APPENDIX I – PEER CITY INTERVIEWS

NELSON NYGAARD

MEMORANDUM

To: Tracy McMillan, Associate Principal

From: Miranda Adams, Associate

Date: May 31, 2024

Subject: Downtown North-South Bikeway – Event Center Impacts

As we progress with the Phoenix Downtown North-South Bikeway on 3rd Street, we want to ensure the concerns of key downtown event centers are fully addressed. This memo outlines the main points of tension when constructing bike lanes near downtown event centers and how they have been resolved in Phoenix's peer cities. City staff interviewed for this memo include representatives from the Cities of Denver, Houston, Las Vegas, Salt Lake, and Sacramento.

Street Closures

The 3rd Street Canyon area is often used as an event space, necessitating its closure to through-traffic of all kinds, including those using the proposed bike lane. The City of Houston has not faced any major barriers to utilizing the roadways as event spaces in the same way as before with the addition of protected bike infrastructure. There has been some frustration from bike users in Houston over street closures that include bike lanes, just as happens with car drivers and re-routed bus riders. To reduce the impact of street closures on bike riders, city staff and event planners work with local bike advocacy groups to communicate street closures and identify alternative routes. Ensuring bike riders are aware of upcoming closures and are provided with the safest alternative bike route to return to the protected infrastructure is essential in building trust between event hosts and riders, and can provide the basis for future partnerships.

While not used as an event space, the bike lanes directly adjacent to Coors Field in downtown Denver are typically closed for major events due to safety issues that arose when Coors Field was first opened. Because the event center was constructed after the bike lanes, the lanes were not designed with the level of event traffic in mind, and officials recognize that the configuration of the roadway overall would look different and likely not pose similar concerns if constructed today. Since its construction, bike riders have used alternative routes when lanes were closed for events, often directed by hired event staff.

Over time, as protected bike infrastructure and a strong overall network proliferates, the less an individual street closure will impact riders. For example, in Sacramento, the Downtown Bikeways project in 2018 added 30 blocks of protected bikeways, and the current Central City Mobility Project is working to add an additional 62 blocks of protected bikeways, including multiple one-way to two-way road conversions. Street closures as a result of events or construction have less impact on individual blocks as other options become available to bike riders.

Multimodal Interactions

The AT Connector will change how the many modes of travel in downtown Phoenix interact, particularly at key access points, therefore it is an opportunity to increase safety for all road users.

Pedestrians

In Denver, a key goal of the most recent protected bike lane projects has been to reduce the use of micromobility devices on sidewalks. Giving micromobility users space to safely ride without endangering pedestrians has been viewed by businesses as worth losing a lane of parking, providing relief to crowded sidewalks.

Mini-crosswalks were added across the bike lanes between valet loading zone and the frontage of the venue for one key destination in Denver, and similar actions to adjust lane may be taken in Phoenix if there are clear areas of conflict.

Curb and Garage Access

Ensuring continued use of the curb for loading and access to parking garages will be key to the successful integration of bike facilities in Phoenix, as has been the case in other downtown areas. In Sacramento, outreach teams worked with adjacent businesses to identify appropriate loading zones and reduce conflicts once the bike lane was implemented. Denver similarly supported businesses in either relocating loading and valet zones or adding additional protection and delineation where needed, satisfying the needs of current and future road users. The Denver team recommends colored painting and striping or pavement markings to improve user awareness of differences in infrastructure. Making garage access clear will support the multiple needs of the road where ingress and egress are required.

Road Safety

As motor vehicle speed is typically the largest contributing factor to road injuries and fatalities, the reduction in speed caused by lane conversion mitigates most other safety concerns, despite the increase in bicycle traffic and changes to typical traffic flow. For

example, Denver reported a reduction in crashes between modes when protected bike lanes were installed. Similarly, other cities have found that protected bike lanes reduce overall conflict between modes and risk can be further reduced through proper signage and outreach to all road users.

Motor Vehicle Congestion

Lane reductions and conversions to two-way vehicle operation have always caused stakeholder concern at the outset of the planning process, as they will inevitably result in changed traffic flow. However, with outreach, education, and continued management, as well as moving forward with other active transportation projects, roadway conversions and bike lanes can improve access and safety for all. Conversion from one-way to two-way traffic is common throughout peer downtown master plans and can improve access for drivers and reduce confusion.

Insights from Denver highlight the significance of prioritizing traffic management plans, especially during major events, to address congestion concerns effectively. Traffic congestion is always severe during a major event, regardless of the presence of a bike lane, and providing alternative modes of travel supports an overall reduction in traffic volume.

Houston Public Works is actively reviewing traffic volume, speed, and crash data from before and after the installation of a new bike lane, on the road where the project was installed as well as surrounding roads. If there is a significant increase, HPW can implement additional mitigation measures. After the installation of the Downtown AT Connector, ongoing monitoring can support modifications and other mitigation efforts if needed, targeting areas where changes occur as road users adapt to the new roadway. Denver arts venues have found that there is less conflict from the bike lane than they initially anticipated, as peak periods of traffic don't always align between bike lanes and event center traffic, and no modifications ended up being necessary.

MEMORANDUM

To: Brian Fellows, City of Phoenix

From: Tracy McMillan, Nelson\Nygaard

Date: September 21, 2023

Subject: Phoenix Downtown AT Connector Interviews

Context

The event centers in DT Phoenix are concerned about the impact on event traffic if bike infrastructure such as a protected bike lane is routed through downtown on 3rd St., which is the main bike route on the north and south side of the city. The PHX Convention Center, Footprint Center (where Suns play) and Chase Field (Diamondbacks) are all on or adjacent to 3rd St. They're concerned about high traffic volumes in/out of parking garages along the route and/or the impact on bike travel through the area (feasibility and safety). We want to learn how other cities successfully addressed concerns like this and put in quality bike infrastructure next to major event spaces (e.g., convention centers, sports arenas) that are activated at times (e.g., events, games). We are interested in design but also importantly operations. What were the considerations when planning and what coordination occurs during events in terms of mobility and safety for all?

Interview Questions

1. How was the planning of infrastructure changes and implementation of operations conducted?
    a. What were the kinds of conversations that transpired?
    b. What were the tradeoffs in the negotiations and concessions processes?
    c. Related to operations, what were the effects on pedestrian and bicycle travel during sidewalk and road closures?
        i. How frequently did these occur?
        ii. How were they coordinated?

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City of Sacramento

Coordination or planning around large venues and/or event centers was not needed as much as a part of the city's engineering phase of the Downtown Mobility Project as a part of the Central City Specific Plan and Grid 3.0 Plan, with the objectives to:

- enhance commercial corridors for safe cycling and walking, while accommodating both through and local traffic;
- protect neighborhood streets as places where parents feel safe for their children to walk and bike; and
- improve connections between neighborhoods and downtown for biking, walking, and transit.

The master planning for the downtown grid made decisions regarding:

- which streets get road diets,
- which get two-way conversions, and
- which get traditional rather than protected or buffered bikeways.

The original scope of the Local Partnership Program (LPP) grant was to

- convert 5th St and a segment of I St from one-way to two-way traffic, adding Class II bike lanes; and
- implement and/or expand Class IV bikeways on 9th St, 10th St, P St, and Q St.

The scope was revised and expanded:

- on 5th St to:
  - convert blocks with one-way traffic to two-way traffic,
  - install new Class II bike lanes, and
  - install signal modifications to accommodate the new southbound direction of travel, and
- on I St to:
  - reduce travel lanes from three to two, and
  - install Class IV or buffered Class II bike lanes

Broad and deep public engagement was conducted through the methods of public meetings and tabling at the local farmers' market. Infographics, posters, maps, and flyers were developed to share information. A website was created for similar purposes and to share public meeting information. Stakeholders such as Project-Based Improvement Districts (PBIDs), neighborhood associations, community groups, and businesses with potential

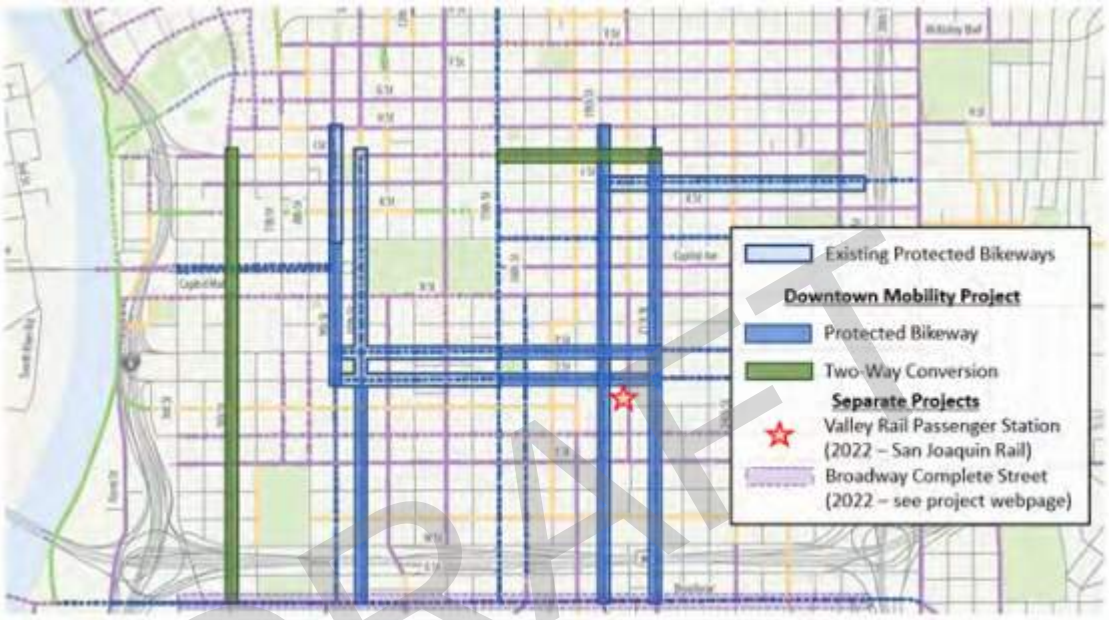
parking and/or loading zone impacts were determined by project staff for direct and specific engagement and follow-up.

