



TOD VISIONING

STUDY AND RECOMMENDATIONS

October 20, 2017



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EXECUTIVE SUMMARY

The Culver City TOD Visioning Study and Recommendations centers on re-focusing mobility planning in the TOD area to include multiple modes – pedestrians, transit, and bikes, in addition to automobile traffic that has guided mobility planning historically. Beginning with the Expo Station at its core, the mobility visioning study has explored linkages to connect the station area better with Downtown and with its surrounding neighborhoods. Through a series of eight public workshops and numerous interviews and focus group meetings, the project team has identified mobility issues of primary concern to residents and other stakeholders and outlines in its report multiple interconnected measures for addressing them. In addition to the workshop series, interested parties within the greater area of the TOD have mapped and posted their comments on an interactive website at www.culverTODvision.org. In total, approximately 170 people participated in one or more of the workshop sessions, and approximately 450 unique comments were posted on the interactive website.

The major issues of concern that emerged from this stakeholder input and the consultant team’s own research included the following:

- There is too much traffic – especially too much of the “wrong kind” of traffic (i.e., through-traffic originating outside of Culver City).
- Of the three kinds of automobile traffic having impacts on the area, there is too much through-traffic on local streets, impeding the mobility of residents (i.e., local circulation) and local employees (i.e., destination traffic).
- Culver City’s historic street network threads through-traffic on to streets and neighborhoods not designed to accommodate it.
- The distribution of land use in the city exacerbates the through-traffic problem.
- The street network is disconnected and insufficiently designed to encourage mobility through alternative modes.
- The road infrastructure is insufficient and rapidly approaching its ultimate capacity for cars.

The central goal defined through the engagement process is to provide more and better choices for circulation, by increasing the viability of alternative mobility mode choices for residents and other users alike. Priorities were established with pedestrians first, transit next, then bikes, and finally cars. Under this central goal, supporting objectives include:

- Establishing the TOD area and its neighborhood vicinity as a pedestrians-first environment;
- Advancing the use of transit for first/last mile connections and local circulation;
- Providing a safe and protected network for bicycling as a choice;
- Managing the flow of traffic around and through the TOD area to minimize conflicts with other modes; and
- Conserving and protecting the character of existing residential neighborhood quality.

The consultant team’s recommendations are based on a framework of connected mobility networks to allow people to drive less and walk, bicycle, and take transit more. Principles of the mobility framework include diverting vehicular through-traffic to major arterials around the perimeter of the area; servicing the downtown/commercial core and the eastside employment centers from the “outside” (i.e., from the major perimeter arterials); protecting interior neighborhood circulation from cut-through traffic; protecting pedestrian circulation through improved street crossings, better sidewalks, and better connectivity; facilitating local transit use through improved infrastructure and more responsive service; and facilitating bike use through a connected network of cycling routes.

Within this framework of mobility principles for the TOD area and pursuant to the defined goals, the TOD Visioning report presents a series of categorical recommendations for physical intervention.

FRAMEWORK PRINCIPLES	RECOMMENDATIONS							
	WASHINGTON BOULEVARD "COMPLETE STREET"	MICRO-TRANSIT	BICYCLE NETWORK	TRAFFIC DIVERSION	PARKING STRATEGIES	NEIGHBORHOOD PROTECTION	TOD ORDINANCE / SPECIFIC PLAN	TRANSPORTATION DEMAND MANAGEMENT
Establish the TOD area and its adjacent neighborhood (including downtown) as a pedestrians-first environment.	●			●	●	●	●	●
Advance the use of transit for first/last mile connections and local circulation.	●	●			●			●
Provide a safe and protected network for bicycling as a choice.	●		●					●
Manage the flow of traffic around and through the TOD area to minimize conflicts with other modes.	●			●	●	●		
Divert vehicular through-traffic to major arterials.	●			●	●	●		
Service the downtown/commercial core and the eastside employment centers from the "outside."	●			●	●	●		
Connect perimeter parking through transit.		●			●			●
Conserve and protect the character of existing residential neighborhood quality.						●	●	

The Vision Study's categorical recommendations are organized within a framework of guiding principles.

Pedestrians.

To improve walkability, improve pedestrian safety, and encourage circulation on foot:

- Redesign street intersections in the district for pedestrian priority
- Initiate the City's Neighborhood Traffic Management Program (NTMP) process for a specific set of possible neighborhood protection interventions
- Redesign sidewalks on Washington and National to meet minimum standards of 10 ft.
- Coordinate with City of Los Angeles and Metro to improve crossings on Venice and connections with the Metro transit system.

Transit.

To improve the efficiency and convenience of transit as a mobility option:

- Establish a system of micro-transit for area residents and employees
- Facilitate the efficiency of transit and micro-transit through dedicated street lanes and strategic "hinge" connections
- Clarify connections to regional Metro transit through improved wayfinding systems and real-time "smart" communications

Bikes.

To improve convenience, safety, and efficiency of a cycling infrastructure and encourage biking as an alternative mobility option:

- Establish the Washington/Culver corridor as the major local east/west bike spine with a southside alignment
- Establish a network of bike lanes, paths, and sharrows to connect local and regional systems and initiate a bikeshare program
- Add connections to the Ballona Creek bike path
- Consider a grade-separated bike/ped bridge overcrossing to connect both ends of the Metro Bike Path across the Expo Station area
- Proceed with phased implementation of the Downtown Connector

project as an initial step in Washington Boulevard “complete street” improvements, considering the southside alignment

Traffic.

To improve mobility for pedestrians, transit and bikes, as well as to relieve certain traffic congestion conditions on local streets:

- Implement traffic disincentives to discourage through-traffic and protect the neighborhoods
- Initiate the City’s Neighborhood Traffic Management Program (NTMP) process for a specific set of possible neighborhood protection interventions
- Work toward a peripheral shared parking plan with congestion pricing
- Plan for additional crossings of Ballona Creek for vehicular access to east side employment centers
- Coordinate with other jurisdictions toward an improved through-traffic bypass solution

Washington Boulevard.

To establish Washington Boulevard, from Downtown to its crossing at Ballona Creek, as the principal spine of the TOD area:

- Implement over time a ‘complete streets’ design for Washington Blvd.
- Place priority on enhancing the convenience and safety of the pedestrian experience
- Facilitate use of the street by transit and other high-occupancy vehicle circulation
- Provide a safe and connected place for cyclists

In addition, the TOD Visioning Study makes certain policy recommendations to help in the implementation and management of the physical interventions described above:

Transit-Oriented Development (TOD) District Policies.

To guide development within the TOD area, to define and design certain improvements that address mobility, and to clarify and document the City’s expectations regarding conditions for new development:

- Expand the existing TOD district boundaries to account for future development demand
- Adopt a TOD ordinance (specific plan) including urban design guidelines that require pedestrian easements, modified setbacks, and active street frontages
- Encourage more mixed use and affordable housing to address the jobs/housing balance and to promote walk-to-work options
- Reduce or re-define parking requirements to encourage alternate mode use and require funding of a Mobility Fund
- Develop shared parking strategies and other Transportation Demand Management (TDM) policies

Transportation Demand Management (TDM) Policies.

To encourage, facilitate and promote the use of alternative mobility modes:

- Develop a strategy for TDM measures, for the TOD area and, over time, city-wide. Begin with a clarification of conditions to be used in the current planning discretionary review process
- Enact a TDM ordinance and establish a Mobility Fund
- Establish a Transportation Management Association / Organization (TMA/TMO) to oversee compliance with TDM requirements and to manage the uses of the Mobility Fund (first, for the TOD district, then later, citywide)
- Develop an education and outreach program
- Introduce other mobility services, including a mobility hub program, bike- and car-share, shuttle / micro-transit services, and “smart” wayfinding and information systems

The TOD Visioning Study concludes with an itemized summary of recommendations, identification of responsible parties within the City, and narrative about the timeline for their implementation. Overall, the recommended implementation strategy is to approach each major intervention incrementally in a step-wise fashion with initial “test” installations and specific evaluation of each action before proceeding to the next. Oversight of this process is recommended to be interdepartmental, with management support for all mobility measures ultimately realized through a TMA/TMO and the establishment of a Mobility Fund.



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A MOBILITY VISION FOR CULVER CITY'S TOD

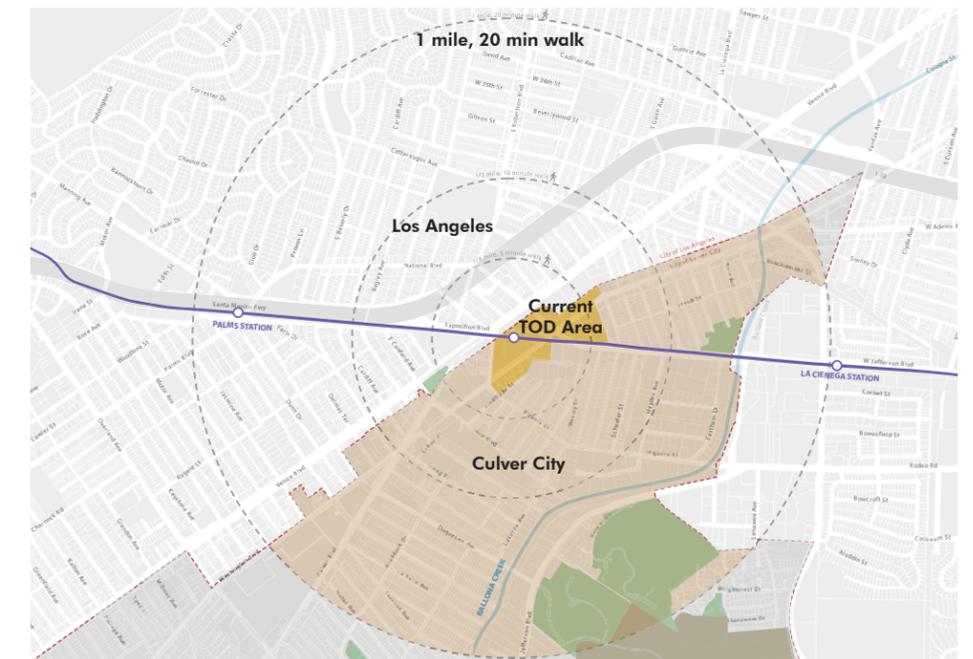
MISSION

Visioning for mobility in Culver City in the future changes the focus from designing solely for the automobile, to more inclusive modes – pedestrians, transit, and bikes, in addition to automobiles.

Culver City's growth into a more mature city over the past 25 years has yielded great benefits to the community, securing its position as an important, active and vibrant place in the regional urban context. In particular, the City's TOD district is becoming a higher density transit-served neighborhood that provides new high quality housing, retail, and employment opportunities while also improving regional mobility and air quality through reduced local reliance on the automobile. Work remains to be done to enable city residents to shift from a car-driven to a multi-modal lifestyle. Many neighborhoods remain constrained by conditions that long pre-date the recent decades' planning accomplishments: limited access to and from the freeway and regional roads; a tangle of historical street grids; boundaries imposed by Ballona Creek and other natural geographic features and by the new Expo Line itself. And these constraints are exacerbated by the success of the City's active civic life and local culture as well as the surrounding region's growth and specific conditions imposed by its location bounded by other jurisdictions.

While the focus of the present Visioning Study is on the area designated for the TOD, fostering multi-modal connectivity implies using a wider lens to account for origins, destinations, and paths-of-travel. More broadly, however, the Visioning Study has sought to think beyond the success of the city's TOD experience and move toward a concept of Culver City as a "Transit Oriented Community." This would broaden and strengthen the scope of Transit Oriented Development at the municipal scale and establish an innovative framework that could become a model for other cities in the larger Los Angeles region. The goal is to provide the opportunity for people to drive less and walk, bicycle, and take transit more. A Transit Oriented Community can promote improved livability; greater sustainability – environmentally, socially and economically; and enhanced resiliency to retain the City's value as a "great place" to live, work, and visit, even as the surrounding urban environment and the needs of residents change.

The study looks at the immediate project area, the TOD District, as well as at the contextual area including the Arts District and Downtown to the east and west, the Hayden Tract to the southeast and Venice Boulevard to the north, and also toward traffic impacts and potential key connections with the City of Los Angeles. The primary study area is defined as the area within the half-mile walk and 3-mile biking radii from the Expo Station. The study and its recommendations is framed as a "vision plan;" i.e., as a view toward a future to which the City can aspire and that can help guide decisions along the way so as not to preclude those aspirational future conditions from being achieved.



Limits of the Study Area



Workshop I - How do we get there from here?



Workshop IV - Summary of Issues



Workshop II - Bikeshop



Workshop V - Design Community Roundtable



Workshop III - Walkshop



Workshop VI - TOD Talks; Design Charrette

PROCESS

The project team worked with stakeholders through a series of workshops and other engagements using a variety of tools combining innovative online strategies with traditional planning techniques (see Appendix B for documentation of the stakeholder engagement process). The workshops and dedicated website (<https://culverTODvision.org>) provided a framework for public collaboration focused on developing an integrated transportation strategy to encourage the use of sustainable alternatives, reduce drive-alone trips, and discourage some amount of regional vehicular traffic for the next ten years and beyond.

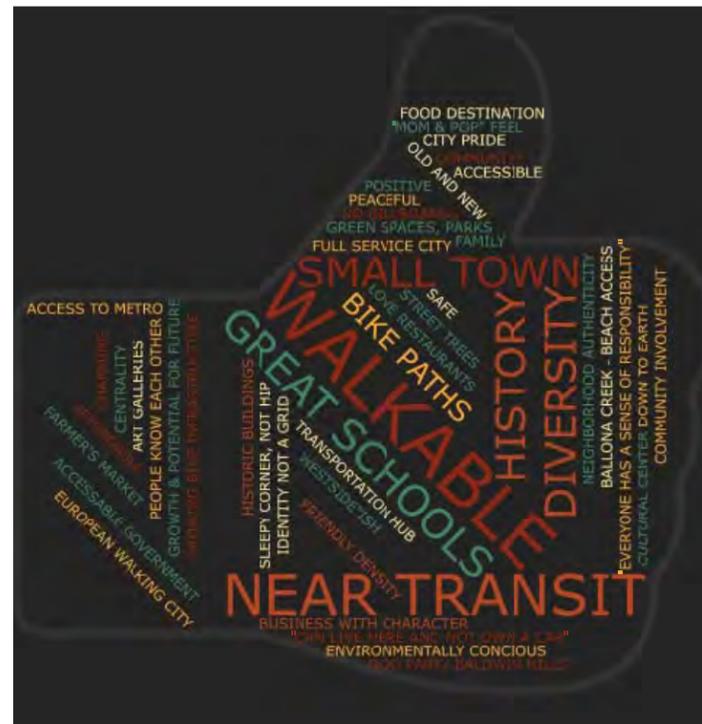
The TOD Visioning team's work with the community explored a variety of measures and interventions in a range of different formats. We began with a kick-off workshop that asked some simple questions:

- What makes Culver City special?
- What creates the unique character of Culver City and contributes to its sense of place?
- What are the critical challenges to the city's character, today and in the future?

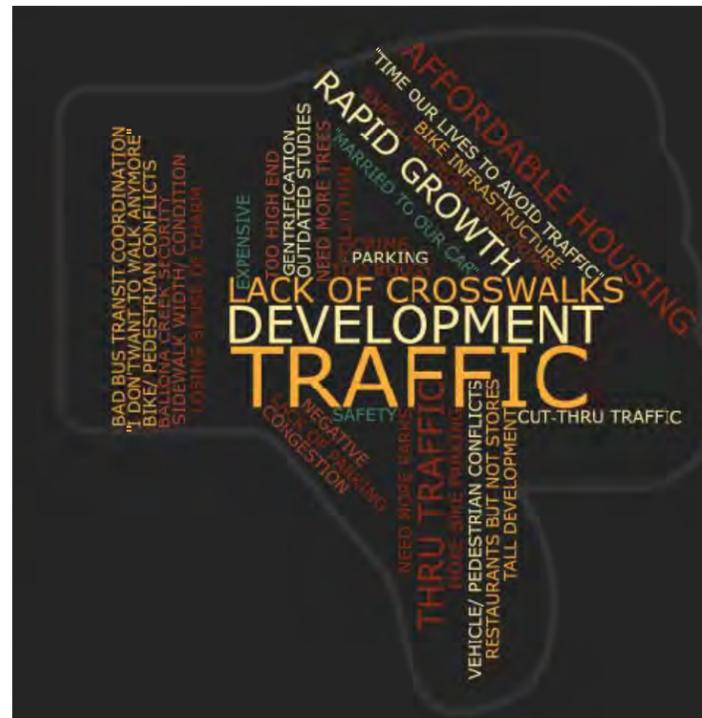
We continued with exploring the area together as a group, on bikes and on foot, to understand better the specific conditions inhibiting safe and convenient mobility in the area today. There was a panel discussion with distinguished members of Culver City's design

community to explore some “out of the box” thinking about the future of the city. There were brief “TOD Talk” lectures on the critical subjects of Smart Cities, Transportation Demand Management, and Complete Streets, and invited discussion of those subjects among the participants. And there were several hands-on work sessions where participants could tell us and show us their mobility problems and solution ideas as well as give critical feedback to our own. At the same time, stakeholder postings on the interactive web page showed with pinpoint detail where problems exist, how they impede mobility for individuals and neighborhoods.

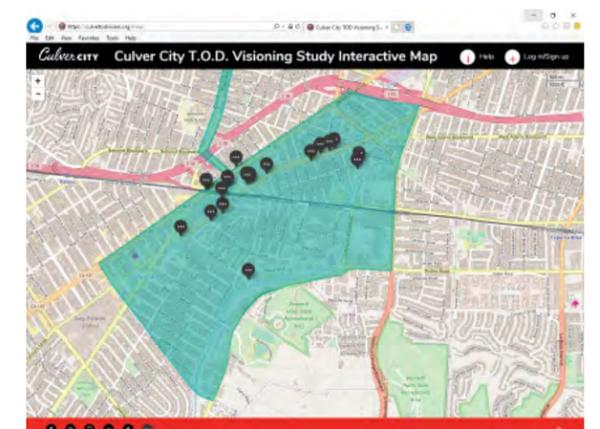
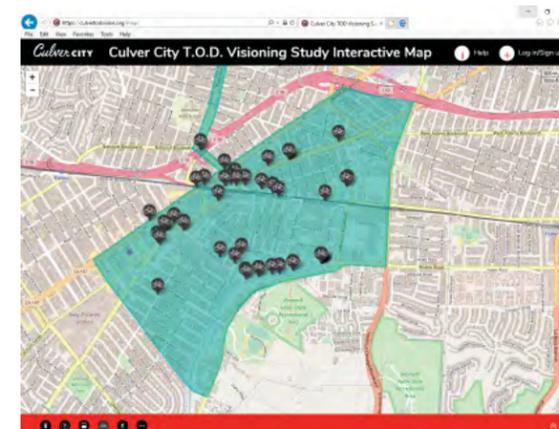
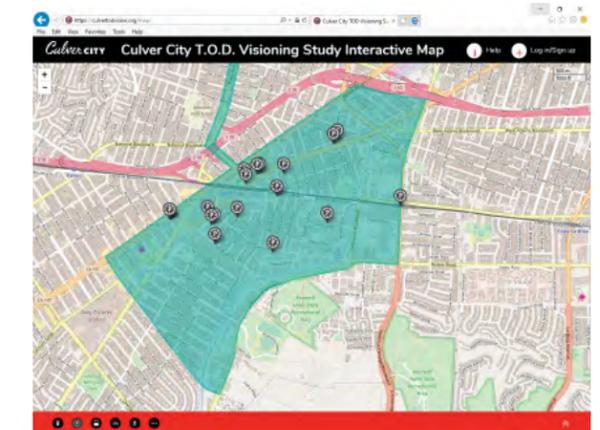
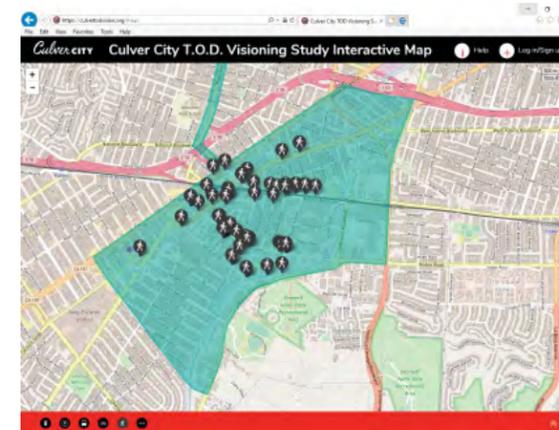
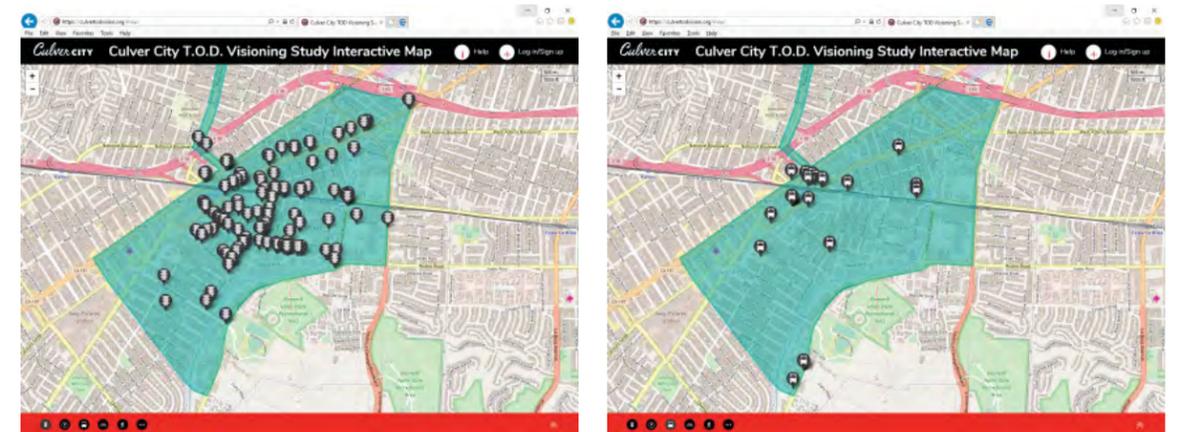
This engagement process produced rich results, with clear and graphic direction on how to think about stakeholders’ needs and the problems they perceive and experience every day. As might be expected in such a series of open workshops, many of the concerns that were raised by the community focused on problems specific to their respective neighborhoods and reflective of current conditions. From these local concerns, the consultant team sought to place these local issues in a context of city-wide solutions. Not only did this allow the team and the stakeholders to think about the issues in a more comprehensive way, looking broadly at causes and effects both within and outside of the neighborhoods, but it also cast the process at the level of a “vision” plan, one that looks beyond immediate fixes to broader and ultimately more ambitious plans that can set in motion a strategy for the city’s future. In this sense, the present TOD Visioning study might be viewed as a precursor to the City’s upcoming General Plan Update process, scheduled to embark within the coming year.



What creates the unique character of Culver City and contributes to its sense of place?



What are the critical challenges to the city’s character today and its future?



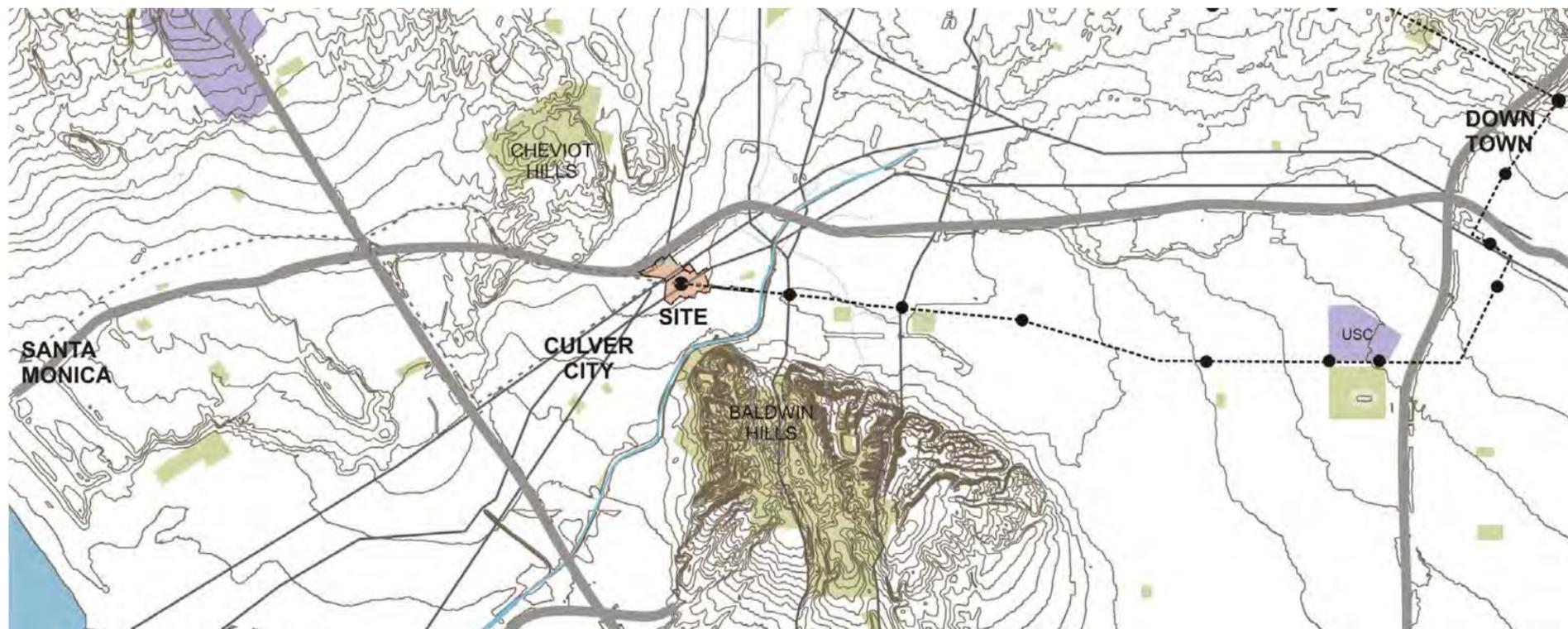
Stakeholders posted their specific observations and suggestions about mobility issues on the interactive map on the study’s web page www.culverTODvision.org.

DEFINING THE PROBLEM

From the public workshops and from the consultant team's assessment of existing conditions through research and interviews with key stakeholders, the key issues of mobility in Culver City include the following.

The first, and most obvious complaint, is that there is too much traffic. Streets are clogged with cars at peak hours impeding local automobile circulation and local bus transit efficiency. There are essentially three types of traffic that demand the use of local streets:

- (1) local circulation of residents leaving or returning to their neighborhoods and accessing local destinations such as schools, shops and businesses;
- (2) destination traffic generated by employees accessing local workplaces; and
- (3) pass-through traffic coming from elsewhere than Culver City and using its streets to go to and from origins and destinations outside the city.



Harry Culver said, "All roads lead to Culver City." Historically this has always been true, and today this puts large volumes of through-traffic on Culver City's streets from cars passing through between downtown Los Angeles and the coastal employment centers of Silicon Beach.

The challenge is to find ways to facilitate the first two types of movement, which benefit the city, while discouraging the through traffic.

A second issue is that movement by cars and bus transit through and within the TOD area is disrupted by Culver City's complex historic street network. Culver City's streets are the result of historical rail lines and other early routes using the relatively flat "pass" between the Baldwin Hills to the south and Cheviot Hills to the north, resulting in an eccentric crossing of roads. As the city developed, the spaces between these crossings were infilled with residential neighborhood grids that do not connect easily with each other. Although this allows Culver City's neighborhoods to maintain strong and distinct neighborhood identities, it does not allow for efficient and redundant movement through and around the city. Furthermore, the barriers created by Ballona Creek, the I-10 Freeway, and the Expo Line itself have bounded the neighborhoods and closed off connectivity to areas outside the city.



Irregular street grids support neighborhood identity but limit connectivity.

This complex road network has the effect today of threading through-traffic on to streets and neighborhoods not designed to accommodate it. Car traffic on the major roads, such as Washington and National Boulevards, becomes impacted during peak hours and motorists seek alternative routes, often taking them through the surrounding residential neighborhoods on narrower streets designed at a residential scale, such as Higuera, Ince or Lucerne. This problem is further exacerbated by the distribution of land use in this area of Culver City, where employment centers surround the residential neighborhoods, encouraging employees to use the residential streets to get to and from their places of work.

A third issue is that these same road geometries and their disconnected street networks are insufficiently designed to encourage alternative modes of mobility. Bus transit is stuck in the same heavy traffic as motorists, resulting in delays and unreliable scheduling and a consequent reduction in ridership and additional operational costs.

Streets filled with cars during peak hours, or traveled by cars moving too fast in off-peak, present serious safety issues for pedestrians, especially where sidewalks and crosswalks are insufficient for safe pedestrian use. The same can be said of bicycle use, where the absence of bike lanes and protected routes discourages this mode of circulation.

Finally, and perhaps most significantly, the TOD area's road infrastructure's insufficiency means that the network is rapidly approaching its ultimate capacity for cars. Conventional traffic mitigation measures are no longer effective solutions for improving automobile capacity and through-put: streets cannot be widened further, turn lanes cannot be added, and new streets cannot be built. Having run out of options for adding more cars to the system, it becomes necessary to think about how best to improve other ways of getting about. In other words, it is an objective of this study to provide Culver City citizens with greater choices for getting around their city.



The neighborhoods are bounded by Ballona Creek, the Freeway and the Metro, leaving residents with no mobility redundancy.



The disconnected grids and regional barriers channel through-traffic onto local streets.

SEEKING SOLUTIONS THROUGH VIABLE OPTIONS

The fundamental goal of this mobility vision is to provide more and better choices for Culver City's residents and other users alike by increasing the viability of alternative mobility modes. A clear set of priorities came out of the public process: pedestrians first, transit next, then bikes, and finally cars. This establishes a priority for modes that favor the pedestrian and more sustainable methods for getting around, not just the car. Translated into subsidiary goals or objectives for the mobility vision, these might be stated as follows:

- A** *Establish the TOD area and its adjacent neighborhood (including downtown) as a pedestrians-first environment.* Walking (or individual mobility) begins every trip. To the extent that pedestrian mobility can feasibly become the basis of the trip as a whole depends on the safety, convenience, and quality of the pedestrian experience. Can one safely and comfortably walk to one's destination in a timeframe that is a reasonable trade-off to driving and parking there, and is it a pleasant walk to get there?
- B** *Advance the use of transit for first/last mile connections and local circulation.* The viability of transit as an alternative for local trips rests on its convenience, legibility and reliability. How can local transit fulfill the need of local residents and employees?
- C** *Provide a safe and protected network for bicycling as a choice.* Safety, convenience and directness of the trip by bike, whether for local errands or daily commutes, requires protected routes and connections with all of the region's network of bike facilities.
- D** *Manage the flow of traffic around and through the TOD area to minimize conflicts with other modes.* How can through-traffic be diverted away from the core to facilitate movement for local trips on foot, by transit, or on a bike?
- E** *Conserve and protect the character of existing residential neighborhood quality.* While not strictly speaking an issue of mobility, the character of Culver City's neighborhoods has been compromised by traffic impacts. Addressing the priorities of walking, transit, biking and traffic management will need to carry over into the neighborhoods themselves in order to maintain the quality of life that attracted their residents there in the first place.



Edward Koren, *The New Yorker*. 1969

Mobility planning in Culver City should prioritize options:

- Pedestrians first
- Then transit
- Bikes next
- and finally cars.

A MOBILITY VISION FRAMEWORK

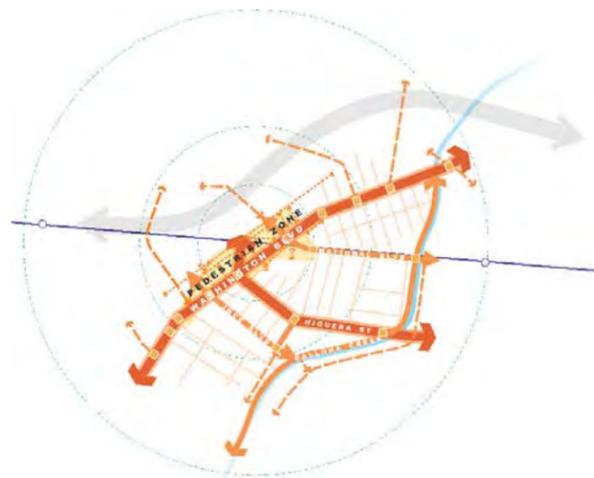
The recommendations in this report can be understood best in the context of a vision framework formed around the goals and objectives above. While the vision does not rest on automobile traffic management as its priority, realizing the objectives for viable alternative modes properly begins with understanding ways to minimize traffic as an inhibiting factor.

Divert vehicular through-traffic to major arterials. Non-local traffic needs to be diverted to major roads outside of the neighborhoods, encouraging use of the sub-regional roads of Venice, La Cienega, Jefferson and Overland as the perimeter of a "box" that protects the interior and uses disincentives for traffic on the interior streets such as Duquesne, Higuera, and especially, Washington.

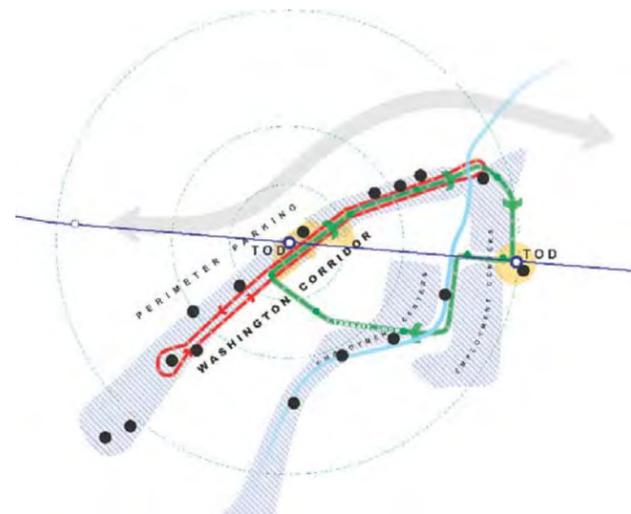
Service the downtown/commercial core and the eastside employment centers from the "outside." A significant number of trips are by employees accessing the city's employment centers. Access to employment centers should be from the periphery, not through the neighborhoods. A system of shared parking facilities around the perimeter should supply employment parking demands.

Connect perimeter parking through transit. A system of on-demand micro-transit and fixed-route transit service should connect parking to employment, and also serve neighborhood residents.

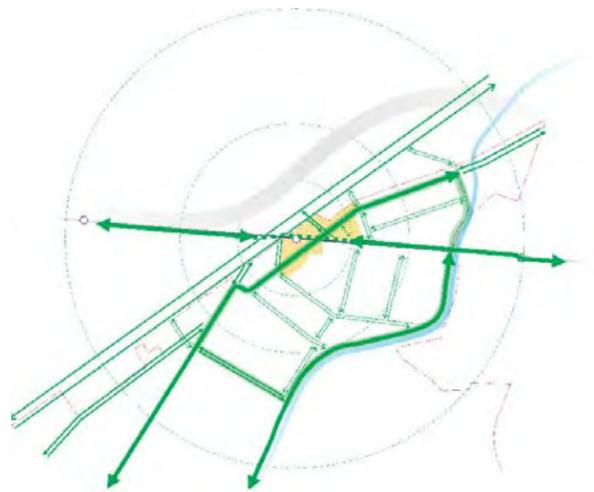
In the chapters that follow, this simple framework informs the development of choices for implementing improvements in an overlay of connected networks for pedestrians, transit, bicycles and cars. It forms the rationale for recommendations for a "complete streets" approach to Washington Boulevard, and for an array of neighborhood protection interventions. It is tied together with recommendations for implementation policies in a proposed Transit Oriented Development District Plan and in a series of Transportation Demand Management policies. Ultimately, all of these recommendations are directed toward protecting interior neighborhood circulation from cut-through traffic; protecting pedestrian circulation through improved street crossings, better sidewalks, and better connectivity; facilitating local transit use through improved infrastructure and more responsive service; and facilitating bicycle use through a connected network of cycling routes.



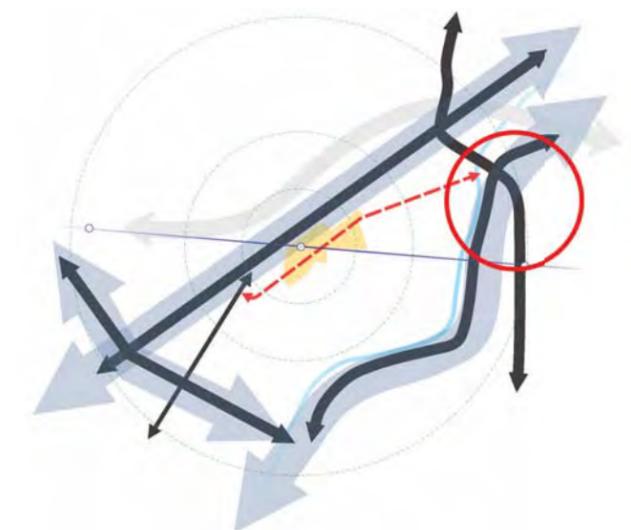
A Pedestrian first - Establish the TOD area and its adjacent neighborhood (including downtown) as a pedestrians-first environment.



B Transit - Advance the use of transit for first/last mile connections and local circulation.

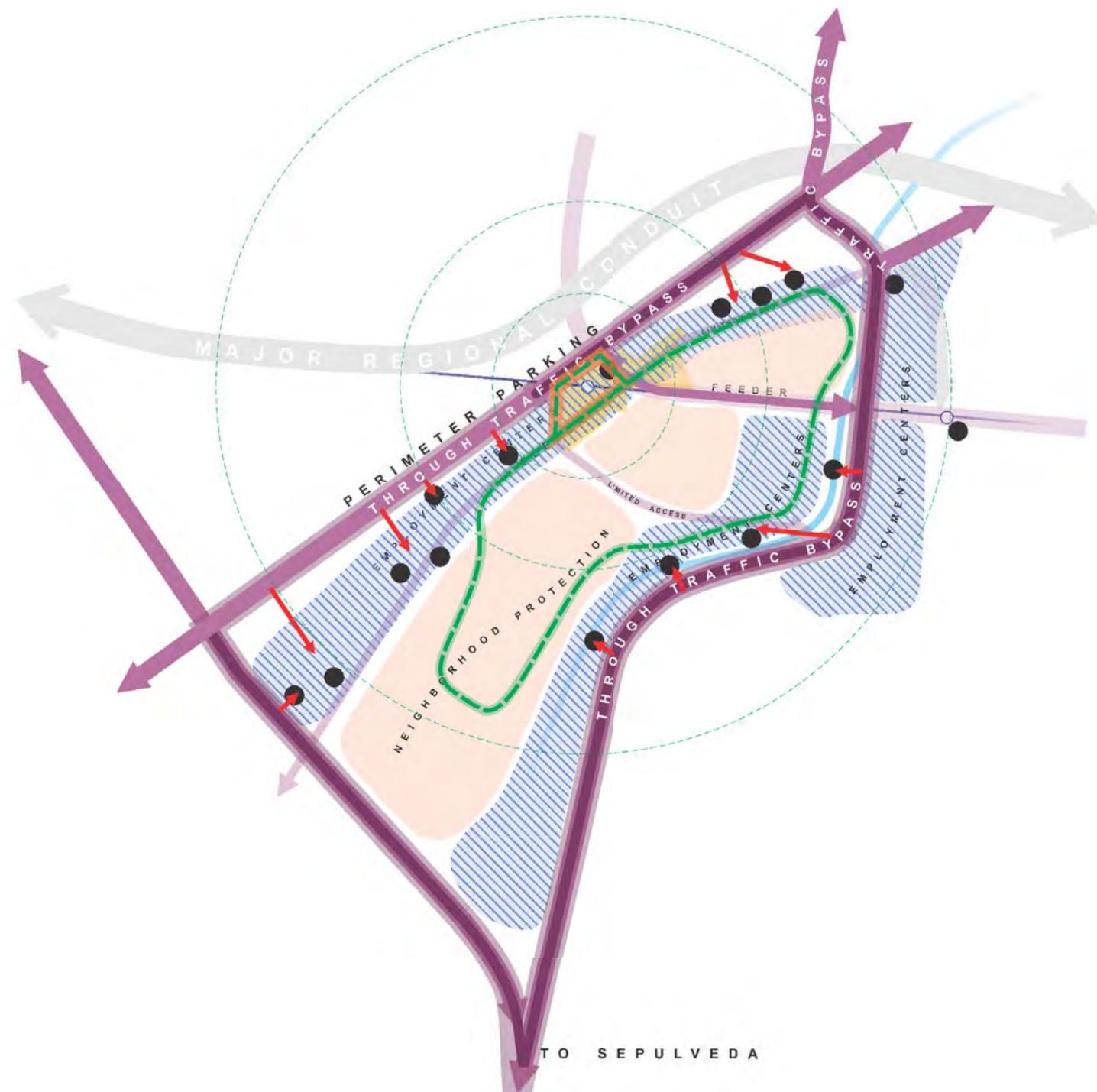


C Bicycle - Provide a safe and protected network for bicycling as a choice.



D Car - Manage the flow of traffic around and through the TOD area to minimize conflicts with other modes.

Prioritize options for mobility planning in Culver City



E Recommendations for traffic diversion - Conserve and protect the character of existing residential neighborhood quality.

PLATFORM



2

CONNECTED NETWORKS: A FRAMEWORK OF PRINCIPLES

Principles at a glance:

- **Pedestrians First**
- **Capitalize on Transit Opportunities**
- **First / Last Mile Options**
- **Accommodate Bike Trips**
- **Optimize Mobility Hub**
- **Allocate “Appropriate” Space for Cars**

PRINCIPLES FOR OPTIMIZING VIABLE CHOICES

The overriding principle of this Mobility Vision is to provide choices for movement within Culver City for those living and working there. Addressing the mobility priorities and the TOD area’s mobility issues can best be understood as an overlaid series of networks, each with its own requirements and characteristics and all of them interrelated. In the following discussions, each of these networks is considered separately, recognizing that all of them ultimately work together jointly. The discussions are organized according to the modal priorities, beginning with improving walkability, then examining options for transit, improved connectivity for bicycles, and finally addressing the problem of automobile traffic.

Pedestrians: Walkability and the Pedestrian Environment

With the objective of encouraging travel on foot (or for those with mobility impairments, on accessible paths of travel), the TOD area and its neighborhood vicinity should be established as a pedestrians-first environment. This means designing streets that promote walking, streets for all that are safe and convenient. Streets for walking are streets that are pleasant and interesting, and the high quality streetscape that they represent elevates the Culver City experience. Certainly the success of downtown Culver City’s streetscapes is testimony to this. The discussion and recommendations for the pedestrian experience focus on measures for achieving this throughout the TOD district.

Transit: Viable Options

For transit to be a reasonable choice for local residents, the City needs to advance the use of transit for first/last mile connections and local circulation. Increasing the viability of alternative mobility modes for residents and other users means developing more and better choices, and new kinds of service. It also implies improvements to the infrastructure that supports transit. The quality of the environment of the Expo Station area and its surroundings is a key part of the transit experience, and the addition of other smaller mobility hubs, with bikeshare, carshare and micro-transit services, will also contribute to this.

To facilitate transit efficiency and convenience, consideration is given to peak hour “flex-lanes” (monitored and adjusted on an ongoing basis) for HOV use and micro-transit throughout the city using electric vehicles, either in fixed routes or multi-directional on-demand systems.

Bikes: Safe Cycling

In Culver City today, bicycling is becoming increasingly feasible as a means of mobility for everyday trips, but cycling on the streets of Culver City can still be thought of as a mission for the brave. In this section, priority is given to providing a safe and protected network for cycling as a choice for people of all ages. Connections to sub-regional bike routes should be made through a network of protected or bicycle-friendly local routes, that also provide residents with safe options for local trips. Culver City has recently conducted a Bike Share Feasibility Study and is in the process of bringing a bike share system to Culver City by 2018.

Cars: Managing Traffic

The management of the TOD area’s traffic congestion problems to free up space for alternative modes is at the core of the mobility problems in the area. With the objective of diverting the flow of pass-through traffic around and through the TOD area to minimize conflicts with other modes, strategies for traffic disincentives within the TOD area are discussed. These include diverting through-traffic to perimeter roads, such as Venice, Jefferson and Overland. The challenge is to discourage through-traffic in Culver City while enabling access for those who live and work there, and to make Culver City understood as a pedestrian first area that makes people think twice before driving through it and to seek alternate routes. In Europe these areas are called “30 km/h zones” (equivalent to 20

mph zones).

Complete Streets: Washington Boulevard

Washington Boulevard lies at the heart of the area and also offers the key to linking all of the various modal recommendations together into a coherent concept. A Complete Streets approach to Washington Boulevard’s design is recommended, which provides an enhanced pedestrian environment, facilitates efficient transit, protects cyclists, and deliberately reduces its traffic capacity to discourage its use as a through street. Washington Boulevard as a Complete Street will restore the boulevard to its role as the vibrant “main stem” of the TOD district.

Throughout these discussions, attention is given to the potential consequences of traffic diversion on the surrounding neighborhoods. With the goal of conserving and protecting the character of existing residential neighborhood quality, an array of neighborhood protection measures and processes for achieving them is recommended.

In later chapters, policy measures for implementing these recommendations and additional recommendations for encouraging mode shifts in mobility are discussed, including density and land use considerations, urban design standards, district parking strategies, and transportation demand management policies. In this chapter, however, we focus on physical provisions that can encourage alternative modes to driving and how best to address mitigations to minimize undesirable impacts.

RECOMMENDATIONS

- Redesign street intersections in the district for pedestrian priority
- Initiate N.T.M.P. process for neighborhood protection interventions
- Redesign sidewalks on major streets (e.g., Washington, National, Robertson) to meet minimum width standards of 10 feet.
- Coordinate with City of L.A. and Metro to improve crossings on Venice and connections with the Expo Station, especially in coordination with I-10/Robertson/National Area Circulation Improvement Project.



A connected network of pedestrian sidewalks and paseos links the neighborhoods to destinations

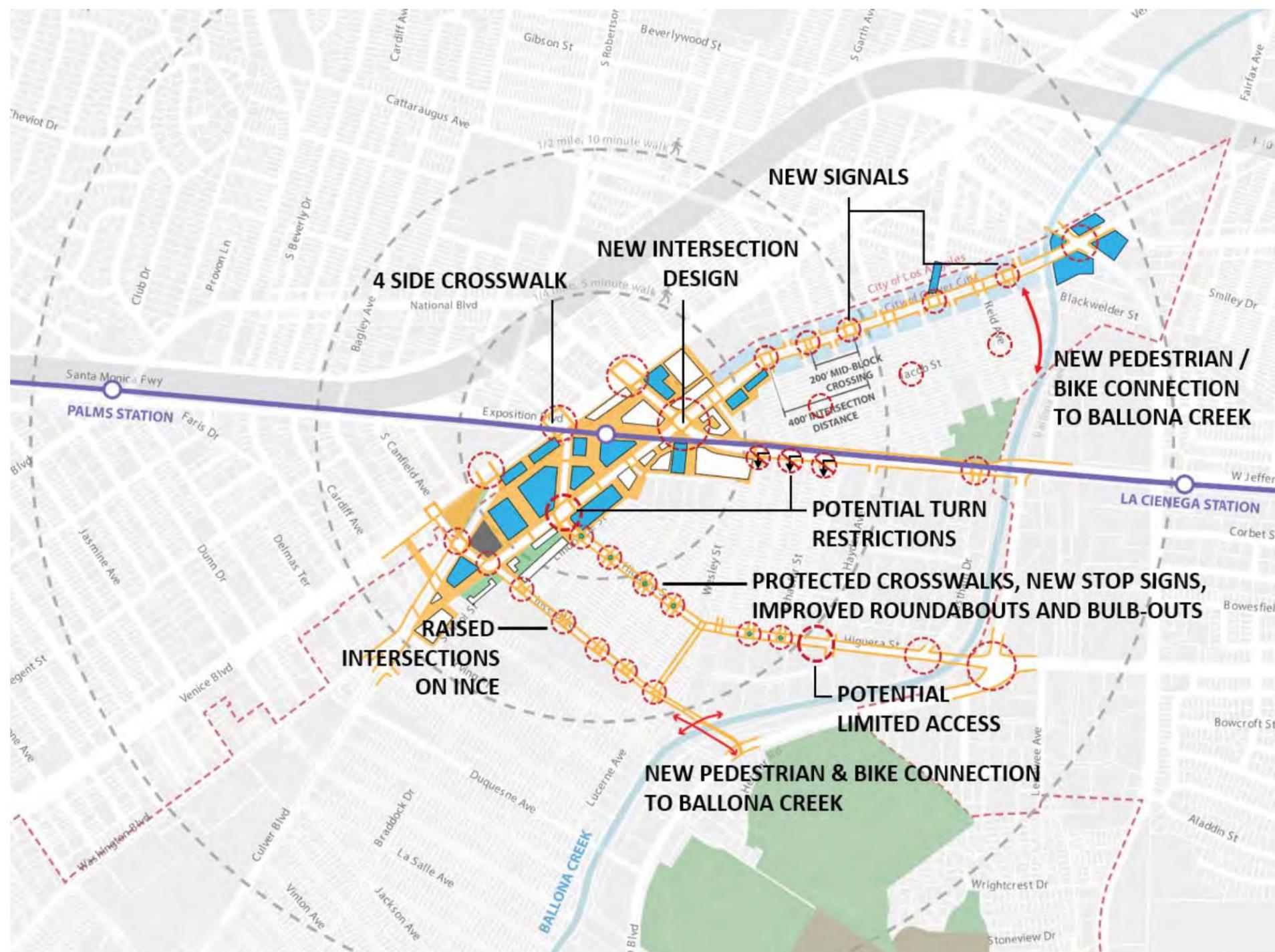
PEDESTRIANS

As the highest priority and “first choice” mode alternative, pedestrian movement requires walkable streets that are safe, convenient, interesting and pleasant. Many of the area’s streets have sidewalks that are too narrow, that are disconnected by breaks and cul-de-sacs, and that lack active frontages to help shorten perceived distances. The area needs a connected network of pedestrian sidewalks and paseos that link the neighborhoods to destinations.

