BRODIE PUD

Stakeholder Presentation – March 09, 2022

BARSHOP&OLES COMPANY

LIONSTONE INVESTMENTS

LIONHEART

Armbrust & Brown PLLC

OVERLAND

LJA ENGINEERING

BOE

DPZ CODESIGN

NELSON NYGAARD

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SPECK & ASSOCIATES LLC

PROJECT OVERVIEW AND CONTEXT

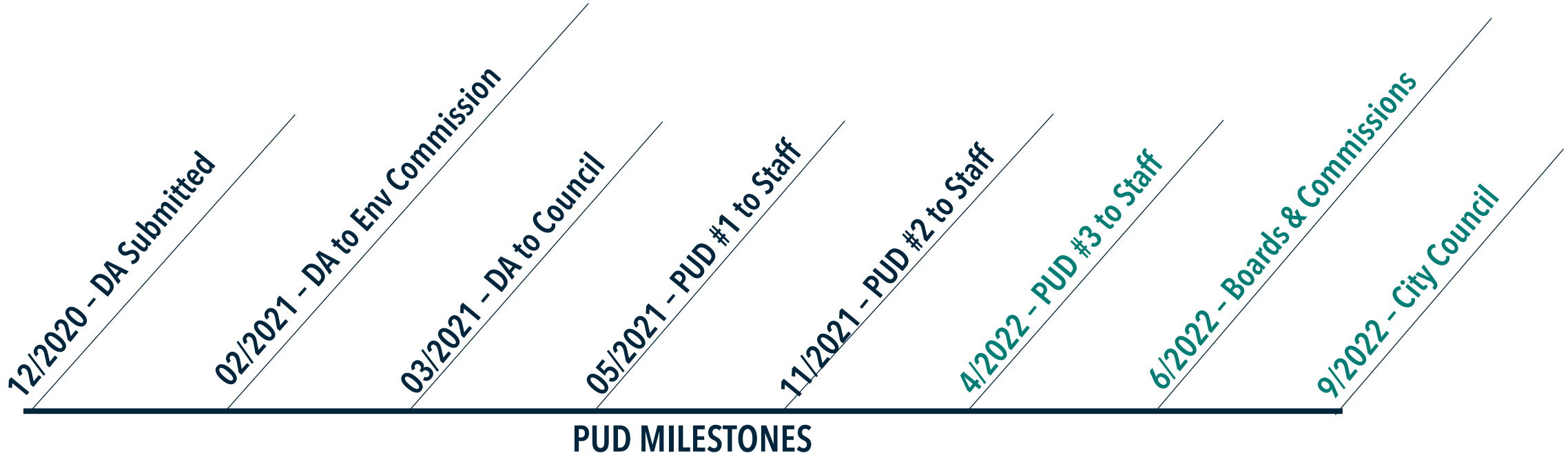
BRODIE VISION

Located in vibrant South Austin and along the prized Barton Creek Greenbelt, this 37-acre site should reflect the values and vision of our community – a transit-oriented activity center in a sensitive environmental area. The reality on the ground does not reflect the community vision.

The Brodie PUD seeks to transform this site from an underutilized suburban shopping center and surface parking lots to a forward thinking, vibrant, transit oriented, mixed-use development that enhances and rebuilds our natural systems, connects our neighbors through active places, local amenities and diverse experiences, and drives equitable economic development.

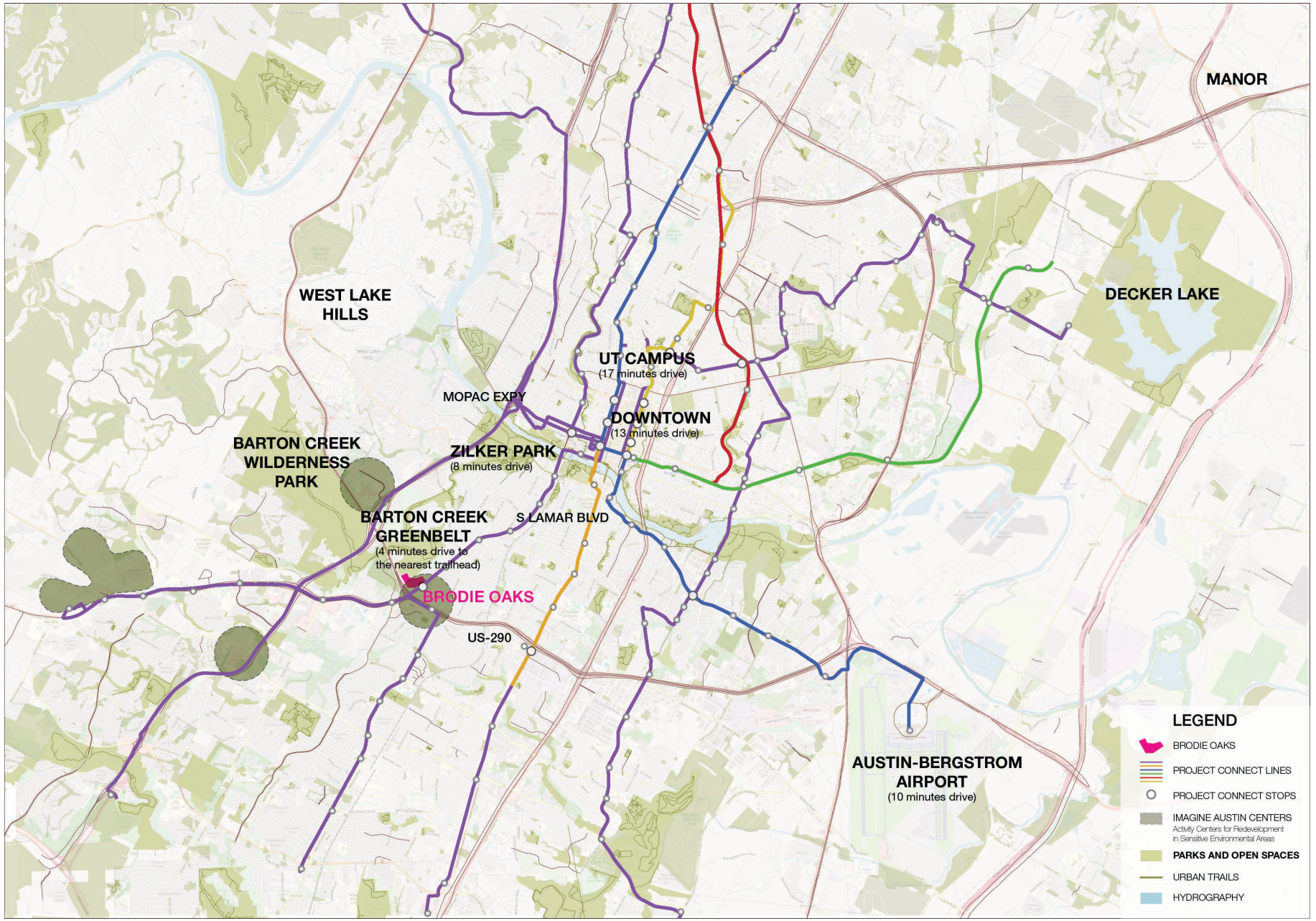
ESTIMATED OVERALL TIMELINE

PUD PROCESS TIMELINE & OVERVIEW



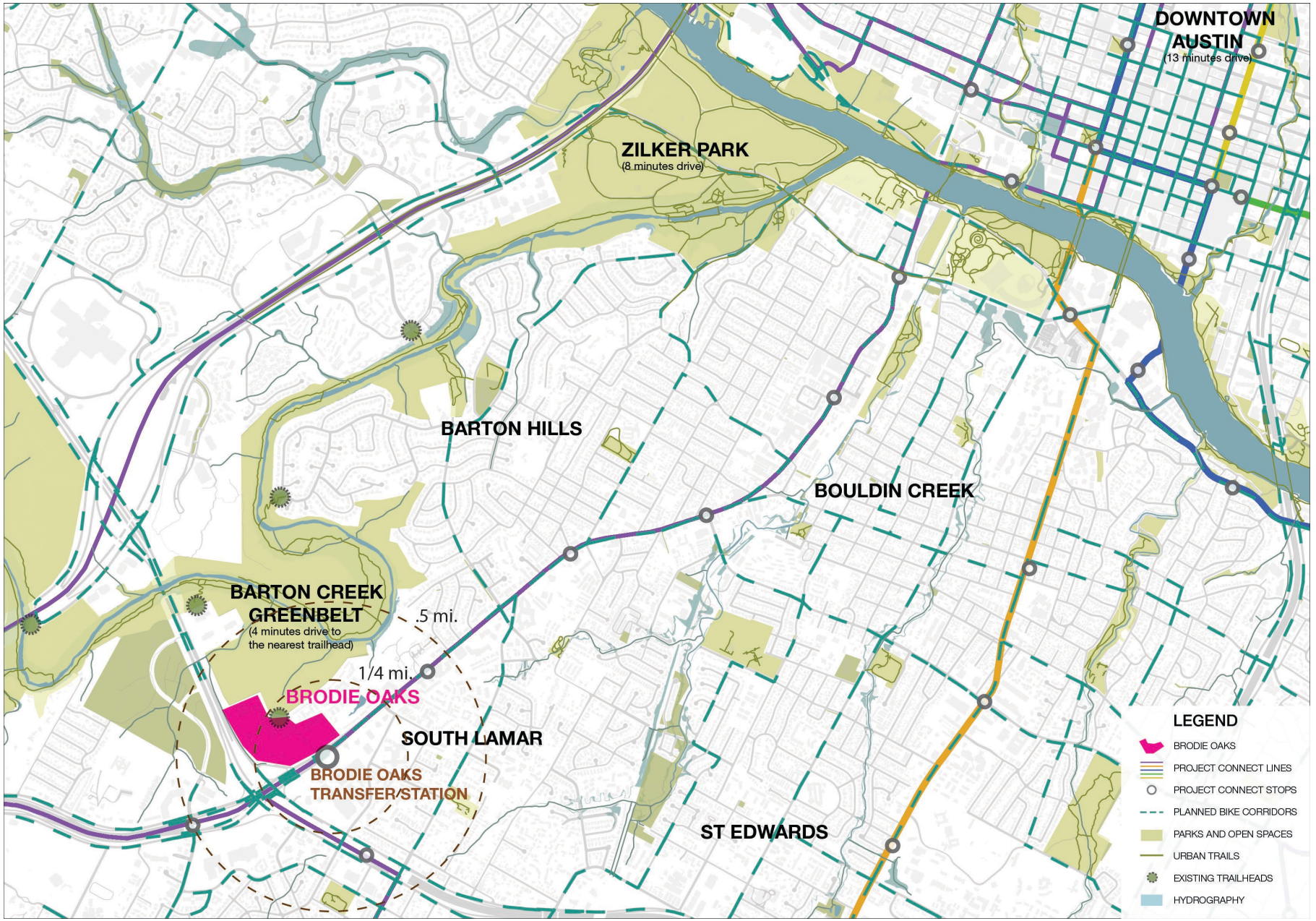
REGION

- Brodie is located on and will contribute to the Project Connect purple line.
- Brodie is located along the Imagine Austin South Lamar Corridor
- Brodie is one of the first Imagine Austin Centers to Redevelop in an Environmentally Sensitive Area.
- Brodie is located adjacent to and will contribute to the Regional Violet Crown Trail.



