Sustainable Checklist for Renovation Projects

	Program Criteria Architect to complete as appropriate for specific to the renovation project. Add sustainable requirements as appropriate:		
	ITEM	**INCORPORATE IN DESIGN**	
DAYLIGHTING		**Y**	**N**
1	Incorporate daylighting through windows in the following spaces. Minimize direct sunbeam penetration. (a) All Classrooms and Offices (Min) (b)		
2	Use light shelves for exterior envelope in the following building elevations (a) (b)		
3	Use skylights to allow for day lighting in the following spaces: Ensure that energy savings gains exceed energy losses from increased solar load. (a) (b)		
4	Use solartube to allow for day lighting in the following spaces: (a) Interior Corridors (Example) (b)		
5	Lighting fixtures should be controlled by photocells, occupancy sensors and connected to the Energy Management System.		
6	Maintain floor to ceiling height per base design standards.		
ENERGY SHELL OF A BUILDING		**Y**	**N**
1	**Maximize energy efficiency to achieve California Code of Regulation Title 24, part 6. Also comply with Califonria Energy Code, Part 11, California Green Building Standards Code.**		
2	Provide operable windows for ventilation in offices.		
3	Insulate the Roof – R30		
4	Insulate the Walls- R-25		
5	Use double pane high efficiency glazing to reduce heat gain while still allowing daylight into the space. (include specific glazing requirements here)		
6	Use passive or built-in exterior shading devices such as awnings, overhangs, trees, thermal mass, berms etc. to prevent solar heat gain entering through windows and doors.		
7	Use sound-reducing glass on all windows and glass doors facing noisy streets. (Include applicable technical requirement)		
8	Use a minimum of10% exterior building shell materials that are recyclable and are manufactured within 500 miles of the college.		

ITEM		INCORPORATE IN DESIGN	
9	For roofing projects, the design team must use mandatory roof requirement in the sustainability standards.		
ENERGY EFFICIENT LIGHTING AND ELECTRICAL SYSTEMS		**Y**	**N**
1	Use LED fixtures		
2	Use LED in place of incandescent lights.		
3	Use dimmable switches for all lighting applications.		
4	In perimeter day lit zones use daylighting controls to dim areas that do not need to be illuminated to 100%.		
5	For all spaces employ a comprehensive use of occupancy sensors to control both lighting and plug loads.		
6	Use energy star LED exit signs.		
7	Offices shall have direct control of office and task lighting by use of dimmable control.		
8	Specify a color temperature of 4000K or less and specify a Color Rendition Index (CRI) of 80 or higher.		
9	Provide Direct Digital Control (DDC) of primary equipment in order to employ energy saving strategies and of terminal air-conditioning unit's e.g. variable air volume (VAV) terminals and lighting panels for better control of individual spaces.		
ENERGY EFFICIENT MECHANICAL AND VENTILATION SYSTEM		**Y**	**N**
1	The following spaces were programmatically identified for natural ventilation. Design for natural ventilation and write a detail narrative on how this will be achieved. (a) All Classrooms and Offices (Min) (b)		
2	**The HVAC system must be designed to maximize energy efficiency. Comply with current California Code of Regualtions, Title 24, Part 6. for renovation projects.**		
3	The following sustainability standards mandatory measures are also applicable to this project: California Code of Regulations, Title 24, Part 11 (CALGREEN) Green Seal Standard GS-11 Green Seal Standard GS-36 and SCAQMD Rule 1113		
4	The Energy Management System (EMS) will be a full DDC system. The controls must be designed to account for the maximum energy savings possible. These include but are not limited to the following:		
	a) Upon opening of a window the corresponding air conditioning terminal unit automatically shuts down.		

ITEM		INCORPORATE IN DESIGN	
	b) Consider the use of "smart building" design such as one in which when an occupant is no longer occupying a space, the HVAC and lighting systems for that space shut down automatically. One method is to use a combined function motion detector, one signal to turn off the lighting and the other to shut down the air conditioning terminal unit.		
	c) The EMS software must be able to schedule automatic changeover for run and standby machines.		
	d) Provide carbon dioxide (CO_2) sensors that provide outside air requirements on demand for those areas that have a high occupancy levels.		
	e) Consider the use of night purge which takes advantage of nighttime cool dry air and exploits the thermal capacity of the building by pre-cooling air for the next day.		
	f) Use the EMS for optimum start/stop that takes advantage of the building's thermal capacity and minimizes equipment run time.		
	g) Use the EMS to provide chilled water temperature and condenser water temperature reset.		
ENVIRONMENTALLY SENSITIVE BUILDING PRODUCTS AND SYSTEMS		**Y**	**N**
1	Establish a storage and collection area for recyclables at each facility during construction and during occupancy.		
2	Use rapid renewable materials these include bamboo, cork, linoleum flooring, sunflower seed board, wheatgrass cabinetry in the following spaces: (a) All Classrooms (Example) (b) Library (Example)		
3	Maximize the use of wood-based materials certified in accordance with components, including but not limited to: structural framing and general dimensional framing, flooring, finishes, furnishings, and non-rented temporary construction applications such as bracing, wood formwork where specified and pedestrian barriers.		
4	Incorporate re-used items, seconds, surplus, donations etc. in order to reduce capital expenditure.		
INDOOR ENVIRONMENTAL QUALITY		**Y**	**N**
1	Comply with the latest edition of American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 62 for air ventilation. Use 22 cfm of outside air per occupant in all occupied spaces. Programming criteria will apply if there is a conflict between this requirement and program criteria. Where there is a difference between ASHRAE outside air requirement and the 22 cfm (and no program criteria guidance) use the most stringent requirement.		
2	Meet operational, maintenance and record keeping requirements of Cal/OSHA.		
3	Outside air intakes shall be at least 20 ft from temporary and/or permanent sources of contamination.		
4	Prevent accumulation of water under in or near buildings.		
5	Use high efficiency HVAC unit filters.		

ITEM		INCORPORATE IN DESIGN	
6	Provide CO2 controlled ventilation for high-level occupancies e.g. classrooms, auditoriums, cafeterias, conference room etc.		
7	Perform a flush out prior to substantial completion and occupancy.		
8	Return ventilation system to normal operation following flush-out period to minimize energy consumption.		
9	Air out materials and equipment before installation to minimize off gassing during occupancy.		
10	Use paint, carpet, adhesives, sealants and interior finishes with low or no volatile organic compounds (VOC):		
	a) Carpet systems shall comply with the limits set by the Carpet and Rug Institute Green Label Indoor Air Quality Test Program.		
	b) Paints and coatings must comply with the VOC and chemical compound limits of Green Seal requirements.		
	c) Composite wood or agrifiber products may not contain any added urea-formaldehyde resins.		
	d) Adhesives shall comply with the VOC limits of South Coast Air Quality Management District Rule 1168 (SCAQMD) and all sealants used as fillers must comply with Bay Area Air Resources Board Reg. 8, Rule 51.		
11	Install permanent entryway systems for (grills, grates, etc.) to capture dirt, particulates, etc. from entering the building at all high volume entryways into the building.		
12	Provide areas with structural deck-to-deck partitions with separate outside exhausting, no air recirculation and negative pressure where chemical use occurs (housekeeping areas, copying/print rooms).		
13	Provide drains plumbed for appropriate disposal of liquid waster in spaces where water and chemical concentrate mixing occurs.		
WATER CONSERVATION AND MAINTENANCE		**Y**	**N**
1	Use reduced water consumption fixtures including the following: (use programming criteria when information is available there for latest fixture flow and flush requirements. Also comply with sustainability Standards requirements)		
2	Use water-conserving appliances in cafeterias and kitchen and/or laundry facilities.		
3	Consider using condensing boilers or instantaneous point-of-use water heaters on restroom, kitchen or cafeteria sink fixtures to provide hot water on demand. Justify selection based on life-cycle cost analysis.		
4	Provide a gray water system for Landscaping. See the programming criteria for more requirements. (this requirement if selected should be clearly spelled out in the programming criteria requirements)		
5	Provide green roof. See the programming criteria for more requirements. (this should be clearly spelled out in the programming criteria requirements and approved by LACDD)		

	ITEM	INCORPORATE IN DESIGN	
6	Infiltrate stormwater on site through the use of cisterns, porous paving, on site infiltration, and bioswales, and biofiltration (**California Water Resources Control Borad MS-4 regulations).**		
RECYCLING SYSTEMS AND WASTE MANAGEMENT		**Y**	**N**
	Provide in the construction documents the following requirements:		
1	Construction waste management plan is mandatory. During construction sort wood waste, cardboard, scrap, metal and drywall at a minimum.		
2	Install dual bin system of recyclables and trash at each college for use during construction and occupancy.		
3	Use materials that are factory cut and finished to minimize waste, such as carpet tiles instead of broadloom carpet.		
4	Where feasible, removal of vegetation during construction shall be mulched and stored on site for use as ground cover after final grading.		
5	Grind and reuse all concrete and asphalt.		
6	Recycle all sheetrock.		
OTHER PROJECT SPECIFIC REQUIREMENTS		**Y**	**N**

LOS ANGELES COMMUNITY COLLEGE DISTRICT

DEPARTMENT OF FACILITIES PLANNING AND DEVELOPMENT
SUSTAINABLE BUILDING PROGRAM

SUSTAINABILITY COVER SHEET

Part I: Project Information

		Project Phase
Date:	____________	☐ Programming
College :	____________	☐ Programming Validation
Project Name :	____________	☐ 100% SD
Project Number:	____________	☐ 50% DD
AE - Name/ Point of Contact :	____________	☐ 100% DD
Company Name :	____________	☐ 50% CD
Phone - Direct Line	____________	☐ 95% Turn Page CD
Phone -Mobile :	____________	☐ DSA
Email :	____________	☐ 100% CD
Sustainability Consultant Name/ Point of Contact :	____________	