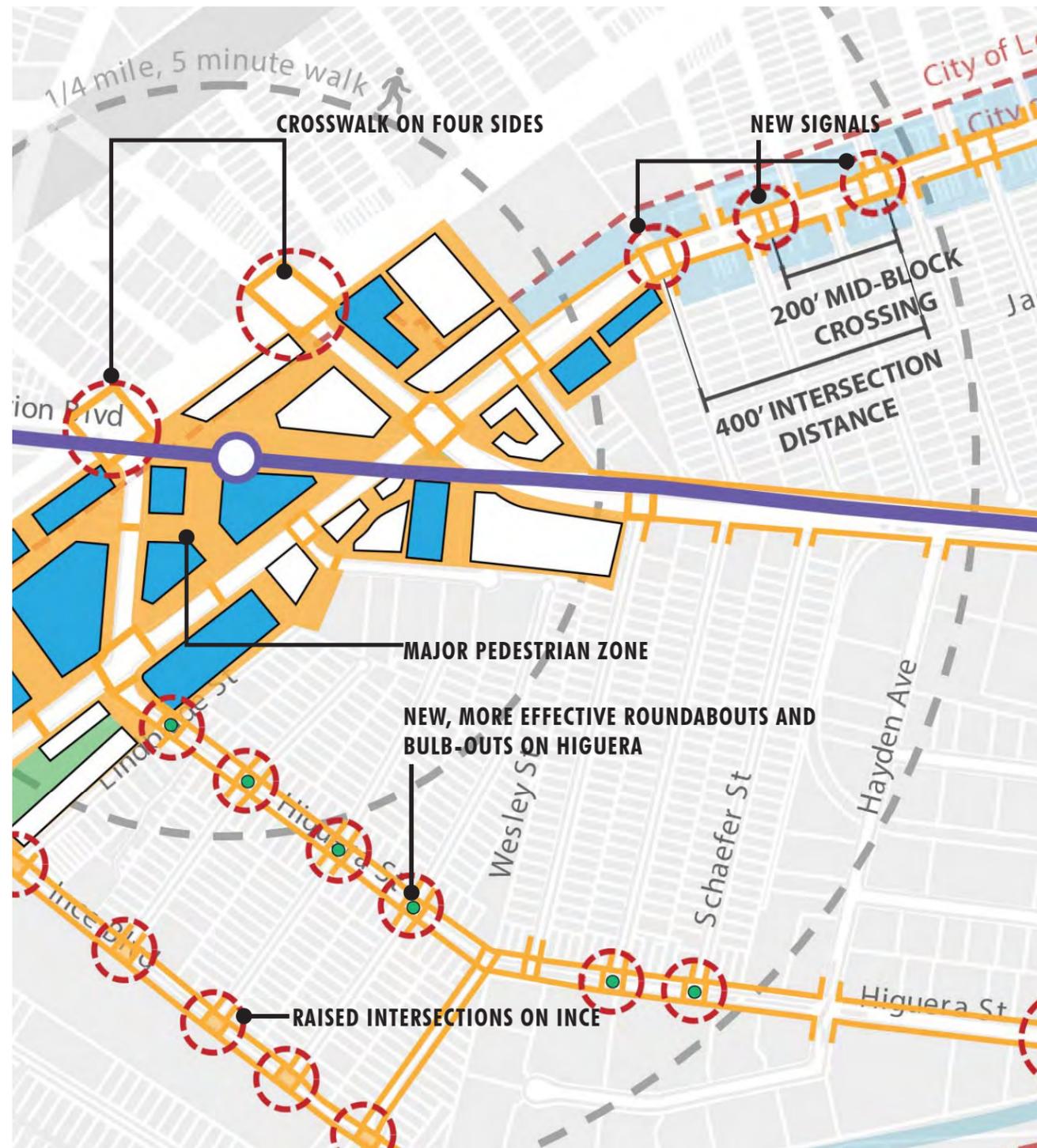
At the core of the TOD area, future improvements should be viewed as a pedestrian priority zone. This implies that Washington Boulevard, as the “main spine” through the district be given a highly pedestrian-friendly design approach, as described in greater detail in the discussion of Complete Streets elsewhere in this report. Priority should also be given, however, to moving Metro patrons to and from the Expo Station along “paths of least resistance,” passing through future development in improved and activated paths and paseos. Clear and easily usable wayfinding graphics and other wayfinding devices should be adopted to facilitate these movements, as described in more detail in the Wayfinding discussion elsewhere in this report. Retail and other activating uses should be required to line these pedestrian routes in order to bring life to the street and provide an incentive for pedestrians to use them.

Outside of the core area, as illustrated in the figures to the right and on the following page, streets and sidewalks should be improved as a safe, convenient and connected network of pedestrian-supportive routes. At certain critical locations (such as, for example, the end of the Lindblade cul-de-sac, or the end of the Landmark cul-de-sac), efforts might be made to acquire easement rights for pedestrians to connect to Washington Boulevard and the Expo Station area. Additional connections to the Ballona Creek bike and pedestrian path should also be explored as an alternative to walking on busy streets.

Critically, there is an insufficient number of safe pedestrian crossings at intersections and, in the case of some longer blocks, at mid-block locations. An increased number of improved crosswalks will promote pedestrian mobility and increase pedestrian safety. Throughout the study area and its neighborhoods, improvements to street crossings should be made for the dual objectives of slowing (and thus disincentivizing) passing through-traffic, and of improving safety conditions for pedestrians.



Pedestrian network recommendations

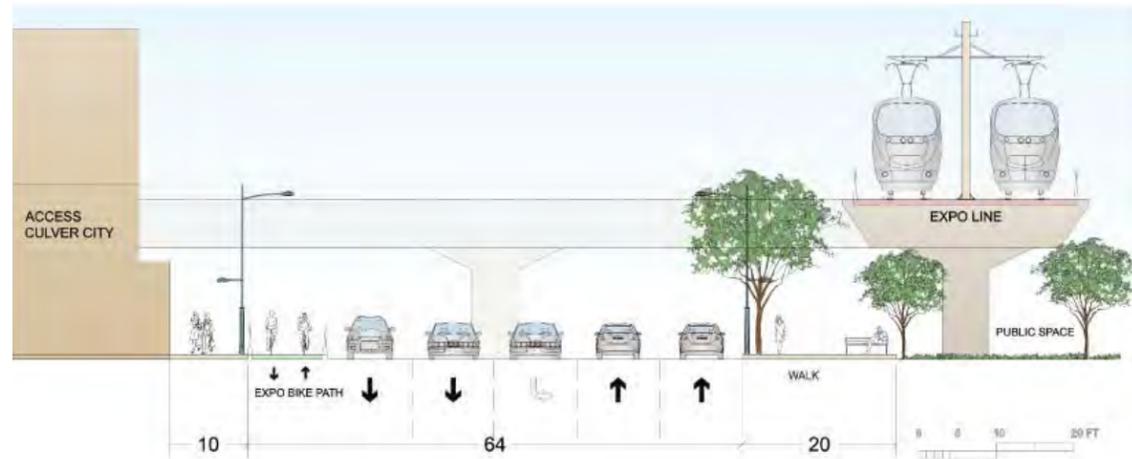


An array of traffic-calming and walkability-improving measures should be considered, many of which were raised by participants in the project workshops. The City of Culver City has an established protocol for evaluating the implementation of such improvements, the Neighborhood Traffic Management Program (NTMP), administered through the Department of Public Works. Selection of appropriate approaches from the “toolkit” illustrated here should be undertaken by constituent neighborhood groups and Public Works in conformance with the NTMP’s prescribed process.

Additionally, there are several important intersections where improvements for pedestrian crossings fall outside Culver City’s jurisdiction. In particular, the Venice / National intersection, and the Venice / Robertson intersection are currently dangerous crossings that are critically important to access from Metro bus routes on Venice, as well as destinations to the north such as Hamilton High School. The City of Culver City should work with the City of Los Angeles and with Metro to improve these intersections for pedestrian safety, leveraging the I-10/Robertson/National Area Circulation Improvement Project (currently on-going and Culver City is a partner with LA and Caltrans on this project) to ensure proper pedestrian access to transit system in TOD area. A Pedestrian Environment Review System (PERS) audit which was carried out as part of this study, has been included in the site analysis chapter of Appendix A.



National Boulevard - Section B - Option 01 - Extended Sidewalk + Street Parking + Removed Median



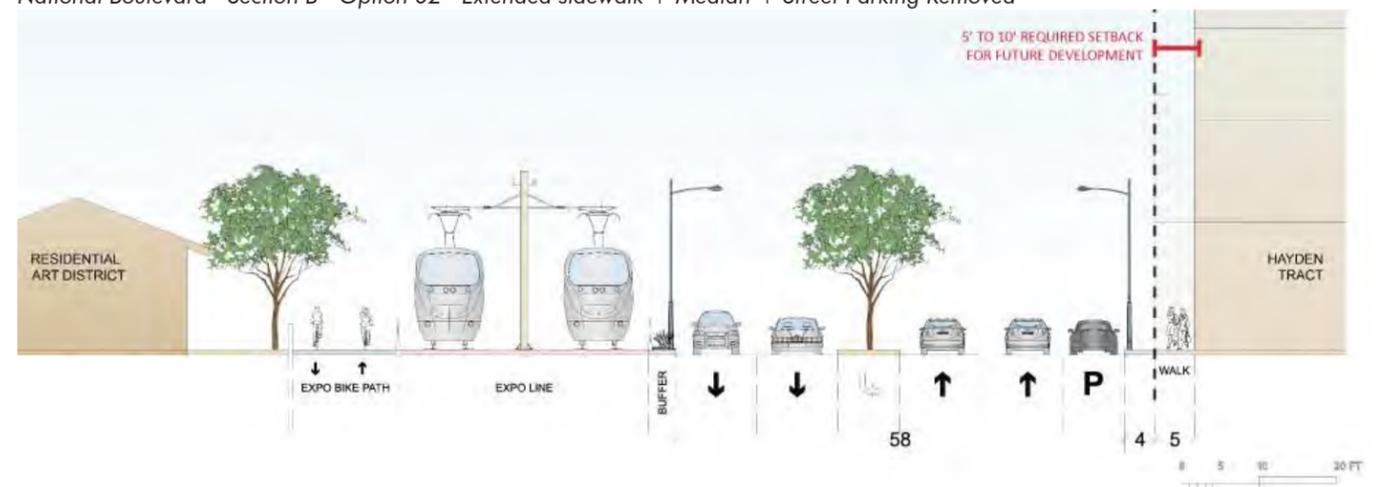
National Boulevard - Section A - Bike Path Extension + Sidewalk Widening + Public Park + Road Diet



National Boulevard - Section B - Option 02 - Extended sidewalk + Median + Street Parking Removed



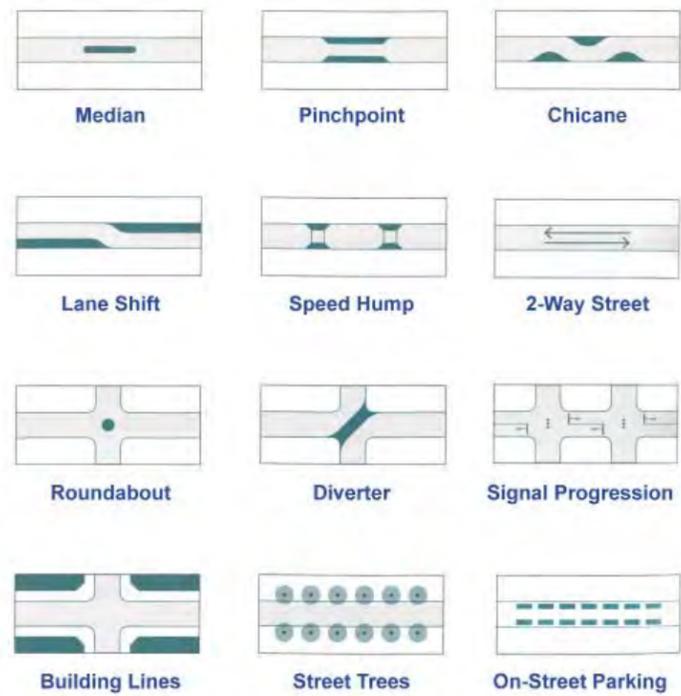
National Boulevard - Section B - Existing Condition



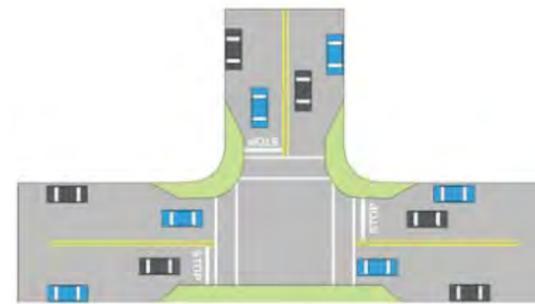
National Boulevard - Section B - Option 03 - Required sidewalk for future development to extended sidewalk



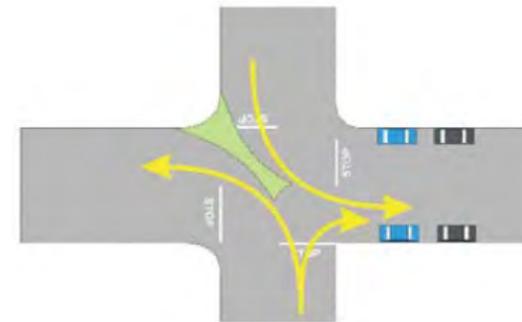
Speed Reduction Mechanisms



Volume Reducing Elements



Curb Extensions



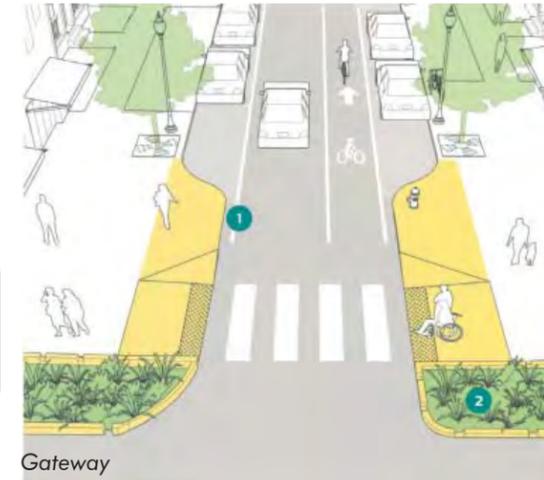
Semi-Diverter



One-way Street R6-1

R6-2

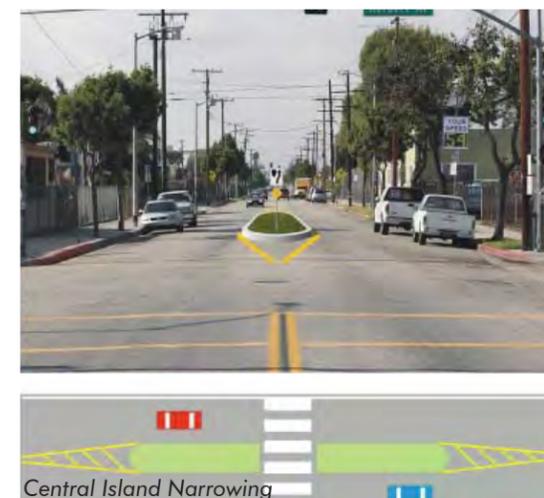
Source: NACTO (National Association of City Transportation Officials)



Gateway



Pinchpoint

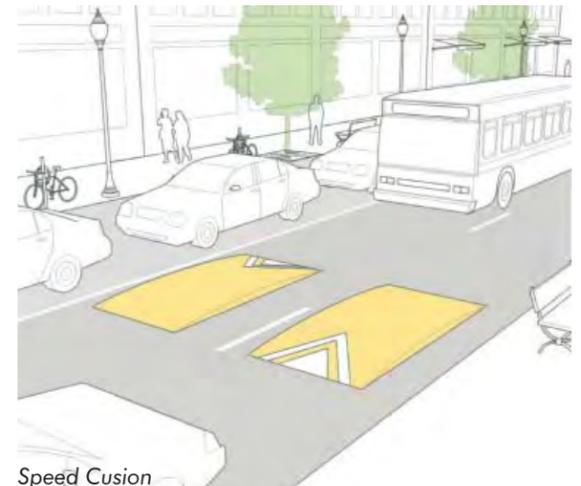


Central Island Narrowing

Speed Reduction Elements



Speed Humps



Speed Cushion



Speed Tables

Traffic Calming Toolkit - Intersection of Minor Streets

Reconstruction



Reconstruction of intersection to limit turning speed and improve crossing for pedestrian and cyclists.

Raised Intersections



Raised intersections create a safe, slow-speed crossing and public space at minor intersections.

Neighborhood Traffic Circles

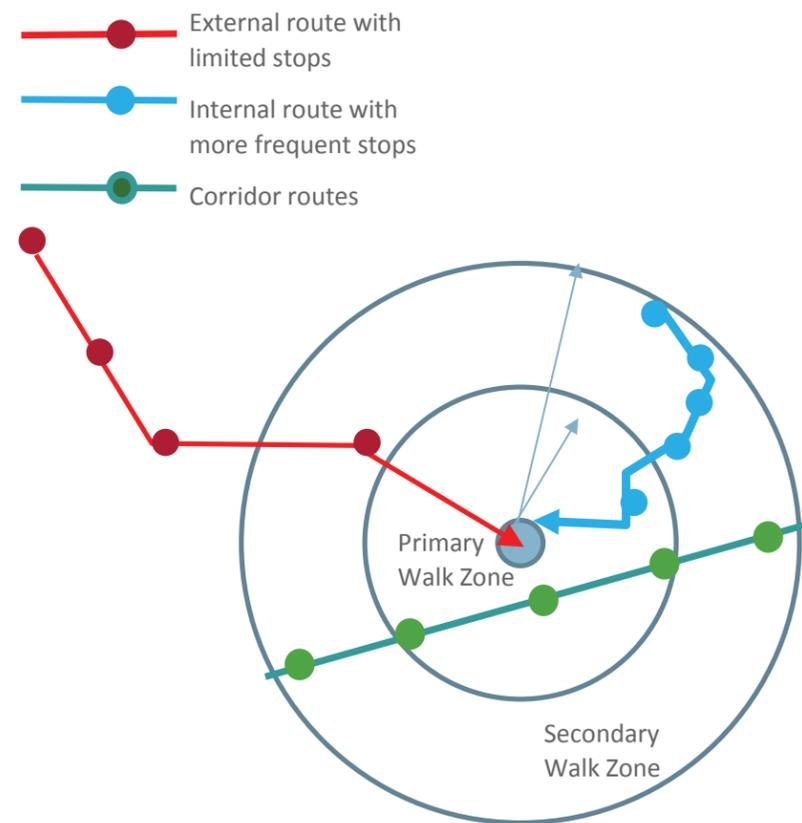


Neighbourhood traffic circles lower speeds at minor intersections crossing and are an ideal treatment for uncontrolled intersections.

Source: NACTO (National Association of City Transportation Officials)

RECOMMENDATIONS

- Establish a system of micro-transit for area residents and employees
- Facilitate the efficiency of transit and micro-transit through dedicated street lanes and strategic “hinge” connections
- Clarify connections to regional Metro transit through improved wayfinding systems and real-time “smart” communications



TOD Zone Route Concept

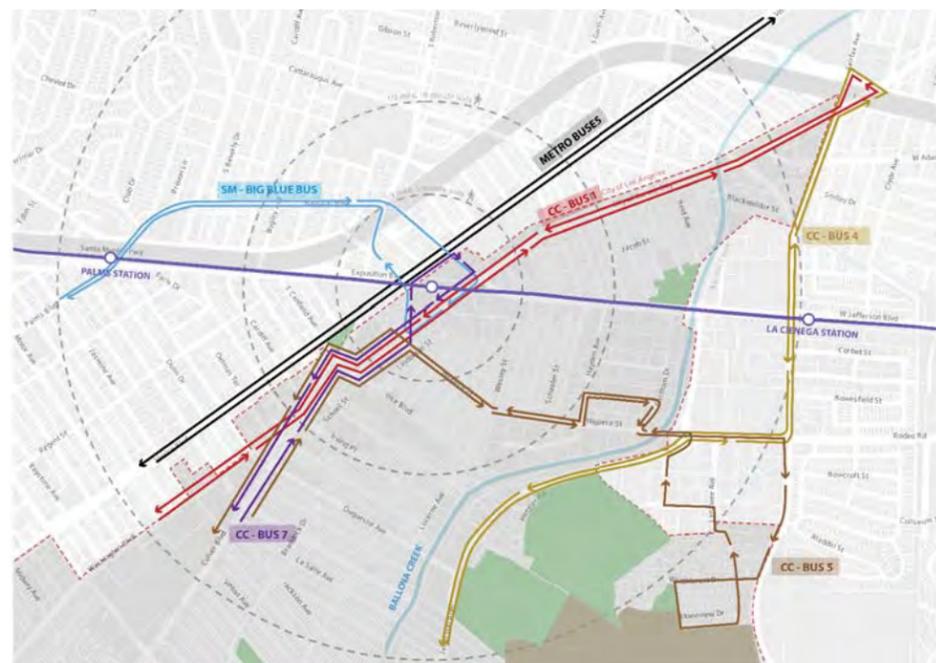
TRANSIT

To be attractive for local circulation needs, transit needs to be efficient, reliable and responsive to the needs of residents and local employees. Transit options for first-mile / last-mile trips to and from the Expo Station area can be characterized by different scales of operation and service.

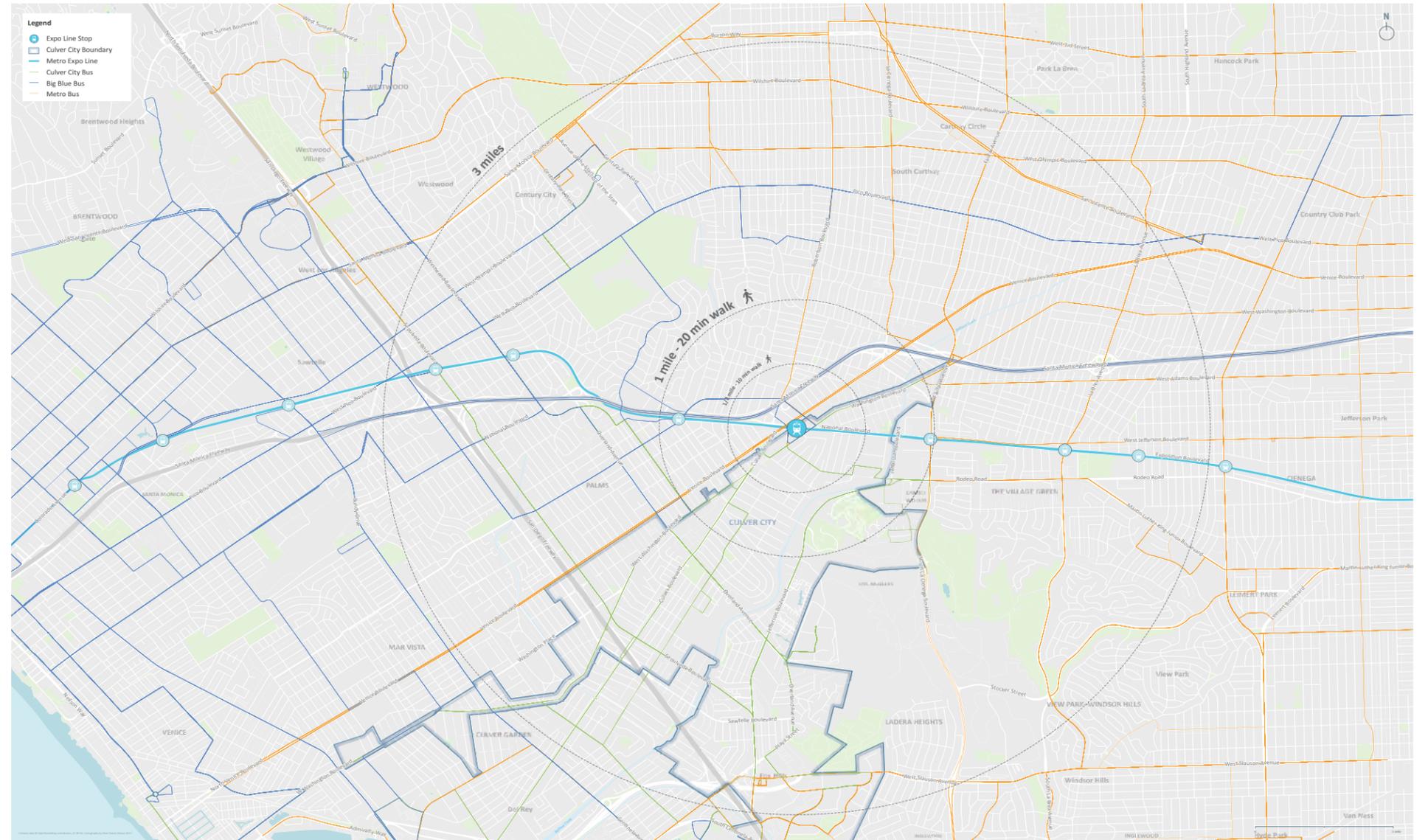
- *External carriers’ routes, with direct service, and examination of the potential to add a limited number of stops within the TOD zone.* Longer distance first-mile / last-mile routes such as LA Metro Route 17 (from 3rd Avenue) or BBB Route 17 can be used to provide first-mile / last-mile trips within the zone as they approach the station. However, to the extent that these are already longer distance first-mile / last-mile trips, the existing passengers would be inconvenienced by additional stops within a short distance of the station. The fact that these services are provided by other jurisdictions reinforces this.
- *Short-distance shuttle services within the TOD zone and short distances beyond.* These shuttles can be dual function first-mile / last-mile services, for instance, bringing employment trips to the Hayden tract from Culver City Station, and residential trips from Rancho Higuera to Expo Station.
- *Corridor trips to and from the zone service.* Culver Blvd and Washington Avenue should be direct services, facilitated by transit priority and customer-oriented transit features including transit only lanes (part-time), bulb-outs, stop amenities and such. These trips should not comprise multiple functions, including short-distance detours to the station, since this detracts from the attractiveness of the service. However, the pedestrian environment between these corridors and the stations should promote pedestrian access between corridor stops and the station, so that people can choose to use these services for station access without diverting the route.

Agency	Route	Peak Service	Off-peak Service	Description
Culver City	1	12	20	Washington Blvd – through service with station connection
	5	School trips	-	
	7	40	40	Culver Blvd – through service
Santa Monica Big Blue Bus (BBB)	17	30	30	CC St to UCLA via Palms and Sawtelle
LADOT	CE437	6 trips	-	CC to Downtown – peak direction
LA Metro	17	Irregular	30	CC via branch of 3rd Avenue service
	32			
	105			
	217	Irregular	Irregular	Branch service to Hollywood
	733	20	20	Venice Blvd: Santa Monica to DTLA with station connection

Table 1 - Existing Local Services



Existing transit routes - 10 minute walk radius from Culver City Station



Existing transit routes within 20 minute walkshed / 3 mile bikeshed from Culver City Expo Station

Trips within the zone can be accommodated by local routes such as the existing routes and new routes that adapt to changing travel patterns. Where appropriate, these can take advantage of the transit priority features and amenities provided in the corridors and where warranted, introduce similar features along these routes.

While some local trips are served (particularly on Lines 1 and 6), the current Culver City Bus system mainly serves a wider, more sub-regional circulation purpose, for longer less-frequent trips. For daily errands and shorter local trips, a more flexible system of micro-transit is appropriate, with smaller vehicles that ideally are on-demand and travel on variable non-fixed routes.

Future technologies currently in development are foreseen to be well-suited to these specifications, where autonomous electric vehicles can efficiently serve users within prescribed geo-fenced areas. Linked to a “smart” wayfinding and communications system, on-demand micro-transit could be easily used and highly responsive. Management and operation of such a micro-transit network may involve coordinated services between the City’s Department of Transportation and various private entities, such as major private employers in the area or consortia of private entities. This may also include oversight and coordination through a Transportation Management Association or Organization (TMA/TMO) as described in the section on Transportation Demand Management elsewhere in this report.

The relatively short distances and local service needs, particularly the first-mile/last-mile components, are well-suited to micro transit, transportation network companies (TNC), or conventional transit services with small vehicles, depending on the demand. Such services should operate at least as frequently as the train service in all peak periods, and be coordinated with train arrivals and departures in times when service is less frequent. Where local demand warrants, service should be more frequent. Micro transit solutions can include a variety of routes and services, typically with a small vehicle (4 to 10 passengers). Typical approaches include:

- On-demand type services without a fixed route or schedule. These are similar to those already provided by taxis and TNCs.
- Zone bus service with a fixed schedule, but not a fixed route. Each trip to and from the station is uniquely designed for the customers requesting to travel on each scheduled trip. Local stops can be door-to-door, or provided to designated local area stop points.

- Hybrid services. These are zone service with fixed stops at popular locations that are typically served on every trip. For example, a service operating between the Expo Station and the Hayden Tract may have a fixed stop along National or Higuera, or within the Tract. Typically, this approach has been used to reduce the need to arrange the service at higher volume stops; providing this service through a smartphone app reduces this need.

Existing transit services, combined with potential new services connecting to the station and serving the commercial core, will increase the overall level of service on Washington Boulevard, creating the need and justification for an improved transit environment in this entire corridor. Options for street environments are contained elsewhere in this report. Generally, a transit-first perspective suggests that the major transit corridors feature dedicated transit facilities including dedicated lanes (which can be peak-only shared with off-peak parking wherever possible), signal priority (especially within the station area), and stop amenities. When combined with other mode priorities, a balance needs to be struck between transit operational priority and the needs of other road users.

To work efficiently, even these future systems will need to be protected from the congestion that comes from excessive car traffic. Dedicated transit lanes in the major boulevards (e.g., Washington, National) will allow both micro-transit and the larger-scaled bus transit to move with fewer impediments. Off the major streets and in the neighborhoods, the disconnected street grids need to be re-connected for exclusive micro-transit use at a series of critical “hinge” points. These might include, for example, a new limited connection of Wesley Street to National Boulevard and even to the small segment of the Metro bike path between Wesley and Helms (or, potentially, through future development adjacent to it) as an outlet/access route for micro-transit service within the Arts District. Similarly, connections might be made for micro-transit exclusive access between Hayden Place and Ince Boulevard, or in any potential limited access configuration of Higuera Street between Hayden Avenue and Schaefer Street. These or other potential “hinge” points need further more detailed study to determine their feasibility and specific configuration.

The Mobility Vision Framework described earlier proposes a “necklace” of shared parking facilities located around the perimeter

of the general TOD area, to serve as parking supply for commercial users including employees of local business and industries. This system of shared parking will help to divert through traffic demand, but first/last mile connectivity remains vital. The flexible-route micro-transit approach can provide these important links to local destinations.

Other more futuristic technologies could potentially be brought to bear on the area’s transit needs as well. For example, an aerial gondola system might connect the Expo Station with key destination points, such as the Hayden Tract employment center, downtown Culver City, Veterans Park, or even the Culver Pointe employment center. Such systems operate with limited stops and they work best with high-volume destinations at each end.

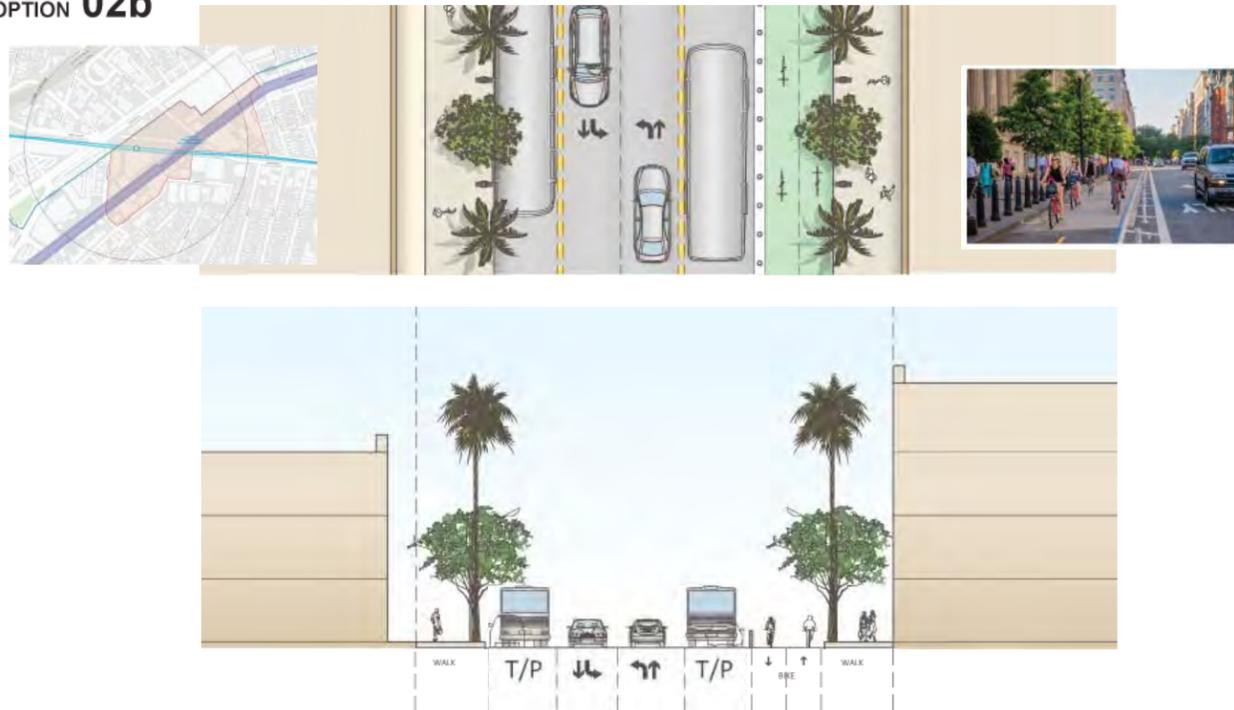


Dedicated Transit Lanes

OPTION 02

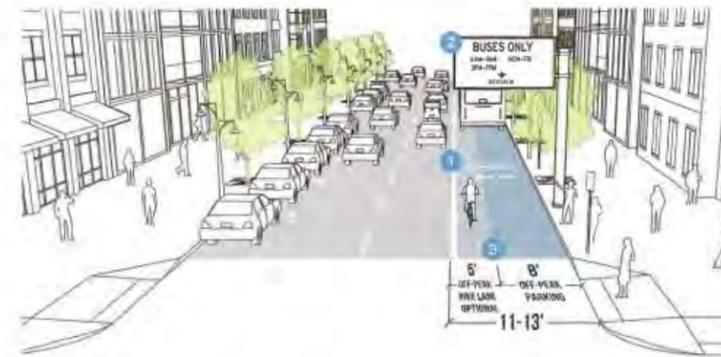


OPTION 02b



Washington Boulevard - Two Options: Dedicated transit/ parking flex lane + class IV bike lanes
 Option 2: Two one way bike lanes; Option 2b: Two way bike track

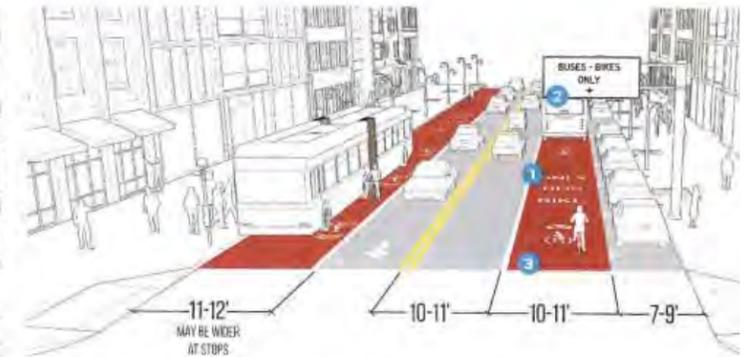
Peak-Only Bus Lane



A peak-only bus lane can operate as a dedicated bus lane at peak travel periods and provide general curbside uses at other times. Wider lanes can enable an effective bicycle lane off-peak adjacent to parking. Peak-only transit lanes may also be exclusive to streetcars or buses at peak times, while permitting mixed traffic at other times.

Different possible options for the flex lane

Shared Bus-Bike Lane



Shared bus-bike lanes can accommodate both modes at low speeds and moderate bus headways, where buses are discouraged from passing, and bicyclists pass buses only at stops. In appropriate conditions, bus-bike lanes are an option on streets where dedicated bus and separate high-comfort bicycle facilities cannot be provided.

Bus Lane

Dedicated Curbside Bus Lane



Dedicated Offset Bus Lane

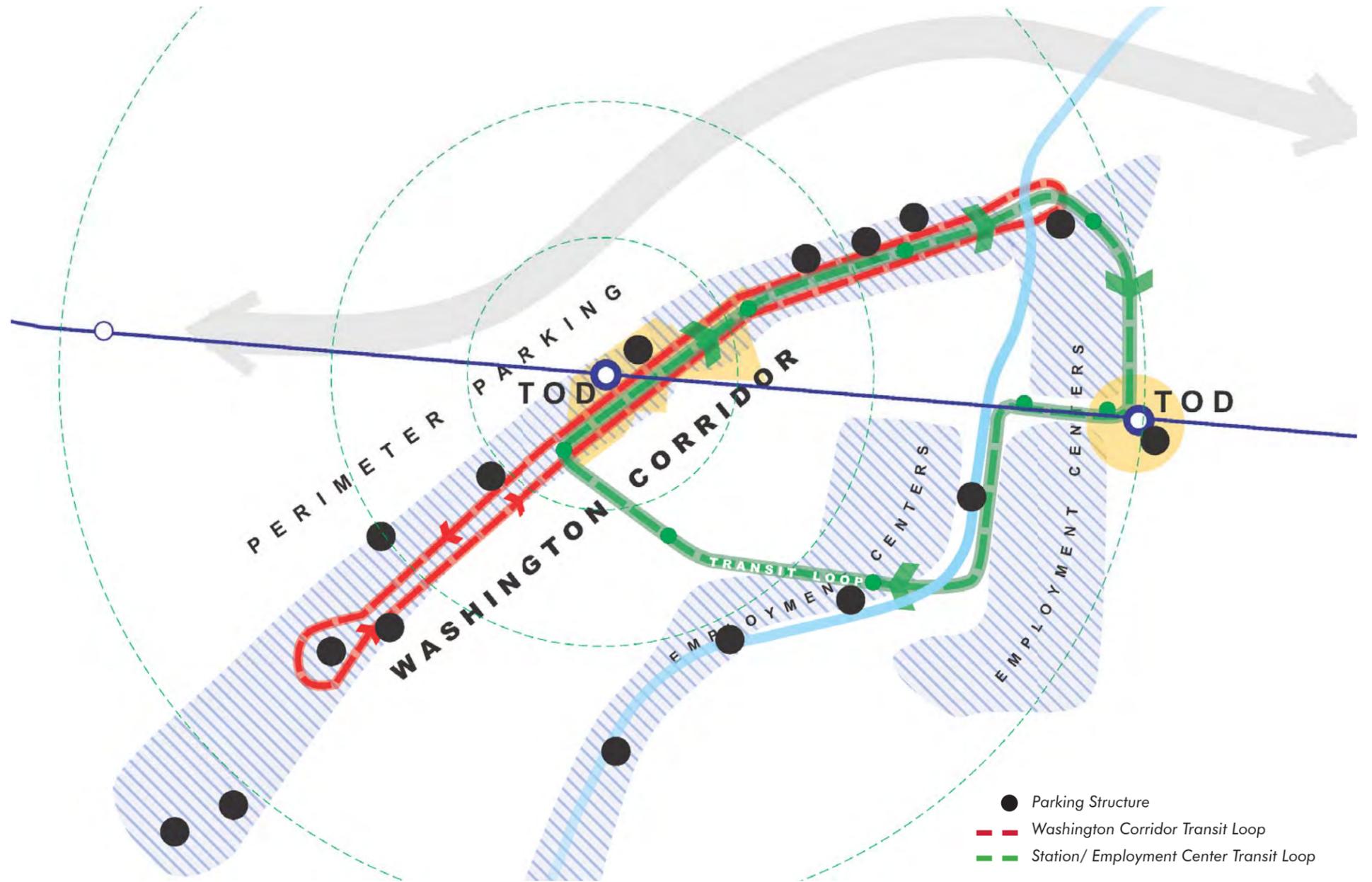


Bus Lane

Bus Bulbs



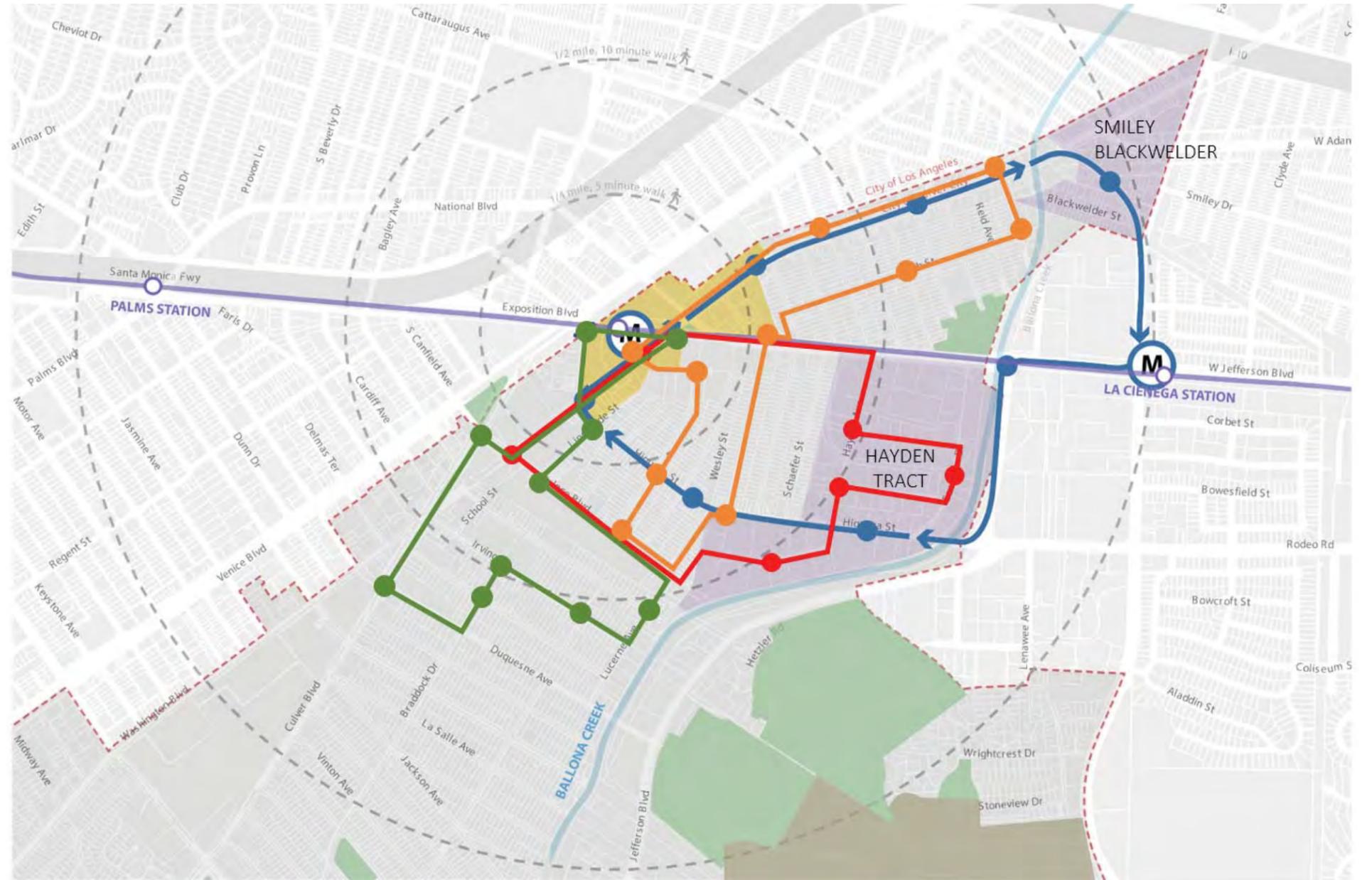
Source: NACTO (National Association of City Transportation Officials)



Micro-Transit System Connecting Shared Parking To Employment Areas



Exclusive Connections for Micro-Transit Use. These “hinge” connections provide linkages between currently disconnected neighborhoods and require further more detailed study to determine their feasibility.



A variable network of on-demand micro-transit service

RECOMMENDATIONS

- **Establish the Washington/Culver corridor as the major local east/west bike spine with a south side alignment to serve the residential neighborhoods to the south**
- **Establish a network of bike lanes, paths, and sharrows to connect local and regional systems and initiate a bikeshare program with appropriately located mobility hubs**
- **Add connections to the Ballona Creek bike path**
- **Proceed with phased implementation of the Downtown Connector project as an initial step in Washington boulevard “Complete Street” improvements, considering the south side alignment**
- **Consider future development of a grade-separated pedestrian and bike bridge to connect the ends of the Metro bike path and to access the Expo Station**

BICYCLE NETWORK

Bikes are increasingly popular as a mode of transportation in Culver City, deserving of a complete and connected network of cycling routes to support it. One primary move should be to establish the Washington / Culver corridor as the principal east-west bike spine through the city, from La Cienega on the east to at least Veterans Park and its public attractions on the west while also connecting to the already existing bike path south of it on Culver. A two-way protected bike lane should be considered along the entire length of this spine, on the south side of the street to serve the residential neighborhoods adjoining it, and not requiring cyclists to cross the major road to access it. The first leg of this protected two-way bike track would be as proposed in the recent Downtown Connector project prepared on behalf of the City, which could initiate the biking facility effort.

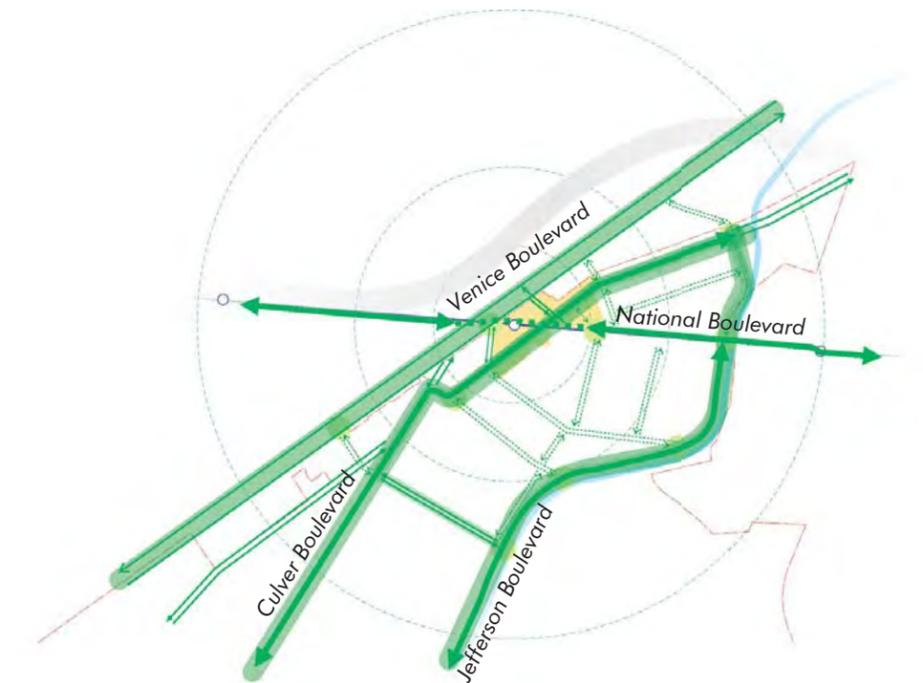
This east-west corridor should serve as the backbone of a fully connected and protected grid of bike lanes and bike-friendly streets with links to the sub-regional bikeway system on Venice Boulevard and along Ballona Creek. Together with improved pedestrian crossings and traffic-calming measures on streets that are currently heavily traveled by cars. Whether these are protected bike lanes or in-lane sharrows can be determined in coordination with other neighborhood protection measures recommended in the discussion of pedestrian safety improvements, in accordance with the City’s Neighborhood Traffic Management Program protocols.

Additional consideration should be given to adding points of bicycle connection to the existing Ballona Creek bike path, at several key locations. The connection at Higuera will be made in the upcoming replacement of the Higuera Street bridge. Other new connecting points include the southeasterly end of Van Buren Place, and a path extension from Kronenthal Park north either to Sentney Avenue or all along the Ballona channel north to Washington Boulevard.

