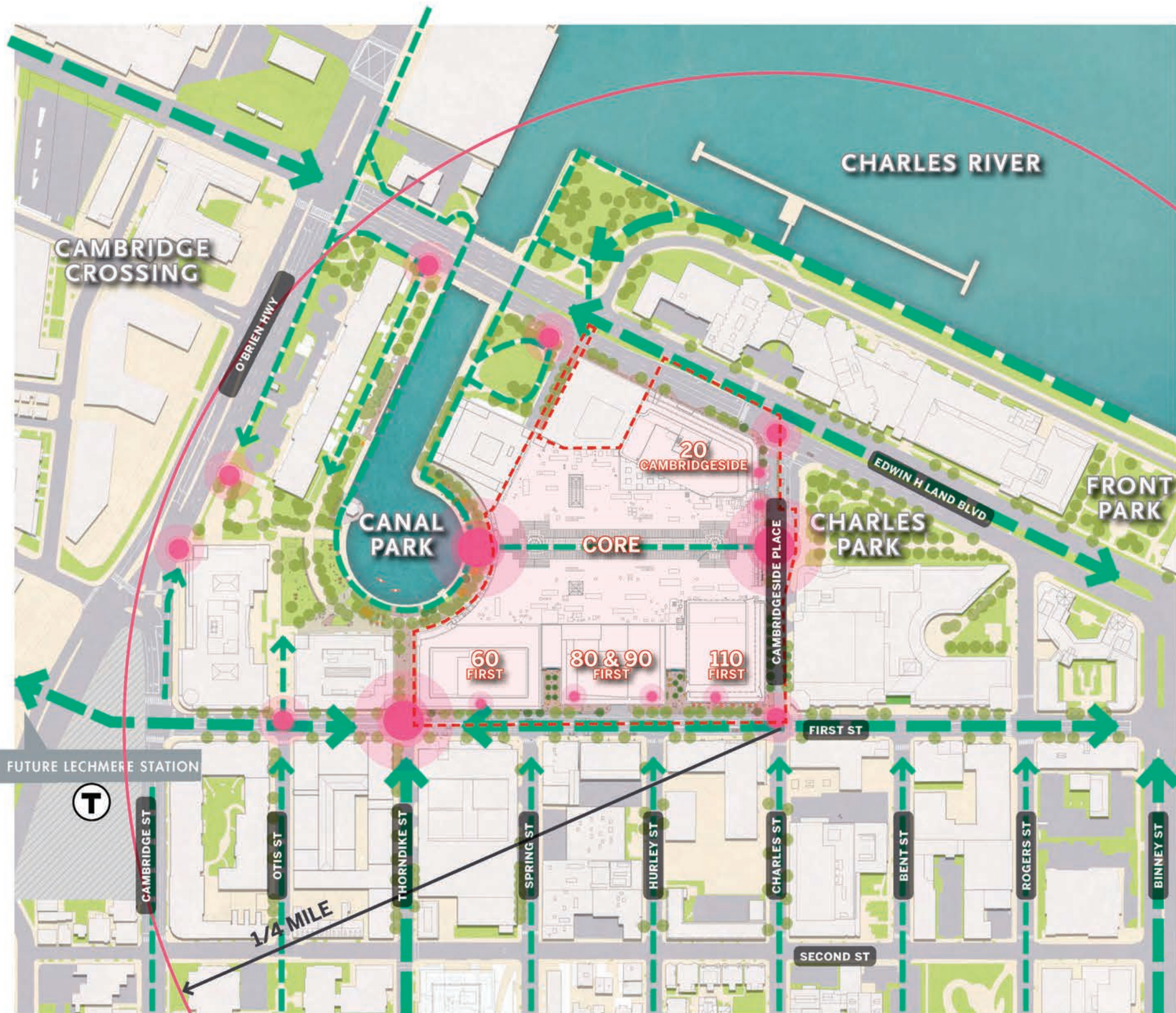
PUD-8 Special Permit
CambridgeSide
Cambridge, MA