Coordination with the Regional Transit District was necessary for decision-making regarding bus stop locations and configurations along the two-way conversion corridors. Coordination was also necessary with other divisions and departments, such as the

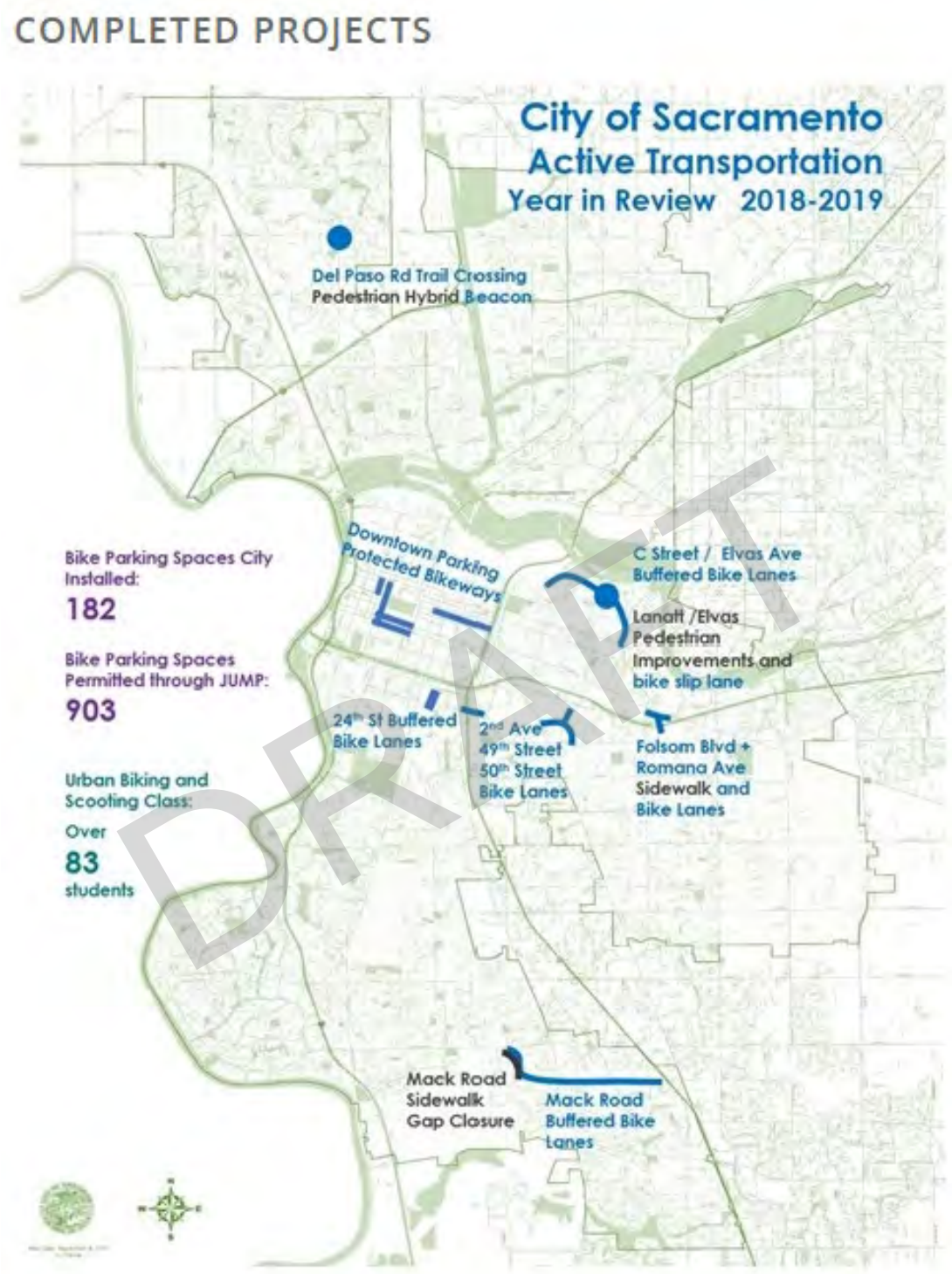
- Recycling and Solid Waste Division (to understand project impacts on street sweeping, garbage collection, and leaf pick-up),
- Transportation Division (for contributions toward the decision-making regarding the development of lane configurations along the corridors),
- Parking Division (to identify and coordinate loss of parking, loading zone adjustments, and parking meter modifications, as well as to determine the responsibilities of the contractor and Parking Services during construction), and
- Department of Utilities (to coordinate project implementation with utilities construction and plan for timeline conflicts).

Regarding large venues and/or event centers:

- The Golden 1 Center (G1C), where the Sacramento Kings U.S. men's basketball team plays and which hosts concerts and large events, is next to the project work on 5th St, which will not have protected bikeways adjacent to the venue. The block of 5th St directly adjacent to the arena was constructed with the ultimate two-way facility as part of the construction of the Golden 1 Center, so the project will not change anything fronting the arena. The project engineering team made sure to review the G1C Traffic Management Plan, to make sure that the established pre- and post-event traffic plans are not affected by the corridor improvements. The block directly adjacent to the arena is closed during events, and the traditional bike lanes on the adjacent blocks leading away from the arena will be open during events.
- The Memorial Auditorium backs up to the bikeway improvements on I St and is a one-way street currently with three lanes. The project will reduce the lanes to two lanes and install a protected bikeway, which will be on the opposite side of the street from the back of the Memorial Auditorium. The project engineering team worked with the Memorial Auditorium staff to understand how their event trucks will access the loading docks, but there were not any discussions or concerns about the bikeway with respect to events, as it is on the other side of the street.
- The rest of the bikeways being constructed as a part of the Downtown Mobility Project are along regular downtown/midtown gridded streets. The project engineering team worked with business associations to identify loading zones and related items with potential impacts, but not on the magnitude of running a protected bikeway on the frontage of an arena.

- Active transportation and complete streets projects underway include Central City Mobility, Bell Avenue Complete Street Rehabilitation Project, Broadway Bridge Project, Broadway Complete Streets, Del Rio Trail, Franklin Complete Street, Garcia Bend Trail, I Street Bridge Replacement, Meadowview Road Streetscape Project, North 12th Complete Street Project, South Sacramento Parkway Trail West Project, and Two Rivers Trail Phase II.
- Figure 1 Multimodal Projects in City of Sacramento
- 

- Street maintenance and bikeway projects in 2018 were specified in the 2018 street maintenance program and included most residential streets with no bikeways. Opportunities arose to resurface that year for a number of high-volume streets, however. Enhanced bikeways were then added along Mack Road from Archean Way to Valley Hi Drive and 24th Street from 2nd Avenue to Broadway, and through the J Street Safety Project. One-time bikeway projects installed in 2018 include a hybrid beacon crossing with crosswalk on Del Paso Boulevard at Jackrabbit Trail (East Drain Canal), buffered bike lanes on C Street from 33rd Street to Elvas Avenue and Elvas Avenue from C Street to H Street, bike lanes on 2nd Avenue from Franklin Boulevard to Broadway, trail gap closure from Mae Fong Park to 65th Street, a hybrid beacon crossing with crosswalk on Pocket Canal Trail at Pocket Road and Sump Station, buffered bike lane and sidewalk on Mack Road at Deer Meadow Drive, and Downtown Bicycle and Pedestrian Safety Projects. [i]
- Figure 2 Completed Active Transportation Projects in City of Sacramento



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- The Downtown Bikeways project built in 2018 brought 30 blocks of protected bikeways to P Street, Q Street, 10th Street, and J Street. The Central City Mobility Project is the next phase associated with this project and related ones, which will add 62 blocks of protected

bikeways with rehabilitated pavement to the network and convert a major street (5th Street from X Street to H Street) from one-way to two-way for circulation improvements with bike lanes added in both directions. The project will also extend the protected bikeway network built in 2018 on 9th Street from Q Street to L Street, 10th Street from Broadway to Q Street, 19th Street from H Street to Broadway, 21st Street from I Street to Broadway, P Street from 15th Street to 21st Street, and Q Street from 14th Street to 21st Street. [ii, iii, iv, v, vi]

- Figure 3 Central City Mobility Project Elements

City of Sacramento

Planning Division

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Central City Mobility Project

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Megan Johnson, Senior Engineer

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Bell Avenue Complete Streets Rehabilitation Project

916-226-3838, Outreach@CompleteBell.org

34th Street Rehabilitation and West El Camino Avenue Rehabilitation Projects

Kelli Lacy, Project Manager

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City of Denver (4/17/2023)

Sam is bike/ped planning director. Jay manages office of innovation and has completed/is constructing bike lane in question, can answer specific questions in relation.

Blake and Market multimodal project with further extents as a protected bike lanes

- 2 miles both ways on one-way couplets, installing 7 blocks of bus only lanes downtown, with walking improvements in former industrial lands (low-cost walkways which preserve the space for future sidewalks).
- Bike lanes date back over a decade ago. Denver moves DT: started in 2018, delayed due to pandemic, and ended in 2020, involving residents, community organizations, businesses, surveyors, and survey participants; focused on DT mobility.
- Project selected because micromobility data was leveraged to find that Blake and Market were most used for micromobility and e-bikes, though no designated lanes existed
  - mobility on sidewalks and study analyzed how to get people on designated ROW.
- Runs from cherry creek trail system through downtown corridor, with decent bike connections, then in front of Coors field, then terminates on Broadway, connecting to district with active transportation infrastructure and users. Blake abuts Coors Field.
- Between 21st and 22nd, Blake St and bike lanes on it are closed during games, which was decided soon after stadium was built, finding that it was a safety issue – Still need to determine how bicycling community feels, but this has been an existing condition for a while, and it's not the only connection. Street closure front Coors Field was decided decades ago and would not happen today
- Parking concerns were also considered and addressed. Half of Blake and Market are three travel lanes then drops to two around 20th. Street could be taken easily. Taking 300 parking spaces part of the process, which has upset retail business owners. Biggest parking space loss project, but project is mandated by mayor (strong from top), and planning director understands the importance.
- Downtown folks have been talking about getting micromobility off sidewalks, so parking spots must be taken to create active transportation infrastructure to transition them. Business communities have been loud, but existing planning processes have brought relief. Street widening not conducted anymore, and street curbs are in high demand.
- 50% of people who travel downtown or in the proximity don't travel by car – not big of a driving culture. 83% of on-street metered parking will remain within greater LoDO area. Park-n-Rides are free first 24 hours.

- Population growth will bring more people in and out of downtown. So lanes must be dedicated toward transit and active transportation for efficiency reasons. Strong active transportation community in Denver. Need exists for undoing decades of car-oriented planning, so planning for active transportation prioritized ahead.
- Minor tweaks made after conversations, but overall it is the desired terminus and alignment. Concessions made for loading zones and valets at select locations, tried to maintain as many as they could, but where they couldn't, loading zones and valets were relocated, such as where protection and delineation was added for one, specific location, and Coors Field had concessions and issues with alignment abutting in front.
- There were issues with bike lane crossing straight on the north side, so it crossed diagonal, which was proven more safe by engineers. Concerns remained regarding lanes still being used when it was closed, but monitoring helped to redirect people as needed, which was minor. Wanted most of the delineation to be removed, but that concession was not made to safety hazard reasons.
- Bike projects often comes down to leadership and how they deal with alleviating confrontation and when to concede. Denver is bike-friendly with strong planning processes when things get heated.
- Traffic becomes so gridlocked during games that the transportation system operates much differently. The stadium itself should have a traffic management plan
- There's so much traffic and activity that people find themselves through it. How do you have PBL by high-activity loading stations? Safety problems, their occurrence and severity, are not a huge issue due to congestion/slow traffic speed. Congestion induces people to use active transportation/micromobility. Safety risk is mitigated because cars are going so slow. More vehicle-to-vehicle crashes, but less crashes between respective modes. Hard to get stakeholders to agree this is the right decision because they're stuck on bikes being the problem, when it actually brings more people to businesses.
- Add bike signals where sensible
- Do we have a traffic management plan with respect to events centers?