NEIGHBORHOOD

- Brodie will provide a new trailhead to Barton Creek Greenbelt
- Brodie will bring transit supportive densities within a ¼ - mile walking distance from the planned project connect transfer station.
- Brodie will extend the planned S. Lamar Bike Corridor from Panther Crossing to the Loop 360 Intersection.



SITE

- Brodie will be certified in LEED-ND; SITES; and AEGB rating systems.
- Brodie will reduce impervious cover by 36% and provide a buffer to the Barton Creek Greenbelt.
- Brodie will dedicate and develop over 10 acres of public parkland.
- Brodie will build over 200 affordable residential units.
- Brodie will capture and re-use 100% of rainwater from building roofs.
- Brodie will activate and enhance the South Lamar Corridor.

The content on these slides is conceptual in nature and is subject to change.

ADVANCEMENTS IN PROGRAM

BARSHOP&OLES COMPANY
LIONSTONE INVESTMENTS
LIONHEART
Armbrust & Brown PLLC
OVERLAND
LJA ENGINEERING
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NELSON NYGAARD
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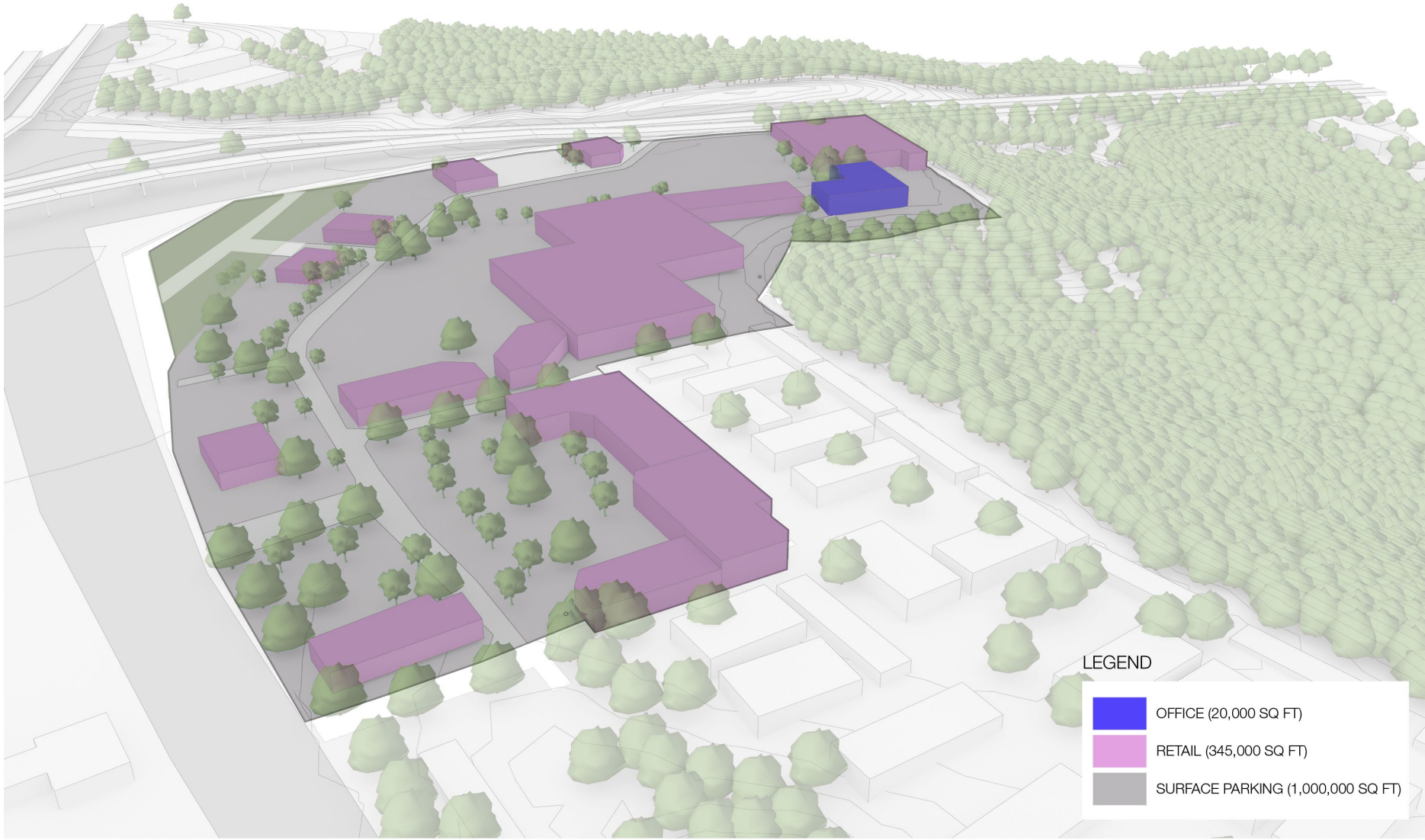
EXISTING LAND USE & PROGRAM

- Retail Uses: 345,000 SF
- Office Uses: 40,000 SF
- Surface Parking and Drives: 21.2 Acres
- Open Space: 2-Acres



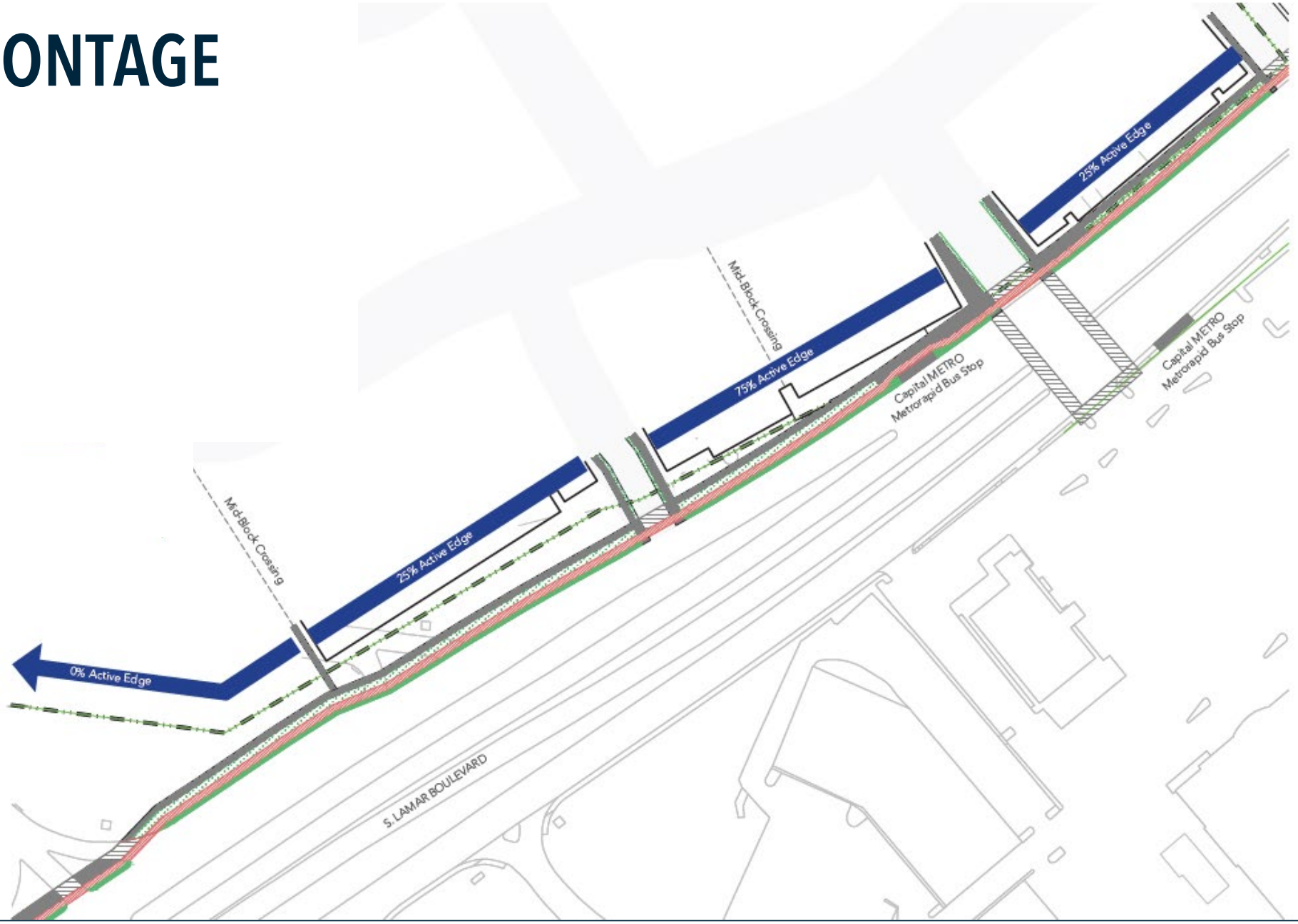
PROPOSED LAND USE & PROGRAM

- Active Ground Floor / Retail: 140,000 SF
- Office Uses: 1,260,000 SF
- Residential Units: 1,700
- Hotel Rooms: 200
- Surface Parking: 225 Spaces On-Street.
- Open Space / Parks: 13.2 Acres
- Affordable Housing: Over 200 Units
- Affordable Retail Space: 10,000 SF at 60% Market Rent
- Art Installations: Minimum of 2 Installations of $50,000
- Local Business Commitment: 25% Retail Space