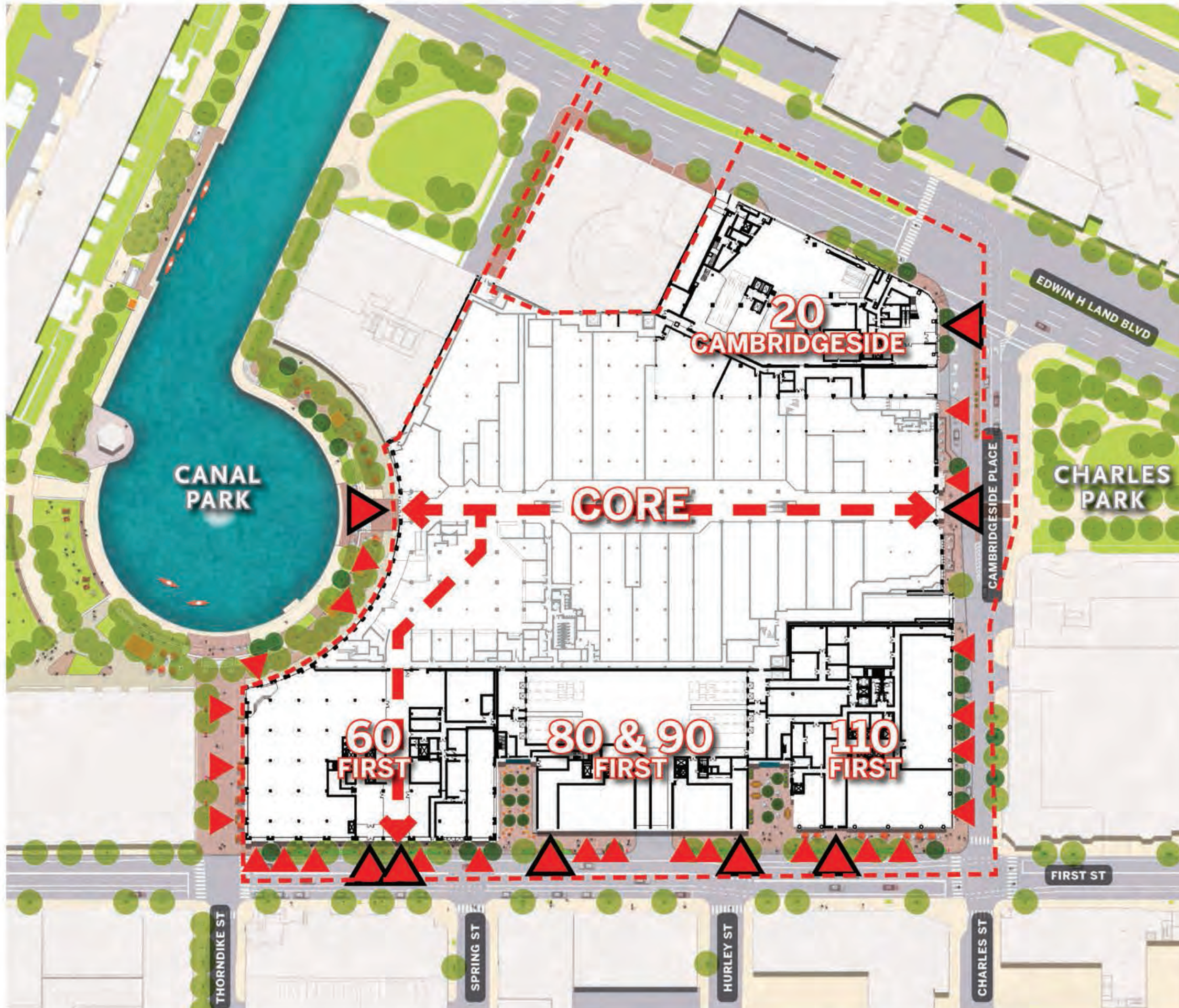
VOLUME II
EXHIBIT CP.1



Legend

- PUD-8 DEVELOPMENT PARCEL
- ENTRY POINTS
- PEDESTRIAN CIRCULATION

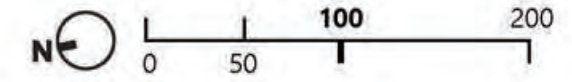




Connectivity Plan Pedestrian Access Plan

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT CP.2



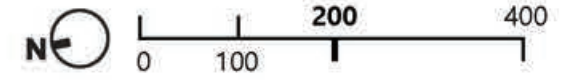
Legend

- PUD-8 DEVELOPMENT PARCEL
- ▲ PEDESTRIAN ENTRY
- ↔ PEDESTRIAN PATH

Connectivity Plan Bicycle Circulation Plan

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT CP.3



Legend

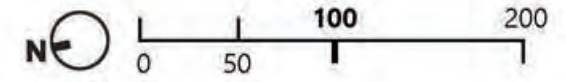
-  PUD-8 DEVELOPMENT PARCEL
-  BIKE LANE/PATH
-  PROPOSED BIKE ACCESS/STORAGE



Connectivity Plan Bicycle Access Plan

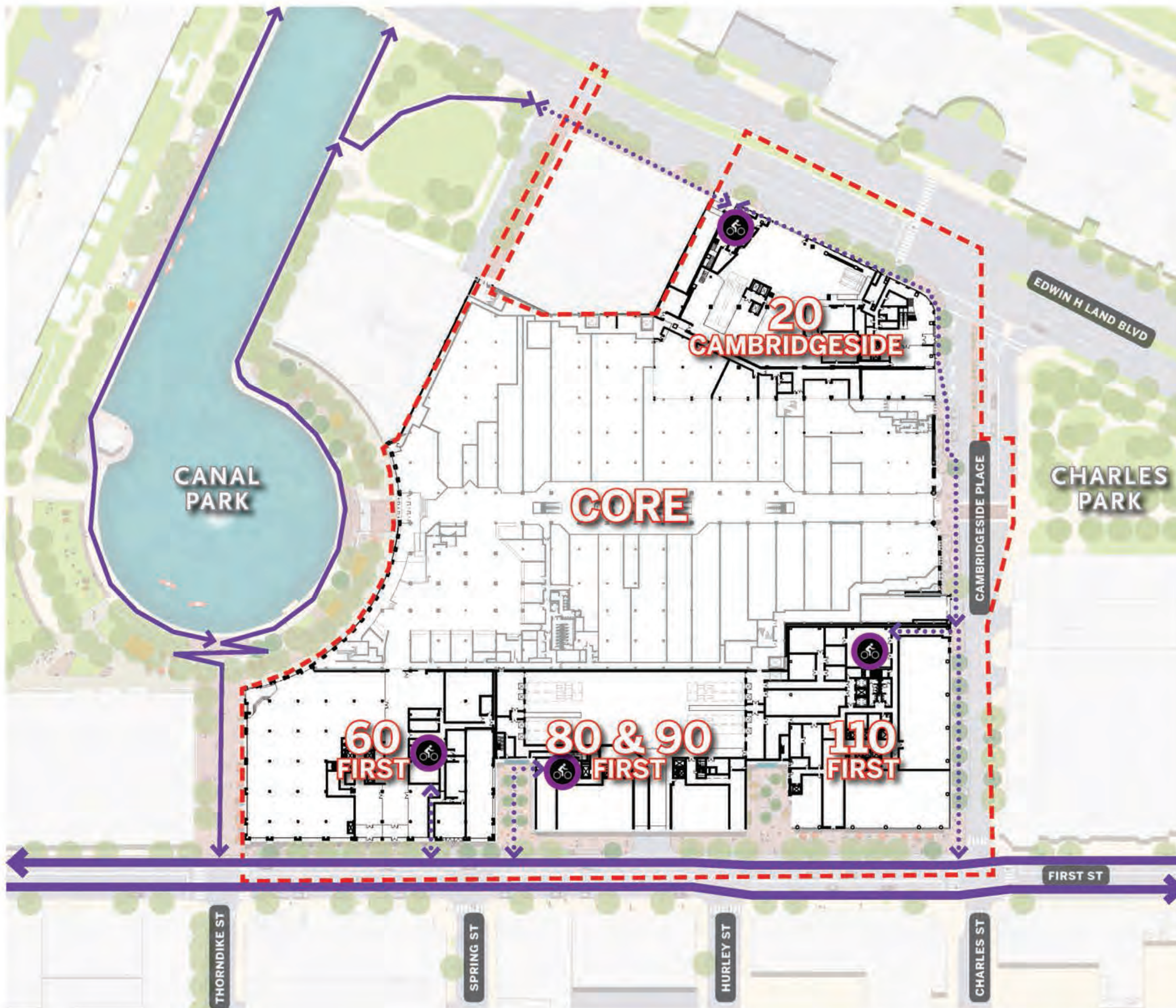
PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT CP.4



Legend

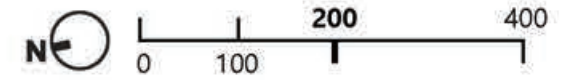
- PUD-8 DEVELOPMENT PARCEL
- RIDE BIKE
- WALK BIKE
- PROPOSED LONG-TERM BIKE STORAGE



Connectivity Plan Public Transit Plan

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT CP.5



Legend

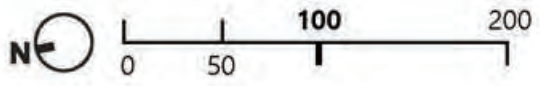
- PUD-8 DEVELOPMENT PARCEL
- EXISTING SUBWAY LINE
- EXISTING EZRIDE LINE
- CAMBRIDGESIDE SHUTTLE ROUTE
- SUBWAY STATION
- BUS STATION
- EZRIDE STOP
- CAMBRIDGESIDE SHUTTLE STOP



Connectivity Plan Vehicular Access Plan

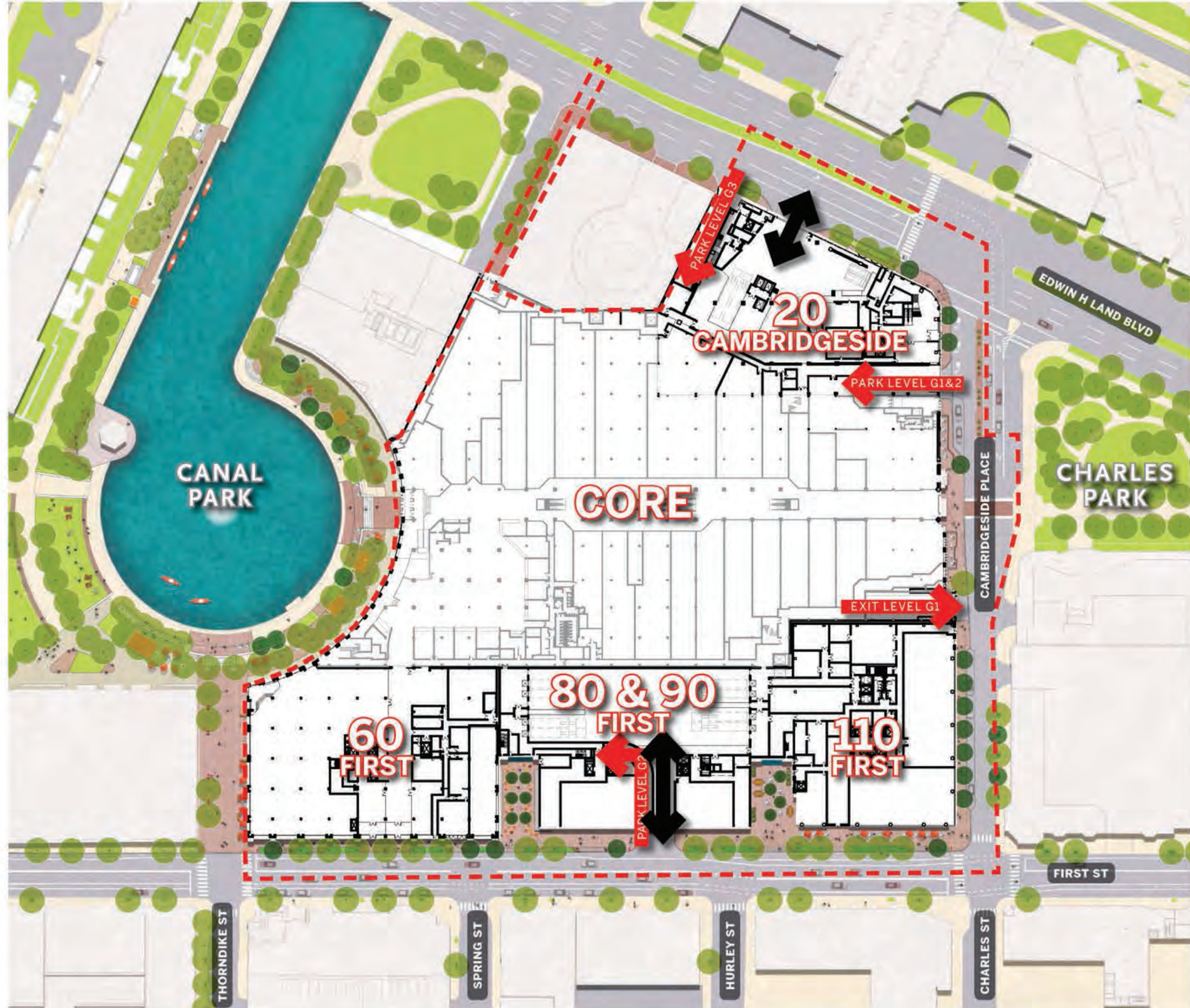
PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT CP.6



Legend

- PUD-8 DEVELOPMENT PARCEL
- ← PASSENGER VEHICLE ACCESS
- ↔ LOADING VEHICLE ACCESS



2.5 Open Space Plan

(Section 13.102.3(e))

**PUD-8 Special Permit
CambridgeSide
Cambridge, MA**

Pursuant to Section 13.105 of the Ordinance, a minimum of 20% of the land area within the PUD-8 Development Parcel shall be Public Open Space or Publicly Beneficial Open Space (as such terms are defined in Article 2.000 of the Ordinance), which Open Space may be located in the PUD-8 District and/or within 1,000 feet of such district provided that the Applicant demonstrates that it, or its affiliates, has historically contributed to, or is committed to contributing to, the creation of such Open Space.

As shown on the Open Space Plan Exhibit OSP.1, the Project provides more than 20% of the land area within the PUD-8 Development Parcel as Open Space under Section 13.105 of the Ordinance, and subject to final Project layout and design, may provide up to approximately 64% of such land area as Open Space.

2.5.1 Historic Open Space

The open space at and surrounding the Project site is a wonderful natural asset that will continue to serve the needs of the community similar to the way it does today - by providing a mix of passive and active circulation, gathering spaces, and natural greenery. In connection with the original construction of the Mall in 1990, the Applicant provided for a substantial amount of open space, including (i) development of Cambridgeside Place (then known as Charles Street Extension), (ii) creation of the sky-lit public pedestrian atrium that connects Charles Park to Canal Park and the riverfront, and (iii) contribution to the design and development of Charles Park and Canal Park. See Figure 2.5.1 – 1978 East Cambridge Riverfront Plan.