Denver Performing Arts Center (DPAC)

Figure 4 Google Streets Point of View

https://www.google.com/maps/@39.745555,-104.9974742,3a,75y,162.7h,87.46t/data=!3m6!1e1!3m4!1s1jJ5l7rZG-SreXBJ8RK2vQ!2e0!7i16384!8i8192

- Site Plan Developed for DPAC: Prior to creating this plan for DPAC, there was no existing site traffic plan, rather the police department created a standard operating procedure

and then passed these instructions along officer to officer – word of mouth rather than written text. Is this similar in Phoenix?

Denver Library/Art Museum

Figure 5 Google Streets Point of View

https://www.google.com/maps/@39.736845,-104.9890674,3a,75y,304.55h,71.62t/data=!3m6!1e1!3m4!1s7vzBt5pTsp5gmMSdsUSJ4g!2e0!7i16384!8i8192

Figure 6 Denver Library/Art Museum Loading Here

- Lots of school buses load here. A few alternatives were iterated and are to be implemented in the design in Figure 3 this summer. The idea is that bus drivers are professionals, and the conflicts will be primarily off-peak with bike peak volumes.
- Art Museum was concerned about children walking off the bus into a bike lane, which we understood, and thought this design was a good balance of pros/cons/tradeoffs. Buses will bend in at designated in and out conflict points, while bikes stay straight.

Busy Downtown Hotel

Figure 7 Google Streets Point of View

https://www.google.com/maps/@39.7443727,-104.9935556,3a,90y,257.81h,86.3t/data=!3m7!1e1!3m5!1sQZN7f78-bNpdHUSWU7Azww!2e0!6shttps:%2F%2Fstreetviewpixels-pa.googleapis.com%2Fv1%2Fthumbnail%3Fpanoid%3DQZN7f78-

bNpdHUSWU7Azww%26cb_client%3Dmaps_sv.tactile.gps%26w%3D203%26h%3D100%26yaw%3D75.26411%26pitch%3D0%26thumbfov%3D100!7i16384!8i8192

- PBL on 13th-15th
- DPAC mobility study: worked with arts venues, and they did not like protected a bike lane abutting area, because it becomes so activated, and people tend to stand in the bikeway, but peak periods don't always align – traffic not as heavy when peak periods coincide
  - Recommendation given for events staging plan. Consideration for at-grade raised bike lane with rumble strips to heighten awareness of bikes crossing
  - Best practice is to add vertical element for consolidating crossing areas, but not a big safety issue so project not as highly prioritized
- Convention center peak periods overlap more with bike traffic peak periods
- Pertinent to have excellent sightlines and ped/bike etiquette when traveling
- Events, what the traffic is, and specialized plans respective to events are very important
- Colored painting and striping and/or pavement markings are important for user awareness of differences in infrastructure
- Mini crosswalks between valet loading zones and hotel ROW frontside
- Safety issue is overblown between bikes and peds

Bannock

- Multimodal street abutting city hall and park. Lots of street painting. Street regularly closed for events, but accessible to peds/bikes, either by dismounting and walking bike or moving slowly on bike. Not vital to transportation network, and was closed off to cars with bollards.
- Property owner may have bump-in zoning load, so no free loading in bike lane
- Understand parking utilization and loss, with respect to the street and up to two blocks of those corridors, considering the relative catchment area

Coors Field

Figure 8 Google Streets Point of View

https://www.google.com/maps/@39.7547846,-104.9937309,3a,75y,18.82h,89.28t/data=!3m6!1e1!3m4!1snK4-piit_8CjDtm7O-dZgA!2e0!7i16384!8i8192

New PBL in front of Coors Field in construction now and is planned to open this May.

City of Denver

Downtown Denver had the highest share of walking trips in 2019 and the highest volume of scooter trips in 2020. Downtown also had some of the highest population densities citywide (p. 23, 25, 42). [vii, viii, ix]

Figure 9 Share of All Walking Trips

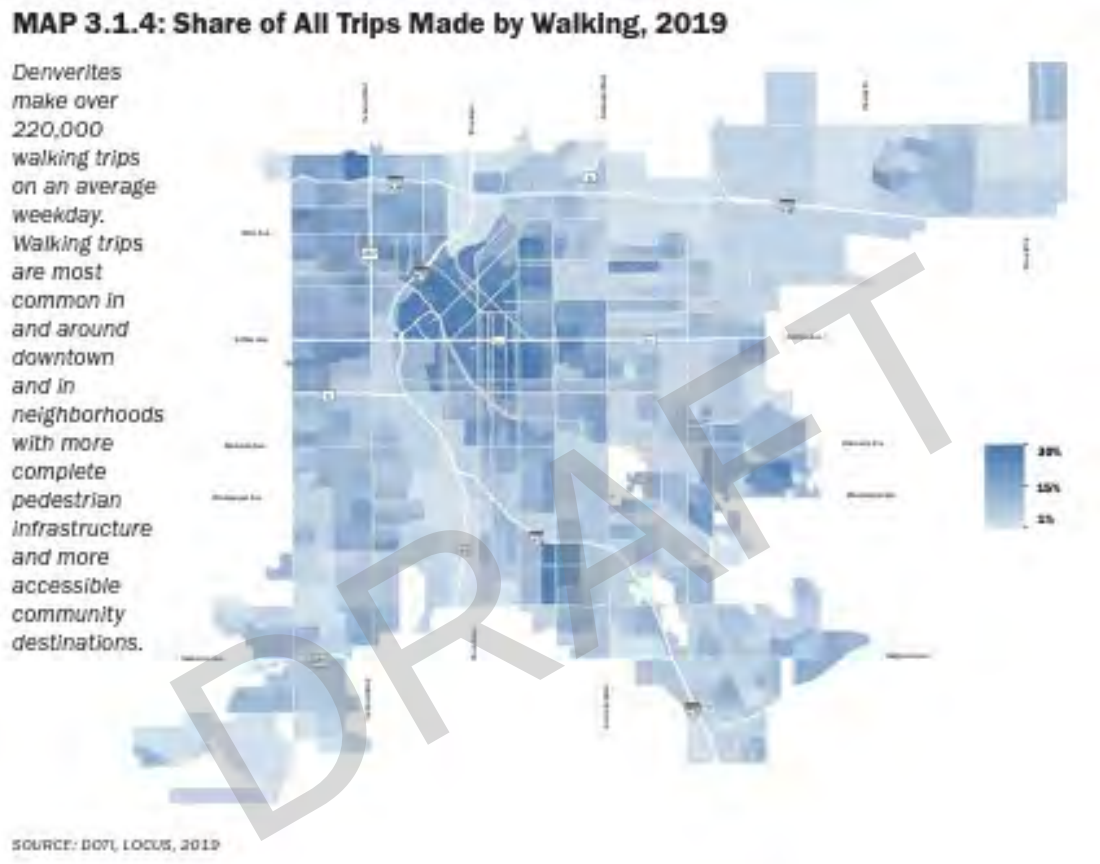
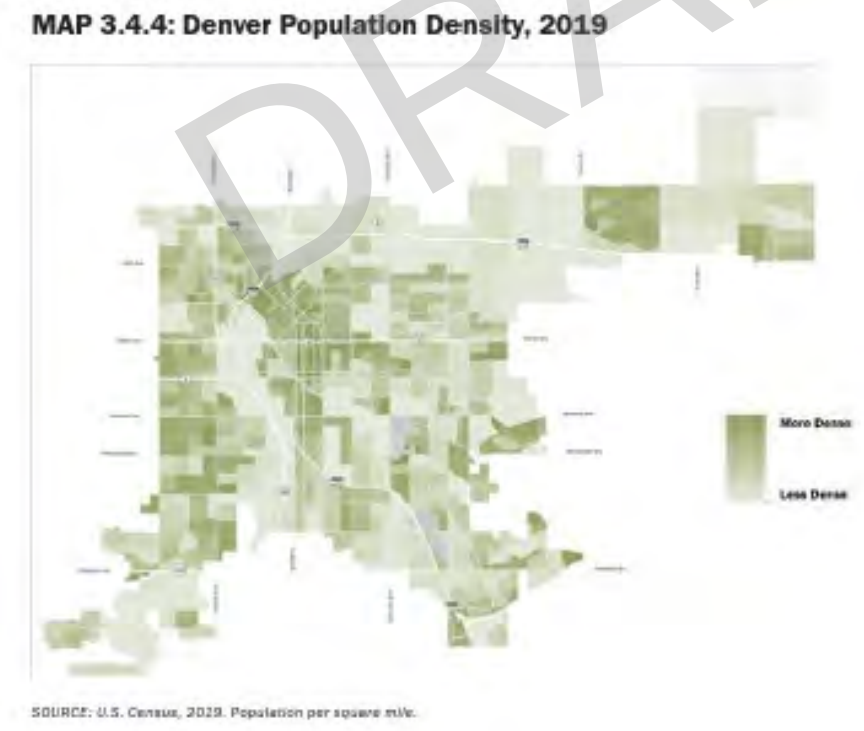


Figure 10 Volumes of Scooter Trips

Figure 11 Citywide Population Density



Protected one-way bike lanes run on Lawrence, Arapahoe, 15th and 14th streets, hugging the Colorado Convention Center. Standard bike lanes run along Champa and other streets between the Convention Center and Civic Center. Protected one-way bike lanes on 15th and 14th streets connect the Colorado Convention Center and Civic Center. [x, xi]