SOUTH LAMAR FRONTAGE

Brodie is committing to bicycle and infrastructure improvements along the South Lamar frontage including:

- **Two mid block crossings**
- **An enhanced bus stop and connectivity from the stop to the development.**
- **A minimum percentage of active edges on building facades including at least one of the following types of design elements:**
  - *Active Uses*
  - *Building Entrances*
  - *Window Treatments*
  - *Screened Parking*
  - *Public Art*




Rock
Music
Festival
WP VISIONS LLC

ADVANCEMENTS IN WATER STORY

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Executive Summary

1. Brodie has seized the opportunity to be a leader in water conservation and reuse in the local area.
2. The site will capture the storm water quality event to meet the requirements of the SOS Ordinance.
3. Rainwater harvesting and collection of condensate represents the best opportunity to make beneficial use of an onsite resource for the most convenient uses such as traditional irrigation and cooling tower makeup water while reducing downstream stormwater impacts, including shrinking the re-irrigation fields by 2/3.
4. Subsurface ponds provide the opportunity to further reclaim valuable parkland formerly designated for water quality ponds
5. Additional green infrastructure may further enhance landscape design and stormwater performance in streets and parklands, and potentially allow for additional reductions in re-irrigation field sizing.
6. Opportunities exist to consider synergies between energy and water at a district plant linked to site infrastructure
7. The feasibility of greywater recycling is poor due based on the scale and number of buildings. District blackwater recycling shows greater promise, but there is no clear regulatory pathway at present.

PUD #3 Revised Plan By the Numbers

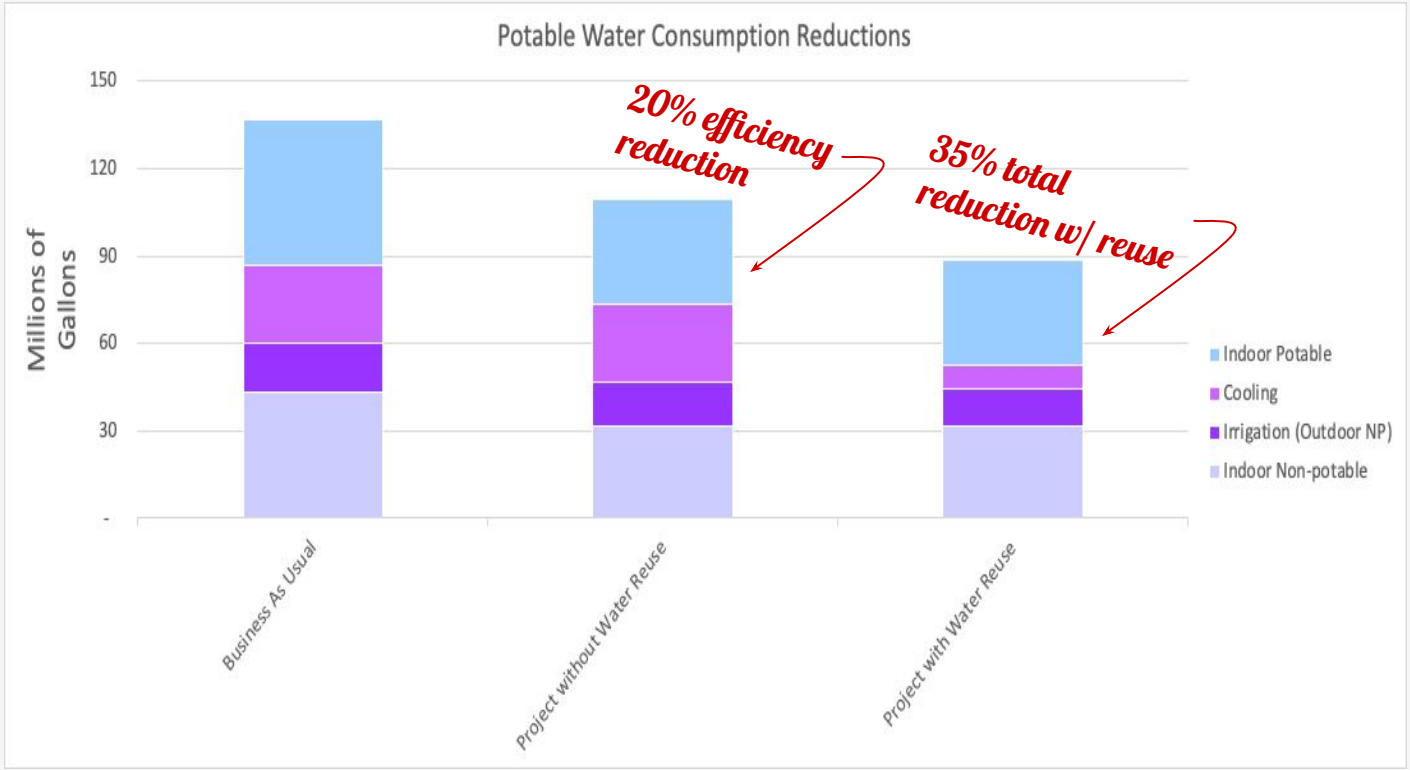
7.5 acres of planned pond and re-irrigation areas removed to avoid conflict with recreation

~35% reduction in overall potable water usage compared to business as usual

Up to 20M gal/yr supplied through rainwater and condensate capture and reuse

5% improvement in runoff capture efficiency compared to typical retention-irrigation

Major Reduction in Potable Consumption



Business as Usual

- Minimum code compliant

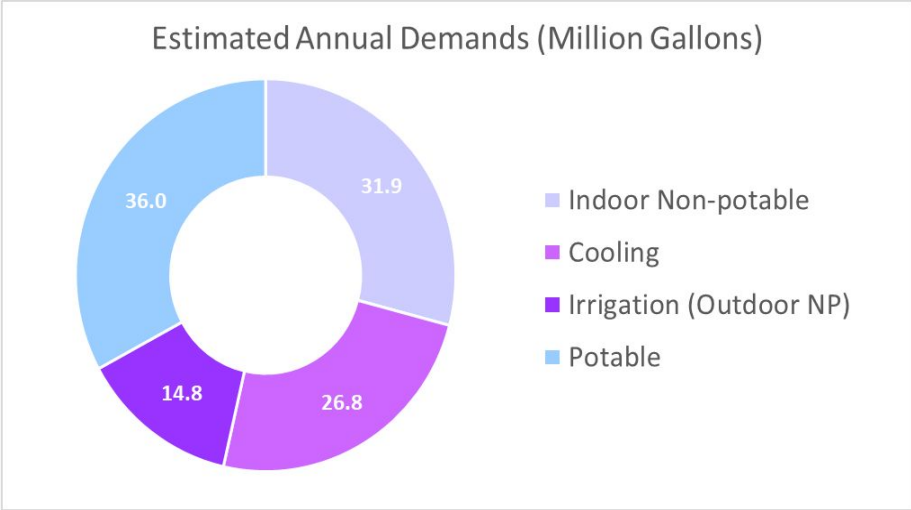
Project w/o Water Reuse

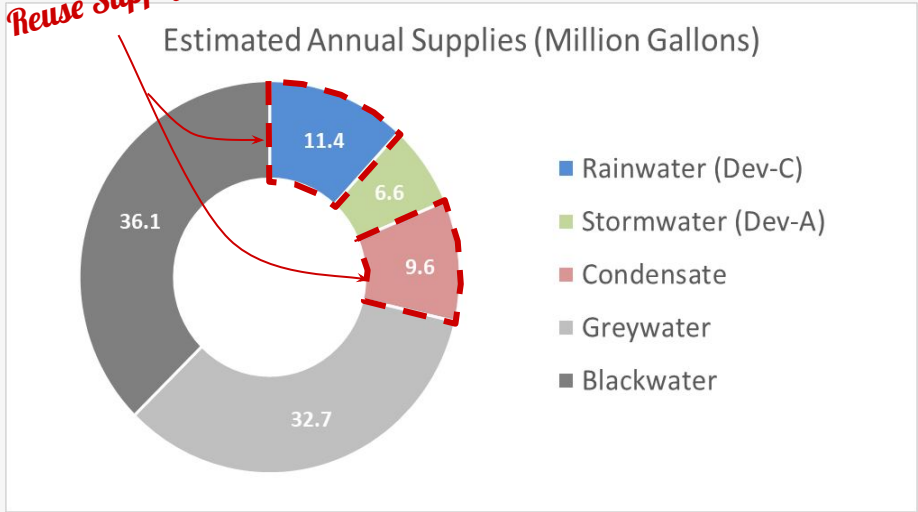
- High-efficiency fixtures
- Water-efficient landscaping

Project with Water Reuse

- Project as listed above
- Reuse of rooftop rainwater and condensate for cooling towers and landscape irrigation