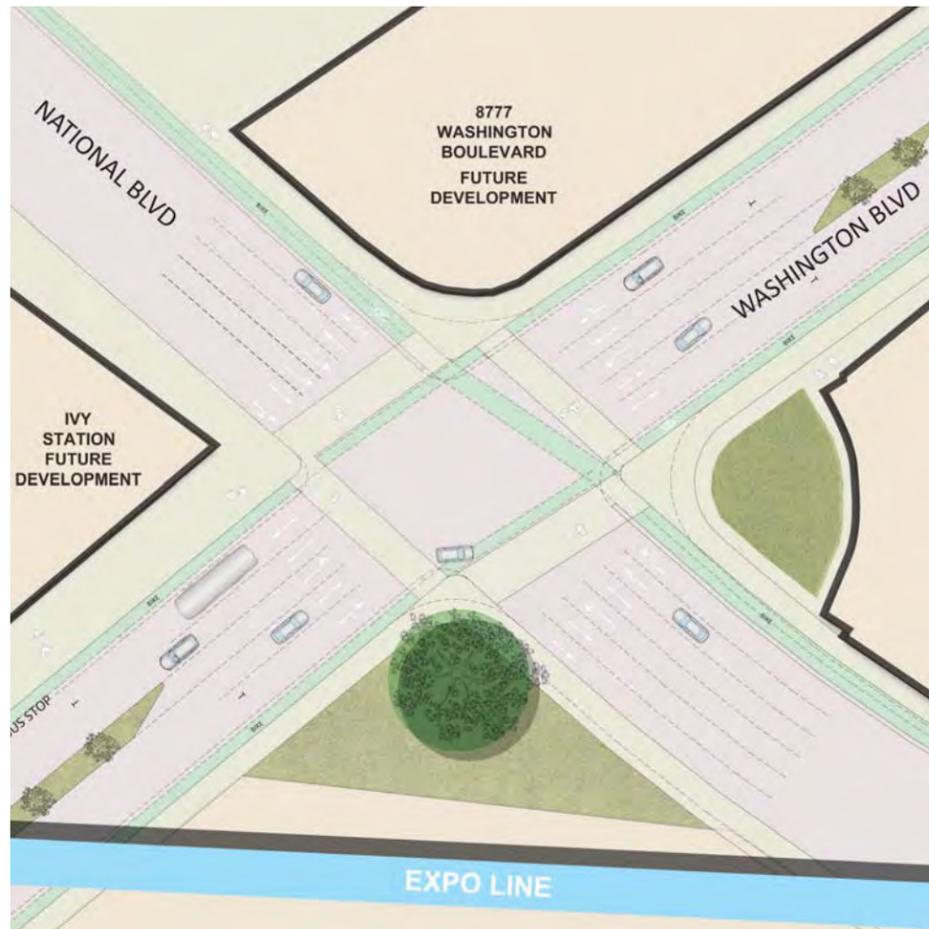
With a framing “box” of significant bike routes on major streets and a connecting grid of bike-friendly streets within the neighborhoods, it should be possible to use bikes to travel from one end of the greater TOD area while avoiding heavily trafficked streets, and to connect to

the sub-regional network of bike routes for longer rides.

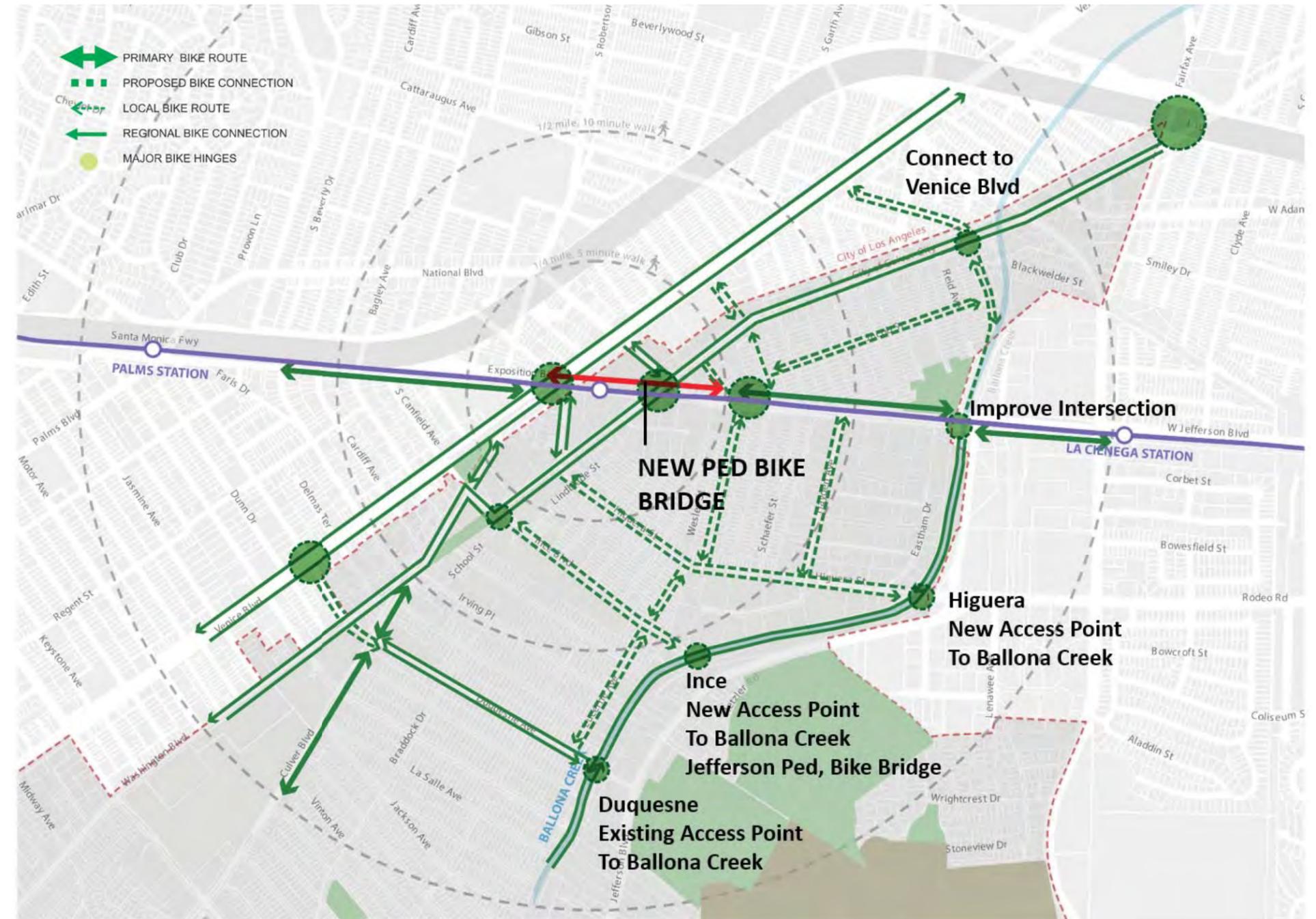
There are also some more ambitious approaches to making bike connections work. The toughest problem in the existing bike system is the disconnect between the two ends of the Metro bike path on either side (east and west) of the Expo Station area. A grade-separated pedestrian and bike bridge across the Washington/National intersection to complete bike path connections and also to access the Expo Station itself would be one way of “cutting through the Gordian Knot” and literally flying over the areas of greatest traffic congestion. Such a bridge could be designed as a signature icon of the east end of Culver City, and signal the city’s priority on pedestrian, transit, and bicycle travel.



Major bicycle network

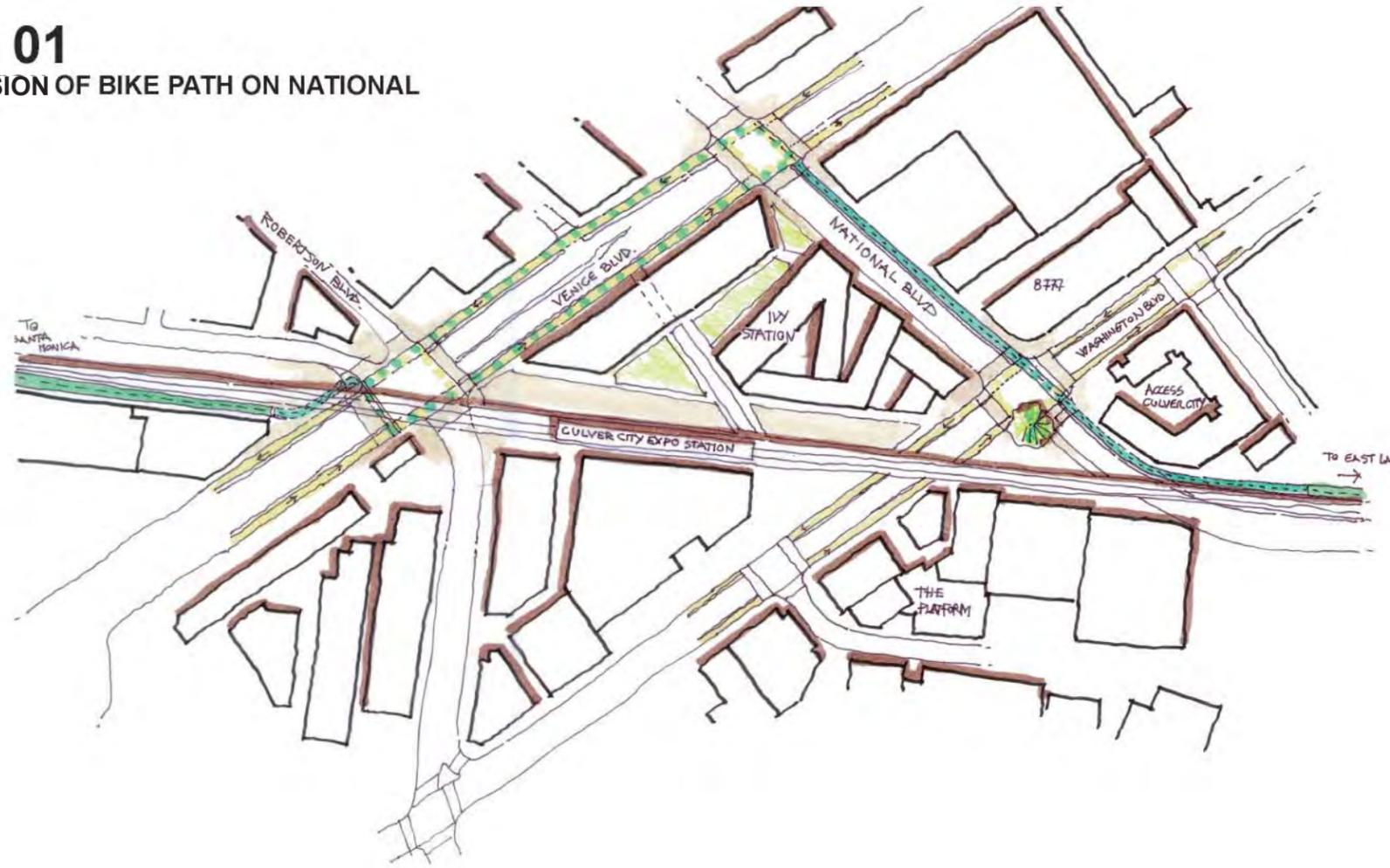


Washington/ National intersection - pedestrian and bikes first

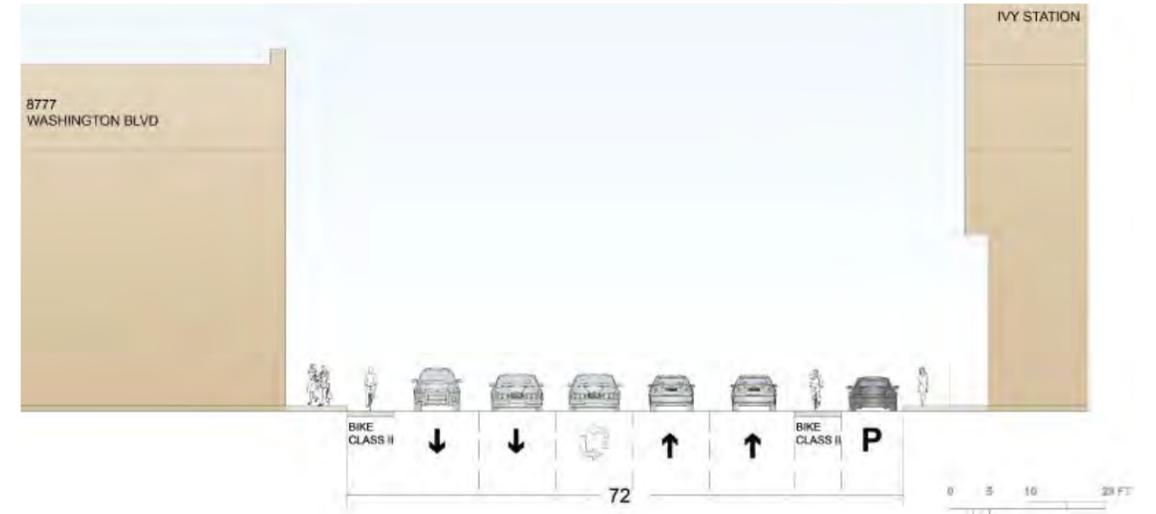


Bicycle Network

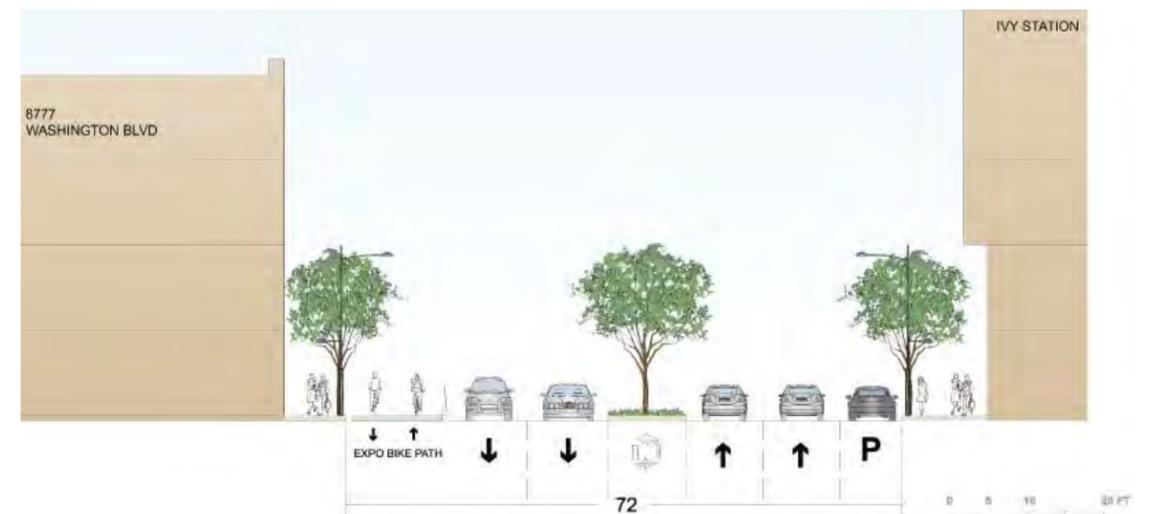
OPTION 01
EXTENSION OF BIKE PATH ON NATIONAL



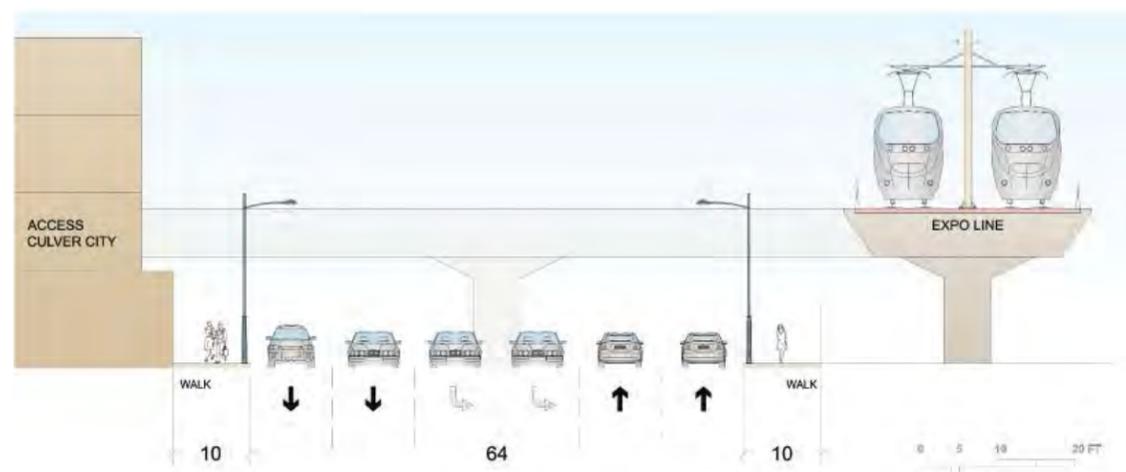
Option 01 - Extension of Bike Path on National Boulevard



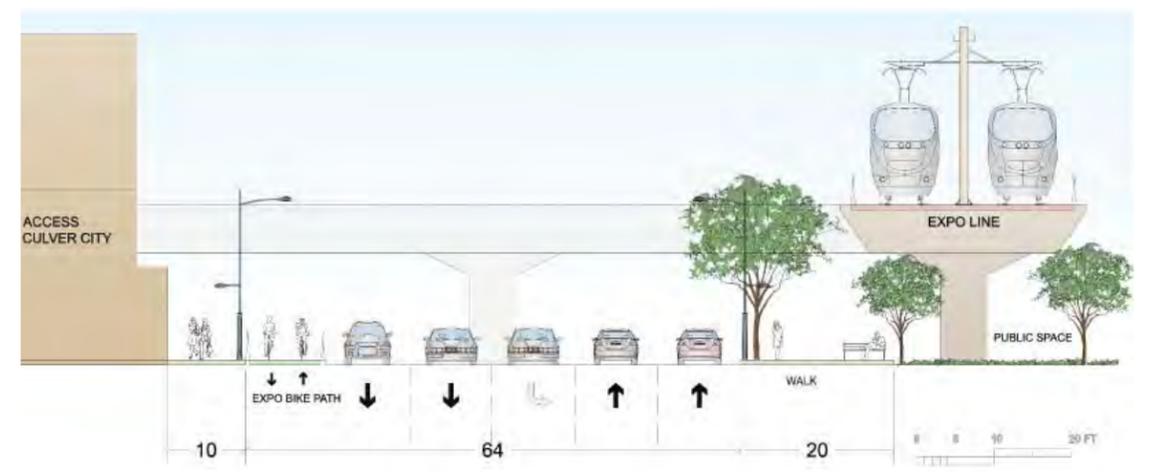
National Boulevard - Section C - Existing condition



National Boulevard - Section C - Expo bike path extension

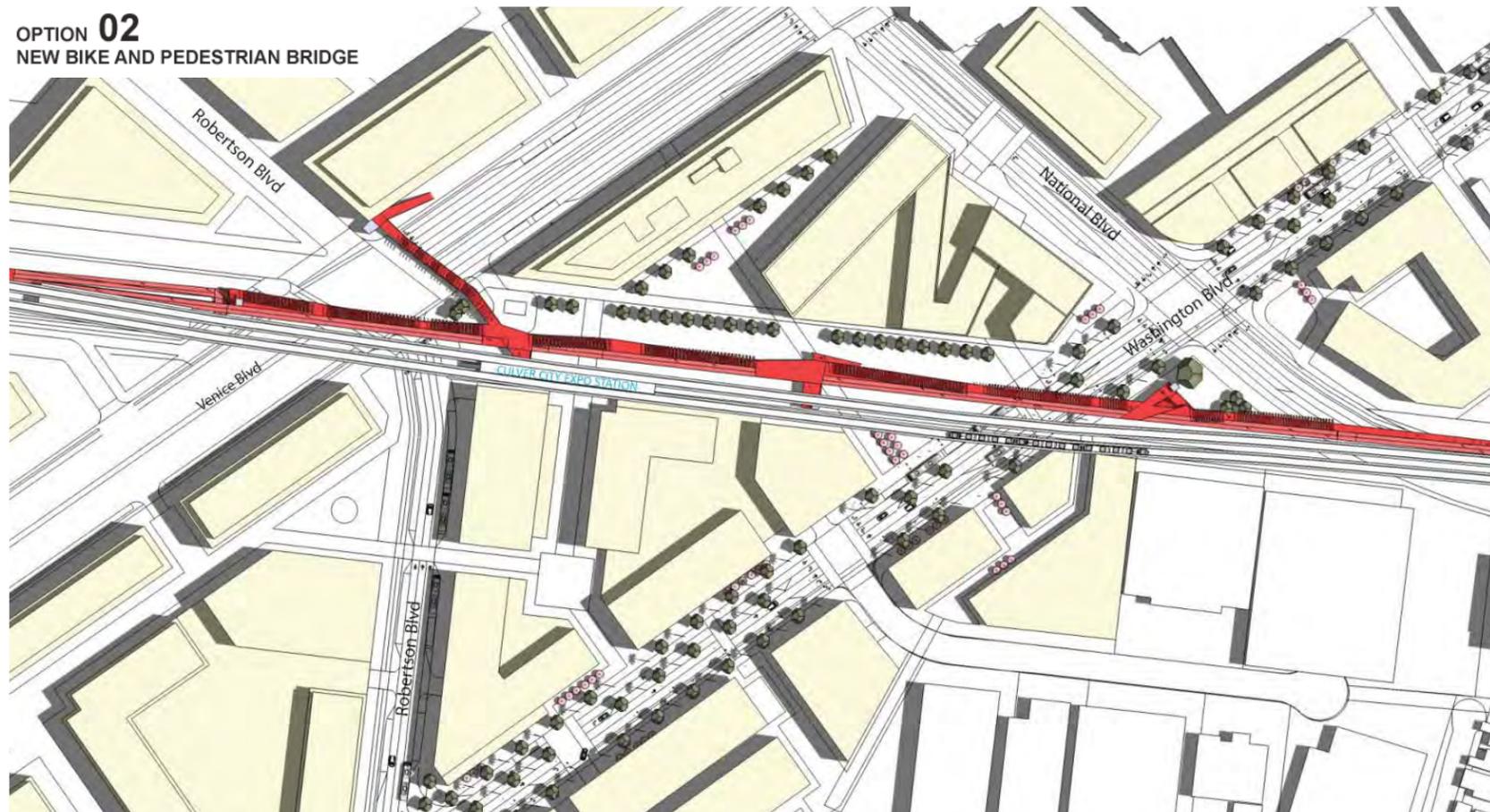


National Boulevard - Section A - existing condition



National Boulevard - Section A - Bike path extension + sidewalk widening + public park + road diet

OPTION 02
NEW BIKE AND PEDESTRIAN BRIDGE



Option 02 - New bike and pedestrian bridge



New bike and pedestrian Bridge connecting the two ends of the metro bike path



New bike and pedestrian Bridge at Expo station



RECOMMENDATIONS

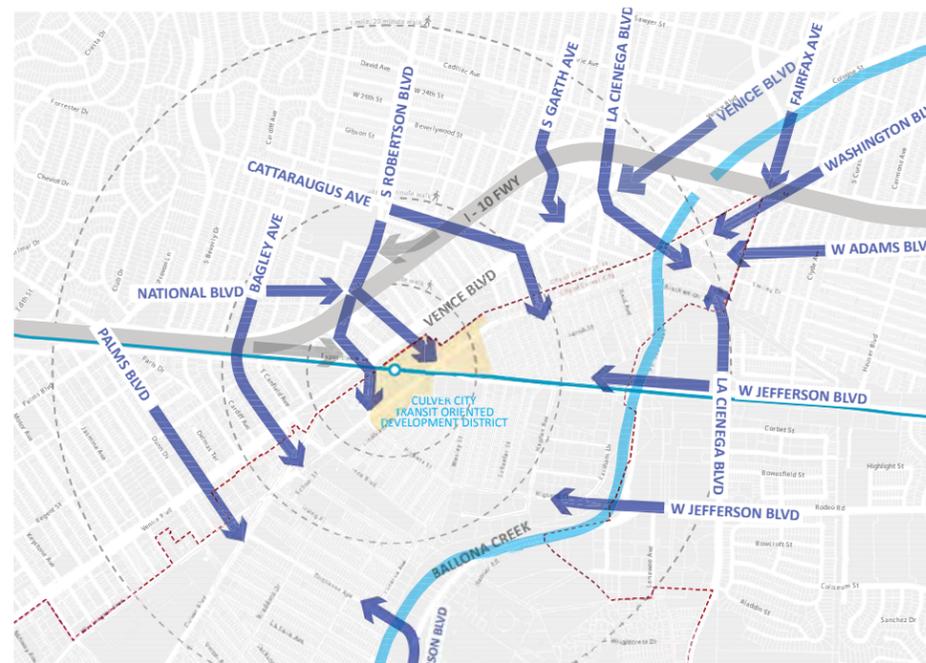
- **Implement traffic disincentives to discourage through-traffic and protect the neighborhoods**
- **Initiate N.T.M.P. process for neighborhood protection interventions**
- **Work toward a peripheral shared parking plan with congestion pricing**
- **Plan for additional crossings of Ballona Creek for vehicular access to east side employment centers**
- **Coordinate with other jurisdictions toward an improved through-traffic bypass solution**

CARS

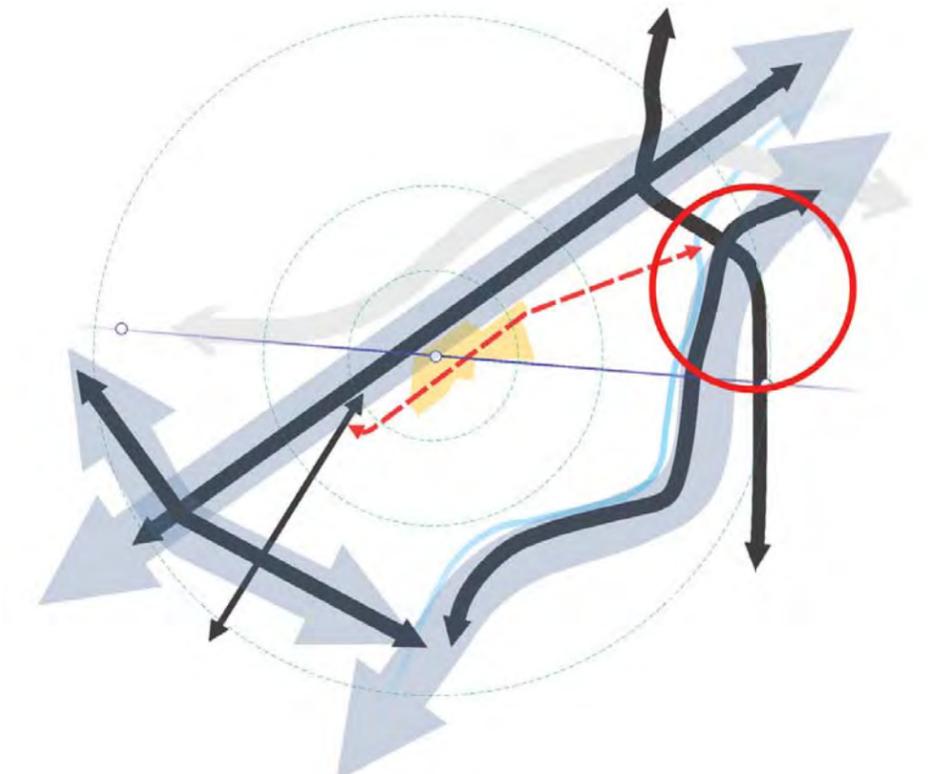
The preceding recommendations and principles are intended to develop viable choices that will prioritize the use of transit, pedestrian and biking modes in contrast to the prevailing auto priority. However, to be successful, another key principle is to minimize auto traffic in the TOD District is to minimize the congestion impact of the remaining auto demand. This TOD Visioning study proposes a number of measures to achieve these objectives by considerably improving the infrastructure and services associated to transit and active modes. However, the success of these measures would be substantially intensified if they are complemented by a strategy that also disincentives the use of the car.

Diverting through-traffic around the city core will reserve Washington Boulevard for local use, deliberately dis-incentivizing through traffic on Washington and restoring the street as a central and positive feature of the district. Other measures will be required as well, including ultimately to improve the “missing links” on the east side with an extension of Jefferson Boulevard, connecting it roughly along the alignment with Ballona Creek (either parallel to it on one side, straddling it with opposing lanes on either side, or, less desirably, decking it) to La Cienega and the easternmost end of Washington Boulevard at the north. This would increase the capacity of Jefferson to carry by-pass traffic and maintain access to the employment centers in Culver City on Jefferson between National and Overland. Such an increase in connectivity and capacity would help to mitigate the deliberately reduced capacity of Washington and any spillover traffic in the residential neighborhoods. As parts of this alignment lie within the City of Los Angeles and also affect roads controlled by CalTrans, this would require a multi-jurisdictional planning approach. Additionally, new bridge connections across Ballona Creek (for example, at Steller Drive in the Hayden Tract, or further south connecting to Hayden Place) would further help to distribute traffic appropriately into the employment centers.

Another multi-jurisdictional matter is the ultimate resolution of the I-10 Robertson interchange configuration. Currently being studied by the City of Los Angeles, Metro, and CalTrans, early options show more reliance on a realigned Robertson Boulevard for freeway egress. Culver City should advocate for options that do not add pressure on southbound Robertson that would load more through-traffic into the Robertson/Higuera corridor.



Access / Gateways to the TOD District Area



Deflect through-traffic around the center and reserve Washington Blvd for local use

CASE STUDY

Throughout the extensive LUCE community outreach process, Santa Monica residents cited traffic congestion and parking scarcity among their greatest concerns. Congestion on the Westside is among the worst in the nation, limiting the amount of people streets and highways can move. Surrounded by forces over which it has little direct control, Santa Monica finds itself enmeshed in a vigorous and growing regional economy. This circumstance is both a benefit and a burden, for regional growth brings economic vitality but it also brings congestion.

“Solving” the Congestion Problem

Ultimately, the elimination of congestion in Santa Monica is outside of the City’s control and requires a regional strategy. To address both local and regional congestion, Santa Monica will continue to use its regional leadership to explore the following programs:

- Regional Development Impact Fees
- Congestion Pricing
- peak parking pricing
- Transit Investment
- Regional Land Use Strategies

Disincentive Strategies

The key principle, however, is to introduce disincentives to through-traffic in the city core and encourage access to employment from around the perimeter. As noted earlier, the major urban roads in the TOD District in Culver City are heavily congested in the peak hours (i.e. Washington Boulevard and National Boulevard). The existing traffic in these roads can be classified as follows:

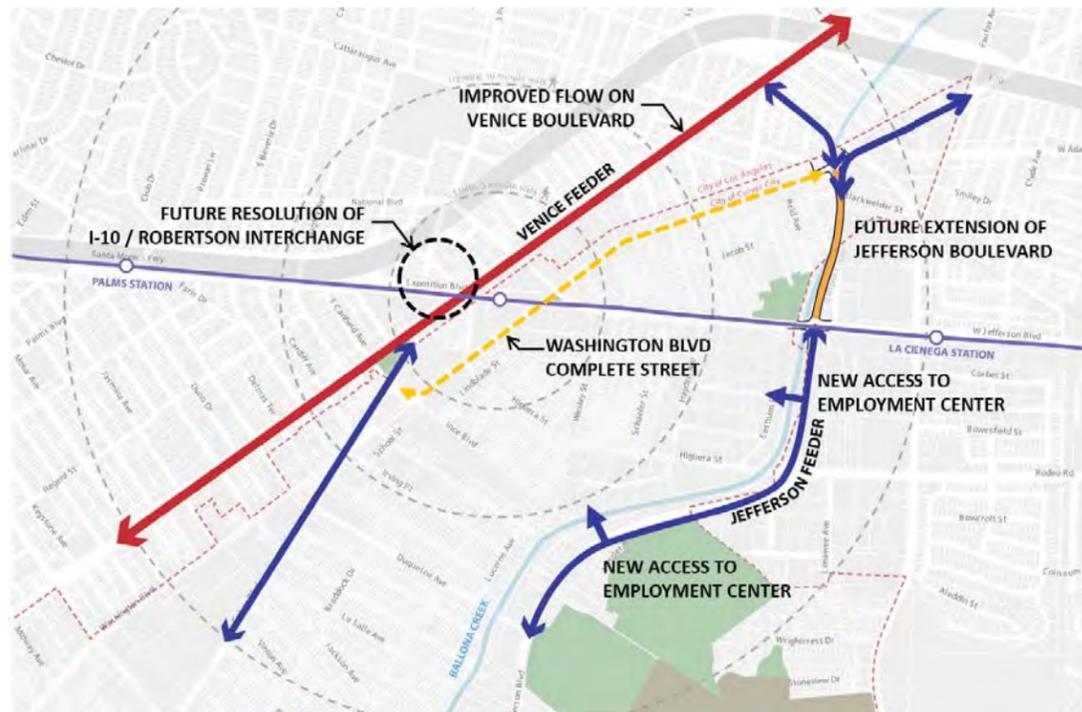
External Traffic

(with origin and destination outside Culver City).

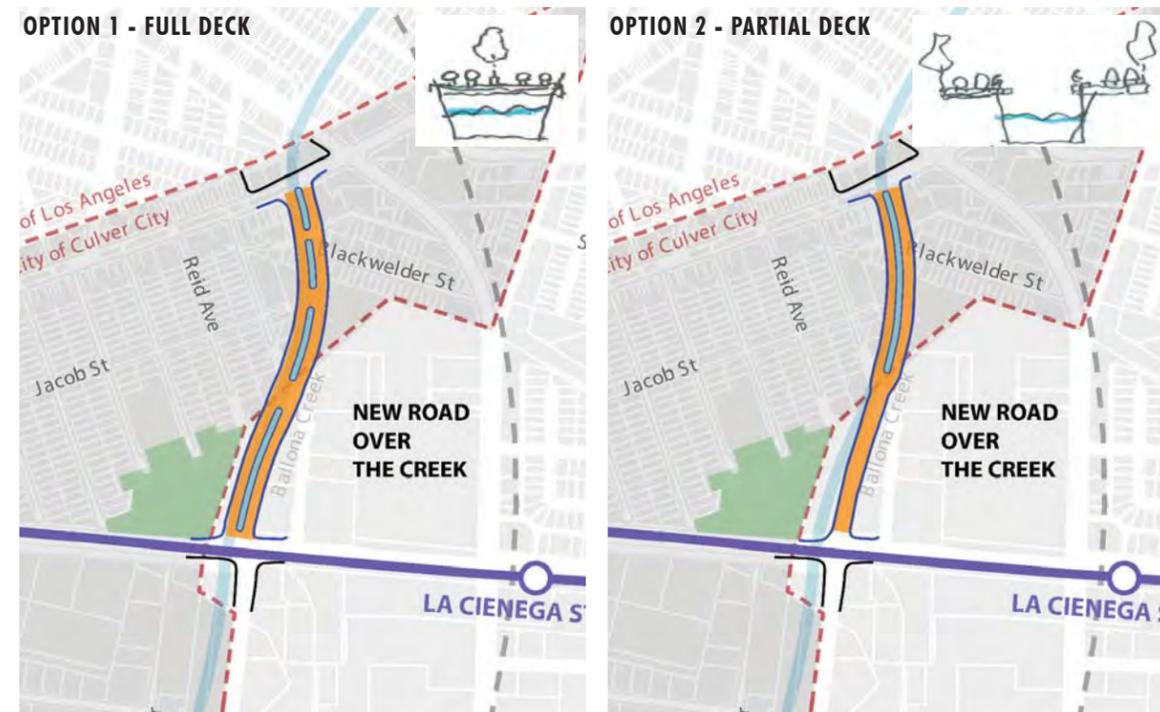
“Through traffic” in Culver City is an important contributor of congestion in the peak hours. The major urban roads in the TOD district are currently used by motorists commuting from East to West Los Angeles (on Washington Boulevard.) and from North to South Los Angeles (on National Boulevard). The potential measures to

incentivize the shift of this traffic to transit modes are heavily reliant on transit strategies at a regional level and therefore out of the City’s area of influence. However, given the relevance of “external traffic” in the City’s overall congestion, a set of measures should be considered to divert through traffic to alternative roads outside the City limits or around its perimeter. Measures that are recommended to address this are:

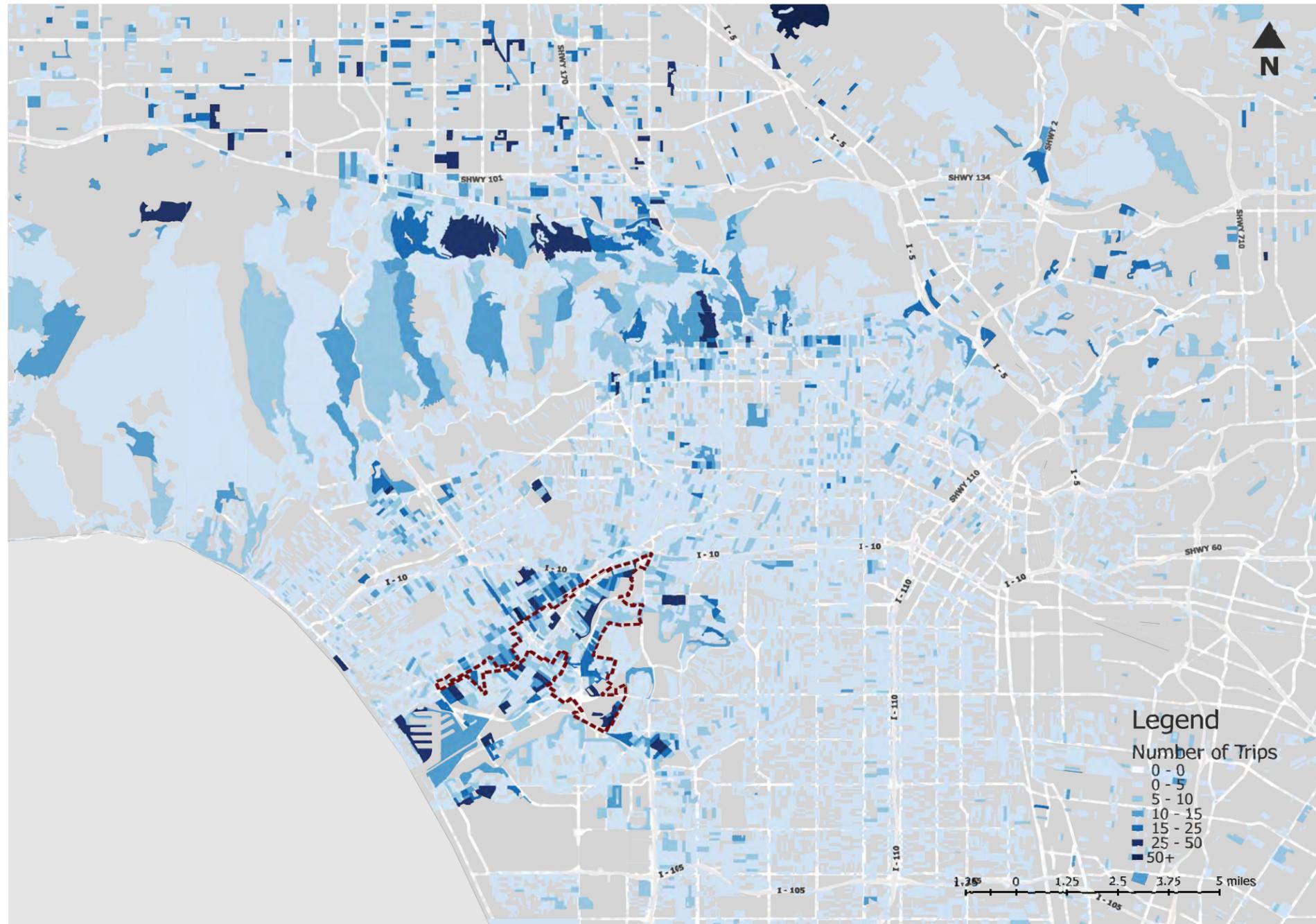
- Reduce car capacity in key arterials and convert them into “urban streets” (i.e. Washington Boulevard and National Boulevard), allowing more capacity for transit and active modes;
- Include traffic calming measures to reduce speed and make it less competitive for through traffic;
- Traffic wayfinding/signals- directing traffic to alternative routes;
- Digital routing information strategies (Google, Waze, etc.).



Recommendations for diverting traffic around the city core



Two potential options for extension of Jefferson Boulevard along the Ballona Creek alignment to connect to La Cienega require inter-agency coordination with City of Los Angeles and CalTrans.



Daily trips to Culver City

In 2014, LODES recorded 72,779 daily trips to Culver City. For everyone who works in Culver City (BLUE), this map show where their trip begins; their home block. Blocks with darker blue contain a higher number of people who commute to Culver City for work, while even the lightest blue blocks contain at least 1 but up to 5 people commuting to Culver City.

People commute to Culver City from all over, but certain areas send a higher number of commuters to Culver City. Many Culver City workers come from within the city, from nearby neighborhoods of Palms, Marina Del Rey, Playa Del Rey, Inglewood and the Village Green; many come from further distances, for example from neighborhoods in the San Fernando Valley.

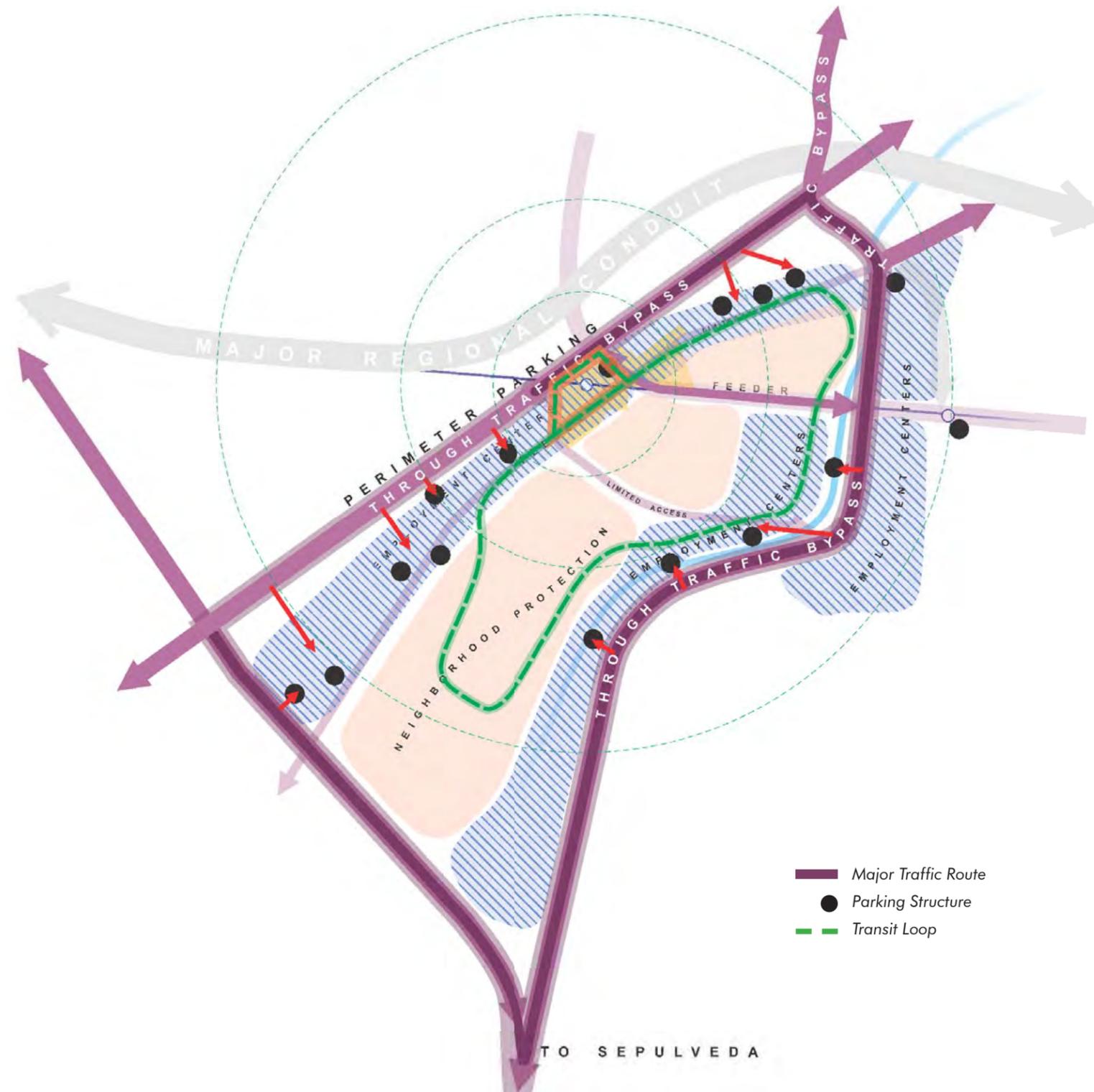
Source: <https://lehd.ces.census.gov/data/>

Origin of commuter trips that end in Culver city

Traffic to/from Culver City

(with origin or destination in Culver City).

Given the high relevance of Culver City as an employment destination, commuter traffic to Culver City is also an important component of the City traffic congestion, especially in the peak hour. Our study on LEHD origin-destination employment statistics from 2014, records 72,779 daily commuter trips that end in Culver City (see appendix for details on the study). While the key objective would remain to try to shift this traffic to transit by improving existing services and introducing new ones, ultimately the management of this type of traffic will depend upon both regional transit strategies to improve services from Culver City to outer destinations, and city-wide strategies to improve intermodal facilities, provide attractive first/last mile solutions and develop specific measures with employers to incentivize mode shifts (as part of recommended Transportation Demand Management (TDM) programs).

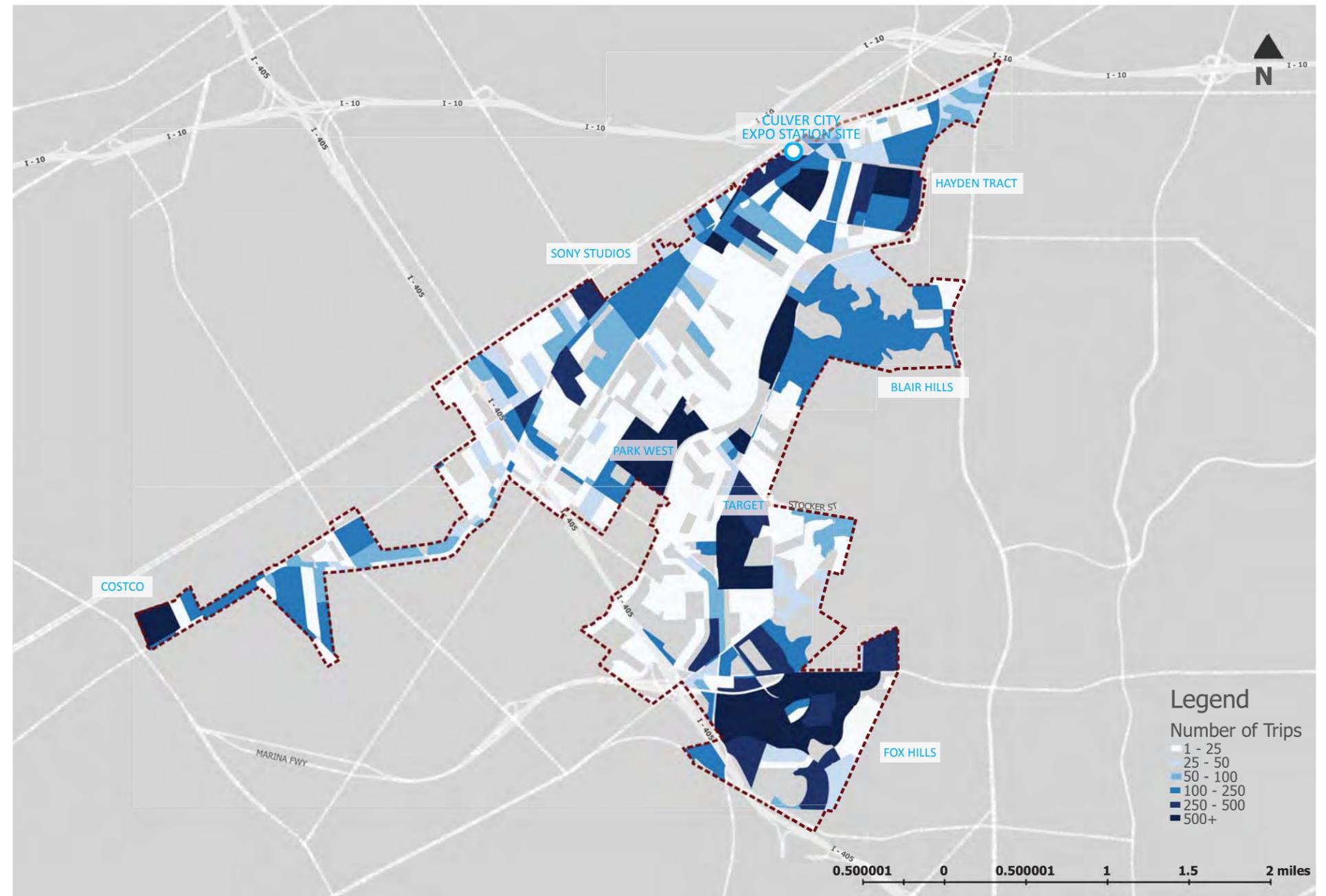


A system of shared parking will help to divert through traffic demand

Internal Traffic

There are multiple tools for substantially improving the competitiveness of alternative modes, many of which are anticipated by and in line with the Culver City Department of Transportation Mobility Action Plan. These include:

- High frequency and high speed transit shuttles (APM, automated buses in dedicated lanes, etc.) connecting transit centers with major origins/destinations in Culver City;
- On-demand services (TNC type) for first/last mile;
- Integrated services among transit providers, with integrated ticketing and pricing;
- Integrated information technology with real-time scheduling and personal smartphone capabilities;
- A robust and coordinated program of Transportation Demand Management elements;
- Complete streets with high quality pedestrian and biking infrastructure to provide a safe and enjoyable environment with access to key destinations.



Destination of commuter trips (daily trips) within Culver City

TRAFFIC DIVERSION STRATEGIES

Traffic disincentives are aimed at diverting traffic that does not “belong” in the TOD area to routes outside and around it. Such diversion comes with some risk, however, that diverted through-traffic will seek alternate routes through streets not intended for through traffic, especially in the residential neighborhoods. Determining the impact of this undesirable diversion routing will require a careful traffic diversion strategy study. This study will help to understand the traffic currently using the TOD road network, and will help to propose alternative measures to re-direct this traffic to other alternative routes and/or parking facilities, and assess its potential traffic impact in alternative routes. Conducting a diagnostic traffic study is essential to this effort, to analyze in detail the existing traffic and travel patterns on the critical roads in order to assess and classify them accordingly to the different traffic segment types:

External traffic.