Figure 12 Downtown Bike Paths

Source: City of Denver

City of Denver

Community Planning and Development

General Inquiries

720-865-2700

Community Planning & Development General Inquiry Form

Citywide and Neighborhood Planning

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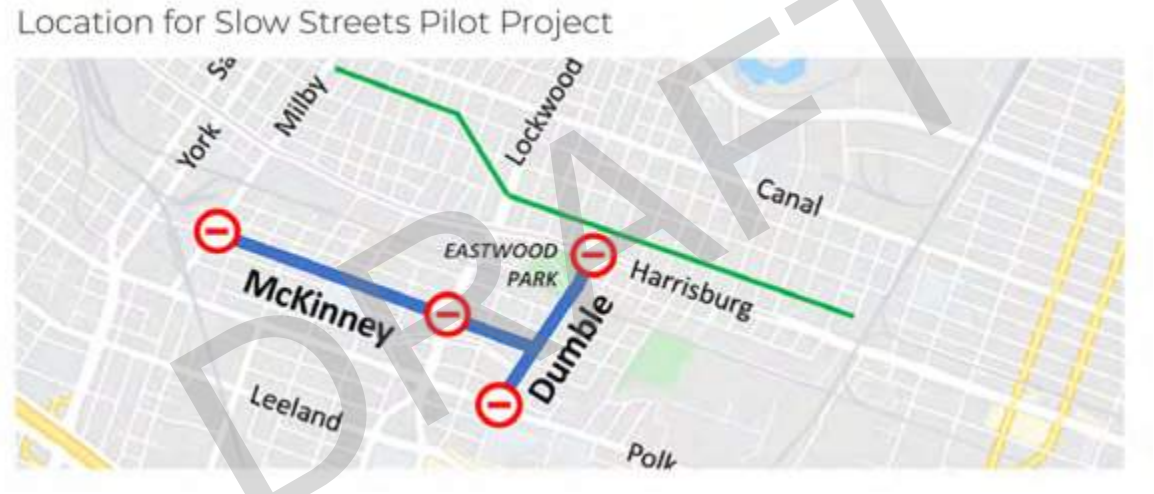
City of Houston

Houston's Slow Streets Pilot Projected "provided more space for walking and biking by limiting selected streets to local vehicle traffic" (p. 7). A $3.7 million grant is being implemented by Houston's bike share program to "purchase and install 71 bike stations, 568 bicycles, and 2 transport vehicles through H-GAC's Transportation Improvement Program (TIP)." Houston's bike share program now maintains 1,000 bicycles, including 100 electric bikes and 125 stations, with 13 new stations installed in 2020 at Austin and Gray, Westheimer and Dunlavy, Quitman and Main, Telephone and Eddington, Mason Park, Dllas and St. Emanuel, N. Braeswood and Kirby, S. Braeswood and Linkmeadow, Levy Park, Lyons and Waco, and Alexander Deussen Park (p. 11). [xii]

Figure 13 Slow Streets Pilot Project Locations



Houston Public Works Sidewalk Program builds sidewalks and ramps along streets approaching schools, major thoroughfares, and improves accessibility for people with disabilities. The Pedestrian Accessibility Review Program element requests improved sidewalk accessibility for people with disabilities to travel to the bank, bus stop, educational facility, employment, grocery store, home, medical facility, METROLift, pharmacy, vehicle, or place of worship. The School Sidewalk Program element builds sidewalks up to four blocks approaching an existing school, not including sidewalks around the perimeter of the school, and not approving a project if there is an existing sidewalk on either side of the street along the requested path. The Major Thoroughfare Program element provides up to four blocks of new sidewalks along major thoroughfares for people to safely access shopping centers, bus stops, and other frequently traveled routes. The area must have acceptable right-of-way with

no ditches, slopes, large tree roots, fences, walls, or obstructions, and no present sidewalk on either side of the street along the requested path. [xiii]

Walkable Place Pilot Areas were established in Midtown, along Emancipation Avenue, and along Hogan/Lorraine Streets, where new standards will be held for street width, pedestrian realm, building design, site design, and off-street parking. Midtown will see the most of the pilot program's associated changes out of the three areas, realizing future mandatory and a combination of mandatory and optional rules. Unlike the other two projects which will realize future street width rules, Midtown will instead realize future sidewalk and safety buffer rules. [xiv], [xv], [xvi]

Figure 14 Midtown Walkable Place Pilot Area

Figure 15 Emancipation Avenue Walkable Place Pilot Area

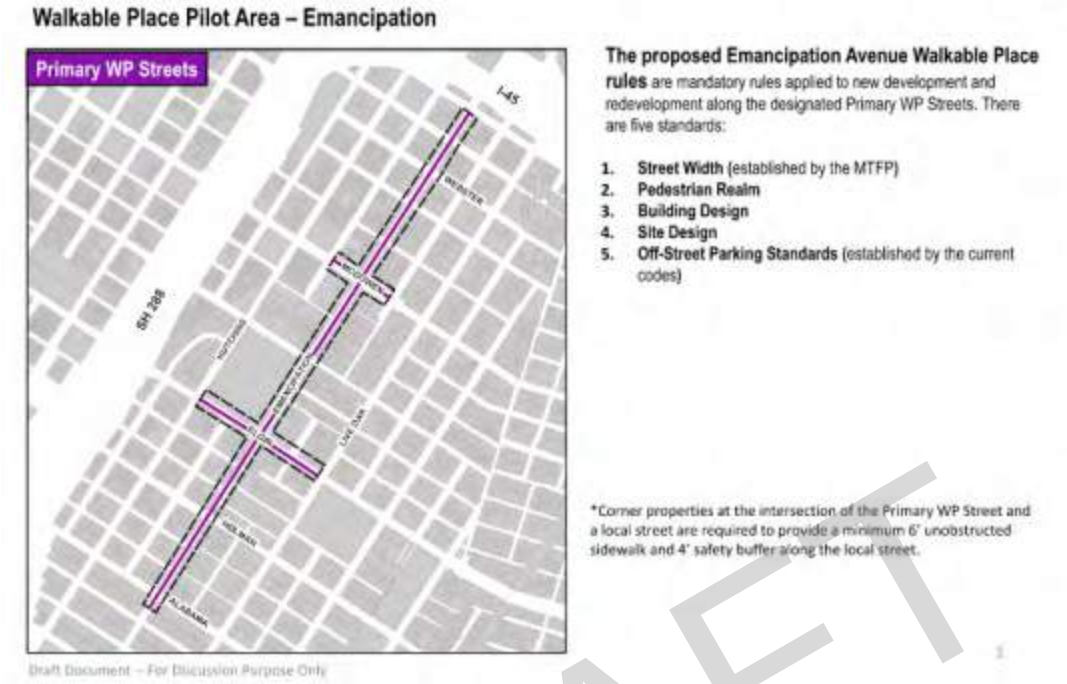


Figure 16 Hogan/Lorraine Street Walkable Place Pilot Area

City of Houston

Slow Streets Program

Mobility.Planning@houstontx.gov, 832.393.6660

Walkable Places Program

Homero Guajardo Alegria

Lyndy Morris

Phone: 832.393.6600, Fax: 832.393.6647

City of Las Vegas

The Stewart Avenue Complete Streets project is planned to start in 2023 to include sidewalks, improved lighting and bus stops, and adding landscaping and trees. This is to control for congestion and speeding and achieve safety and accessibility goals. The project is planning for transformative changes in downtown. A corridor-wide speed limit reduction near intersections is suggested to improve the safety of cyclists and pedestrians. City of Las Vegas received 23.9 million in federal money through the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) program. [xvii, xviii]

Gradual land use transitions are proposed for Allegiant Stadium to create opportunities for walking in the district. [xix, xx]

Figure 17 North Las Vegas Pedestrian & Bicycle Plan Network Recommendations, North

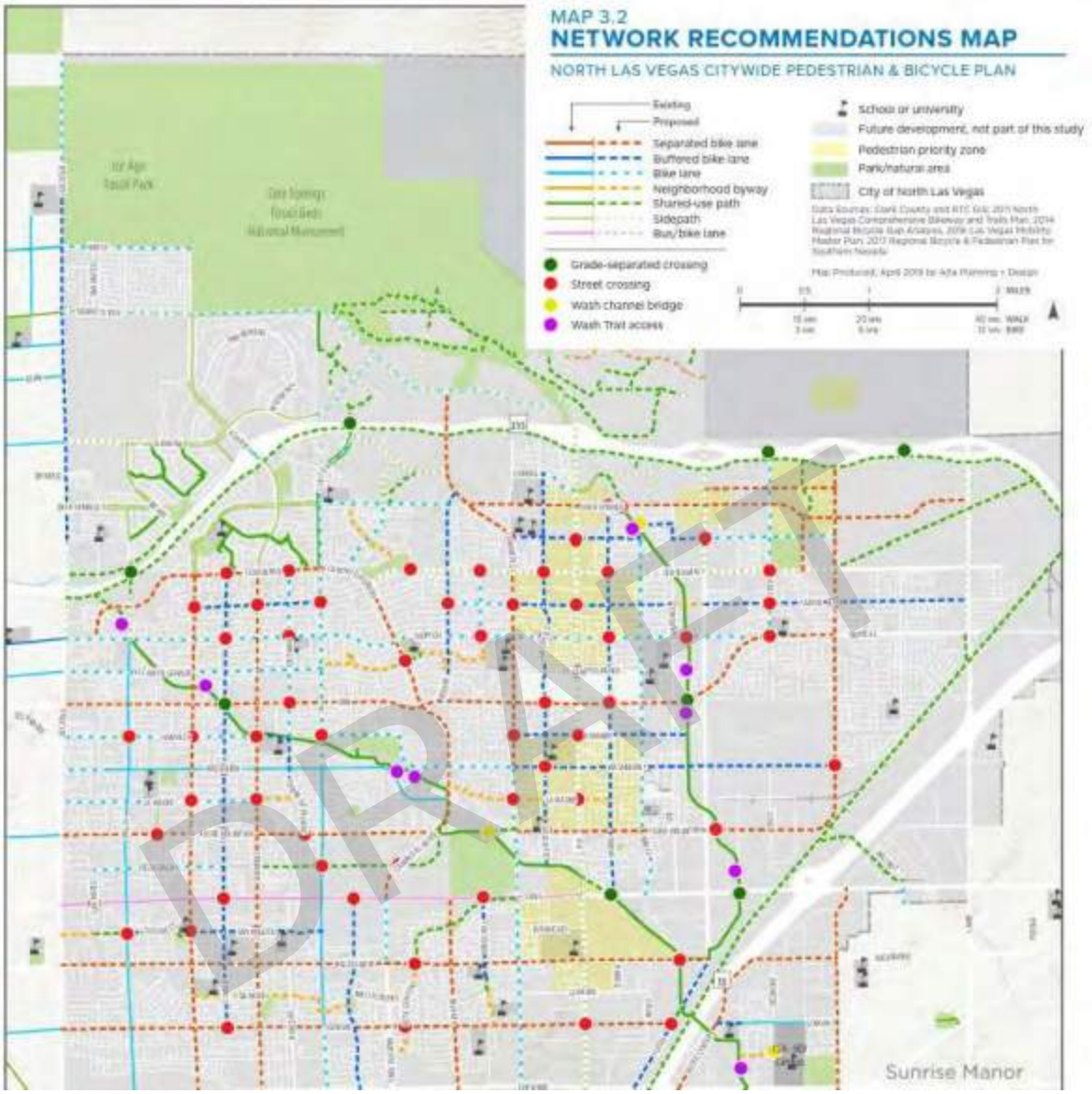


Figure 18 North Las Vegas Pedestrian & Bicycle Plan Network Recommendations, South

