Ordinance amending MobilityCC, a transportation element of the Comprehensive Plan of the City of Corpus Christi, by adopting the Corpus Christi Metropolitan Planning Organization (CCMPO) Strategic Plan for Active Mobility, Phase 1: Bicycle Mobility Plan; providing for severance; providing for a repealer clause; and providing for publication.

WHEREAS, in 2013 the City adopted MobilityCC that consolidated existing transportation related plans into a single transportation planning framework. MobilityCC serves as the transportation element of the City's Comprehensive Plan and allows a process for design, operation and maintenance of existing and proposed transportation infrastructure;

WHEREAS, existing plans that were incorporated and modified by MobilityCC include HikeBikeCC (City's Trails Master Plan for Off-Road Bicycle and Pedestrian Facilities) and Corpus Christi Metropolitan Planning Organization (CCMPO) 2005 Bicycle and Pedestrian Plan (City's On-Street Bicycle Facilities Master Plan);

WHEREAS, an image of the CCMPO 2005 Bicycle and Pedestrian Plan (City's On-Street Bicycle Facilities Master Plan) is embedded in the Urban Transportation Plan map and shall be removed upon adoption of the Strategic Plan for Active Mobility, Phase 1: Bicycle Mobility Plan ("the Plan");

WHEREAS, HikeBikeCC contains prescriptions for trails and/or bikeways that conflict with the bicycle infrastructure types outlined in the Plan;

WHEREAS, the City Traffic Engineer recommended approval of the adoption of the Plan to the City Transportation Advisory Commission (CTAC) and at its monthly meeting on February 22, 2016, CTAC recommended approval of the Plan to City Council. The City's Park and Recreation Advisory Committee also passed a resolution of support to adopt the Plan on March 9, 2016;

WHEREAS, with proper notice to the public, the Planning Commission held a public hearing on Wednesday, March 23, 2016, during which all interested persons were allowed to appear and be heard, regarding amending MobilityCC by adopting the Plan. The Planning Commission recommended adoption of the Plan without adopting the Matrix of Best Practices contained within the Plan; and

WHEREAS, the City Council has determined that these amendments would best serve the public health, necessity, and convenience, and the general welfare of the City of Corpus Christi and its citizens;

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CORPUS CHRISTI, TEXAS

SECTION 1. MobilityCC, a transportation element of the Comprehensive Plan of the City of Corpus Christi, Texas (the "Comprehensive Plan"), is amended by adopting and incorporating the Corpus Christi Metropolitan Planning Organization (CCMPO) Strategic Plan for Active Mobility, Phase 1: Bicycle Mobility Plan (the "Plan"), without adopting the Matrix of Best Practices contained within the Plan and amending the Urban Transportation Plan Map by deleting the Corpus Christi Bicycle and Pedestrian Plan graphic. The Plan is attached to this ordinance as Exhibit "A" and incorporated into this ordinance by reference as if fully set out in its entirety.

SECTION 2. To the extent the amendments made by this ordinance represent a deviation from the Comprehensive Plan and MobilityCC, the Comprehensive Plan and MobilityCC are amended to conform to the amendment made by this ordinance.

SECTION 3. The Comprehensive Plan and MobilityCC, as amended from time to time and except as changed by this ordinance, remain in full force and effect.

SECTION 4. Any ordinance or part of any ordinance in conflict with this ordinance is expressly repealed by this ordinance.

SECTION 5. The City Council intends that every section, paragraph, subdivision, clause, phrase, word, or provision of this ordinance be given full force and effect for its purpose. Therefore, if any section, paragraph, clause, phrase, word, or provision of this ordinance is held invalid or unconstitutional by final judgment of a court of competent jurisdiction, that judgment shall not affect any other section, paragraph, subdivision, clause, phrase, word, or provision of this ordinance.

SECTION 6. Publication shall be made in the official publication of the City of Corpus Christi as required by the City Charter of the City of Corpus Christi.

The foregoing ordinance was read for the first time and passed to its second reading on this the _____ day of _____, 20___, by the following vote:

Nelda Martinez	_____	Brian Rosas	_____
Rudy Garza	_____	Lucy Rubio	_____
Michael Hunter	_____	Mark Scott	_____
Chad Magill	_____	Carolyn Vaughn	_____
Colleen McIntyre	_____		

The foregoing ordinance was read for the second time and passed finally on this the _____ day of _____, 20___, by the following vote:

Nelda Martinez	_____	Brian Rosas	_____
Rudy Garza	_____	Lucy Rubio	_____
Michael Hunter	_____	Mark Scott	_____
Chad Magill	_____	Carolyn Vaughn	_____
Colleen McIntyre	_____		

PASSED AND APPROVED this the _____ day of _____, 20____.

ATTEST:

_____	_____
Rebecca Huerta	Nelda Martinez
City Secretary	Mayor

STRATEGIC PLAN FOR ACTIVE MOBILITY

WWW.COASTALBENDINMOTION.ORG

PHASE 1: BICYCLE MOBILITY PLAN

Mobility CC

CORPUS CHRISTI MPO

EXHIBIT A

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EXHIBIT A

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Credit: Bay Area Bicycles

EXHIBIT A

INTRODUCTION

The personal automobile is no longer the ultimate symbol of personal freedom in modern communities. The percentage of vehicles sold nationwide to people under 35—Millennials—has been falling steadily since early in the 21st century, and data suggest that most aging Baby Boomers would prefer to leave suburbia and the two-car garage behind in favor of a more unencumbered existence. These trends are not lost on leaders in the industrial and technical marketplaces, who carefully evaluate the availability of community amenities, such as transit and bicycle networks, before setting up shop in a new location where they hope to attract and retain the best and brightest. Yet planning for and investing in transportation options in Corpus Christi is about much more than retaining our creative class or inspiring Winter Texans to invest in permanent roots.

Our transportation network is the vascular system of our community, delivering people and goods to destinations and literally shaping our community in the process. The way in which we move around our community is the single biggest determinant of our quality of life. Our transportation choices impact our daily schedules, our free time, our wallets, even our waistlines. When a community transportation system is designed principally around personal automobiles, the streets, neighborhoods, and shopping areas that we build tend to be scaled for cars rather than people, and thus, without meaning to, we build communities that make active mobility—walking and bicycling—the more difficult alternatives. Case in point: less than one percent of children aged 7-15 now ride a bicycle to school, a decrease of more than 60% since the 1970s according to the Surface Transportation Policy Project. On the other hand, the experience of communities in the US and beyond shows that strategic investment—the right infrastructure in the right places—in bicycle and pedestrian infrastructure naturally induces development that is denser and more resource efficient (think main street vs. strip mall), translating into a higher return on infrastructure investments and more tax revenue per unit of developed land.

Transportation is the second largest expense for most households, often accounting for 25% of total income in auto-dependent communities according to the U.S. Department of Transportation. Across the nation, obesity rates have doubled in children and quadrupled in adolescents in the past 30 years according to the Centers for Disease Control and Prevention, and over 20% of our nation's health care costs are attributable to obesity according to the Campaign to End Obesity. Likewise, mobile sources of air pollutants—cars and trucks—have pushed many communities into non-attainment with federal standards at a significant cost in real dollars and public health.

Tools to evaluate the quality of life in our communities, such as the Livability Index produced by the American Association of Retired Professionals (AARP) Public Policy Institute, include a variety of measurable metrics related to housing, neighborhoods, public health, environmental quality, and social equity—all of which are influenced by the community's transportation system. As such, investing in mobility options is one of the most direct ways to enhance quality of life in a community, but such investments must be strategic in order to yield optimal returns in the form of community benefit.

In response to the need for a strategic plan to guide such investments, the Corpus Christi Metropolitan Planning Organization (MPO) has undertaken a Strategic Plan for Active Mobility for the urbanized portions of Nueces and San Patricio counties, of which this Bicycle Mobility Plan is Phase I. The MPO receives federal funding to help coordinate and fund transportation projects in the urbanized areas of Nueces and San Patricio counties and has funding dedicated to non-vehicular transportation alternatives. Ultimately, it will be up to the municipalities within the MPO area—Corpus Christi, Portland, and Gregory— and to their partners to construct the infrastructure prescribed in this Bicycle Mobility Plan.

Of the hundreds of individuals that our team interviewed or surveyed, the number of respondents—over 70%—who said that they agreed strongly with the vision of a Coastal Bend where walking and biking are integral to the community culture and represent viable, safe mobility and recreation options exceeds the number who said they ride a bike at least once per week by a factor of three! In other words, even non-riders recognize the benefits to our community of infrastructure to support an active lifestyle. Likewise, over 70% of respondents also told us that they don't feel safe from vehicles on existing bike facilities. **The unmet demand for safe, high quality cycling infrastructure in our community is clear**.

PLAN INTENT AND OVERVIEW

The MPO's Bicycle Mobility Plan is intended to foster cycling as a meaningful transportation alternative for riders of diverse abilities. This plan was created to alleviate uncertainty about where investments in bicycle infrastructure should be made and how that infrastructure should be designed and maintained. The bicycle mobility network prescribed in this plan was developed with the bike-dependent commuter and casual recreational rider—not the high-speed sport cyclist—in mind.

The planning team took a blank slate approach to developing the bicycle mobility network prescribed in this plan, which is designed to enhance access to essential goods and services for all residents of our community. As detailed in the *Methods Section* (page 6), the team used state-of-the-art mapping software to identify existing and future centers of community activity and to define key connections between them.

On average, most individual residences in the urbanized area of Nueces and San Patricio counties are within a two- to five-minute bike ride (on a neighborhood street) from some segment of the new bike mobility network, and the network delivers riders within ¼ mile (about a five-minute walk) of:

- 89% (158 of 178) of early education and daycare centers, grade schools (public and private) and higher education campuses
- 85% (122 of 143) of parks over two acres in size
- 83% (1088 of 1319) of transit stops and stations
- 82% (541 of 657) of low income housing units (Section 8 or Housing Tax Credit properties)
- 80% (104 of 130) of groceries, meat and fish markets, bakeries, and corner markets
- 77% (186 of 242) of pools, senior centers, recreation centers, movie theaters, community pools, fitness centers, museums and hotels

On the basis of feedback gathered from the community through interviews, focus groups, and on-line tools, the planning team prioritized a low-stress rider experience and maximal separation between cyclists and cars by using off-road trail segments on stormwater easements wherever possible. Where the bike mobility network corresponds to the street network, the planning team prioritized neighborhood streets with low traffic volumes and speeds. Where the network falls on busier roads, the Plan prescribes alternatives to the standard on-street bike lane, such as separated multi-use sidepath or protected cycle tracks (see *Infrastructure Illustrations*, page 48) outside of the vehicular travel lanes.

The installation of even the most robust, dedicated bicycle infrastructure, which is often separated from the vehicular travel lane to afford the highest level of safety, can represent a meaningful cost savings as compared to maintaining the existing condition of many of our streets. Asphalt pavement designed to support vehicles is much more expensive to build and maintain than hardscape designed only to support bicycles. Where installation of bike infrastructure adjacent to the sidewalk (behind the curb) allows us to eliminate on-street bike lanes and thus narrow roadway width without reducing the number or width of travel lanes, the cost of constructing and maintaining the roadway goes down by significantly more than the cost of building the bike infrastructure. In this way, many of the more capital intensive elements of the prescribed bicycle network can be constructed opportunistically over time and will ultimately help to reduce the overall cost of maintaining our streets.

This Bicycle Mobility Plan comprises two major components. Section One, the Network Prescription, details just over 290 miles of network connections:

TABLE 1: Bicycle Mobility Network Summary

Infrastructure Type	Network Miles	Percent of Network
Low Cost/High Impact/Rapid Implementation* **No major capital investment required other than paint and signage*		
Bicycle Boulevard	64	22
Buffered Bike Lane	7	2
Strategic Capital Investments		
Multi-use Sidepaths	8	3
1-way Cycle Tracks	145	50
Off-road Multi-use Trails (on stormwater and old railroad easements)	66	23
	290	

Installation of the right infrastructure in the right places is critical to catalyzing the change necessary for walking and biking to become endemic to our community culture, but we also have other means of promoting active mobility options.

Subsequent sections of this plan include: *Matrix of Best Practices* (page 66), *Case Studies* (page 73), and *Special Topics Narratives* (page 83) related to education and encouragement programs, supporting infrastructure, code reform and enforcement, and program evaluation.

EXHIBIT A

VISION, GOALS, AND OBJECTIVES

Vision:

The metropolitan area of the Coastal Bend is a place where walking and biking are integral to the community culture and represent viable, safe mobility and recreation options for residents and visitors of diverse abilities.

GOAL 1

Develop a cohesive, strategic network of bicycle facilities that accommodates a diversity of riders

Objectives

Provide bicycle facilities that are appropriate to street classification, traffic volume, and desired level of safety and service

Enhance connectivity between community activity centers

Minimize uncertainty about bicycle infrastructure design and cost by establishing standards (by reference) for the design, construction, and maintenance of bicycle facilities

GOAL 2

Increase the percentage of trips of all types that are made by bicycle

Objectives

Provide access for residents in project area to the bike mobility network within two miles of their homes

Increase the proportion of transit riders who access transit by bike

Increase the proportion of students arriving to school by bike

GOAL 3

Promote health and wellness through bicycling

Objectives

Increase the proportion of community members who indicate that they ride a bicycle at least once per week

GOAL 4

Enhance safety for bicyclists

Objectives

Decrease the total number of interactions between bikes and cars

Increase fixed/permanent messaging (signage) about safe bicycling within the project area

Increase the perception of rider safety among the public

EXHIBIT A

ACKNOWLEDGMENTS

Decision makers in the jurisdictions within the MPO boundary—the cities of Corpus Christi, Portland, and Gregory, Nueces and San Patricio counties, the Corpus Christi Regional Transportation Authority (RTA) and the Texas Department of Transportation Corpus Christi District (TxDOT-CRP)—must be commended for their commitment to protecting and enhancing the vibrancy of our region by promoting active mobility options. The highest elected officials and their appointees in each of these jurisdictions, as members of the MPO's Transportation Policy and Technical Advisory Committees, demonstrated great leadership in their resounding support of MPO staff during this planning process. Staff in multiple departments in each municipality followed suit, providing detailed guidance and feedback during the network development and facility selection phases and working to incorporate the planning team's recommendations into the design of on-going roadway projects.

The RTA and the City of Corpus Christi deserve special recognition for their financial contributions, which supported specialized consultant teams who provided critical technical assistance to MPO staff. Olivarri and Associates went to great lengths to engage the full spectrum of stakeholders in the planning process, and HDR Engineering displayed tremendous flexibility in working as a unified team with MPO technical staff to complete the bicycle network development and infrastructure selection portions of this work.

The members of the project Steering Committee, each of whom represents an entity that is well positioned to help implement this plan, displayed compelling commitment to this endeavor through their participation in quarterly meetings. This group provided invaluable feedback about the planning process, helping to ensure that the outputs of this work will be put into practice by their respective organizations. These Steering Committee members also served as conduits for information about the bicycle mobility plan to their respective organizations, effectively expanding the web of stakeholders who were invested in this process.

The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) must be acknowledged for their leadership in investing in transportation alternatives. Continued commitment to active mobility at the federal level is one important part of getting more pedestrian and cycling infrastructure on the ground in our community.

Above all else, the planning team wishes to recognize and thank the residents of the Coastal Bend for their clear vision and voice. Individuals from all walks and corners of our community took the time to share their priorities and perspectives, all of which were essential to creating a plan that will help meet the fundamental need in our community for expanded mobility options.

EXHIBIT A

EXHIBIT A

METHODS

The bicycle mobility network prescribed in this Plan is intended to foster cycling as a meaningful transportation alternative for riders of diverse abilities and to enhance access to essential goods and services for all residents of our community. Thus, as detailed in this section, the planning team undertook a two-part analysis to identify existing and future centers of community activity and to define key connections between them. Once this network had been defined, the planning team undertook a separate two-part analysis to determine exactly what type of infrastructure should be installed on each segment of the network to uphold the level of safety that the community seeks.

Network Development

Community Hotspot Analysis

The planning team used Geographic Information Systems (GIS) to map the location of primary destinations—those places that shape our daily travel—in the project area:

TABLE 2: Primary Destinations Used to Identify Hubs of Community Activity

Primary Destinations	Description
Schools	Early childhood education and daycare centers, elementary/middle/high schools (public and private), higher education campuses
Low Income Housing	Section 8 or Housing Tax Credit properties
Transit	Bus stops, Bike Boardings and Transit stations
Food Markets	Grocery stores; bakeries; meat, fish, and produce markets; corner store markets
Recreation and Tourism	Hotels, fitness centers, senior centers, community centers, pools, movie theaters, museums
Parks	Larger than 2 acres
Civic Institutions	City Hall, post offices, public libraries, municipal courts, court houses

The team also considered other supplemental data about how residents currently move around the community:

TABLE 3: Supplemental Data Used to Identify Hubs of Community Activity

Supplemental Data	Description
Travel Demand Model Origin/Destination Data	Data (per Census 2010) about where (in terms of census blocks) car trips begin and end in the community
Population and Employment Density	Relative density of population and employment; areas with higher density of population and employment tend to be more urban and thus more likely to support trips by bicycle
Employment to Population Ratio	Relative balance of employment opportunities to population density; areas with a ratio closer to 1:1 represent the availability of employment opportunities in close geographic proximity to commensurate population density, thus increasing the likelihood of trips being made by bicycle rather than personal automobile
Zero Car Households	Location of zero car households (2009-2013 American Community Survey 5-yr Estimates); zero car households are inherently dependent on other modes of travel, such as cycling, walking and transit
Bike to Work	Location (residences) of individuals that uses bicycle as means of commuting (2009-2013 American Community Survey 5-yr Estimates)
City of Corpus Christi Destination Nodes	Nine Destination Nodes—areas that are pre-disposed for redevelopment as compact, efficient, community centers—were identified in the City's 2011 Integrated Community Sustainability Plan

Once the Primary Destinations (**Table 2**, above) and Supplemental Data (**Table 3**, above) had been mapped, the planning team created four concentric buffer rings around each destination. The area inside the tightest buffer ring—a 0.25 mile radius around the destination—was weighted most heavily; the area inside each successive 0.25 mile ring was assigned a lesser weighting, where the outer buffer ring (i.e. the area between 0.75 mile and 1 mile around the destination) received the lowest score.