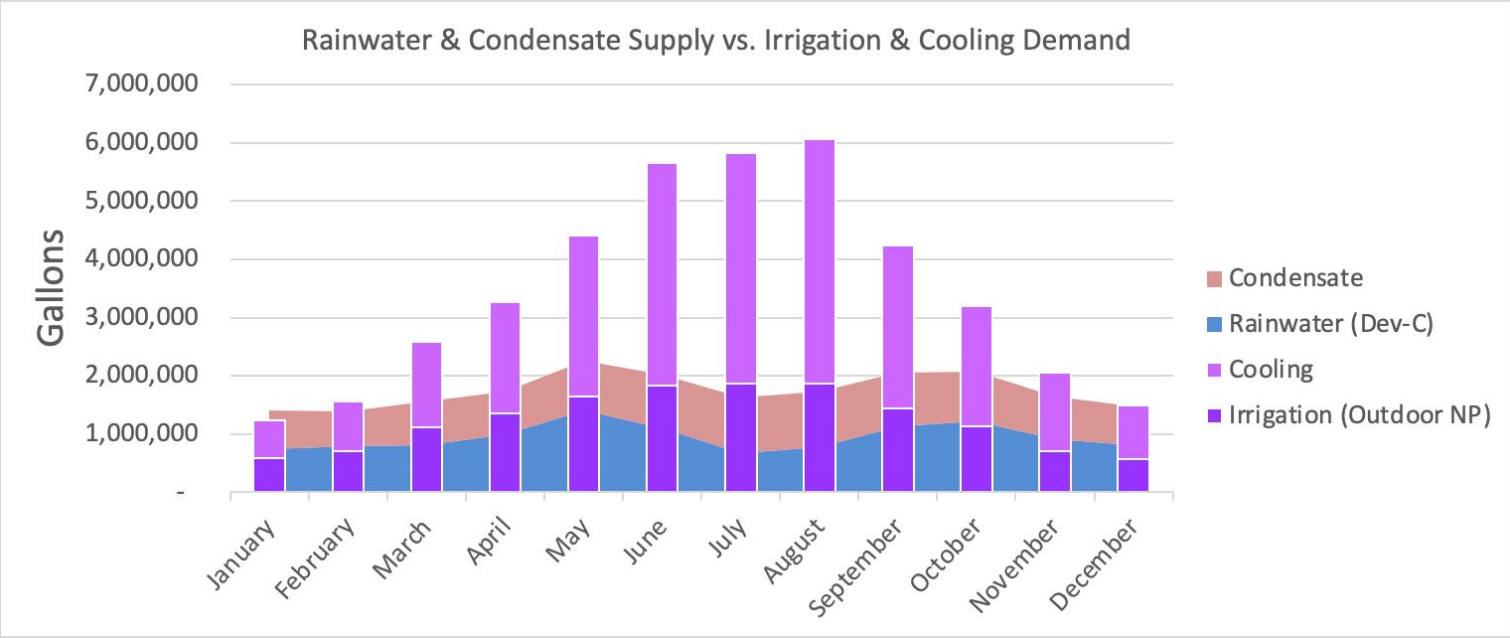
Annual Water Balance Summary (Arup Estimate)





Supply & Demand Pairing - PUD #3 Revised Plan

Rainwater and condensate can supply the majority of cooling tower and irrigation demands in all but the peak summer months.

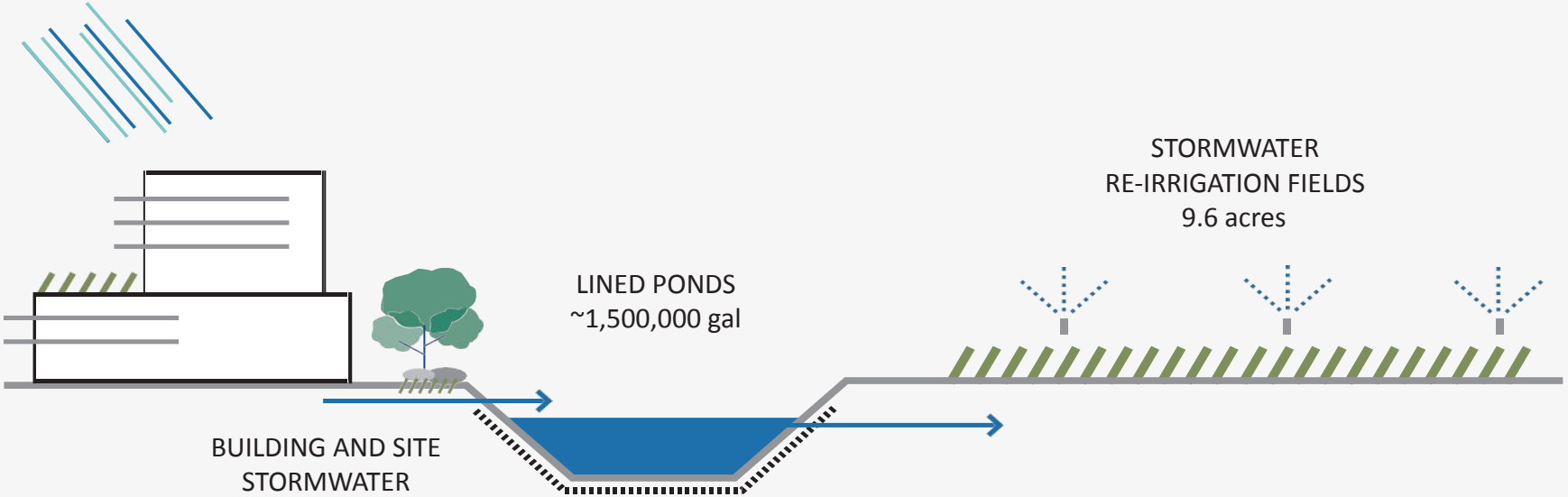


PUD #2 Prior Plan - Explanation

Retention/Irrigation Ponds

- Capture 100% of stormwater runoff from the water quality event in **two lined retention/irrigation ponds** with overflow bypass for larger events to downstream stormsewer leaving site
- Pump from pond wet well into **stormwater re-irrigation systems** consisting of distribution piping and spray irrigation heads in open space
- Through the use of soil for removal and uptake, provides greater pollutant removal than sedimentation/infiltration systems—which are not allowed due to the infiltration restrictions above the aquifer—essentially **removing all pollutants**
- Requirements for max re-irrigation dosing rate, minimum soil depth, basin emptying (between 12 to 72 hr, variance sought), and drawdown time
- A portion of passive open space down-gradient from the catchment area is “self-treating”

PUD #2 Prior Plan - Concept and Sizing



PUD #3 Revised Plan - Two-Pronged Approach

	Description	Benefits Relative to PUD #2 Prior Plan
Rainwater Harvesting	Capture rooftop rainwater for reuse in landscape irrigation and cooling tower makeup. Some treatment required including filtration and potentially sterilization.	Reduce pond sizing and overall site development costs
		Reduce stormwater re-irrigation area, eliminating conflict with irrigation to create more usable parkland and increase PARD parklands credit
		Conserve potable using stormwater as a resource—rather than a waste product—to meet non-potable demands and lower water bills
		Take advantage of overlapping benefits between different system types
		Contribute to Austin's long term sustainability and continued growth
		Create access to grants, incentives, or other preferred financing
Stormwater Subsurface Ponds	In lieu of stormwater ponds at surface, underground tanks located beneath parkland that capture and hold stormwater runoff from the water quality event prior to re-irrigation.	Unencumber usable parkland formerly designated for SOS ponds to meet the 50% requirement and increase PARD parklands credit
		Create more overall parkland space to better site stormwater re-irrigation
		Reduce site development costs and excavation volume
		Otherwise operates the same as SOS ponds, meeting drawdown time requirements and bypassing larger events up to the 100-year event.

PUD #3 Revised Plan - Drainage Areas

	Description	Treatment
Area A	Site stormwater runoff from streets and open space—including Central Green—in Phases 1 & 2	Collected in subsurface ponds and then discharged to re-irrigation fields
Area B	Site stormwater runoff from streets and open space—including Neighborhood Park—in Phase 3	Collected in subsurface ponds and then discharged to re-irrigation fields
Area C	Rooftop rainwater from all buildings	Captured and treated for reuse in landscape irrigation and cooling towers
Area D	Site stormwater runoff from park lands and open space	Localized landscape-focused BMPs

PUD #3 Revised Plan - Drainage Plan

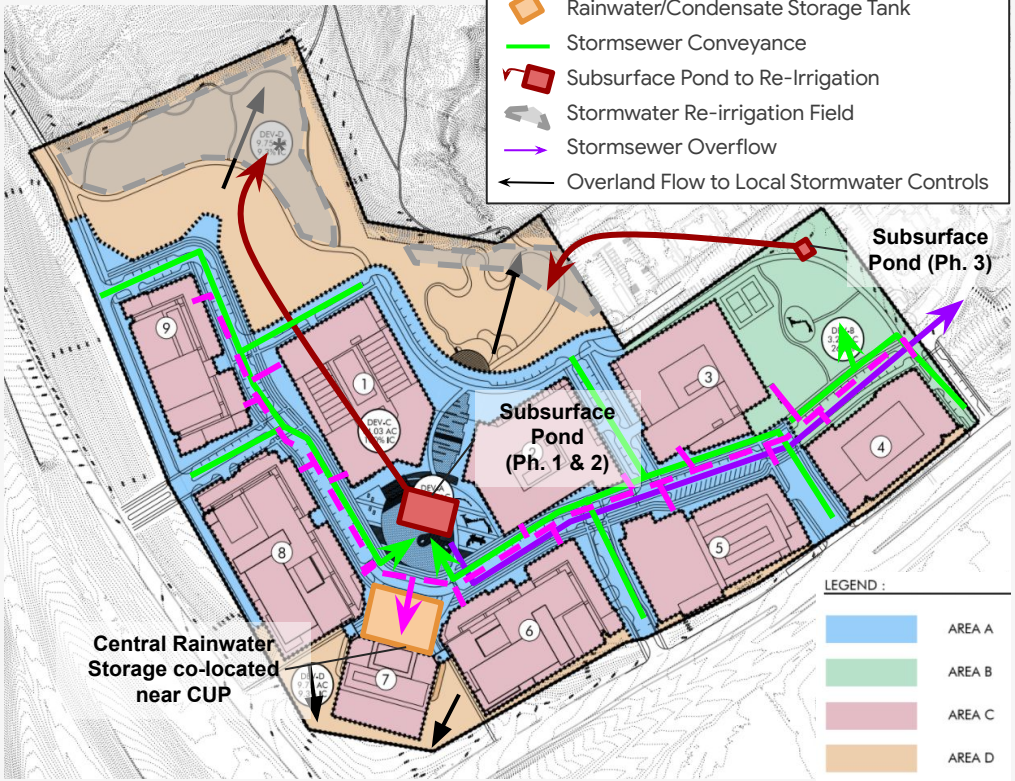
Rainwater Harvesting

- Rooftop rainwater and building condensate from Area C collected at central tank near Central Utility Plant (CUP)
- Treated to supply cooling tower makeup and landscape irrigation in all areas except stormwater re-irrigation fields