Diagnostics for external through-traffic should focus on several key questions: How much of the existing traffic is through traffic (by time of day)? Which are the key origin and destination patterns? What are the alternative routes and how competitive are they? Available solution sets should be based on this diagnostic analysis, identifying strategies to divert through traffic into other appropriate routes with appropriate capacity.

Traffic to/from Culver City.

Diagnostics for incoming and outbound traffic essential to the economic and social vitality of the city should focus on similar questions: How much of the existing traffic is to/from the City (by time of day)? Which are the external origins and internal destinations? What are available alternative routes and how competitive are they? Solution sets based on this diagnostic analysis should identify the strategic locations for off-street facilities to reduce congestion impact.

Internal traffic to Culver City (with origin and destination inside Culver City).

Diagnostics for local, internal traffic for shorter, higher frequency trips should similarly focus on these questions: Which are the key origins and destinations of internal auto trips by type of user and time of

day? Which are the preferred alternative modes to do this trip and how competitive they are? From this analysis, solution sets can identify the best transit/active mode strategies to encourage mode shift.

In order to characterize existing demand, required data collection would include automatic and manual traffic counts (at intersections) to estimate total traffic at key locations at different times of day; origin-destination data using GPS and LBS data to estimate key origins and destinations by time of day; and travel time surveys to estimate travel times in key locations and competing routes by time of day. This analysis could be carried out at a very local level or with a wider scope, but a detailed assessment of existing demand should focus at least on the following roads:

Washington Boulevard.

A key measure is deliberately to reduce auto capacity in this road to allow more capacity to transit and active modes, recognizing that this will deliberately increase congestion in alternative routes as part of the disincentive strategy.

Higuera Street.

A traffic impact study would be required to assess the potential closure of Higuera Street with a cul-de-sac and identify alternative routes and/or transit/parking measures to accommodate this traffic. Moreover, one of the TOD objectives will be to minimize through-traffic in the Higuera-adjacent neighborhoods with traffic calming and signaling solutions. This will have an impact on alternative routes. The upcoming closure of the Ballona Creek bridge while its replacement is constructed offers an opportunity to test a variety of mitigation measures to reduce through traffic.

Duquesne Avenue and National Boulevard.

Potential limited access at the easterly end of Higuera Street and the traffic calming solutions in the neighborhood will increase congestion in the alternative access points. Congestion could be shifted from Higuera street and Washington Boulevard into other areas.

The traffic diversion plan that ultimately results from these focused studies will define and refine the specific implementation measures based on detailed data analysis and further consultation with neighborhood stakeholders through the City’s NTMP process. Based

on the preliminary analysis in the present Visioning Study and on similar experience elsewhere, one can anticipate some of the likely recommendations.

- On Washington Boulevard, reduce auto capacity as a traffic disincentive, reduce speed and increase pedestrian safety and convenience with traffic calming measures, consider reducing on-street parking capacity and introducing a variable pricing strategy, and locate shared parking facilities along the street with variable congestion pricing strategy and adequate smart wayfinding and pricing information.
- On Higuera Street, reduce speed with traffic calming and diversion measures to minimize non-local traffic, limit further the on-street parking restrictions for non-residents, introduce smart wayfinding to direct through-traffic to best alternative routes (outer alternatives) and to accessible shared parking facilities with micro transit service.
- On Duquesne Avenue and National Boulevard, identify measures to reduce the through traffic in local roads accessing via these two streets, and introduce smart wayfinding similar to the above.

Complete Streets Toolkit for Major Streets - Urban Streets Design Principles

Phases of Transformation

Existing

Existing conditions demonstrate how traditional design elements, such as wide travel lanes and undifferentiated street space, have had an adverse impact on how people experience the streetscape.



Interim Redesign

Striping and low-cost materials can realize the benefits of a full reconstruction in the short term, while allowing a city to test and adjust a proposed redesign.

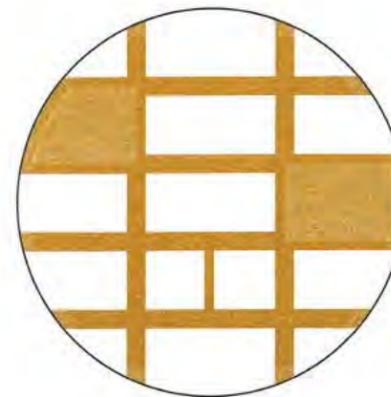


Reconstruction

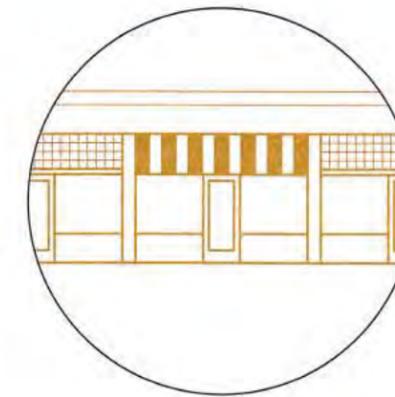
Full capital reconstructions can take 5-10 years. A complete upgrade might include new drainage and stormwater management provisions, raised bikeways, wider sidewalks, and traffic calming elements.



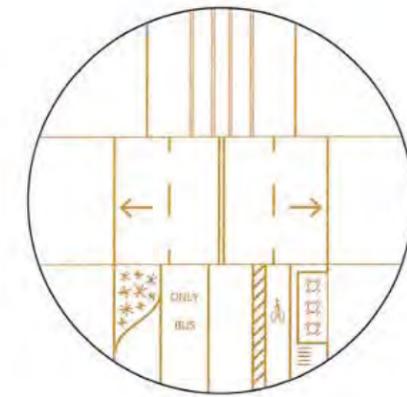
Key Principles



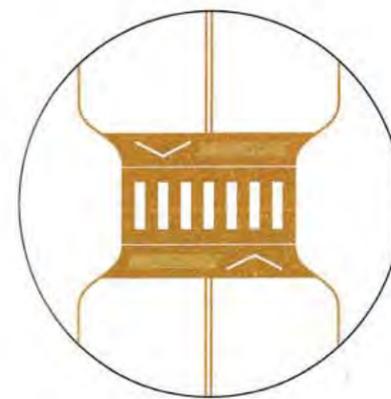
Streets are Public Spaces



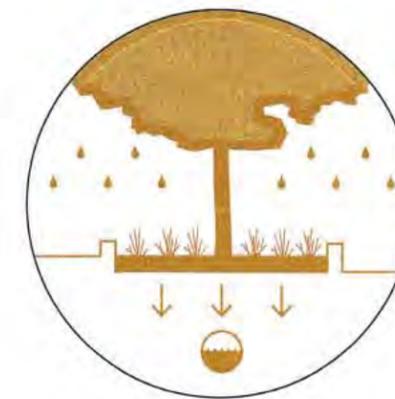
Great Streets are Great for Businesses



Streets can be changed



Design for Safety



Streets are Ecosystems



Act Now!

Source: CMAP (Chicago Metro Agency for Planning) Complete Streets Toolkit

COMPLETE STREETS

COMPLETE STREETS: STRATEGIC PRINCIPLES

Streets are an essential part of our cities and communities. Streets make up around 20% of Culver City’s urban fabric, and fulfill two core functions: providing mobility, and making places for people. They enable people to get to work, to travel to school, to do their shopping, and to access community facilities. They are also places in their own right, which people want to visit and spend time in.

Complete Streets is a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. After World War II, many communities in California like Culver City, were designed to facilitate easy and fast access to destinations via automobile. Even today people in the community often rely on the automobile as their sole means of transportation and even in areas with public transportation and safe places to walk and bicycle. They live in a state of automobile dependence so that automobiles are the central focus of transportation, infrastructure and land use policies to the extent that other modes of transportation, such as walking, cycling and mass transit, have been marginalized and become impractical.

Adopting a Complete Streets approach for the TOD District and eventually for Culver City at large, means designing streets for everyone. Complete Streets recognize the variety of users, but importantly, the variety of non-automotive users. People of all ages and abilities should be able to move along and across streets, regardless of how they are traveling. Complete Streets make it easy to cross the street, walk around neighborhoods, and bicycle to work. They help buses to run on time and make it safe for people to walk to and from school. Complete Streets design streets fit for all abilities, for under 20 and over 80.

In Culver City, the range of people who use streets is wide, and includes bicyclists, pedestrians, persons with disabilities, transit users, truckers, motorists, and skateboarders. A Complete Streets approach considers who uses different streets and prioritizes modes accordingly.

Complete Streets as a transportation policy and design approach for the TOD District helps inform the design and operation of a transportation network that enables safe access for all users, regardless of age, ability, or mode of travel. It shifts the planning

focus from an automobile-centric framework to a more inclusive approach that facilitates a higher quality of urban living.

The CMAP (Chicago Metro Agency for Planning) Complete Streets Toolkit provides a useful summary of design concepts and considerations.

Overall design concepts and considerations

Once a Complete Streets policy is adopted and a plan for implementing the policy is in place, a large part of the work and responsibility for making Complete Streets a reality shifts from policy makers to transportation planners and engineers. Successful implementation of Complete Streets entails rethinking roadway design concepts and considerations to fully accommodate all anticipated users. Such concepts represent “starting points” in the design process and are crucial to implementing a policy and achieving Complete Streets.

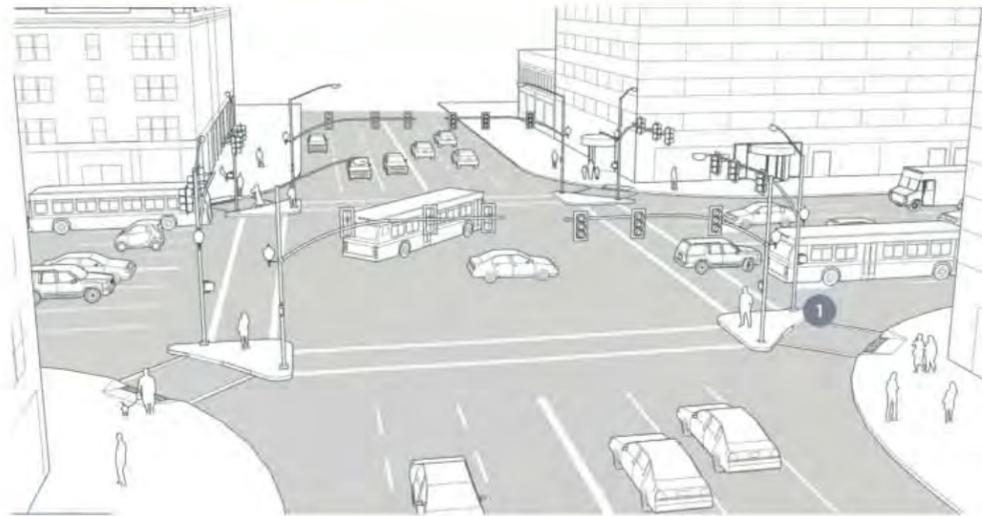
A typical design approach should entail:

- *Modal Hierarchy and Prioritization.* Modal hierarchy is a ranking of the relative importance of travel modes, determined in the initial phase of a roadway project, to clearly establish and state priorities for accommodation in design. While all travel modes must be considered when designing a street, the practice of assigning a mode hierarchy can assist the application of engineering judgment to design decisions, and help planners to address tradeoffs in different design alternatives. For example, limitations in right-of-way can force a planner to decide between a wider sidewalk and a buffered bike lane, or reducing the width of travel lanes to accommodate safer crossings. By determining a mode hierarchy at the project start, planners will have guidance on how to make those decisions based on overall project goals and scope. This practice serves as an alternative to traditional methods of roadway design optimization measures, such as vehicular capacity and Level of Service (LOS).
- *Context Zones.* A study of context zones, categories of development patterns that describe the general form, pattern, and character of a given area.
- *Roadway Typologies.* The assignment of roadway typologies supports design decisions that consider all modes, and can also

Complete Streets Toolkit for Major Streets - Intersection Design Principles

Intersection Design Principles

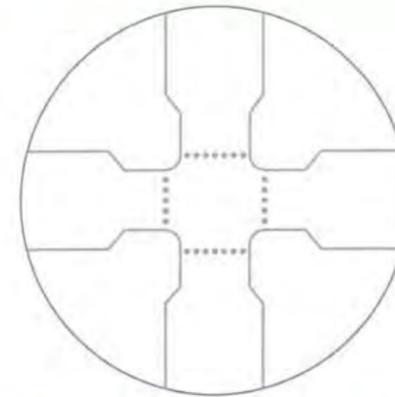
Existing



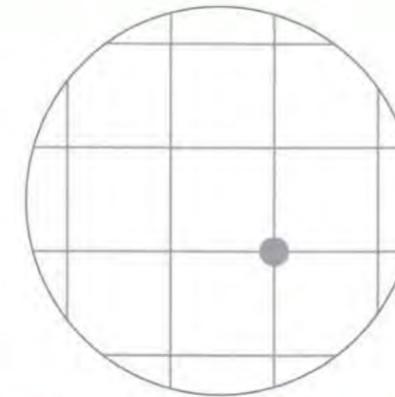
Reconstruction



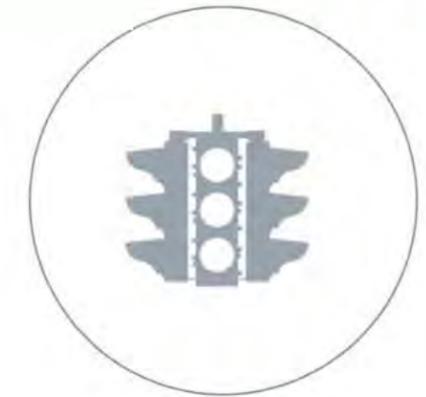
Principles



Design Intersections to be as Compact as Possible



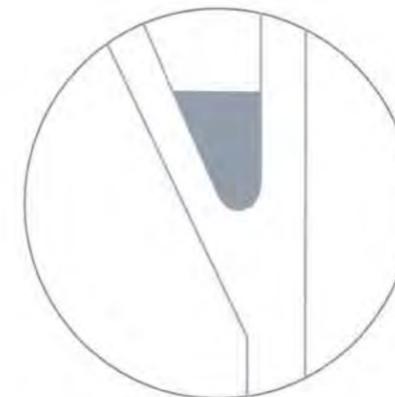
Analyze Intersections as Part of a Network, not in Isolation



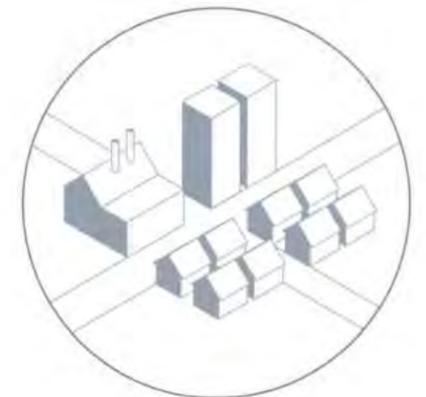
Integrate Time and Space



Intersections are Shared Spaces



Utilize Excess Space as Public Space



Design for the Future

Source: CMAP (Chicago Metro Agency for Planning) Complete Streets Toolkit

help to determine mode hierarchy on a project-by-project basis. Traditionally, roadway typologies come in the form of functional classification. A naming scheme is used to indicate the average daily traffic (ADT) and vehicle speeds, and to establish right of way. The Complete Streets approach goes further to assign typologies that reflect multimodal design implications. Naming schemes vary, but typically include Boulevards, Avenues, and Streets.

- *Design Controls.* Design controls are the parameters around which engineers select geometrics for roadways. These parameters and how they are used may be different for each project, but should generally reflect community-wide goals and standards. For example, when a community adopts a Complete Streets policy, a crash reduction goal, or mode shift target, they may wish to establish project design controls and define their utilization and function in a manner that maximizes walkability.

A non-exhaustive list of design controls could include:

- Design vehicle;
 - Design speed;
 - Functional classification (replaced, in part, by street typologies in a Complete Streets approach, see above);
 - Vehicle performance (acceleration and deceleration);
 - Driver performance (age, reaction time, driving task, guidance and so forth);
 - Traffic characteristics (volume and composition);
 - Capacity and vehicular level of service;
 - Access control and management;
 - Pedestrians and bicyclists;
 - Safety.
- *Street and Lane Widths.* The Complete Streets design approach encourages narrower vehicle lanes and street widths, where possible and appropriate, to create a safer street network for active travel. Wide streets and vehicle lanes typically encourage

high vehicle speeds, which subsequently increases the severity of crashes when they occur. These conditions also present significant barriers to walking and biking. Crossing wide roads with multiple lanes and traveling alongside fast moving vehicle traffic creates real and perceived dangers for pedestrians, especially children and people with disabilities.

- *Connectivity and Block Length.* A strong network of Complete Streets provides short, direct walking routes and ample opportunities for safe street crossings. This is best facilitated by a gridded street pattern of short block lengths. Intersections are the most natural place for crosswalks, and streets with longer block lengths provide fewer intersections and fewer opportunities for pedestrians and bicyclists to safely cross.
- *Access Management.* Access management is a technique for reducing conflict points between pedestrians, bicyclists, and motorists at driveways and intersections.
- *ADA Accessibility.* Designing a facility for pedestrians means designing it for people with disabilities or mobility impairments. Such impairments can be temporary, such as might result from a broken leg or other injury, or permanent.
- *On-street parking.* The public ROW at a curb dedicated to on-street vehicle parking deserves careful design and policy consideration in the context of Complete Streets. Parking is critical to support local businesses, and on-street parking is more valuable than off-street parking because the same space can serve multiple users and multiple businesses. Parked cars along a busy roadway offer protection for pedestrians and increase the feeling of safety by providing a physical barrier or buffer area to the moving vehicles. On-street parking can also function as a traffic calming measure on roads that are excessively wide.
- *Transit.* Transit systems represent more than just a mode of travel; because most transit trips are also walking trips, every transit stop is a destination in and of itself that must be accessible to pedestrians, including those with disabilities. Access to transit is also supported when transit ways link to local bikeway routes, when secure bike parking is provided at transit stations, or when transit agencies enable passengers to bring their bicycles with them onto buses or trains.

COMPLETE STREETS: INSIGHT

Creating Complete Streets will require Culver City’s community to broaden its approach to serving transportation needs. Priorities need to be balanced between a variety of demands including traffic operations, public safety and health, social equity, and quality of life. In California, this approach has been sanctioned through legislation; the California Complete Streets Act (AB 1358) of 2008 requires the circulation element of jurisdictions’ General Plans to “plan for a balanced, multimodal transportation network that meets the needs of all users of the streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context”. The Act requires that jurisdictions’ General Plans must be updated upon any substantive revision to the Circulation Element.

Current issues

There are several issues facing Culver City (and common to many communities in Southern California) that the implementation of Complete Streets could help to improve. These include a declining health in children, an aging population, a growing opportunity gap between high- and low income families, decreased safety on roads, and environmental concerns.

Improving the health in children

The nationwide obesity rate in children has been growing to more than double what it was just three decades ago. Along with national trends, more than a quarter of Los Angeles County children are overweight or obese. As a result, obesity-related chronic diseases such as diabetes and heart disease are also rising. A network that does not incorporate a Complete Streets approach limits children (and adults) the opportunity to choose more active mobility. Complete Street networks provide opportunities for increased physical activity by incorporating features that promote regular walking, cycling, and transit use which supports healthier lifestyles.

Enhancing mobility for the elderly

About 15% of the population of Culver City are seniors. This percentage of residents 65 and older is projected to grow in the coming years. Complete Streets can help improve mobility for older residents in various ways. For example, new infrastructure that slows down vehicles creates a better driver and pedestrian environment through more easily navigated streets, increased visibility, and additional multi-modal options to choose from.

Creating equitable streets

The development of Complete Streets creates an opportunity for

more equitable streets as these corridors are planned, designed, and maintained to be for everyone regardless of age, ethnicity, income, or educational background. Creating a safe and functional place for all residents to walk, ride bicycles, or take public transportation helps populations that usually suffer disproportionately from poor street design through a decreased likelihood of illness, injury, and death.

Safety on roads

With Complete Streets, the provisions for non-motorized users and the number of non-motorized travelers increases. This improves safety indirectly, having more people walking and biking reduces risk per trip. Changes in street infrastructure to be more complete also create long-lasting speed reduction which benefits the safety of all road users – motorists, pedestrians, and bicyclists. Recently, in this direction, the City as launched the Culver City Non-Infrastructure Safe Routes to School Program – Culver City Walk & Rollers, in which all schools are encouraged to develop sustainable walk and bike to school programs.

Sustainable streets

With the transportation sector being the fastest growing carbon dioxide source in the United States, any mode shift from driving to walking, biking, or transit is a mitigation strategy. Walking and bicycling are zero-emission transportation modes, and transit is a lower-emissions mode – using transit can help a solo commuter who switches from driving to transit to reduce carbon dioxide emissions by 20 pounds per day, or more than 4,800 pounds in a year. Boulder, CO, saw a reduction in car trips due to the implementation of Complete Streets that has cut annual CO2 emissions by half a million pounds in just over a decade. By reducing emissions through Complete Streets, Culver City’s community can see a measurable improvement in the environment.

Benefits

Complete Streets have a wide range of positive impacts on individuals, businesses, the environment and the wider community that would benefit Culver City.

Economic revitalization

Complete Streets can reduce transportation costs (up to \$9,000 annually for individuals who switch from driving to transit) and travel time, while increasing property values (in a survey of 15 real estate markets a one-point increase in the walkability of a neighborhood as measured by WalkScore.com increased home values by \$700 to

\$3,000), and job growth in communities. A balanced transportation system that includes Complete Streets can bolster economic growth and stability by providing accessible and efficient connections between residences, schools, parks, public transportation, offices, and retail destinations.

Livable communities

Streets are an important part of the livability of our communities and should be designed to be for everyone, whether young or old, motorist or bicyclist, walker or wheelchair user, local resident or visitor. More than half of Americans recently surveyed would like to walk more and drive less. Increased bicycling and walking are indicative of vibrant and livable communities and can substantially improve the overall health of a community.

Ease congestion

Designing streets for automobiles only reduces opportunities for safe travel choices that can ease traffic congestion such as walking, bicycling, and taking public transportation. Many of the non-commute trips type are generally short and could be made safely by walking, bicycling, or taking transit – if the streets are complete. A comprehensive approach to transportation planning and design will increase transportation choices and encourage efficient use of current roadways by offering alternatives to the automobile, especially during peak travel times.

Improved return on infrastructure

Investments Integrating sidewalks, bicycle lanes, transit amenities, and safe crossings into the initial design of a project spares the expense of retrofits later. The careful planning encouraged by Complete Streets policies also helps jurisdictions find many effective measures that can be accomplished at little or no extra cost. On a project by-project basis, any additional money spent on Complete Streets can be considered part of a long-term investment in the financial and physical health of the community.

Adopting Complete Streets policies can help Culver City reduce transportation costs and travel time, while increasing property values and the overall physical health of its community. Increased bicycling and walking can help the City become an even more vibrant and livable community for everyone, while allowing for many of the non-commute trips type to be made safely by walking, bicycling, or by taking transit.

TOD DISTRICT STREETS: MOVEMENT AND PLACE

The map to the right identifies the types of streets in 10 minutes' walk radius from the Culver City Expo Line Station, utilizing the theory of movement and place. Different types of streets can be mapped against both the movement and place axes, according to how 'local' or 'strategic' in significance they are in terms of movement and place functions, and taking into account the mix and balance of transportation modes, the nature of the built environment/aesthetic quality, and character of different places. This classification suggests what the 'vocational' function of the Complete Street should be according to this Visioning study more than accepting the existing condition that often is the result of an unplanned compromise. The classification has been further informed by the site analysis and by inputs from the public workshops. Please refer to the Appendix for further details on the analysis.

National Boulevard - South of the 10 FWY, is identified as a movement corridor. Modes are, in large segments of the boulevard, physically separated from the road, with landscape zones. The space of the Expo Metro rail South of Washington Boulevard, further provides a physical barrier. Surrounding land uses may vary from place to place, but tend to be single use. It is characterized by a high volume and fast moving traffic environment and is a heavily used commuter route and transit route, truck route, and emergency route. It should have limited vehicle access points in between major intersections.

Venice Boulevard - is identified as a mixed land use corridor. It is a street which carries high volumes of general automobile traffic, and regional transit routes, truck routes, and emergency routes. However, it also presents a mix of uses with retail and other business uses in shopping centers or large, continuous strip malls. The street is outside Culver City's boundaries.

Washington Boulevard, Culver Boulevard and Robertson Boulevard - are identified as downtown streets. They are mixed use streets in the heart of downtown, attracting visitors and workers from across the city and the region. Streets are, at least to some extent, already designed for a mix of transportation modes including pedestrian and transit, and bicycle movement. Buildings are multi-stories and positioned on the edge of the sidewalk. Uses include shops, workplaces, and recreation facilities.

Higuera Street and other streets- are identified as local streets. Local streets are streets serving a residential area, as well as schools and local community facilities. They should carry low to moderate traffic volumes at low speeds. Land use is predominantly residential in the form of single family or multi-occupancy housing.

Legend

- Movement Corridor
- Mixed Land Use Corridor
- Downtown Street
- Neighborhood Main Street
- Local Street
- Transit Plaza Ped Mall



Movement and Place Diagram

OUR VISION: WASHINGTON BOULEVARD AS CULVER CITY'S MAIN STREET

Washington Boulevard is one of the longest (27.4 miles) continuous east-west arterial roads in Los Angeles. It starts by the Pacific Ocean just West of Pacific Avenue in Marina del Rey, and ends far to the East in the City of Whittier, on Whittier Boulevard. It is south of Venice Boulevard for most of its length. In Culver City, Washington Boulevard represents the City's major spine, spanning about 5 miles from Venice to the west, to Fairfax Avenue to the east, and serving all the main functions of the City. It is de facto Culver City's Main Street. The central segment of Washington Boulevard stretches for about a mile, or 20-minute walk from the Arts District to downtown passing through the TOD District, with 90 feet street section from façade to façade. Most major Culver City attractions are either along the street or nearby. The Complete Street Vision of this study starts by imagining Washington Boulevard as Culver City's Main Street.

Like for similar boulevards in Los Angeles, the automobile has played a central role in the development of Washington Boulevard in the twentieth century. The influence of the car, and the culture it spawned, is reflected in some of the businesses lining the street and the car-driven attitude of many of the stakeholders along the corridor. Its current condition is in a sense representative of a street 'typology' common to many urban cores in Southern California - a large thoroughfare devoted to a fast-moving vehicular traffic serving private parcels. Historically, urban boulevards conveyed grandeur, formality, and civic pride. In the last century street design in the US started to fall victim to a narrowly focused approach that views unencumbered vehicular traffic flow as the highest priority with destination and speed as the ultimate design goals.

The great urban boulevards in the past were designed as delightful places to be a pedestrian; walking was the focus. They were conceived in a way to permit people to walk at varying paces, at their leisure, safe from vehicles. Trees added to the curb line and close enough to each other created spatial definition, a prominent pedestrian zone that felt safe and provided physical comfort without negating the natural environment. There are few striking differences with the traditional design of urban boulevards that cause the experience along Washington Boulevard somehow to disappoint today:

- the lack of continuity of the urban fabric and urban design experience;
- the lack of wide sidewalks;

- the lack of lush trees closely spaced;
- the lack of plentiful attractions along the sidewalks.

Washington Boulevard is now seeing its vocational use shifting from a suburban car-driven model to a more urban, multimodal one (pedestrian, transit and bicycle) as Culver City's Downtown, the TOD District and the Arts District densifies, mix of uses intensifies, and craving for public space rises among new generations.

The essential purpose in re-envisioning Washington Boulevard as Culver City's Main Street should be sociability. It should be peopled, full of activity and life. The second purpose should be of providing civic mobility, reinforcing the corridor as the main East-West transit spine for the City, connecting the different districts and attractions.

Elements that should be considered in re-envisioning Washington Boulevard are:

- It should be a place for people to walk with some leisure, where you can meet other people;
- It should help make community, a setting for activities that bring people together, to encourage participation;
- It should be physically comfortable and safe;
- It should be remembered, leaving strong, positive impressions;
- It should be representative, possess a unique identity;
- It should be multimodal: to be truly civic people should be able to move through it in different ways;
- It should provide efficient and reliable transit service to allow people to reach different attractions without using the automobile.

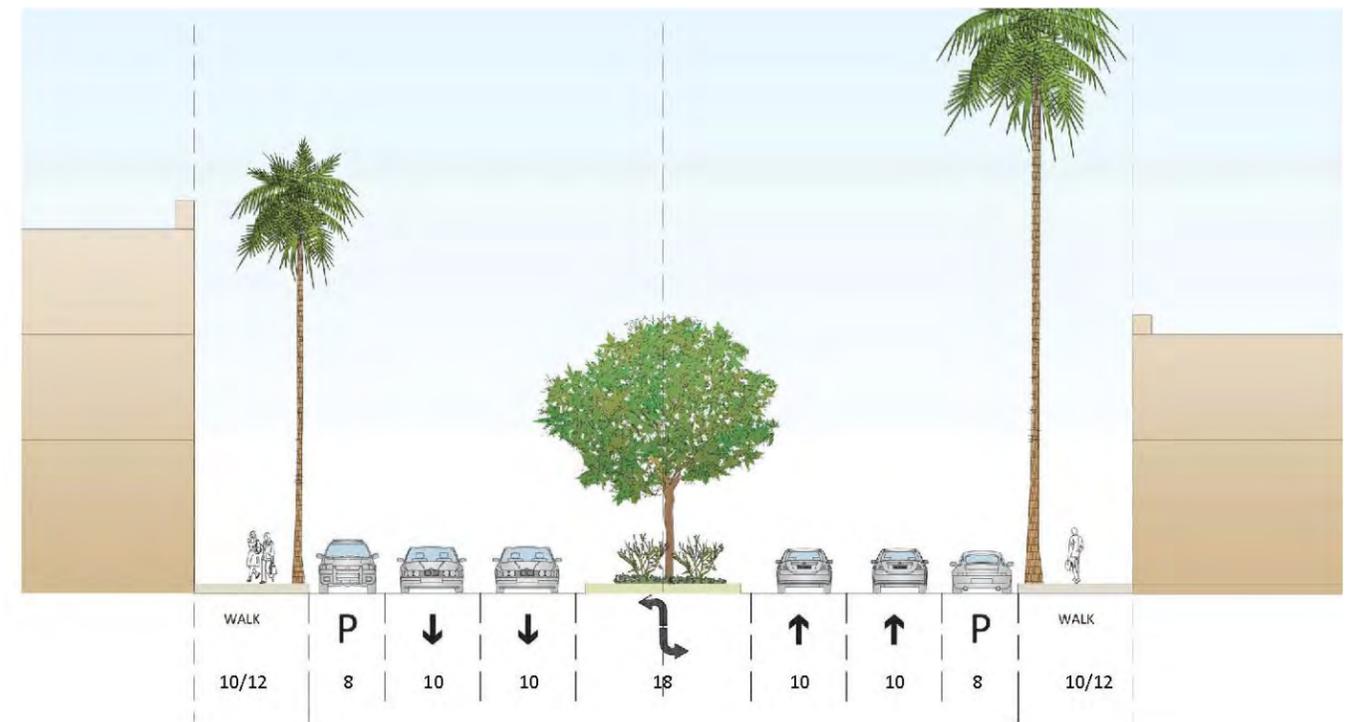
Washington Boulevard's most important future function will be that of giving structure and comprehension to the whole Culver City as it grows and matures in the next 20 years; becoming a distinctive link between important destinations and, at the same time, becoming a major destination in its own right. The re-design of Washington Boulevard, could become a strategic opportunity for the City to beautify its core, providing identity and space for sociability. In this direction, incremental approaches by means of Complete Streets and tactical urbanism techniques should be considered tools to jumpstart a much larger public-private place-making vision, also in lieu of the

upcoming General Plan update process.

Culver Boulevard is the second east-west city-wide axis. This Vision study imagines Culver Boulevard as Culver City's Main Cycling Spine, extending the existing protected bike path south of Elenda Street, to Veteran Park and to downtown along Culver Boulevard, and diverging then on Washington Boulevard to connect to the TOD District and to La Cienega Boulevard further east, with a possible future connection to an extended Ballona Creek bike path. This spine will be able to serve most of the residents in Culver City as it will touch most of the residential neighborhoods in the city and will provide, if protected from vehicular traffic, a valid alternative to the automobile to reach major destinations within the city.



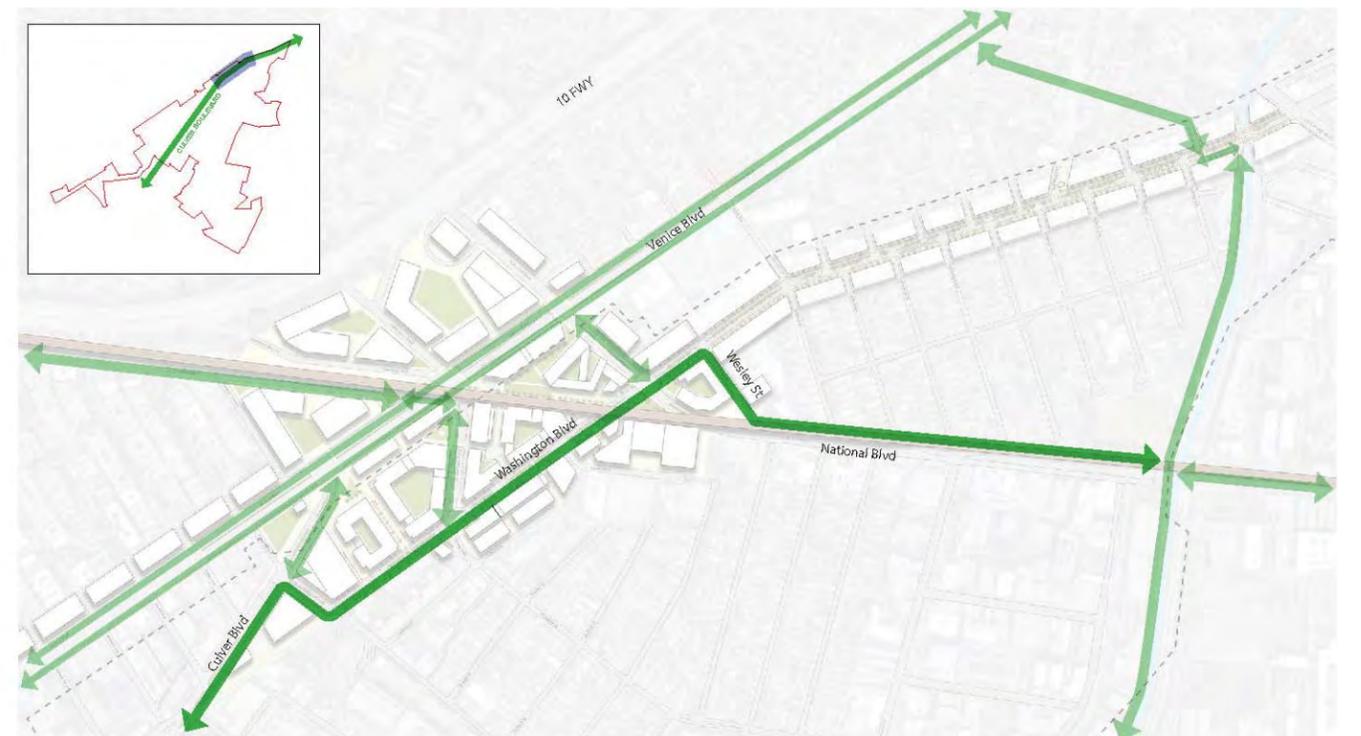
Washington Boulevard - Existing conditions



Washington Boulevard - Existing typical section



Cycling Spine Option 1: South side two way protected bike lane



Cycling Spine Option 2: South side two way protected bike lane to Wesley Street

RECOMMENDATIONS

The following are recommendations for a Complete Streets plan for the TOD District that could be implemented in the next 10 to 15 years. The proposed plan unfolds following two main ideas: Washington Boulevard as Culver City's Main Street and Culver Boulevard as Culver City's Main Cycling Spine, as discussed in the previous chapter. For the purpose of this study the proposed street design for these boulevards are shown only for the TOD Visioning study area but should be imagined for the full lengths of the boulevards throughout Culver City.

Reconfiguring Washington Boulevard - The diagram in the previous page shows the existing conditions of a typical street section along Washington Boulevard: two lanes each way for vehicular traffic, a central median, parallel parking and 10-12' sidewalks on both sides.

The diagram in the next page shows the proposed typical street section. Our recommendation is to reconfigure Washington Boulevard to accommodate:

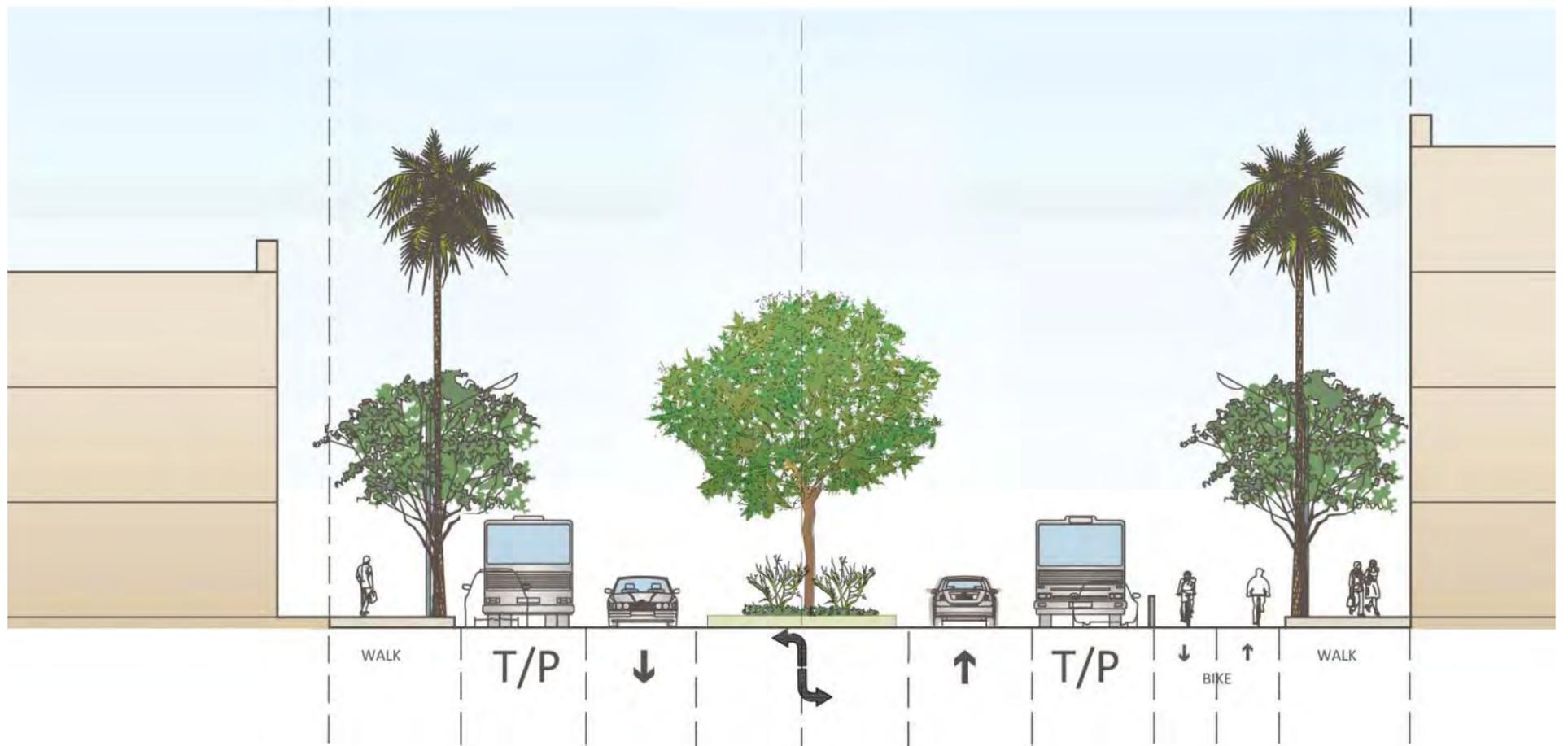
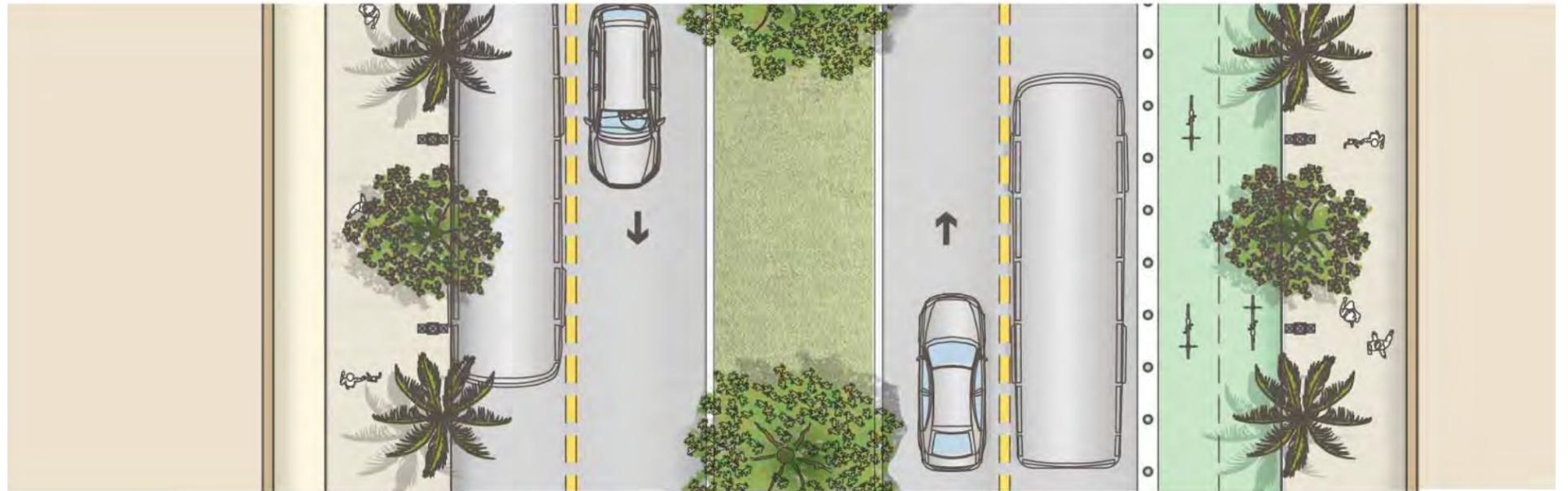
- Separated two-way cycle track on the south side of the street. The cycle track should be class IV (i.e. completely separated from vehicular traffic) to maximize safety and ease of use. Placing the cycle track on the south side will facilitate access from the residential neighborhoods for the most part located to the south of Washington. The cycle track should extend within the TOD District from downtown to the Expo Station and further east to connect to the Expo cycle track. Refer to Cycling spine option 1 & 2 from the previous page and also the bridge option (p. 39) for proposed alternative cycle track path extensions. This vision is also consistent with the Expo-to-Downtown Protected Bike Lane currently under study by the City, which could be considered an interim phase.
- Transit / flex lanes. One lane each way on the curb side should be dedicated as transit flex lanes. The flex lanes should be clearly and distinctly marked and considered as a flexible space. This could be managed over time to accommodate change in the community's travel behavior and in technology. It will also give a clear indication of the community's commitment to a multimodal lifestyle, open to innovation. The main purpose of these lanes is and will remain to improve public transit efficiency.
 - Initially flex lanes should serve as dedicated lanes during peak hours for buses, micro-transit, public service vehicles,

and first/last mile shuttles. During non-peak hours, flex lanes could be used to accommodate parking for commercial uses as existing today, or for vehicular movement.

- Over time flex lanes should become permanently dedicated to public transit. This will also be the space to accommodate new type of services like the autonomous vehicle (AV) micro transit.
- Vehicular movement. The central portion of the street should be dedicated to vehicular movement with one lane each way. Reducing vehicular capacity on Washington Boulevard has two main objectives:
 - discourage through traffic and cut-through traffic from using the street;
 - slow down speeding cars, making the space friendlier to other users.
- Central median. To improve left turns movement, the central median should be redesigned on the east portion of Washington Boulevard and extended all the way to the south to downtown. The central median will also provide an opportunity to break down the scale of the space making it more pleasant, to improve pedestrian crossing and to create a continuity in the character of the Boulevard. As the section of Washington Boulevard is narrower in the segment south of National Boulevard, it is proposed to use a 10' set-back on future developments on the north side to provide space for the reconfiguration of the street.
- Sidewalks. As already discussed, pedestrians are crucial in re-envisioning Washington Boulevard and the corridor is thought as a pedestrian first type of environment. The existing sidewalks along the Boulevard are currently 10 to 12' wide which is an adequate dimension for walking but not to introduce more 'place' type functions (like cafes, outdoor dining, pocket parks, etc.). It is recommended to introduce a 5 to 10' set-back on future developments along the corridor to allow for side walk widening coupled with a requirement for ground floor active street-frontage use. This will create pockets of activities along the streets and reinforce what is already in place in new developments like the Platform, making the experience of walking much more pleasant.
- Crosswalks and mid-block crossings. Intersections along

Washington Boulevard should be redesigned for pedestrians first. This means, provide maximum comfort (or higher level of service) for crossing at intersections to pedestrians. With this in mind, curve radii should be reduced to 15 or 10', typical of any urban walkable environment, lanes crossing should be minimized to improve safety and crosswalks should be clearly marked with distinct treatment. Mid-block crossing should be introduced to improve ease of crossing for pedestrians where block sizes are too long (over 300'), and to promote the continuity of the mid-block paths network already discussed. In the Arts District some of the central breaks of the median could be closed to traffic to rationalize vehicular movement and converted to mid-block crossing using the space of the median as safe island.

- Landscape and street furniture. The redesign of the Boulevard should also be the opportunity to rethink and extend the landscape treatment and public furniture along the corridor with a more holistic approach. This to provide a unique character to the place. Canopy types of trees should be introduced to provide shade to pedestrians strolling. Palm trees provide an iconic unique character to the Boulevard, particularly in the Arts District segment. They should be, at least to some extent, preserved and re-introduced in the design.



Washington Boulevard - dedicated transit / parking flex lane + two-way protected bike lane

The figures on this page shows conceptual three-dimensional sketches of the proposed treatment along Washington Boulevard from East to West. The following page show the Arts District section of the Boulevard with and without the two-way cycle track on the south side. In the first case the central median is reconstructed and shifted to the north.



3D View proposed Washington Blvd/Higuera St



3D View proposed Washington Blvd/Culver City Expo Station



3D View proposed Washington Blvd/Arts District



3D View proposed Washington Blvd/Arts District without cycle track

TOD Visioning Illustrative plan

The following illustrative plan shows one of the possible full built-out configurations of the TOD District for the next 10 to 15 years. The plan is drawn to reflect the recommendations in this document and is showing streets reconfigurations and potential new developments for illustrative purposes. The plan also shows likely redevelopment in the City of Los Angeles and highlights how these different elements will need to work together to fulfill the vision.

- In light yellow is represented the pedestrian environment;
- In light pink is represented the space dedicated to transit;
- In light green is represented the bicycle network;
- In darker green are represented opportunities for intersection reconfiguration and new pocket park/public space.

In particular, this illustrative plan shows:

Pedestrian environment

- All intersections are redesigned to minimize pedestrian crossing time. Curb radii are redesigned to 10 to 15’.
- Sidewalks are widened to a minimum of 10’ or more by using road diet or set-backs from new developments.
- The network of mid-block paseos is extended to create more porosity and access points for pedestrians to and from the Expo Station.
- Mid-block crossings are introduced to reinforce the network of mid-block paseos and break long blocks.
- Additional public space is created by streets reconfiguration.

Transit

- Transit/flex lanes are shown from Culver Boulevard into Washington Boulevard and extending all the way to La Cienega Boulevard.
- Bus stops locations are reorganized to improve quality of service, passengers comfort and exchange with other modes.

- Most of the east side of Robertson Boulevard is dedicated to transit and other public transportation services (micro-transit, shuttles, Uber/Lyft) layover or drop off/pick up.
- Mid-block pedestrian paseos and crossings are paired with bus stops around the Expo Station to maximize ease of interchange between modes.

Bike infrastructure

- A separated two-way cycle track coming from the west on the south side of Culver Boulevard and extending to meet Venice Boulevard future Class IV bike lanes.
- A separated two-way cycle track on the south side of Washington Boulevard extending from Culver Boulevard to La Cienega Boulevard and connecting to the Ballona Creek Bike Path.
- A separated two-way cycle track on Robertson Boulevard connecting Washington Boulevard to the Expo Bike Path north of Venice. The intersection on Venice and Robertson is redesigned to allow for bikes and pedestrians crossing on the west side of the intersection.
- The extension of the separated Expo Bike Path on National Boulevard north to meet Venice Boulevard future Class IV bike paths. This by removing a right turn lane at the intersection with Washington Boulevard and by reconfiguring the street section along National.