The team then aggregated the scores between overlapping buffer rings to create a heat map (**Figure 1**) of the community, where the warmest colors represent the highest scores and depict the greatest concentration of primary destinations.

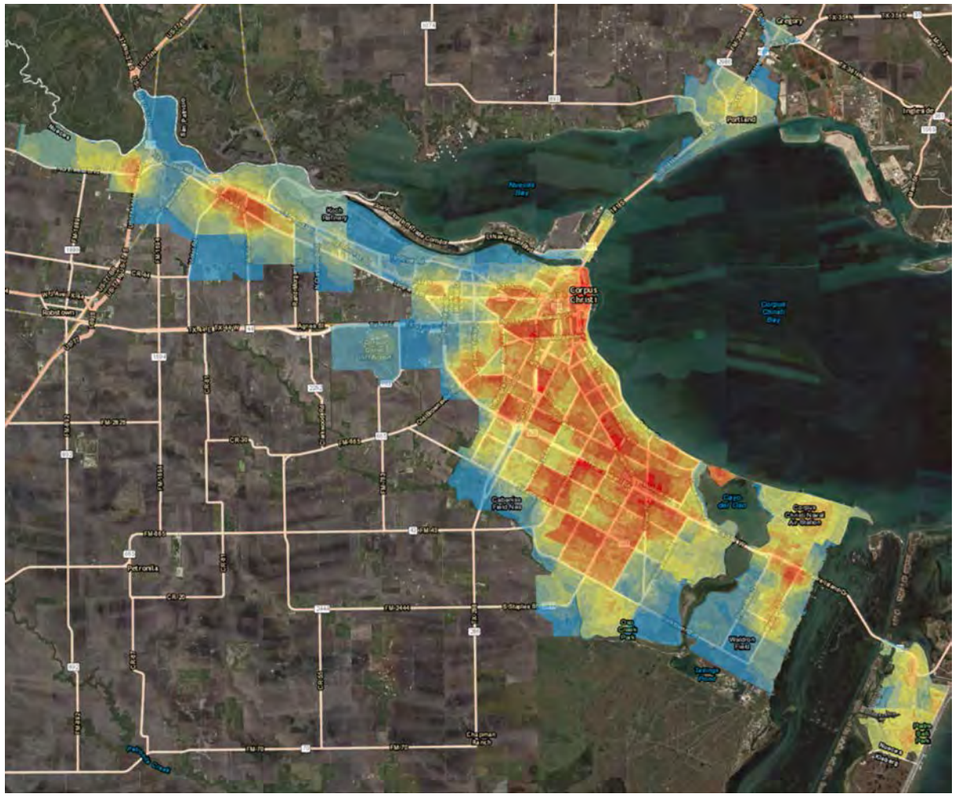

Figure 1: Heat map of the project area, where warm colors depict hubs of community activity as defined by a concentration of key destinations such as schools, food markets, parks, civic institutions, transit stops, low income housing locations, employment centers, and population centers.

Bicycle Route Selection

Once the heat map of community activity centers had been finalized, the planning team examined each of the high scoring (red) areas and assigned individual routing points—points to be connected to create the bike network within each hotspot on the basis of land use, traffic movements, and local knowledge.

The team also identified appropriate locations to create routing connections across major arterials and highways and assigned routing points accordingly.

The team then used a specialized tool within the GIS platform called Network Analyst to identify connections between the routing points (i.e., to define connections between key locations). To guide this preliminary network development, the team defined parameters that reflected community members' priorities as captured through stakeholder engagement activities, including:

1. **Off-road trail connections (existing or proposed) were prioritized over routes that followed the street network**. Community members indicated that, where possible, they prefer to cycle as far from vehicles as possible. Likewise, there are locations in the project area where off-road trails along stormwater easements or abandoned rail easements afford a much more direct connection between key destinations than existing roadways.

2. **Neighborhood streets and minor collectors were prioritized over busier roadways**. Community members expressed strong preference for a low stress bike network on streets with low traffic volumes and speeds. What's more, when such streets are designated as Bicycle Boulevards (see Infrastructure Illustrations) the infrastructure (paint and signage) required to keep cyclists safe is much less capital intensive than that required on larger/busier streets.

3. **Streets that pass through the orange areas of the heat map (Figure 1 ,** page 7**)—i.e. through areas that are on the edge of or adjacent to activity centers—were prioritized over streets that run right through the heart of an activity center or through areas with a very low concentration of destinations (cool colors on the heat map)**. The confluence of traffic and land uses at the heart of the community hotspots create unsafe conditions for cyclists, so it is safer to route cyclists within a block or two of these destinations and then let them navigate the last block or two (potentially on foot).

Once connections between community activity centers had been identified to create a preliminary bicycle mobility network, the planning team reviewed each segment, using data (**Table 4**) about how folks currently move around our community by bike to validate and refine the preliminary network:

TABLE 4: Stakeholder Bicycle Route Data Used to Validate the Bicycle Mobility Network

Data	Description
Stakeholder Participation Routes	As part of the planning process, community members used the MAP IT! application on the project website to record where they ride or would like to ride if conditions improved
Strava Commuter Routes	The planning team encouraged community members to download and use the smartphone application Strava to track various details of their rides; the team aggregated all Strava data for the project area
Sport Routes for Road Bikes	As part of a previous project, MPO staff had mapped the top sport routes for road bikes based on input from local cycling clubs' members

Bicycle Infrastructure Facility Selection

Once the preliminary bicycle mobility network had been thoroughly vetted (see *Stakeholder Engagement*, page 9) and refined accordingly, the planning team identified the type of infrastructure (see *Infrastructure Illustrations*, page 48) that should be installed on each segment of the network to uphold the level of safety that the community seeks. The team began by compiling primary and secondary data for every segment in the network:

TABLE 5: Primary Data Collected for all Bicycle Mobility Network Segments

Primary Segment Data
Daily traffic volumes for cars and trucks
Posted speed

TABLE 6: Secondary Data Collected for all Bicycle Mobility Network Segments

Secondary Segment Data
Right-of-way width
Shoulder width and material
Number of driveways
Number of travel lanes
Presence of curb and gutter
Presence, type, and relative utilization of on-street parking

EXHIBIT A

On the basis of vehicular traffic volume and speed (Primary Segment Data), the team used a specialized model to assign each segment in the network to one of three bicycle infrastructure categories, wherein the intensity of the infrastructure category is a function of the intensity of the street:

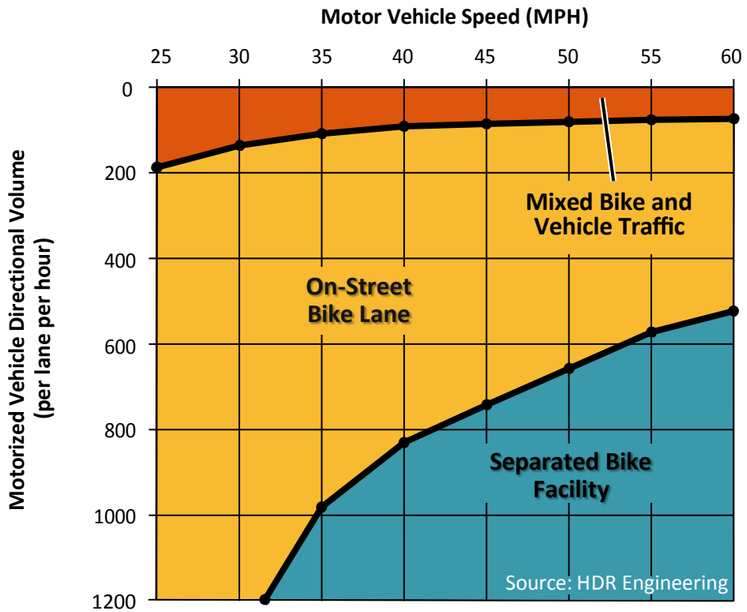

Figure 2: Bicycle Infrastructure Categories as a Function of Traffic Volumes and Speeds

Mixed Bike and Vehicle Traffic: On low traffic volume and/or low speed (generally < 25 MPH) streets, bicycles and cars can safely co-mingle. The specific type and combination of lane markings and signage are a function of the particular characteristics of the roadway.

On-street Bike Lane: On streets with moderate traffic speeds and volumes, a dedicated lane is necessary to create a division between motorists and cyclists. Relatively higher traffic speeds and/or volumes within this infrastructure category may necessitate a visual buffer between the bike and vehicular travel lanes.

Separated Bicycle Facility: The busiest class of roadways require a physical separation between motorists and cyclists. Depending on the context, protected bike facilities may take the form of cycle tracks or multi-use sidepaths and may be specified either inside the roadway right-of-way or behind the curb at sidewalk level.

Working with the model, the team next used the Secondary Segment Data (**Table 6**, page 8) to identify specifically which type of infrastructure (see *Infrastructure Illustrations*, page 48) is appropriate on each segment to uphold the target level of safety and service.

Stakeholder Engagement

Stakeholder engagement for this bicycle mobility plan began in the spring of 2015 with the formation of a Project Steering Committee comprising delegates from each of the local governmental, agency, and private entities that may ultimately contribute, directly or indirectly, to the implementation of this plan. In addition to numerous vetting meetings about specific portions of the plan with subsets of the Steering Committee over the course of the project, the planning team convened the entire Steering Committee on three occasions to get feedback on analytical methods and preliminary results.

The planning team employed a wide range of strategies to engage community members from the full spectrum of geographic, socioeconomic, demographic, and cultural perspectives. The project Website, **www.CoastalBendInMotion.org**, provided three ways for participants to give input:

MAP IT!
A Web application that enabled individuals to show the planning team where they ride or would like to ride if conditions improved

TRACK IT!
A downloadable smartphone application, Strava, allowed users to automatically record speed, distance, and other data every time they took a bike ride. The planning team used these data to prioritize potential routes in the new bike network

ANSWER IT!
A very short on-line survey captured community members' priorities for cycling related safety and education programs, policies, and supporting facilities

The planning team included a consulting team (Olivarri and Associates, O&A) dedicated to direct, in-person engagement to compliment information gathered through the project Web portal. O&A developed a database of potential outreach destinations, community events, key contacts, and community groups to track the public engagement process. The team categorized database entries by geographic location, customer or clientele base, and the type of entity that each locale represented, and this database was updated throughout the project as new events were identified and contacts made. The O&A team captured details about who performed the outreach and whether interviews were conducted or flyers passed, along with notes about the experience.

Rather than rely on traditional town meeting style events, wherein community members must disrupt their schedule to attend and participate, team members attended community events and regularly scheduled meetings for a diverse range of community groups. The team developed an interview protocol, based on the ANSWER IT! on-line survey described above, for use as a tool when initiating conversations with citizens at events about their level of interest in and priorities for cycling facilities and programs. These one-on-one interviews yielded great information about individuals' bicycling habits, sentiments about existing cycling infrastructure, and ideas for improvement. The interviewer included certain demographic questions to determine the participant's age, gender, student status, and zip code.

Safety was the overwhelming theme in these interviews, and most respondents indicated that they do not feel safe riding in the street—even in a conventional (unbuffered) bike lane—because of aggressive drivers. Respondents also frequently cited the accumulation of debris in on-street bike lanes as an issue with current infrastructure. Most participants were supportive of the planning effort and indicated that having a safer, more connected bicycle network would be an asset to the city. Those who did not support the idea cited equity, or a lack of faith in equal dispersal of the project's benefits throughout the city, as well as concerns about funding for implementation and maintenance.

In addition to one-on-one interviews, the team hosted a handful of focus groups with key stakeholder groups as a means of seeking input on the project. The MPO planning team used the information collected through these interviews and focus groups to guide the best practice recommendations that are included in the Matrix of Best Practices section of this plan.

The team also passed out flyers and posters at local businesses and organizations in various neighborhoods to promote awareness of the planning process and the opportunities to engage. Likewise, team members attached bicycle packets containing flyers to bicycle racks throughout the city to increase awareness among local cyclists.

TABLE 7: Summary of Community Engagement

Engagement Strategy	Number Conducted	Additional Details
Meetings of full Project Steering Committee	3	Appendix B
On-line survey responses collected	220	Appendix B
Bike trips logged via Strava smartphone app (May-Oct 2015)	8353 (730 unique riders)	----
Bike routes logged via MAP IT! Web app	200 (99 unique users)	----
Presentations given	26	Appendix D
Community events attended	15	Appendix E
Leaflets and posters distributed	900+	Appendix F
One-on-one interviews conducted	50	Appendix G
Focus groups hosted	5	• Industry • Business owners • Roadway design engineers • RTA operators • Corpus Christi Police Dept.
Targeted vetting of preliminary network	11	Appendix H

EXHIBIT A

EXHIBIT A

BICYCLE MOBILITY NETWORK PRESCRIPTION

On the basis of feedback gathered from the community through interviews, focus groups, and on-line tools, the planning team prioritized a low-stress rider experience and maximal separation between cyclists and cars by using off-road trail segments on stormwater easements wherever possible. Where the bike network corresponds to the street network, the planning team prioritized neighborhood streets with low traffic volumes and speeds. Where the network falls on busier roads, the team identified alternatives to the standard on-street bike lane, such as separated multi-use paths or protected cycle tracks outside of the vehicular travel lanes.

On average, most individual residences in the urbanized area of Nueces and San Patricio counties are within a two to five minute bike ride (on a neighborhood street) from some segment of the network, and the network delivers riders within ¼ mile (about a 5-minute walk) of:

- 89% (158 of 178) of early education and daycare centers, grade schools (public and private) and higher education campuses
- 85% (122 of 143) of parks over two acres in size
- 83% (1088 of 1319) of transit stops and stations
- 82% (541 of 657) of low income housing units (Section 8 or Housing Tax Credit properties)
- 80% (104 of 130) of groceries, meat and fish markets, bakeries, and corner markets
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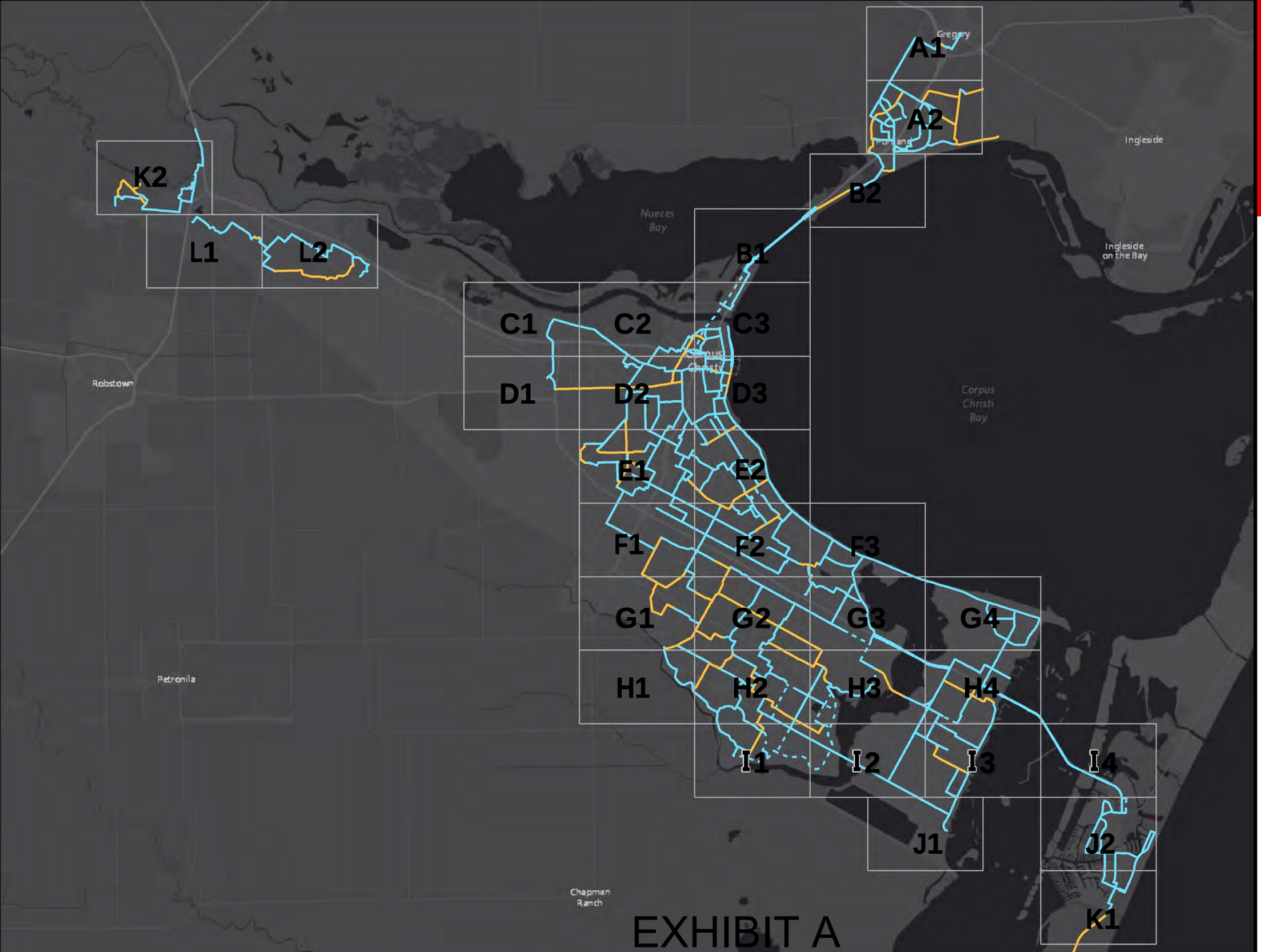


KEY MAP

BICYCLE MOBILITY NETWORK OVERVIEW

- On Roadway Network*
- On Roadway Network* (Proposed)
- Off-Road Multi-use Trail

*On Roadway Network does not necessarily mean in the street; please see detailed network maps and *Infrastructure Illustrations*, page 48.