Total GSF of project: ____________

Total ASF of project: ____________

PART II : Sustainability Policy

1. LEED Project? (Yes/No) ____________

1a. If Yes, provide LEED version (e.g. NCv2.2) ____________

1b. Certification Level Targeted ____________

(See Part III for documents required to be attached)

1c. If 1a. & b. do not apply

Complete 'Renovation checklist review' (DES-007-B) Completed & Attached ☐

2. Energy Performance:

2a. Energy Performance better than Title 24 (Yes/No) ____________
2b. Energy Cost Performance (Title 24) ____________
2c. Is building connected to Campus Central Plant? (Yes/No) ____________
If yes, please list other buildings also connected ____________
2d. List systems supplemented by central plant ____________
2e. List backup building systems ____________
2f. Is the building metered for all utilities? (Yes/No) ____________

3. Renewable Energy:
3a. Is PV design and installation part of this project? (Yes/No) ____________
3b. Is campus PV used to achieve renewable energy target ? (Yes/No) ____________
3c. List PV KW allocation required from Campus bank ____________

4. Items to confirm with SPL in Schematic Design Phase regarding a LEED project:
a. LEED boundary of project
b. Occupied space in the program
c. Occupancy of project to be used for LEED submission
d. Owner provided sustainability attributes (pull exhibits from the sustainability standards at back of the document that show bicycles and metro paths etc.)
e. M&DR program interface
f. Central Plant coordination
g. Project appropriate certification level (LEED certified is the program minimum)
h. LEED scorecard approval from owner at 100% SD and 100% CD

PART III : Documents as stated below are required to be attached :

1. (IF APPLICABLE) Industry Standard Detailed LEED scorecard showing status of credits expected to be achieved.
List strategies to achieve credits and how they will be accomplished with team responsibilities.
2. Title 24 energy performance document ____________
3. Energy Modeling Simulation Program: Title 24 (drop down)
3.a. If other, list energy modeling program: ____________
4. For Energy Modeling Program, list Occupancy Schedule: ____________
5. For Energy Modeling Program, list Schedule Profile: ____________
6. For Energy Modeling Program, are there Exceptional Calculations: (Yes/No) ________ If yes list-
7. Provide Energy Model

Part IV : Sustainability KPI Metric Review

1. Milestone LEED checklist accurately reflects sustainability features incorporated into project	(Yes/No)	______
2. Milestone Renovation checklist accurately reflects sustainability features incorporated into project	(Yes/No)	______
3. Compliance with SOP critical coordination checklist form	(Yes/No)	______
4. Completeness of milestone deliverables	(Yes/No)	______
5. Completeness of milestone energy modeling deliverables	(Yes/No)	______
6. Green Building Certification design submission within 3 months of DSA approval of design	(Yes/No)	______
7. Green Building Certification construction submission within 3 months of substantial completion	(Yes/No)	______

LOS ANGELES COMMUNITY COLLEGE DISTRICT
DEPARTMENT OF FACILITIES PLANNING AND DEVELOPMENT
SUSTAINABLE BUILDING PROGRAM

Energy Modeling Cover Sheet

Project Phase

☐ Programming ☐ Programming Validation ☐ 100% SD ☐ 50% DD ☐ 100% DD ☐ 50% CD ☐ 95% Turn Page CD ☐ DSA ☐ 100% CD

Project Information

Number of Bldgs within project: (Please fill out a separate form for each building)

Date:	**College :**
Project Name:	**Project Number:**
AE - Name/ Point of Contact :	**Company Name :**
Phone:	**Email:**

Title 24 Data contact name/Co:
Energy Modeling Contact name/Co:
Sustainability Consultant Name/Co:

Total GSF of project:	**Total ASF of project:**

Building Information

Building Name:		**Electricity Cost (kWh):**	/Kwh	**Energy Use Intensity (EUI) Proposed:**		**EUI Baseline:**	
Building __ of __ (If Multiple Buildings)		**Fuel Cost (Therm):**	/Therm	**Electricty EUI:**	kWh/sf/yr		kWh/sf/yr
Building Program:		**Construction Type:**		**Fuel EUI:**	kBtu/sf/yr		kBtu/sf/yr
Location Zip Code:		**Primary Structure:**		**Total EUI:**	kBtu/sf/yr		kBtu/sf/yr
Weather Station:		**Primary Exterior Skin:**					
Gross Sq Ft:				**Life Cycle Energy Use/Cost:**		**Life Cycle Baseline:**	
Assignable Sq Ft:		**Construction Percentage**		**Energy Use:**	kWh		kWh
Avg Lighting Power Density:	W/sqft	**New Construction:**	%	**Fuel Use:**	Therms		Therms
Exterior Window Ratio:		**Renovating:**	%	**Energy Cost:**			
		Existing to Remain:	%				

Rev.06.05.2015

LACCD CLIMATE ZONE INFORMATION

Name / Address	CA Climate Zone	Summer* 0.5% DB/ 0.5% MCWB (deg F)	Winter** 0.6% DB (deg F)
East Los Angeles College 1301 Avenida Cesar Chavez Monterey Park, CA 91754	9	94/68	37
Los Angeles City College 855 N. Vermont Avenue Los Angeles, CA 90029	9	89/69	44
Los Angeles Harbor College 1111 Figueroa Place Wilmington, CA 90744	6	88/68	40
Los Angeles Mission College 13356 Eldridge Avenue Sylmar, CA 91342-3245	9	99/70	28
Los Angeles Pierce College 6201 Winnetka Avenue Woodland Hills, CA 91371	9	99/70	34
Los Angeles Southwest College 1600 Imperial Highway Los Angeles, CA 90047	8	85/68	39
Los Angeles Trade-Technical College 400 W. Washington Blvd. Los Angeles, CA 90015	9	92/68	42
Los Angeles Valley College 5800 Fulton Avenue Valley Glen, CA 91401	9	98/69	39
West Los Angeles College 4800 Freshman Drive Culver City, CA 90230	8	88/69	39

Source: Joint Appendices for the 2005 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, Joint Appendix II – Reference Weather/Climate Data.

Climate Data

To a varying degree the energy use in all building types is influenced by climatic conditions. LACCD campuses are spread across different climate zones (6, 8 and 9) which vary significantly from mild coastal to hot dry conditions. Selecting weather information representative of the project site is an important first step in assessing opportunities to incorporate passive design strategies and predicting building energy use intensity. Some of the important information that can be gathered from hourly weather files includes:

- Extent and frequency of overheated periods
- Diurnal temperature swing
- Wind speed and direction
- Wet bulb, dew point and relative humidity levels
- Insolation and illuminance levels
- Ground temperatures
- Night sky radiant temperatures
- Sun path

The microclimate can also impact site conditions and must also be considered in the climate analysis. Adjacent buildings and vegetation may provide shading and can impact wind speed and direction. The topography of the site can change wind patterns and generate localized airflows as the surrounding air heats and cools during the day. The landscaping around the site can also generate a heat island effect, increase reflected radiation or provide cooling through evaporation and evapotranspiration.

While the standard California Climate Zone files are still required for Title 24 compliance, other weather files are potentially more representative of campus weather patterns. The original TMY2 weather files on which the California Climate Zone files are based have been updated to TMY3 weather files by the National Renewable Energy Laboratory. These weather files can be downloaded in energy plus weather format (epw) or in statistical summary form at http://apps1.eere.energy.gov/buildings/energyplus/. DOE2 compatible weather files in the *.bin format can also be downloaded at http://doe2.com/index_Wth.html. The location of each campus along with the location of the TMY3 station locations is below.

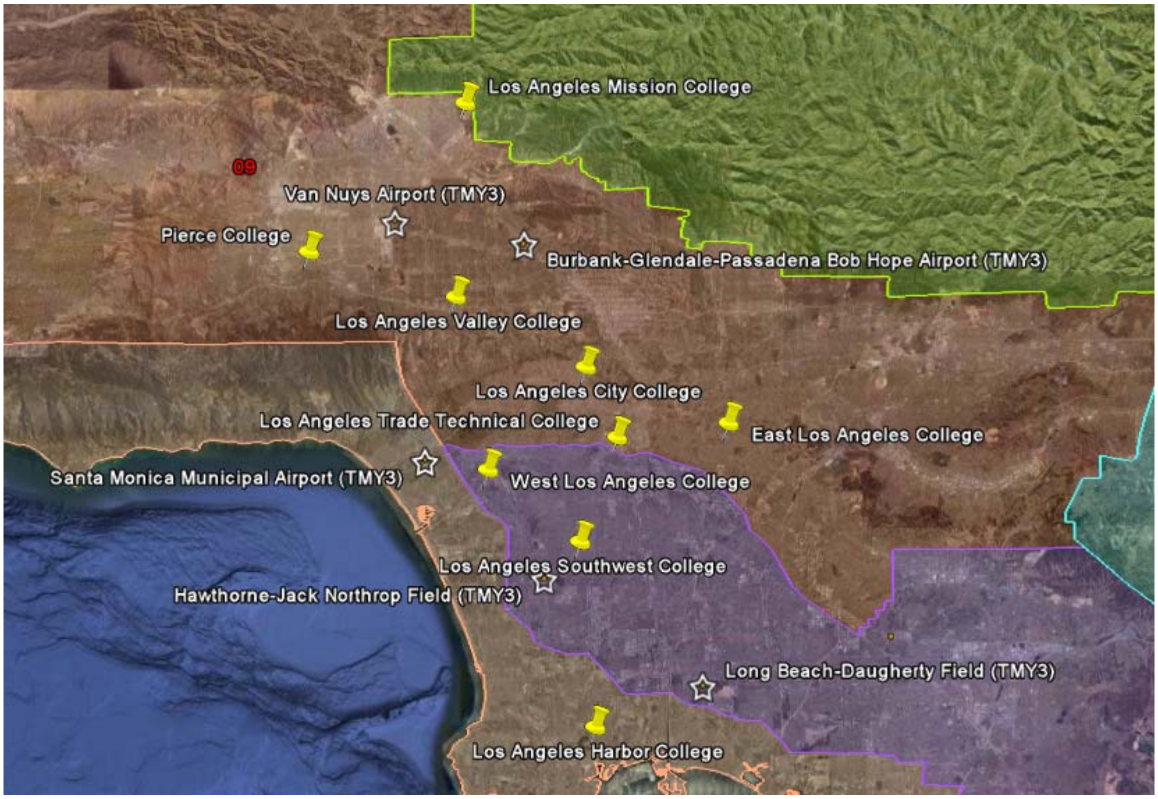


Figure 1: Campus and TMY3 Weather Stations Locations

In cases where additional weather data is available closer to the campus this should also be used to assess the impact on building energy use. Examples of additional data sources include the National Oceanic and Atmospheric Administration which provides, for a small fee, information from a large database of weather stations. Typically there are significant gaps in this kind of data so it can't be used in place of standard weather files.