Vehicular movement

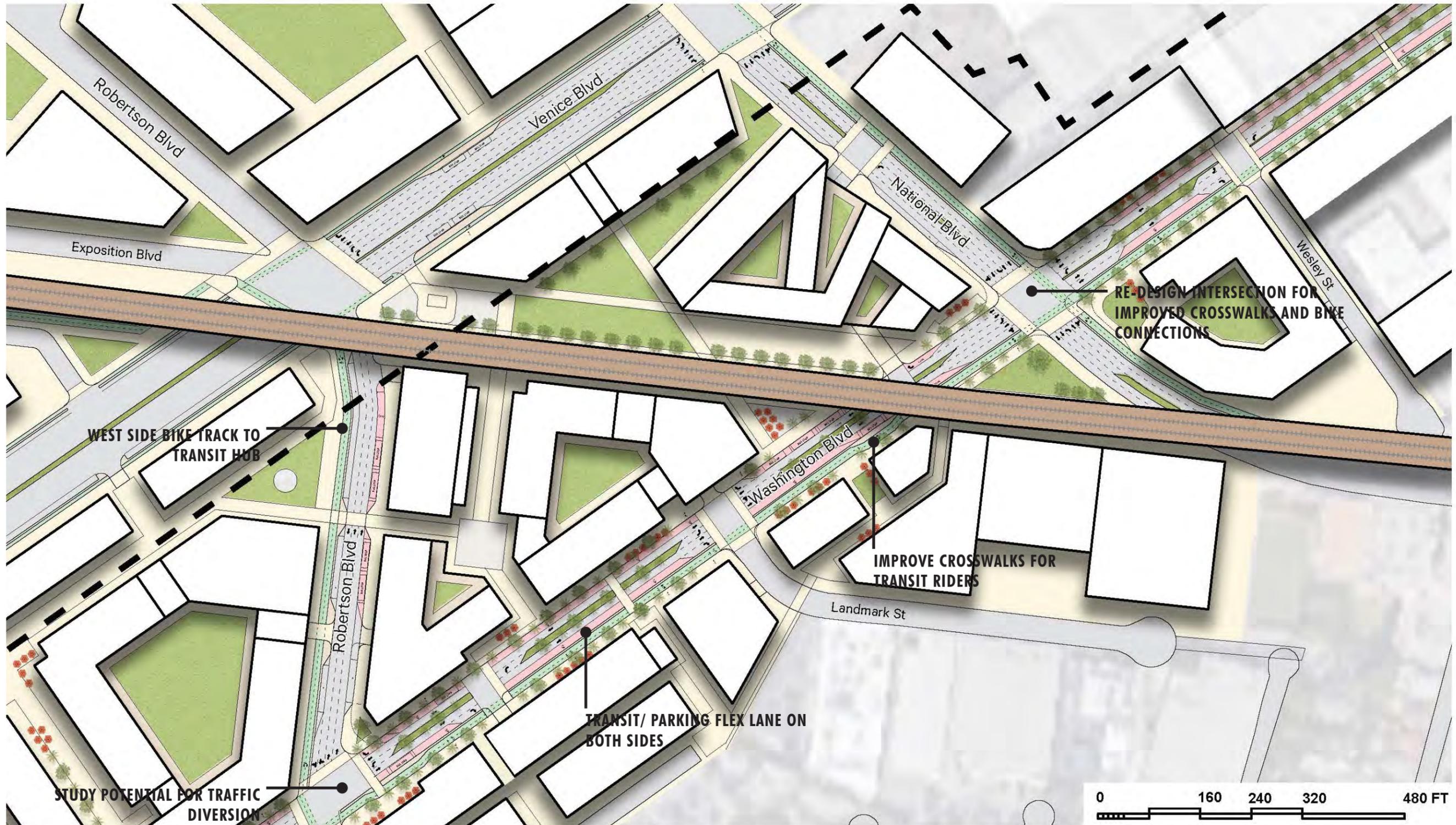
- Washington Boulevard is shown with one lane each way. The central median is redesigned and shifted north on the east portion of Washington Boulevard and extended all the way to the south to downtown, providing left turn opportunity as well as refuge for pedestrian crossing. A possible alternative solution for the east end, depending on further traffic studies during the implementation phase, will be to remove the median altogether and install a third traffic lane that would be a peak hour directional flex lane.

- National Boulevard median is also extended on the north portion to Venice Boulevard.
- Robertson Boulevard is reduced in vehicular capacity by providing one lane south and two lanes north to allow for transit movement.
- Intersection at Higuera and Ince on Washington are redesigned to improve pedestrian crossing and reduce vehicular capacity and car speed.



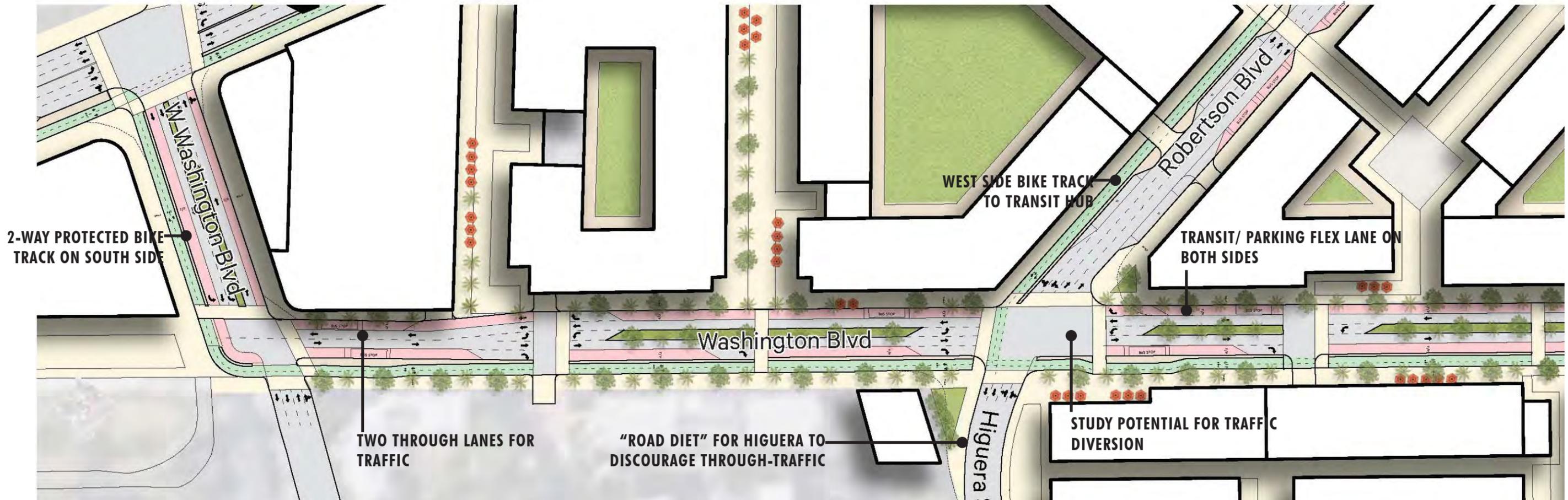
Illustrative Site Plan - Washington Boulevard as the Culver City TOD District's "Main Street"





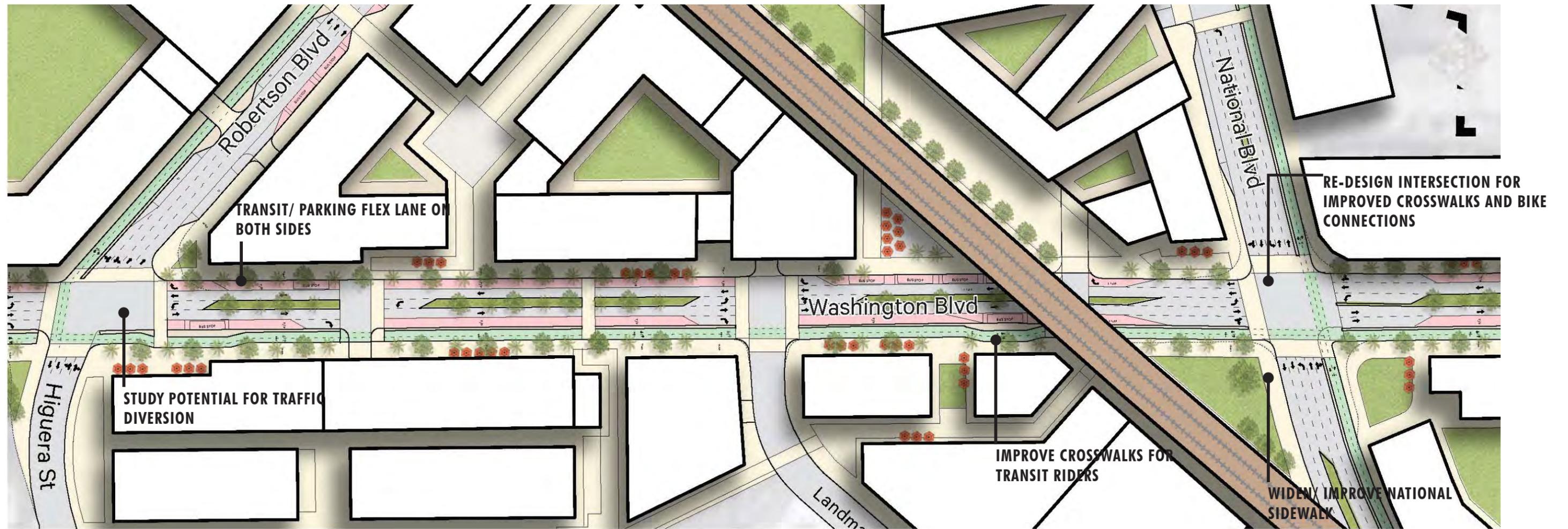
Washington Boulevard - Complete street recommendations

Illustrative Site Plan

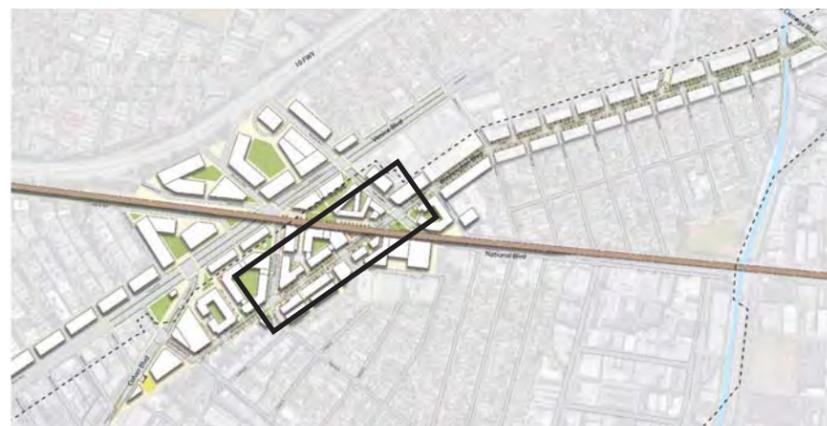


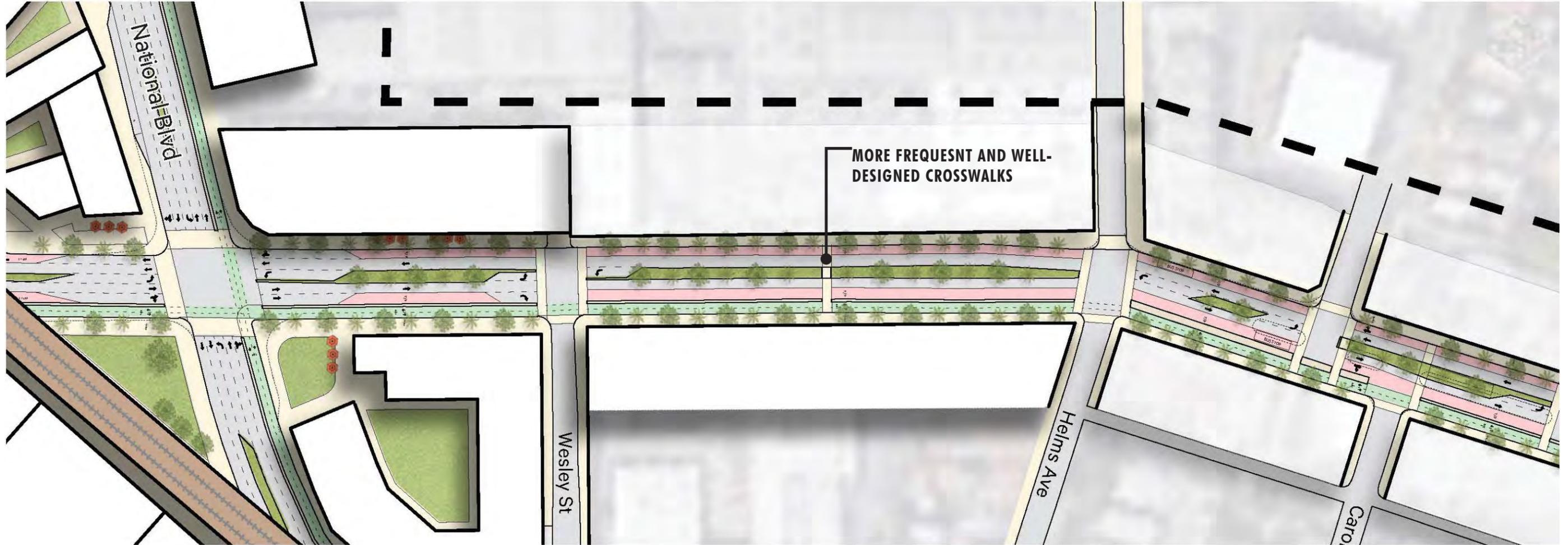
Washington Boulevard - Complete street recommendations





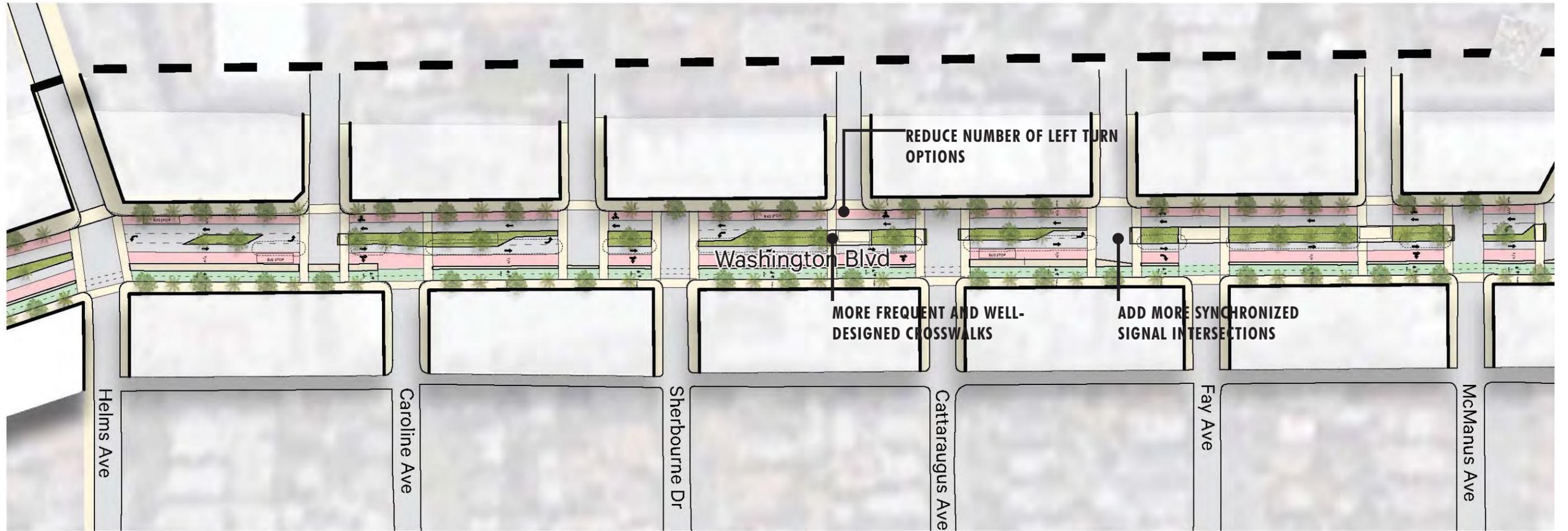
Washington Boulevard - Complete street recommendations





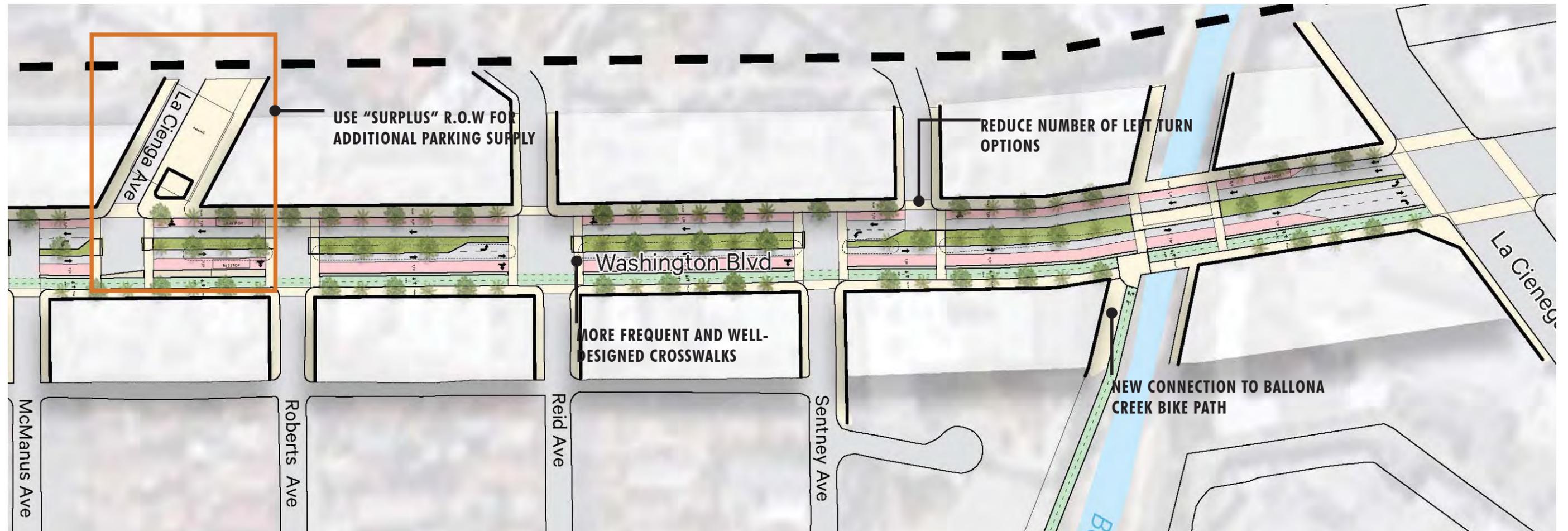
Washington Boulevard - Complete street recommendations





Washington Boulevard - Complete street recommendations

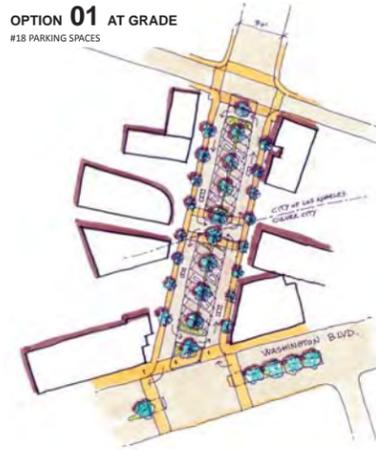




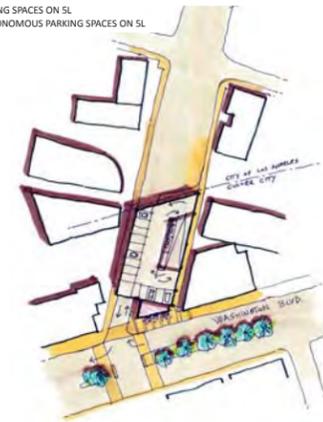
Washington Boulevard - Complete street recommendations



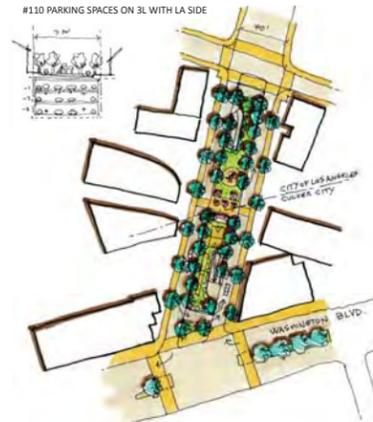
OPTION 01 AT GRADE
#18 PARKING SPACES



OPTION 02 PARKING STRUCTURE
#60 PARKING SPACES ON SL
#120 AUTONOMOUS PARKING SPACES ON 5L



OPTION 03 BELOW GRADE AND PUBLIC PARK
#110 PARKING SPACES ON 3L WITH LA SIDE



Three possible options (at left) for adding parking in the excess right-of-way on La Cienega Avenue at Washington Boulevard. This is an example of "found" options for perimeter parking supply facilities.

Immediate for the TOD District

There are a number of projects the City could begin immediately or put in place plans to begin at a later date. These projects could make immediate improvements and start to build towards the proposed Vision.

- Implement the Expo-to-Downtown Protected Bike Lane currently under study as an interim phase to the development of a more robust bicycle network.
- Implement transit/flex lanes along Washington Boulevard. Flex lane concept should also be extended to other areas of the city.
- Redesign street intersections in the district for pedestrians first, particularly focusing on Washington/National as major divider for east/west pedestrians and cyclist movement.
- Redesign sidewalks to meet minimum standards of 10'. This is particularly important on the south section of National Boulevard for instance, where walking and ADA accessibility is difficult or not permitted. This link is a critical first/last mile connection between the Hayden Tract and the Expo Station.
- Coordinate with City of LA and Metro to improve pedestrians and bicycles crossing on Venice and interchange with Metro transit system.

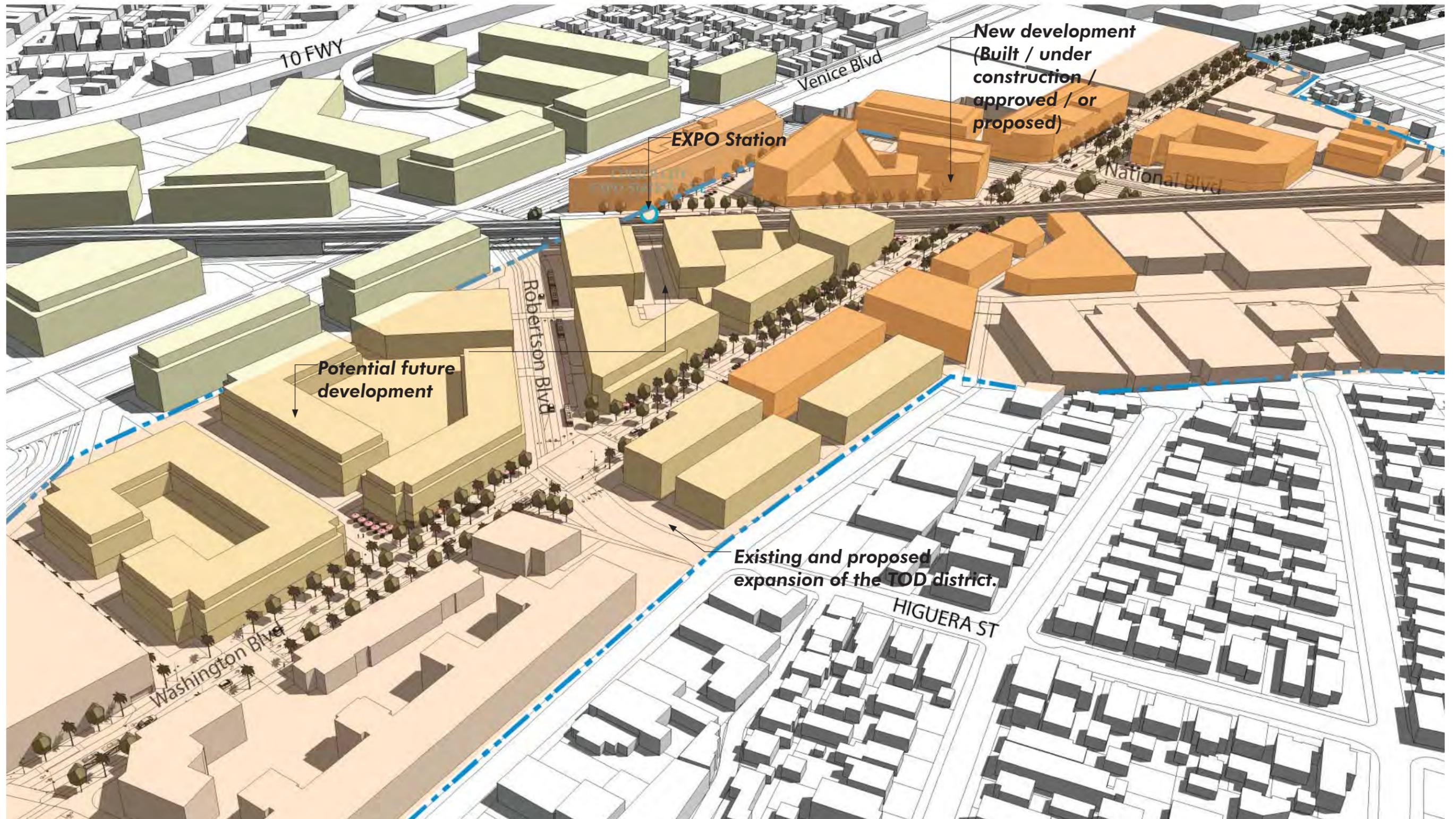
Considerations for TOD-adjacent Neighborhoods

The many neighborhood protection intervention measures discussed in this Vision Study should be studied and evaluated, using the established mechanism of the City's Neighborhood Traffic Management Plan (NTMP) program to assess their feasibility, explore specific design options, and foster community support. Through this process:

- Consider redesign of mini-roundabouts on Higuera Street to proper engineering standards to slow traffic and discourage volume.
- Consider additional curb-extensions or bulb-outs at intersections in the Rancho Higuera, Hayden Tract and Arts District to slow traffic, discourage traffic volume, and enhance pedestrian mobility and safety (coordinated with the micro-transit plan so as not to impede its efficiency).
- Consider installation of a cul-de-sac on Higuera Street north of Hayden Avenue.
- Consider prohibiting through traffic at the intersection of Higuera Street/Robertson Boulevard at Washington Boulevard.
- Consider additional traffic controls (stop signs) along Higuera Street and Washington Boulevard to slow traffic and enhance pedestrian mobility and safety.
- Consider installing high visibility cross-walks.
- Consider raised cross-walks to slow vehicles and enhance pedestrian safety on Lucerne, Ince, Higuera and other streets.
- Consider turn restrictions at select intersections on National Boulevard and other streets.

City-wide

As a next step of the Complete Streets element of the TOD Visioning Study the City should explore a city-wide Complete Streets Plan. The Complete Streets Plan transportation policy and design study will then help inform the revision of the Circulation Element in the upcoming General Plan update.



Potential TOD district build-out: Proximity to the Expo Station together with increasing demand for new uses will generate new development within the district, with Washington Boulevard as its "Main Street"



LINDA FARROW

DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS

3

TRANSIT ORIENTED DEVELOPMENT(TOD) DISTRICT POLICIES

TOD District Planning as Policy

The Center for Transit-Oriented Development (TOD) at the University of California, Berkeley, describes transit-oriented development as “a mixture of housing, office, retail and/or other amenities integrated into a walkable neighborhood and located within a half-mile of quality public transportation.” Increasingly, cities are recognizing the value of TOD area planning as a means for providing people with expanded mobility choices that reduce dependence on the automobile, and that improves the quality of life through walkable communities that promote healthier and more active lifestyles. Benefits of coordinated TOD area planning include reduced household driving and thus lowered regional congestion, air pollution and greenhouse gas emissions; increased transit ridership and fare revenue; the potential for increased and/or sustained property values; improved access to jobs and economic opportunity; and reduced household transportation costs. TOD area planning can also increase public safety by creating active places, play a role in the economic development of the district, contribute to more affordable housing, and protect existing single-family neighborhoods by directing higher density development to appropriate areas near transit.

TOD planning represents an approach to development focused on compact, walkable and bikeable places integrated with transit, in a community context rather than on individual development projects. Typically, TOD planning provides for greater densities, a mix of uses, and a quality pedestrian environment organized around a defined center.

- Higher densities. Greater residential density and intensity of workplace development, often defined in cities’ TOD policies as minimums, supports walkability and transit use by reducing walking distances between residences and other destinations within a quarter- to half-mile distance of transit. Parking requirements are often modified to include shared parking

policies, and are also expressed as minimums, to reduce demand for use of automobiles and increase support for transit and other modes.

- Mix of uses. Transit supportive land use policies encourage a mixture of residential, commercial, service, employment, and public uses, making many trips between destinations shorter and more walkable. Through development standards and urban design guidelines, first floor uses are required to be “active” and oriented to serve pedestrians.
- Quality pedestrian environment. Vibrant communities, with or without transit, always are convenient and comfortable places for pedestrians. Standards and policies for TOD districts focus on urban design, requiring convenient and appropriate building entrances, features that convey a sense of place, pedestrian-oriented amenities such as storefront windows, awnings, architectural features, lighting, and landscaping, wide and accommodating sidewalks that are interconnected, safe and convenient street crossings. And tree-shaded streetscapes with pedestrian-scale lighting.
- A defined center. Transit serves as the hub of the neighborhood and helps to anchor its sense of place. Planning policies reinforce this by encouraging multiple attractions and reasons for pedestrians to frequent the area through higher densities and more intense uses nearest the center, reduced parking requirements in closest proximity to transit, and strongly defined street frontages.

RECOMMENDATIONS

- **Expand existing TOD district boundaries**
- **Adopt a TOD ordinance (specific plan) including urban design guidelines**
- **Pedestrian easements and modified setbacks**
- **Encourage more mixed use and affordable housing to address the jobs/housing balance and to promote walk-to-work options**
- **Reduce or re-define parking requirements to encourage alternate mode use and require funding of a mobility fund**
- **Develop shared parking strategies and other TDM policies**
- **Require active street frontages**

In Culver City, TOD policies are found in several places in the City's codes, but at present there is no consolidated statement of the City's policies for development standards and public improvements. The City's Mixed Use Ordinance (17.400.065) defines mixed use development standards with specific reference to parcels identified for transit-oriented development. Within the specified TOD area, residential densities are allowed up to 65 DU per acre on the condition that proposed development also incorporate certain community benefits defined in Council Resolution 2008-R 015. These community benefits include streetscape improvements, addition of parks and public open space, or other benefits as defined on a case-by-case basis by the City Council. Approvals of projects within the designated TOD area are negotiated on a project-by-project basis, at the discretion and recommendation of the Community Development Director. To date this has yielded several projects that meet the general conditions typically required of transit-oriented development, but the process is lengthy and the City's conditions and requirements are not necessarily transparent as developers enter into the submittal process.

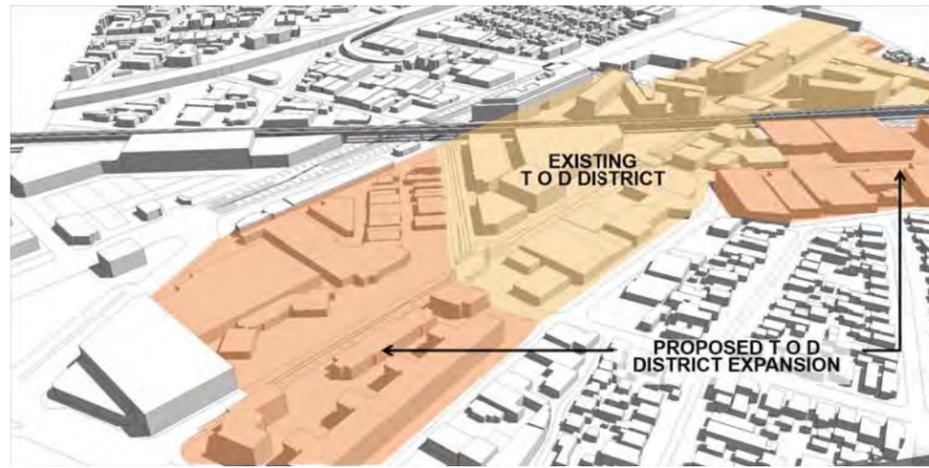
A TOD DISTRICT PLAN

Expansion and clarification of the City's TOD development expectations is recommended, through the adoption of a TOD ordinance or, more robustly, through a Specific Plan for the TOD district area. This will have the benefit of clarifying for the City, its residents, and prospective developers the expectations and standards that are required of projects to promote the supportive environment sought by TOD planning. For the City and its residents, such standards will establish a coherent set of agreed-upon requirements to support a high-level quality of life within the TOD area and its vicinity to get the type of environment that people want. For prospective developers, it will clearly state the requirements going in to the submittal process in order to minimize surprises.

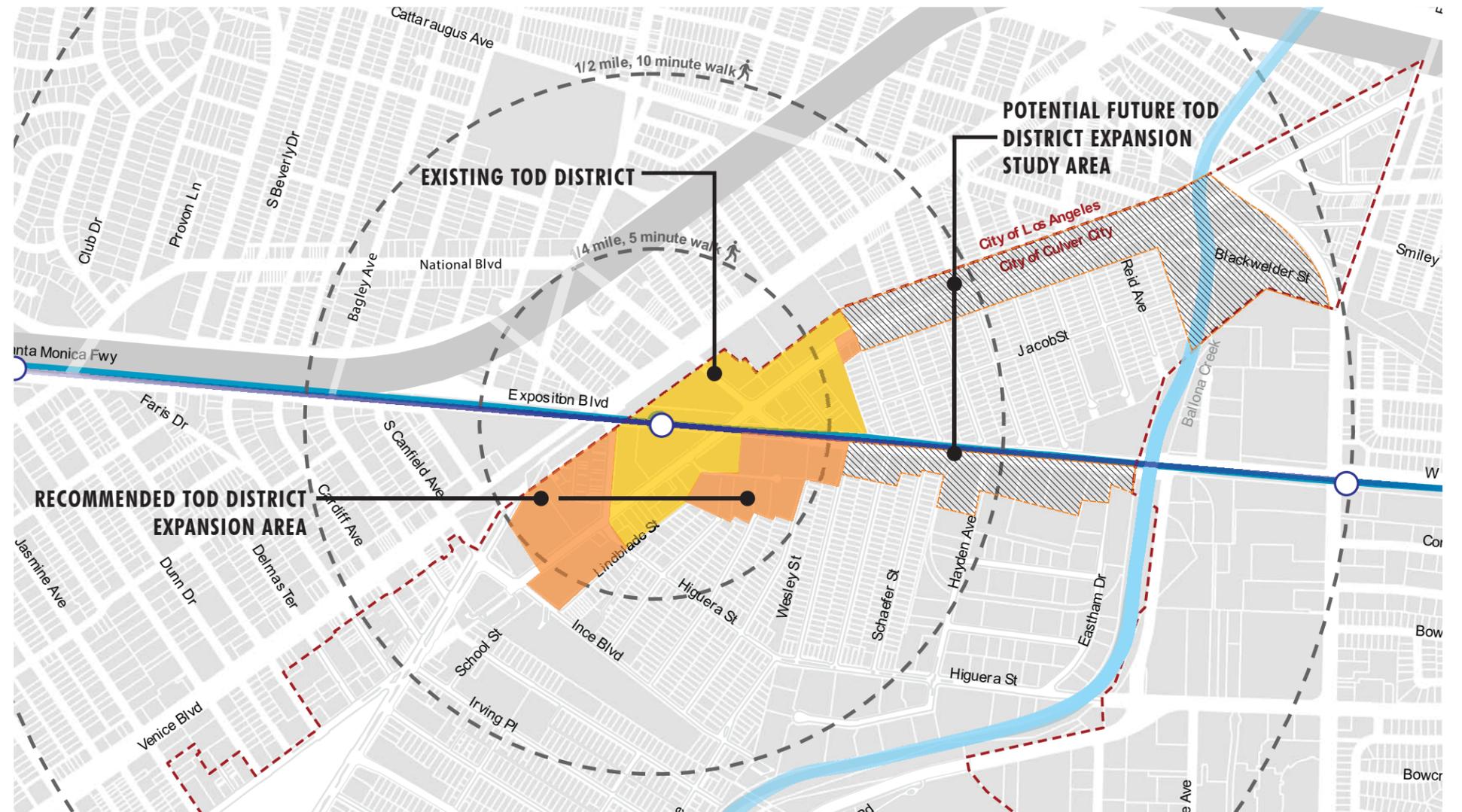
The Visioning Study recommends that the geographic area of the TOD district be expanded to embrace commercial properties fronting on Washington and National Boulevards, including parcels on Landmark and Robertson, which are adjacent to the currently identified TOD parcels but currently included in that designation. With the steadily increasing demand for new creative industry-related development in Culver City, it seems inevitable that these parcels may come into play at some point in the near future and that new development will be proposed for them. Indeed, the City of Los

Angeles anticipates exactly this type of demand on the north side of Venice Boulevard, where they are currently contemplating an up-zoning ordinance to permit higher intensity workplace development. Expanding Culver City's TOD district will give the City more control over new projects within the TOD area and help to ensure that the new development contributes to the life and vitality of the streets with an improved pedestrian environment, and that it will contribute to the objectives of mode shifts in mobility choice.

Adopting TOD policies as a Specific Plan will allow the City to set standards for urban design that contribute to the overall quality of the district. As an element of the Zoning Code, a Specific Plan can address such matters as minimum allowable densities, the mix of uses including housing and especially affordable housing, and to address new definitions of parking requirements either as maximums or as contributions to a shared parking strategy. It can also establish an urban design framework for the district, with standards and guidelines for streetscape design, additional setbacks for wider sidewalks and easements through large block parcels for pedestrian paseos, and requirements for active street frontages with retail and entertainment uses. It can also be coordinated with new Transportation Demand Management (TDM) policies (as described elsewhere in this report) to require participation in area-wide and, ultimately perhaps, city-wide programs to reduce individual automobile use, such as programs for employers to provide incentives to employees to take transit.



Transit oriented development district policies



Proposed expansion of the TOD district



4

PARKING STANDARDS AND POLICIES

CASE STUDY

Wilshire/Vermont TOD generates 2,228 automobile trips, which is only 43% of ITE estimates. Similarly, the peak parking demand is only 33% of that estimated with the ITE supply guidelines.

This is partially related to:

- Lower use of automobile in the TOD area: 26% Auto market share versus 27% walk, 21% bus and 20% rail.
- Optimization of use of parking spaces - with parking sharing between commercial and residential uses.

We focus on parking policies at greater length here because parking is a fundamental part of any development project, and its ultimate role in helping to manage traffic congestion is an area-wide concern not best solved on a parcel-by-parcel basis. The following discussion summarizes some of the general strategies and specific measures that might be incorporated into the TOD Ordinance / Specific Plan, while others speak to broader areas of the city beyond the half-mile radius from Expo Station. In all of the following, specific details and timescales are subject to further analysis and discussion with the City to fully comply with its mission and objectives. Ultimately, these and similar strategies should be extended to City-wide measures to maximize their impacts and benefits.

PARKING STRATEGY AND VISION

Before any changes to citywide parking policies are considered, the first task required is to carry out a full and integrated parking strategy analytic study. Right-sizing parking for TOD requires a full understanding of the existing and projected parking utilization and available supply in and around a TOD project area, as well as the projected demand for new parking once the project is completed. Conducting a diagnostic parking study that is comprehensive and aligned with mobility choices is essential to this effort.

The objective is to understand the existing situation and define a parking strategy that is fully integrated with the TOD overall concept, transit strategy and the City's goals and objectives. It must also be consistent with the dynamics of general mobility and technology trends that could further change the way we travel in the future. Also, this study will inform and could be extended citywide for the mobility element of the General Plan update.

A diagnostic parking study would need to comprise the following tasks, within the context of defining and confirming the City's goals and objectives.

- Understanding of existing demand. Data collection and analysis of existing demand by time of day, type of parking (on-street, off street), type of trip (internal, to/from Culver City), trip purpose (work, leisure, residential, visitors, etc.).
- Understanding of existing supply. Parking inventory (on and off street parking), location and pricing.

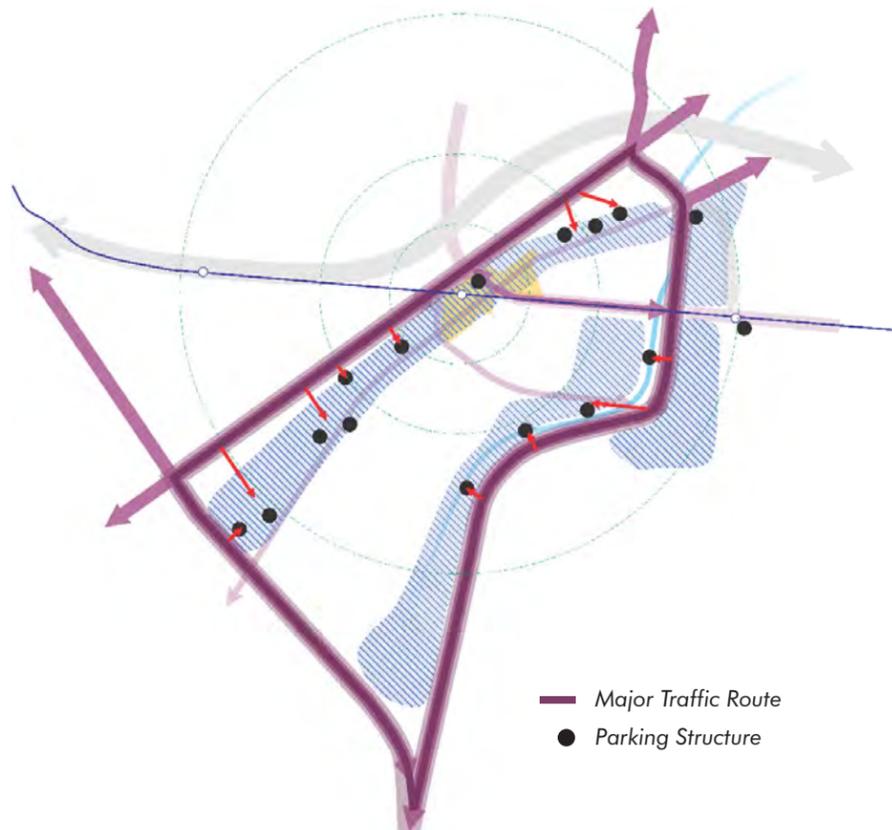
- Estimation of future parking demand. Based on TOD Visioning and target modal market shares and technology and mobility trends.
- Definition and evaluation of criteria. For short, medium and long term scenarios, to meet the City's goals and objectives.
- Financial feasibility and implementation.

Once the City has a clear understanding of the existing parking demand and supply, it will be important to define which are the short and long term needs/targets of parking based on the TOD objectives and the general mobility/technology trends.

Historically, planners have estimated the parking supply needs based on the Institute of Transportation Engineers' (ITE) Trip Generation and Parking Generation guides. However, this data tends to overestimate the parking needs, since it is based on auto market shares in suburban areas. It is worth noting that TOD zones do not need as much parking, since improved transit, walking or biking, result in a lower use of the automobile. In contrast, studies have shown that residents in TOD projects are twice as likely not to own a car as other US households. They are also two to five times more likely to commute by transit than others in the region.

On the other hand, residents will need access to cars even if not on a daily basis and commercial establishments require some amount of parking to service their non-walking clientele. Moreover, in many cases, developers will be unable to secure financing unless parking is provided.

According to the study Empty Spaces (2017) vehicle trip generation rates on TOD areas are less than half of those estimated by ITE (based on five pilot TODs), and the parking demand ranges between 19 to 46 percent of those estimated using the ITE parking supply guidelines. Overparking leads not only to an over-dimensioning of parking supply and low utilization of public space (which is a highly-valued commodity, especially near transit stations), but also encourages the use of the auto and is therefore contrary to TOD principles.



Shared parking strategy: Parking structures easily accessible from perimeter traffic spine.

ASSESSMENT OF CHANGES IN MOBILITY/ TECHNOLOGY TRENDS

To provide a reliable and holistic vision of future parking demand and the impacts of technology and mobility trends in Culver City it will be necessary to examine both global trends that contribute to changing user attitudes, and options as well as local uptake of existing technology disruptors. Active transportation is a means to deliver essential health, sustainable growth and environment objectives. The increasing use of active modes (i.e., walking and biking) is especially relevant in some demographic segments and type of trips and could have an impact on mobility patterns and the use of parking facilities.

One of the emerging themes likely to have a significant impact on the demand for parking is the balance between the private ownership of vehicles and a move towards a more usage-based model. Automotive manufacturers such as Ford have cited their ambition to serve this market. And a major study estimated that worldwide the percentage of shared vehicles on the road would reach 15 percent by 2030.

This change in ownership models is supported by new business models within the transportation sector with a greater distinction between the physical asset and the provision of service-based business (e.g. TNCs, rideshare solutions, car sharing, demand responsive transit, single occupancy CAVs as part of a shared fleet, multiple occupancy CAVs as part of a shared fleet, Mobility-as-a-Service, etc.). It is further reinforced by demographic changes, where younger generations in particular are indicating a decreased demand for car ownership (in the US, the percentage of young people between the age of 20 and 24 with a driving license has dropped from 91.8% in 1983 to 76.7% in 2014.) These user centric services are being particularly enabled by the rise in the market penetration of smartphones. In the US, it is estimated that 77% of the population will own a smartphone in 2016 compared to 35% in 2011. For 18- to 29-year-olds, 92% own a smartphone.

Clearly, we need to consider the impact of smart infrastructure, especially related to parking interventions. New apps providing information and guidance to affordable parking (JustPark and their

equivalents) and software companies such as LUXE are providing on-demand valet parking solutions: use your smartphone to request a valet service before you leave home and a representative will meet you and park your car for you at a nearby lot.

In addition to the functionalities offered by smart phone technologies, the most talked about technology in transportation is of course the introduction of autonomous vehicles (AV). It now seems clear that the technical challenges have been/can be addressed, and autonomous vehicles will be introduced into the fleets over the next years. On the one hand, AV will offer enhanced mobility to particular groups, such as those who are currently unable or unwilling to drive (the elderly, infirm, or those without driving licenses). On the other hand, autonomous vehicles will allow drop-off at destination and parking in cheaper locations, which could shift parking from downtowns (typically costlier) to outer areas. Also, on top of these direct impacts, autonomous vehicles will have significant impacts on car ownership trends and the development of more demand-based transit services. The implementation of autonomous technologies will encourage the vision of 'subscribing' to mobility, rather than owning a single mode.

Mobility of the future will depend on excellent software, simple digital payment systems and infrastructure that can best service on-demand services. In a "mobility as a service" scenario, users hire an AV to make a trip (either by themselves or through ride-sharing) and upon completion of that trip, the vehicle is hired by another user. In this case, the need for parking may be limited to the wait time between pick-ups, and may transform parking lots themselves into service centers where fleet vehicles are maintained and fueled/charged in preparation for their next hire.

This study would provide an understanding of the existing needs, and will allow to shape the future needs based on a global vision and strategy, integrating parking policies and needs in the broader TOD strategy and mobility trends. One of the key outcomes of the study would be to identify the TOD parking supply needs under the new vision, and how to distribute this supply geographically and across the different parking typologies for on-street parking and for off-street parking, including new development parking.

PRELIMINARY RECOMMENDATIONS

On-Street Parking

Donald Shoup in his research (2004) indicates that 8 -74% of commercial center traffic congestion is caused by vehicles cruising for an on-street parking space. Cost-recovery parking fees (such as 50 cents per hour or \$5.00 per day) typically reduce automobile travel by 10-30% (VTPI, 2016). This indicates that parking pricing is a very powerful and effective congestion reduction strategy (second after congestion charging). Therefore, some of the intervention measures to explore include the following:

Reduce on-street parking supply.

Reducing parking in major streets around commercial and employment areas (i.e. Washington Boulevard, National Boulevard and Culver Boulevard) will help to prioritize transit /active modes and avoid congestion resulting from traffic idling searching for parking.

Apply on-street parking pricing strategy.

Parking pricing means that motorists pay directly for using parking facilities. Parking pricing may be implemented as a TDM strategy (to reduce vehicle traffic), as a Parking Management strategy (to reduce parking problems), to recover parking facility costs, to generate revenue for other purpose, or as it is in this case, for a combination of these objectives. However, in order to be successful, it is important that the pricing strategy is applied correctly and in coordination with other efforts (such as transit improvement, encourage development and economic growth, etc.). On-street parking strategies with pricing based on the impact on congestion could include:

- Reducing on-street Parking capacity in key urban roads (i.e. Washington Boulevard, Culver Boulevard). This measure would reduce traffic congestion resulting from idling traffic searching for a parking space in congested areas. Moreover, this existing parking capacity can be used to improve infrastructure for transit/active modes, making them more competitive and therefore encouraging modal shift.
- Pricing strategies by time of day and day of week, with higher price on peak periods might encourage traffic shift to less congested periods.
- Pricing strategies by geography with a higher price on congested areas to incentivize parking in outer areas, with less congestion

impact. A strategy of this type could be applied along the Washington Boulevard corridor.

- Pricing strategies by type of user with on-street parking allowing only specific types of users to help manage traffic and incentivize the use of the available space by specific users. This could include, for example, rotation parking with time limits if incentivizing commercial use; residential parking if incentivizing use by locals; disabled parking if incentivizing use by disabled or seniors; or electric vehicle parking with charging facilities if incentivizing use of electric vehicles, etc.

Some of the measures to be considered include definition of different typologies of on-street parking areas depending on existing demand and identified user priorities. For example, rotation parking around key commercial/employment areas (Washington and Jefferson Boulevards), with metered parking with a time limit of 1 or 2 hours to encourage short stay use and avoid use by employees or other long stay users. Also, residential parking could be limited to designated areas to reduce commuting traffic idling around residential areas searching for parking.

Rotation and residential parking areas could be initially limited to the key congested areas along the Washington Boulevard corridor, and could be extended in time - in line with increasing availability of off-street capacity. Pricing strategies could be gradually applied based on geography - with central (congested) areas being more expensive than the outer areas - to encourage parking before entering congested areas.

Optimize information and pricing strategy to minimize congestion.

A real time Parking and Wayfinding System helps visitors find venues and parking more easily. Pricing, information and tariff collection technology also manages on-street parking dynamically with some success.

Anticipating automated vehicle technology.