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

A1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

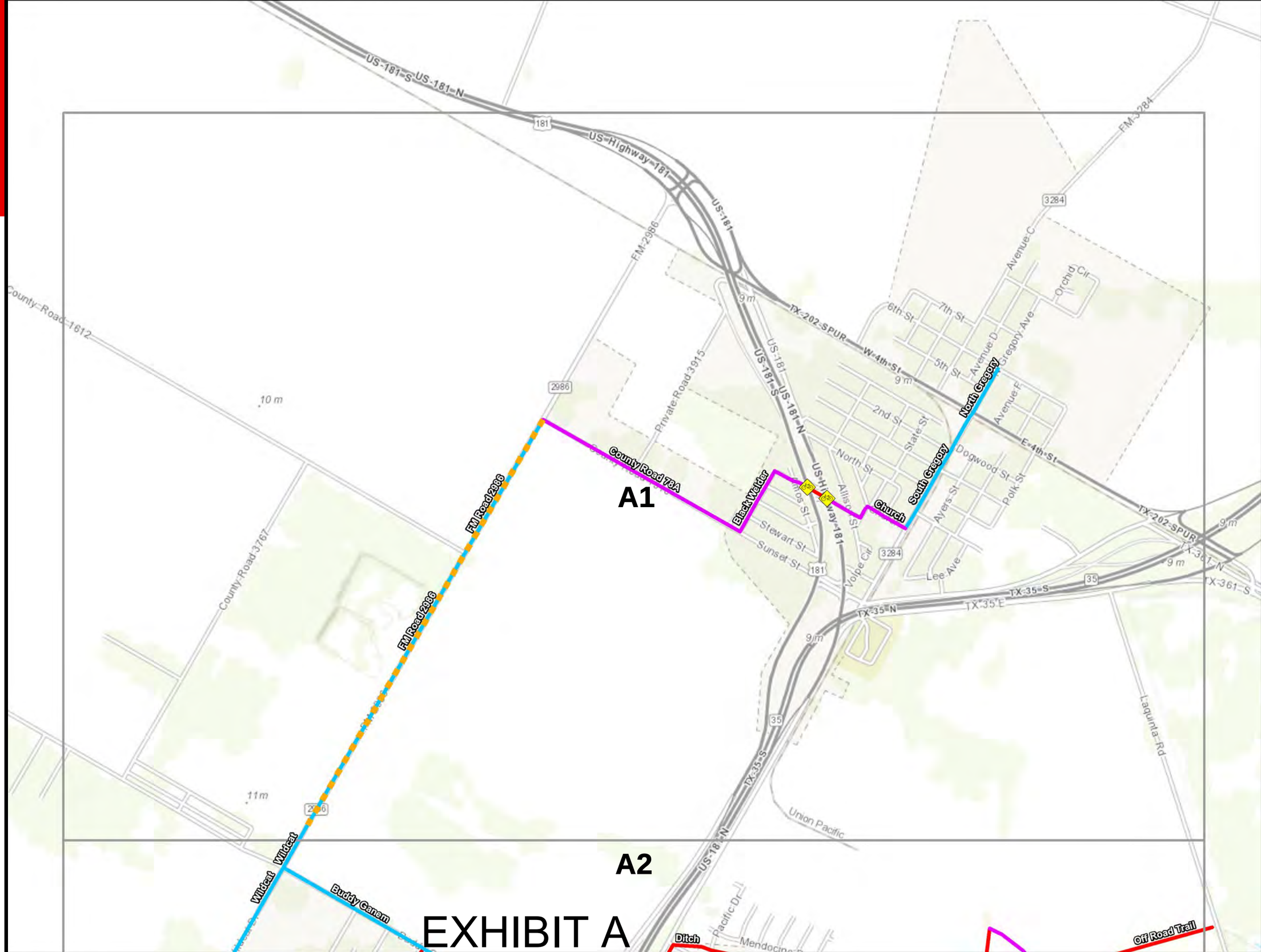


EXHIBIT A

A2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

B2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

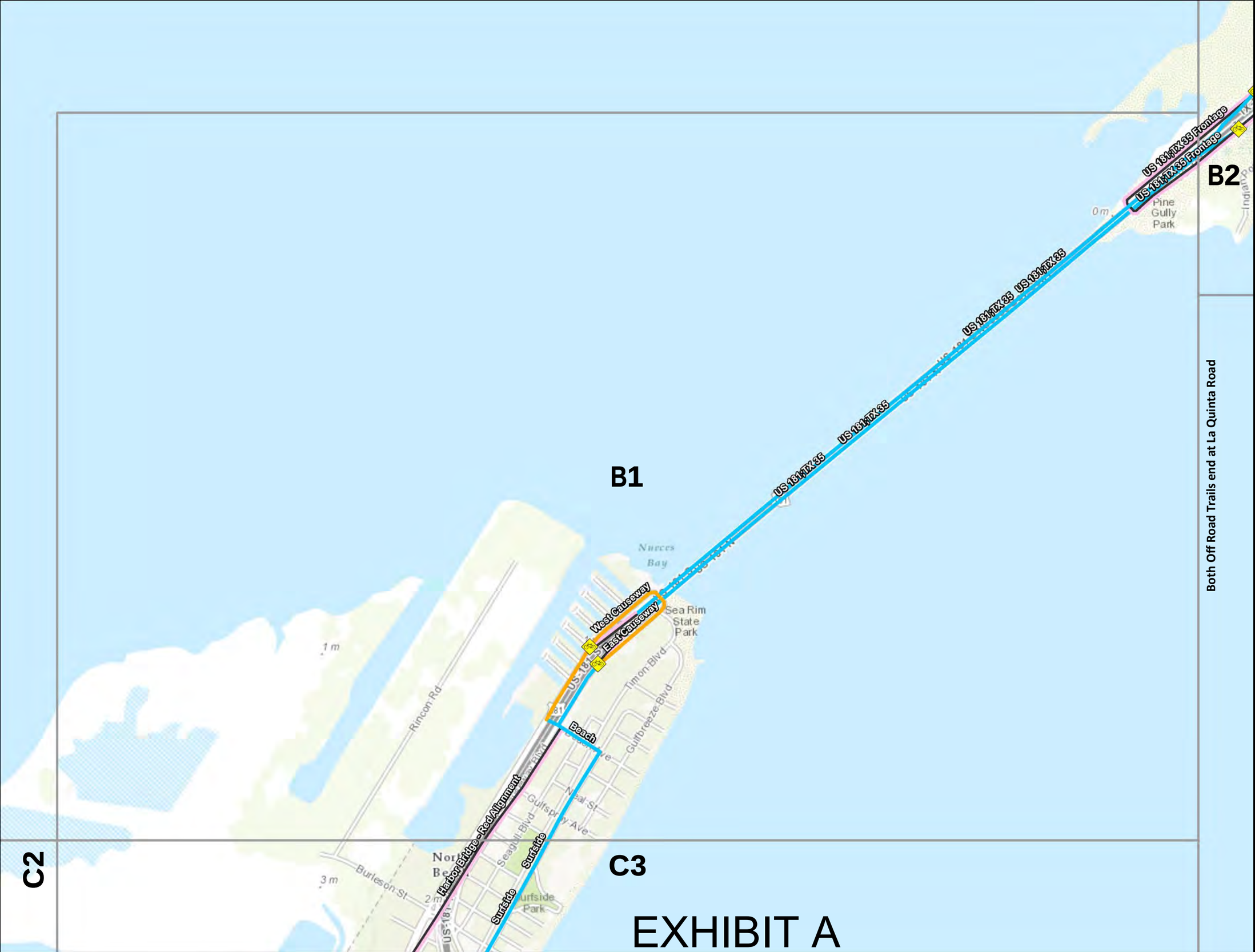
Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A



B1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

C1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

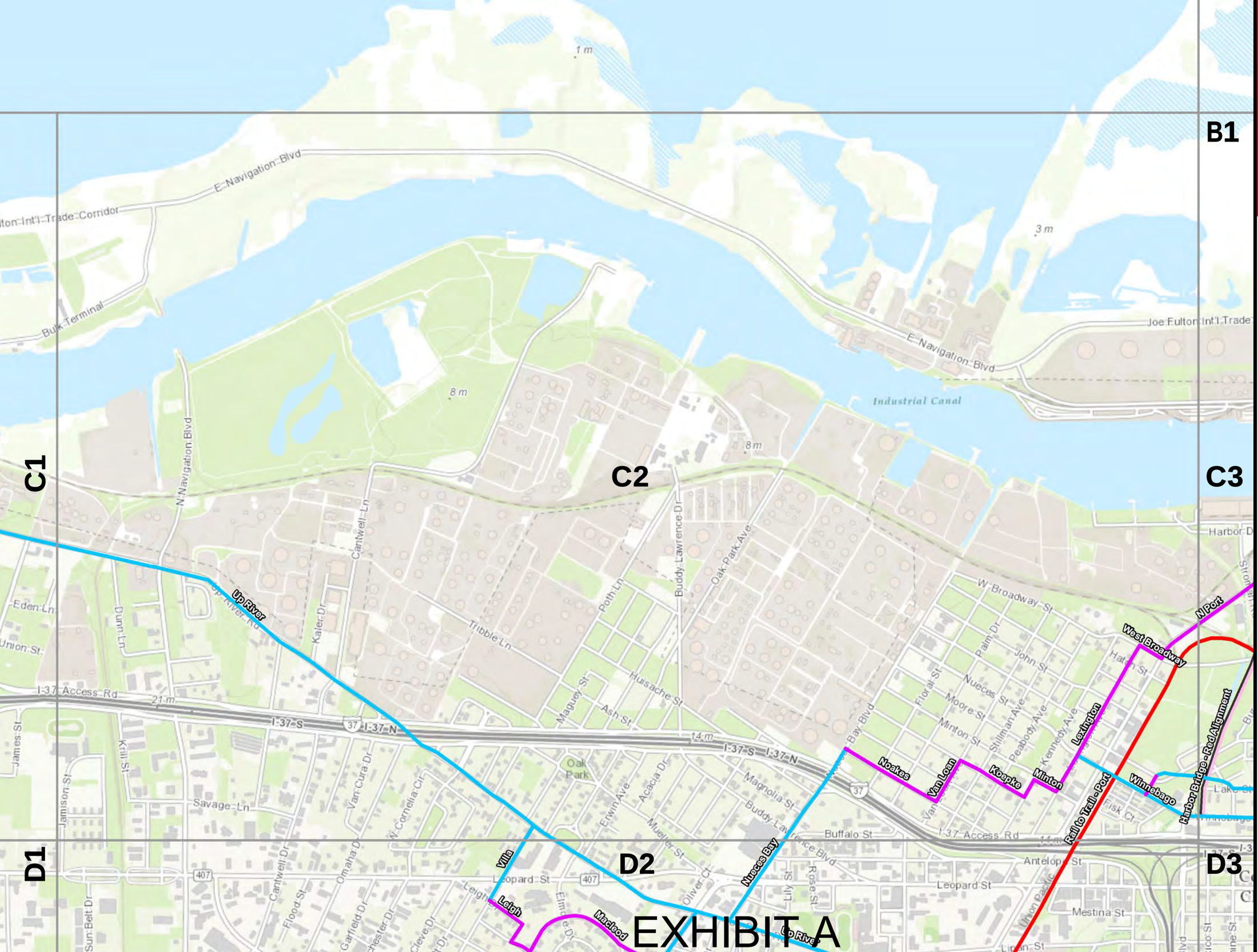
- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH



C2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

C3

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail
- TBD: Corridor study recommended

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

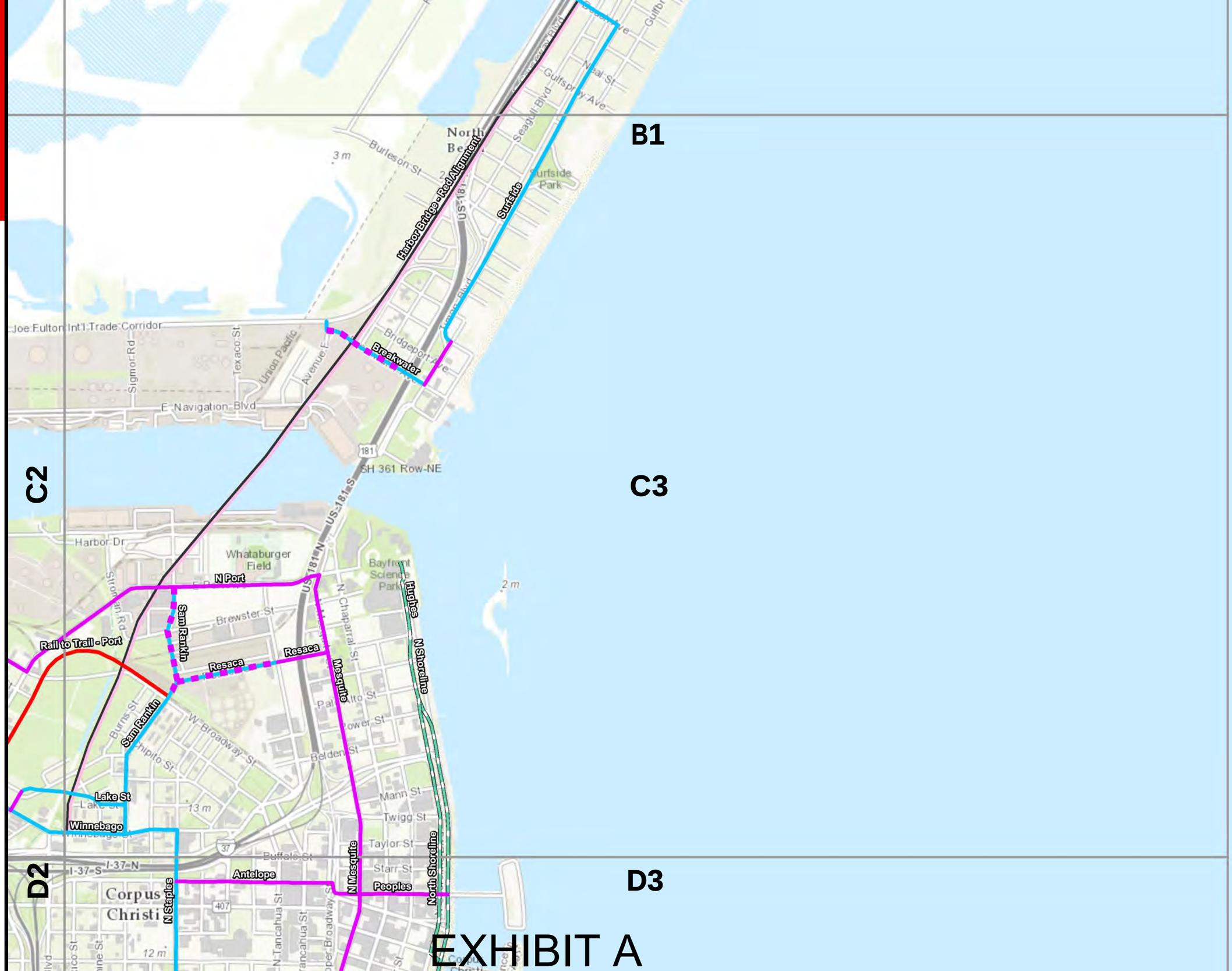
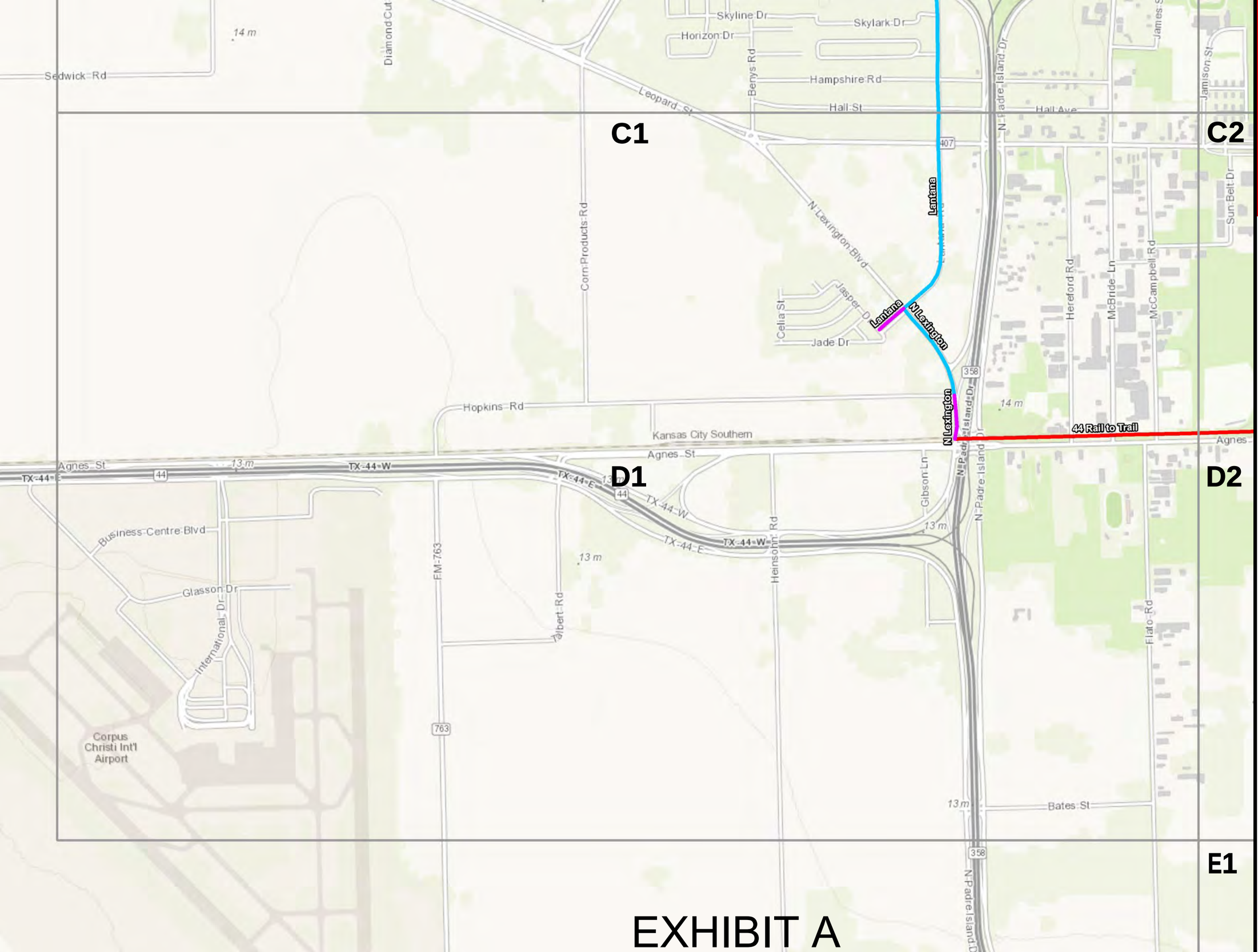