In the case of Pierce College there is a weather station on campus and the data is posted on-line at http://data.piercecollege.edu/weather/summary.html.

Recommended Weather Data Sources

CAMPUS	WEATHER DATA
Pierce College	Van Nuys Airport (TMY3), Pierce College Weather Station
Los Angeles Mission College	Van Nuys Airport (TMY3)
Los Angeles Valley College	Burbank Airport (TMY3)
Los Angeles City College	California Climate Zone 9
Los Angeles Trade Technical College	Hawthorne Jack Northrop Field (TMY3)
West Los Angeles College	Santa Monica Municipal Airport (TMY3)
Los Angeles Harbor College	Long Beach Daugherty Field (TMY3)
Los Angeles Southwest College	Hawthorne Jack Northrop Field (TMY3)
East Los Angeles College	California Climate Zone 9

Weather Summary Tables

	VAN NUYS AIRPORT (TMY3)
Overheated Periods	Significant overheated periods (>75^{o}F) occur from late April through September and typically last from 8am to 8pm
Dry Bulb Temperatures	Average maximum and minimum temperatures are 46 – 67^{o}F during the coolest month (January) and 62- 91^{o}F during the warmest month (September)
Potential for Natural Ventilation	Assuming an allowable temperature range of 57-75^{o}F, maximum humidity ratio of 0.10lb/lb and occupancy from 8am to 9pm, natural ventilation could be used 47% of the time
Average Wind Speeds	5mph
Wind Direction	The dominant wind direction is from the SE
Average Hourly Profile for Hottest Month	The hottest month is September when temperatures drop to 64^{o}F during the night and rise to 91^{o}F during the day
Average Hourly Profile for Coolest Month	The coolest month is February when temperatures drop to 51^{o}F during the night and rise to 62^{o}F during the day
Ground Temperatures	At 1.6 ft depth temperature vary from 56^{o}F in January to 73^{o}F in July
Illumination	The average illumination during daylit hours is 4400 footcandles
Insolation	The average daily total global horizontal insolation is 1700 Btu/sf
Shading	Window solar heat gain needs to be reduced during the cooling season to avoid overheating, particularly low angle western sun

	BURBANK AIRPORT (TMY3)
Overheated Periods	Significant overheated periods (>75^{o}F) occur from late April through September and typically last from 8am to 8pm
Dry Bulb Temperatures	Average maximum and minimum temperatures are 45 – 65^{o}F during the coolest month (February) and 67-91^{o}F during the warmest month (September)
Potential for Natural Ventilation	Assuming an allowable temperature range of 57-75^{o}F, maximum humidity ratio of 0.10lb/lb and occupancy from 8am to 9pm, natural ventilation could be used 46% of the time
Average Wind Speeds	5mph
Wind Direction	The dominant wind direction is from the SE
Average Hourly Profile for Hottest Month	The hottest month is September when temperatures drop to 68^{o}F during the night and rise to 90^{o}F during the day
Average Hourly Profile for Coolest Month	The coolest month is February when temperatures drop to 46^{o}F during the night and rise to 65^{o}F during the day
Ground Temperatures	At 1.6 ft depth temperature vary from 53^{o}F in January to 75^{o}F in July
Illumination	The average illumination during daylit hours is 4500 footcandles
Insolation	The average daily total global horizontal insolation is 170 Btu/sf
Shading	Window solar heat gain needs to be reduced during the cooling season to avoid overheating, particularly low angle western sun

	JACK NORTHROP FIELD (TMY3)
Overheated Periods	Significant overheated periods (>75^{o}F) occur from July through September and typically last from 8am to 6pm
Dry Bulb Temperatures	Average maximum and minimum temperatures are 49 – 66^{o}F during the coolest month (January) and 64-75^{o}F during the warmest month (July)
Potential for Natural Ventilation	Assuming an allowable temperature range of 57-75^{o}F, maximum humidity ratio of 0.10lb/lb and occupancy from 8am to 9pm, natural ventilation could be used 62% of the time
Average Wind Speeds	5mph
Wind Direction	The dominant wind direction is from the SW
Average Hourly Profile for Hottest Month	The hottest month is September when temperatures drop to 62^{o}F during the night and rise to 76^{o}F during the day
Average Hourly Profile for Coolest Month	The coolest month is March when temperatures drop to 54^{o}F during the night and rise to 63^{o}F during the day
Ground Temperatures	At 1.6 ft depth temperature vary from 56^{o}F in January to 68^{o}F in July
Illumination	The average illumination during daylit hours is 4400 footcandles
Insolation	The average daily total global horizontal insolation is 150 Btu/sf
Shading	Window solar heat gain needs to be reduced on the south facade during the cooling season and potentially used to provide passive solar heating during the heating season

	SANTA MONICA MUNICIPAL AIRPORT (TMY3)
Overheated Periods	Significant overheated periods (>75^{o}F) occur from July through September and typically last from 8am to 5pm
Dry Bulb Temperatures	Average maximum and minimum temperatures are 49 – 67^{o}F during the coolest month (January) and 64-76^{o}F during the warmest month (July)
Potential for Natural Ventilation	Assuming an allowable temperature range of 57-75^{o}F, maximum humidity ratio of 0.10lb/lb and occupancy from 8am to 9pm, natural ventilation could be used 56% of the time
Average Wind Speeds	6mph
Wind Direction	The dominant wind direction is from the SW
Average Hourly Profile for Hottest Month	The hottest month is September when temperatures drop to 64^{o}F during the night and rise to 74^{o}F during the day
Average Hourly Profile for Coolest Month	The coolest month is March when temperatures drop to 53^{o}F during the night and rise to 62^{o}F during the day
Ground Temperatures	At 1.6 ft depth temperature vary from 56^{o}F in January to 68^{o}F in July
Illumination	The average illumination during daylit hours is 4300 footcandles
Insolation	The average daily total global horizontal insolation is 1600 Btu/sf
Shading	Window solar heat gain needs to be reduced on the south facade during the cooling season and potentially used to provide passive solar heating during the heating season

	LONG BEACH DAUGHERTY FIELD (TMY3)
Overheated Periods	Significant overheated periods (>75^{o}F) occur from late June through September and typically last from 8am to 6pm
Dry Bulb Temperatures	Average maximum and minimum temperatures are 48 – 67^{o}F during the coolest month (January) and 64-83^{o}F during the warmest month (September)
Potential for Natural Ventilation	Assuming an allowable temperature range of 57-75^{o}F, maximum humidity ratio of 0.10lb/lb and occupancy from 8am to 9pm, natural ventilation could be used 51% of the time
Average Wind Speeds	6mph
Wind Direction	The dominant wind direction is from the south and north west but occurs with significant frequency from all directions
Average Hourly Profile for Hottest Month	The hottest month is September when temperatures drop to 65^{o}F during the night and rise to 81^{o}F during the day
Average Hourly Profile for Coolest Month	The coolest month is January when temperatures drop to 50^{o}F during the night and rise to 65^{o}F during the day
Ground Temperatures	At 1.6 ft depth temperature vary from 56^{o}F in January to 70^{o}F in July
Illumination	The average illumination during daylit hours is 4300 footcandles
Insolation	The average daily total global horizontal insolation is 1600 Btu/sf
Shading	Window solar heat gain needs to be reduced during the cooling season to avoid overheating, particularly low angle western sun

	CALIFORNIA CLIMATE ZONE 9
Overheated Periods	Significant overheated periods (>75^{O}F) occur from late April through October and typically last from 8am to 6pm
Dry Bulb Temperatures	Average maximum and minimum temperatures are 45 – 68^{O}F during the coolest month (January) and 61-89^{O}F during the warmest month (July)
Potential for Natural Ventilation	Assuming an allowable temperature range of 57-75^{O}F, maximum humidity ratio of 0.10lb/lb and occupancy from 8am to 9pm, natural ventilation could be used 48% of the time
Average Wind Speeds	6mph
Wind Direction	The dominant wind direction is from the south and south east
Average Hourly Profile for Hottest Month	The hottest month is August when temperatures drop to 62^{O}F during the night and rise to 88^{O}F during the day
Average Hourly Profile for Coolest Month	The coolest month is January when temperatures drop to 46^{O}F during the night and rise to 67^{O}F during the day
Ground Temperatures	At 1.6 ft depth temperature vary from 55^{O}F in January to 71F in July
Illumination	Not available
Insolation	The average daily total global horizontal insolation is 1600 Btu/sf
Shading	Window solar heat gain needs to be reduced during the cooling season to avoid overheating, particularly low angle western sun

Energy Model Criteria – Occupancy, Lighting and Plug-Load Schedules

Classroom / Library / Gym / Recreational / Library / Performance / Theater / Laboratories