Figure 19

Figure 20

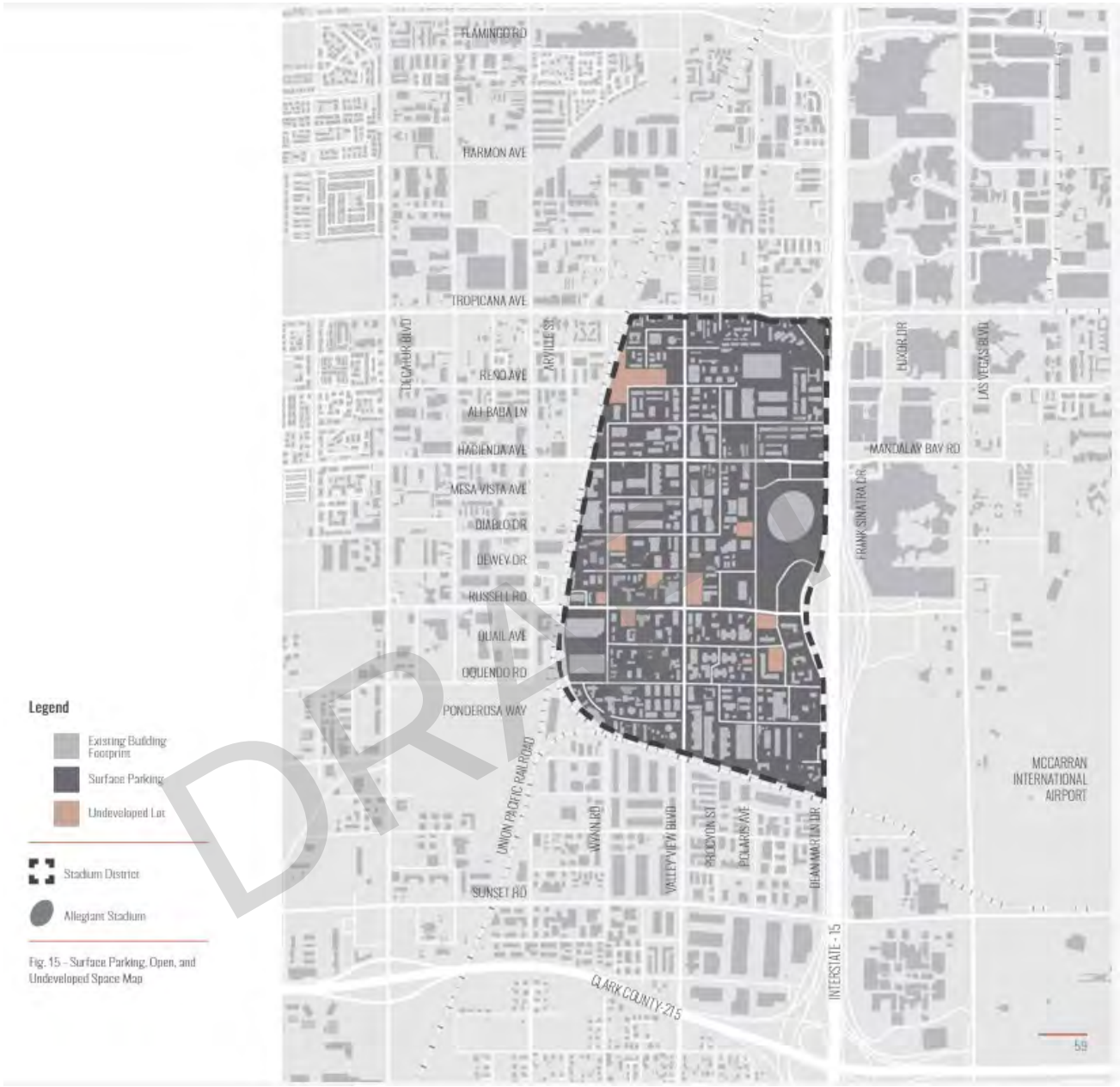

FLAMINGO RD
HARMON AVE
TROPICANA AVE
TROPICANA BLVD
ARVILLE ST
RESO AVE
ALI BABA LN
HACIENDA AVE
MESA VISTA AVE
DIABLO DR
DEWEY DR
RUSSELL RD
QUAIL AVE
OQUENDO RD
PONDEROSA WAY
UNION PACIFIC RAILROAD
WYNN RD
VALLEY VIEW BLVD
BRUCE WOODBURY BLVD
POLARIS AVE
DEAN MARTIN DR
SUNSET RD
CLARK COUNTY 215
INTERSTATE - 15
EXPY
LUXOR DR
LAS VEGAS BLVD
MANDALAY BAY RD
FRANK SINATRA DR
MCCARRAN INTERNATIONAL AIRPORT
59
Legend
Existing Building Footprint
Surface Parking
Undeveloped Lot
Stadium District
Allegiant Stadium
Fig. 15 – Surface Parking, Open, and Undeveloped Space Map
DRAFT

Figure 21

Figure 22


Dead Ends in the District
Pedestrian Travel Distances
The map on the right shows walking times less than 20 minutes from the Stadium District.
5 minutes
10 minutes
15 minutes
20 minutes
Starting Point
Stadium District
Allegiant Stadium
Fig. 17 - Pedestrian Travel Distance Map
FLAMINGO RD
HARMON AVE
TROPICANA AVE
RENO AVE
ALI BABA LN
HACIENDA AVE
MESA VISTA AVE
DIABLO DR
DEWEY DR
RUSSELL RD
BRAEL AVE
OCEANSIDE RD
PONDEROSA WAY
UNION PACIFIC RAILROAD
WYNN RD
KOVAL LN
PARADISE RD
SUNSET RD
CLARK COUNTY 215
INTERSTATE - 15
LAS VEGAS BLVD
MCCARRAN INTERNATIONAL AIRPORT
15 minute walk time because there is no direct route.
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Figure 23