EXHIBIT A



D1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

D2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

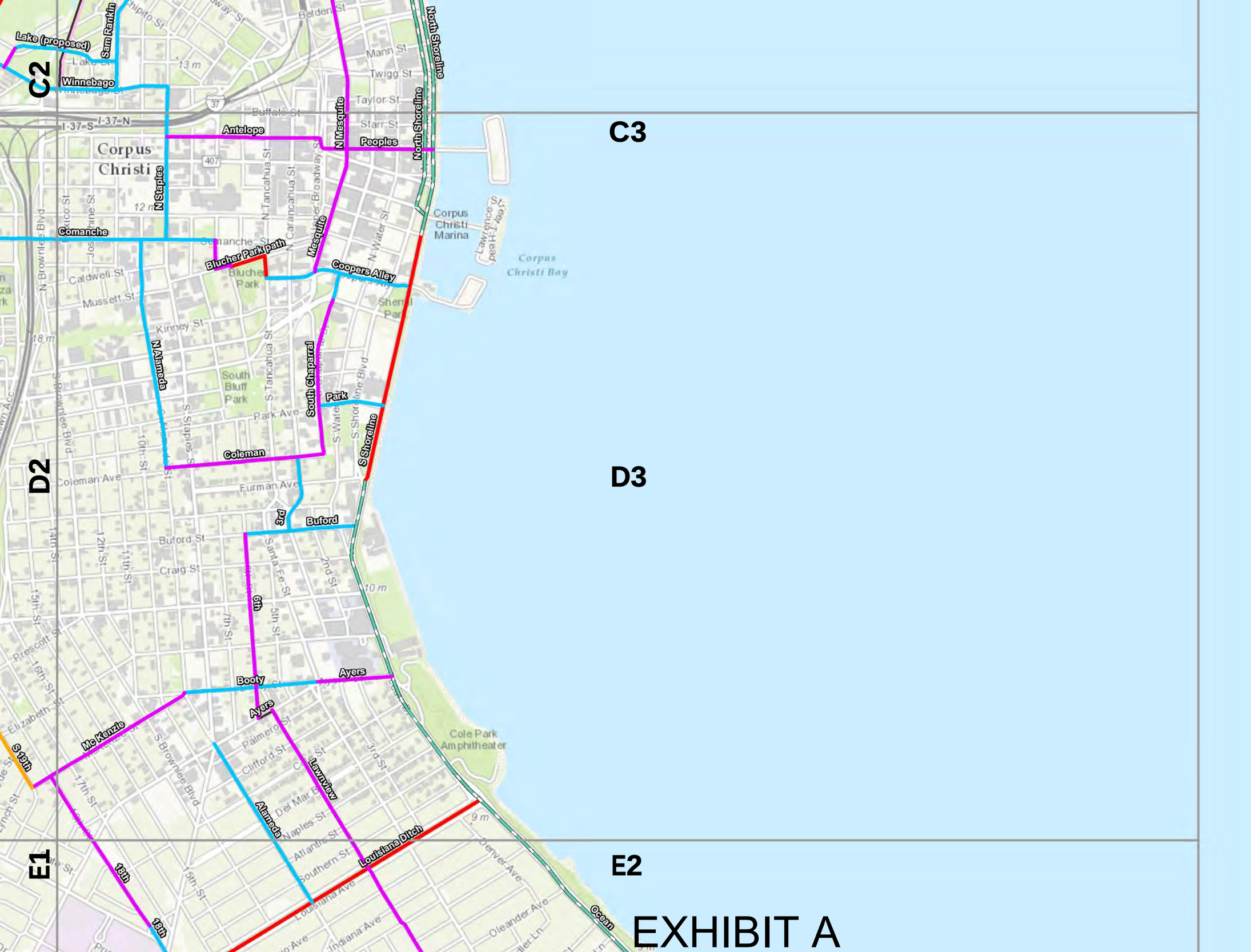
Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A



D3

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail
- TBD: Corridor study recommended

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

E1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

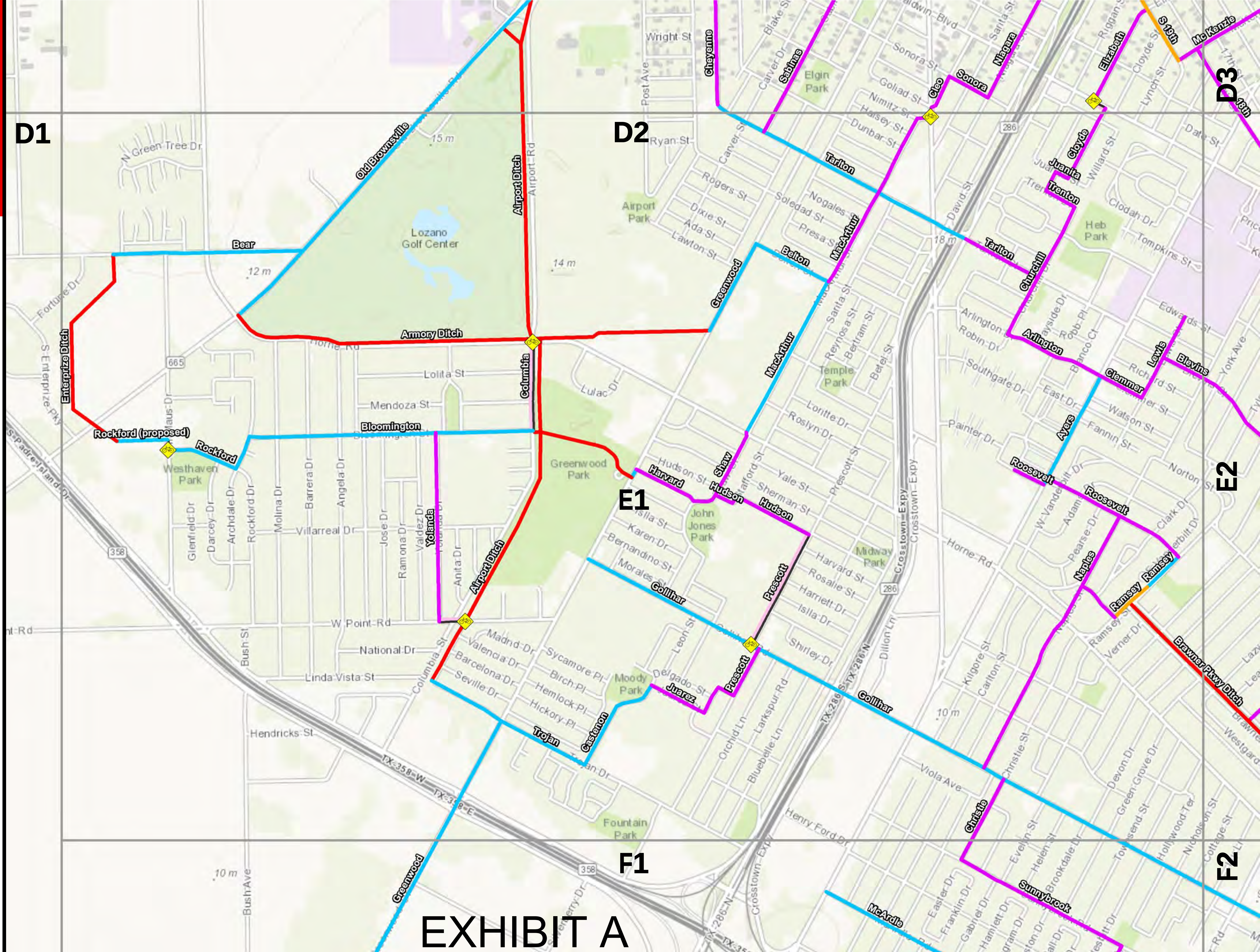
- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH



D1
D2
D3
E1
E2
F1
F2
Lozano Golf Center
Old Brownsville
Bear
Airport Ditch
Armory Ditch
Enterprize Ditch
Rockford (proposed)
Rockford
Bloomington
Columbia
Yolanda
Westhaven Park
Greenwood Park
Greenwood
MacArthur
Belton
Tarlton
Shaw
Harvard
Hudson
John Jones Park
Gollihar
Prescott
Juarez
Castenon
Trojan
Moody Park
Fountain Park
Temple Park
Midway Park
Airport Park
Elgin Park
Heb Park
Sabinas
Cisco
Sonora
Niagara
Elizabeth
S 19th
McKenzie
Clyde
Juanita
Trenton
Churchill
Arlington
Clemmer
Lewis
Blevins
Ayers
Roosevelt
Naples
Ramsey
Brawner Pkwy Ditch
Christie
Sunnybrook
McArdle

EXHIBIT A

E2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail
- TBD: Corridor study recommended

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

F1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

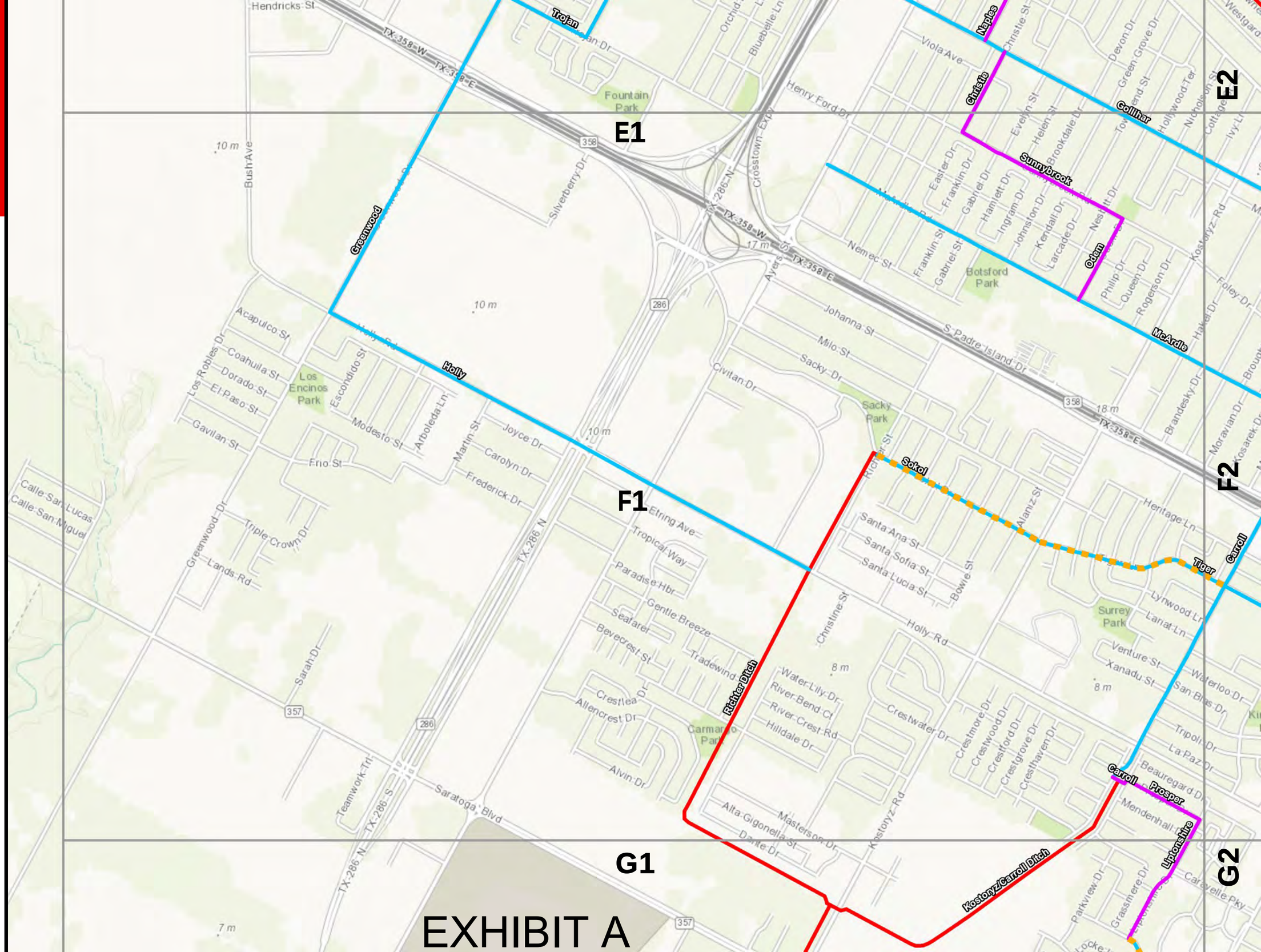


EXHIBIT A

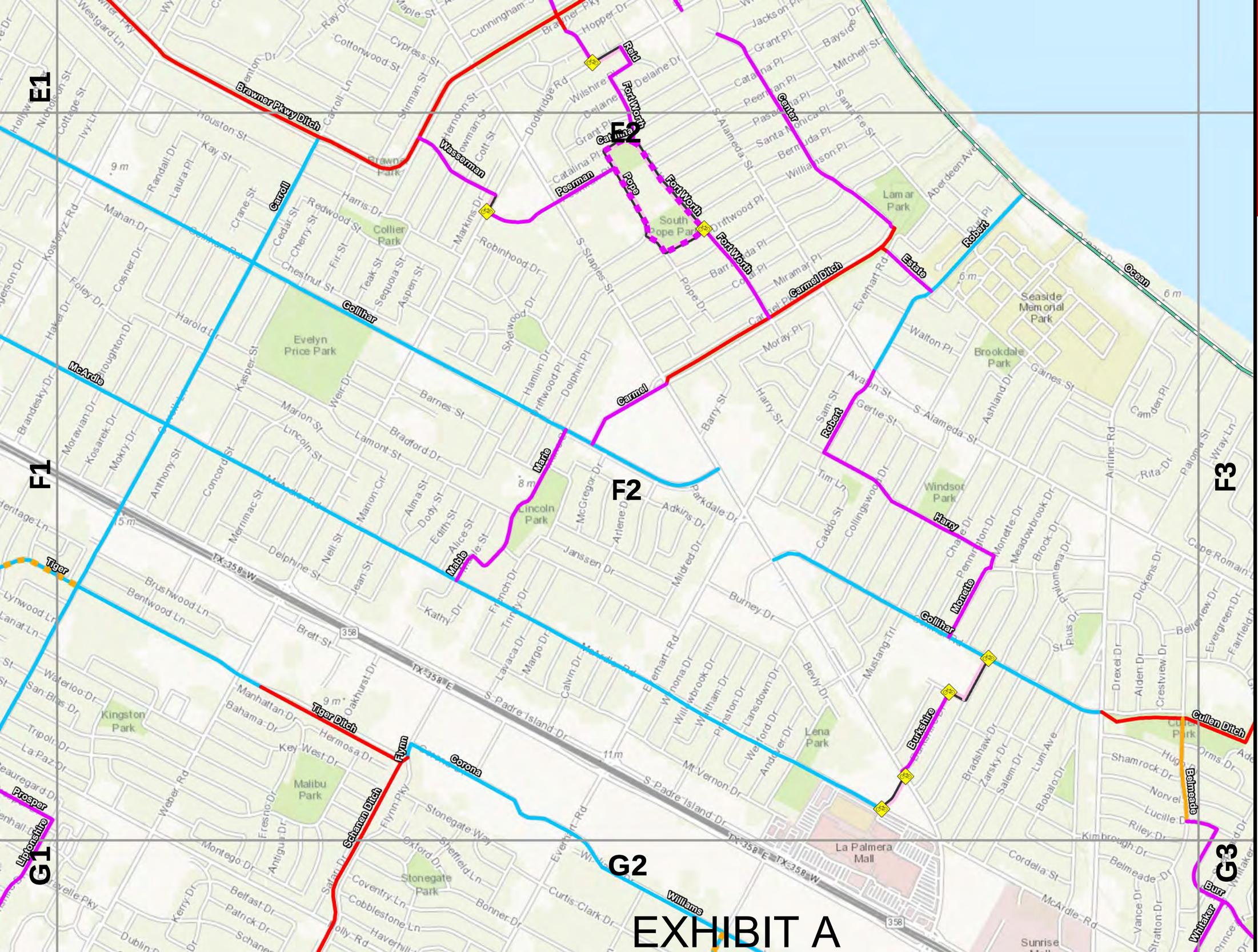


EXHIBIT A

F2

INFRASTRUCTURE

Low Cost/Rapid Implementation

▬ Bike Boulevard

▬ Bike Boulevard as Transitional Treatment

▬ Buffered Bike Lane

▬ Buffered Bike Lane as Transitional Treatment

▬ Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

▬ 1-way Cycle Track (both sides)