		Hour																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
People (%)	WD	0	0	0	0	0	0	10	25	95	95	95	95	95	95	95	95	95	95	95	95	95	40	0	0
	Sat	0	0	0	0	0	0	10	25	95	95	95	95	95	95	95	95	95	40	0	0	0	0	0	0
	Sun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (%)	WD	5	5	5	5	5	5	40	70	85	85	85	85	85	85	85	85	85	85	85	85	85	70	5	5
	Sat	5	5	5	5	5	5	40	70	85	85	85	85	85	85	85	85	85	70	5	5	5	5	5	5
	Sun	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Maintenance Shop

		Hour																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
People (%)	WD	0	0	0	0	25	50	50	50	50	50	50	50	50	50	50	40	25	10	0	0	0	0	0	0
	Sat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Sun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (%)	WD	5	5	5	5	40	70	85	85	85	85	85	85	85	85	85	85	70	5	5	5	5	5	5	5
	Sat	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	Sun	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Office / Medical Office / Food Service (Title 24 N 2-8 Assumptions)

		Hour																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
People (%)	WD	0	0	0	0	5	10	25	65	65	65	65	65	65	65	65	65	65	40	25	10	5	5	5	0
	Sat	0	0	0	0	0	0	5	15	15	15	15	15	15	15	15	15	15	5	5	5	0	0	0	0
	Sun	0	0	0	0	0	0	0	5	5	5	5	5	5	5	5	5	5	5	5	5	0	0	0	0
Lights (%)	WD	5	5	5	5	10	20	40	70	80	85	85	85	85	85	85	85	85	80	35	10	10	10	10	10
	Sat	5	5	5	5	5	15	25	25	25	25	25	25	25	25	20	20	20	15	10	10	10	10	10	10
	Sun	5	5	5	5	5	10	10	15	15	15	15	15	15	15	15	15	15	10	10	10	5	5	5	5

Non-Laboratory

		Hour																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Plug Loads (%)	WD	15	15	15	15	15	15	40	70	85	85	85	85	85	85	85	85	85	85	85	85	85	70	15	15
	Sat	15	15	15	15	15	15	15	20	25	25	25	25	25	25	20	20	15	15	15	15	15	15	15	15
	Sun	15	15	15	15	15	15	15	20	20	20	20	20	20	20	20	20	20	15	15	15	15	15	15	15

Laboratory

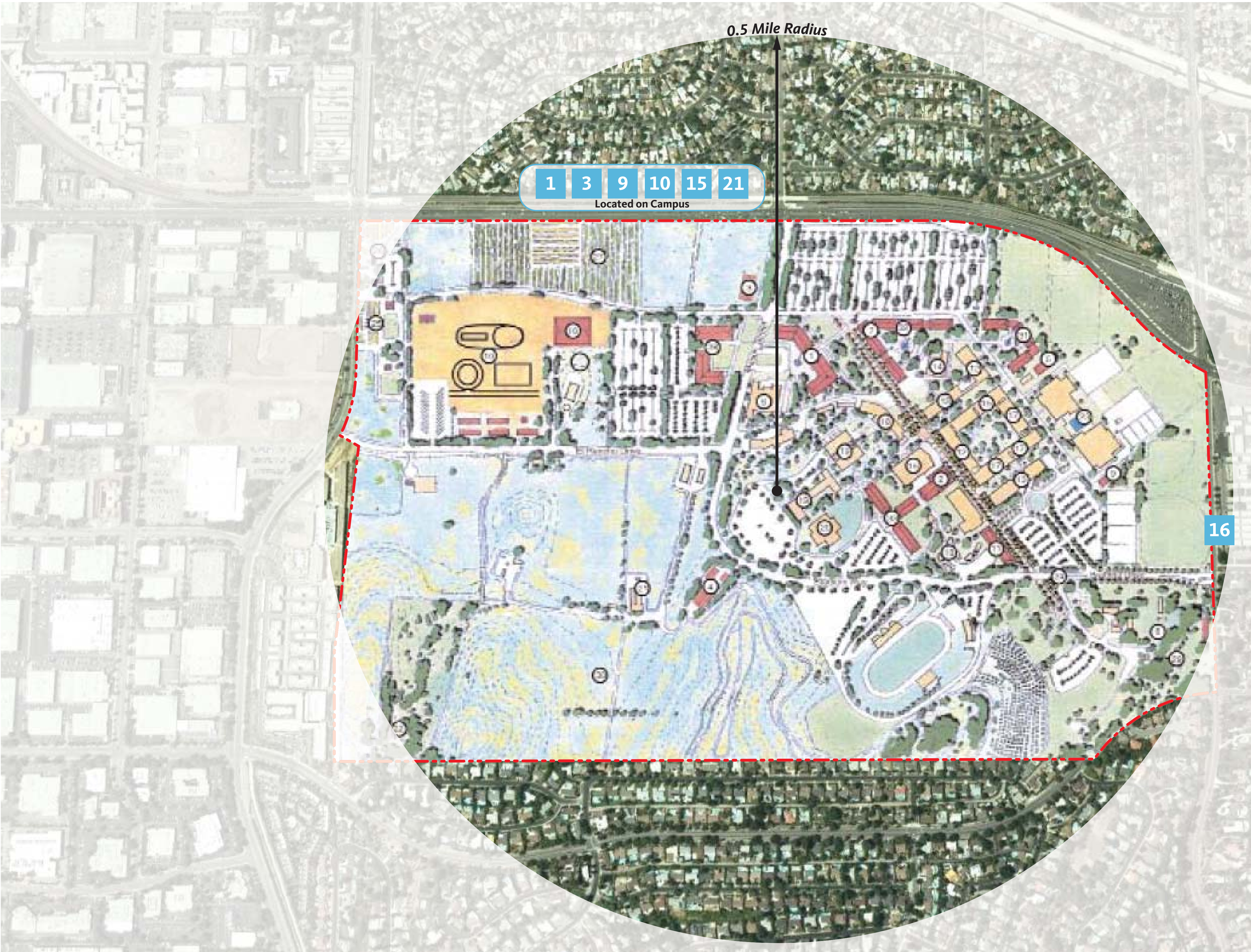
		Hour																							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Plug Loads (%)	WD	20	20	20	20	20	20	30	40	50	50	50	50	50	50	50	50	50	50	50	50	50	40	30	20
	Sat	20	20	20	20	20	20	30	40	40	40	40	40	40	40	40	40	15	15	15	15	15	15	15	15
	Sun	15	15	15	15	15	15	15	20	20	20	20	20	20	20	20	20	20	15	15	15	15	15	15	15

Notes:

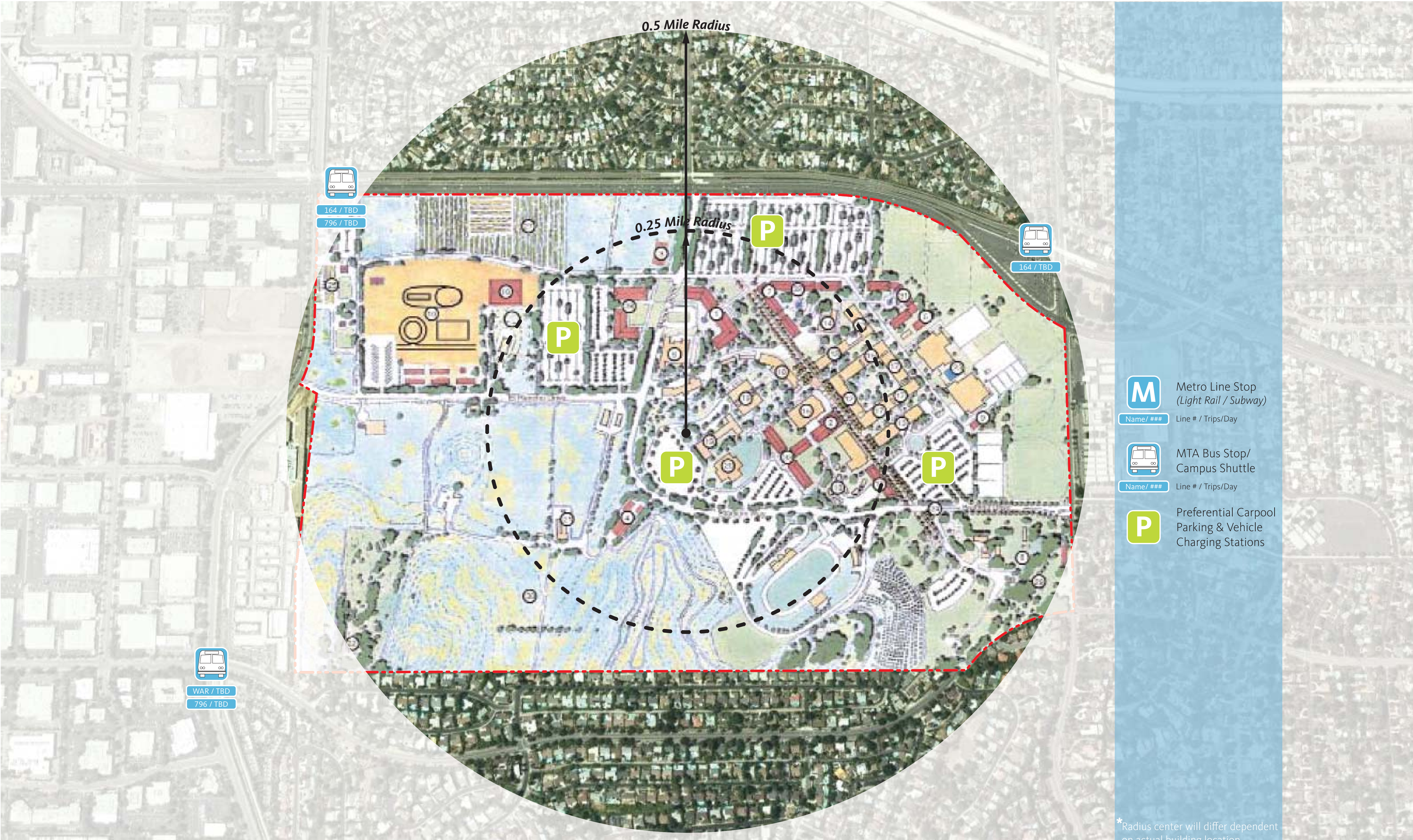
- Lighting schedules are for lighting which is uncontrolled and not connected to occupancy or daylighting photosensors
- Laboratory schedules are based on information published by Labs21, “Laboratory Modeling Guildeline using ASHRAE 90.1-2007 Appendix G”, available at http://www.labs21century.gov/pdf/ashrae_appg_2007_508.pdf
- Holidays should use the Sunday schedule