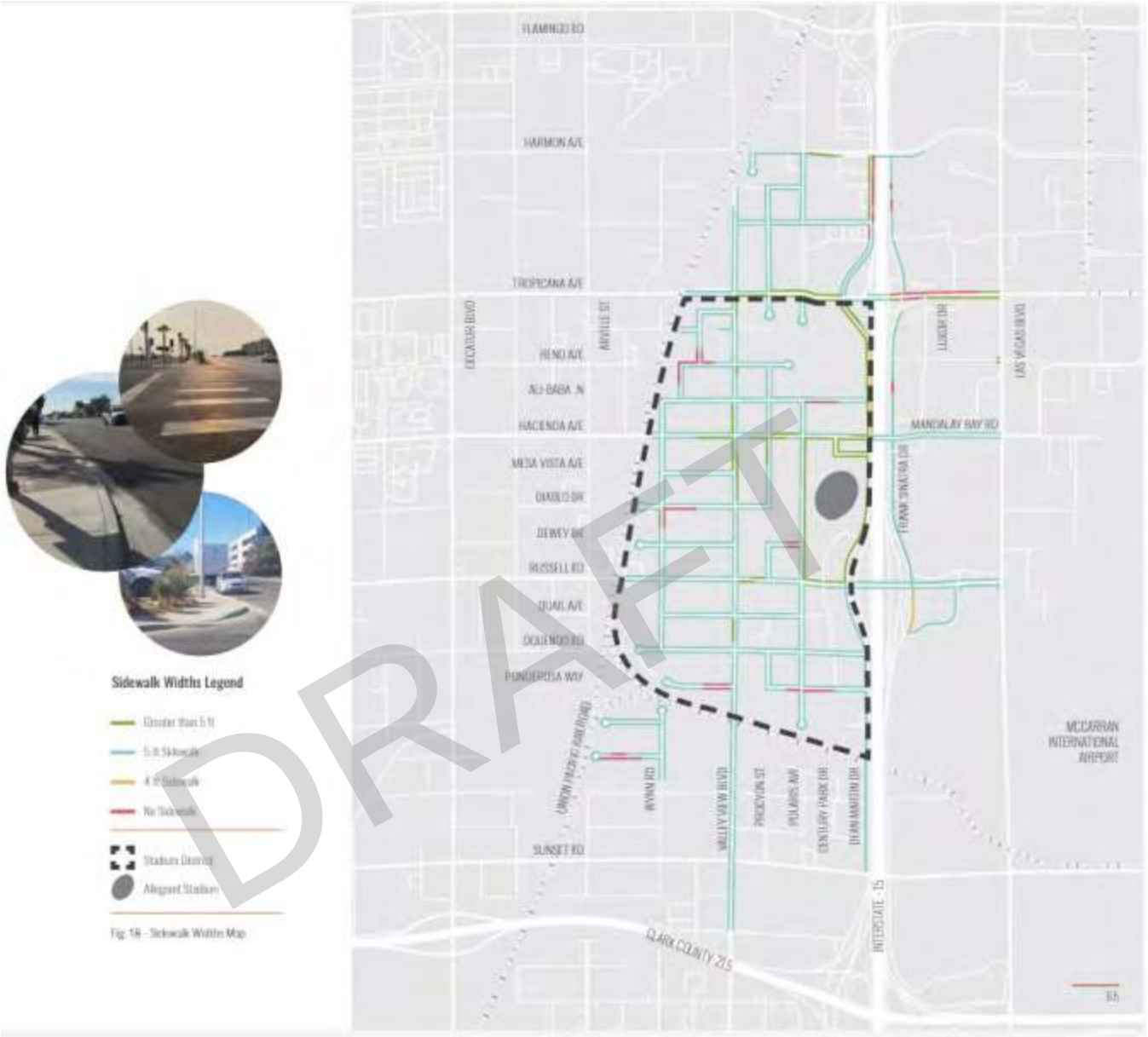


Figure 24

Figure 25

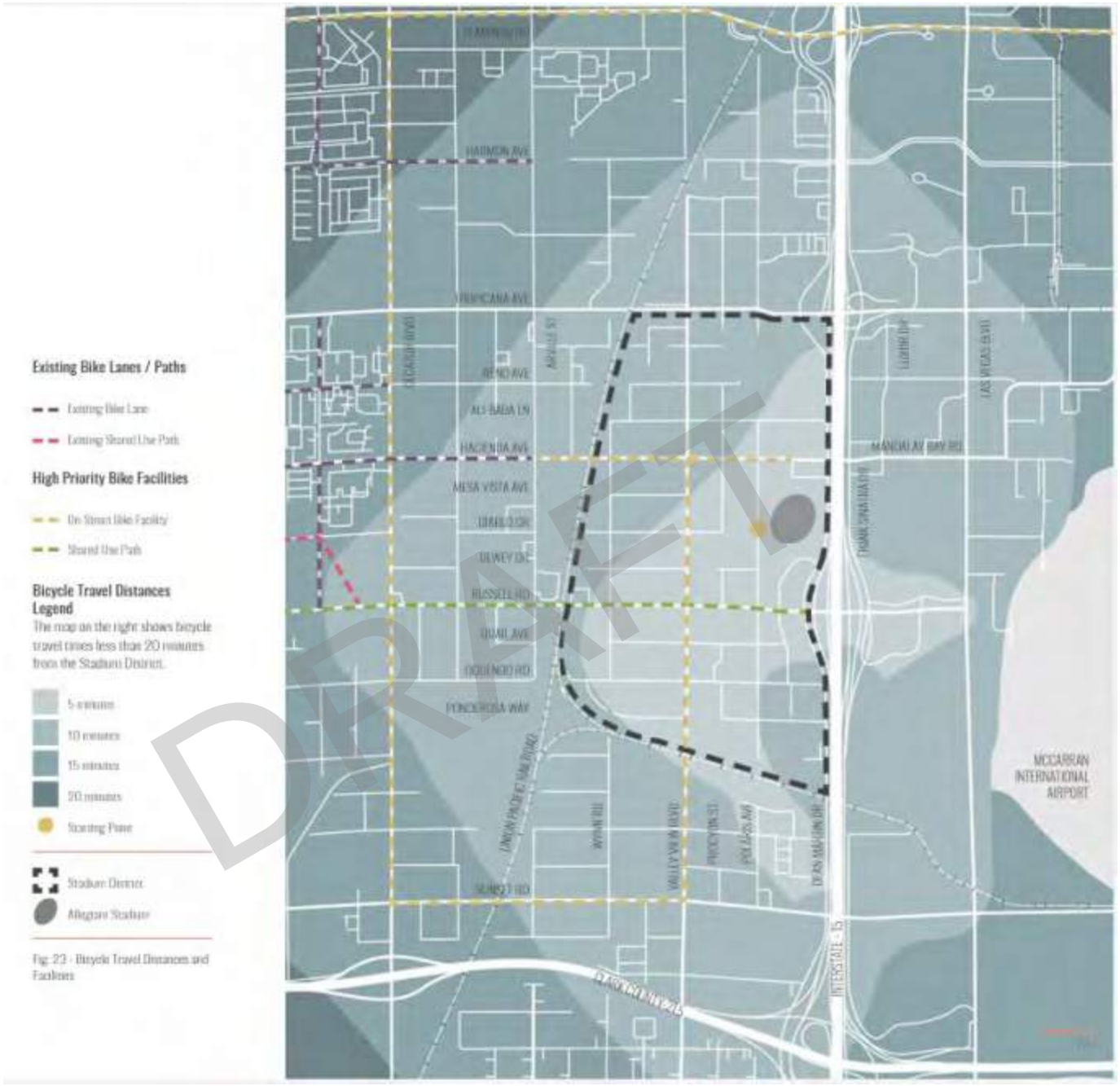

Existing Bike Lanes / Paths
Existing Bike Lane
Existing Shared Use Path
High Priority Bike Facilities
On-Street Bike Facility
Shared Use Path
Bicycle Travel Distances Legend
The map on the right shows bicycle travel times less than 20 minutes from the Stadium District.
5 minutes
10 minutes
15 minutes
20 minutes
Starting Point
Stadium District
Allegiant Stadium
Fig. 23 - Bicycle Travel Distances and Facilities
HARMON AVE
FLAMINGO RD
RENO AVE
ALI BABA LN
HACIENDA AVE
MESA VISTA AVE
RUSSELL RD
DUAL AVE
TROPICANA AVE
PONDEROSA WAY
SUNSET RD
MANDALAY BAY RD
MCCARRAN INTERNATIONAL AIRPORT
I-15
DRAFT

Figure 26

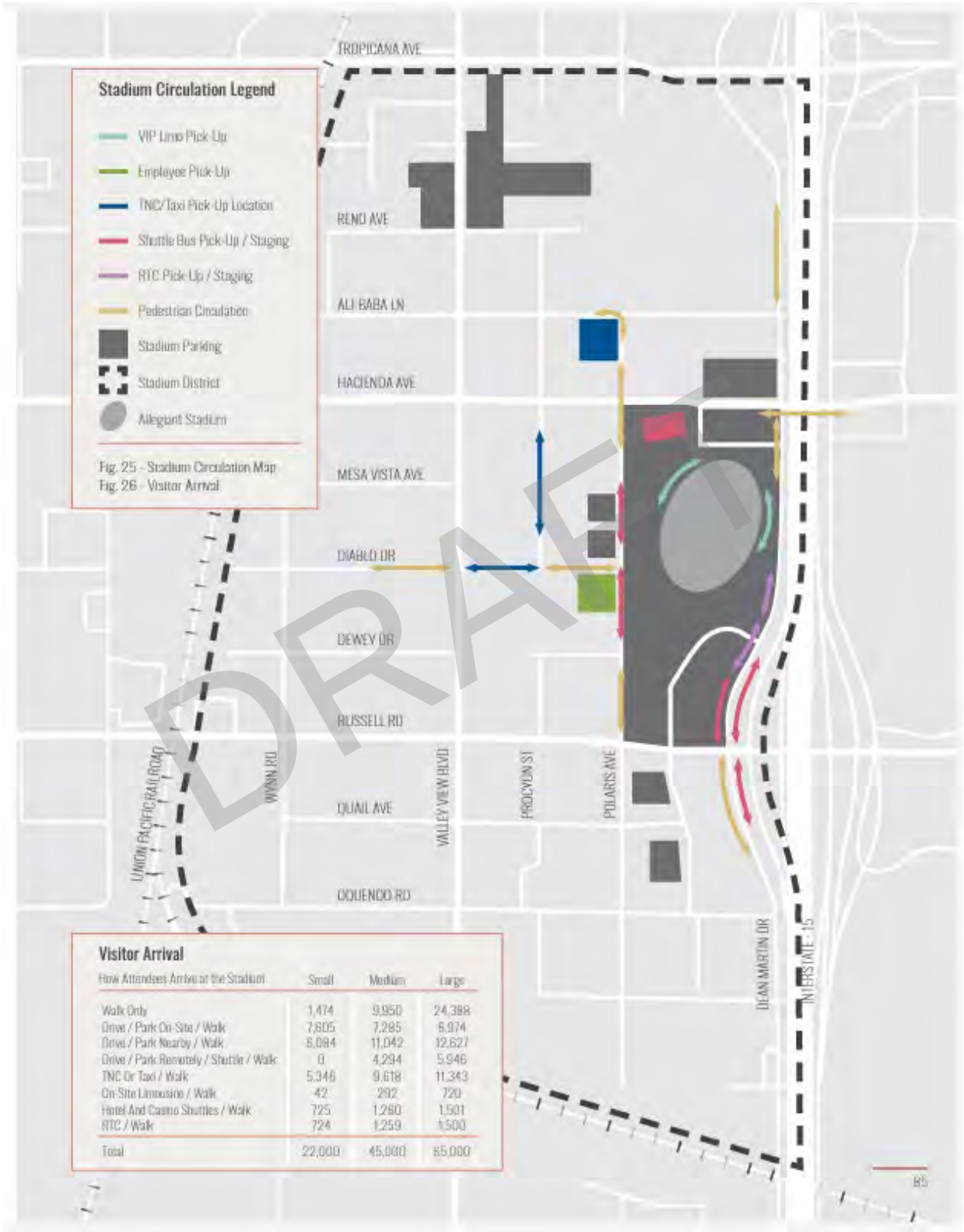
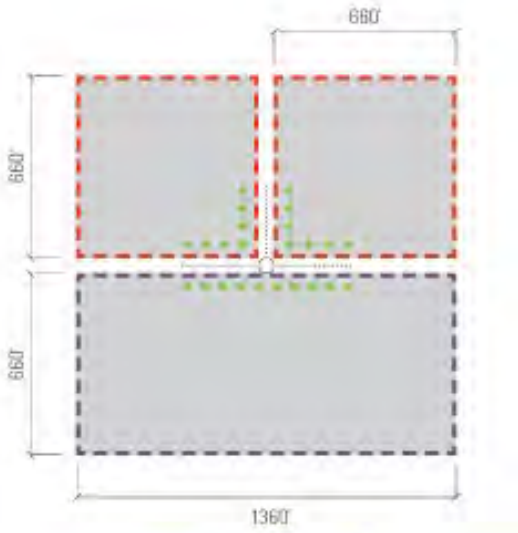

Stadium Circulation Legend
VIP Limo Pick-Up
Employee Pick-Up
TNC/Taxi Pick-Up Location
Shuttle Bus Pick-Up / Staging
RTC Pick-Up / Staging
Pedestrian Circulation
Stadium Parking
Stadium District
Allegiant Stadium
Fig. 25 - Stadium Circulation Map
Fig. 26 - Visitor Arrival
TROPICANA AVE
RENO AVE
ALI BABA LN
HACIENDA AVE
MESA VISTA AVE
DIABLO DR
DEWEY DR
RUSSELL RD
QUAIL AVE
OQUENDO RD
UNION PACIFIC RAILROAD
WYNN RD
VALLEY VIEW BLVD
PROCYON ST
POLARIS AVE
DEAN MARTIN DR
INTERSTATE 15
Visitor Arrival
How Attendees Arrive at the Stadium
Small
Medium
Large
Walk Only
1,474
9,950
24,388
Drive / Park On-Site / Walk
7,605
7,285
6,974
Drive / Park Nearby / Walk
6,084
11,042
12,627
Drive / Park Remotely / Shuttle / Walk
0
4,294
5,946
TNC Or Taxi / Walk
5,346
9,618
11,343
On-Site Limousine / Walk
42
292
720
Hotel And Casino Shuttles / Walk
725
1,260
1,501
RTC / Walk
724
1,259
1,500
Total
22,000
45,000
65,000
DRAFT