Figure 2.5.1 – 1978 East Cambridge Riverfront Plan

The Applicant's specific contributions to the development of Cambridgeside Place, Canal Park and Charles Park are detailed in the Development Agreement for the Cambridgeside Galleria, Cambridge, Massachusetts by and between the City of Cambridge and Trustees of Cambridgeside Galleria Associates Trust dated as of June 30, 1987 (as amended and affected by various Certificates of Completion), the Maintenance Agreement for Lechmere Canal Park between the City of Cambridge and Trustees of Cambridgeside Galleria Associates Trust dated as of September 1,

1991 (as amended) and a Canal Park Maintenance Agreement dated as of March 1, 2003 between Cambridgeside Galleria, Inc. and various abutters (and approved by the City of Cambridge). In summary, the Applicant or its affiliates dedicated land in fee and/or granted public easements to the City of Cambridge to establish Cambridgeside Place (then Charles Street Extension) and Charles Park, contributed funds for the maintenance of Charles Park once completed, and completed the construction of a portion of Canal Park and agreed to ongoing maintenance obligations with respect to the same that still exist today.

The Project and the East Cambridge neighborhood continue to benefit from the two parks created and maintained as part of the original CambridgeSide development. The open space that surrounds CambridgeSide is a wonderful natural asset that will continue to serve the needs of the community similar to the way it does today - by providing a mix of passive and active circulation, gathering spaces, natural vegetation, and wildlife/insect habitats. The proposed changes intend to enhance and expand these features in places and spaces that are lacking them today.

These historical (and ongoing) open space contributions account for approximately 171,600 square feet of Public Open Space and approximately 41,800 square feet of Publicly Beneficial Open Space under Section 13.105.



Figure 2.5.2 – Historic photos of Lechmere Canal from the 1970's

2.5.2 Enhancements to Historic Open Space

The Applicant also proposes to enhance and expand upon the above-described open space features that were created

in connection with the original development of the Mall. The Project's proposed changes, as shown on the Open Space Plan and associated Exhibits, intend to enhance and expand these features in places and spaces that are lacking them today. Existing streetscapes will be refreshed and enhanced with new paving, widened sidewalks, new tree plantings and site furnishings to support an enlivened retail environment along First Street, Cambridgeside Place and Land Boulevard.

Proposed Canal Park improvements include enhanced pedestrian and bike circulation through the upgrading of paving materials along the water's edge. Informal seating and passive uses will be enhanced by creating a grand lawn overlooking the Canal suitable for lounging, picnics, and special events. This will also provide the benefit of reducing the area of impervious surfacing and increasing the amount of ground water recharge. At the retail edges of Canal Park, seating areas will be expanded beneath the existing mature tree canopy, which, along with the removal and replacement of overgrown shrub plantings, will greatly improve visibility and community connectivity to the Canal. The existing paving will be reset or replaced as needed, to improve safety and universal access. Additionally, the existing stairs and ramps connecting the upper walkways to the lower canal walk will be replaced in order to both open their visual connectivity and to meet current universal access standards. Finally, in response to neighborhood safety concerns, additional lighting will be provided throughout Canal Park. Exhibits OSP.3 through OSP.8 provide conceptual illustrations of the proposed Canal Park improvements.

As depicted on Exhibits OSP.4, at the Land Boulevard Bridge underpass, where safety is of the utmost importance, new paving and proper lighting will be provided, and art installations inside the tunnel-like areas beneath the Bridge are proposed to enliven and enrich the experience for pedestrians and cyclists.

2.5.3 New Open Space

In addition to maintaining and improving the above described open spaces, and subject to receipt of necessary permits and approvals, the Applicant proposes a number of new open space improvements, centered around activating First Street in connection with the Project. The Applicant proposes widening the sidewalk along a majority of the Project site that abuts First Street in order to allow for dynamic programming of ground-floor Active Uses and increased pedestrian amenities and furnishings. The Project also includes two new pocket parks along First Street, which will provide spacing between buildings and help to create

a pedestrian-centric scale. Finally, the Project will involve the creation of a new pedestrian connection from First Street, through the new 80 & 90 First Street building, into the sky-lit atrium and Mall food court. This connection will include Active Uses, creating an engaging new public space. These new open spaces are currently anticipated to account for approximately 18,000 square feet of Publicly Beneficial Open Space under Section 13.105. The Project also proposes re-creating Thorndike Way by installing new pavers, plantings, furnishings and lighting features to create a more welcoming and dynamic connection from First Street to Canal Park.

As described above, the Project complies with the Open Space requirements of the PUD-8 zoning as it provides more than 20% of the land area of the PUD-8 Development Parcel as Open Space under Section 13.105.

The exhibits that follow in this Section 2.5 supplement the information above and:

- Quantify the areas of all open space areas utilized in satisfaction of Section 13.105; and
- Illustrate conceptual improvements planned for these open spaces, including representative materials, furnishings, lighting and art installations. Please refer to Volume III for more detailed design proposals for the open space improvements associated with the initial phase buildings – i.e., Canal Park, Land Boulevard Bridge and Thorndike Way improvements.

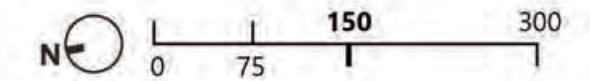
The final location and design of the proposed open space improvements will be determined as part of the final construction plans for the initial and subsequent buildings, which final configuration will be subject to review by the Project's Retail and Open Space Advisory Committee that will include representatives from the Community Development Department and the East Cambridge neighborhood.

Open Space Plan





Open Space Diagram

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT OSP.1



Legend

-  PUD-8 DEVELOPMENT BOUNDARY (405,760± SF)
-  EXISTING PUBLIC OPEN SPACE (171,600± SF)
-  EXISTING OPEN SPACE, PUBLICLY BENEFICIAL (41,800± SF)
-  PROPOSED NEW OPEN SPACE, PUBLICLY BENEFICIAL (18,000± SF)

TOTAL OPEN SPACE = 231,400 SF

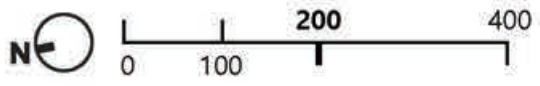
PROPOSED OPEN SPACE FOOTPRINTS AND DESIGNS ARE SUBJECT TO THE FINAL BUILDING LAYOUT.



Open Space Plan Open Space Map

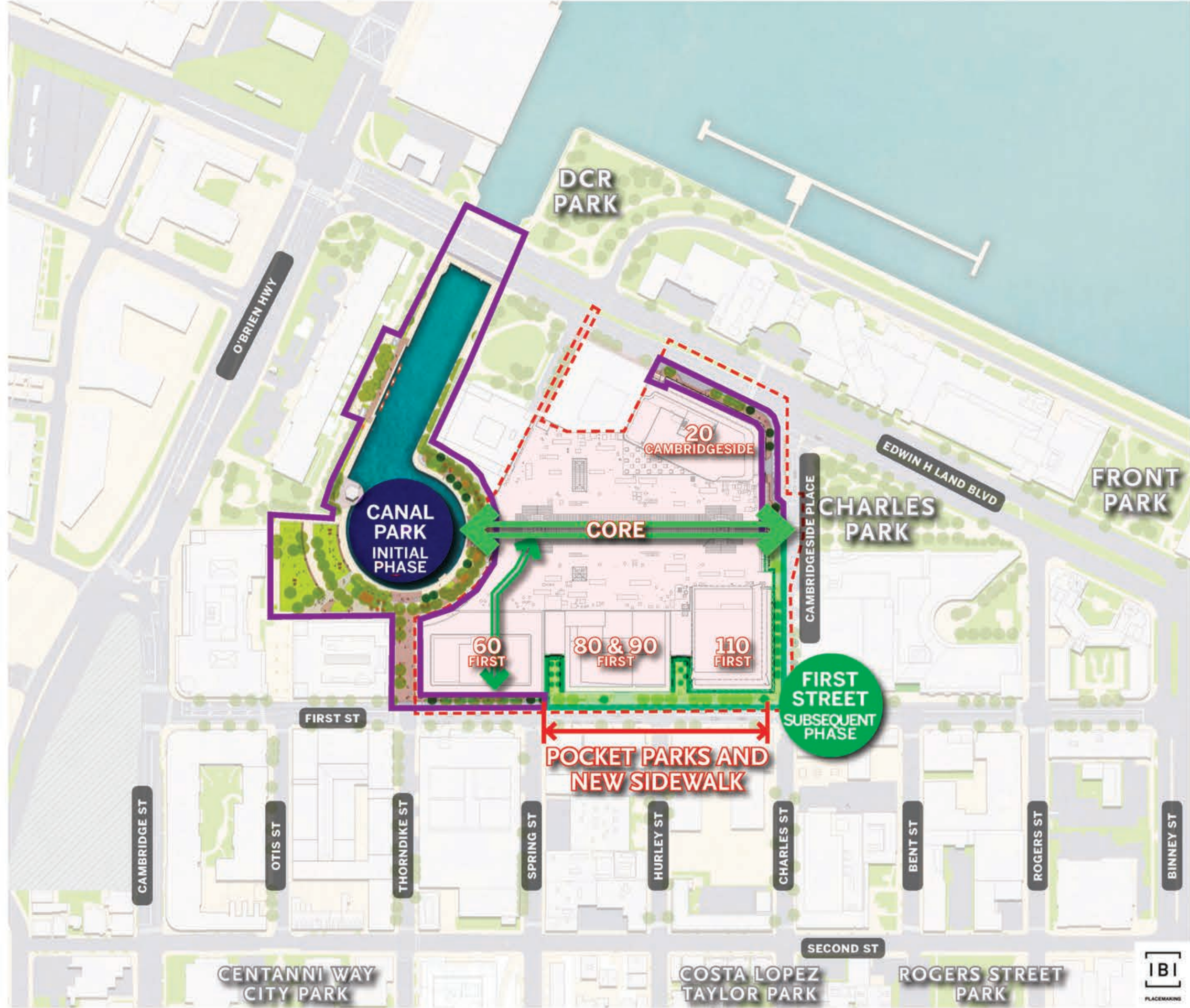
PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT OSP.2