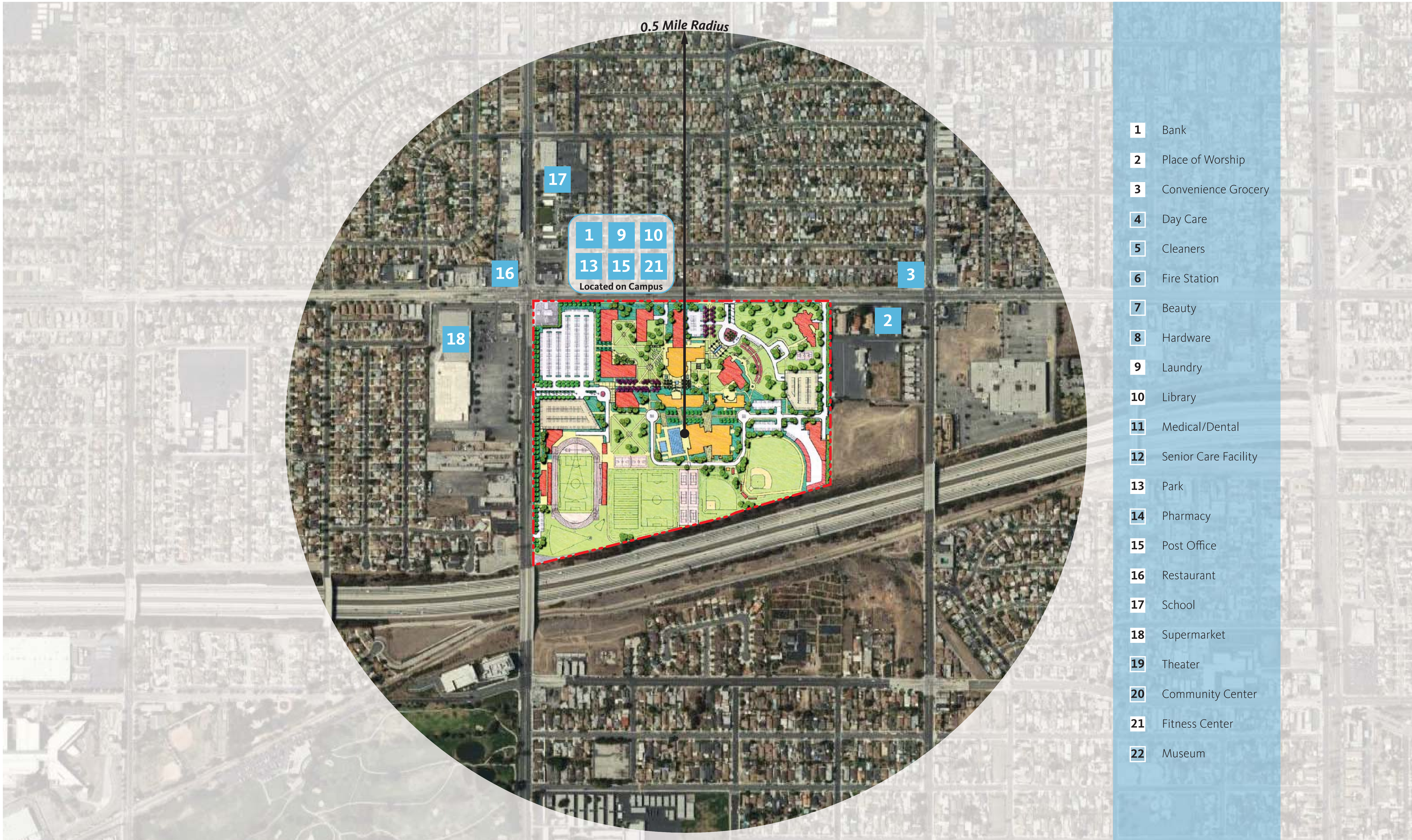

0.5 Mile Radius
1
3
9
10
13
15
21
Located on Campus
17
16
1 Bank
2 Place of Worship
3 Convenience Grocery
4 Day Care
5 Cleaners
6 Fire Station
7 Beauty
8 Hardware
9 Laundry
10 Library
11 Medical/Dental
12 Senior Care Facility
13 Park
14 Pharmacy
15 Post Office
16 Restaurant
17 School
18 Supermarket
19 Theater
20 Community Center
21 Fitness Center
22 Museum