Prepare for the potential role of on-street parking in a "AV scenario," in a "mobility-as-service" scenario. Users hire an AV to make a trip (either by themselves or through ride-sharing) and upon completion of that trip, the vehicle is hired by another user. In this case, the need for on-street parking may be limited to the wait time between pick-ups at central locations.

CASE STUDY

Parking supply and pricing often have a direct impact on the ability to create compact, healthy communities. Implementing paid on-street parking in targeted areas and eventually in other areas of the TOD Overlay Zone has several benefits.

On the one hand, charging for parking is the most direct way to both reduce parking demand but also helps ensure the availability and turnover of on-street and improve the utilization of off-street spaces. Some success examples include the following :

Aspen, Colorado

Aspen experienced growing parking problems due to its success as international resort. The city built an underground parking structure but occupation was very low. In 1995, the city began charging multi-space meters with parking fees highest in the center and declining with distance from the core. Parking was also priced on residential streets, with residents allowed to a limited number of passes. Although downtown workers initially protested, the strategy proved to be very effective and 6 months later the program was heavily supported.

CASE STUDY

Downtown Pasadena

The city proposed pricing on-street parking as a way to increase turnover and make parking available to customers. All revenues were allocated to public improvements to make the downtown more attractive. This resulted in extensive redevelopment of buildings, new businesses and residential development. As a result, local sales tax revenues have increased far faster than any other shopping districts with lower parking rates or nearby malls with free parking.

CASE STUDY

San Francisco

The SFpark pilot project provided real-time information on parking availability and cost; reducing double parking, circling, and congestion; and improving parking ease and convenience.

A high-caliber data management tool allows the San Francisco County Transportation Authority to make rate-change recommendations, supply real-time data, maintain optimum operational and contractual control, and rigorously evaluate the pilot's various components.

The SFpark pilot evaluation has been released and demand-responsive rate adjustment continued to be applied in the SFpark areas. The evaluation showed that after SFpark, San Francisco saw:

- Average parking rates were lower;
- Parking availability improved;
- It is easier to find a parking space;
- It is easier to pay and avoid parking citations;
- Greenhouse gas emissions decreased;
- Vehicle miles traveled decreased.

The SFMTA will use the results of the evaluation to develop a proposal for expanding the SFpark approach to the SFMTA's other meters, lots and garages in the city.

Off-Street Parking.

Off-street and on-street parking strategies need to be fully coordinated to ensure that there is enough supply for all user segments, but also to optimize the use of the existing capacity. A well-organized system of parking can result in better utilization of existing facilities and reduce the perceived need for additional parking to accompany investments in office or mixed use developments. An important benefit is avoidance of an oversupply of parking that could compete with a growing transit system. Identification, sizing and location of a strategic off-street parking network will need to meet two objectives: (a) to provide off-street capacity to compensate (if required) for the reduction of on-street capacity; and (b) to re-direct traffic to strategic parking locations that minimize the congestion impact in the TOD area (i.e. close to the key access roads or feeders, mainly Venice Boulevard to the North and Jefferson Boulevard to the South). Some of the intervention measures to explore include:

Apply pricing strategies.

Pricing strategies for off-street parking should be applied to consider peak and long-stay parking (i.e. commuters; employees, students, etc.) in outer areas, with more affordable prices for long-stay parking; and short term parking (commercial, visitors, etc.) in central areas, with parking availability for rotation and higher hourly fees (with potential subsidies from commercial businesses).

An off-street parking facilities network with pricing strategies based on congestion impact with a coherent approach to on-street parking is a more complex issue. The Visioning Study's recommendations include the reduction of on-street parking capacity in order to prioritize the use of public space to other uses to manage traffic more efficiently. However, these measures need to be complemented with the provision of additional parking capacity around the perimeter of the TOD area as proposed elsewhere in this report.

A network of off-street facilities in a combination of existing and future parking facilities, strategically located at the access points of the city's districts, would encourage the early diversion of traffic to those garages and minimize traffic impact. Specific approaches and policies could include:

- Pricing strategies by geography with higher pricing on off-street facilities located in congested areas will incentivize the use of alternative modes (transit/active) or to park in outer areas with less congestion impact.
- Pricing strategies by time of day and day of week with a higher price during peak periods would also incentivize shifting of trips to less congested times of the day.
- Pricing strategies by type of user would incentivize the use of available space by specific users. For example: rotation parking with time limits in commercial areas; residential/employment parking permits if incentivizing use by residents/workers; electric vehicle parking with charging facilities if incentivizing use of electric vehicles, etc.
- The optimization of parking spaces could also be encouraged by implementing mixed-use pricing strategies with shared use of employees (i.e. daily passes) and residents (i.e. night/weekend passes).

Pricing integration.

The network of off-street parking facilities should be considered as critical intermodal facilities with a special attention to transit/active mode integration. The success of this measure is heavily reliant on the optimum connectivity of this network with key destination areas within the City (commercial area, employment centers, administrative centers and residential areas). Micro-transit and pedestrian/bike integration is critical, not only from the infrastructure and service perspective but also with full pricing integration (i.e. free shuttle or bike share if using outer garages).

Optimize parking utilization.

Encourage optimum use of existing and future parking facilities to optimize parking utilization. Traditionally, the objective of parking ordinances has been to make sure that ample parking spaces were provided for individual land uses. As discussed above, these minimums result in an overabundance of parking, since many of these facilities have distinct patterns, for instance office parking is generally empty in the evenings and on weekends and residential parking is generally emptier in the mornings. This over supply of parking induces more driving while also leaving many spaces underused, which in turn, inhibits the possibility to design more compact developments and neighborhoods.

A better utilization of the existing facilities could be achieved by encouraging shared use of parking. By taking into account different peak parking demands, shared parking areas reduce the total number of parking spaces required compared with simply adding together the parking requirements of each individual land use.

Shared Parking and Parking Management Districts.

Some local jurisdictions have adopted ordinances that contained sections permitting reduced overall parking when shared parking is provided, involving contractual agreements between adjacent uses. Shared parking works best in situations where there are somewhat dissimilar land uses, with different peak hours of use (i.e., a hotel and an office, or a home supply store and a movie theater, etc.). That is why TOD areas are particularly appropriate.

Shared parking facilities make spaces publicly accessible rather than reserved for a particular tenant or property owner, and parking may then be traded as a commodity. It may be privately constructed and/or operated, depending on a contractual agreement, but ideally should remain within the government's jurisdiction for long-term transport planning purposes. However, this also requires eliminating free parking. Shared parking unlocks the potential for higher development densities around transit and acts as a control mechanism against urban sprawl. According to ITDP studies, shared parking can reduce parking requirements by 20-40%, creating positive economic, social and environmental benefits.

There are several conditions that apply to the development of a shared parking strategy and implementation of a parking management district.

- First, the City must understand the actual parking demand in a neighborhood.
- Eliminate minimum parking standards;
- Change zoning regulations and encouraging shared parking arrangements;
- Educate owners and tenants on bundled parking and the associated costs;
- Promote public transport and walkability through coordinated investment.

CASE STUDY

Seattle

Since 2011, Seattle Department of Transportation's (SDOT) has implemented an on-street performance-based parking pricing (SeaPark), based on the lessons learnt with a Pilot study carried out in 2011.

Seattle system uses parking occupancy and turnover data to set parking rates and rules that drive demand patterns in a way that achieves a clearly stated policy objective. A Performance-based parking pricing program can grow over time to include new data sets, expanded demand management strategies, and more sophisticated technology.

As articulated by the City Council, performance-based parking pricing in Seattle is intended to achieve an objective of meeting the target occupancy of one to two on-street spaces available, on average, per blockface throughout the day.

SDOT calculates peak parking conditions to adjust hourly rates and/or time limits, ensuring balanced occupancy and space availability on each city block. Its "After 5" program extends the normal two-hour maximum by one hour from 5 to 8 p.m., giving people time to enjoy dinner and a show. The "Best Value" program encourages parking outside the congested core to areas with longer time limits and/or lower rates.

However, the new pricing relies in data collection and the lack of dynamism has been criticized compared to other systems (SF).

CASE STUDY

City of Indianapolis

The mixed-use Circle Centre was able to reduce the provision of parking by 53% from the standard regulations by using a shared parking approach. That also amounted to a saving of \$10,000 USD per space to the developers.

In Culver City the saving amount could be of about \$30,000 per space for parking structure and of about \$50,000 per space for underground parking.

City of Ann Arbor

The city's Downtown Development Authority coordinates parking availability, location and price as part of the larger transport system that is essential to the urban core's vitality and growth. Revenue from public parking helps subsidize transit passes with priority spaces offered to car-sharing, vanpools and electric vehicles. Cost and lack of parking availability is cited as a top reason people shift to *modes other than driving*. *The city makes an effort to keep walking and cycling infrastructure and transit mobility in top shape while helping to satisfy parking demands with existing public spaces.*

Montgomery County, Maryland

The County has several parking management districts that correspond with central business districts in several cities, such as Bethesda and Silver Spring, where a shared parking program is part of a long-term strategy to offer parking as a shared resource. The program enables financial lenders to consider shared parking if they are likely to withhold financing due to lack of parking in a development on-site plan. This has helped promote mixed-uses around transit.

- Optimize information and pricing to minimize congestion impact. A collaborative system with a unique approach including a common pricing strategy, parking guidance system and a common branding program would be a more cost-effective approach for meeting parking needs. The objective is to efficiently use existing and new facilities (especially those located in key locations) by coordinating available parking to meet demand and its shifts during the day and optimize utilization, as a cost-effective alternative to new construction.

Another key factor to minimize the impact of motorists searching for parking is to provide efficient wayfinding and information. There are multiples technologies that facilitate this tasks providing real time information with garage identification, pricing and parking availability. A collaborative parking system could provide opportunities for owners and operators to more effectively market their parking facilities based on support provided by the collaborative's marketing and branding.

Parking network integration.

In order for a Parking network to fully work, it needs to be fully integrated with the rest of the Transit and Active mode network. To encourage drivers to park out of the congested areas, we need to provide frequent and fast transit /active mode access to key destinations from all the "off-street parking facilities" with integrated fares (free shuttle or bike share to access final destination) and high quality service and information.

Anticipating automated vehicle technology.

Preparing for the potential role of off-street parking in a “mobility-as-service” scenario, users hire an AV to make a trip (either by themselves or through ride-sharing) and upon completion of that trip, the vehicle is hired by another user. In this case, the need for off-street parking may be limited to the longer wait times between pick-ups, and parking facilities may transform themselves into service centers where fleet vehicles are maintained and fueled/charged in preparation for their next hire. These centers are likely to be located in outer areas with cheaper fees.

Funding sources.

It is worth noting that parking strategies not only contribute to the overall strategy to shift traffic to transit and manage existing traffic more efficiently, but they also generate additional revenue to the city, which could contribute to the funding of the TOD Visioning transit measures. If a comprehensive plan is developed, part of the plan could be delivered through Public/Private Partnerships. However, in order to be successful, the City needs to develop a comprehensive approach that emphasizes leveraging parking infrastructure investment as a key element of community and economic development.

CASE STUDY

Beijing, China

In early 2011, the Beijing government started promoting shared parking by encouraging and guiding institutions in opening their parking lots to the public after work hours. By the end of 2011, 61 parking lots were sharing 8,946 spaces in 6 central districts. Most of these shared parking lots are open to residents in the surroundings between 6pm and 8am. In late 2013, the Beijing government approved another policy on shared parking where more details of the mechanism were explained. Charging for parking must be within the parameters permitted by the Parking Price Bureau and registration must be completed with the Industrial & Commercial Bureau

CASE STUDY

City of Seattle

e-Park, an innovative electronic parking guidance system, uses dynamic real-time message signs and web information to direct people to available off-street parking at numerous downtown garages.

CASE STUDY

Many Spanish cities are planning their Public Garages with a specific purpose within a strategic network and with a fixed pricing strategy; only short stay (in central areas), only long stay (residential/office) or mixed. For example, el Puerto de la Cruz has designed a Public Parking network and pricing strategy based on congestion impact. This has been designed together with an on-street parking policy and garages are expected to be procured bundled in P3 Projects.

SISTER CITIES

URUAPAN, MEXICO
1,421 MILES →

KAIZUKA, JAPAN
← 5,733.6 MILES

IKSAN, SOUTH KOREA
← 6,035.2 MILES

LETHBRIDGE, CANADA
1,118.7 MILES →



5

SMART CITY & WAYFINDING

Smart City

What is a 'Smart City' and why should Culver City become one?

A 'Smart City' is one that puts its users first and seamlessly and effortlessly provides them with viable and attractive mobility options. Those who use the roads, the buses and the bike lanes to lead their lives and run their businesses. Culver City should make every effort to enable and support lifestyles that rely less on the automobile and offer viable alternatives. Technology can support these efforts.

As mentioned elsewhere in this document, Culver City's roads and streets should ultimately be sociable. They should be 'peopled, full of activity and life'. Its residents, visitors and commuters should be happy. Technology has an important role to play in the creation and growth of a Smart City, and ultimately connected and fulfilled travelers, but should not be considered the answer to all issues. Deploying technology should be considered and the end goal carefully outlined and monitored. Any decisions made should be data driven. It must support the need to make Culver City's streets more sociable and user-focused – be it an app, a smart parking system, shared vehicles or an autonomous Downtown Connector – and ultimately be measurable.

It is important that the TOD Vision suggests Smart City pilots and projects that put the user first, as well as integrating with the Culver City Mobility Plan's supportive policies. Any technologies deployed should be done so in partnership and delivered from a single platform or dashboard, with clear agreements between parties that benefit the City – be it through data sharing principals or sharing revenues generated.

How does Culver City become a 'Smart City'?

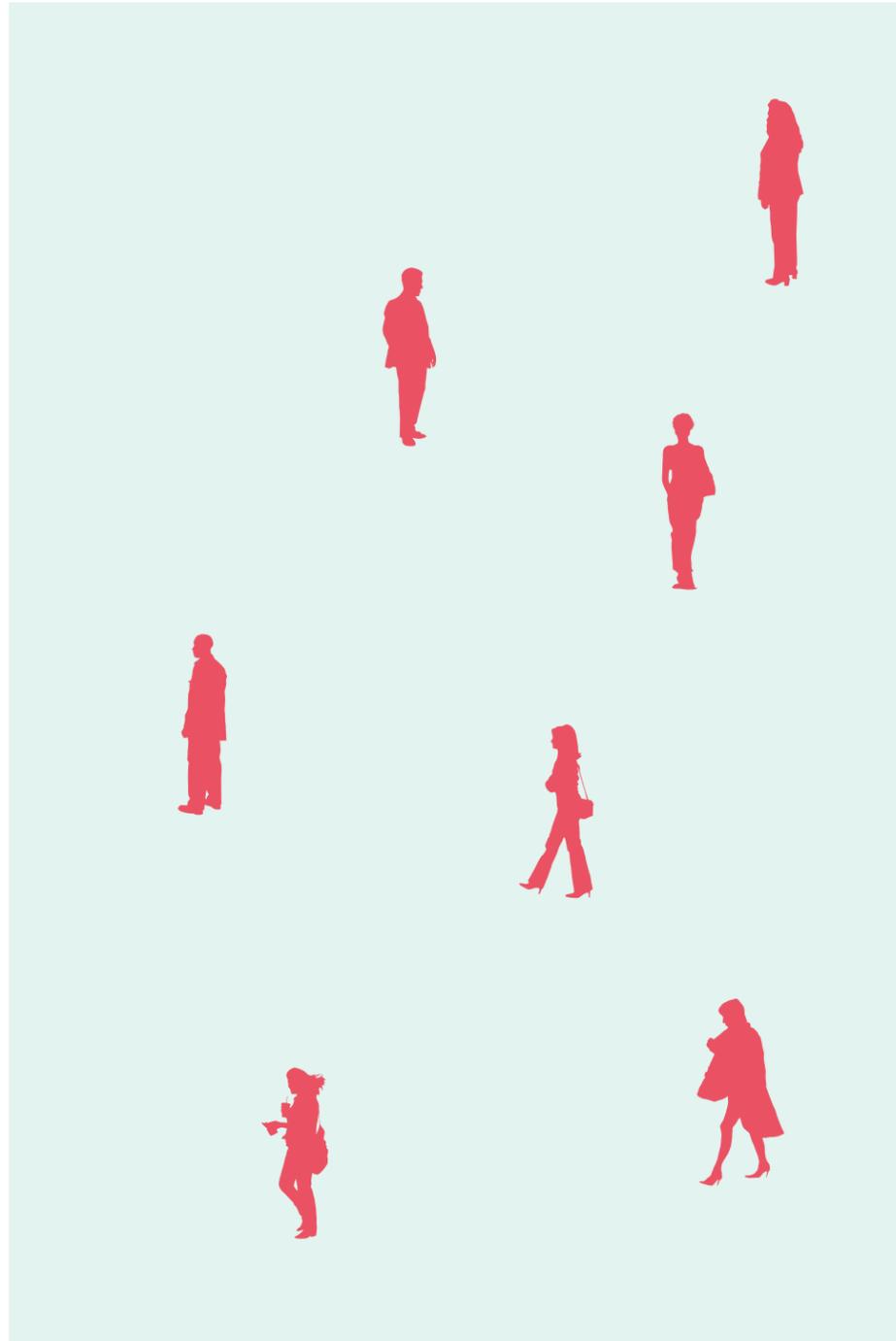
There is a need to be strategic and focus on three core aspects of a smart city - data, mobility and infrastructure- and a strategy should be put in place to:

Improve the user experience of the City – make it easier to use and pay for mobility

- Understand your users – carry out detailed user experience research across a broad range of demographics (what apps do people use? What are the pain points in their journey?) and create viable user personas. These can then be used to deliver user-focused smart cities projects – from dynamic parking information to 'all in one' smart phone apps
- Engage with property developers – help them understand how new technologies can help manage parking, save money and provide their tenants with brand new mobility services such as electric carsharing. Align this with the TDM plan.
- Make transit easier to use, safer, more reliable and more attractive as an option. Embrace mobile ticketing, real time information for arrivals and easy ways of reporting issues on board or at stops.

Leverage existing data sources, create partnerships to share data, and consider new technologies to create new data sources.

- Steps: Understand what data is available (parking data, bus arrival data for example) which strategic partnerships should be explored to create or administer new data sets (companies such as Waze and Google).
- Consider 'mobility as a service' - a single online platform that provides travel options and a simple means to pay for them. Allow a user to book and pay for any mode through their phone using one app.
- Steps: Consider all viable modes, how people pay for them (including services provided by Metro) and understand how payment platforms
- could be used to deliver seamless travel – such as contactless and mobile payments (such as Apple Pay)
- Make better use of existing infrastructure – road space should be shared with all modes, including new modes such as automated vehicles. Also, consider the possibility of 'infrastructure as a



service’ where pay-as-you-go user fees are charged for road usage.

- Steps: Consider smart technologies for parking management – stop drivers from circulating and instead push useful information to their cars/smart phones. If parking is full, tell them before they leave and offer alternatives.

Smart City Recommendations

Bikeshare systems.

Bikeshare offers a great opportunity to accommodate first and last mile trips connecting with the Expo Station. Also consider the difference between managed and funded systems (which cost the city money and the city has control of), and of unmanaged and unfunded systems (which cost the city nothing but for which they have no control). Culver City has recently conducted a Bike Share Feasibility Study and is in the process of bringing a bike share system to Culver City by 2018.

Electric carshare systems.

Carshare companies such as Car2Go will place shared electric vehicles in cities. This supports those who don’t need a car – use transit for longer commute trips and carshare for local or shorter trips. Other innovative companies, such as Envoy, are providing carshare services to apartment buildings and other developments – as part of tenant services.

An all in one app – a single platform for planning and paying for trips in Culver City and beyond, using a smart fare system.

We’ve heard from residents that they are tired of using multiple apps to do multiple, but connected tasks. This includes planning trips, checking for parking, sharing a bike or car, paying for services etc. Using innovative ‘mobility as a service’ technology, a single app

and data platform could be developed that covers all modes of transportation, and provides Culver City with the data they need to understand how their population moves and interacts.

Electric on demand microtransit Downtown Connector.

An electric microbus service that connects the TOD Vision area with Downtown, and elsewhere. It could be made on-demand, with no fixed stops, and potentially fully autonomous if it runs in its own segregated lane.

Integration between TNCs and transit to offer last mile connectivity.

Using the all in one app, make it simple for transit riders to connect to their local station or final destination – ‘nudge’ usage of TNCs such as Uber and Lyft using the app.

A City dashboard that shows just how ‘Smart’ Culver City really is.

All of this technology is useful, but the City will need to know just how effective it is. Using an online Dashboard can show stakeholders and the public the impacts that new projects and pilots are having on the City. This may include traffic flow information, transit ridership and on time statistics, Co2 saved, miles cycled or walked by residents, cars shared and mileage saved – even a ‘happiness’ rating derived from sentiment on social media or surveys carried out via the app.

Smarter parking and congestion management.

Parking systems are getting smarter. Technology allows for real time management of off-street and on-street parking and the dissemination of data to smart phone apps and street signage. Using a smart-camera based system for management and data analysis will allow Culver City to better manage their parking stock and understand where there are limitations. It will also help mitigate the issue of cars circulating and looking for spaces – a major cause of congestion.

A wayfinding system for Culver City's TOD District should:

- Enhance the overall image of the area as a destination.
- Increase visitors at key attractions, and boost the local economy.
- Increase confidence to walk, reduce walk times, promote multi-modal transit and reduce auto use.
- Improve urban realm, sense of community, pedestrian safety, health and environment.

Wayfinding

STRATEGIC PRINCIPLES

Wayfinding is the action of navigation throughout a journey (the provision of information to allow us to make trips from A to B). The stages that require information in order to make informed choices are called decision points. It is at these points we use wayfinding information, and our surrounding environment to read, understand, experience a place and to help form our decisions of how we travel.

Wayfinding information is provided through a variety of forms including web based information, mobile technologies, printed products as well as more familiar signage products.

The urban environment and its geographic features, architecture, landmarks, public spaces, landscaping, material and lighting also play an important role in the influencing of journeys.

These visual cues can help to guide users and provide a sense of welcome. They can also have an adverse affect leading to confusion and disorientation.

A successful wayfinding system will guide users to, through and around Culver City - minimizing stress, improving the users experience and their impression of the City. The recommendation of this Visioning study is the development of a specific wayfinding system for the TOD District that could be eventually be expanded to the entire city.

WAYFINDING IN CONTEXT

The provision of effective wayfinding forms a fundamental part of a place and helps to create positive experiences for visitors and residents.

An effective wayfinding system will:

- Better connect user's to destinations;
- Use consistent naming;
- Maintain movement;
- Be predictable;
- Disclose information progressively;
- Help users learn;
- Keep information simple.

MORE THAN SIGNS

The many ways in which people find their way around a place is commonly referred to as wayfinding, signs are often the most frequently used tool in which to do this however its influence goes far beyond signage.

Wayfinding is:

- a physical extension of a brand or identity;
- a reflection of a destination's physical character; and
- an information system.

The value on an effective wayfinding system should not be underestimated, it can play an important role in how pedestrians rate their overall experience of a place.

DIGITAL ENHANCEMENT

When considering the inclusion of digital solutions within a wayfinding system it must be remembered they are meant to enhance the experience and legibility of space, not replace the physical touch points. Careful consideration needs to be given to:

- How can digital supplement physical navigation?
- How can digital data demonstrate the physical use of space and systems?
- How can Culver City make best use of the physical/digital to manage events/temporary or changeable information?
- How can digital support accessible mobility needs of physically or visually impaired users?

A digital wayfinding service could provide users with route, location and context specific information that will enable them to explore and navigate in a more interactive and personalized way.

WAYFINDING INSIGHT

Wayfinding system

The wayfinding system underpins all applications/products used by people. These can be broadly defined into two groups: Apparatus, and Guidelines.

- Apparatus form the basis of the wayfinding system determining how information is used, what things are called (nomenclature), how they are visually represented and how they are communicated.
- Guidelines determine how things are implemented to ensure effectiveness.
- Applications/Products are the physical manifestations; signs and maps.

A wayfinding system for the TOD District and Culver City will need to address each of these.

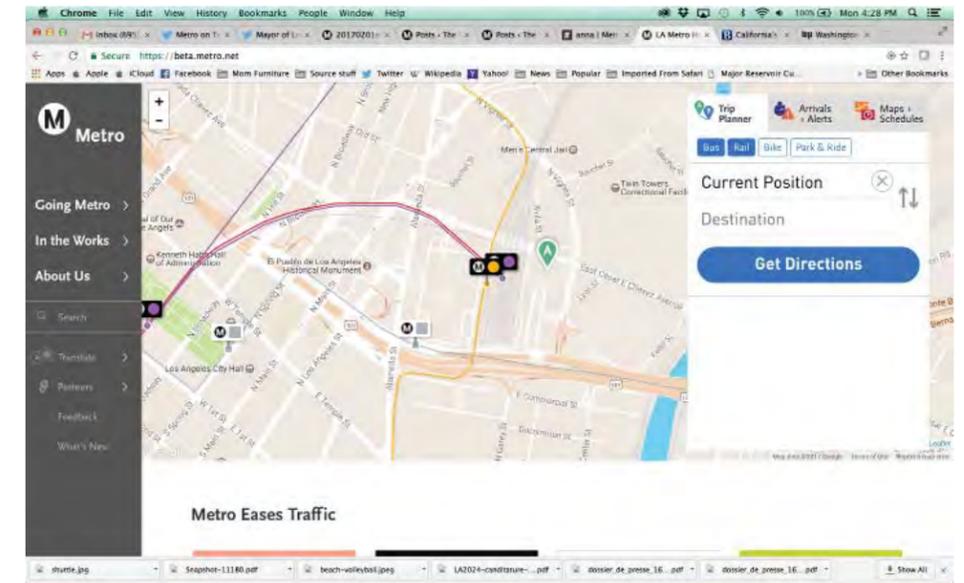
Considering the whole journey

It is essential to consider the importance of a user's journeys on approach to Culver City by transit, vehicle and other modes of transport, and the ease of access and ability to find one's way.

A user's experience is already under way before they even reach the city. Getting lost even trying to find the correct car park or catch the correct bus means that the city wayfinding system is not properly organized - this creates negative experiences.

An effective wayfinding system will address all stages of a journey whether it be at home, on-route, at destination or as a visitor departs the city. It is important for a wayfinding system to support the incremental construction of mental maps of a place, so that over time people are better able to personalize their journeys and ultimately navigate independently.

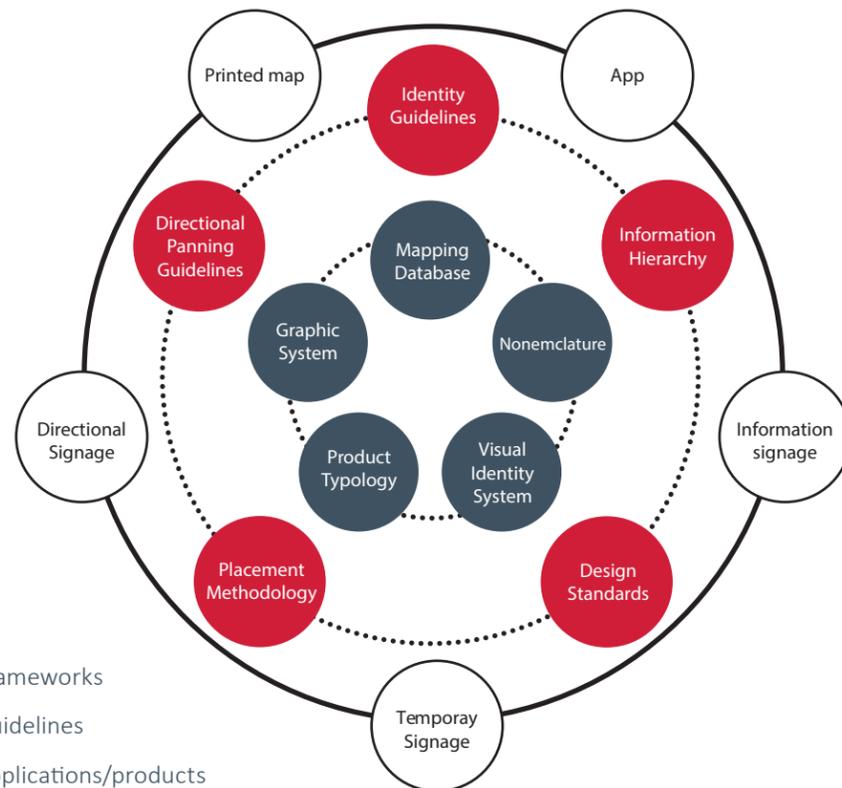
When thinking about Culver City it is important to consider its connection to a wider transport network and the information systems provided by different operators.



At Home



On-Route





WAYFINDING OUR VISION

A wayfinding system aims to assist people in navigating an environment with which they are unfamiliar, helping them find their way to key destinations in the easiest possible way. Often the easiest routes to navigate are not the quickest routes or most scenic routes.

Directing visitors along simpler routes can reduce cognitive load and levels of anxiety typically caused by the sense of being lost. This results in greater trust in the wayfinding system, which is critical to its success.

By promoting the simplest routes, the wayfinding system helps visitors develop a basic understanding of the area. The mapping system complements this point-to-point navigation by reinforcing landmarks and revealing a greater level of detail and information. Once a basic understanding has been established, return visitors may be able to develop a more complex understanding of the site.

Progressive disclosure: The key to an effective wayfinding system is to prioritize information, providing only the most necessary information at the relevant points in the visitor journey. Providing too much information at any one place can confuse visitors, create visual clutter and impair legibility.



Mental mapping: The more familiar users are with an environment, the less abstract their mental map of the site is, and therefore the more confident they are in navigating it independently. In addition, the greater their understanding, the better they can personalize their route choices based on individual preferences.

Understanding the user: Understanding user needs and experiences helps us to determine a range of aspects when developing a wayfinding system. Information type, format, product type and positioning are all influenced by our understanding of users.

Strategic principles:

- Maps that provide an understanding of one's location in relation to the site;
- These are located at arrival points and key decision points throughout a site;
- Maps at arrival and key decision points provide context;
- The use of landmark buildings located at key orientation points help reinforce the a sense of place;
- Develop a route hierarchy that emphasizes the simpler primary network over the more complex;
- Direct along the simplest routes to reduce cognitive load where reasonable.

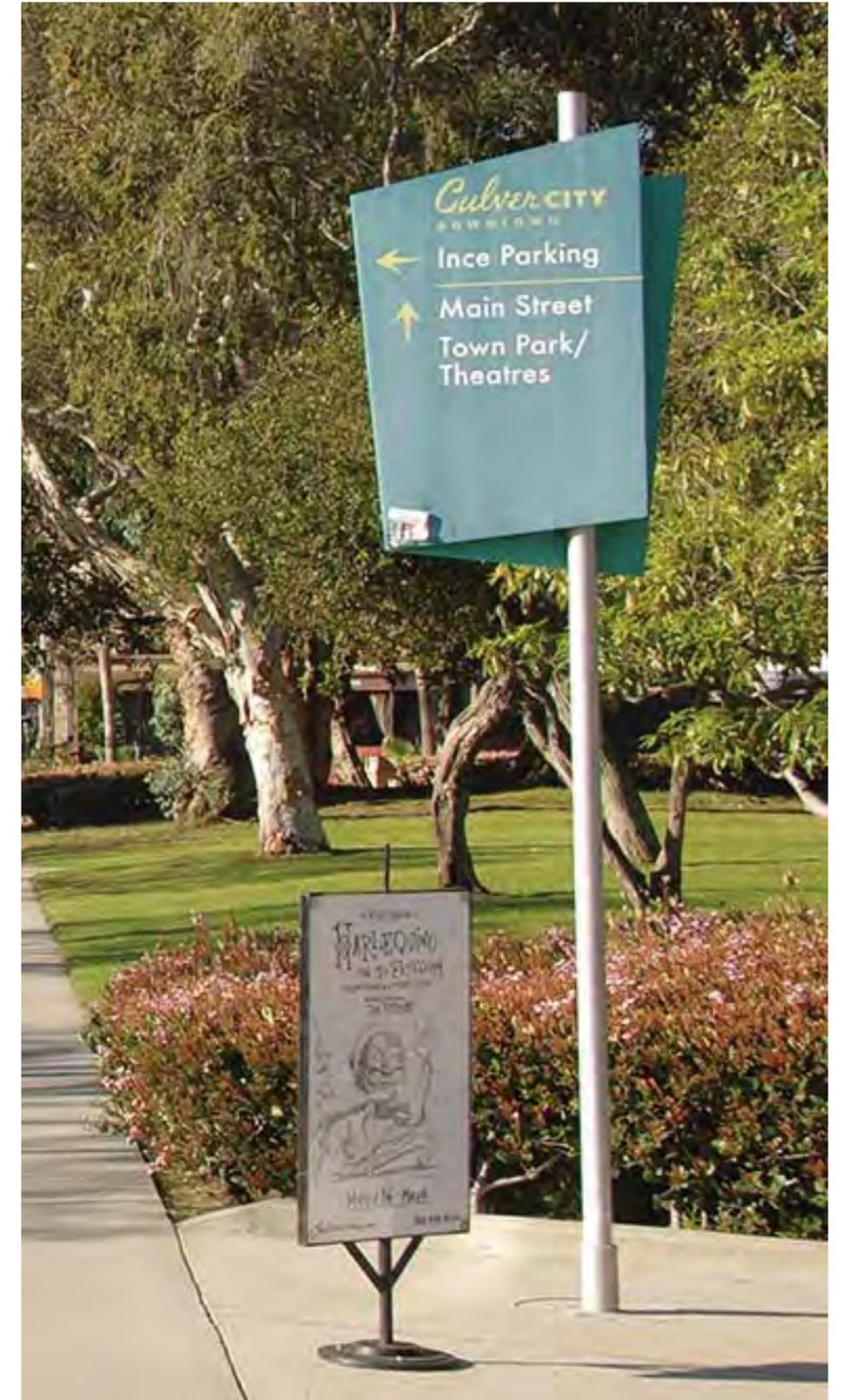
Wayfinding for Culver City should be implemented through visual elements applied to wayfinding infrastructure and maps. The sum of its parts will constitute a recognizable 'brand' that signifies a new standard for wayfinding in Culver City.

Defining route hierarchy and identification; through the use of color, numbering, distance and symbols can all play an important role in a effective system.

A suite of consistent high-quality geographic and schematic mapping will support at-home journey planning and aid on-street navigation.

Technology elements will be physically integrated in an interactive totem providing the basis for wider digital engagement and potential data collection.

CURRENT CONDITIONS



Wayfinding signage

- Sign heights and text size are not appropriate for pedestrians;
- Color contrast is poor making signs difficult to read;
- Sign locations are often away from sidewalks making them illegible for pedestrians;
- No maps are provided for pedestrians to make journey planning decisions;
- City and Metro wayfinding signage is not co-ordinated;
- Signage scale is not appropriate for the location.





Transit information

- Bus stops provide relatively little information relating to routes, timetables, transit connection;
- Bus shelters provide no local information;
- No real-time service information is currently provided at Street level at Culver City station;
- Local area mapping at the Metro station is provided at platform level only;
- Metro station local area mapping provide no context information relating to destinations in Culver City.

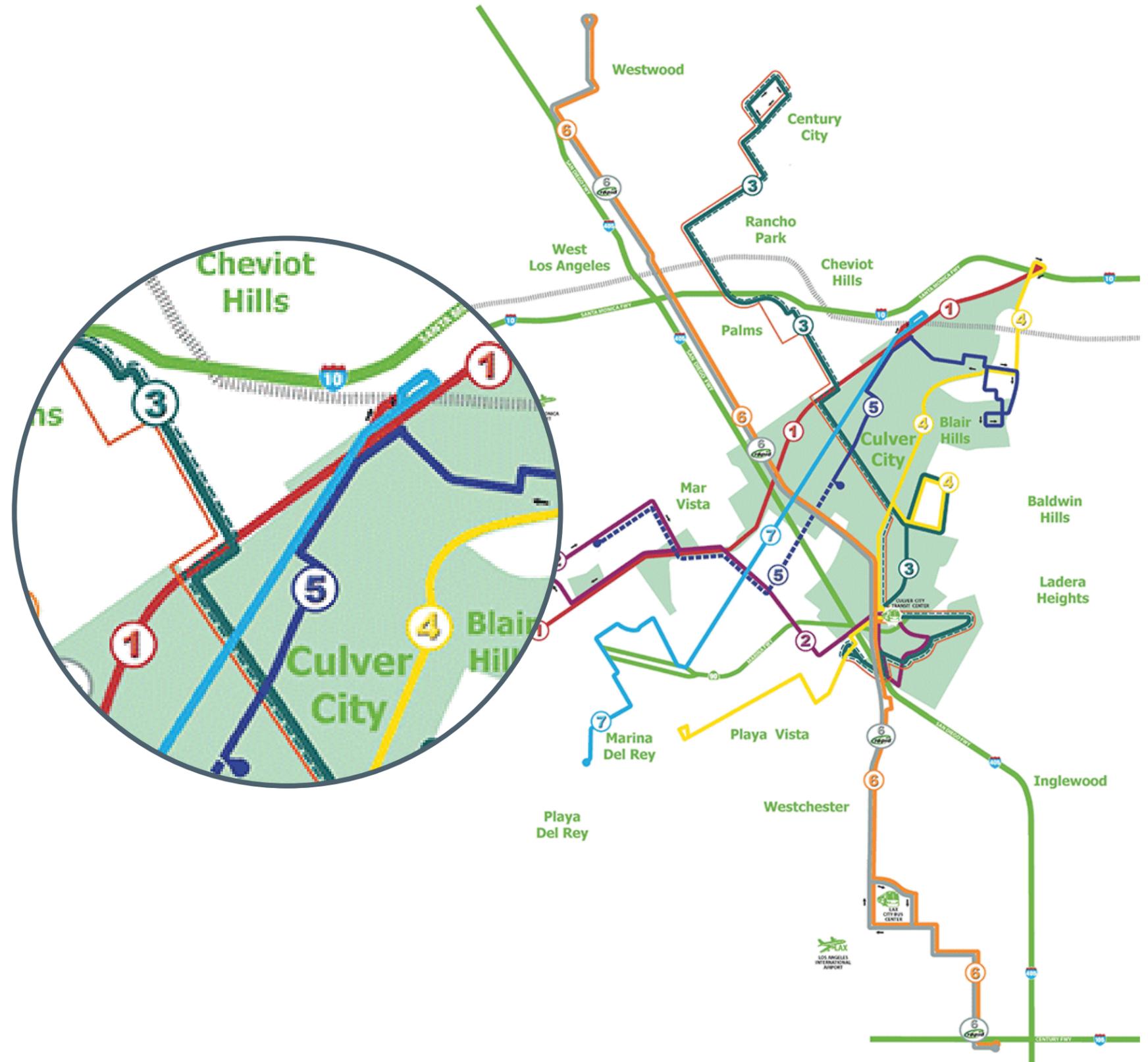


Culver City Bus map

The existing Culver City bus map is difficult to use and produced inconsistently across formats. Map scales, content and naming between products are inconsistent with a lack of clarity on onward connections.

Key improvements:

- Change of format and increased size to improve usability;
- City centre pedestrian map to provide context;
- Integrated transit information showing better connections to Metro;
- Addition of average travel times;
- Greater distinction between bus routes and highways;
- Map key and destination index;
- Information hierarchy to progressively disclose information and limit cluttering of the map;
- Destination finder;
- Accessible transit facilities/connections highlighted;
- Map suite to meet multiple application formats (printed/digital);
- The area surrounding the Culver City Metro station appears confusing and lacks location specific context.



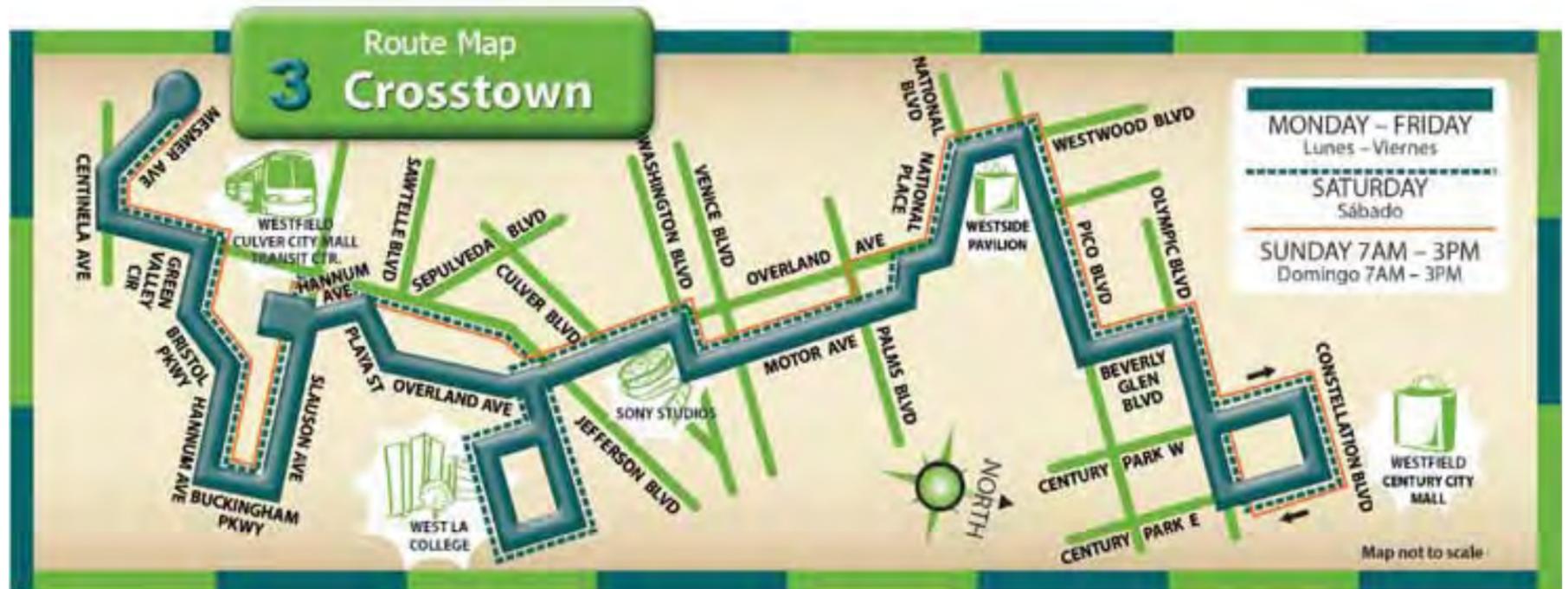
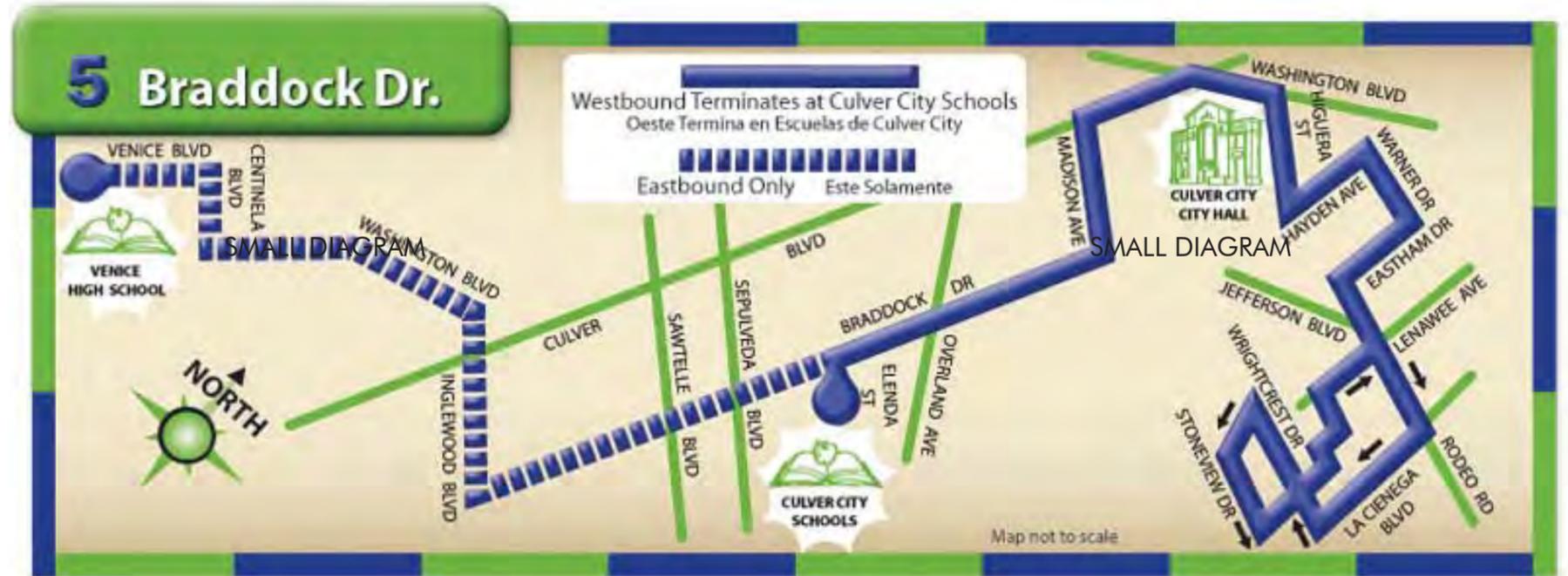
Culver City Bus route maps on the individual route schedule are inconsistent and lack the detail to make informed planning decisions.

Key issues:

- Lack of bus stop indicators;
- No bus stop names;
- Maps combine a schematic design style with a geographic base which causes issues with scaling and space;
- No average journey time information;
- No transit interchange information;
- No onward journey information to key destinations/landmarks highlighted.

Key improvements:

- Change format to a schematic design style;
- Add stop indicators and names;
- Retain and rationalize key street grid network.



WAYFINDING TOOLS

Summary and Insight

Wayfinding information is provided through a variety of forms including web based information, mobile technologies, printed products, as well as more familiar physical signage products.

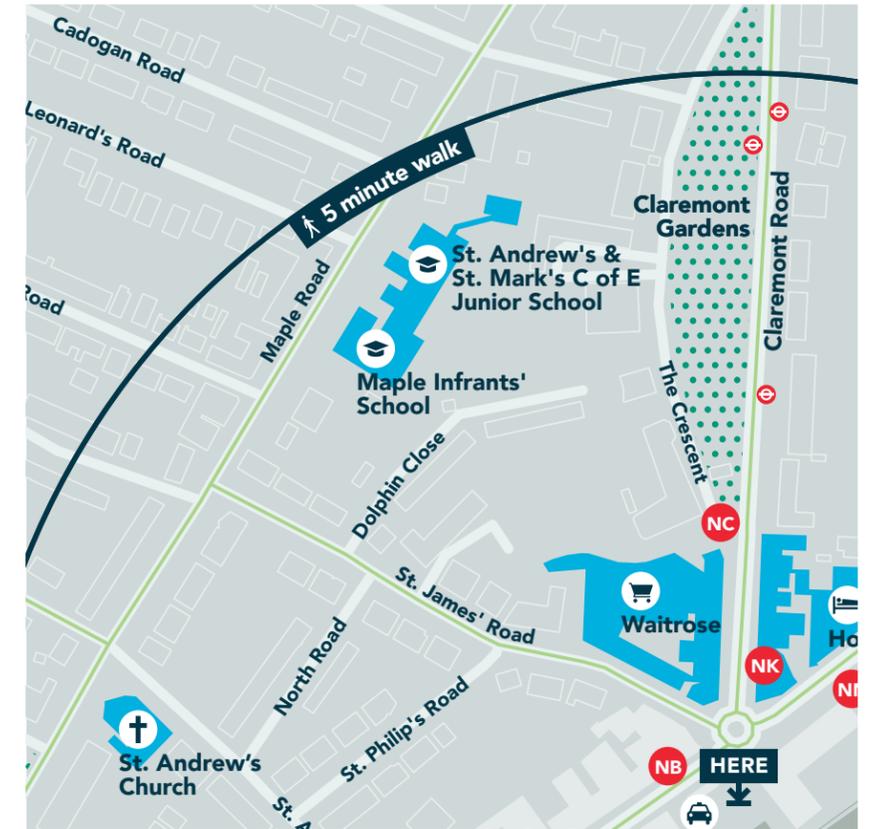
The urban environment and its geographic features, architecture, landmarks, public spaces, landscaping, material and lighting also play an important role in the influencing of journeys. These visual cues can help to guide users and provide a sense of welcome.

There are no requirements concerning the types or amount of tools required as each destination is unique.

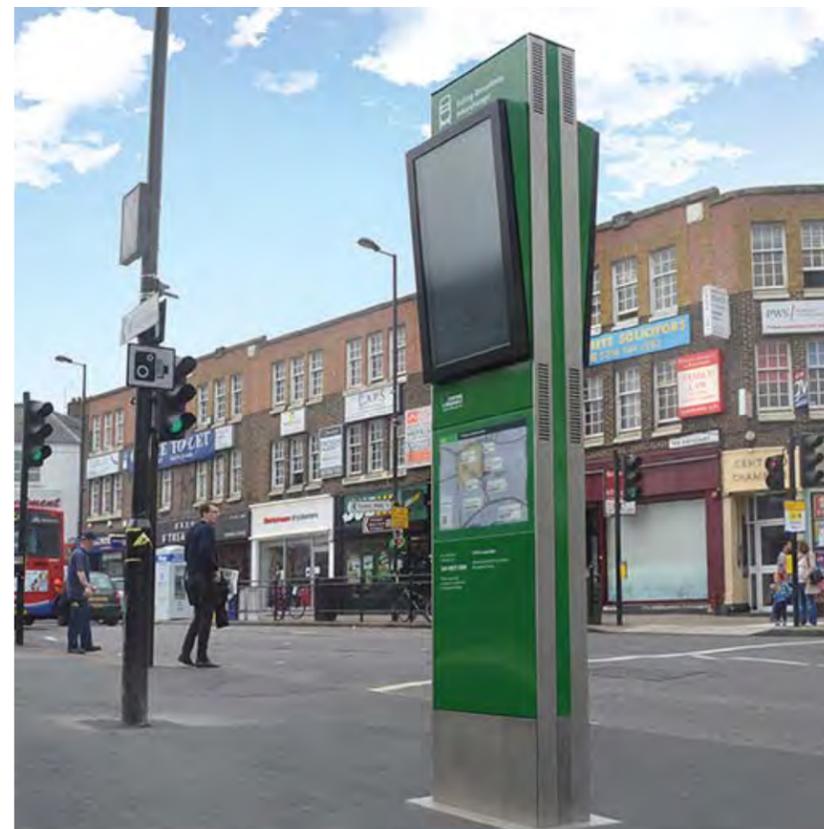
The following pages outline four of the tools most appropriate for use with the TOD District and Culver City in the immediate term (seen alongside). In addition to these bicycling information and mobile technologies should also be considered when developing a wayfinding system for Culver City.