Legend

- PUD-8 DEVELOPMENT PARCEL
- STREETScape AND CANAL PARK
- NEW SIDEWALK AND POCKET PARKS



NEW ENGLAND DEVELOPMENT | ELKUS | MANFREDI ARCHITECTS | CS CAMBRIDGE SIDE

Conceptual Illustrations of Open Space Improvements



1

LIGHTING, ART AND ACTIVITY UNDER LAND BOULEVARD



2

NEW PLANTING, LIGHTING, FURNISHINGS AND IMPROVED CANAL WALK



BRIDGE ART (EXAMPLE)



EXISTING BRIDGE



EXISTING CANAL WALK



LIGHTING (EXAMPLE)



3

ENGAGING THE WATER



4

ARTS



5

ACTIVITIES



6

THORNDIKE WAY

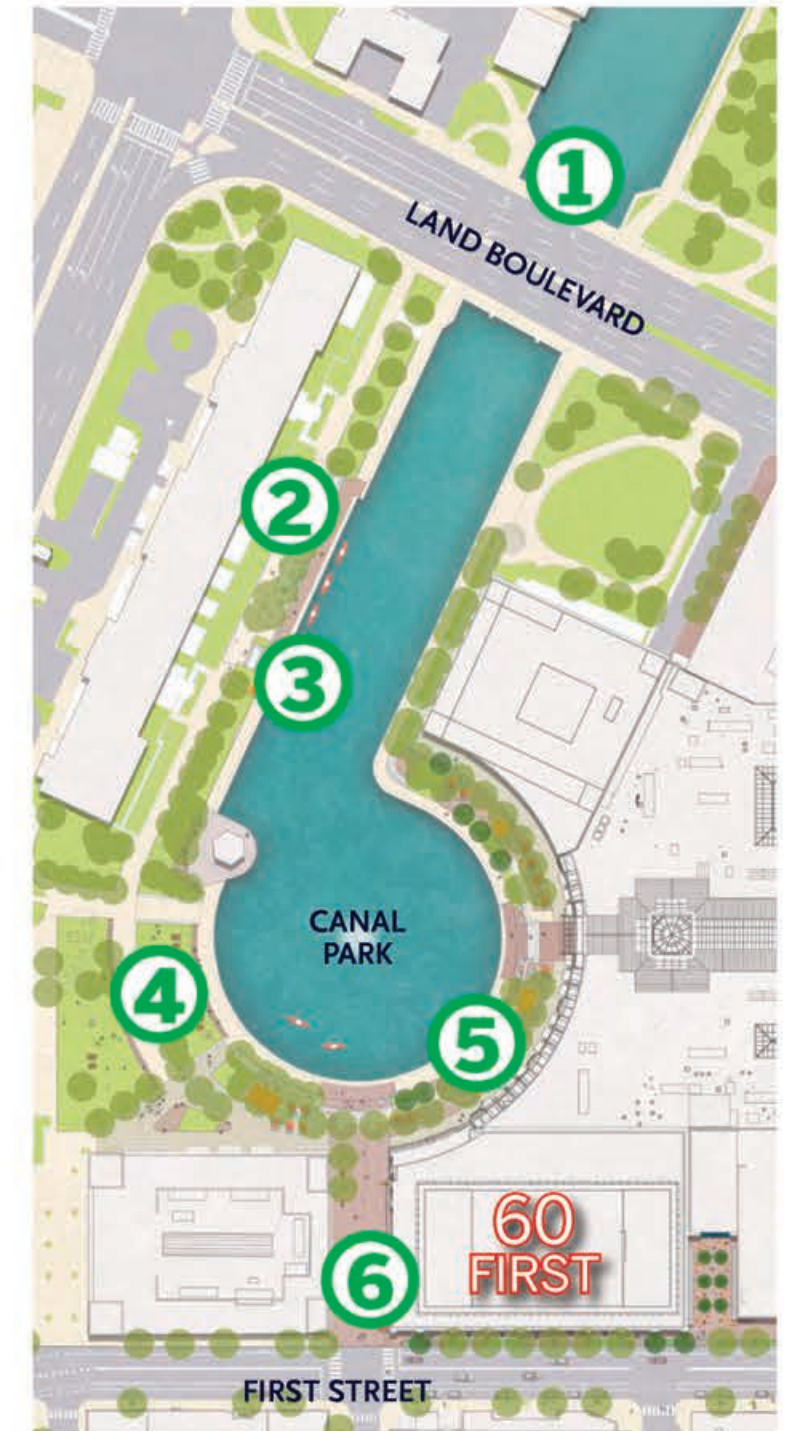


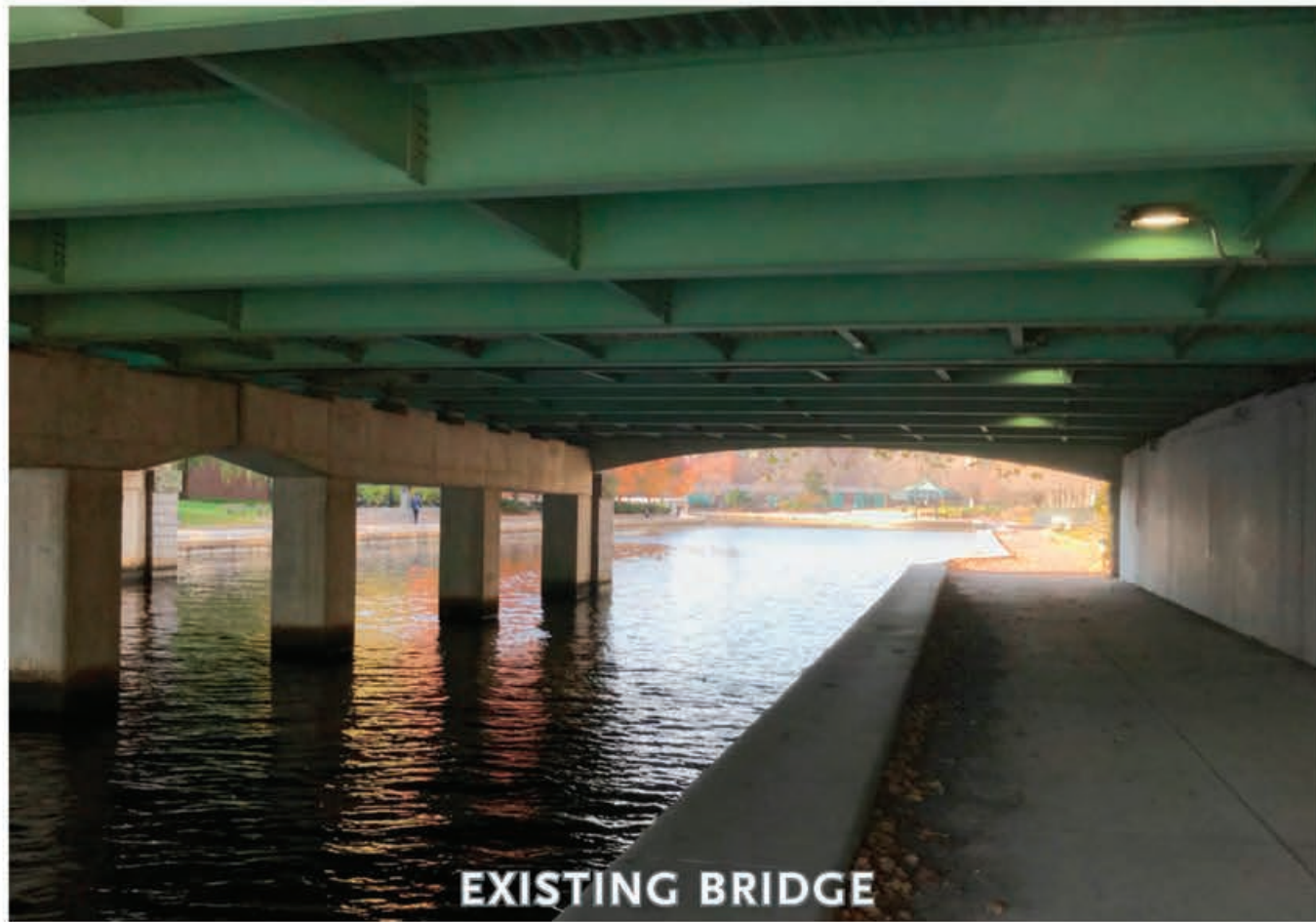
Open Space Plan Conceptual Illustrations Canal Park