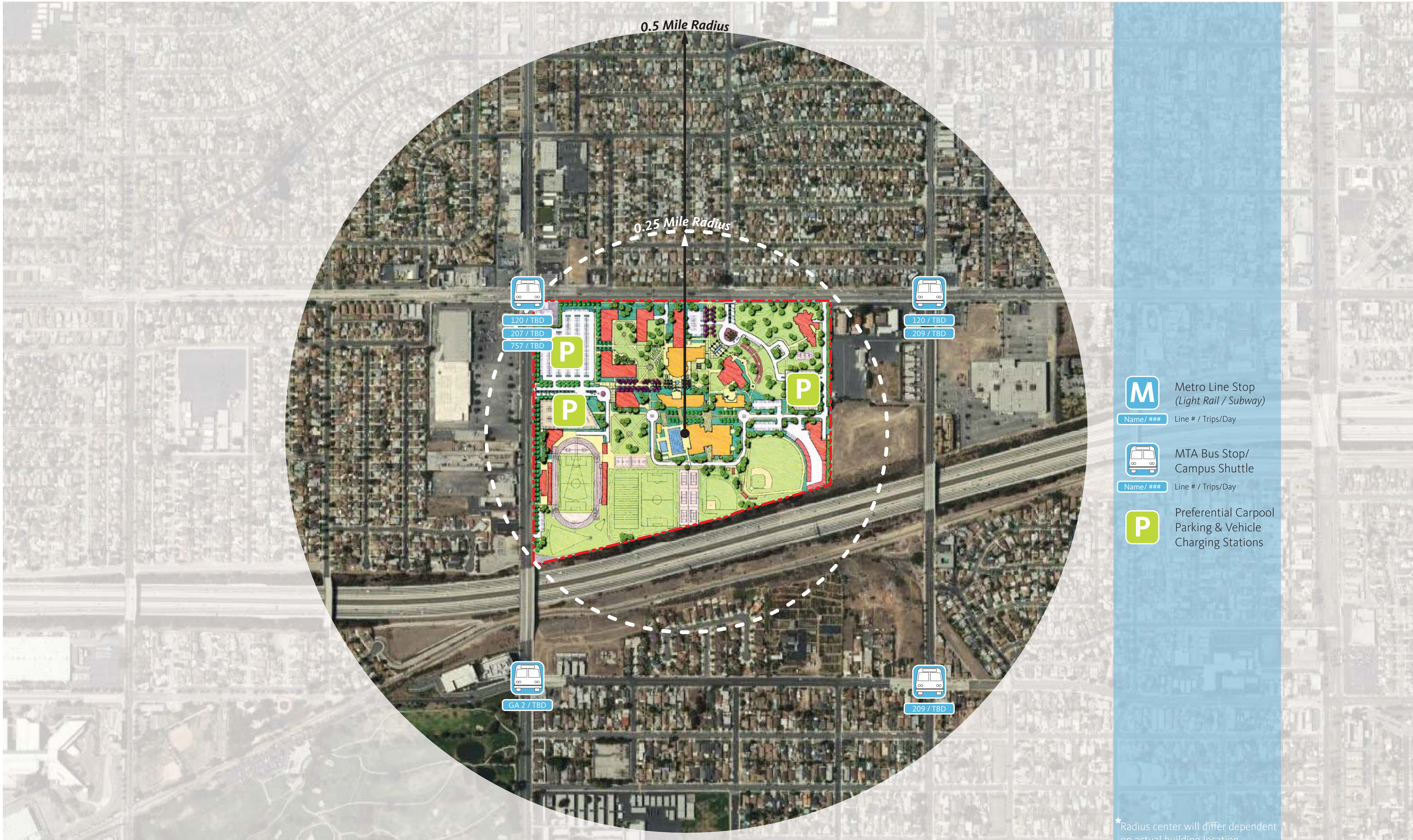

0.5 Mile Radius
0.25 Mile Radius
Shuttle/ TBD
Culver / TBD
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location

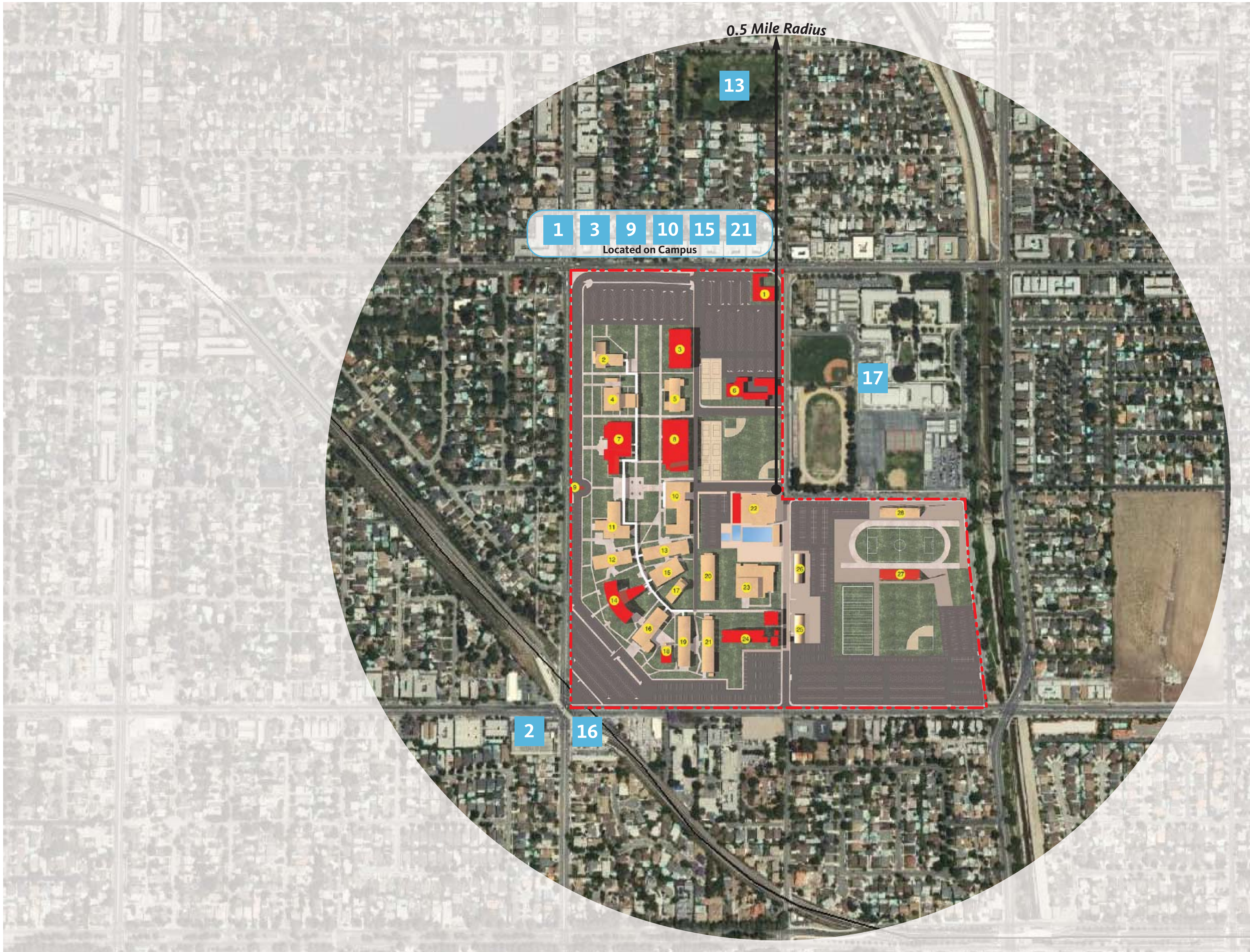


1	Bank
2	Place of Worship
3	Convenience Grocery
4	Day Care
5	Cleaners
6	Fire Station
7	Beauty
8	Hardware
9	Laundry
10	Library
11	Medical/Dental
12	Senior Care Facility
13	Park
14	Pharmacy
15	Post Office
16	Restaurant
17	School
18	Supermarket
19	Theater
20	Community Center
21	Fitness Center
22	Museum

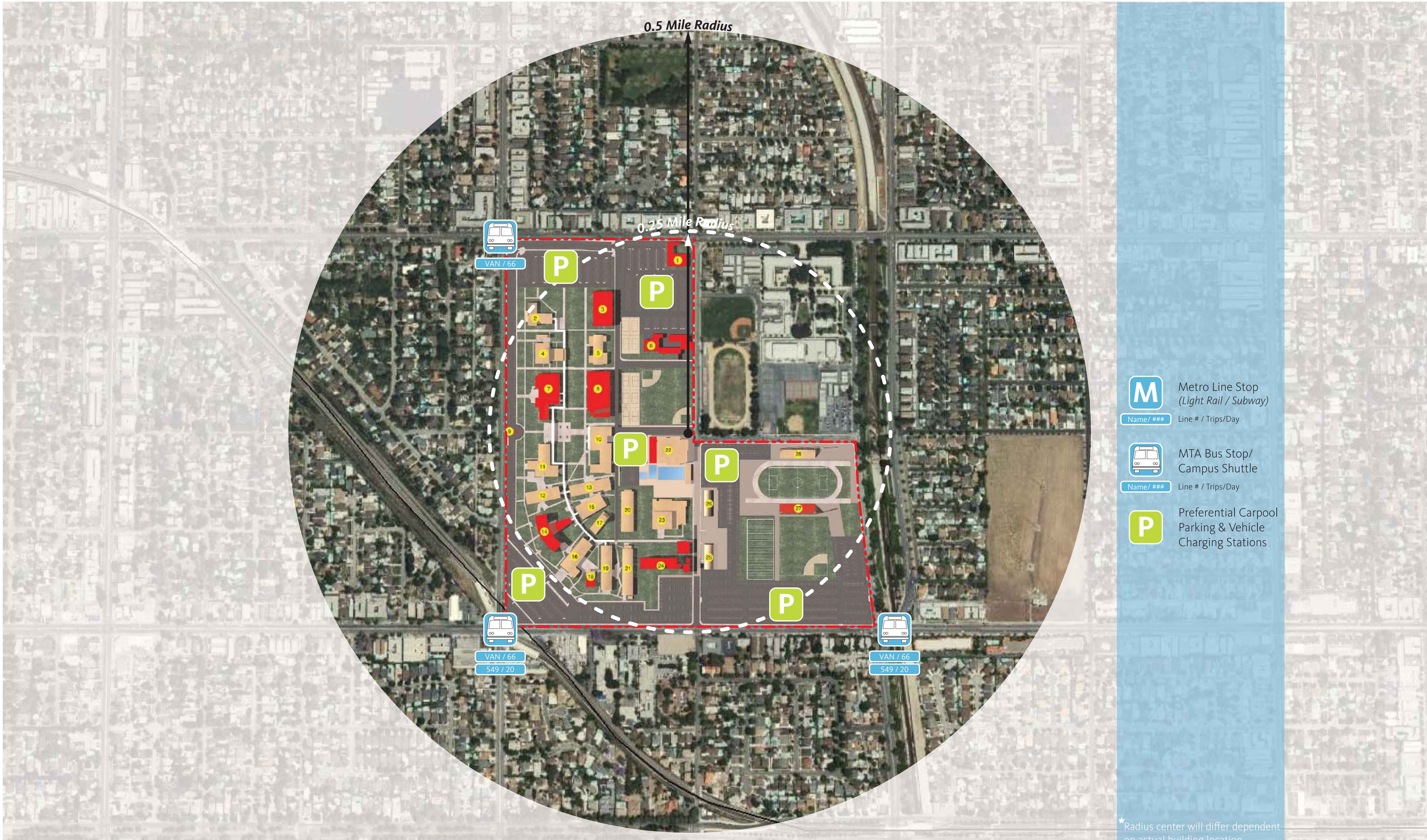

0.5 Mile Radius
0.25 Mile Radius
164 / TBD
796 / TBD
164 / TBD
WAR / TBD
796 / TBD
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location


0.5 Mile Radius
17
1
9
10
13
15
21
Located on Campus
16
3
2
18
1 Bank
2 Place of Worship
3 Convenience Grocery
4 Day Care
5 Cleaners
6 Fire Station
7 Beauty
8 Hardware
9 Laundry
10 Library
11 Medical/Dental
12 Senior Care Facility
13 Park
14 Pharmacy
15 Post Office
16 Restaurant
17 School
18 Supermarket
19 Theater
20 Community Center
21 Fitness Center
22 Museum


0.5 Mile Radius
0.25 Mile Radius
120 / TBD
207 / TBD
757 / TBD
120 / TBD
209 / TBD
GA 2 / TBD
209 / TBD
P
P
P
M
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location