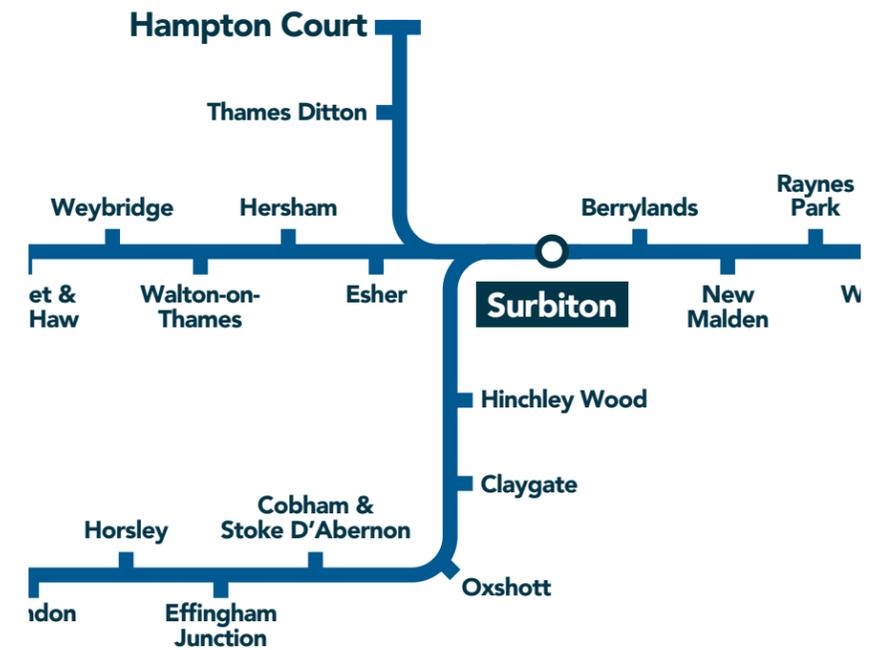
Wayfinding Signage



Mapping (Pedestrian)



Real-time transit information



Mapping (Transit)



Wayfinding signage

There are three key types of wayfinding signs: Information signs (seen alongside), for instance a map panel to locate a destination and / or to orientate yourself located at arrival and key decision points such as a transit station. Directional signs, where information is displayed to find destinations, located at strategic points along routes. Identification signs, where information about individual locations is displayed such as buildings and public facilities

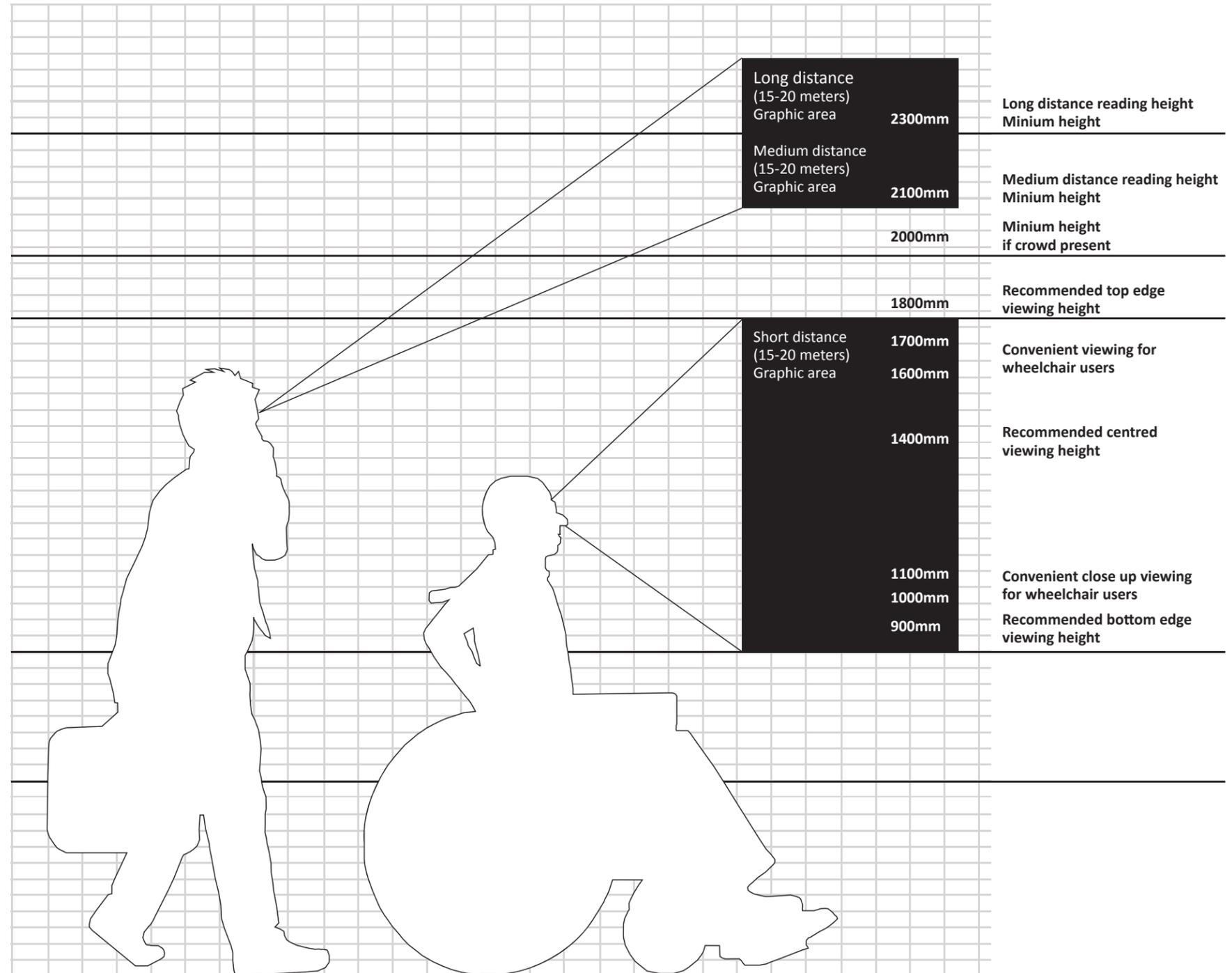
Wayfinding signage can take many forms, no one sign is alike aesthetically but, information signs share six commonalities. These commonalities combined with the other key sign types form the basis of the information system and together provide users with the tools required to navigate, understand and explore a place.

A wayfinding system for Culver City should provide accessible pedestrian information at gateways, key decision points and along key routes in order to support journeys.

The accessibility of information in the public realm is vital and determines the effectiveness of a wayfinding system. No one sign can meet the needs of all users, they each perform specific functions for defined user groups.

The illustration alongside shows best practice in relation to accessibility of information. When providing mapping for instance, the centered viewing height of 55 inches (1400mm) from center of the map to the ground level is recommended.

Signage in Culver City should adhere to these guidelines.



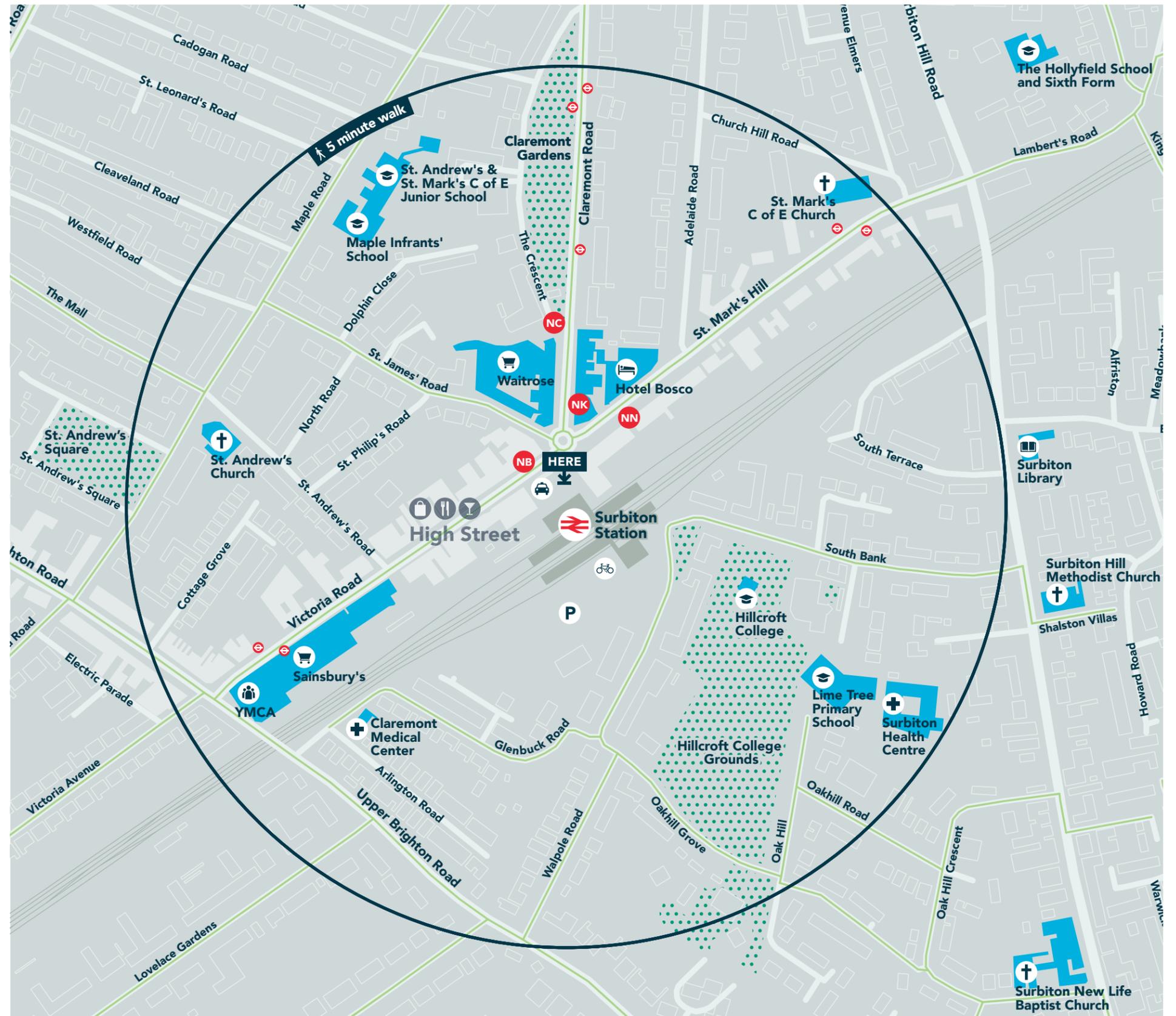
Mapping (Pedestrian)

Mapping is an effective way of communicating an offer. The map alongside was designed for an area around a transit station in the UK, it is similar in scale to that of Culver City Metro station.

The map uses several graphic tools that may be found in a Culver City mapping system:

- Area names and walk circle;
- Pedestrian crossing points;
- Building naming and entrances;
- Retail clusters;
- Bike hire points and route network;
- Transit stations/stops;
- Gardens and squares; and
- Walk time circle.

Each of these tools combined help to build a picture of a destination, its offer and aids in navigation for users.

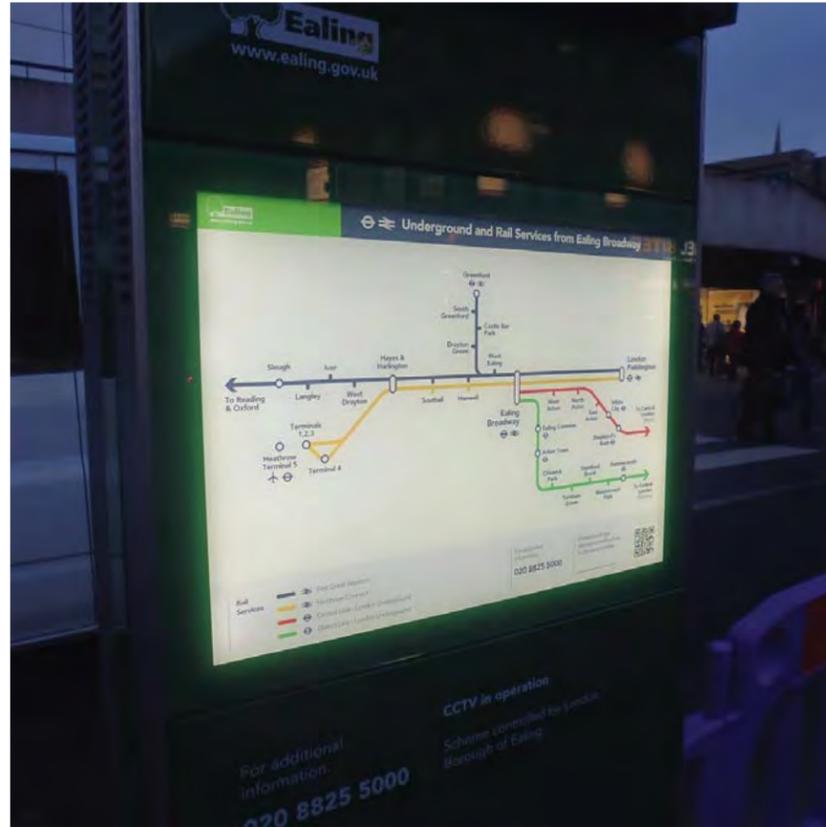


Real-time transit information

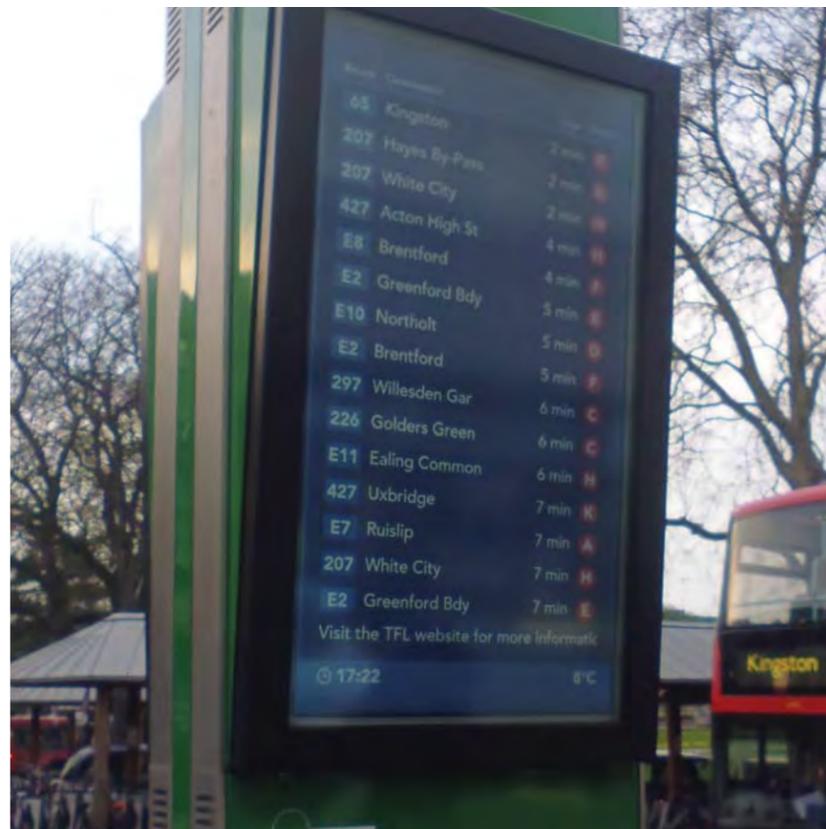
Real-time information can provide reassurance, reduce user anxiety and contribute towards a positive experience. Culver City Metro station would benefit with the addition of real-time information point, that could act as a gateway between transit and pedestrian activity.

Ealing Broadway station in the UK is a complex, multi-modal interchange which experiences large numbers of passengers transferring between modes. To improve the experience, the local authority commissioned Steer Davies Gleave to design and implement a real-time transit information product.

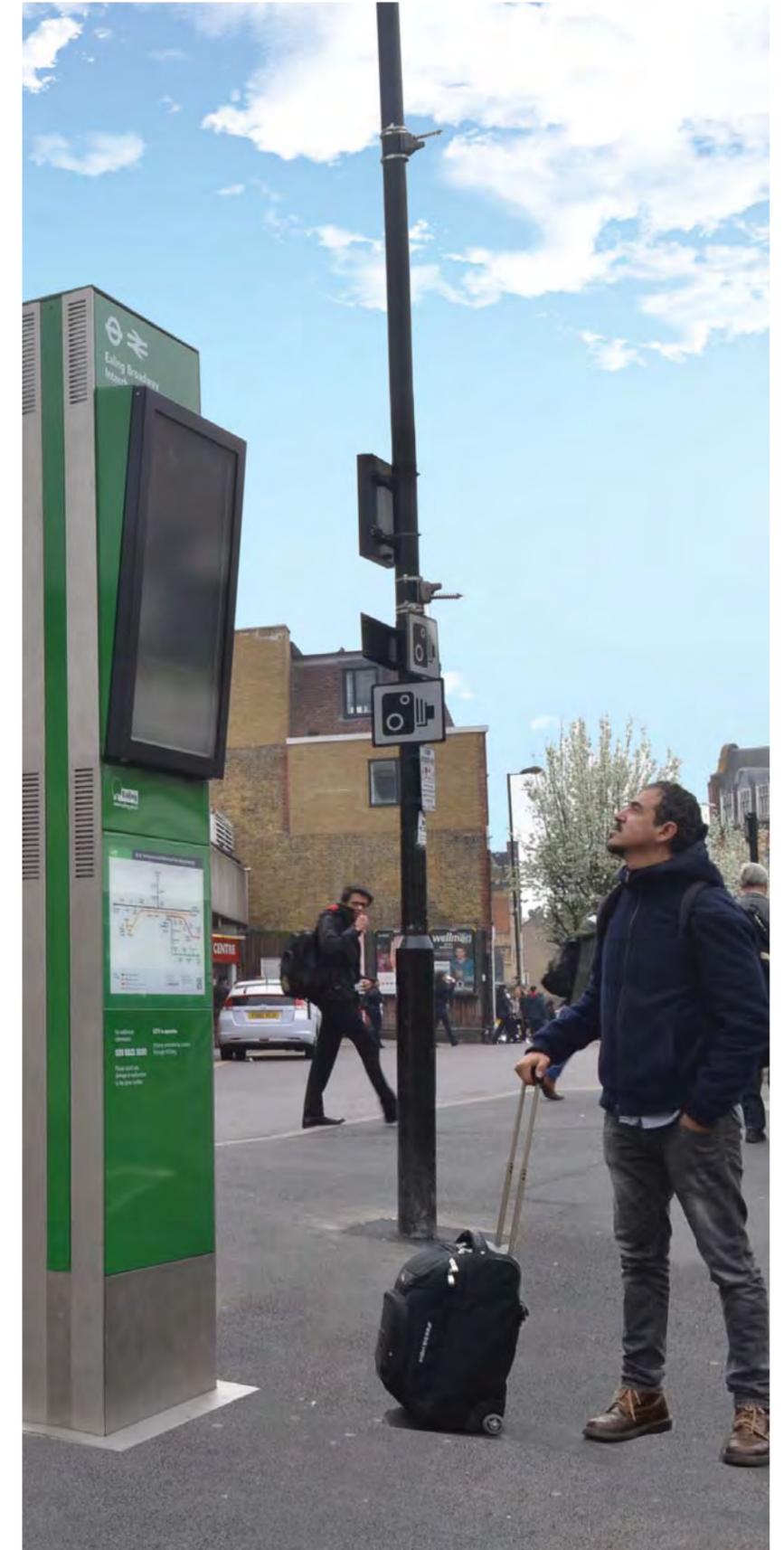
The column has two integrated high-definition screens that display easy to understand bus and rail digital information derived from open data feeds and National Rail Enquires live information service. The column also includes static mapping of the local area indicating bus stop locations and a network map highlights key rail lines running through Ealing Broadway. The maps are illuminated and printed on vinyl for ease of updating.



Illuminated mapping



Real-time bus departure screen



Real-time transit totem

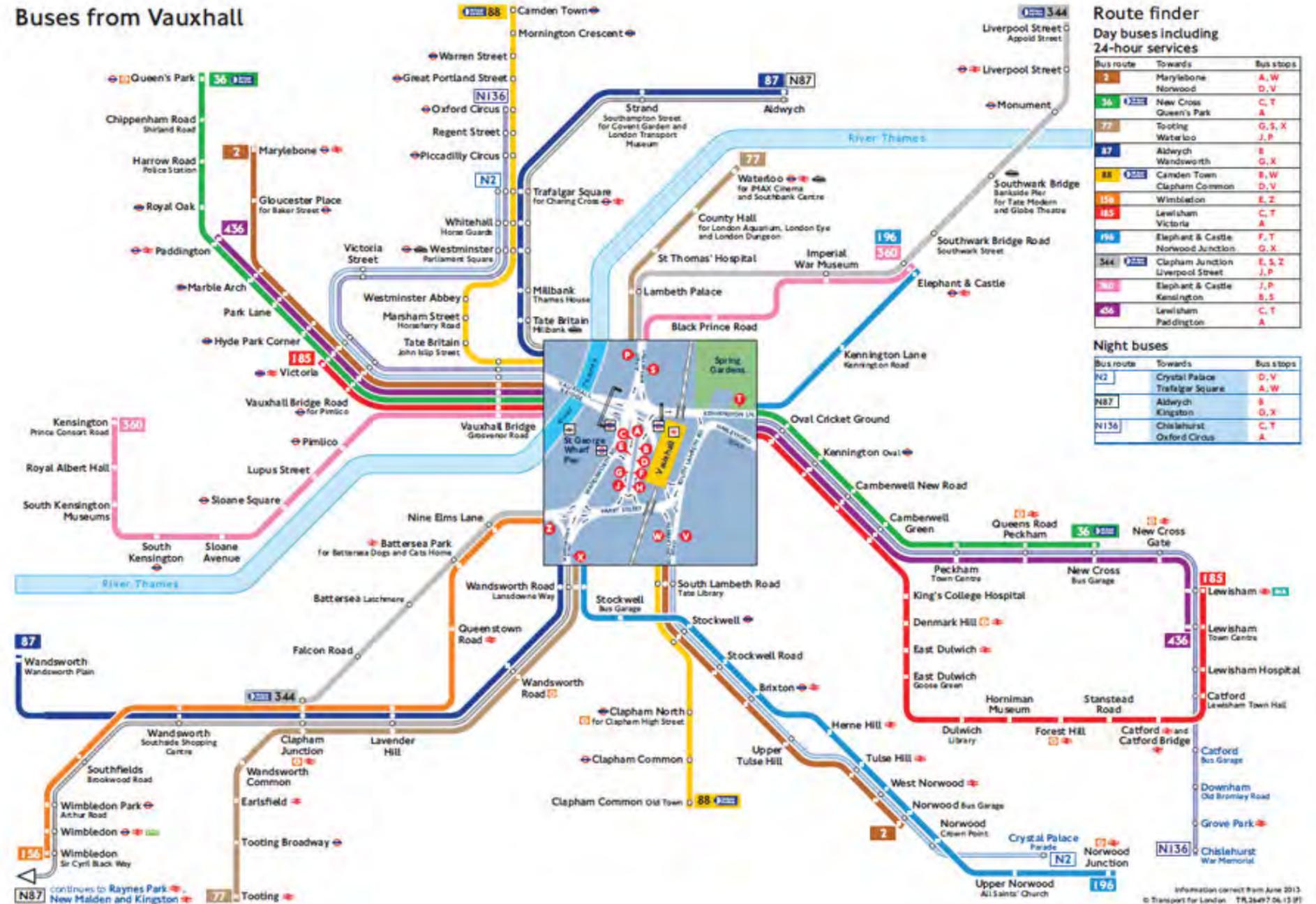
Mapping (Transit)

The transit map alongside is a typical example of a poster that can be found in bus shelters across London, UK. The bus network diagram combines several key types of information:

- Schematic route network of each individual route;
- Clearly marked transit interchanges;
- A single landmark/geographic reference point (The River Thames);
- A simplified pedestrian map insert that communicates the immediate local area and locations of surrounding bus stops; and
- A simplified route finder.

The success of this map is achieved by applying a combination of simplicity - a schematic transit map should be focused on providing transit information first and coherence/balance on the route network by providing trade-offs with geographic accuracy to achieve an understandable transit information product.

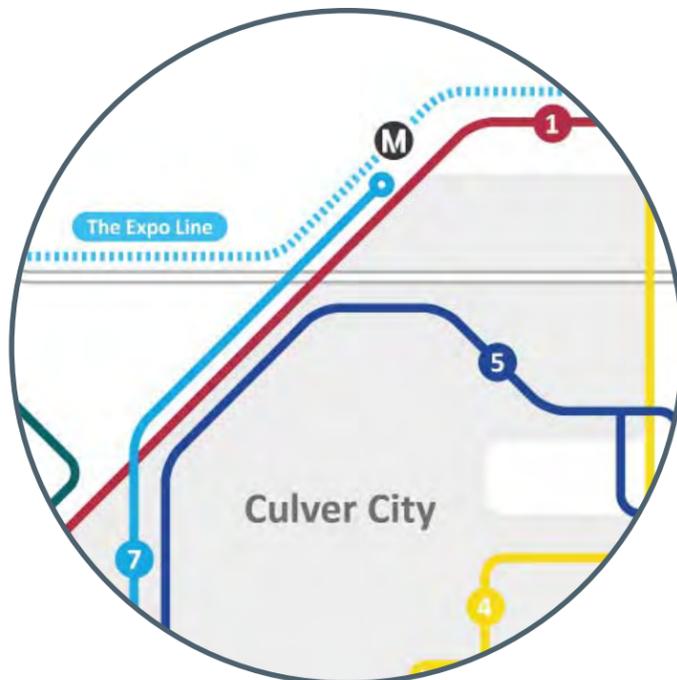
Buses from Vauxhall



Interchange map



Existing Culver City bus map



Application of recommendations. Illustrative only.

RECOMMENDATIONS

The following are our initial recommendations for a wayfinding system for the TOD District and that should be eventually expanded to the City at large.

Immediate for the TOD District

There are a number of projects the City could begin immediately or put in place plans to begin at a later date. These projects could make immediate improvements and start to build towards the development of a city-wide wayfinding system for Culver City.

- Design and implementation of real-time transit information at street level at the Culver City Metro station gateway including local onward journey/planning information;
- Development of a local area base map for use in pedestrian signage, online applications and for printed materials;
- Update of the local area bus network map to provide greater context to users and improve transit connections;
- Clutter reduction - Identification and removal of redundant and out dated sign products;
- Audit of all existing wayfinding signage, detailing location, content, type and condition;
- Audit and review of transit information located in bus stop;
- Management - identify a single point of contact or group to act as a guardians and quality control for all information produced by the City and external third parties;
- Information integration - identify opportunities to work with third parties (such as Metro) to co-ordinate information provision and improve accuracy and relevance;
- Operational/regulatory signing - scoping and strategy for the co-ordination, design and location of operational signing.

Interchange Totem

The implementation of a real-time interchange totem at Culver City Metro station would help to improve transit connections, encourage use of alternate transit modes, support onward pedestrian journey planning and contribute to the positive experiences of visitors and residents to Culver City.

The totem should include:

- Two real-time digital screens (one with Metro departures/arrivals and one with bus departure information);
- A Culver City local area map;
- A Culver City transit map including bus and Metro information;
- Illuminated map panels.

The totem should be located at street level visible to arriving Metro customers and bus users.

Local area and transit map

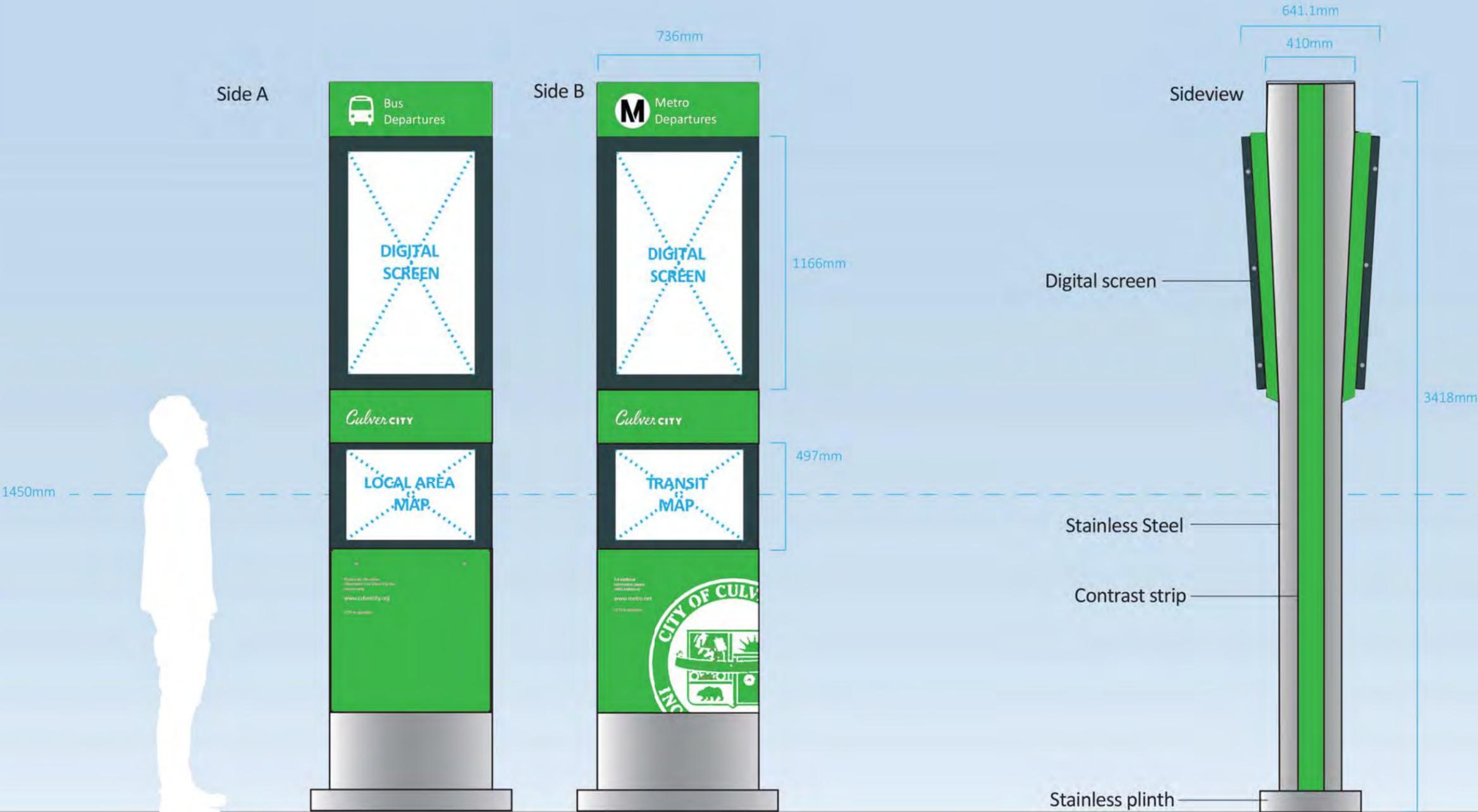
In order to support onward journeys and planning at Culver City Metro Station a planner/local area map should be provided.

When considering a map for Culver City it should provide the following:

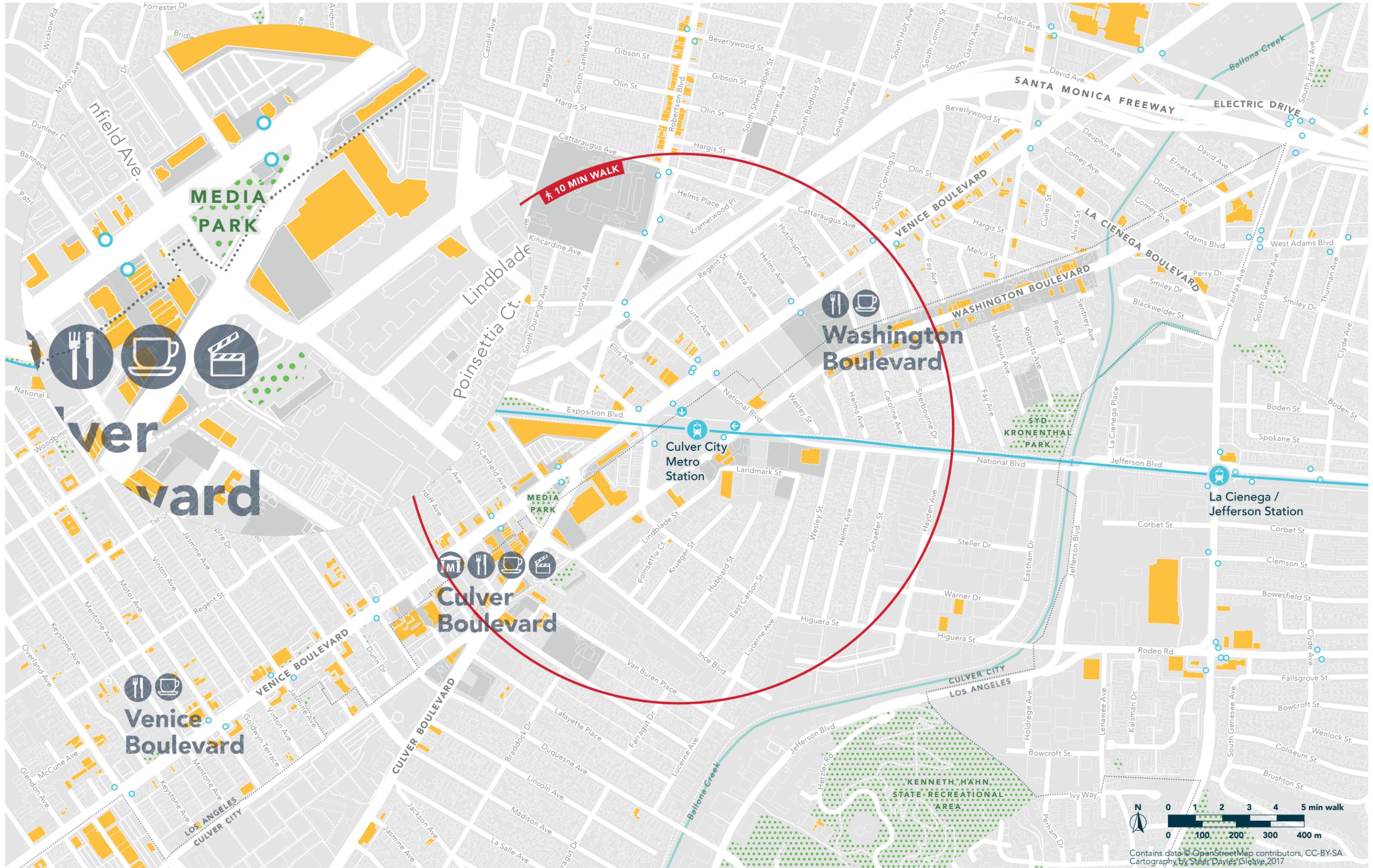
- Geographic reach - The area of coverage of the map should be appropriate to the users needs. This should be determined by the aims of the system;
- Mapping information - Maps should be rotated and presented as 'heads up' to reflect direction of travel of the users;
- Transit connections - Transit connections and options should be revealed as primary wayfinding information;
- Richness of information - A range of information should be communicated through the map in order to communicate the diverse retail, leisure and historical information within Culver City;
- Distance - An indicative scale of distance or walking/bicycling times will aid journey planning;
- Emphasis - A local area map should focus on the provision or pedestrian and bicycling information only. This will determine the style and scale of the map output ensuring it is appropriate for users.

The following page provides an indicative Culver City base map. The map however should not be considered final and needs to undergo a testing and design development phase in order to ensure the map is effective.

Culver City Transit Totem - Example

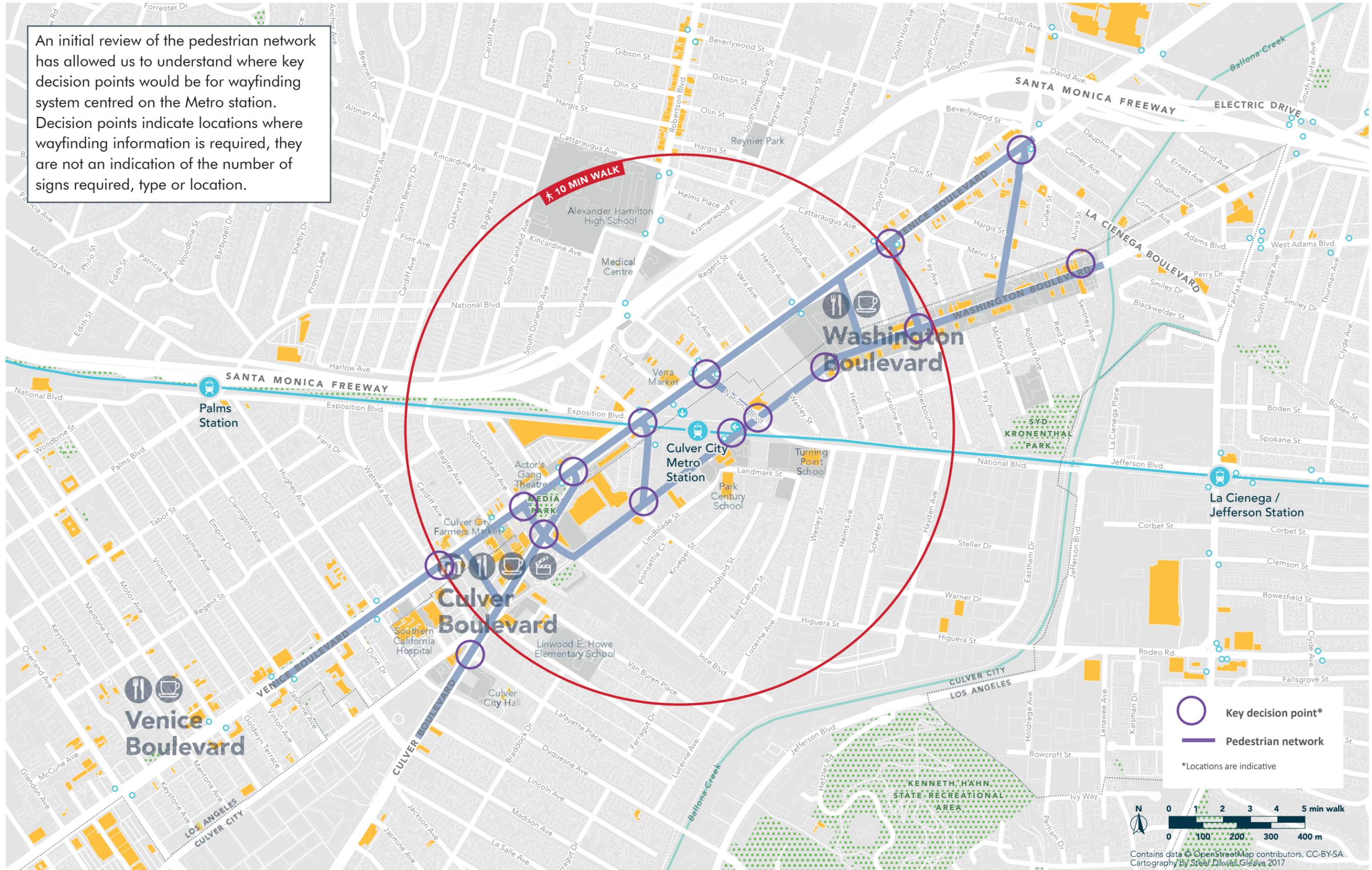


Interchange totem

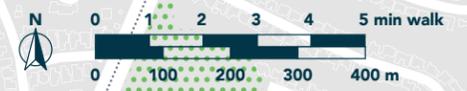


Interchange local area map

An initial review of the pedestrian network has allowed us to understand where key decision points would be for wayfinding system centred on the Metro station. Decision points indicate locations where wayfinding information is required, they are not an indication of the number of signs required, type or location.



○ Key decision point*
 — Pedestrian network
 *Locations are indicative



Contains data © OpenStreetMap contributors, CC-BY-SA
 Cartography by Steve Davies, Gleave 2017

Decision point plan recommendation

owered by Clean Natural Gas...

Doing Our Share for Clean Air

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Saint John's Health Center
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Culver CITYBUS

EM



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TRANSPORTATION DEMAND MANAGEMENT

INTRODUCTION

The goal of the Culver City Transit Oriented Development (TOD) Visioning Study is to create a comprehensive program of alternative transportation options and mobility improvements to address local circulation needs and first/last mile issues around the TOD District. The City has expressed its interest in mitigating traffic congestion and parking due to growth within the region as well as increasing and improving multi-modal travel options around the TOD District.

In addition to the land use planning and design improvements under review, it is recommended that the City incorporate transportation demand management (TDM) strategies to mitigate the mobility challenges within the TOD District. TDM consists of programs and policies to balance demand in the transportation network and maximize efficiency of infrastructure and resources. It is usually aimed at reducing demand for single occupancy vehicle (SOV) trips and increasing demand for other, more efficient travel options, such as walking, biking, transit, and shared mobility, by simplifying travel choices and influencing travel behavior. TDM interventions can include infrastructure or service improvements, marketing and incentive programs, and education/public outreach campaigns.

The City's mobility goals align well with many of the TDM strategies recommended in this report, as summarized in Table 1.

Incorporating TDM measures into the TOD District will further support the City's goal of evolving the area surrounding the Culver City Expo Station into a multi-modal community by increasing sustainable transportation options and defining the City's expectations of developers and employers.

Instituting a comprehensive TDM program can benefit the various stakeholders in Culver City; benefits for the City, for Developers and Employers and for Employees and Residents are listed in Table 2.

To support the City's ongoing efforts to create a transit oriented community around the Culver City Expo Station and beyond, we recommend the City implement the following short and long term strategies in phases. These approaches range from immediate actions that can be initiated in the TOD District within the next few years to City-wide changes that are more complicated and require more coordination within City staff and in the community.

City Goal	How TDM can support the goal
Reduce traffic congestion	TDM interventions, including infrastructure and behavior change strategies, are all designed to promote alternative travel options and discourage SOV trips.
Improve first/last mile connectivity	Infrastructure-related interventions such as on-site bikeshare and/or bike facilities, and safe pedestrian crosswalks/walkways, improve connectivity to and from transit stations.
Increasing multi-modal travel options	Bicycle facilities, transit subsidies, rideshare programs, and on-site transit information increase access to a range of transportation options in the area.
Mitigating the effects of new development on traffic & parking	Requiring developers to identify and implement TDM strategies will mitigate its potential impact on traffic and reduce the demand for on-site parking

Table 1: How TDM can support City goals

Benefits to the City	Benefits to Developers/Employers	Benefits to Employees/Residents
Cohesive identity as a multi-modal district	Increased clarity around development process	More transportation choices and improved mobility
Simplified implementation & enforcement program	Improved public image/marketability	Increased health benefits and reduced stress
Improved community health & satisfaction	Reduced congestion & parking demand	Improved quality of life
Improved public image/marketability	Environmental sustainability (LEED)	Increased flexibility for commuting

Table 2: TDM Benefits

GLOSSARY OF TERMS

Air Quality Management District (AQMD): Air pollution control agency responsible for monitoring and controlling emissions from stationary sources of air pollution. The County of Los Angeles belongs to the South Coast Air Quality Management District (SCAQMD).

Average Vehicle Ridership (AVR): current number of employees scheduled to report to work during the window for calculating AVR divided by the number of vehicles arriving at the worksite during the window.

Employer Transportation Coordinator (ETC): The designated point of contact for transportation-related commuter benefits and main administrator for TDM programs.

General Plan: Broad planning guideline to achieving the city's vision for the future.

Specific Plan: A tool for the systematic implementation of the General Plan for a defined area within the city.

Transportation Demand Management (TDM): Balancing demand in the transportation network to maximize efficiency of infrastructure and resources to support and incentivize sustainable travel choices like walking, biking, taking transit, or carpooling. TDM is a powerful strategy to reduce demand for single occupancy vehicle trips increasing demand for other options.

TDM Plan: The proposed plan outlining the TDM interventions that would be implemented at the site to meet AVR targets or to commutes into and out of the site.

TDM Ordinance: Formal set of regulations that define the City's trip reduction goals, the types of development that are subject to the ordinance, and the specific actions that must be completed.

Transportation Management Association/Organization (TMA)/ (TMO): membership based, nonprofit dedicated to promoting transportation options for commuters to reduce traffic congestion and improve air quality.

Recommendation:

- **Implement a Formalized TDM Program**
- **Establish a Transportation Management Association/Organization (TMA/TMO)**
- **Develop an Education and Outreach Program**
- **Introduce Other Mobility Services**
- **Considerations for the General Plan Update**

IMPLEMENT A FORMALIZED TDM PROGRAM

Option 1: Discretionary review process

We recommend that the City standardize its entitlement process for the TOD District to immediately capture benefits from upcoming development projects and eliminate uncertainty surrounding the City’s expectations and requirements for discretionary approval. This includes creating a list of TDM strategies from which developers can choose as well as a TDM plan template for developers to complete indicating which strategies they will implement at their site.

The list of TDM strategy options should include different infrastructure as well as behavior change measures that would promote alternative modes of transportation and mitigate any potential congestion that may be caused by the new development. The list will provide developers the flexibility to choose the TDM strategies that would be most effective at their site while improving transparency in the entitlement process and supporting the City’s mobility goals. Examples of such measures are included in Table 3.

Developers should then be required to submit a TDM plan as part of the discretionary review process. The site-specific TDM plan will contain the infrastructure or behavior change TDM interventions to be implemented as part of the development. The City should create a TDM plan template or checklist that clearly specifies everything required by the City to receive conditional approval. Rather than requiring specific interventions, the plan should focus on City and regional goals (e.g. SCAQMD requirements) and setting and meeting tangible targets (e.g. AVR targets). The plan should include the components in Table 1.

Ideally, the City should have a dedicated TDM officer in charge of reviewing plans and acting as the point of contact for developers. A TDM officer would provide developers a clear line of communication to the City who is knowledgeable of the TDM plan procedures, City goals and initiatives, and upcoming projects that would be required to submit a TDM plan as well.

Infrastructure-related strategies	Behavior change strategies
	
Bike facilities (bike racks, repair stations/rooms, showers)	Incentives (discounted transit passes, parking cash out, etc.)
Pedestrian network improvements (easy access to bus stops)	Awareness-raising campaigns/outreach
Dedicated carpool/vanpool parking spaces	Employee benefits (pre-tax transit options, flexible working schedules, telecommuting options)
On-site bikeshare/car share services	Transit information, new hire packets, trip planning assistance
Shuttle services to and from transit stations	Regional services, e.g., Rideshare and Guaranteed Ride Home
Transit Facilities and Mobility hub	

Table 3: Example Infrastructure and Behavior Change TDM Measures

Component	Description
Project Information	<ul style="list-style-type: none"> • Project name, owner, contact person, proposed types of uses and estimated number of employees
Goals & Objectives	<ul style="list-style-type: none"> • Goals should support TOD District goals and targets. • Objectives should be SMART: specific, measurable, achievable, realistic, time-based.
Measures & Targets	<ul style="list-style-type: none"> • Measures should support objectives of the TDM plan. • Targets should set out what will be achieved and when (e.g. mode split, Average Vehicle Ridership). • Targets could be determined by the City through a TDM Ordinance or Zoning code
Data Collection	<ul style="list-style-type: none"> • Surveys establish baseline data to allow progress to be measured. • Existing transportation options should be recorded (e.g. transit information, bike and pedestrian links)
TDM Interventions	<ul style="list-style-type: none"> • Can be fixed, flexible or tiered. • Should address everybody who accesses the site and all modes. • Link back to TDM plan objectives. • Be context-specific. • Be developed from a site assessment and survey data. • Include both infrastructure and behavior change measures.
Monitoring	<ul style="list-style-type: none"> • Should establish methods by which progress will be measured at the site. • Should outline a schedule for reporting to the City.