INITIAL PHASE

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT OSP.3



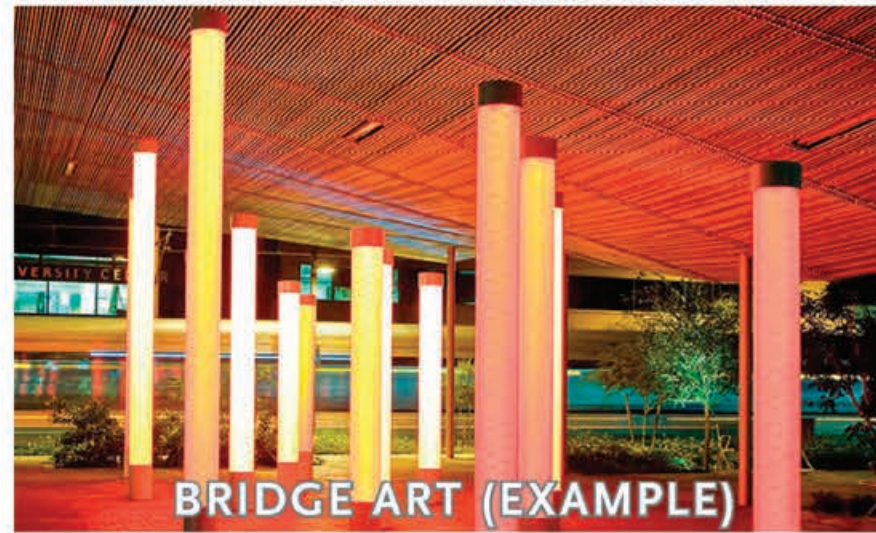


EXISTING BRIDGE



1

BRIDGE ART (EXAMPLE)



BRIDGE ART (EXAMPLE)