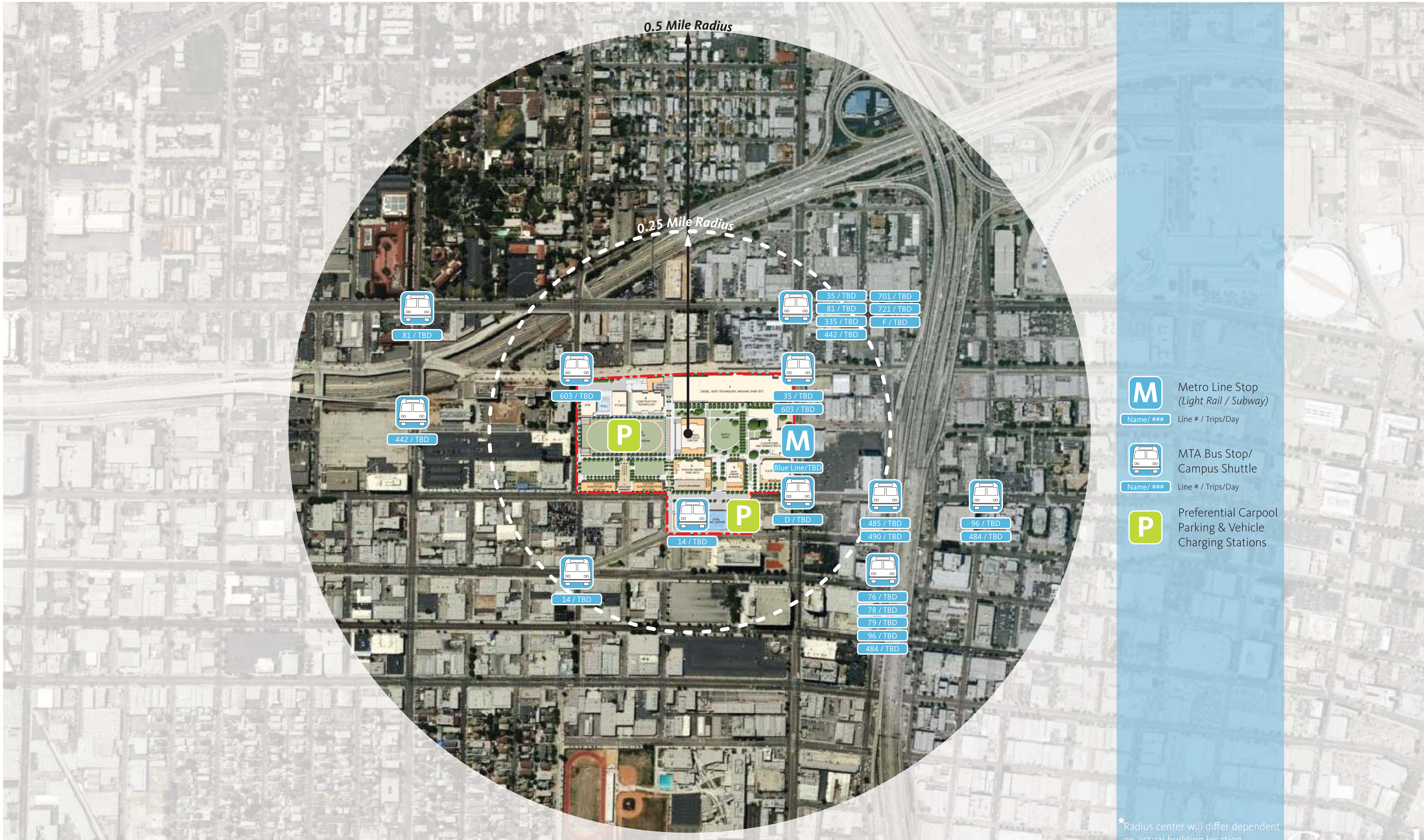
1	Bank
2	Place of Worship
3	Convenience Grocery
4	Day Care
5	Cleaners
6	Fire Station
7	Beauty
8	Hardware
9	Laundry
10	Library
11	Medical/Dental
12	Senior Care Facility
13	Park
14	Pharmacy
15	Post Office
16	Restaurant
17	School
18	Supermarket
19	Theater
20	Community Center
21	Fitness Center
22	Museum


0.5 Mile Radius
0.25 Mile Radius
VAN / 66
VAN / 66
549 / 20
VAN / 66
549 / 20
P
M
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location

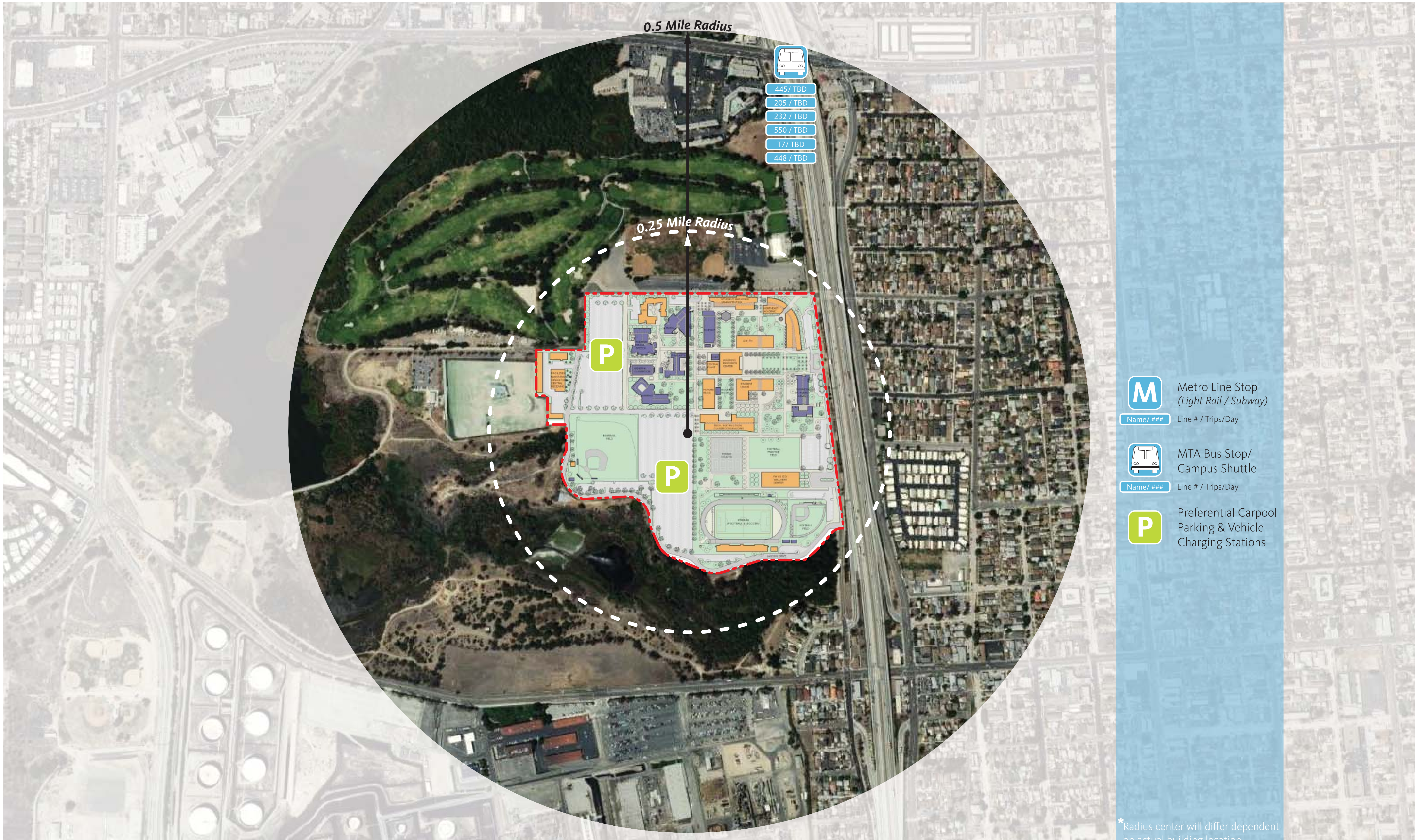

0.5 Mile Radius
4
9
10
15
21
Located on Campus
2
3
14
16
17
18
1
1 Bank
2 Place of Worship
3 Convenience Grocery
4 Day Care
5 Cleaners
6 Fire Station
7 Beauty
8 Hardware
9 Laundry
10 Library
11 Medical/Dental
12 Senior Care Facility
13 Park
14 Pharmacy
15 Post Office
16 Restaurant
17 School
18 Supermarket
19 Theater
20 Community Center
21 Fitness Center
22 Museum

0.5 Mile Radius
0.25 Mile Radius
10 / 188
Red Line/ 128
4 / 170
204 / 250
704 / 150
754 / 200
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location


0.5 Mile Radius
13
17
9 10 15 21
Located on Campus
11
2
3
14
16
1
1 Bank
2 Place of Worship
3 Convenience Grocery
4 Day Care
5 Cleaners
6 Fire Station
7 Beauty
8 Hardware
9 Laundry
10 Library
11 Medical/Dental
12 Senior Care Facility
13 Park
14 Pharmacy
15 Post Office
16 Restaurant
17 School
18 Supermarket
19 Theater
20 Community Center
21 Fitness Center
22 Museum


0.5 Mile Radius
0.25 Mile Radius
81 / TBD
35 / TBD
81 / TBD
335 / TBD
442 / TBD
701 / TBD
721 / TBD
F / TBD
603 / TBD
35 / TBD
603 / TBD
442 / TBD
Blue Line/TBD
D / TBD
14 / TBD
485 / TBD
490 / TBD
96 / TBD
484 / TBD
14 / TBD
76 / TBD
78 / TBD
79 / TBD
96 / TBD
484 / TBD
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location