▬ Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed

▬ Off Road Multi-use Trail

▬ TBD: Corridor study recommended

Specialized Treatments

◆ Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

F3

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail
- TBD: Corridor study recommended

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

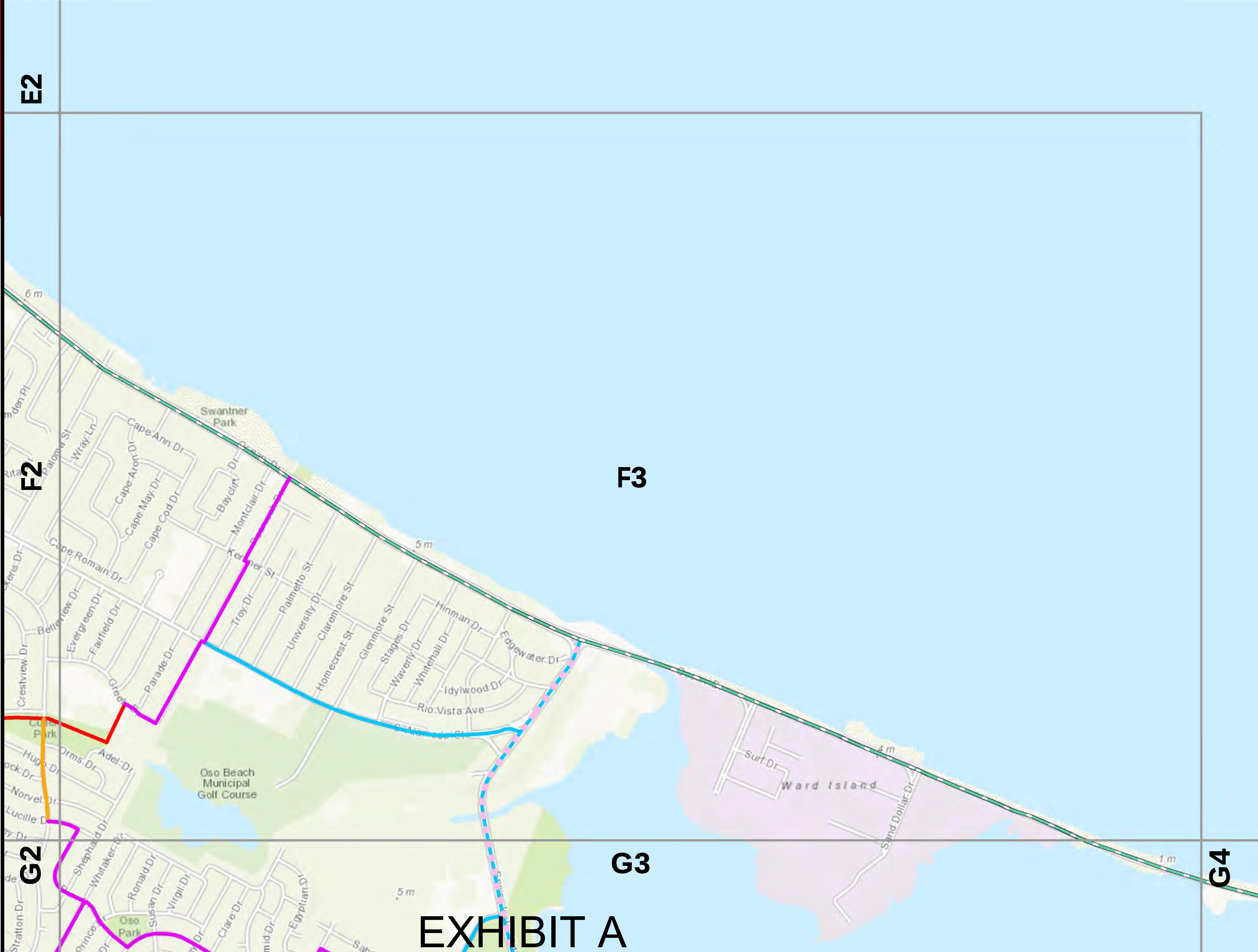


EXHIBIT A

G1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

G2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

G3

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail
- TBD: Corridor study recommended

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

G4

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail
- TBD: Corridor study recommended

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

F3 G3 G4 H3 H4

Ocean 1 m 3 m 5 m 2 m Saipan St Rabaul St 2nd Avenue C Crecy St 4th St Vicksburg St Midway St 5th St King Dr Tarawa St Saratoga Dr Trafalgar Dr Orion Dr D Avenue D Corpus Christi Naval Air Station 1st Avenue E Avenue E-1 Skyray Dr E St 7th St Lexington Road G Road H Boomer St 9th St Dimmit Avenue L Iwo Jima St NAS Turtle Cove Park Oriole St Donald St Mattock S.P.I.D.

EXHIBIT A

H1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

H2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

H3

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

H4

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

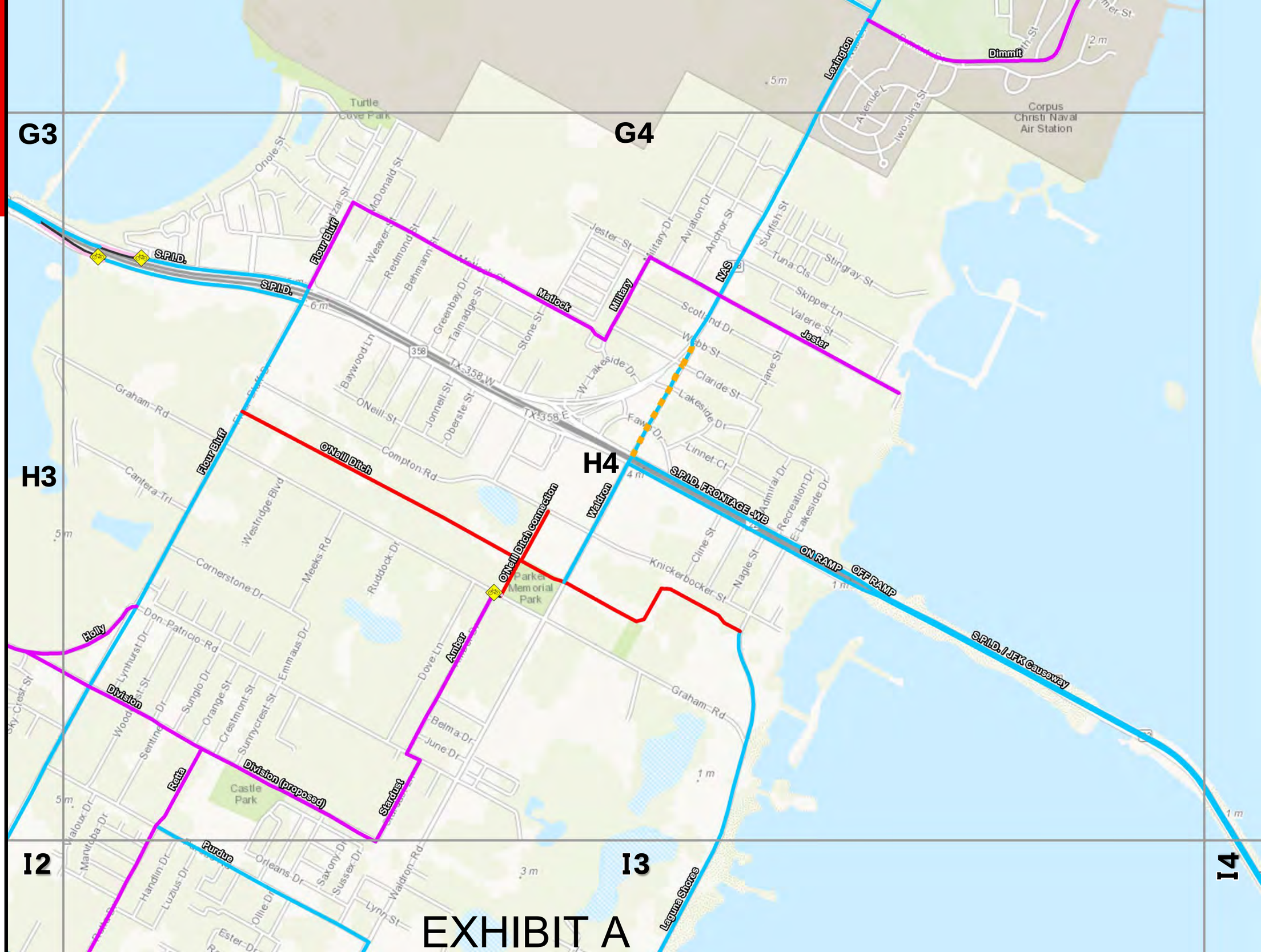
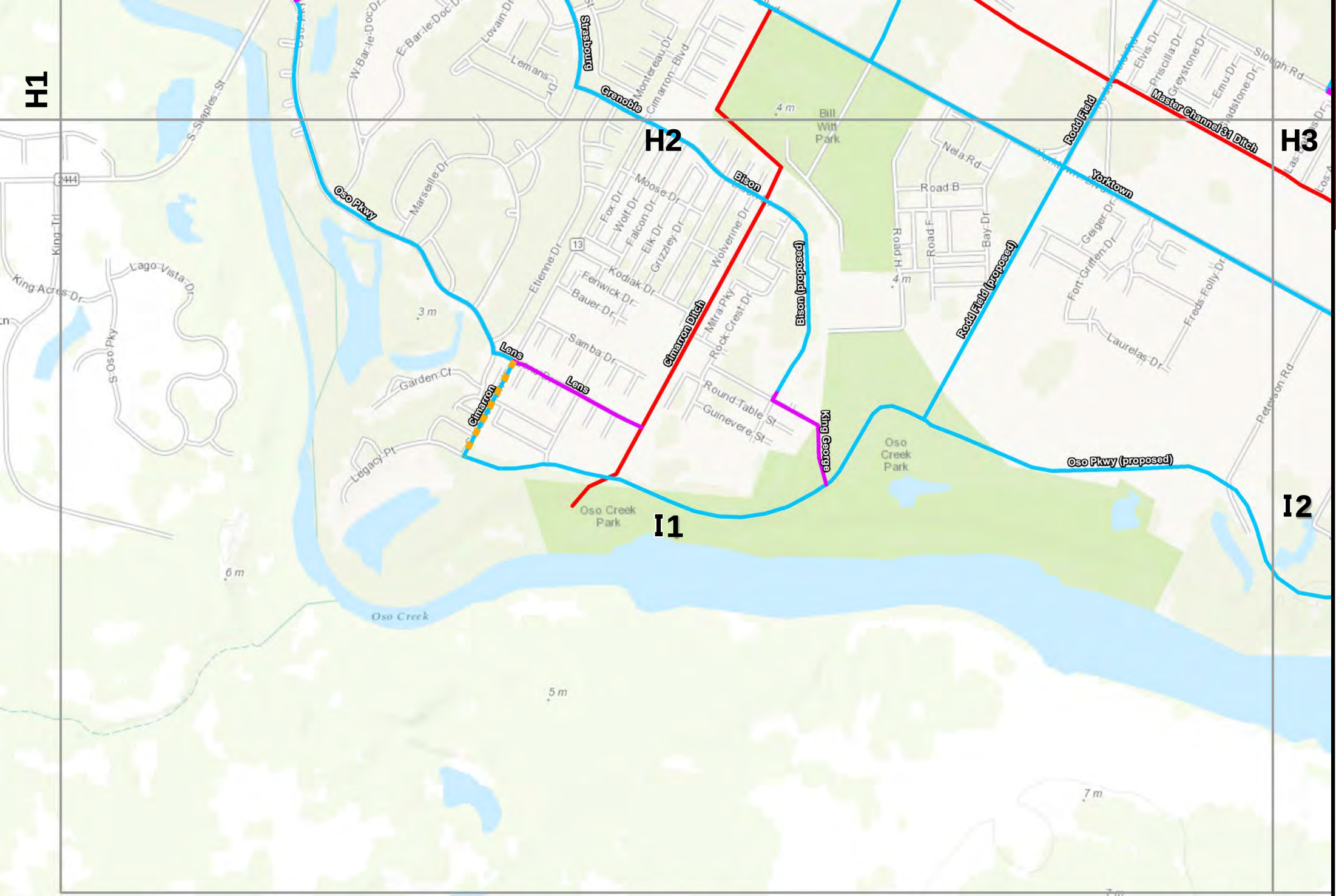