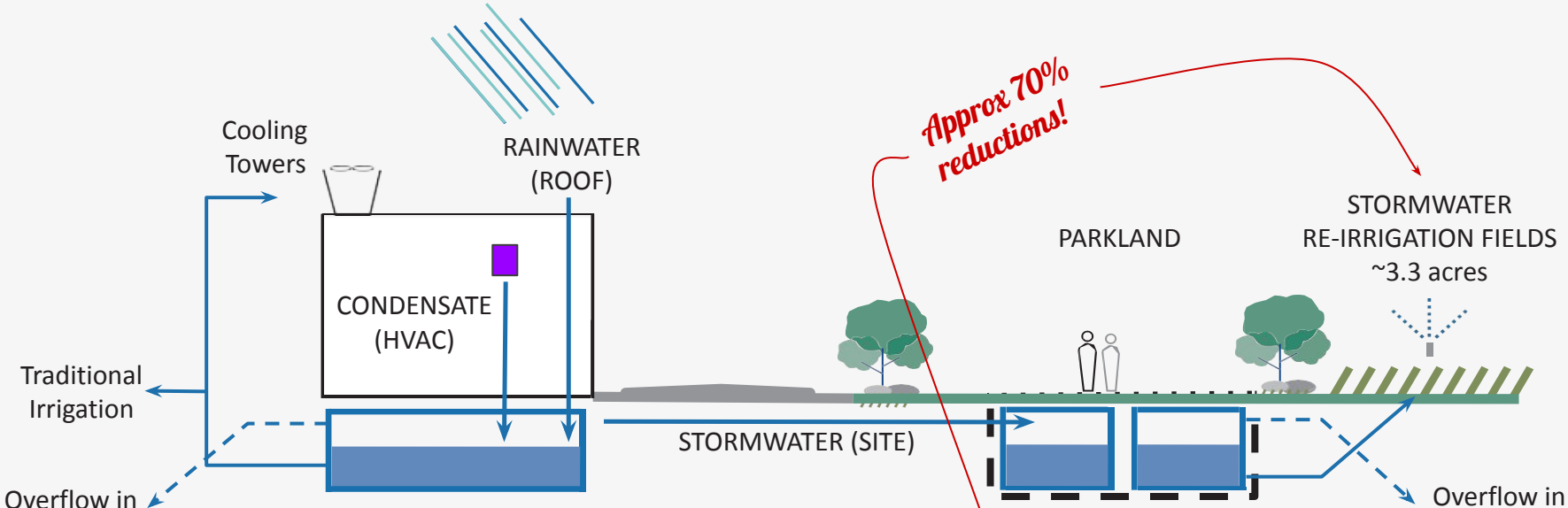
Stormwater Subsurface Ponds

- Following the minimum residence time, stormwater runoff in Areas A* and B will be collected in subsurface ponds and then discharged to re-irrigation fields in Area D
- Future addition of green infrastructure in Areas A and B may reduce the size of subsurface ponds and re-irrigation fields
- Stormwater runoff in Area D will be treated through a separate set of localized landscape-focused BMPs

**** Additional Stormwater Capture Option: mix rainwater and stormwater flows and first pass through central rainwater storage prior to overflow into Phase 1 & 2 subsurface pond, enabling an increased amount of reuse and eliminating the need for separated rainwater collection***



PUD #3 Revised Plan - Concept and Sizing



CENTRAL RAINWATER STORAGE

914,300 gal tank at CUP

Sized based on ARUP drawdown methodology

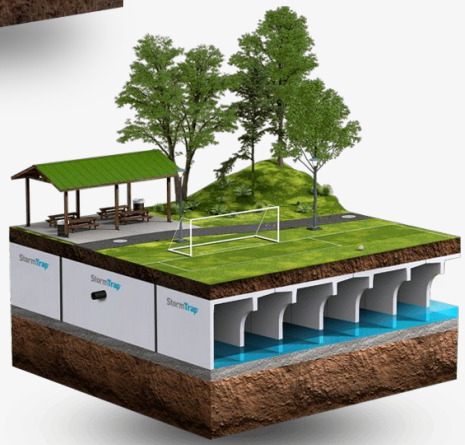
For reuse in CTs at CUP and traditional irrigation

SUBSURFACE PONDS

480,100 gal tank at Central Green

55,200 gal tank at Neighborhood Park

PUD #3 Revised Plan - Central Rainwater Storage I Subsurface Ponds



Design

- Made of reinforced, high-strength precast concrete that provide a durable solution
- Flexible, modular design easily accommodates existing utilities, light pole foundations, trees and other job site constraints
- Can be made with post-consumer recycled with locally harvested materials prefabricated approximately 200 miles from site, supporting additional LEED credits
- Vaults can be placed under driveways of buildings with minimum 6″ cover
- Filtration and UV sanitization occurs downstream of storage prior to reuse, and includes a day tank with booster pump

Rainwater Tank Sizing - Comparison to Retention-Irrigation (model here)

- **Rainwater harvesting can achieve full compliance with the SOS Ordinance using a tank sized to SLAT WQ Volume**
- Tank performance is highly dependent on the frequency, spacing, and size of individual storm events, as demonstrated by the unique results of each of the five years tested.
- For the PUD #3 Revised Plan, **overflows occur less frequently than WQ Events** based on a WQ Depth of 2.40 inches
- The PUD #3 Revised Plan experiences **less overflows** than PUD #2 Prior Plan
- The PUD #3 Revised Plan **retains a greater volume of water** than the PUD #2 Prior Plan that relied on retention-irrigation to meet the SOS non-degradation requirement (i.e. the runoff capture efficiency, or RCE, is higher)

			PUD #2 - Retention-Irrigation		PUD #3 - Rainwater Harvesting	
Year	WQ Events	Max Event	# Overflows	RCE	# Overflows	RCE
2013	5	9.78	4	67%	3	72%
2014	1	5.17	1	88%	1	88%
2015	5	8.47	4	63%	4	66%
2016	6	7.26	6	79%	5	88%
2017	1	2.71	3	95%	1	95%
TOTAL	18	-	18	78%	14	82%

SUBSTATION EXPLORATION UPDATE

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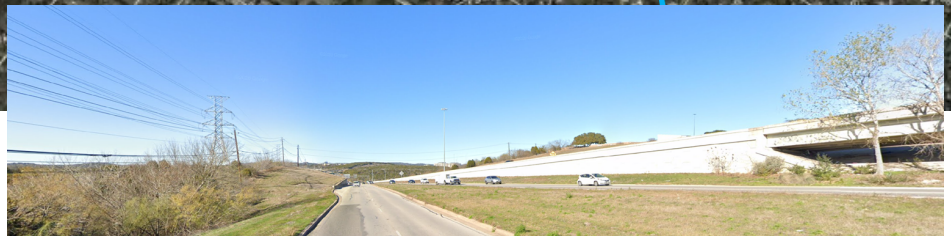
BRODIE
SUBSTATION CONTEXT

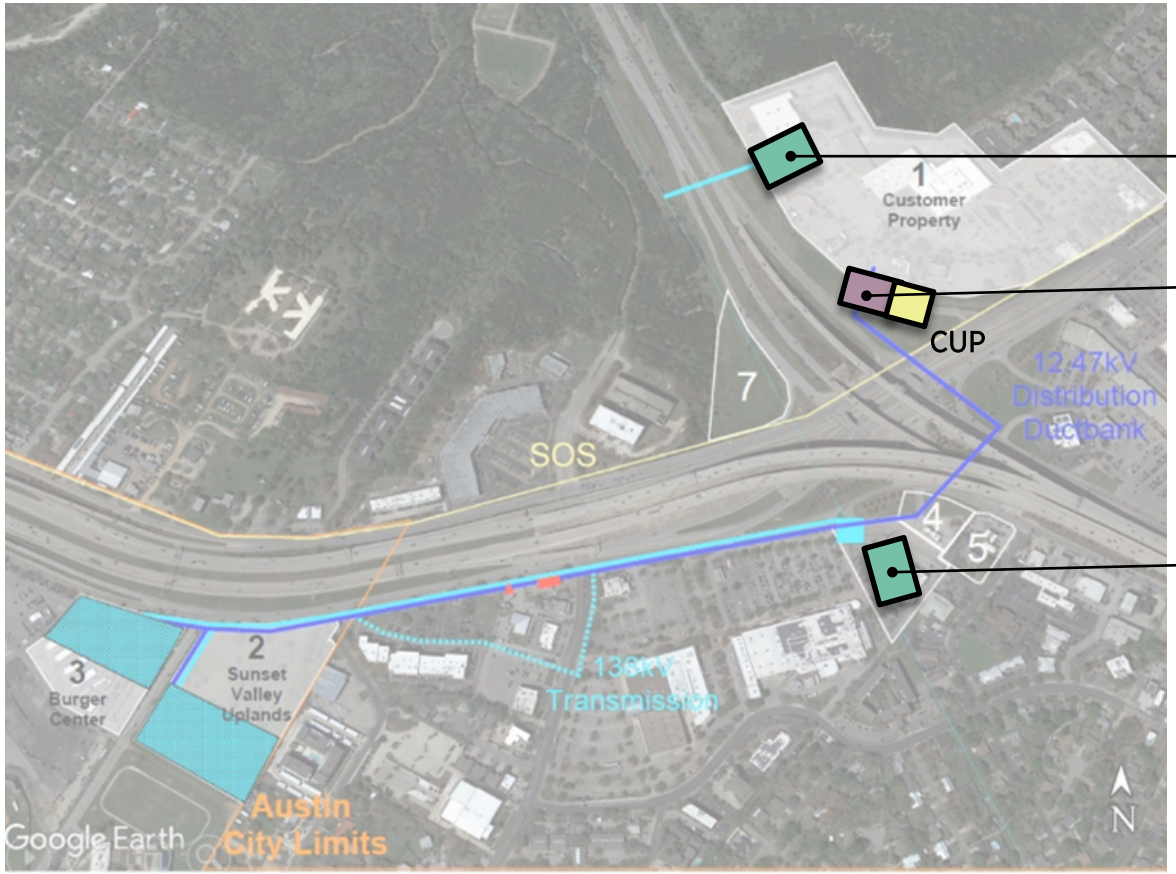
MARCH 2022


EXISTING HV LINE
BRODIE OAKS SITE. TWO SERVICES NEEDED. NEW SS NEEDS TO BE SITED
POWER LATTICE
ONE CIRCUIT AVAILABLE AND NEW LINE WOULD NEED TO FIND WAY TO OUR SITE. POSSIBLE BUT NOT FAVORED BY AE (ROUTE TBD)
CARDINALE AVE EXISTING SUBSTATION
Meadowview at Sunset Valley
Tournoy Acres
Westgate
Galindo
Dawson