LIGHTING, ART AND ACTIVITY UNDER LAND BOULEVARD



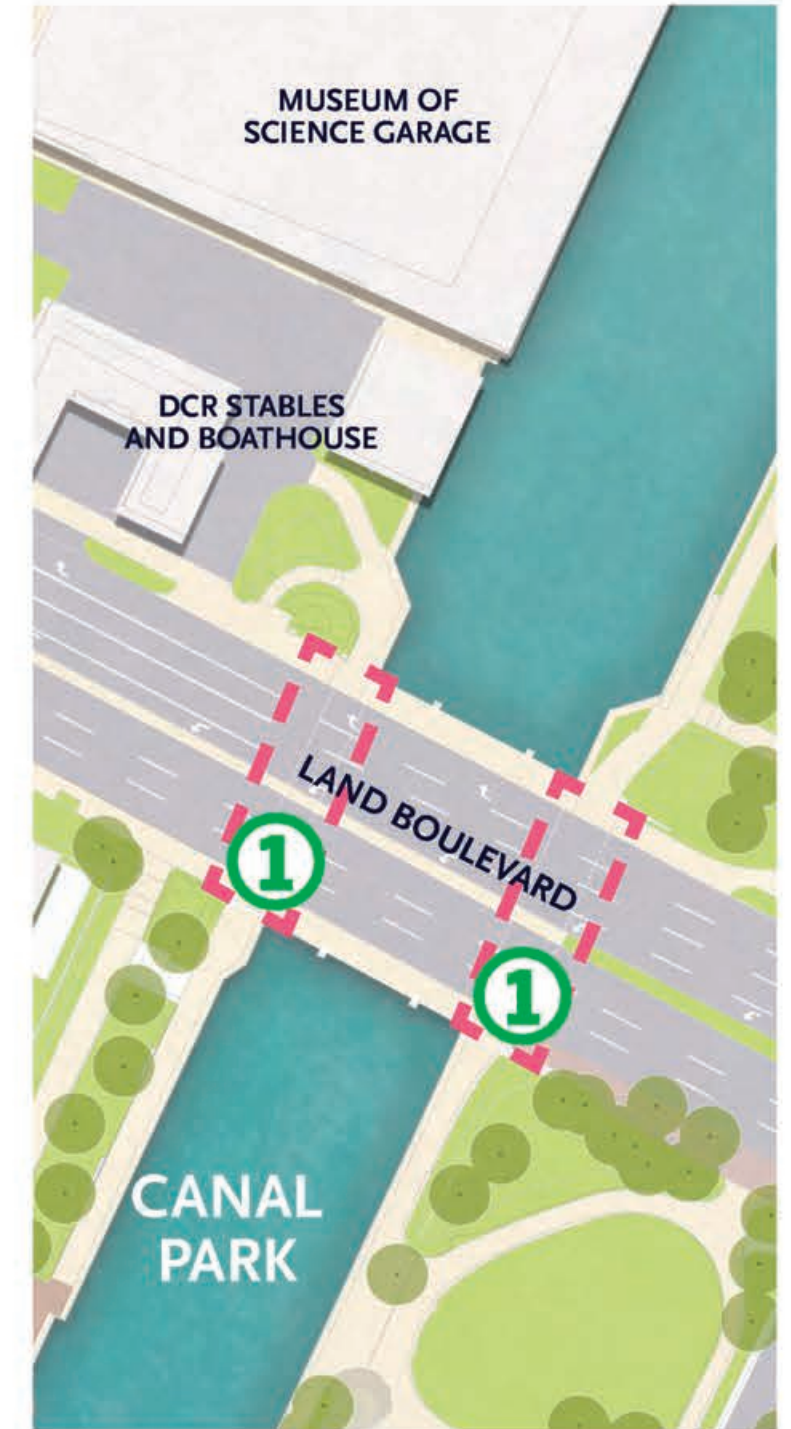
IBI
PLACEMAKING

Open Space Plan Conceptual Illustrations Land Blvd. Bridge

INITIAL PHASE

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT OSP.4



NEW ENGLAND DEVELOPMENT | ELKUS | MANFREDI ARCHITECTS | CS CAMBRIDGE



SCULPTURE



WATER SPORTS



SEATING



SEATING



Open Space Plan
Conceptual Illustrations
Lower Canal

INITIAL PHASE

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

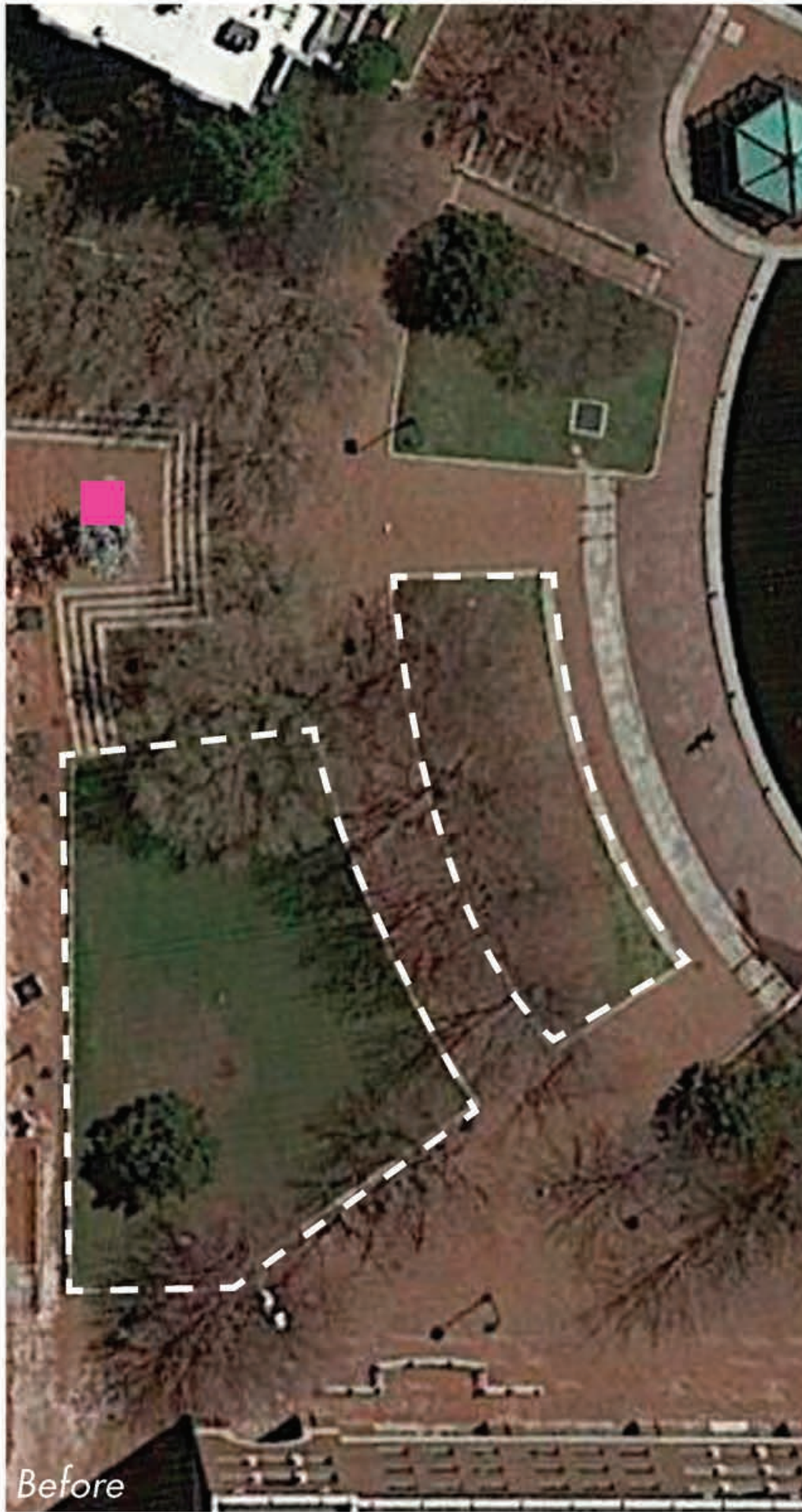
VOLUME II
EXHIBIT OSP.5



NEW ENGLAND
DEVELOPMENT

ELKUS | MANFREDI
ARCHITECTS





Before



After

Approx. 750 People Capacity

Open Space Plan Conceptual Illustrations Great Lawn

INITIAL PHASE

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CambridgeSide
Cambridge, MA

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EXHIBIT OSP.6





SEATING



POP-UP CAFE



OVERHEAD LIGHTING

5

Open Space Plan
Conceptual Illustrations
Upper Canal
INITIAL PHASE

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT OSP.7



MALL
ENTRY

60
FIRST



LOCAL ART



OUTDOOR SEATING



LIGHTING



6

THORNDIKE WAY

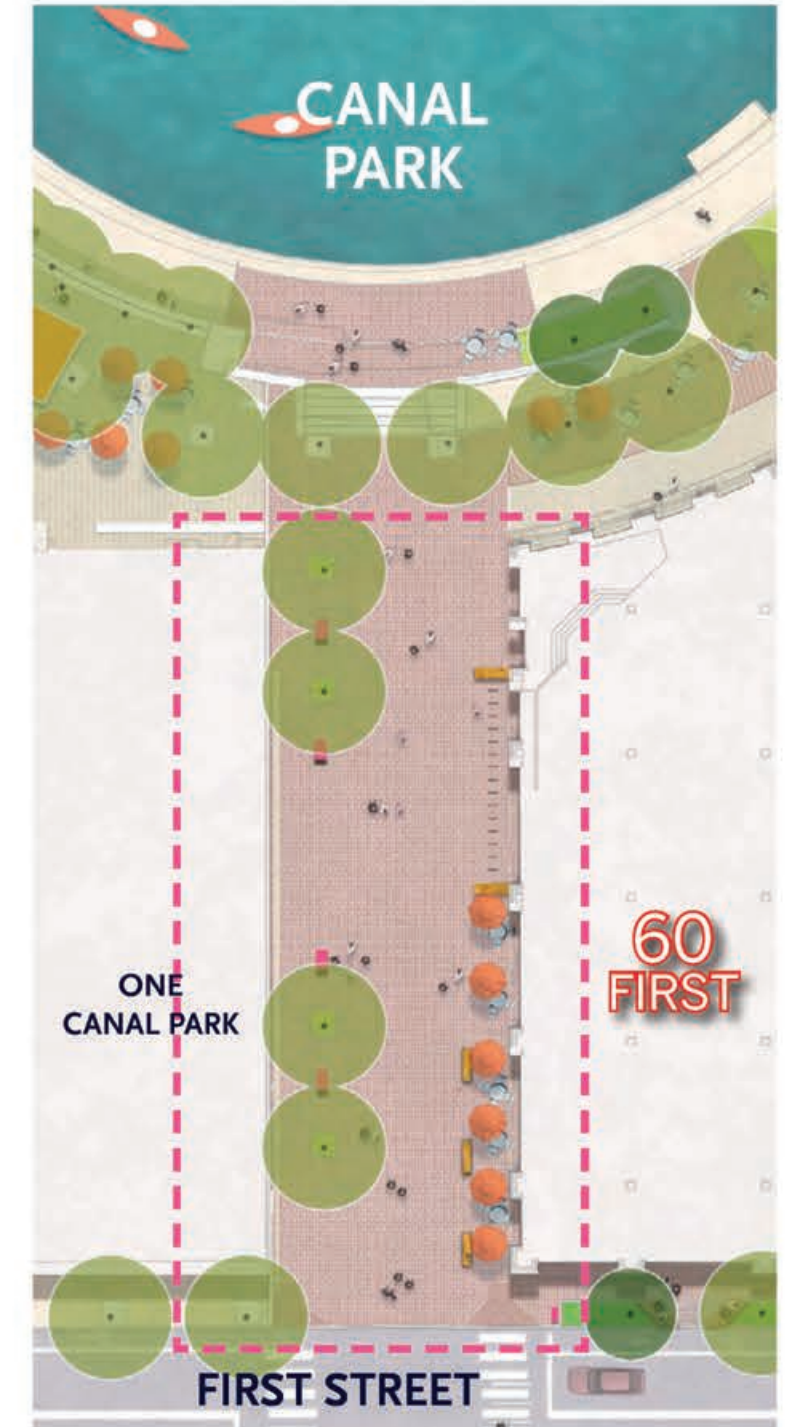


Open Space Plan Conceptual Illustrations Thorndike Way

INITIAL PHASE

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CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT OSP.8





Open Space Plan
Conceptual Illustrations
Activity and Programming
INITIAL PHASE

PUD-8 Special Permit
 CambridgeSide
 Cambridge, MA

VOLUME II
EXHIBIT OSP.9



CANAL PARK





POCKET PARKS

1



STREETSCAPE

2



WORK



REST



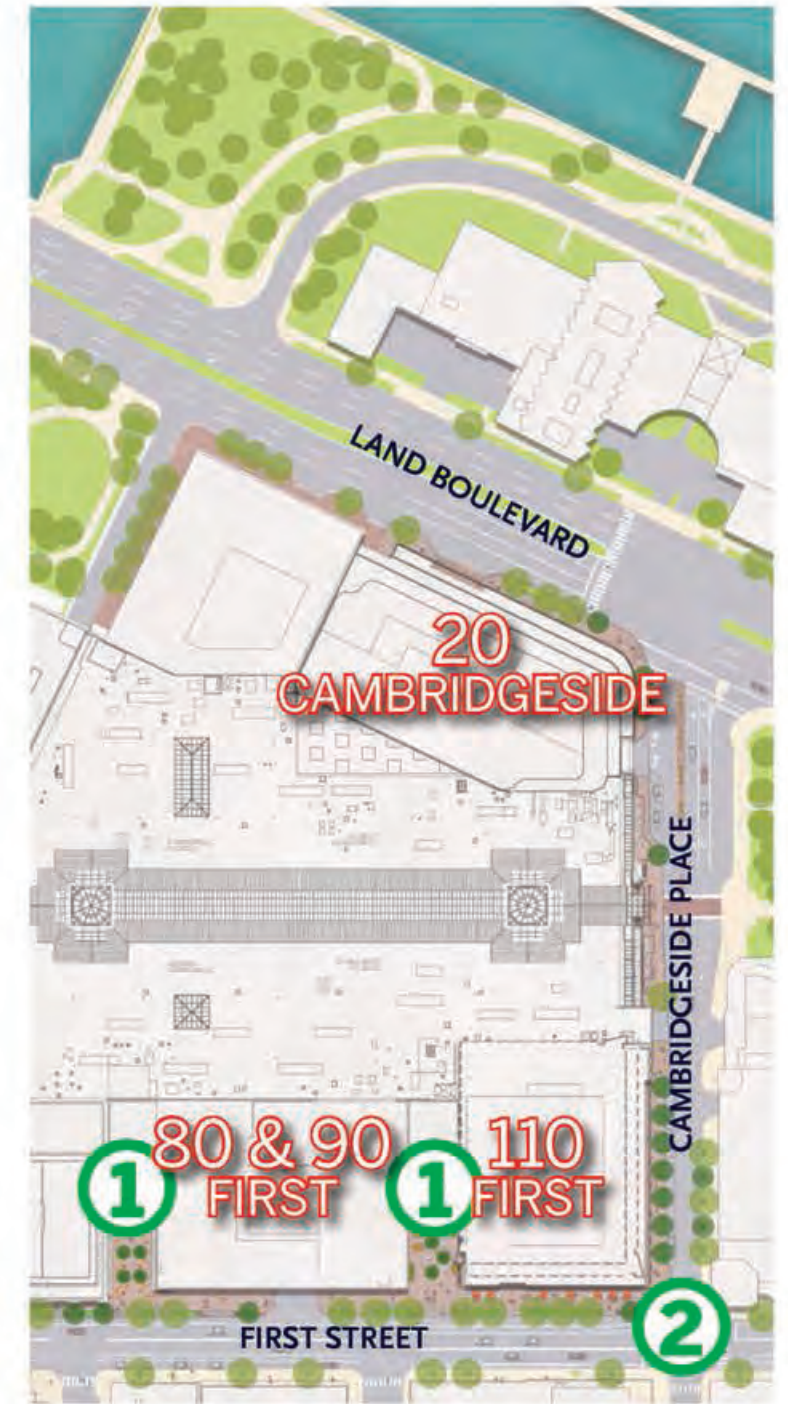
GATHER

Open Space Plan Conceptual Illustrations First Street

INITIAL PHASE

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CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT OSP.10