EXHIBIT A



INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

I2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

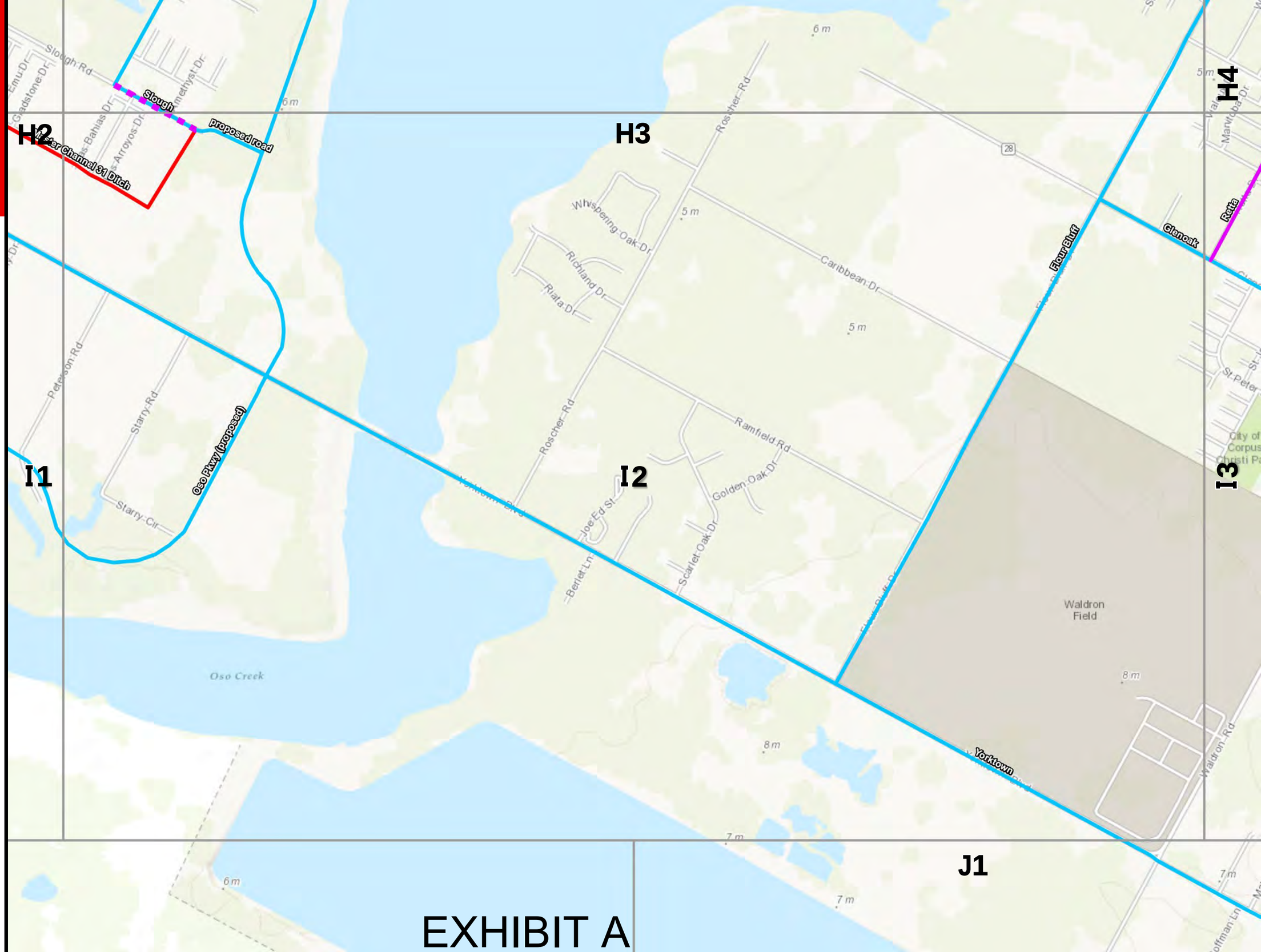


EXHIBIT A

I3

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

I4

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

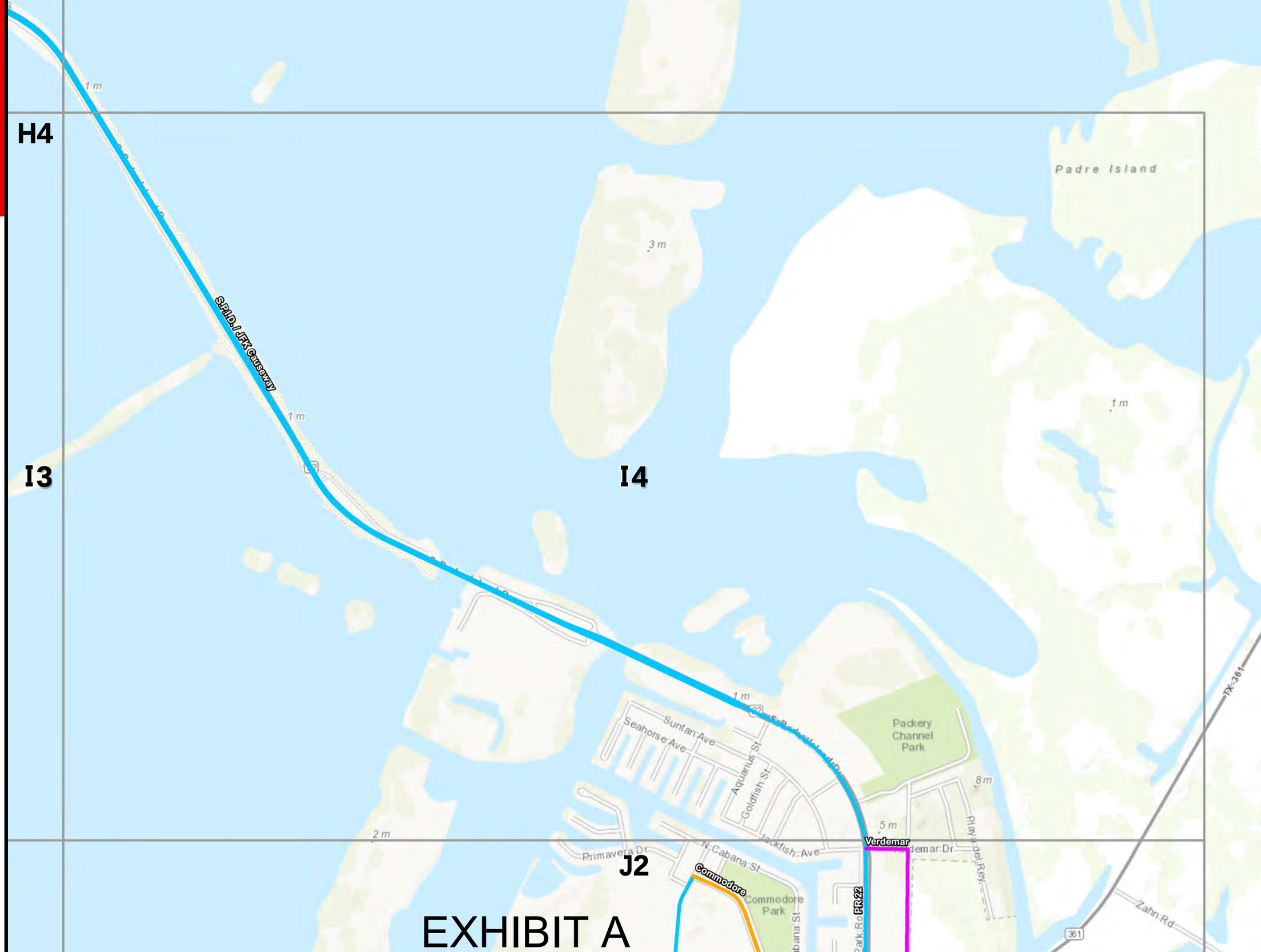


EXHIBIT A

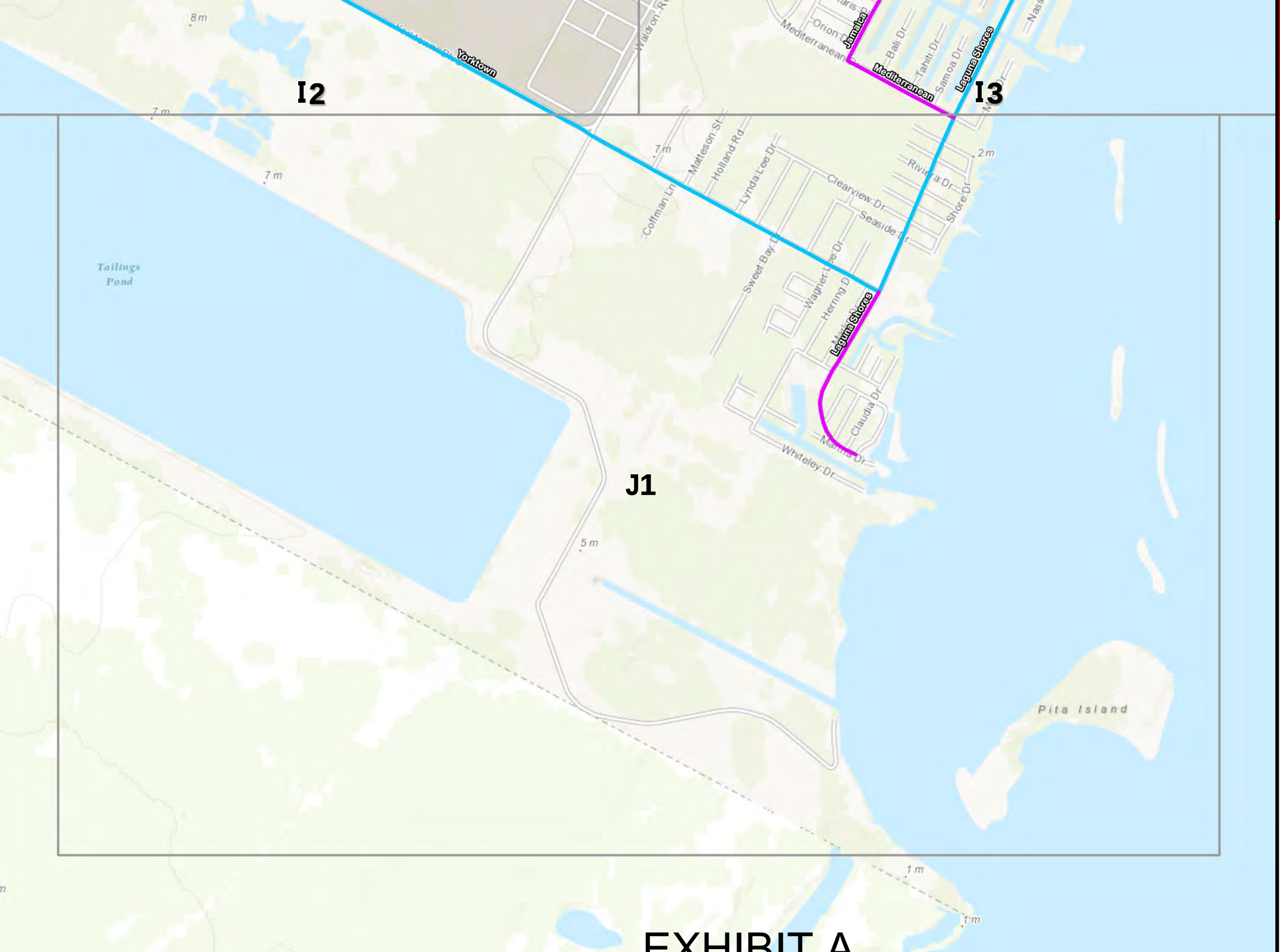


EXHIBIT A

J1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

J2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

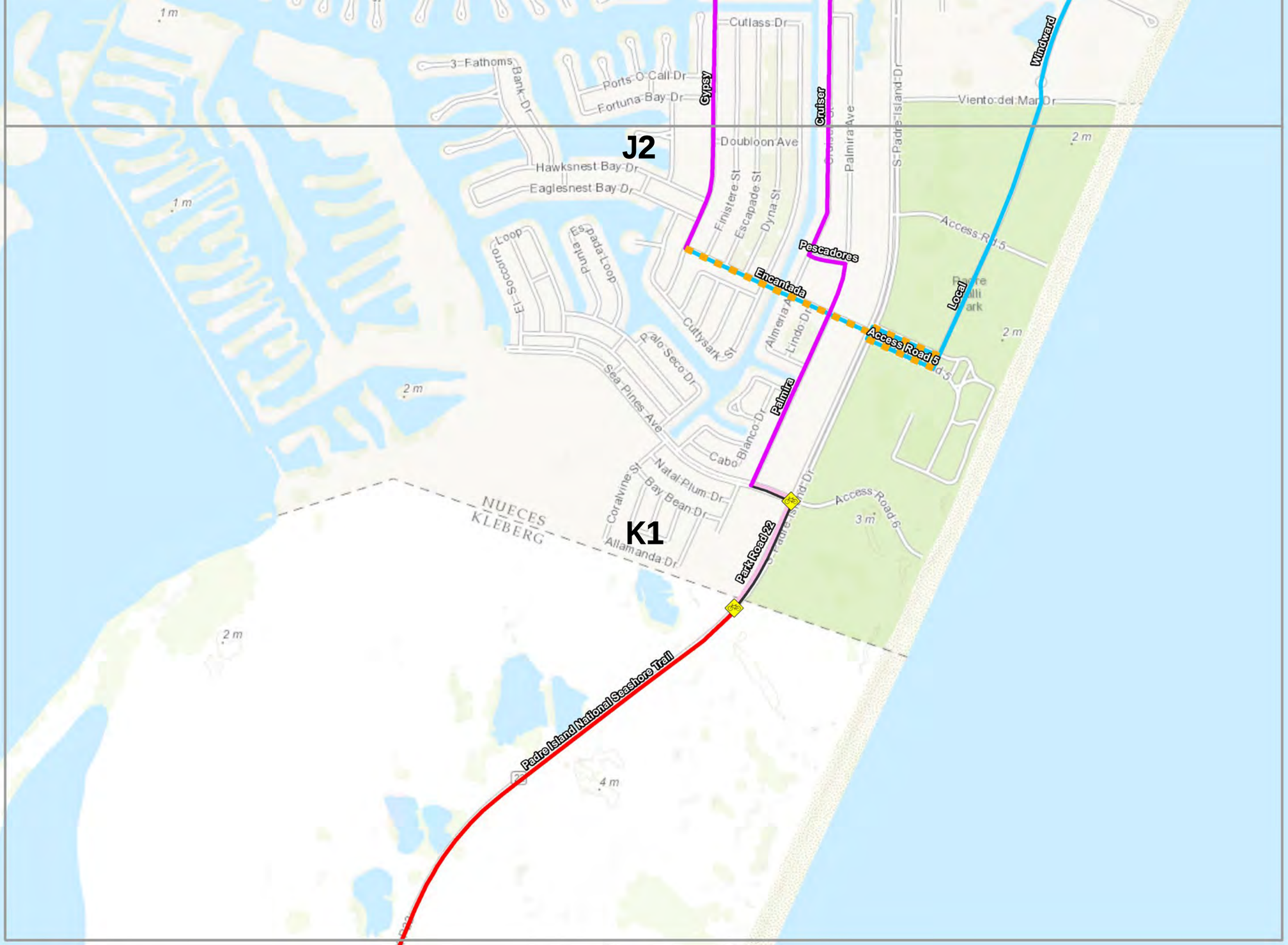
Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A



Off Road Multi-use Trail ends at Padre Island National Seashore

EXHIBIT A

K1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

K2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

Multi-use Sidepath (one side) ends at Labonte Park

K2

L1

EXHIBIT A

L1

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

EXHIBIT A

L2

INFRASTRUCTURE

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Transitional Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Transitional Treatment
- Multi-use Sidepath (one side) as Transitional Treatment

Strategic Capital Investment

- 1-way Cycle Track (both sides)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail

Specialized Treatments

- Mid-block crossing location

Supplemental Specialized Treatments are listed in Table 8, page 47.

NORTH

L1

L2

EXHIBIT A

SUPPLEMENTAL SPECIALIZED TREATMENTS*

TABLE 8: Supplemental Specialized Treatments

Specialized Treatments	Street Name	From	To	Transitional Infrastructure Prescription	Final Infrastructure Prescription
Reduce Travel Lane Width**	Up River Rd.	Deer Run	West Guth Park entrance	Buffered Bike Lane	N/A
Super Sharrow	N. Port Ave.	Mesquite St.	Broadway St.	Bike Boulevard	N/A
Road Diet	Alameda St.	Ayers St.	Louisiana Ave	1-Way Cycle Track, both sides	N/A
	Golihar Rd.	Staples St.	Airline Rd.	1-Way Cycle Track, both sides	N/A
	S 19th St.	Morgan Ave.	Prescott St.	Buffered Bike Lane	N/A
	S Gregory St.	4th St.	Church St.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Spohn Dr. South	Saratoga Blvd.	Parkway Dr.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Violet Rd.	Starlite Ln.	Willowood Ck. Dr.	Sidepath, 1 side	N/A
	Violet Rd.	Windsor St.	Timbergrove Ln.	1-Way Cycle Track, both sides	N/A
Recapture Parking, 1 Side	Broadway Blvd.	Ayers St.	Louisiana Ave	1-Way Cycle Track, both sides	N/A
	Brockhampton St.	Staples St.	Airline Rd.	1-Way Cycle Track, both sides	Bike Boulevard
	Carroll Ln.	Holly Rd.	Brawner Pkwy	1-Way Cycle Track, both sides	N/A
	Cedar Pass Dr.	Tiger Ditch	Everhart Rd.	1-Way Cycle Track, both sides	N/A
	McArthur St.	Horne Rd.	Belton St.	1-Way Cycle Track, both sides	N/A
	Oso Pkwy	Yorktown Blvd.	S. Staples St.	1-Way Cycle Track, both sides	N/A
	Oso Pkwy	Bar-Le-Doc Dr.	Lens Dr.	1-Way Cycle Track, both sides	N/A
	Purdue Rd.	Retta Dr.	Waldron Rd.	1-Way Cycle Track, both sides	N/A
	Timbergate Dr.	Hunt Dr.	S. Staples St.	1-Way Cycle Track, both sides	N/A
	Treyway Ln.	Holly Rd.	Williams Dr.	1-Way Cycle Track, both sides	N/A
	Trojan Dr.	Greenwood Dr.	Castenon St.	1-Way Cycle Track, both sides	N/A
Recapture Parking, Both Sides	River Hill Dr.	Northwest Blvd.	Red River Dr.	Buffered Bike Lane	N/A

Specialized Treatments	Street Name	From	To	Transitional Infrastructure Prescription	Final Infrastructure Prescription
Reduce Street Width**	Beach Ave.	W. Causeway Blvd.	Timon Blvd.	1-Way Cycle Track, both sides	N/A
	Betty Jean Dr.	Williams Dr.	Holly Rd.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Bison Dr.	Cimarron Blvd.	Bison Dr. (Prop)	1-Way Cycle Track, both sides	N/A
	Bloomington St.	Archdale Dr.	Columbia St.	1-Way Cycle Track, both sides	N/A
	Booty St.	Alameda St.	Santa Fe St.	1-Way Cycle Track, both sides	N/A
	Buford St.	6th St.	Shoreline Blvd.	1-Way Cycle Track, both sides	N/A
	Comanche St.	19th St.	Artesian St.	Sidepath, 1 side	N/A
	Comanche St.	Palm Dr.	19th St.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Daniel Moore Ave.	Denver St.	Wildcat Dr.	1-Way Cycle Track, both sides	N/A
	Dry Creek Dr.	E. Riverview St.	Rapids Dr.	Sidepath, 1 side	N/A
	Gingerberry Dr.	Loire Blvd.	Lipes Blvd.	1-Way Cycle Track, both sides	N/A
	Grenoble Dr.	Strasbourg Dr.	Cimarron Blvd.	1-Way Cycle Track, both sides	N/A
	Hunt Dr.	Long Meadow Dr.	Timbergate Dr.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Lang Rd.	Akins Dr.	Wildcat Dr.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Loire Blvd.	Gingerberry Dr.	Beauvais Dr.	1-Way Cycle Track, both sides	N/A
	Long Meadow Dr.	Saint Andrew's	Hunt Dr.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Middlecoff Dr.	Player St.	Long Meadow Dr.	1-Way Cycle Track, both sides	Buffered Bike Lane
	N. Gregory Rd.	Fresnos St.	4th St.	1-Way Cycle Track, both sides	N/A
	Palm Dr.	Lipan St.	Comanche St.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Robert Dr.	Ocean Dr.	S. Alameda St.	1-Way Cycle Track, both sides	N/A
	Saint Andrew's Dr.	Long Meadow Dr.	Holly Rd.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Strasbourg Dr.	Loire Blvd.	Grenoble Dr.	1-Way Cycle Track, both sides	N/A
	Tarlton Dr.	Cheyenne St.	Prescott St.	1-Way Cycle Track, both sides	N/A
	Teague Ln.	Wildcat Dr.	Carroll Ln.	1-Way Cycle Track, both sides	N/A
	Tiger Ln.	Kostoryz Rd.	Carroll Ln.	1-Way Cycle Track, both sides	Buffered Bike Lane
	Timbergate Dr.	S. Staples St.	Master Channel 31	1-Way Cycle Track, both sides	N/A

* See pages 59-65 for illustrations

**The prescribed reduction in street width affects only the surplus width on the margins of the curb lanes and does not impact the *effective* travel lane width. A reduction to 11' travel lane widths allows surplus ROW to be repurposed for bicycle facilities and may have a beneficial traffic calming effect but will not impact the efficiency of the street.