Figure 27


Bus Stop Ridership Legend
Weekday Average of Boarding and Alighting
0 - 150
150 - 900
900 - 1500
1500 - 2775
Existing Bus Route
Realigned Bus Route 104
Proposed Rapid Bus Line
Proposed High Capacity Transit Line
Proposed Vegas Loop Tunnel
Proposed Vegas Loop Station
FLAMINGO RD
HARMON AVE
TROPICANA AVE
201
DECATUR BLVD
ARVILLE ST
RENO AVE
ALI BABA LN
HACIENDA AVE
MESA VISTA AVE
DIABLO DR
DEWEY DR
RUSSELL RD
QUAIL AVE
OQUENDO RD
PONDEROSA WAY
SUNSET RD
212
104
UNION PACIFIC RAILROAD
WYNN RD
VALLEY VIEW BLVD
PROCYON ST
POLARIS AVE
DEAN MARTIN DR
LUXOR DR
FRANK SINATRA DR
MANDALAY BAY RD
LAS VEGAS BLVD
119
EXPO
MCCARRAN INTERNATIONAL AIRPORT
INTERSTATE - 15
CLARK COUNTY 215
DRAFT

Figure 28

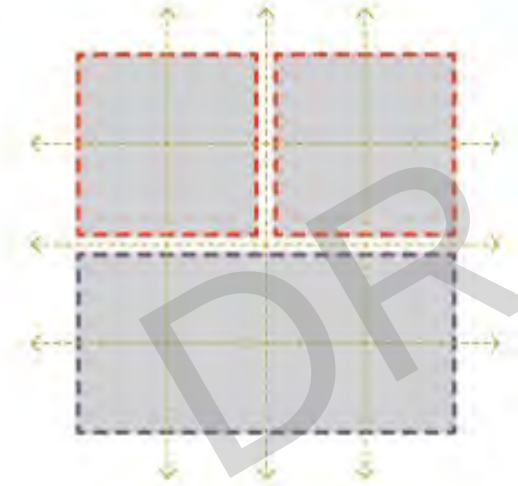


Not Easily Walkable

Because the blocks are so large, there are few route options for pedestrians and vehicles, and this size constraint limits the number of parcels that are available. Being forced to walk on a long block with no other option is a deterrent for pedestrians.

Pedestrian 5 min. Walking Path
Destinations Accessible Within 300' (5 min walk)
Pedestrian Starting Point

An average pedestrian walking time along a block length of 300 feet is 5 minutes. This means that the smaller blocks in the district, at 660 feet, require more than 10 minutes to traverse, and the larger blocks, take over 20 minutes to walk.

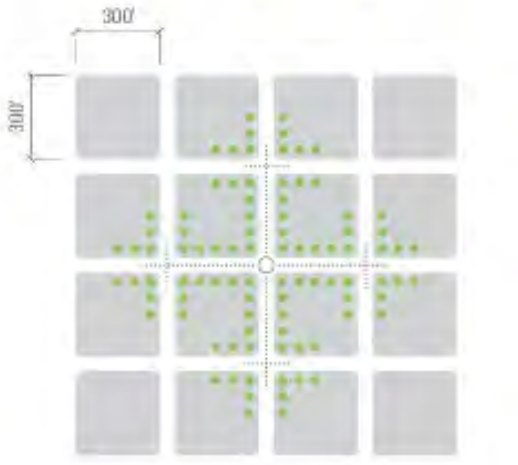


Increase Permeability

Reducing the scale of the blocks allows for more route options for pedestrians, greater permeability for vehicles and pedestrians, and increased route efficiency.

Dividing the Block

Blocks can be reduced through a few different options. Most commonly, streets with varying types of transportation are used, but pedestrian-only paths, bicycle paths, and open spaces can also be used to make blocks more permeable and provide pedestrians with visual interest and options.



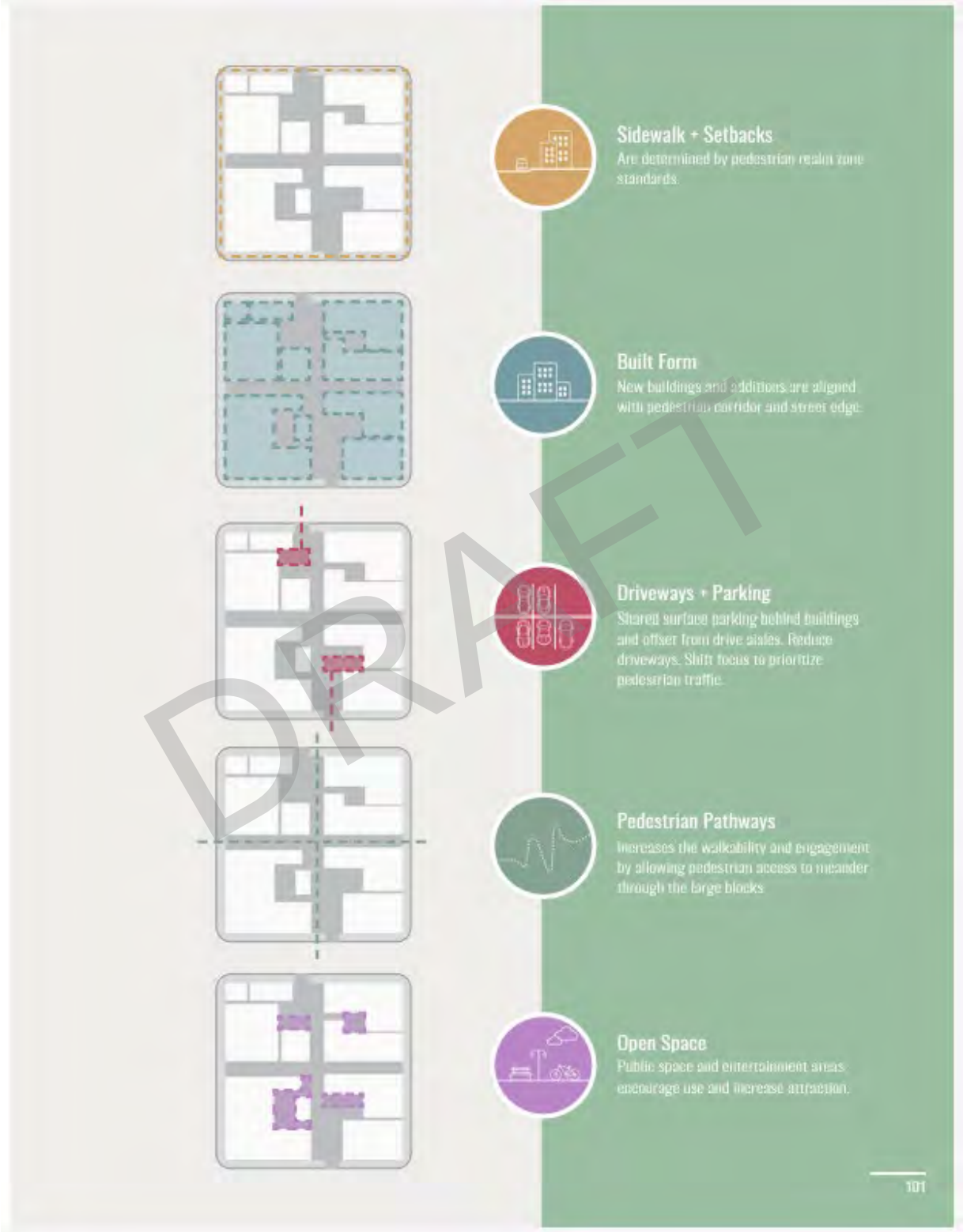
Develop Walkable Distances

By creating more paths, it opens up the perimeter for various land uses, increases the amount of places easily accessible within the same distance, and offers more variety in routes for visual interest and efficiency.

Pedestrian 5 min. Walking Path
Destinations Accessible Within 300' (5 min walk)
Pedestrian Starting Point

This graphic indicates the time required for a pedestrian to traverse a block length after its reduced scale.

Figure 29


Sidewalk + Setbacks
Are determined by pedestrian realm zone standards.
Built Form
New buildings and additions are aligned with pedestrian corridor and street edge.
Driveways + Parking
Shared surface parking behind buildings and offset from drive aisles. Reduce driveways. Shift focus to prioritize pedestrian traffic.
Pedestrian Pathways
Increases the walkability and engagement by allowing pedestrian access to meander through the large blocks.
Open Space
Public space and entertainment areas encourage use and increase attraction.
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DRAFT

Figure 30

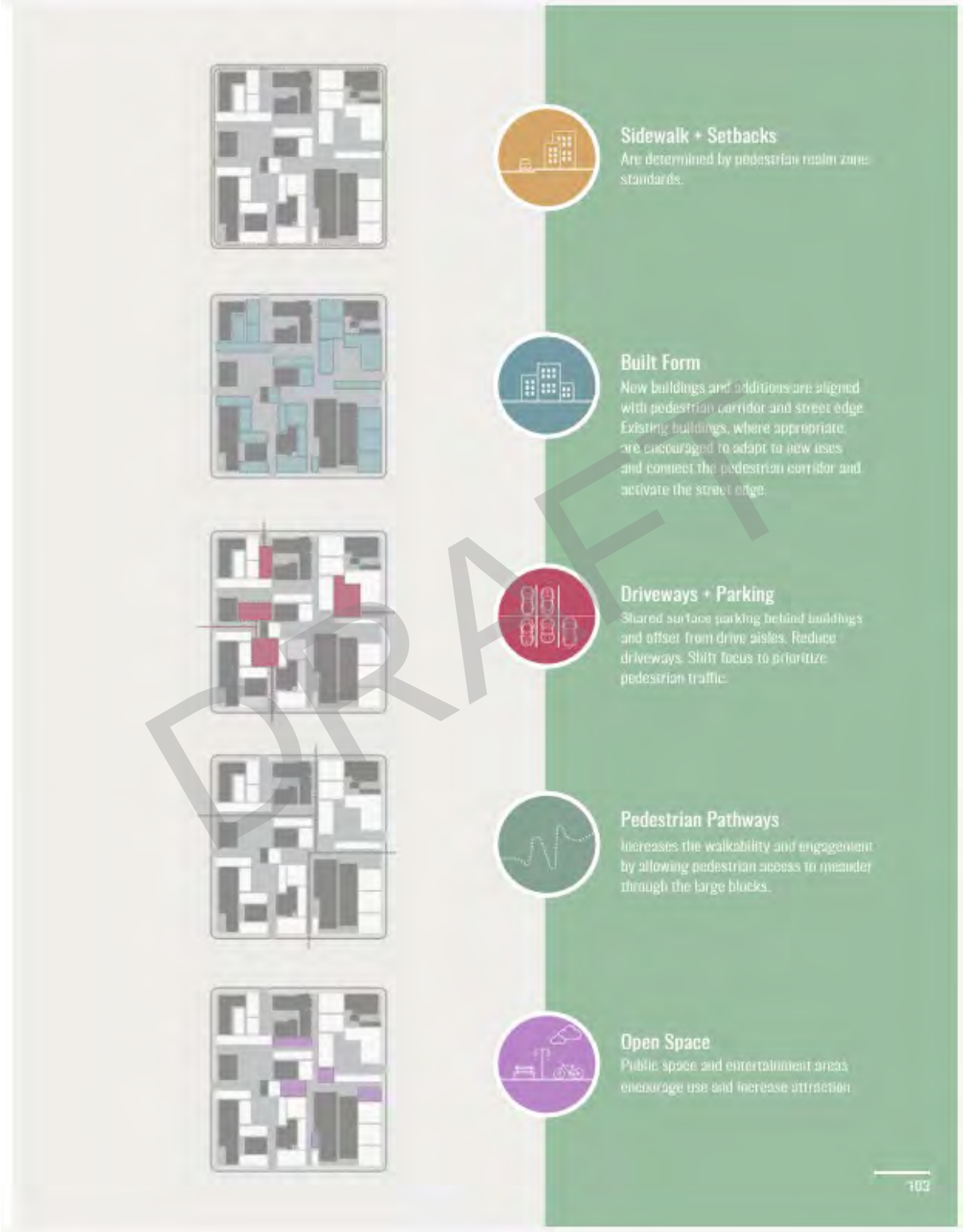
Sidewalk + Setbacks
Are determined by pedestrian realm zone standards.
Built Form
New buildings and additions are aligned with pedestrian corridor and street edge. Existing buildings, where appropriate, are encouraged to adapt to new uses and connect the pedestrian corridor and activate the street edge.
Driveways + Parking
Shared surface parking behind buildings and offset from drive aisles. Reduce driveways. Shift focus to prioritize pedestrian traffic.
Pedestrian Pathways
Increases the walkability and engagement by allowing pedestrian access to meander through the large blocks.
Open Space
Public space and entertainment areas encourage use and increase attraction.
102
DRAFT