NEW ENGLAND DEVELOPMENT | ELKUS | MANFREDI ARCHITECTS | CS CAMBRIDGESIDE



ARTFUL



SOCIAL



PLAYFUL



MOVE



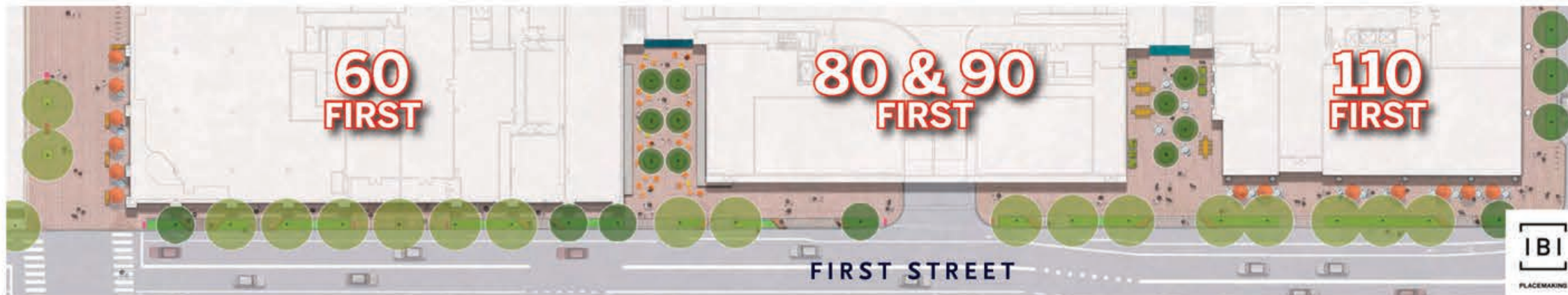
READ



PAUSE



SHOP



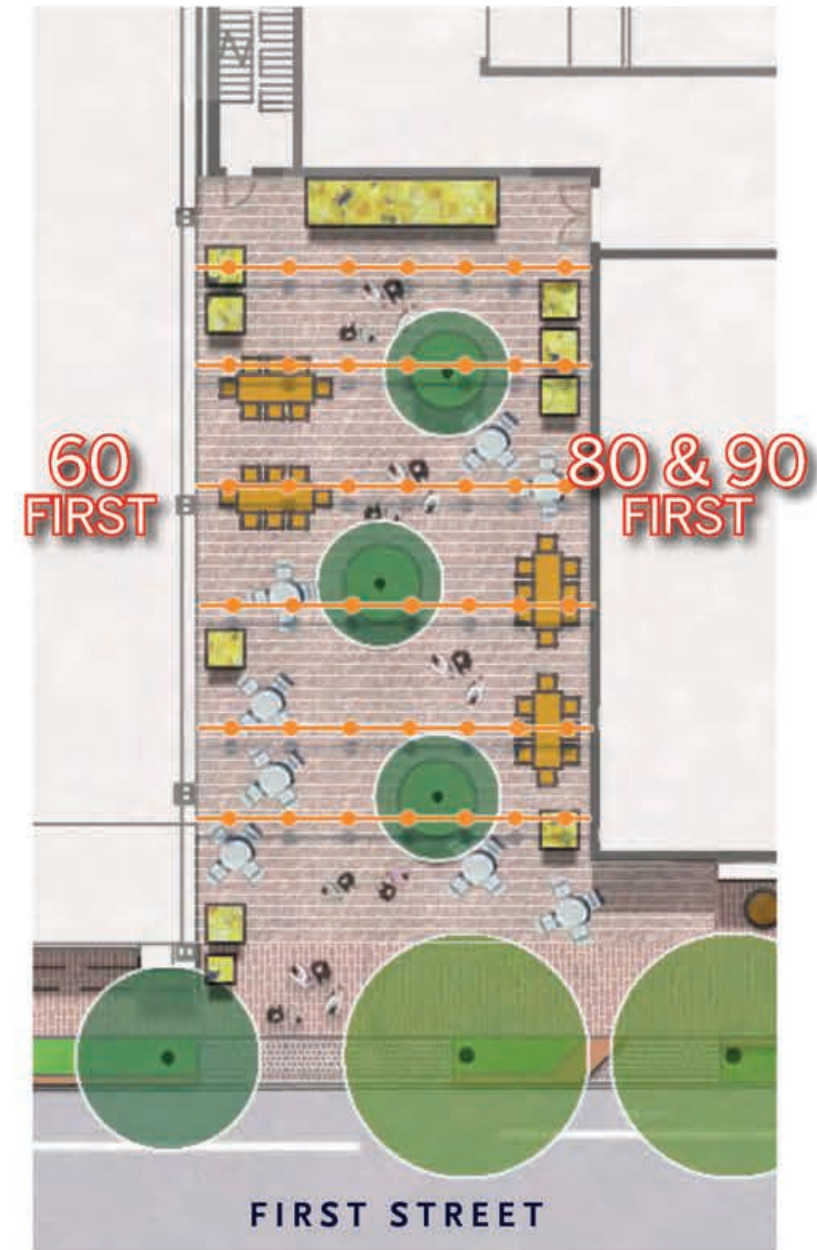
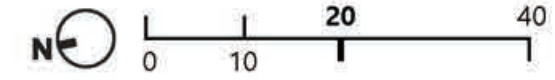
**Open Space Plan
Conceptual Illustrations**

First Street

POCKET PARKS SUBSEQUENT PHASE

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CambridgeSide
Cambridge, MA

**VOLUME II
EXHIBIT OSP.11**



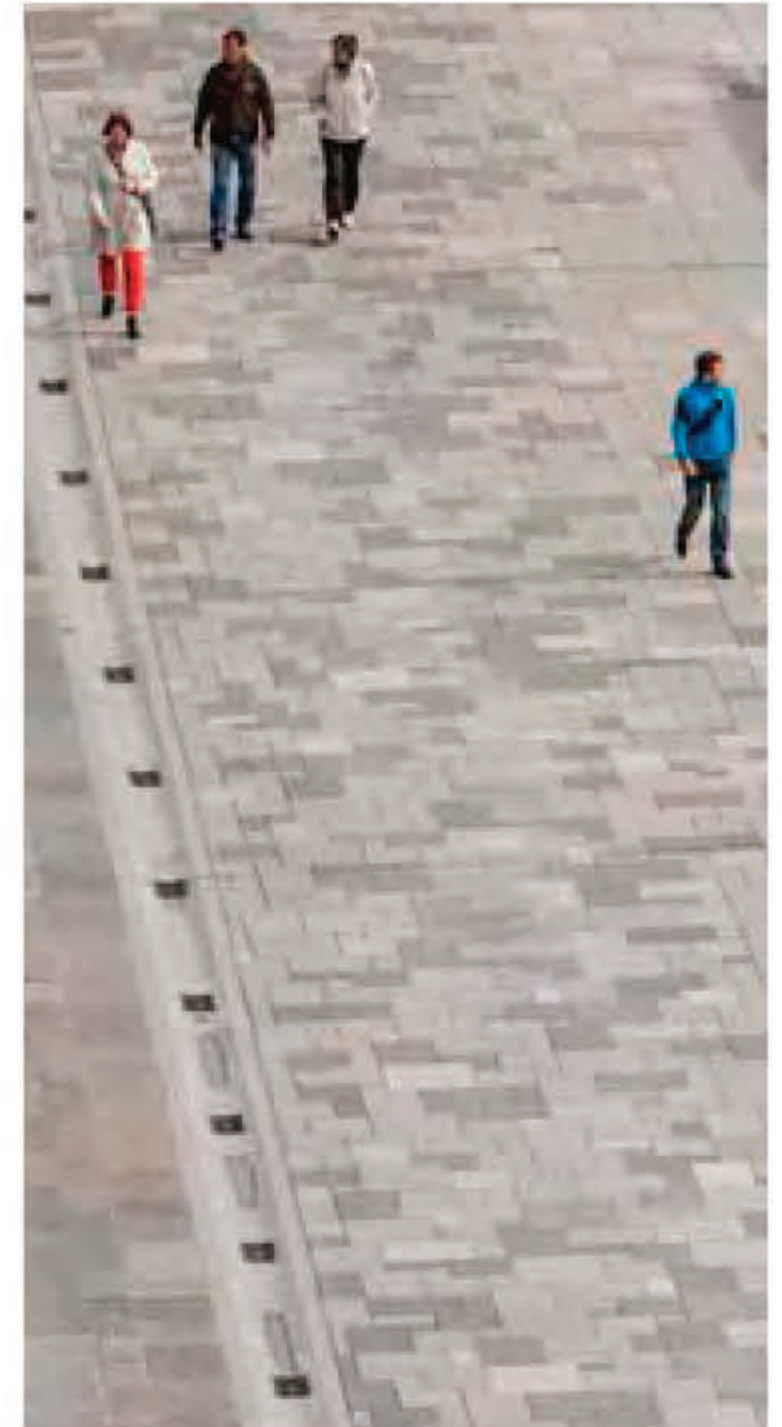
Representative Materials, Furnishings, Lighting and Art Installations



Open Space Plan Conceptual Illustrations Site Paving

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CambridgeSide
Cambridge, MA

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EXHIBIT OSP.12





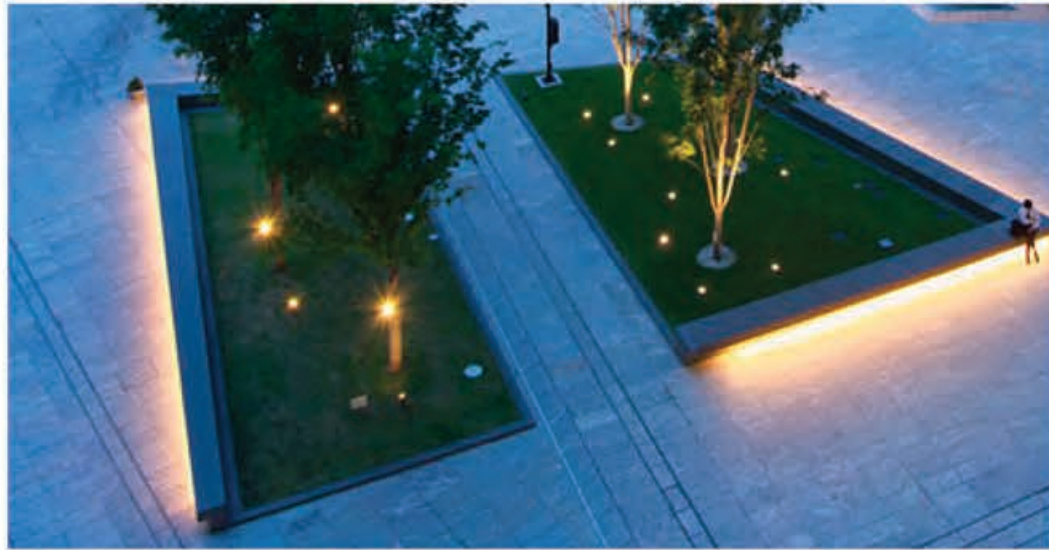
Open Space Plan Conceptual Illustrations Site Furnishings