SITING OPTIONS:

AE GIS Substation
AE Indoor Substation alternative
Brodie Central Utility Plant (CUP)



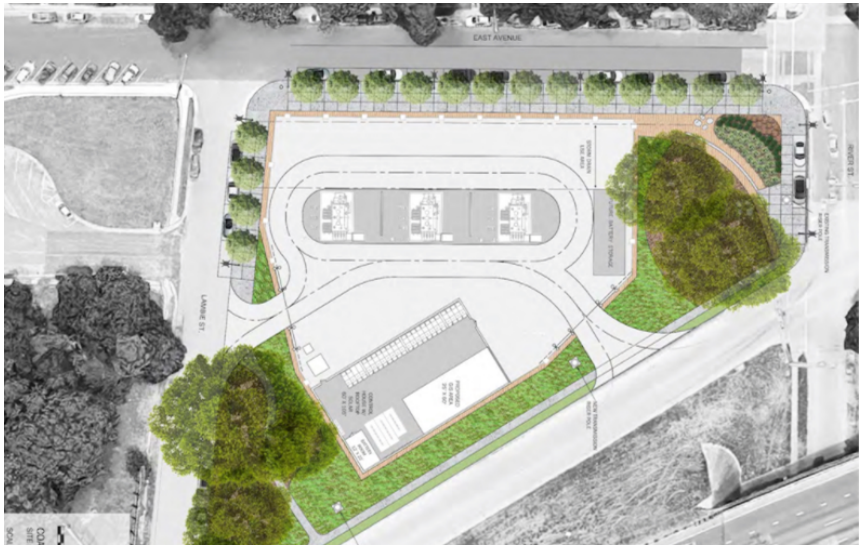
On-site GIS

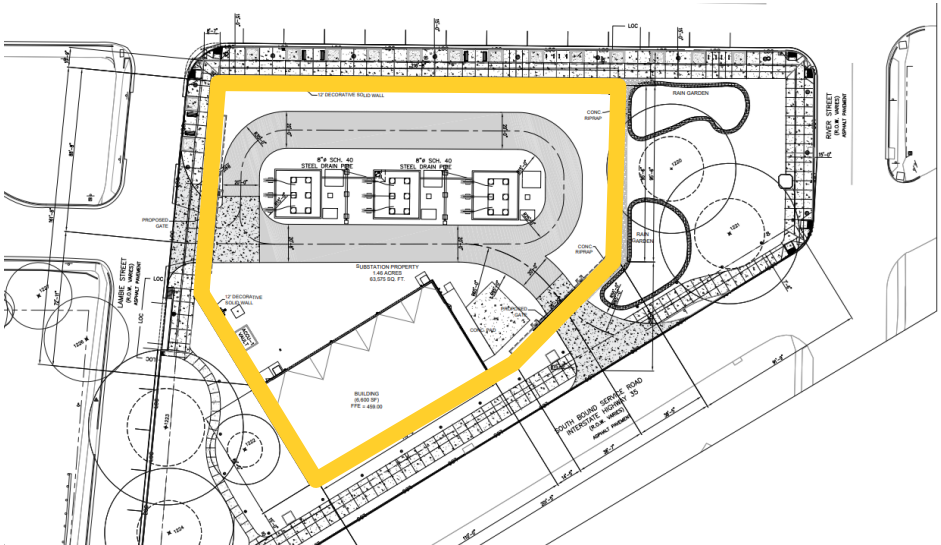
Other On-site Options
(enclosed and integrated)

Off-site GIS
(one of several options)

CUP = Central Utility Plant
(District thermal and Brodie switchgear)

RAINEY ST. SUBSTATION (GIS)