INFRASTRUCTURE ILLUSTRATIONS

Over 70% of survey respondents and interviewees indicated that they don't feel safe from vehicles on existing bike facilities in our community. Thus, where the bike mobility network corresponds to the street network (as opposed to off-road segments on stormwater or railroad easements), the planning team emphasized alternatives to the standard (unbuffered) bike lane that provide more separation between cyclists and vehicles. Each type of bicycle infrastructure that is prescribed in the network is illustrated in this section. Design and maintenance standards are provided by way of reference to external national standards (typically from the National Association of Community Transportation Officials (NACTO) Urban Bikeway Design Guide) that are updated frequently and independently, thus ensuring that the bicycle mobility network in our community will reflect contemporary best practices.

INFRASTRUCTURE ILLUSTRATIONS

EXHIBIT A

BIKE BOULEVARD WITH SHARROW SYMBOL. HOBOKEN, NJ

BICYCLE BOULEVARD

BIKE BOULEVARD WITH DIVERTER. PORTLAND, OR

BICYCLE BOULEVARD

Description:

Bicycle Boulevards are typically local or neighborhood streets that prioritize travel by bicycle. Bicycle Boulevards encourage low motor vehicle speeds, which discourages through traffic, and include safe crossings at busy streets, thus providing a low stress experience for cyclists.

Features:

- Typical average daily traffic (ADT) volumes of less than 3,000 vehicles per day; less than 1,500 vehicles per day preferred
  - Preferred maximum posted speed of 20-25 mph
- Wayfinding signs for cyclists and shared lane markings ("sharrows") to let motorists know that cyclists will be present and have priority are the minimum treatments to designate a corridor as a bike boulevard; shared lane markings provide lateral lane positioning guidance to bicyclists, including riding outside the "door zone" of parked cars
- Supplemental treatments that should be considered include:
  - Bicycle friendly traffic calming features to ensure appropriate motor vehicle speeds, such as: traffic circles/mini-roundabouts, vertical deflection (e.g. speed cushions, which can include cutouts that match the axle width of emergency vehicles)
  - Priority assignment for through bicycle traffic at two-way stop or at all-way stop controlled intersections; this may necessitate turning the signs to stop traffic on the cross street to the bike boulevard to minimize stops for bicyclists at two-way stops or removing stop signs on two approaches at all-way stops
  - Traffic diverters at key intersections to reduce non-local/through motor vehicle traffic but allowing through bicycle traffic
  - Crossing improvements where the bike boulevard crosses major streets; this may include crosswalk markings, median refuge islands, curb extensions (on streets with on-street parking), rectangular rapid flashing beacons (RRFBs), pedestrian hybrid beacons, or traffic signals

Benefits:

- Allow for relatively low cost/rapid implementation without right-of-way acquisition or major capital investment
- Provide a low stress bicycle experience that accommodates cyclists of nearly all ages and abilities
- Provide traffic calming effect and reduce through traffic (particularly when supplemental treatments are implemented), which is of general benefit to neighborhood character and safety
- Provide opportunities to integrate water quality and green street infrastructure in conjunction with traffic calming devices (e.g. in planters or traffic circles)

Challenges:

- Require appropriate crossing treatments at major intersections
- Necessitate appropriate wayfinding and safety signage to establish bicycle priority
- May impact movement of emergency, transit, and maintenance vehicles if supplemental traffic calming is implemented

Design and Maintenance Guidance:

- National Association of City Transportation Officials (NACTO). 2014. *Urban Bikeway Design Guide, 2nd Edition*.
- American Association of State Highway and Transportation Officials (AASHTO). 2012. *Guide for the Development of Bicycle Facilities, 4th Edition*.
- Alta Planning + Design and IBPI. 2009. *Fundamentals of Bicycle Boulevard Planning & Design*.

Relative Cost:

- Vary as a function of supplemental traffic calming and intersection crossing treatments implemented
- Minimum treatment (only signs and markings): ~ $8,500 per mile (assumes 20 pavement markings & 10 signs per mile in each direction)

BUFFERED BIKE LANE

Description:

Buffered bicycle lanes designate a portion of a roadway for exclusive use by bicycles (by way of striping, signage, and pavement markings) that is separated from the vehicular travel lane or from parked cars by a striped buffer space (typically 2-5 feet in width).

Features:

- Typical use on streets classified as residential collectors and above
- Includes a 2-5 foot wide striped buffer space to separate the designated bicycle lane from the vehicular travel lane or parked cars

Benefits:

- Allow for relatively low cost/rapid implementation without right-of-way acquisition or major capital investment
- Can replace underutilized travel lanes or parking lanes with simple re-striping
- Provide higher level of safety and comfort for cyclists as compared to standard (unbuffered) bicycle lanes
- If used adjacent to on-street parking, provide greater separation between cyclists and parked vehicles, helping to eliminate "door zone" conflicts and crashes
- Buffering helps distinguish the lane as a dedicated space for cyclists, thus reducing the likelihood that it is mistaken for a travel lane or parking lane
- Indicate clearly that bicycles have the right to be on the road and thus helps reduce potential for bicycle/pedestrian conflicts on sidewalks
- Encourage more predictable behavior by both motorists and bicyclists
- Allow motorists and/or bicyclists to pass other bicyclists with less delay and with fewer passing conflicts
- Improve sight distances at driveways and intersections
- Increase the separation between motor vehicles and sidewalks/pedestrians, thereby increasing the level of comfort for pedestrians and indirectly fostering pedestrian activity
- May serve to calm traffic by creating the perception of a more distinct lane boundary
- Provide additional turning space for trucks and transit
- Provide shoulder space for disabled vehicles, mail delivery, bus stops, and cars yielding to passing emergency vehicles

Challenges:

- Require more space than conventional (unbuffered) bicycle lanes
- Additional markings and maintenance increase cost relative to conventional (unbuffered) bicycle lanes
- Motorists may park illegally in buffered lanes
- Often collect debris and broken glass, which may render them (or sections of them) unusable; the buffer between the travel lane and bike lane may reduce the natural “sweeping” effect of passing motor vehicles, potentially requiring more frequent maintenance (street sweeping)
- May encourage poor behavior by bicyclists and right turning motorists at intersections and driveways, creating potential conflicts (i.e. “right hooks”)
- May create confusion among drivers as to whether they may cross buffer area to make turning movements

Design and Maintenance Guidance:

- National Association of City Transportation Officials (NACTO). 2014. *Urban Bikeway Design Guide, 2nd Edition*.
- American Association of State Highway and Transportation Officials (AASHTO). 2012. *Guide for the Development of Bicycle Facilities, 4th Edition*.

Relative Cost:

- Striping only: ~$40,000 per mile

BUFFERED BIKE LANE. SANTA MONICA, CA

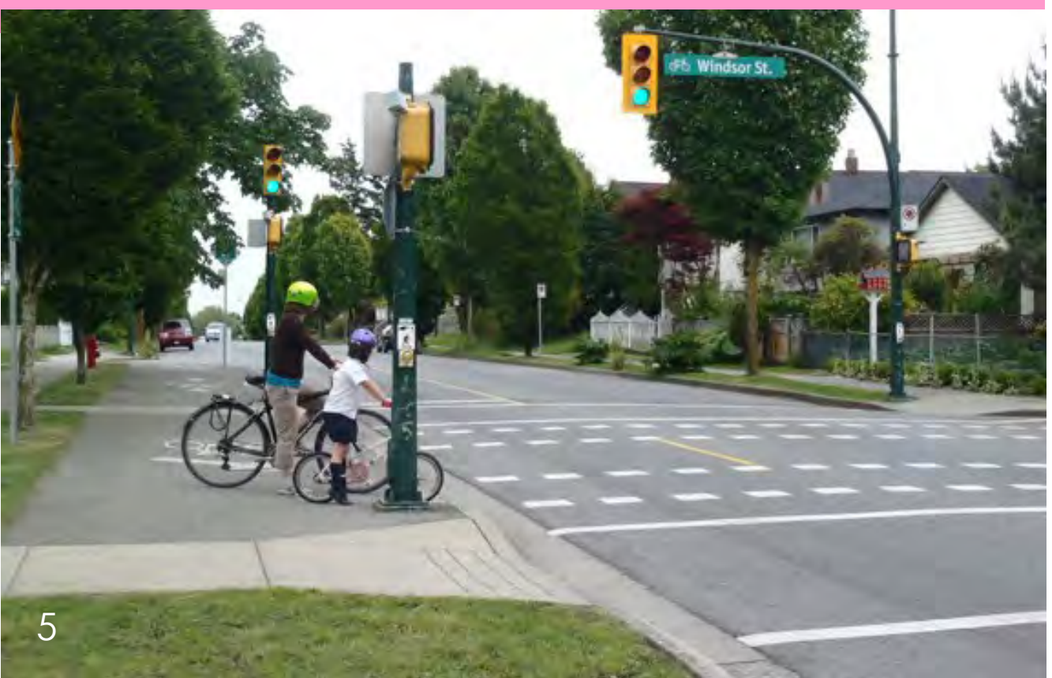
BUFFERED BIKE LANE

BUFFERED BIKE LANE. COMMODORE BLVD, CORPUS CHRISTI, TX

MULTI-USE SIDEPATH. ORLANDO URBAN TRAIL. ORLANDO, FL

MULTI-USE SIDEPATH
ONE SIDE

SIDEPATH. CYCLE TRACK CONNECTION. WINDSOR, VANCOVER, BC



MULTI-USE SIDEPATH, ONE SIDE

Description:

A shared-use sidepath, located on one side of the street (adjacent and parallel to a street), that accommodates two-way non-motorized traffic. Shared use paths are not dedicated bicycle facilities and thus also serve pedestrians, inline skaters, wheelchair users, joggers, and other non-motorized users.

Features:

- Most commonly used to provide a short connection between two offset intersecting streets or facilities that are part of the regional bicycle network or to provide direct connection to a specific destination, such as a school
- Typically used in areas where right-of-way limitations or other physical constraints prevent the installation of bicycle infrastructure on both sides of the street
- Preferred width for a shared-use sidepath accommodating two-way, non-motorized traffic is 12-14 feet; minimum width is 10 feet
- Width of 8 feet may be acceptable to provide short linkages between other, more robust facilities or where rights-of-way are severely constrained

Benefits:

- Highly versatile facility
- Physical Separation

Challenges:

- Every street or driveway crossing presents a potential conflict point that merit additional mitigation; extreme care should be taken in the design of sidepaths along streets with many driveways and street crossings (especially high traffic volume locations); conflict mitigation includes strict access management and specific design treatments to improve visibility, reduce speed, and separate movements at conflict points
- Presence of users of a wide variety of non-motorized modes and abilities and two-way traffic may reduce predictability operation and increase potential for conflicts, necessitating additional interventions, such as path user speed limits
- Provides reduced level of service for cyclists relative to dedicated bicycle facilities

Design and Maintenance Guidance:

- American Association of State Highway and Transportation Officials (AASHTO). 2012. *Guide for the Development of Bicycle Facilities, 4th Edition*.
- National Association of City Transportation Officials (NACTO). 2014. *Urban Bikeway Design Guide, 2nd Edition.*

Relative Cost:

- ~ $200,000 - $500,000 per mile, depending on width and material

OFF-ROAD MULTI-USE TRAIL

Description:

A path, typically found along greenways, waterways, active or abandoned railways, and utility easements, within a right-of-way that is independent and physically separated from motor vehicle traffic by an open space or barrier. Multi-use paths are not dedicated bicycle facilities and thus also serve pedestrians, inline skaters, wheelchair users, joggers, and other non-motorized users.

Features:

- Provides a separated path for non-motorized users along a linear corridor that is independent of the roadway network
- Preferred width for a multi-use path accommodating two-way, non-motorized traffic is 12-14 feet; minimum width is 10 feet
- Width of 8 feet may be acceptable to provide short linkages between other, more robust facilities or where rights-of-way are severely constrained

Benefits:

- Highly versatile facility
- Independence from roadway network creates high quality user experience

Challenges:

- Intersections of trails with roadways present potential conflict points that may merit dedicated crossing treatments
- Presence of users of a wide variety of non-motorized modes and abilities and two-way traffic may reduce predictability operation and increase potential for conflicts, necessitating additional interventions, such as path user speed limits
- Right-of-way acquisition may be costly and/or complicated
- Topography and drainage can greatly impact design, construction, and maintenance
- Personal safety measures, such as emergency call boxes and lighting, must be considered due to distance from roadways

Design and Maintenance Guidance:

- American Association of State Highway and Transportation Officials (AASHTO). 2012. *Guide for the Development of Bicycle Facilities, 4th Edition*.

Relative Cost:

- Typically $400,000 - $600,000 per mile, depending on width and material, not including amenities such as trailheads or supplemental safety measures

OFF-ROAD MULTI-USE PATH. LITTLE ECON GREEWAY, ORLANDO, FL

OFF-ROAD MULTI-USE TRAIL

OFF-ROAD MULTI-USE PATH. MEAD GARDEN TRAIL, ORLANDO, FL

CENTRAL PARKWAY CYCLE TRACK. CINCINNATI, OH

ONE-WAY CYCLE TRACK

CENTRAL TRACK SIDEWALK. EUROPE

EXHIBIT A

ONE-WAY CYCLE TRACK, BOTH SIDES

Description:

A one-way cycle track is a bikeway provided on both sides of the street that is physically separated from the vehicular travel lanes that provides exclusive use by bicycles in the direction of motor vehicle travel. Separated bikeways may be placed at either street level, at sidewalk level, or at an intermediate level; the preferred placement in the Corpus Christi metro area is at sidewalk level adjacent to or in close proximity to the sidewalk.

Features:

- Typically specified on streets with higher traffic speeds and/or volumes
- Dedicated bicycle facility separated from motor vehicle traffic by a physical barrier (e.g. the curb)
- Differentiated from the sidewalk by way of material choice or surface treatment (e.g. green pigmented concrete) and, where space allows, by a strip (1') of differentiated texture (e.g. pavers or stamped concrete)
- Preferred width for one-way cycle track 6 feet; minimum width is 5 feet
- A setback (buffer), preferably grass or otherwise vegetated, of 2 feet (minimum) to 6 feet (preferred) between the back of the curb and the one-way cycle track is preferred to enhance separation between motor vehicles and cyclists and to allow for installation of utility poles, fire hydrants, mailboxes, transit stops, driveway aprons, trash receptacles, etc.

Benefits:

- Physical separation from motor vehicle traffic appeals to users of a range of abilities
- Where sidewalk level cycle tracks are installed in lieu of on-street bike lanes, cost savings (estimated at $1/2M per mile) may be realized during street reconstruction (with additional savings during maintenance) if the curb to curb street width is reduced

Challenges:

- Every street or driveway crossing presents a potential conflict point that merit additional mitigation; extreme care should be taken in the design of cycle tracks along streets with many driveways and street crossings (especially high traffic volume locations); conflict mitigation includes strict access management and specific design treatments to improve visibility, reduce speed, and separate movements at conflict points
- Sidewalk level cycle tracks placed at the back of curb or within a couple feet of the back of curb may necessitate:
  - Revised driveway design to minimize intrusion into cycle track
  - Additional consideration of utility poles placement, fire hydrants, traffic signal cabinets, street trees, trash receptacles, mailboxes, etc.
- Design of curb ramps necessitates additional consideration to accommodate both the cycle track and sidewalk, particularly when the cycle track is placed at the back of curb

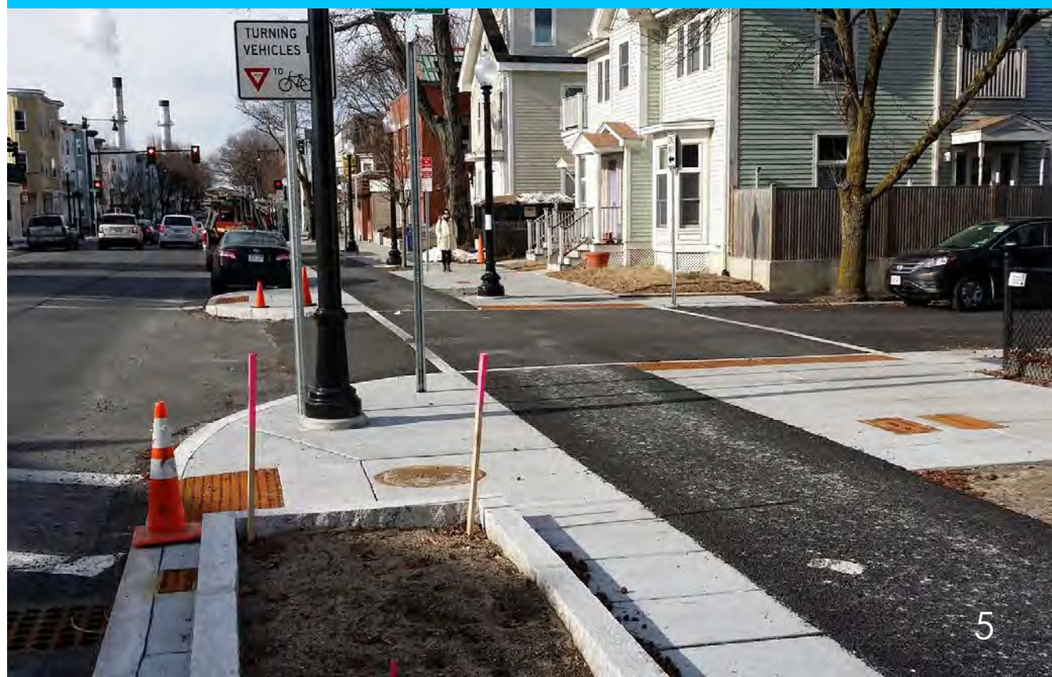
- National Association of City Transportation Officials (NACTO). *2014. Urban Bikeway Design Guide, 2nd Edition*.
- Caltrans Division of Research, Innovation and System Information (DRISI). 2015. *Comprehensive Design Guidance for Cycle Tracks, Preliminary Investigation*.
- Massachusetts Department of Transportation. 2015. *Separated Bike Lane Planning and Design Guide*.
- Federal Highway Administration. 2015. *Separated Bike Lane Planning and Design Guide*.