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

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EXHIBIT OSP.13



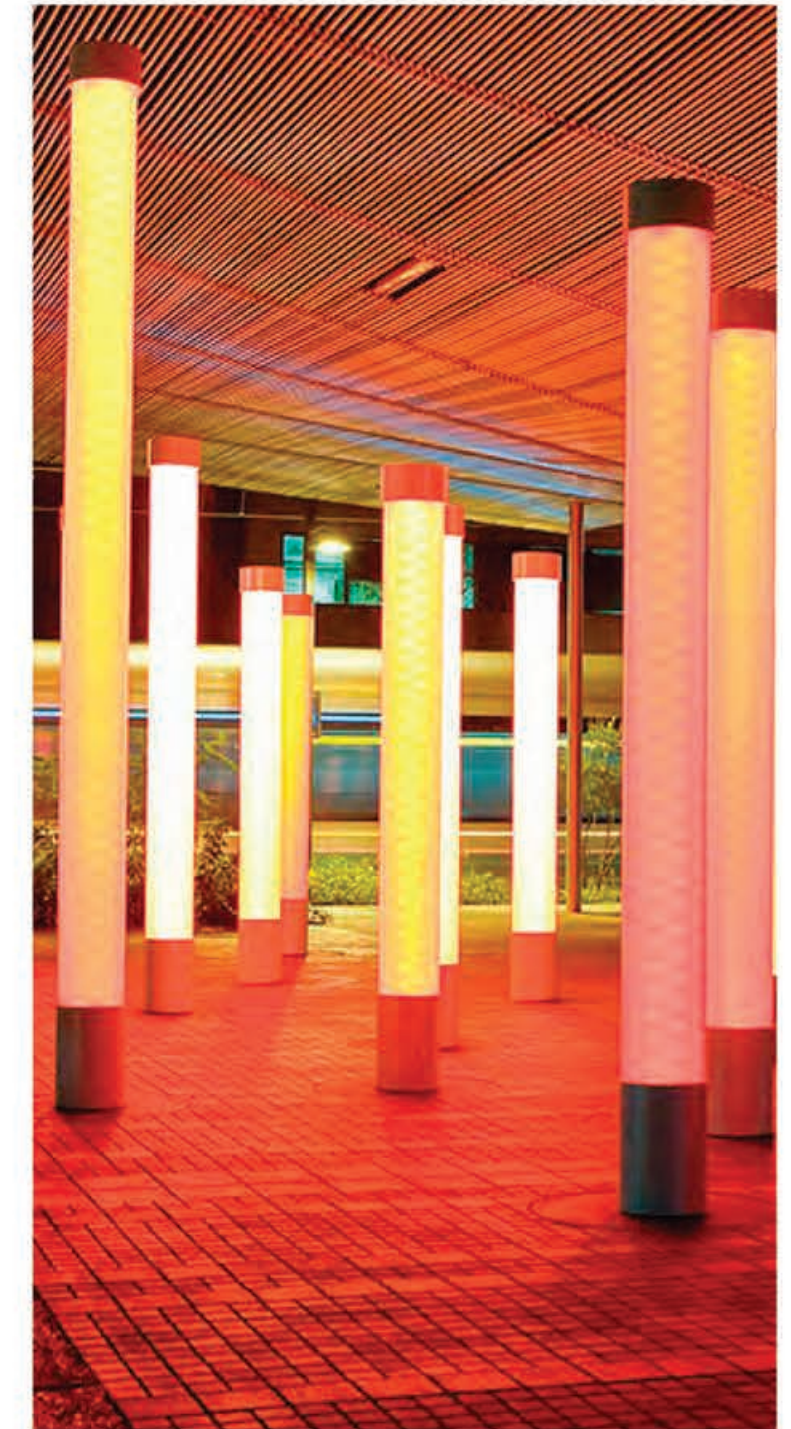
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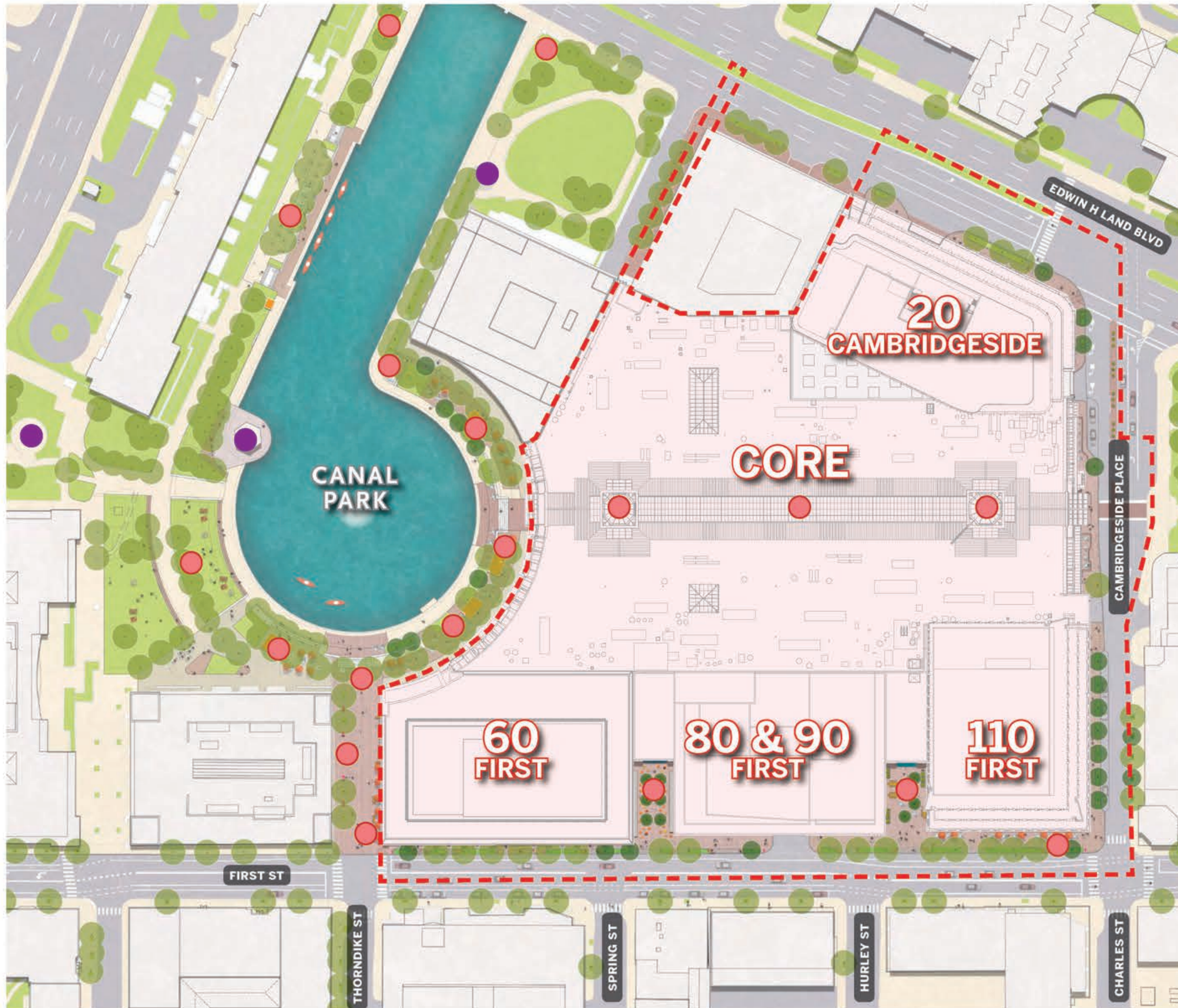
Open Space Plan Conceptual Illustrations Site Lighting

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

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EXHIBIT OSP.14



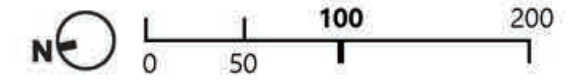
NEW ENGLAND DEVELOPMENT | ELKUS | MANFREDI ARCHITECTS | CS CAMBRIDGE



Open Space Plan Conceptual Illustrations Art and Activity Plan

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Cambridge, MA

VOLUME II
EXHIBIT OSP.15



Legend

- PUD-8 DEVELOPMENT PARCEL
- ART / ACTIVITY LOCATION
- EXISTING ART





Open Space Plan Conceptual Illustrations Local Art

PUD-8 Special Permit
CambridgeSide
Cambridge, MA

VOLUME II
EXHIBIT OSP.16