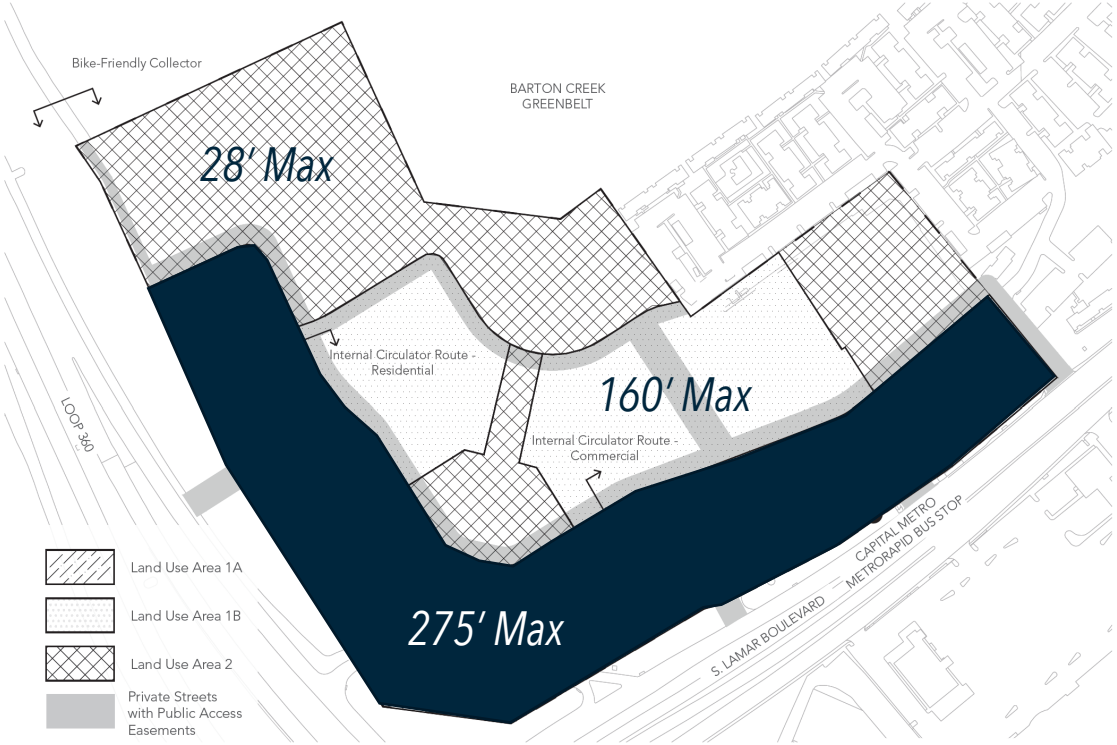




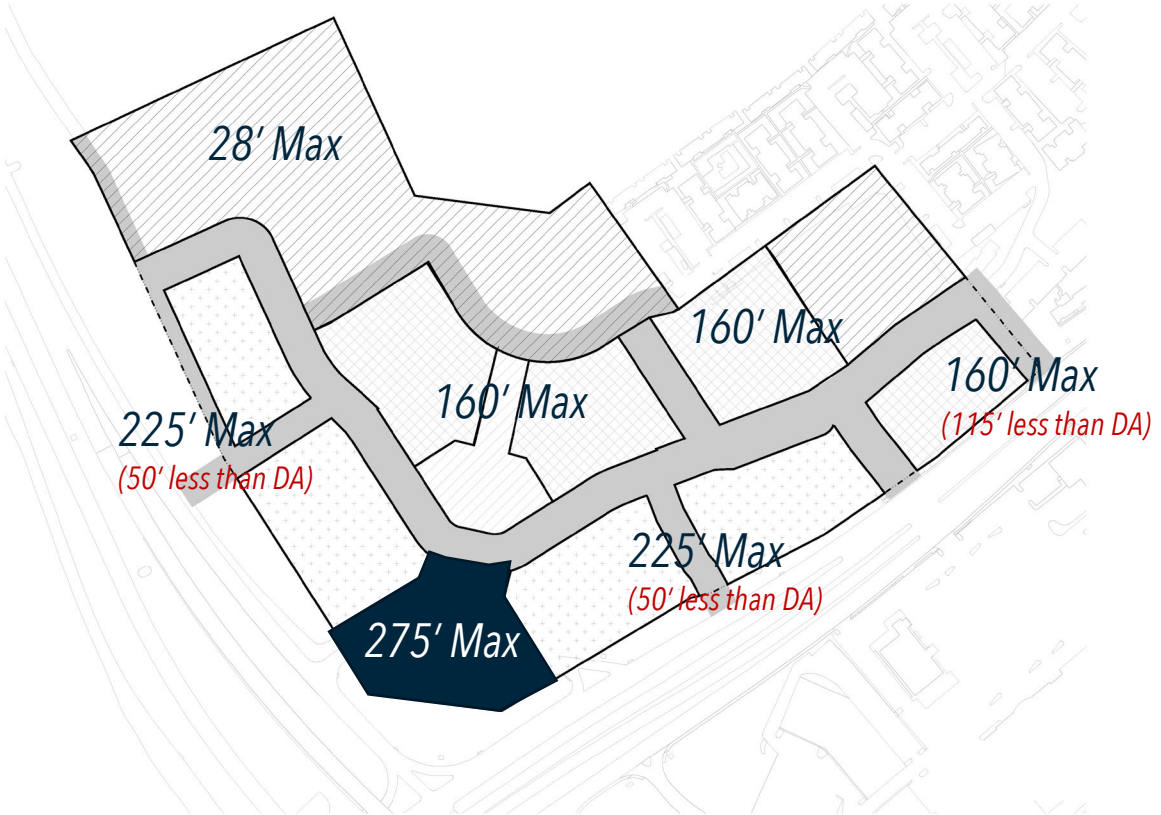
HEIGHT OVERVIEW & DEMONSTRATION

HEIGHT

Development Assessment



PUD



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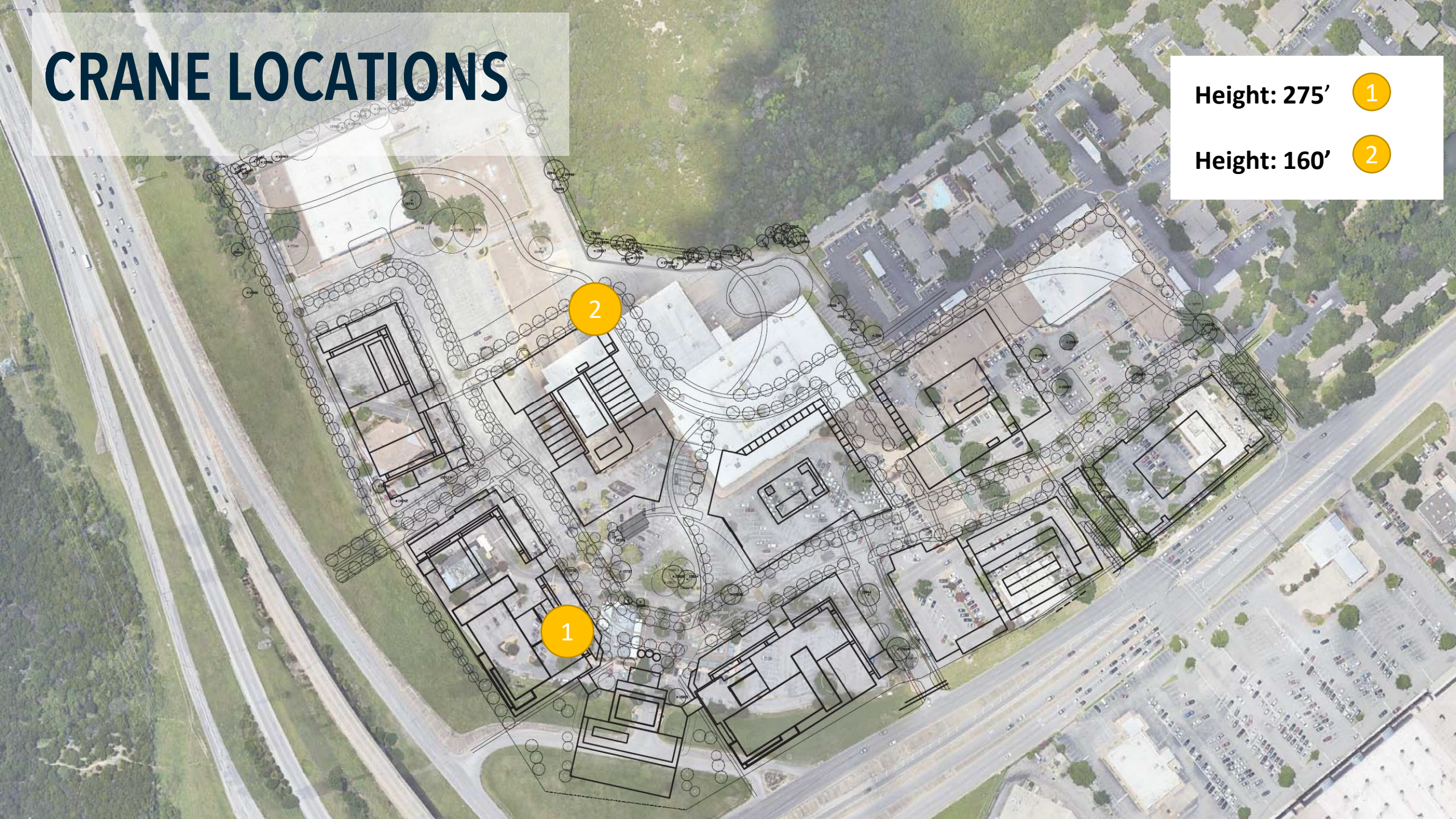
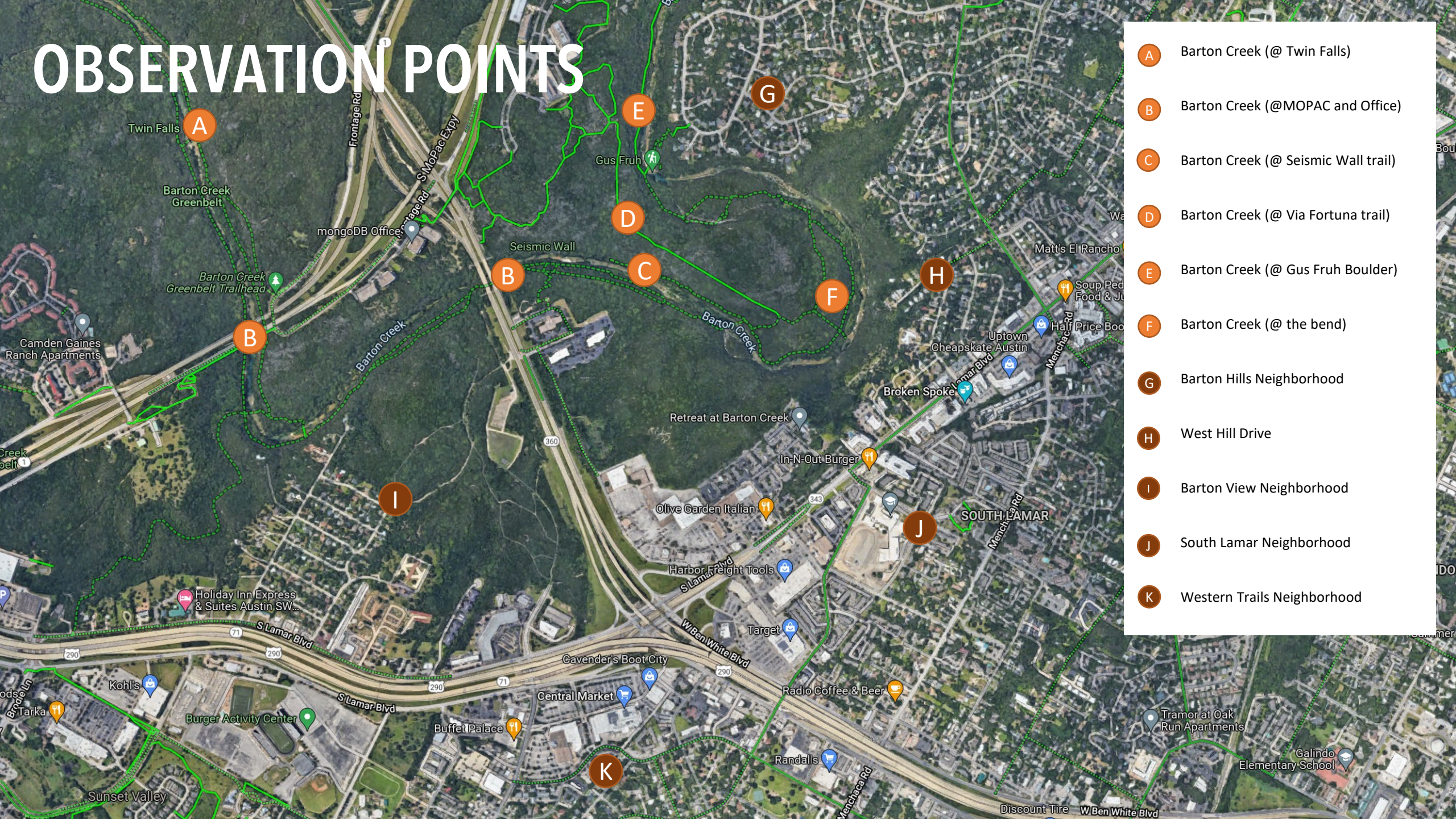
CRANE LOCATIONS



Height: 275’ 1

Height: 160’ 2

OBSERVATION POINTS



- A — Barton Creek (@ Twin Falls)
- B — Barton Creek (@MOPAC and Office)
- C — Barton Creek (@ Seismic Wall trail)
- D — Barton Creek (@ Via Fortuna trail)
- E — Barton Creek (@ Gus Fruh Boulder)
- F — Barton Creek (@ the bend)
- G — Barton Hills Neighborhood
- H — West Hill Drive
- I — Barton View Neighborhood
- J — South Lamar Neighborhood
- K — Western Trails Neighborhood

GREENBELT LOCATIONS

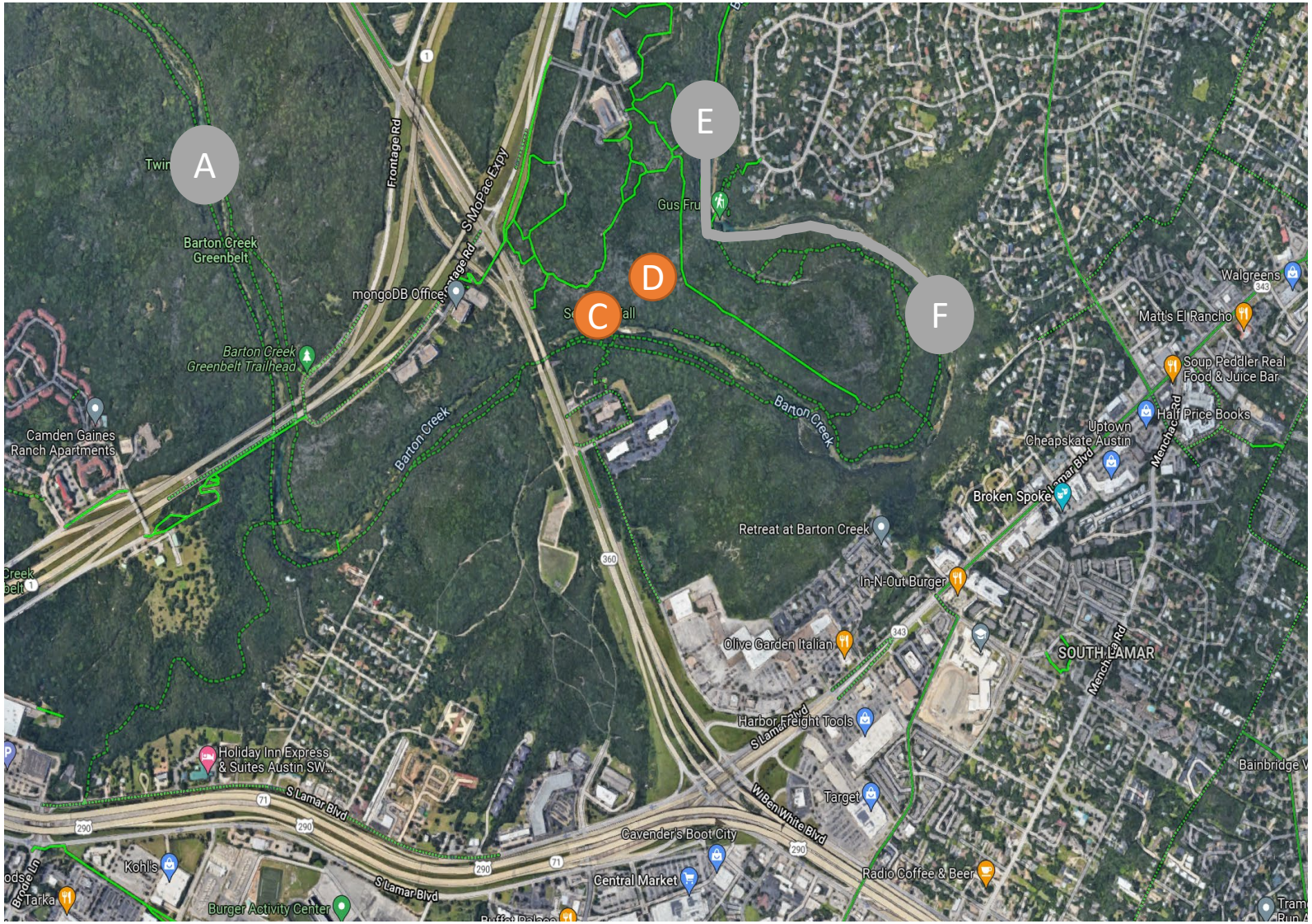
The project team hiked over 2 miles and took over 140 photos within the greenbelt. The crane was only clearly visible from a handful of locations.