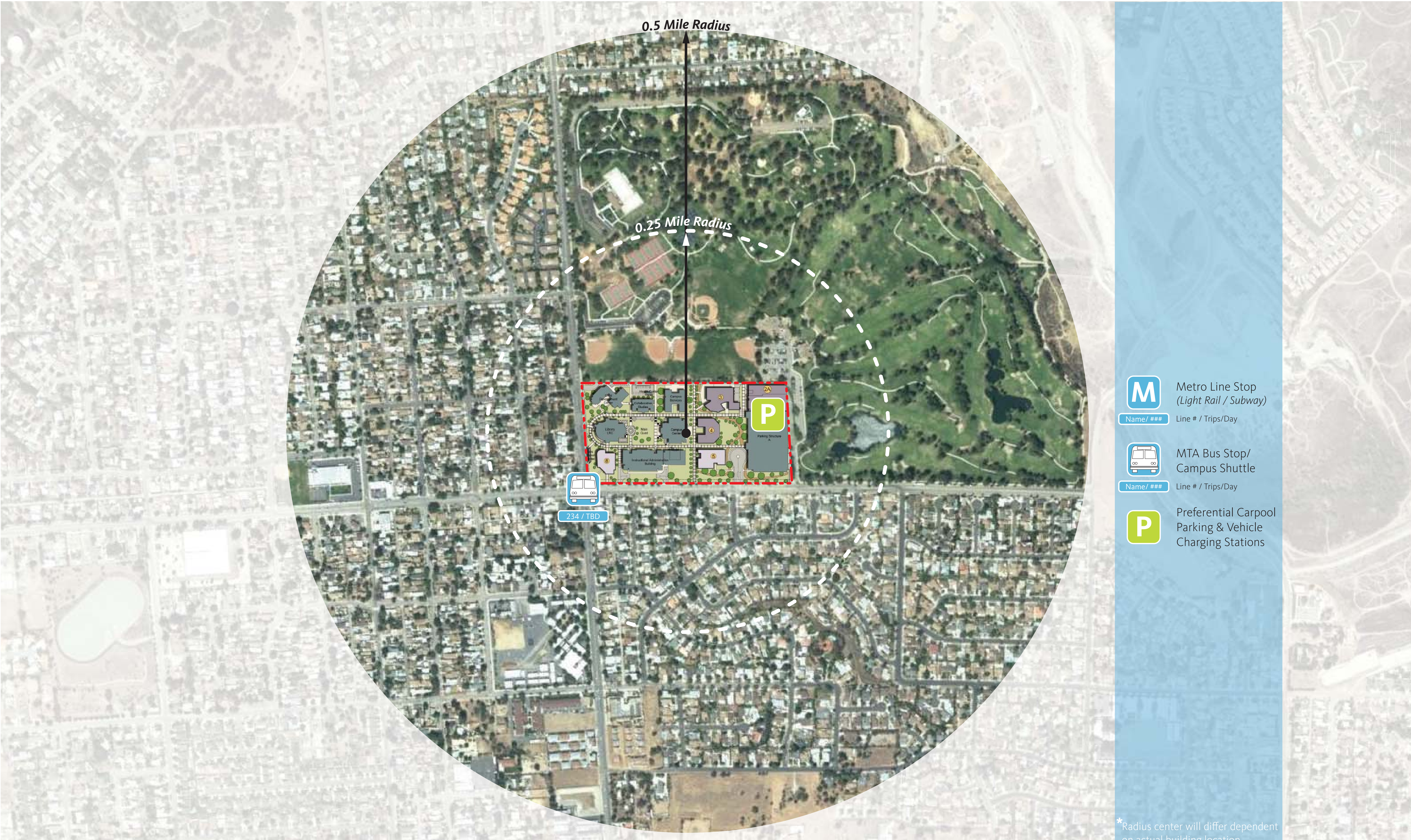
SS C 2 - Community Connectivity

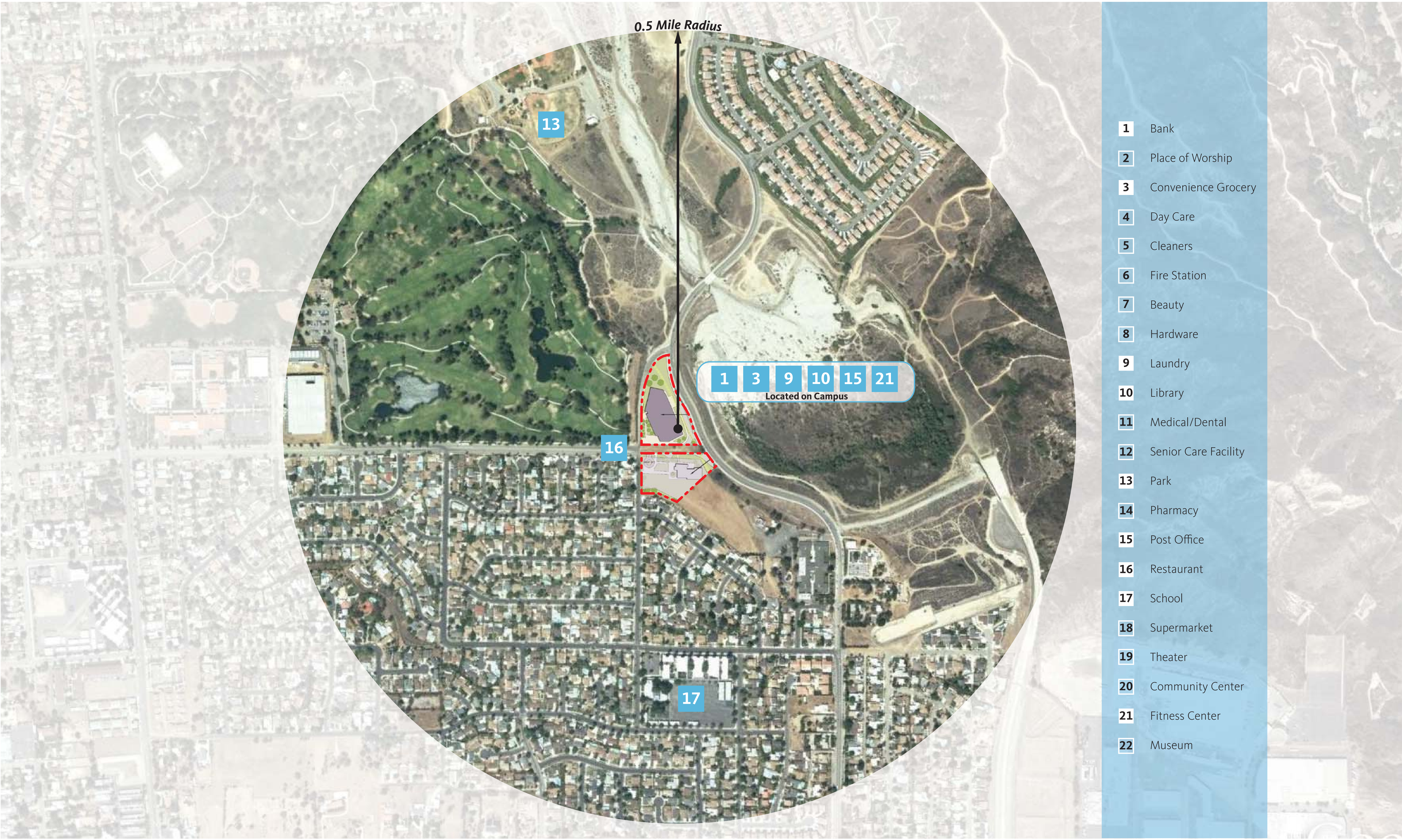

0.5 Mile Radius
0.25 Mile Radius
445 / TBD
205 / TBD
232 / TBD
550 / TBD
T7 / TBD
448 / TBD
P
P
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location


0.5 Mile Radius
3 9 10 15 21
Located on Campus
13
16
17
14
1
18
2
1 Bank
2 Place of Worship
3 Convenience Grocery
4 Day Care
5 Cleaners
6 Fire Station
7 Beauty
8 Hardware
9 Laundry
10 Library
11 Medical/Dental
12 Senior Care Facility
13 Park
14 Pharmacy
15 Post Office
16 Restaurant
17 School
18 Supermarket
19 Theater
20 Community Center
21 Fitness Center
22 Museum


0.5 Mile Radius
0.25 Mile Radius
30 / 220
260 / 228
MP 1 / 18
MP 2 / 18
68 / 106
770 / 174
762 / 102
MP 5 / 41
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location


0.5 Mile Radius
13
1
3
9
10
15
16
21
Located on Campus
17
18
2
1 Bank
2 Place of Worship
3 Convenience Grocery
4 Day Care
5 Cleaners
6 Fire Station
7 Beauty
8 Hardware
9 Laundry
10 Library
11 Medical/Dental
12 Senior Care Facility
13 Park
14 Pharmacy
15 Post Office
16 Restaurant
17 School
18 Supermarket
19 Theater
20 Community Center
21 Fitness Center
22 Museum


0.5 Mile Radius
0.25 Mile Radius
P
234 / TBD
M
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
P
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent
on actual building location


0.5 Mile Radius
13
1 3 9 10 15 21
Located on Campus
16
17
1 Bank
2 Place of Worship
3 Convenience Grocery
4 Day Care
5 Cleaners
6 Fire Station
7 Beauty
8 Hardware
9 Laundry
10 Library
11 Medical/Dental
12 Senior Care Facility
13 Park
14 Pharmacy
15 Post Office
16 Restaurant
17 School
18 Supermarket
19 Theater
20 Community Center
21 Fitness Center
22 Museum


0.5 Mile Radius
0.25 Mile Radius
Campus/ TBD
Metro Line Stop
(Light Rail / Subway)
Name/ ###
Line # / Trips/Day
MTA Bus Stop/
Campus Shuttle
Name/ ###
Line # / Trips/Day
Preferential Carpool
Parking & Vehicle
Charging Stations
*Radius center will differ dependent on actual building location

LOS ANGELES COMMUNITY COLLEGE DISTRICT

SUSTAINABILITY STANDARD DEVIATION REQUEST

(Design Team to Complete)

Part I: Project Information

Date: ______________

College : ______________

Project Name : ______________

Project Number: ______________

AE - Name/ Point of Contact : ______________

Company Name : ______________

Phone - Direct Line ______________

Phone -Mobile : ______________

Email : ______________

Sustainability Consultant Name/ Point of Contact : ______________

Brief Description of Project: ______________

Total GSF of project: ______________

Project Phase

- ☐ Programming
- ☐ Programming Validation
- ☐ 100% SD
- ☐ 50% DD
- ☐ 100% DD
- ☐ 50% CD
- ☐ 95% Turn Page CD
- ☐ DSA
- ☐ 100% CD

PART II: Description of Deviation

1. Describe deviation from the Mandatory Sustainability Standards (List Mandatory Measure(s) in Question):

2. Why can't the project comply with this mandatory measure? Describe justification and merit for this deviation:

3. Attach relevant cost analysis information, attach relevant schedule impact information.

PART III: Attachments/Reference Documentation

1. Please list below all reference documentation, drawings etc. that will be attached to this form.

PART IV: Approvals

Authorized Representative	Signature	Date
CPT Project Manager:		
Building User Group (BUG):		
PMO SPL:		
District Representative:		