Table 4: TDM Plan Components

Section	Considerations
Goals & Objectives	<ul style="list-style-type: none"> Goals: What does the City hope to achieve? Objectives: What will be done to achieve the goal?
Targets & Metrics	<ul style="list-style-type: none"> Targets: What will be accomplished and when? E.g. increase sustainable mode share by 10% in 5 years. Metrics: What is the appropriate metric? (VMT, mode share). How will this data be collected? (survey, traffic counts).
Thresholds	<ul style="list-style-type: none"> Consider which land uses will be subject to the ordinance (e.g. residential, commercial, industrial) and what scale and geography will be included. Set fixed or tiered levels of requirements based on number of employees, square footage, dwelling units, or number of parking spaces.
Program Features	<ul style="list-style-type: none"> May include a fixed or flexible menu of TDM options. Consider different compliance documents: TDM plan, traffic study, parking utilization study. May be varying levels of participation (tiers).
Monitoring	<ul style="list-style-type: none"> Consider when applicants must submit their TDM plans and who approves them. What documents will be required for annual reporting and how will the City verify compliance? Consider the time and resources required for data aggregation.
Enforcement	<ul style="list-style-type: none"> Consider penalties for non-compliance versus good faith effort. Incentives for compliance (e.g. parking reductions, density bonuses). Establish an annual audit for a sample of of employers or developments to ensure the reported numbers are accurate.
Funding	<ul style="list-style-type: none"> Consider staffing levels and number of annual applications when determining budget needs. Will the program be self-sustaining? This will require fees (e.g. traffic impact, develop, TDM). Consider other funding sources, such CMAQ grants, General Fund.
Marketing & Outreach	<ul style="list-style-type: none"> Targeted messaging should be crafted for various audiences: developers, residents and employers. Coordinate when possible with regional TDM programs (e.g. Metro Rideshare). Create handbooks and guides that include sample plans and templates. Consider hosting workshops for ETCs, property managers.

Table 5: TDM Ordinance Considerations

CASE STUDY

CITY OF SANTA MONICA ORDINANCE

The City of Santa Monica has a tiered system for employers:

Employers with 10+ employees are required to complete a Worksite Transportation Plan, which asks employers to estimate their employee mode split, describe the amenities available to employees, distribute educational materials about transportation services, incentivize customers and visitors to walk, bike, ride transit, and carpool, and pay the Annual Transportation Fee.

Employers with over 30 employees are required to designate a certified Employee Transportation Coordinator, conduct a commute survey, identify and implement TDM measures, and pay the Annual Transportation Fee.

Annual Transportation Fee discounts are given to employers who successfully reduce their SOV and meet their target vehicle reductions as assigned by the City.

For more information about Santa Monica's TDM Ordinance, go to Santa Monica's TDM Ordinance - Essentials for Employers <https://www.smgov.net/Departments/PCD/Transportation/Employers/>

Option 2: TDM Ordinance

In the long term, the City should consider developing a comprehensive TDM Ordinance for Culver City. The ordinance will establish the TDM City's mobility goals and objectives, compliance requirements, monitoring procedures, and enforcement policies. This would codify the discretionary review process and provide a unified and consistent policy for the entire city.

Depending on the City's overall objectives and preferred level of involvement, the TDM Ordinance could be written to apply only to new developments (commenced after adoption of a TDM Ordinance), employers (inclusive of all employers in Culver City), or both developers and employers.

- **Developer only:** Only targeting developers would require the least amount of effort as it would simply require a formalization of the discretionary review process. At this stage, the City could require the installation of multi-modal infrastructure that can be used by future tenants and discretionary funds that can earmarked for city-wide mobility initiatives or the funding and operation of a Transportation Management Association or Organization (TMA/TMO). However, since developers are only involved in the development phase of a project, there would not be an opportunity to ensure long term implementation and enforcement of the TDM interventions.
- **Employer only:** A TDM Ordinance which only applies to employers in Culver City will allow for more fine-grained understanding of employee commuter patterns and implementation of behavior change measures such as incentive and employee benefits programs. The ordinance could also require membership into a TMA/TMO, which would provide a stable source of funding and recruitment for the TMA/TMO.

However, working with tenants of multi-tenant office buildings and business centers rather than developers means that the City would lose the ability to influence infrastructure changes to the buildings.

- **Developers and employers:** Creating a TDM Ordinance that applies to both developers and employers will allow the City to capture benefits from both and influence the implementation of TDM interventions throughout the entire cycle, from pre-occupancy infrastructure additions to post-occupancy commuter programs.

Once the City determines to whom the TDM Ordinance should apply, the next step would be to determine the metrics, threshold, and triggers that would cause a developer or employer to comply with the TDM Ordinance.

- The metric used to evaluate the TDM plan should be measurable and reflect the City's mobility goals, such as VMT or mode split. It could be determined by the types of data that are currently available to be used as a baseline.
- Thresholds could vary by type: it could be rentable square footage (e.g., City of Glendale) or number of parking spaces (e.g., City of San Francisco) for developers and number of employees (e.g., City of Santa Monica) for employers.
- Other events that could trigger the TDM Ordinance could include discretionary reviews, conditional use permit requests, and business license applications. Choosing the right thresholds and triggers is vital to ensure the City captures the bulk of the SOV trips going into and out of the TOD District while being mindful of available City resources and funds.

The City should also determine who would be responsible for marketing, monitoring, and enforcing the TDM Ordinance (e.g., City staff, TMA/TMO, etc.). Similar to the TDM Plan Officer for the TOD District, the responsible party would collect TDM Plans, monitor their efficacy, and enforce compliance.

TRANSPORTATION MANAGEMENT ASSOCIATION/ORGANIZATION (TMA/TMO)

As part of the TDM Ordinance, the City should consider the following:

Option 1: TOD District TMA/TMO

Culver City should also consider creating a transportation management association/organization (TMA/O) for the TOD District. TMA/TMOs are non-profit organizations dedicated to promoting sustainable mode choices and reducing SOV trips by helping its members with regulatory compliance, such as conducting transportation surveys and submitting TDM plans as required by AQMD and/or the City, and encouraging mode change by sharing knowledge and promoting the many mobility options available in the area. The TMA/TMO could help the City achieve its vision of a transit oriented community and improve congestion within the District. It would serve as the bridge between the City and developers, property managers, and employers by:

- Coordinating efforts among different stakeholders to solve local transportation concerns
- Assisting local worksites and residential buildings with development and implementation of their TDM plans
- Acting as a liaison to the City to advocate on behalf of its members
- Disseminating information and pooling resources to maximize efficacy
- Implementing a public engagement/outreach campaign to raise awareness

A TOD District TMA/TMO could be funded through various development and impact fees collected by developments within the District, by one or a group of developers as a condition of approval, or annual membership dues paid by employers and multi-tenant property owners located in the TOD area. Funding a TMA/TMO is a transparent and tangible way for the City to use traffic impact fees (where all new development requiring a building permit would have to pay a traffic impact fee based upon evidence that its development would place an additional cumulative burden upon the local transportation system and should be expected to pay a share of the cost for new facilities) and/or development funds and would be a signal of its commitment to improving the local congestion and transportation options in the city.

Option 2: City-Wide TMA/TMO

In the future, the City could explore the possibility of expanding the TMA/TMO to encompass all of Culver City. This could be done in concert with the introduction of the TDM Ordinance or shortly thereafter as a result of the ordinance. Doing so would allow the TMA/TMO to reach all City stakeholders, including residents and visitors. This would be the logical next step as Culver City is a popular destination for employment, residence, and leisure in Los Angeles. Furthermore, the City would be able to consolidate its resources and coordinate efforts across neighborhoods to promote city-wide mobility initiatives.

Scaling up the TMA/TMO to the city-wide level would involve additional investments in staff resources and funding. Depending on the size of the staff, the TMA/TMO could choose to continue providing general services, such as disseminating transportation-related information and running public awareness campaigns while charging for other services, such as AQMD compliance assistance or organizing site-specific events. The City could provide initial seed money to further supplement existing funding streams, such as fees collected from developers and for services.

CASE STUDY

GLENDALE TMA

The Glendale TMA, Go Glendale, works with large employers, multi-tenant office property managers, and residential buildings within the Downtown Specific Plan Area to reduce traffic congestion and improve quality in Downtown Glendale, CA. As part of the TDM Ordinance, new residential and commercial buildings in downtown Glendale are required to be dues-paying members of Go Glendale, submit an annual TDM survey and plan, and provide on-site infrastructure and resources. Fees are assessed based on number of employees (for employers) or rentable square footage (property managers) and paid annually.

CASE STUDY

SANTA MONICA TMO

The Santa Monica TMO, GoSaMo TMO, was started by the City of Santa Monica to help it achieve its mobility goals. It is fully funded by the City for the first three years and is mandated to serve employers, residents, and visitors. In addition to its outreach efforts to engage with all stakeholders and educate them on their mobility options, the TMO provides additional services for a fee, such as preparing TDM plans and serving as ETCs.

For more information about GoSaMo TMO, please refer to Appendix E: TDM in Santa Monica.

CASE STUDY

IN MOTION TRAVEL CONVERSATION CAMPAIGN

Steer Davies Gleave worked with King County Metro to implement a door-to-door outreach campaign to engage participants in the Seattle-area neighborhood of Green Lake. Using Motivational Interviewing techniques, the team used open-ended questions to help participants explore their motivations to try alternative modes of transportation.

In Green Lake, more than 50% of those contacted chose to participate and over 25% reported reductions in driving in the follow up survey.

EDUCATION AND OUTREACH PROGRAM

Option 1: Outreach campaign in the TOD District

A community outreach campaign would help raise awareness and promote sustainable mode choices. The campaign should incorporate existing local and regional initiatives, such as Bike to Work Day or Earth Day, to engage with the community while promoting specific programs. Having a City presence at the Culver City Expo Station, whether to promote a program, provide information and/or deliver assistance, would be an additional display of the City's dedication to creating a transit oriented community and improving multi-modal access.

Personal Travel Planning (PTP) community outreach campaigns involve direct door-to-door outreach in local neighborhoods to identify residents' travel habits, understand their frustrations with transportation, and help them consider new ways to travel. Those interactions are then followed up with packets with incentives and relevant information to help motivate individuals explore their travel options.

Option 2: Community outreach campaign

In the long term, the City could delegate all transportation-related outreach to the city-wide TMA/TMO. This would be another opportunity for the City to consolidate its efforts and deliver a consistent message across the city. In coordination with the City's branding and messaging standards and practices, the TMA/TMO could be empowered to develop and implement city-wide campaigns, such as a city-wide Earth Day Fair or Bike Month campaign, as well as more targeted educational workshops and events, such as neighborhood informational sessions and "Try Transit" events. Local business associations, community/neighborhood councils, schools, etc. could be used as instruments to engage the community and further promote TDM-related practices.

In coordination with the regulatory and/or organizational changes to support the implementation of TDM principles in Culver City, the City should consider complementing existing transit service with other mobility offerings. Mobility hubs, bike and/or car share, shuttles or micro-transit, and shared mobility services all serve to increase the travel options available to Culver City employees and residents and improve first/last mile connectivity to existing transit lines.

INTRODUCE OTHER MOBILITY SERVICES

In coordination with the regulatory and/or organizational changes to support the implementation of TDM principles in Culver City, the City should consider complementing existing transit service with other mobility offerings. Mobility hubs, bike and/or car share, shuttles or micro-transit, and shared mobility services all serve to increase the travel options available to Culver City employees and residents and improve first/last mile connectivity to existing transit lines.

Mobility hub

Launching a mobility hub at the Culver City Expo Station will help integrate various modes of transportation and facilitate first/last mile connections to employment centers and popular points of destination. The mobility hub should include multi-modal supportive infrastructure, such as transit shelters with real-time arrival information, bike share stations, car share facilities, flexible curb space for taxis and shared mobility services, as well as services, such as WiFi service, provision of transit information, and wayfinding.

Bike/car share

Bike and car sharing services provide users point-to-point transportation for short trips. They serve as a first/last mile connector from a transit stop to their final destination and offer flexibility to individuals who did not travel by car and instead arrived by transit or walked.

Bike share stations and car share services should be strategically located in mobility hubs, along transit corridors, in high volume nodes, transit transfer points, retail centers, and/or employment centers, and popular destinations.

Shuttle/micro-transit

Shuttles and micro-transit services help fill gaps in public transit service and help connect individuals from one place to another. These mobility options allow the public transportation system to more quickly respond to demand while providing an almost “door to door” experience to customers. Shuttles running from the Culver City Expo Station, for example, could help transport employees to and from their worksite during peak commute hours. Micro-transit services use data to deliver pop-up bus service when and where it is most needed.

THE GENERAL PLAN UPDATE

It is our understanding that Culver City is in the initial stages of updating its General Plan. In addition to the above recommendations, it would be useful for the City to take the following into consideration when going through this process, especially for the Land Use and Circulation Elements.

1. Vehicle miles traveled

Following the passing of Senate Bill 743 in 2013, the Governor’s Office of Planning and Research (OPR) replaced Level of Service (LOS) with Vehicle Miles Traveled (VMT) as the measure of transportation impacts under CEQA. While LOS focuses on the development’s impact on car congestion, VMT looks at the impacts of the new development on all modes of transportation. Furthermore, it would no longer promote car-centric infrastructure changes, such as widening roads and shrinking sidewalks, as the only way to reduce impacts to less than significant.

Therefore, using VMT as the evaluation metric for the TDM Ordinance would recognize efforts to reduce vehicle miles with the installation of bike lanes or location of a grocery store within walking distance and would be in better alignment with the City’s mobility goals.

2. TOD District Specific Plan

The City should explore the benefits of creating a TOD District Specific Plan to further support the City’s vision of creating a high-density neighborhood near transit with a variety of multi-modal options. While a general plan is the overall policy framework for how the City will achieve its vision, a specific plan is the tool to actually implement them in a specific area within the city. Creating a specific plan for the TOD District will allow the City to further refine development standards, land uses, infrastructure requirements, and implementation measures while taking into consideration local conditions and goals.

While remaining consistent with the general plan, the specific plan should focus on regulations that will further develop the TOD area and promote sustainable transportation choices. It should include land use regulations that support mixed-use development and incentivize the provision of multi-modal amenities by reducing parking requirements. It should also specify development standards such as requiring the installation of bike facilities and safe and convenient pedestrian linkages to transit stops. Lastly, it should require implementation of a set of fixed requirements, such as designating an on-site Employer Transportation Coordinator, distributing educational material, or membership into a TMA/TMO.

The TOD District Specific Plan could serve as the pilot for the General Plan update. The City could test new regulations and refine them prior to introducing them to the entire city via the General Plan. The long-term goal is to have a consistent approach to achieving the City’s vision of being an attractive city that supports sustainable travel modes.



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IMPLEMENTATION STRATEGIES

A Phased and Tiered Approach to Implementation

Implementation of the recommendations described in this Vision Study will necessarily entail an extended roll-out with initial more readily achievable actions seeding more ambitious and complex longer-term actions. Many of the recommendations for initial implementation described below could be considered as stand-alone tasks, relatively independent of future conditions and considerations. Others, however, may be initial “test” steps, the outcomes of which would determine which direction subsequently to take in the future.

INITIAL ACTIONS

Transportation Demand Management Policies

The City may immediately implement a formalized TDM Program by defining TDM measures required of new development in a checklist for discretionary review of proposed projects. This will introduce more transparency of expectations both for the City and for developers, and may include definitions and requirements for development fees to be contributed to a City-established Mobility Fund to be used in the implementation of TDM programs. This checklist will serve as a framework for defining a more comprehensive TDM Ordinance, which can be adopted over time. The next step will be the preparation and adoption of a TDM Ordinance and the establishment of a TMA/TMO to manage it and develop an education and outreach program to foster mobility mode shifts.

TOD Ordinance / Specific Plan

The City may immediately lay the groundwork for a TOD Specific Plan by formally designating an expanded area inclusive of parcels related to transit-oriented development. This may be followed shortly by authorizing preparation of a Specific Plan for the TOD area. In preparation for this, the City may define variables and constraints for TOD policies and summarize attitudes toward development density and intensity, mix of land use, incorporation of affordable housing requirements and incentives, re-defined parking requirements and pricing strategies, and urban design considerations.

Micro-Transit

As a keystone of a policy framework for increasing mobility choice, development of a micro-transit network should be pursued as a first

priority. Negotiations should be initiated between the Department of Transportation and local businesses of scale to identify the dimensions of demand for such a system, and alternative private services should be explored as possible contract service providers. In conjunction with exploring the technologies and dimensions of a micro-transit network, the City should begin to identify potential perimeter parking locations, first as interim measures (leased facilities; shared facilities with businesses) and later as part of a network of shared parking facilities, both public and private, as part of a parking management district.

At the same time, the opportunities for transit dedicated traffic lanes or flex lanes, such as the Washington Boulevard recommendations below, should be explored, along with identifying specific opportunities for strategic “hinge” connections between the neighborhoods for micro-transit access only.

Complete Streets on Washington Boulevard

The application of Complete Streets principles on Washington Boulevard should be initiated in a step-wise incremental fashion. This should begin with the installation of traffic signals and pedestrian crosswalks, especially in the easterly segment of Washington Boulevard between National and the Ballona Creek bridge. At the same time, the initial segment of the protected two-way bike track may be installed on the south side of Washington Boulevard, beginning with the segment between Ince and Robertson Boulevards. The Downtown Connector bike track proposal should be re-visited for the segment between Robertson and National Boulevards to test the feasibility of a south side alignment. The recommended improvements may also be implemented at the Washington/National intersection to connect the Metro bike path and improve pedestrian crossings.

At an appropriate time (which might not be immediate, but could be considered a mid-term action), the City should do test runs of the peak hour transit/parking flex lane concept. Initially, this might include limited access for HOV, electric vehicles, etc., given the relatively low frequency of bus runs before a micro-transit system is in place.

Traffic Management and Neighborhood Protection

Besides the initial tests of the Washington Boulevard concepts, other traffic disincentives may be implemented to discourage through-traffic and protect the neighborhoods. There are a number of specific issues raised by the residential neighborhoods in proximity to the TOD area that may be addressed early on, mostly resulting from currently existing conditions. These issues include:

- Problems of egress from Arts District streets on to Washington Boulevard, that neighborhood's only outlet. High volumes of traffic at peak hours constrains left turn movements out of the residential streets as traffic backs up on Washington. In off-peak, volumes are lower but traffic speeds are higher, posing similar constraints on left turns.
- Higher than desirable [by residents] volumes of travel through the Rancho Higuera residential community to get to the Hayden Tract office/creative/industrial area and higher than desirable [by residents] volumes of travel cutting through the Rancho Higuera residential community to get to and from the Santa Monica Freeway as well as to and from neighborhoods to the north and east and south and west of the community. The primary corridor used for cut-through traffic is the Higuera Street corridor and the Lucerne Avenue corridor. Additional cut-through traffic is also an issue on other residential streets in the community.
- Previous interventions included the installation of mini-roundabouts and median treatments. The mini-roundabouts are ineffective as designed. The median at Higuera Street/Hayden Avenue is ineffective at restricting cut-through traffic.
- The peak period traffic volumes constrain neighborhood vehicle circulation and pedestrian mobility and vehicle speeds are perceived to be excessive. Similar issues exist on Ince Boulevard and Lucerne Avenue. This is an especially sensitive issues as Higuera/Ince/Lucerne are used as a school route for the Linwood Howe Elementary school campus.

Numerous potential solutions have been proposed by the various affected neighborhoods which should be evaluated for their potential effectiveness, feasibility and level of community acceptance. Some

of these proposed interventions by the residents, directed principally at traffic diversion, traffic-calming and improvement of pedestrian safety, include:

- Add traffic signals at selected intersections along the easterly segment of Washington Boulevard, with possible left turn restrictions.
- Redesign of the mini-roundabouts on Higuera Street to proper engineering standards to slow traffic and discourage volume.
- Add additional curb-extensions or bulb-outs at intersections to slow traffic, discourage traffic volume, and enhance pedestrian mobility and safety.
- Install a cul-de-sac on Higuera Street north of Hayden Avenue, with limited access allowed for micro-transit services.
- Prohibit through traffic at the intersection of Higuera Street/Robertson Boulevard at Washington Boulevard.
- Add traffic controls (stop signs) along Higuera Street to slow traffic.
- Install high visibility cross-walks on Higuera Street.
- Intall raised cross-walks to slow vehicles and enhance pedestrian safety on Lucerne, Ince, Higuera and other streets.
- Consider turn restrictions at select intersections on National Boulevard and other streets.

Recommended Next Steps. In support of the aforementioned tools and strategies, the City should conduct a formal community wide Neighborhood Traffic Management Program (NTMP) study to confirm community support. A formal evaluation/study needs to be undertaken to determine the level and type of traffic stress and impacts on streets like Higuera, Lucerne and Ince, among others. The evaluation would include collecting data to identify which problems exist (speeding, excess volume, cut-through traffic, and so on) to ensure the correct tools are considered, recommended and supported by the community at-large. The City's NTMP process has multiple steps which at a minimum require certain traffic conditions to be met including:

- Traffic volumes on affected streets be between 1-3 thousand vehicles per day
- Measured speeds must exceed the speed limit by seven miles per hour
- Accidents must exceed State defined warrants
- Street in question must serve as an access route to a public/private school
- Other exceptions (undefined) may be considered on a case by case basis

The next steps should at a minimum include an extensive data collection effort to support the requests and recommendations of community representatives to ensure the correct tools are considered and implemented. The collection of data will serve as a before case which will allow staff to evaluate their effectiveness and success.

Test installations. Any tools being considered that change the physical characteristics of a street should be done on a temporary basis to test that they 1) work, 2) have community support, 3) have Public Works Department support, and 4) have Council support. Low cost/impact measures should be considered first. These would include crosswalks, signage, turn restrictions and other signage. The CCFD and CCPD should be consulted in particular on the acceptance of a cul-de-sac on Higuera Street, and the businesses in the Hayden Tract should be a part of the study process as well.

Longer-term Actions

The direction taken following initial actions may in part be determined by the outcomes of those actions; i.e., a “test” application may or may not be followed with a permanent installation of that measure, or the next set of “tests” can be initiated. Many of these follow-through actions will be mediated by effectiveness of the test, impacts of the first step on areas away from the intervention, the degree of public acceptance, the availability of funds to proceed, etc. The rolling out of next steps will resemble a decision tree, in which each decision point is defined by evaluation of the preceding step or steps, at which point subsequent options may be evaluated and selected.

Other actions are those that simply require more time to develop, refine, negotiate and fund. Examples of these include full implementation of the perimeter shared parking concept, where funds must be accrued in the Mobility Fund sufficient to cover acquisitions, improvements and operations. Others include projects of significant scale that require inter-jurisdictional coordination and significant land acquisition, such as the extension of Jefferson Boulevard to the north, bridge connections over Ballona Creek, or the ultimate resolution of the I-10/Robertson interchange.

Initial Guide to Funding Sources

The table that follows lists potential sources of funding for projects of various types that may be available to Culver City for implementation of projects recommended in the Visioning Study. In the table, funding sources and mechanisms are defined, along with a description of eligible uses and their correspondence where applicable to TOD Vision Study recommendations. Where available, the value range of funding are noted, as well as requirements that need to be met to maintain eligibility. Some examples of projects from other jurisdictions are listed, as well as next steps for Culver City to potentially pursue funding under the funding source category.

Recommendations Checklist

As an aide to tracking the array of recommendations contained in this Visioning Study report, the final table is a checklist of the recommended actions (in some cases, expressing a series of actions in short-form). The actions are categorized by the general activity of which they are a part, and for each action there is a recommended designated departmental lead within the City. An anticipated timeframe is also indicated, in generalized terms, identifying actions that may be initiated immediately or that are pre-requisites to actions that follow. Mid-term actions are typically the outcomes or follow-through activities that come from the immediate actions. Long-term actions are those that will require extended study, multi-jurisdictional collaboration, and/or significant funding. The objectives for each action are identified, along with notes that briefly discuss expected outcomes or contingency conditions that will affect the direction, scope and schedule of next steps.

INITIAL GUIDE TO FUNDING SOURCES

The following key explains the layout of the funding sources matrix:

Name/Source	Description	Eligible Uses	TOD Visioning Correspondence	Value Range	Requirements	Examples	Next Steps
	Summary of funding mechanism	What type of projects can this funding be used for?	Which specific projects/programs outlined in the TOD Vision Plan could this funding be used for?	What are some typical value ranges can be expected with this funding source?	What requirements of the funding source need to be mindful of? Is there a local match?	Where has this funding mechanism been used successfully? Links to case studies, successful grant applications etc.	What are the actions Culver City needs to take to pursue this funding source?

Funding Sources

Name/Source	Description	Eligible Uses	TOD Visioning Correspondence	Value Range	Requirements	Examples	Next Steps
Local							
Local City Funds	General fund may be a suitable source of funding for specific projects.	-		-	-		
Local Employers	One strategy used to fund long term TDM programs is requiring Employers who commute hour congestion to pay into programs, either by setting commute mode split targets with fines for non-attainment or requiring employers above a certain size threshold to pay membership fees into a TMA	TDM Program	TDM Program	-	-	Santa Monica Employee Trip Reduction Program	
Development Fees	Development fees can be used to fund infrastructure or programs to offset the impacts of increased trip generation. A variety of projects/programs could be funded through these means, from public realm improvements to TDM measures.	-	TDM Program	-	-		
Public Private Partnership (P3)	P3s bring together public and private sector to accelerate the delivery of projects. Up front private investment is used to finance projects while private investor receives a return on investments.	Could be used in anticipation of local return over a multi-year period		-			
Enhanced Infrastructure Financing District (EIFD)	Enhanced Infrastructure Financing Districts (EIFDs) can fund public infrastructure projects such as transportation, transit, parks and libraries, water and sewer, waste disposal and flood control. EIFDs are formed through a Joint Powers Authority (JPA) who coordinate on setting financing plans.	Construction, acquisition and rehabilitation costs, as well as planning and design expenses. An EIFD cannot pay for maintenance, routine repairs or operations		-	City council resolution of intention to form a PFA Preparation of an Infrastructure Financing Plan Public Hearing (no public vote required to form)		Study to determine EIFD feasibility
County/Regional							
Local Return / Metro	A portion of transportation funds derived from sales taxes are re-allocated back to the county's local governments to address specific transportation needs of each individual jurisdiction.	Prop A Local Return can be used exclusively to benefit public transit (TDM applies.) Prop C Local Return must demonstrate benefit to transit but can also be used for congestion management, bikeways and bike lanes, street improvements and pavement management system projects. Measure R must be used for transportation projects (can include street improvements) Measure M local return guidelines under development.	Active Transportation Project Implementation	Yearly \$ by Prop/Measure A: \$801,419 C: \$664,756 R: \$498,567 M: \$565,000	Funding is allocated regionally by formula, requirements for administration apply	Culver City currently puts 86% of its local return (A,C,R) towards Public Transit and 14% towards Streets & Roads <u>How other cities in the County use their Local Return</u>	Consider dedicating Measure M local return towards Active Transportation projects.

Initial Guide to Funding Sources (continued)

Name/Source	Description	Eligible Uses	TOD Visioning Correspondence	Value Range	Requirements	Examples	Next Steps
Subregional Program Funding / Metro	(Measure M) Culver City will be eligible for funding through the following subregional programs: -Westside Active Transportation First/Last Mile Connections Program (\$361M) -Subregional Equity Program (\$160M) -Countywide Bus Rapid Transit program (\$260M) -Countywide Active Transportation Program (\$858M)	Active Transportation projects First/Last Mile Implementation BRT projects		-	Measure M Guidelines	-	
Municipal Operator Funding / Metro	20% of Measure M revenue will go towards funding Metro and Municipal Transit Operators to improve countywide transit service operations, maintenance and expansion. The program is flexible to allow each operator to determine how best to accomplish making public transportation more convenient, affordable, and improve quality of life.	Eligible expenses include operations for transit service, maintenance, and expansion, and any other operating expenses that will contribute to meet the above program purpose and/or objectives.		\$2,240,600 yearly	Allocated by formula	-	
Measure M Visionary Project Seed Funding / Metro	The Visionary Project program seeks to identify the most cutting-edge, research-based mobility solutions to our specific challenges, and to use Los Angeles County as a test-bed to prove those concepts. LA Metro is specifically interested in projects that include developing, testing, and deploying new mobility approaches and new technologies.	Safety or security improvements Substantial improvements in travel time and customer experience Major reductions in emissions or other environmental externalities Improvements in access for disadvantaged populations		\$1.5M available every 3 years (competitive grant process)	Metro, Municipal Operators and Local Operators are eligible to apply Grant limited to 60% of total project cost	-	Prepare potential eligible project with Culver City Transit
Call for Projects / Metro	Call for Projects programs a variety of local, state, and federal revenues to regionally significant capital projects throughout the County.	Regional Surface Transportation Improvements Goods Movement Improvements Signal Synchronization & Bus Speed Improvements Transportation Demand Management Bicycle Improvements Pedestrian Improvements Transit Capital		No min/max range ~ \$100,000 - \$10M	20% local match	2015 Projects	
TOD Planning Grant Program / Metro	EIFD Technical Assistance - Metro TOD Planning Grant Round 5 will also be used to support, for the first time, tax increment financing (TIF) feasibility studies. Metro Transit Oriented Communities (TOC) Tax Increment Financing (TIF) Pilot program will fund a study for a local jurisdiction to explore the formation of an Enhanced Infrastructure Financing District (EIFD) or a Community Revitalization Investment Authority (CRIA)	TIF Feasibility Studies			Demonstrate that a transit supportive regulatory document is in place or under development Use the SCAG screening tool to show eligibility for one of the TIF designations Meet the criteria for TIF formation as set by the County board of supervisors Priority given to disadvantaged communities	Past Awards	
ATP Regional Program Implementation / SCAG & Metro	40% of State STP funding is allocated to MPOs to distribute. Under the Regional Guidelines, at least 95% of SCAG's ATP funds are recommended for Implementation Projects. Metro plays a role in managing recommendations. Projects submitted to competitive statewide ATP that are unfunded are considered by SCAG and Metro.	Environmental, design, and construction of infrastructure and/or non-infrastructure (NI) projects			Apply to Statewide ATP		Apply to Statewide ATP

Initial Guide to Funding Sources *(continued)*

Name/Source	Description	Eligible Uses	TOD Visioning Correspondence	Value Range	Requirements	Examples	Next Steps
Sustainability Planning Grants Program / SCAG	Supports local jurisdictions in testing out local planning tools. The program provides direct technical assistance to complete planning and policy efforts in integrated land use, active transportation, and green region.	Active Transportation: bicycle, pedestrian and safe routes to school plans and programs Integrated Land Use: sustainable land use planning, TOD and land use & transportation integration Green Region Initiatives: natural resource plans, climate action plans, green street plans, and GHG reduction programs		Active Transportation Max: \$200,000 Integrated Land Us/ Green Region Initiatives Max: \$200,000 - \$1M (Capacity Building Mini-Grants Max \$50,000)	Local match not required but competitive		
Mobile Source Air Pollution Reduction Review Committee (MSRC) Clean Transportation Funding	The MSRC funds projects that result in direct and tangible reductions in air pollution from motor vehicles. The discretionary funds can also be used for related planning, monitoring, enforcement and technical studies.	Trip reduction and commuter assistance campaigns Ridesharing programs Major event transportation services Parking management Freeway service patrols Traffic signal synchronization	TDM Program	Variable	MSRC releases topic specific funding programs – requirements will vary		
AB2766 Subvention Fund Program / SCAQMD	Funds the development of motor vehicle emission reduction measures or projects that result in the reduction of motor vehicle emissions.	Projects include quantifiable strategies that specifically reduce motor vehicle emissions	TDM Program				
State							
Active Transportation Program / CTC	The Active Transportation Program (ATP) was created to encourage increased use of active modes of transportation, such as biking and walking. 50% of total funding is awarded to jurisdictions on a competitive basis, 10% is set aside for small urban and rural regions and 40% goes to MPOs to distribute (SCAG's ATP Regional Program Implementation and Sustainable Planning Grant program in southern California)	Environmental, design, and construction of infrastructure and/or non-infrastructure (NI) projects	Washington Blvd Bike + Ped Improvements	2017 awards range from \$73,000 to \$10.6M	Local match not required but competitive	2017 Awards	Prepare ATP application for upcoming cycle
Sustainability Planning Grant / Caltrans	(SB1) Grant funding intended to support and implement RTP Sustainable Communities Strategies (SCSs). Overarching objectives are: Sustainability, Preservation, Mobility, Safety, Innovation, Economy, Health, and Equity. City can apply as a primary or sub-applicant	Plans or studies ie. SOV trip reduction studies, traffic calming/ safety enhancement studies, first/last miles project development planning, shared mobility services planning studies, road/parking pricing studies, TDM studies etc. Not eligible for engineering plans/design specification, environmental process, PIDs, construction/ capital costs	Traffic calming/safety enhancement study for Washington Blvd TDM plan development	\$50,000 - \$1M	Local Match 11.47%	FY17-18 Awards	
Adaptation Grant / Caltrans	(SB1) Aims to support planning actions at local and regional levels that advance climate change adaptation efforts on the transportation system.	Planning efforts including resiliency studies, climate vulnerability assessments, adaptation plans, natural and green infrastructure adaptation plans, update of existing plans to incorporate adaptation. Not eligible for advanced design/ engineering/ construction, PIDs, environmental process		\$150,000 - \$1M	Local Match 11.47%	-	
Highway Safety Improvement Program (HSIP)	The purpose of the HSIP program is to achieve a significant reduction in traffic fatalities and serious injuries on all public roads.	Work on any public road or publicly owned bicycle or pedestrian pathway or trail that improves the safety for its users: -Preliminary engineering -ROW -Construction	Washington Blvd	\$100,000 - \$10M	Can fund up to 90% of project cost. Local HSIP will only fund projects on the state highway system where the state highway acts as the "main street" for the local agency	2016 Awards	

Initial Guide to Funding Sources (continued)

Name/Source	Description	Eligible Uses	TOD Visioning Correspondence	Value Range	Requirements	Examples	Next Steps
Office of Traffic Safety (OTS)	The goal of the annual program is to prevent serious injury and death resulting from motor vehicle crashes so that all roadway users arrive at their destination safely. Using Federal Highway Safety Program funds, the OTS partners with political subdivisions of the state to address California's highway safety needs at the state, county and local level.	Pedestrian Safety/Bicycle Safety		-	Administrative requirements apply. OTS reimburses grant recipient based on expenditure that falls within approved activities.		
Affordable Housing and Sustainable Communities (AHSC) Program	AHSC funds projects that (1) result in the reduction of GHGs and VMT and (2) increase accessibility of housing, employment centers and key destinations through low-carbon transportation options such as walking, biking and transit. <i>Prioritizes low income and disadvantaged communities.</i>	(1) Affordable housing, housing related infrastructure (2) Sustainable transportation infrastructure (bike lanes, bikeshare systems, walkways, ped crossings and traffic-calming projects, infrastructure/ technology to improve transit service) (3) Programs (subsidized transit passes, bike, car- and ride-share programs, and programs to encourage mode shift)	(for expansion of TOD area – affordable housing development)	\$1M - \$20M	Page 5 (FY16-17 Requirements)	FY15-16 AHSC Award Project Summaries	Identify opportunity site/ project and assess for competitiveness Wait for future funding rounds
Environmental Enhancement and Mitigation Program (EEMP) / California Natural Resources Agency	Every EEM project must offset, either directly or indirectly, the environmental impacts of modified or new public transportation facilities (public street, highway, trains, ports, light rail lines, city streets, airports, transit stations etc.)	Must fall into the following categories: (1) Urban Forestry (2) Resource Lands (3) Mitigation Projects Beyond Scope of Lead Agency		Up to \$50,000 (up to \$1M for acquisition projects)	No match funds required but competitive.		
Urban Greening Program / California Natural Resources Agency	Eligible projects will result in the conversion of an existing built environment into green space that uses natural and green infrastructure approaches to create sustainable and vibrant communities. <i>75% awarded to projects in disadvantaged communities per SB 535</i>	Must include one of the following: (1) Sequester and store carbon by planting trees (2) Reduce building energy use by strategically planting trees to shade buildings (3) Reduce commute vehicle miles traveled by constructing bicycle paths, bicycle lanes or pedestrian facilities that provide safe routes for travel between residences, workplaces, commercial centers, and schools.	Streetscape improvements on Washington Blvd: street greening, pedestrian facilities, bike facilities	No minimum or maximum grant amount - \$76 million available Only one funding cycle programmed (past) but potential for future cycles	No match funds required but competitive. Program Guidelines	N/A	Watch for future rounds of funding
Federal							
Transportation Investment Generating Economic Recovery (TIGER) / USDOT	TIGER grant program supports innovative projects which are difficult to fund through traditional federal programs. (2016 round focused on generating economic development and improving access to reliable, safe and affordable transportation)	-Highway or bridge projects (incl bike/ped) -Public transportation projects -Passenger/freight rail -Port infrastructure -Intermodal projects		\$5M - \$100M	Can be used for up to 80% of project cost	2016 Awards	

RECOMMENDATIONS CHECKLIST

Summary of recommendations, City departments to lead the efforts, and general timeframe of implementation.

ACTIONS	DEPARTMENTAL LEAD			TIMING PRIORITY			OBJECTIVES	OUTCOMES & CONTINGENCIES
	Community Development	Public Works	Transportation	Immediate	Mid-term	Long-term		
A TRANSPORTATION DEMAND MANAGEMENT								
1. Checklist for discretionary review.	●		○	●			Definition of terms for negotiation of current development proposals	Offers an interim "test" opportunity for TDM policy requirements.
2. Establish Mobility Fund conditions and criteria	●		○	●			Defined program applications for funds received and formulas for collecting them	Offers an interim "test" opportunity, and refinement of fund applications.
3. Define objectives and strategies for shared parking approaches	●	○	○	●			Clarify goals and approaches for a long-range parking plan	Coordinates with micro-transit program (C.4)
4. Prepare TDM Ordinance	○		●		●		Codify City's TDM principles and policies.	Incorporates City's TDM requirements into a coherent set of programs.
5. Establish TMA/TMO to manage Mobility Fund and TDM policies	○		●		●		Establish mechanism for management of programs and funds.	Incorporate into A.4, TDM Ordinance.
B TOD ORDINANCE / SPECIFIC PLAN								
1. Identify limits of study area and establish a study group for TOD District Specific Plan	●			●			Establish geographic limits, including Study Areas, and categorical policies.	Expansion area boundaries and assignment of oversight responsibilities for plan preparation.
2. Prepare criteria and scoping for Specific Plan	●			●			Establish walkability criteria, density and land use objectives.	Outline scope of TOD District Specific Plan for contract RFP or in-house preparation.
3. Prepare Specific Plan for adoption	●	○	○		●		Codify development standards for the expanded TOD District.	
C MICRO-TRANSIT								
1. Initiate dialog with local businesses			●	●			Assess level of need/demand for employer first/last mile transit.	Potential for public/private collaboration on establishing and operating micro-transit.
2. Explore candidates for potential contract service providers			●	●			Monitor and assess availability of new technologies and systems.	Emerging technologies will offer new options over time.
3. Identify and initiate first dedicated transit lanes and routes (Washington Blvd.; National Blvd.; "hinge" linkages)		○	●	●			Establish infrastructure framework for test application of micro-transit circulator system (A.5).	Connections may require modification of existing access points (e.g., Expo bike trail use; availability of connection easements, etc.).
4. Identify candidate sites for near-term leases and or reciprocal agreements for shared parking facilities	●	○	○	●			Provide initial sites for interim use as shared parking; develop a system of target sites as long-term options.	Coordinates with TDM policies (A.3)
5. Initiate test case application of micro-transit circulator system		○	●	●			Design and implement a prototype test system.	May require adjustments to dedicated flex lane strategies.
6. Evaluate initial phase micro-transit test case			●		●		Monitor and assess efficiency, demand, and cost of system.	Dependent on outcome of C.5
7. Pending evaluation (C.6) implement extended micro-transit service			●		●		Roll-out of functioning system within limited initial service area.	Dependent on outcome of C.6
8. Implement area-wide network of micro-transit services for employees and residents		○	●			●	Multiply benefits of prototype systems to broader community.	Dependent on outcome of C.7

- Key**
- Primary lead agency ●
 - Support agency ○
 - Immediate action ●
 - Mid-term action ●
 - Long-term action ●

Recommendations Checklist (continued)

ACTIONS	DEPARTMENTAL LEAD			TIMING PRIORITY			OBJECTIVES	OUTCOMES & CONTINGENCIES
	Community Development	Public Works	Transportation	Immediate	Mid-term	Long-term		
D WASHINGTON BOULEVARD								
1. Initiate first dedicated transit/parking flex lane between Ince and Robertson as temporary test case		●	○	●			Prepare infrastructure for facilitated micro-transit system test case.	Coordinates with micro-transit projects C.3 and C.5.
2. Implement first segment of Downtown Connector bike track in conjunction with transit/parking flex lane test case		●	○	●			Establish first links in the Downtown Connector project.	Needs coordination with micro-transit, bus transit, and parking evaluations.
3. Implement re-designed street intersections for pedestrian priority and install new synchronized signals		●		●			Improve pedestrian convenience and safety; facilitate vehicular access to Washington from Arts District streets.	Provides initial step for testing Complete Street application (D.4).
4. Initiate interim Complete Street re-design with striping and low-cost materials to test and adjust based on performance		●	○		●		Test effectiveness and feasibility of turn restrictions, pedestrian crossings, flex lanes, and other interim improvements.	Requires effective initial phases of micro-transit plan in operation. Monitor, evaluate, and adjust plans based on test performance.
5. Initiate permanent reconstruction		●	○			●		May be a 5-10 year project; dependent on effective micro-transit plan, and effective automobile by-pass facility provisions.
E BICYCLE NETWORK								
1. Implement first segment of Downtown Connector Bike Track on Washington Boulevard		●	○	●			Test capacity and utilization of initial Complete Streets application (D.2).	Reconciliation of bike track concept with transit and flex lane configurations.
2. Incorporate area-wide bike network plan with City's Bicycle and Pedestrian Action Plan recommendations.		●	○	●			Coordination of overall bicycle network recommendations with Bicycle and Pedestrian Action Plan.	Monitor, evaluate, and adjust plans based on test performance.
3. Proceed with phased implementation of Downtown Connector project, extending along length of Washington Boulevard		●	○		●		Step-wise implementation of bicycle facility element of Washington Boulevard Complete Street plan.	Dependent on outcome of E.2.
4. Evaluate options for added connections to the Ballona Creek bike path		●			●		Complete linkages of bike network with regional paths.	May coordinate with future bridge connections (G.4) and "hinge" easements (C.3).
5. Evaluate options for TOD District bike connections, including potential overcrossing at Washington and National.		●	○			●	Solve the connection problem between current "missing links" in the network.	Overcrossing option will require significant external funding.

Recommendations Checklist (continued)

ACTIONS	DEPARTMENTAL LEAD			TIMING PRIORITY			OBJECTIVES	OUTCOMES & CONTINGENCIES
	Community Development	Public Works	Transportation	Immediate	Mid-term	Long-term		
F NEIGHBORHOOD PROTECTION								
1. Initiate NTMP process to consider redesign of mini-roundabouts on Higuera Street		●		●			Reduce vehicular traffic speeds to improve pedestrian safety.	Confirm general community buy-in. Ensure that proper engineering standards are feasible and can be applied.
2. Initiate NTMP process to consider additional curb-extensions or bulb-outs in the Rancho Higuera, Hayden Tract and Arts District		●	○	●			Reduce vehicular traffic speeds to improve pedestrian safety.	Coordinate with the micro-transit plan so as not to impede its efficiency.
3. Initiate NTMP process to consider installation of a cul-de-sac on Higuera Street north of Hayden Avenue.		●		●			Impede and/or prohibit vehicular through-traffic in residential neighborhoods.	Confirm general community buy-in. Coordinate with micro-transit plan to optimize its efficiency (C.3).
4. Initiate NTMP process to consider prohibiting through traffic at the intersection of Higuera/Robertson at Washington		●		●			Impede and/or prohibit vehicular through-traffic in residential neighborhoods.	Consider potential impacts reduced capacity of Washington. Coordinate with City of LA and CalTrans to ensure future I-10 interchange re-design does not exacerbate conditions.
5. Initiate NTMP process to consider additional traffic controls (stop signs) along Higuera Street and Washington Boulevard		●		●			Improve pedestrian safety by slowing traffic and discouraging volume.	Confirm general community buy-in.
6. Initiate NTMP process to consider installing high visibility cross-walks on Higuera, Lucerne and Ince		●		●			Improve pedestrian safety by slowing traffic and discouraging volume.	Confirm general community buy-in. Ensure that proper engineering standards are feasible and can be applied.
7. Initiate NTMP process to consider turn restrictions at select intersections on National Boulevard		●		●			Discourage vehicular through-traffic in residential neighborhoods.	Confirm general community buy-in.
G TRAFFIC DIVERSION								
1. Initiate NTMP process for TOD-adjacent neighborhood street improvements	○	●		●			Establish infrastructure modifications to discourage vehicular through-traffic in residential neighborhoods.	Confirm general community buy-in; coordinated with all NTMP projects (C.1 - C.7).
2. Initiate Complete Streets detail planning for Washington Boulevard	○	●	○		●		Establish disincentives for vehicular through-traffic	Coordinated with Complete Street re-design (D.4 and D.5).
3. Work toward a peripheral shared parking plan with congestion pricing	●		○		●		Keep arriving destination traffic out of the residential core of the TOD district.	Coordinated with shared parking perimeter facilities and operations policies (A.3 and C.4).
4. Explore feasibility of additional bridge connections across Ballona Creek to employment centers from Jefferson	○	●			●		Provide alternative entry points to employment centers, by-passing residential neighborhoods.	Subject to land acquisition and Ballona Creek air rights opportunities. Coordinated with increased by-pass capacity projects (G.5).
5. Coordinate with other jurisdictions toward an improved through-traffic bypass solution	●	○				●	Establish new through-connection of Jefferson Boulevard to La Cienega / Washington Boulevard to the north.	Requires coordinated planning and funding with City of Los Angeles and CalTrans.



E Santa Monica

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REFERENCES AND RESOURCES

Following is a list of documents and sources that were used during the process of this study.

LEGISLATION

National

- HR 2071 - Safe Streets Act 2015
- S.933 - Americans with Disabilities Act 1990

State

- AB 32 - Global Warming Solutions Act 2006
- AB 976 - California Coastal Act 2013
- AB 1358 California Complete Streets Act 2008
- SB 375 - Sustainable Communities and Climate Protection Act 2008
- SB 743 Environmental quality: transit oriented infill projects, judicial review streamlining for environmental leadership development projects, and entertainment and sports center in the City of Sacramento, 2014

STANDARDS

National

- US Department of Justice – ADA
- Standards for Accessible Design, 2010

State

- California Department of Motor Vehicles – 2015 Vehicle Code
- California Building Standards Commission
- California Fire Code, 2013
- Caltrans – California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014

- Caltrans – Design Information Bulletin (DIB 82-05) Pedestrian Accessibility
- State of California - Public Utilities Code
- State of California - California Streets and Highways Code

POLICY AND PLANS

State

- Caltrans - Complete Streets Implementation Plan 2.0 2014-2017
- Caltrans Memorandum: Design Flexibility in Multimodal Design, 2014
- CMAP - Complete Streets Toolkit, 2015
- Deputy Directive 64-R2: Complete Streets - Integrating the Transportation System, 2014

Local

- City of Santa Monica – Downton Community Plan (DCP), 2017
- City of Santa Monica - Land Use and Circulation Element (LUCE), 2010
- City of Santa Monica - Municipal Code
- City of Glendale – TDM Ordinance
- City of San Francisco – TDM Plan
- City of Cambridge, MA – PTDM Plan
- CMAP - Complete Streets Toolkit, 2015
- METRO - Safe Routes to School Resource Manual, 2016

PROGRAMS

National

- Partnerships to Improve Community Health (PICH) formally Healthy Communities Program (HCP)
- National Center for Safe Routes to School
- National Bicycle and Pedestrian Documentation Project
- USDOT - Transportation Investment Generating Economic Recovery (TIGER)
- Affordable Housing and Sustainable Communities (AHSC)

State

- Caltrans - Active Transportation Planning Program (ATP)
- Caltrans - Safe Routes to School
- Caltrans - Adaptation Grant
- Caltrans - Sustainability Planning Grant
- Caltrans - Highway Safety Improvement Program (HSIP)
- CCC - Local Coastal Program
- California Natural Resources Agency - Urban Greening Program
- California Natural Resources Agency Environmental - Enhancement and Mitigation Program (EEMP)
- Office of Traffic Safety (OTS)

Local

- SCAG - Sustainability Planning
- METRO - TOD Planning
- METRO - Measure M

INITIATIVES

National

- Center for Transit-Oriented Development
- Green Streets
- Open Streets
- Play Streets
- Reconnecting America
- Smart Growth America
- Towards Zero Deaths (FHWA)
- Transit-oriented Communities
- Vision Zero

DESIGN GUIDANCE

National/International

- AASHTO - A Policy on Geometric Design of Highways and Streets, 6th Edition, 2011
- AASHTO - Guide for the Development of Bicycle Facilities, 4th Edition, 2012
- AASHTO - Guide for Geometric Design of Transit on Highways and Streets, 1st Edition, 2014
- AASHTO - Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004
- AASHTO - Roadside Design Guide, 2011
- APA - U.S. Traffic Calming Manual, 2009
- CROW - Design Manual for Bicycle Traffic, 2007
- FHWA - Roundabouts Informational Guide, 2000

- FHWA - Signalized Intersections: An Informational Guide, 2013
- ITE – Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, 2010
- ITE – Recommended Practices on Accommodating Pedestrians and Bicyclists at Interchanges, 2014
- LIDC - Green Streets Municipal Handbook, 2008
- NACTO – Urban Bikeway Design Guide. 2014
- NACTO – Urban Street Design Guide. 2013
- NACTO – Global Street Design Guide. 2016
- Reconnecting America - Station Area Planning
- Smart Growth America – Empty Spaces, 2017

State

- Caltrans - Bus Rapid Transit: A Handbook for Partners, 2007
- Caltrans - Complete Intersections: A Guide to Reconstructing Intersections and Interchanges for Bicyclists and Pedestrians 2010
- Caltrans – Main Street California, 2013
- Caltrans – Smart Mobility Framework, 2010

Local

- OCCOG - Complete Streets Initiative Design Handbook, 2016
- METRO - First Last Mile Strategic Plan, 2014
- Translink – Transit Oriented Communities, 2011
- WRCOG – 4 City Neighborhood Electric Vehicle Transportation Plan, 2010