E F A

The crane was not visible from Twin Falls or from the Gus Fruh Trail due to topography.

C D

The crane was not clearly visible from most locations along the Via Fortuna and Barton Creek Trail due to tree cover. There were a handful of overlook locations at higher elevations along the trail where the existing office building, the back of the Toys-R-Us building, and the cranes were visible in the distance.



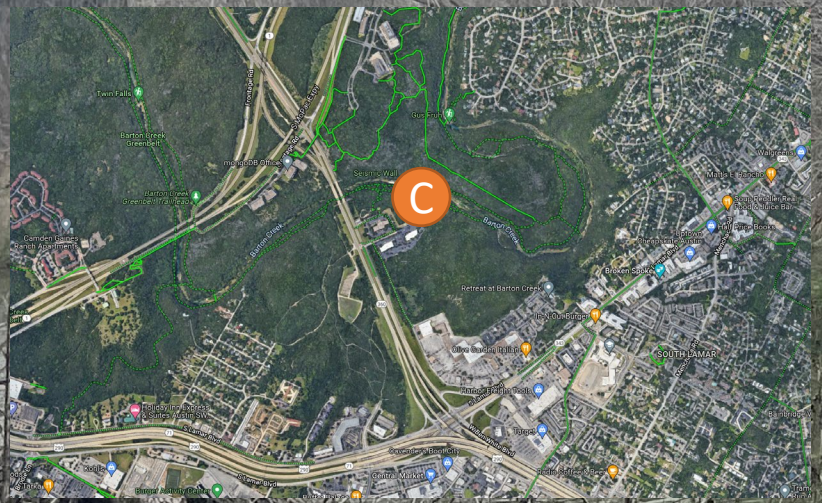
THE CRANES ARE NOT VISIBLE FROM THE TWIN FALLS AREA.



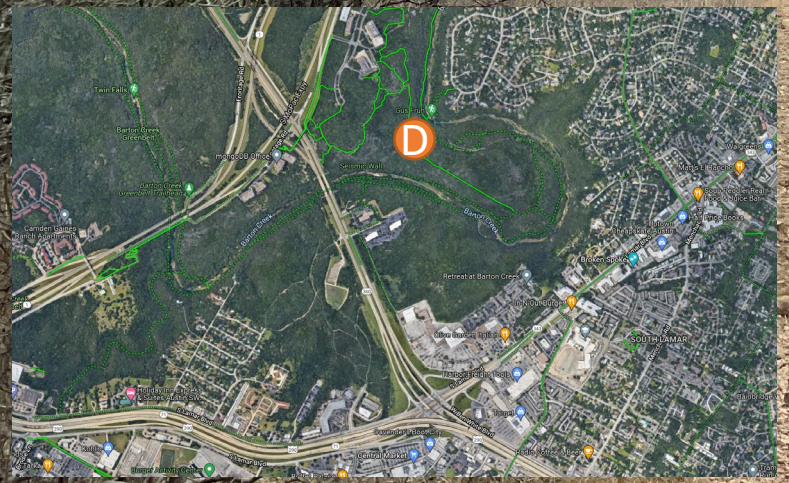
DENSE TREE COVER AND TOPOGRAPHY BLOCK VIEWS ALONG THE TRAIL.



Along Barton Creek Trail; @ .6 miles away from the site.



Highest Point along the Via Fortuna Trail; @ .7 miles away from the site with the Crane at 160’ high.

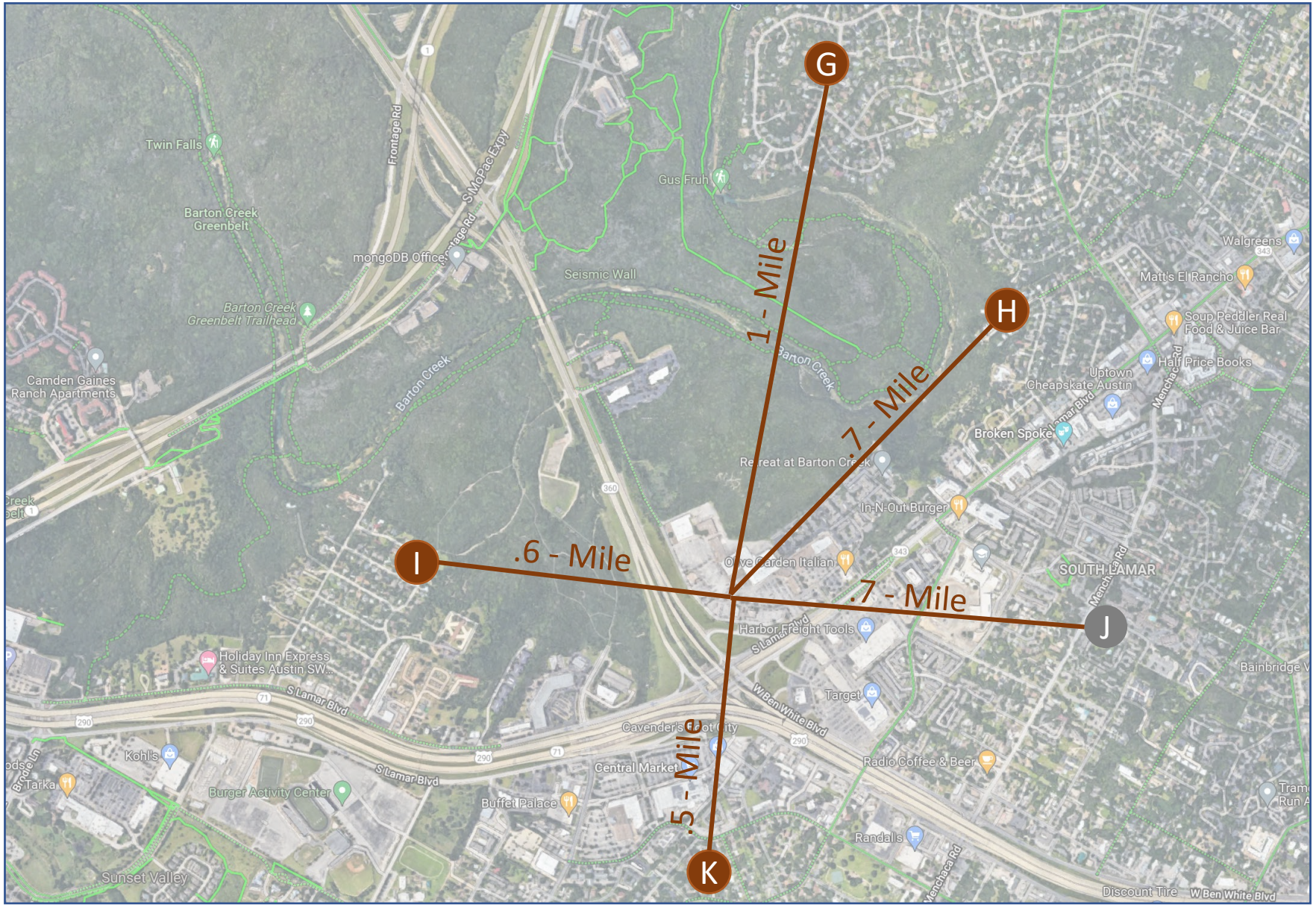


Same location with the Crane at 275’ high.

NEIGHBORHOOD LOCATIONS

Skyline views of the existing Brodie Oaks Shopping Center and cranes were captured in a handful of locations within adjacent neighborhoods.

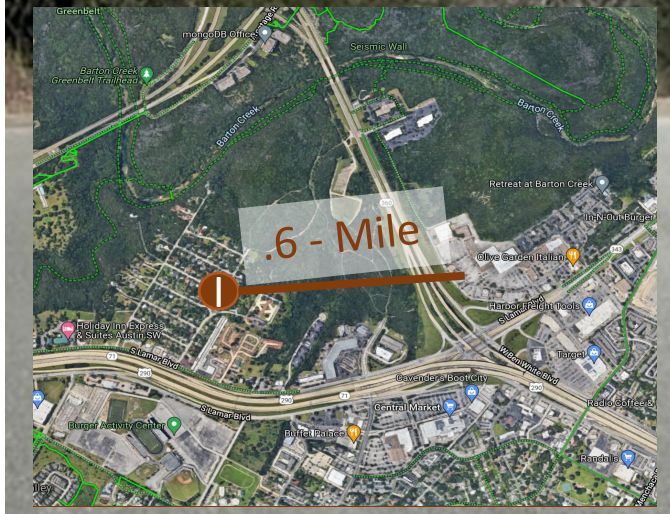
- G — Barton Hills
- H — West Hill Drive
- I — Barton View
- J — South Lamar (not visible)
- K — Western Trails



Barton Hills Neighborhood –
Mountain View Drive @ Kathy Cove
Crane at 275’

West Hill Drive
Crane at 160’

Barton View -
Dudley Dr. and Dudmar Dr.
Crane at 275’



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