Figure 31

City of Las Vegas

Regional Transportation Commission of Southern Nevada Complete Streets Initiative

(702) 228-4400, Send email via here

Clark County and Regional Transportation Commission of Southern Nevada Stadium District Plan

gcerven@clarkcountynv.gov

City of Salt Lake

Salt Lake City Council approved a revitalization plan which includes turning the Smith Ballpark area into an entertainment district, creating more pedestrian-friendly 1300 South, making the TRAX station more accessible, and allowing dense, walkable development along Main Street. The plan focuses on the area between I-15 and State Street from 900 South to 1700 South, calling on the repurposing of parking lots and underutilized properties and investing in green space. The plan seeks to bring more people, parks, streetlights, and wider sidewalks into the neighborhood. [xxi] [xxii] [xxiii] [xxiv] [xxv] [xxvi] [xxvii] [xxviii]

Figure 32 Economic Activity of Capital Construction Expenditures [xxix] [xxx] [xxxi]

Table 9: Economic Impacts of Capital Construction Expenditures

	Total Multipliers per $ of Capital Construction Spending		
Selected Counties	**$ Total Output**	**# of Jobs Per $Million**	**$ Income**
Morgan	$1.33	8.51	$0.41
Salt Lake	$1.78	10.14	$0.57
Summit	$1.41	8.35	$0.46
Washington	$1.62	11.36	$0.41
Weber	$1.41	9.27	$0.41
	Sample Analysis Assumptions: $0.75 Million per mile in Construction Costs; 10% Multiplier Adjustment		
Selected Counties	**$Total Output ($Thous.) per Mile**	**# of Jobs per Mile**	**$Income ($Thous.) per Mile**
Morgan	$1,000	7.0	$338
Salt Lake	$1,338	8.4	$474
Summit	$1,055	6.9	$378
Washington	$1,215	9.4	$339
Weber	$1,055	7.7	$342

Figure 33 Economic Activity of Facility Maintenance Expenditures

Table 10: Economic Impacts of Facility Maintenance Expenditures

	Total Multipliers per $ of Annual Facility Maintenance Spending		
Selected Counties	**$ Total Output**	**# of Jobs Per $Million**	**$ Income**
Morgan	$1.35	10.36	$0.47
Salt Lake	$1.85	12.44	$0.64
Summit	$1.43	10.42	$0.52
Washington	$1.59	13.81	$0.45
Weber	$1.51	12.11	$0.49
	Sample Analysis Assumptions: $6,300 per mile in O&M Costs; 10% Multiplier Adjustment		
Selected Counties	**$Total Output ($Thous.) per Mile**	**# of Jobs per Mile**	**$Income ($Thous.) per Mile**
Morgan	$8.52	0.07	$2.95
Salt Lake	$11.68	0.08	$4.06
Summit	$8.99	0.07	$3.28
Washington	$10.01	0.09	$2.86
Weber	$9.50	0.08	$3.10

Figure 34 Economic Activity of Equipment and Service Spending

Table 11: Equipment and Service Spending

	Total Multipliers per $ of Equipment and Service Spending		
Selected Counties	**$ Total Output**	**# of Jobs Per $Million**	**$ Income**
Morgan	1.78	19.31	0.20
Salt Lake	2.21	12.92	0.56
Summit	1.79	10.44	0.39
Washington	2.11	16.97	0.40
Weber	1.84	14.40	0.37
	Sample Analysis Assumptions: $0.85 in Spending per Mile, and 1 Thousand Miles		
Selected Counties	**$Total Output ($Thous.) per Thous. Rider-Miles**	**# of Jobs per Thous. Rider-Miles**	**$Income ($Thous.) per Thous. Rider-Miles**
Morgan	$1.51	0.016	$0.17
Salt Lake	$1.87	0.011	$0.47
Summit	$1.51	0.009	$0.33
Washington	$1.79	0.014	$0.34
Weber	$1.56	0.012	$0.31

Figure 35 Economic Activity of Overnight Trip Tourism Expenditures

Table 12: Tourism Expenditures – Overnight Trips

	Total Multipliers per $ of Direct Spending - Overnight Trips		
Selected Counties	**$ Total Output**	**# of Jobs Per $Million**	**$ Income**
Morgan	1.22	20.05	0.39
Salt Lake	1.95	22.40	0.79
Summit	1.53	18.45	0.67
Washington	1.76	24.86	0.62
Weber	1.59	23.08	0.60
	Sample Analysis Assumptions: $182 in Spending per Overnight Trip, and 1,000 Overnight Trips		
Selected Counties	**$ Total Output per Million Overnight trips**	**# of Jobs per Million Overnight trips**	**$ Income per Million Overnight trips**
Morgan	$221.50	3.64	$70.67
Salt Lake	$355.44	4.07	$144.12
Summit	$278.74	3.35	$121.53
Washington	$320.28	4.52	$111.95
Weber	$288.20	4.20	$109.72

Figure 36 Economic Activity of Day Trip Tourism Expenditures

Table 13: Tourism Expenditures – Day Trips

	Total Multipliers per $ of Direct Spending - Day Trips		
Selected Counties	**$ Total Output**	**# of Jobs Per $Million**	**$ Income**
Morgan	1.41	19.88	0.34
Salt Lake	2.06	19.09	0.75
Summit	1.62	15.90	0.61
Washington	1.81	21.31	0.53
Weber	1.60	18.76	0.55
	Sample Analysis Assumptions: $35 in Spending per Day trip, and 1,000 Day Trips		
Selected Counties	**$ Total Output ($Thous.) per Thousand Day trips**	**# of Jobs per Thousand Day trips**	**$ Income ($Thous.) per Thousand Day trips**
Morgan	$49.01	0.69	$11.97
Salt Lake	$71.41	0.66	$26.02
Summit	$56.20	0.55	$21.02
Washington	$62.80	0.74	$18.58
Weber	$55.43	0.65	$19.00

Figure 37 Summary of Economic Activity by Sector

Table 20: Summary of Economic Multipliers

Selected Counties	$ Total Output per $ Spent						
	Capital Construction	Facility Maintenance	Equipment and Service	Tourism - Day Trips	Tourism - Overnight Trips	Health Care Spending	Reduced Absenteeism
Morgan	1.33	1.35	1.78	1.41	1.22	0.89	1.36
Salt Lake	1.78	1.85	2.21	2.06	1.95	1.20	1.79
Summit	1.41	1.43	1.79	1.62	1.53	0.98	1.46
Washington	1.62	1.59	2.11	1.81	1.76	1.12	1.66
Weber	1.41	1.51	1.84	1.60	1.59	1.03	1.44

Selected Counties	# of Jobs per $Million						
	Capital Construction	Facility Maintenance	Equipment and Service	Tourism - Day Trips	Tourism - Overnight Trips	Health Care Spending	Reduced Absenteeism
Morgan	8.51	10.36	19.31	19.88	20.05	2.86	11.31
Salt Lake	10.14	12.44	12.92	19.09	22.40	2.82	11.11
Summit	8.35	10.42	10.44	15.90	18.45	2.70	10.53
Washington	11.36	13.81	16.97	21.31	24.86	3.55	14.58
Weber	9.27	12.11	14.40	18.76	23.08	2.58	9.94

Selected Counties	$ Income per $ Spent						
	Capital Construction	Facility Maintenance	Equipment and Service	Tourism - Day Trips	Tourism - Overnight Trips	Health Care Spending	Reduced Absenteeism
Morgan	0.47	0.41	0.20	0.34	0.39	0.58	0.32
Salt Lake	0.64	0.57	0.56	0.75	0.79	0.73	0.60
Summit	0.52	0.46	0.39	0.61	0.67	0.64	0.46
Washington	0.45	0.41	0.40	0.53	0.62	0.66	0.45
Weber	0.49	0.41	0.37	0.55	0.60	0.65	0.42

City of Salt Lake

Wasatch Front Regional Council Active Transportation

Hugh Van Wagenen, 801-363-4250 – Extension 1124

Salt Lake County Active Transportation Implementation Plan

Transportation Program Manager Helen Peters

HPetersslco.org, 385.468.4860

Salt Lake City Pedestrian and Bicycle Master Plan

Alta's Joe Gilpin

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[xx] https://files.lasvegasnevada.gov/public-works/CLV-Mobility-Master-Plan-2050.pdf

[xxi] https://www.sltrib.com/news/2022/11/07/slc-wants-pump-energy-into/

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[xxiv] https://heal.health.utah.gov/wp-content/uploads/2022/02/utah_bicycle_and_pedestrian_master_plan_design_guide.pdf

[xxv] https://slco.org/globalassets/1-site-files/planning--transportation/files/slco-bicycledesignimplementation1.pdf

[xxvi] https://www.utah.gov/pmn/files/826776.pdf

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[xxviii] http://www.slcdocs.com/Planning/Projects/PlanSaltLake/PSL_Existing_Conditions_Report_(FINAL).pdf

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[xxxi] https://static1.squarespace.com/static/5b8b54d1f407b40494055e8f/t/5bdc820c4fa51a4d9f77e014/1541177878083/Utah+Active+Transportation+Benefits+Study+-+Final+Report.pdf