- Varies. Typically commensurate with sidewalk construction when constructed at sidewalk grade adjacent to sidewalk

ONE-WAY CYCLE TRACK. MISSOULA, MT

ONE-WAY CYCLE TRACK

ONE-WAY CYCLE TRACK. CAMBRIDGE, MA



ONE-WAY CYCLE TRACK, BOTH SIDES

Unconstrained Condition: Back of Curb to ROW Limit ≥19’

RODD FIELD ROAD

5’ (minimum) ADA compliant sidewalk

1’ (minimum) buffer between back of sidewalk and ROW limit

6’ (min.) landscape buffer at back of curb

6’ (min.) 1-way cycle track, differentiated from back of sidewalk and ROW limit

1’ (minimum) textured divides between cycle track and sidewalk

EXHIBIT A

ONE-WAY CYCLE TRACK, BOTH SIDES

Partially Constrained Condition: Back of Curb to ROW Limit 13' - 18'

1' (minimum) buffer between back of sidewalk and ROW limit

5' (minimum) ADA compliant sidewalk

CARROLL LANE

Concept for Carroll Lane reflects recapture of substantially underutilized parking on one side of the street:

- Recaptured street width (approx. 7' total) is split evenly between two sides of street: both curbs moved inward by half of width of recaptured parking lane
- Remaining parking could be alternate sides of the street every 2-4 blocks to create a chicaning and traffic calming effect

2' (min.) landscape buffer at back of curb

5' (min.) 1-way cycle track, differentiated from sidewalk by color or texture

No physical separation (possibly painted stripe) between cycle track and sidewalk

ONE-WAY CYCLE COMMUTER TRACK, BOTH SIDES

Constrained Condition: Back of Curb to ROW Limit 11' - 12'

CORONA DRIVE

1' (minimum) buffer between back of sidewalk and ROW limit

5' (minimum) ADA compliant sidewalk

Cycle track tied to back of curb (no buffer)

5' (min.) 1-way cycle track, differentiated from sidewalk by color or texture

No physical separation (possibly painted stripe) between cycle track and sidewalk

EXHIBIT A

SPECIALIZED TREATMENT: HIGHWAY BICYCLE ROUTE CONNECTION

Application: Sunset Drive Connection to US 181 / Nueces Bay Causeway

- Schematic diagram of the bicycle connection between Sunset Drive and the one-way cycle track proposed in each direction on US 181 across the Nueces Bay Causeway
- Sunset Drive immediately east of Indian Point Pier Road is currently closed to vehicle traffic (with bollards) and functions as a shared use path
- Further east beyond the barricaded section of roadway, Sunset Drive currently provides a bike boulevard connection to the City of Portland
- To the west of Indian Point Pier Road, a two-way sidepath should be installed along the US 181 frontage road (which is a two-lane, one-way road)
- The sidepath would connect to the one-way cycle track on each side of US 181, passing underneath US 181 and around the north side of the frontage road to reach the southbound direction cycle track
- If existing ROW is too constrained to construct the sidepath along the side of the frontage road, the outside travel lane of the frontage road could be converted into the two-way sidepath, which could be separated by a barrier from motor vehicle travel

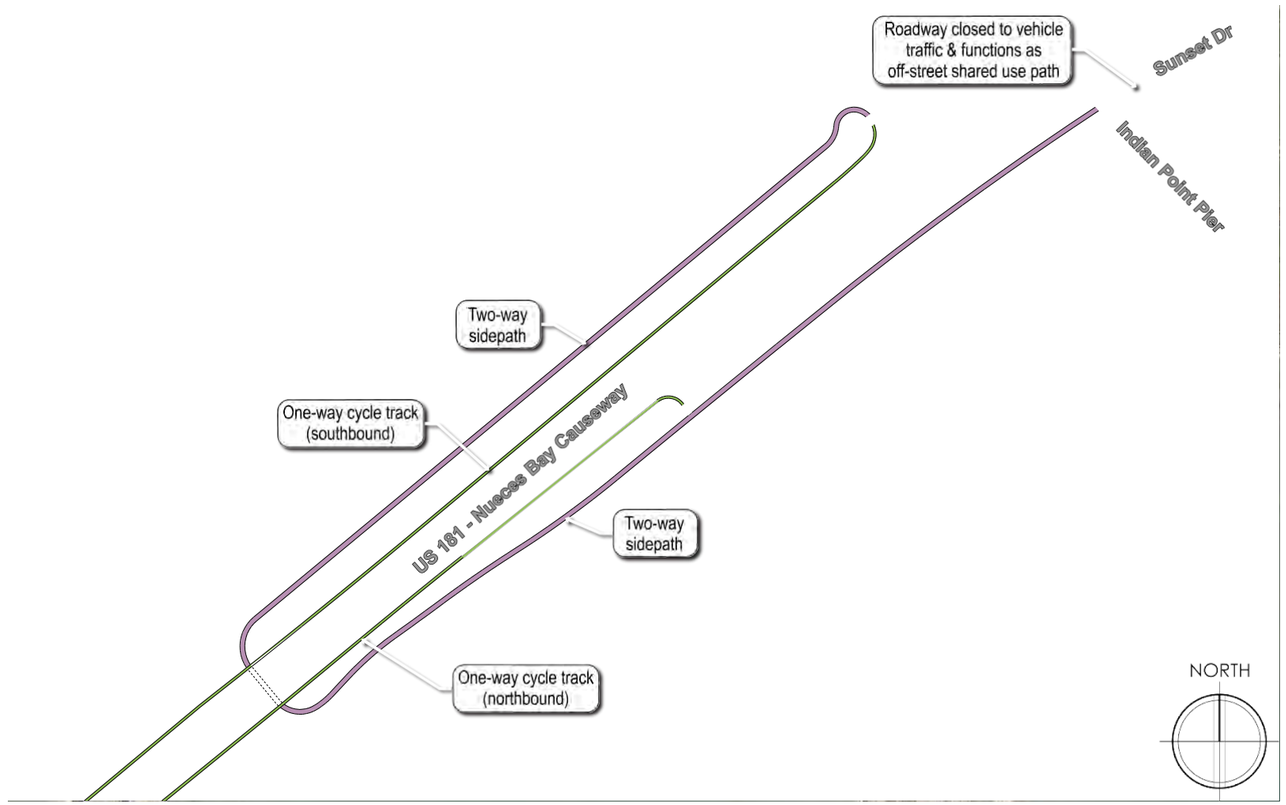
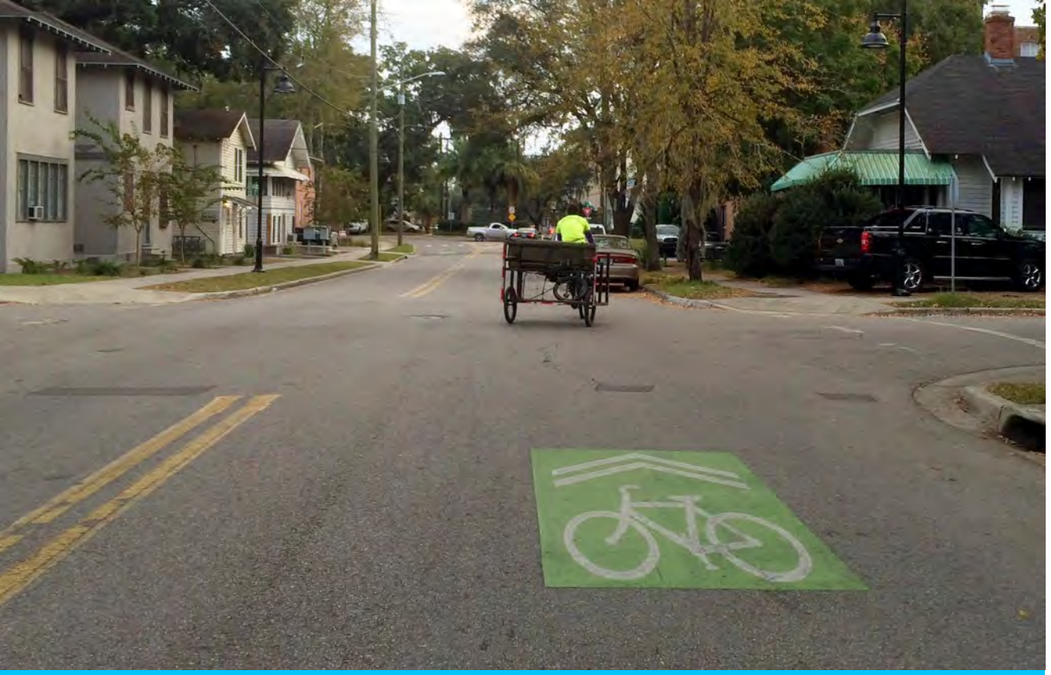


EXHIBIT A



BOSTON, MA

SUPER SHARROW

GAINESVILLE, FL

SPECIALIZED TREATMENT: SUPER SHARROW

Description:

Shared Lane Markings (SLMs), or "sharrows," are road markings used to indicate a shared lane environment for bicycles and automobiles, such as a Bicycle Boulevard. "Super Sharrows" (also known as enhanced or priority SLMs) are a variation of the "sharrow" that provides greater emphasis and visibility of the markings. Super sharrows are currently considered an experimental treatment by the Federal Highway Administration (FHWA). Three primary marking schemes have been used for super sharrows.

1. Placing sharrows on a continuous, longitudinal green stripe which is centered within a travel lane. *It should be noted that although there are four cities with ongoing, active experiments using this marking scheme (Salt Lake City, UT; Long Beach, CA; Medina, MN; and Oakland, CA), the FHWA has discontinued approval of any further experiments using this specific marking scheme. It is presented here only for comparative purposes*.
2. Placing sharrows over green colored pavement background (rectangle).
3. Adding supplemental dashed striping on both sides of the sharrow marking.

The shared lane marking is not a facility type, it is a pavement marking with a variety of uses to support a complete bikeway network. The Manual on Uniform Traffic Control Devices (MUTCD) outlines guidance for shared lane markings in section 9C.07. Information on bicycle facilities and the MUTCD, including FHWA requests to experiment, can be found at this link:
http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/mutcd/index.cfm

Application: North Port Avenue

The only location currently recommended for consideration of super sharrows in the Corpus Christi metro area is North Port Avenue, between Broadway Street and Mesquite Street. This street has the potential to provide an important bicycle corridor, but it is not currently a candidate for changing the four-lane undivided typical section due to its function in accommodating freight movements and event traffic. Despite high volumes on specialized occasions, North Port Avenue has low overall traffic volumes (less than 6,000 vehicles per day on average); the implementation of super sharrows would encourage bicyclists to use this roadway as a connector to many key destinations and would encourage motorists to completely change lanes to pass bicyclists. **If implemented, super sharrow markings on this corridor should be placed in the center of the outside travel lanes**.

Benefits:

- Low cost/rapid implementation
- Provide lateral lane positioning guidance for bicyclists; markings encourage bicyclists to ride further out into the travel lane in lanes too narrow to share side by side with motor vehicles, which encourages safe passing by motorists
- Let motorists know to expect bicyclists
- Indicate clearly that bicycles have the right to be on the road and thus helps reduce potential for bicycle/pedestrian conflicts on sidewalks
- Provides a wayfinding element along bike route
- Discourages wrong-way bicycling

Challenges:

- Super sharrow marking are considered experimental and require a request to experiment be submitted to FHWA
- Markings must be maintained, although maintenance needs are reduced if markings are placed in the center of travel lanes to avoid vehicle wheel paths
- Outreach/communication may be required to educate motorists as to meaning of markings

Design and Maintenance Guidance:

- National Association of City Transportation Officials (NACTO). 2014. *Urban Bikeway Design Guide, 2nd Edition.*

SPECIALIZED TREATMENT: RECAPTURE PARKING / NARROW STREET

Description:

Many two-lane streets in the Corpus Christi metro area that function as collector or residential collector streets are excessively wide due to underutilized on-street parking. Some such streets have designated (striped) parking on each side of the street; some simply have two very wide lanes with no striped parking. Because these streets often provide linkages to streets with higher functional classifications (either arterials or other collectors), they typically have higher traffic volumes compared to most local or neighborhood streets. The unutilized or underutilized parking space gives the perception of a wider travel lane and thus may result in higher traffic speeds, particularly if the street does not have any traffic calming devices, thus creating an intimidating and potentially dangerous environment for cyclists.

In such cases, recapturing the underutilized parking area on one side of the street by narrowing the curb to curb width can create space for enhanced pedestrian and bicycle infrastructure while potentially reducing the cost of roadway reconstruction and maintenance.

Application: Brockhampton Street

Brockhampton Street between Stonehenge Street and Cimarron Boulevard is a two-lane residential collector street with striped parallel parking on both sides of the street and a 40-foot curb to curb width. This example retrofit includes the following features:

- Highly underutilized parking space is recaptured on one side of the street; an adequate supply of available on-street parking is maintained
- Both curbs are moved inward equally, splitting the available additional ROW width gained by recapturing the parking lane
- A one-way cycle track (5 feet wide) is installed on each side of the street immediately adjacent to the sidewalk, ideally set back from the back of curb by at least 2 feet; the cycle track is differentiated from the sidewalk using colored pavement
- Parking could potentially be alternated on opposite sides of the street every 2-4 blocks to promote a sense of equity in the neighborhood and to create a chicaning and traffic calming effect on the street

Benefits and challenges associated with the one-way cycle track are described in the One-way Cycle Track, Both Sides section. The following are additional benefits and challenges associated with the recapturing of parking or street narrowing:

Benefits:

- May reduce motor vehicle traffic speeds
- Provides a safer, lower stress cycling experience

Challenges:

- Removing travel lanes, even on a lightly traveled corridor, can be contentious and necessitates effective public engagement and communication

SPECIALIZED TREATMENT: ROAD DIET

Description:

A “road diet” describes a project to right size a street when it has surplus through lanes given traffic volumes, when can create space for other travel modes or uses. The most common road diet projects involve converting a four-lane undivided roadway to a two-lane roadway (one travel lane in each direction plus a two-way center left turn lane) by removing one travel lane in each direction. A center landscaped median or refuge islands can be used in place of the center two-way left turn lane in locations where driveways are uncommon or absent.

Application: Gollihar Road

Gollihar Road between Staples Street and Airline Road is a good candidate for a road diet from a four-lane undivided section to a three-lane section, with one travel lane in each direction and center two-way left turn lane. With an average daily traffic volume of less than 7,000 vehicles per day, this roadway section falls well below the typical maximum volumes for a four-lane to three-lane road diet of 15,000 vehicles per day. The project, as shown, would include the following features:

- Raised refuge islands at strategic locations, such as between Sheridan Drive and Mustang Trail, to allow for two-stage pedestrian crossings. The refuge would be supplemented with high visibility ladder style crosswalk markings and rectangular rapid flashing beacons (RRFBs). Additionally, the median break at the island would be angled to force pedestrians and bicyclists to look toward the direction of traffic they were about to cross
- The width gained by converting to a three-lane section would be captured by moving the curbs inward an equal amount of each side, translating into savings during roadway reconstruction and maintenance
- A one-way cycle track (5 feet wide) would be installed on each side of the street immediately adjacent to the sidewalk, ideally set back from the back of curb by at least 2 feet; the cycle track is differentiated from the sidewalk using colored pavement
- On-street parking on the south side of the street adjacent to King High School is retained

Benefits:

- Lower vehicle speed variability (i.e. more consistent traffic flow) due to the diversion (into the center turn lane) of vehicles turning left and due to the elimination of aggressive movements between lanes
- Improved mobility and access, particularly for non-motorized modes:
  - A three-lane cross section produces fewer conflict points between vehicles and crossing pedestrians
  - Pedestrians cross one lane of traffic at a time using median refuge islands
- Reduced number of collisions and injuries, which generally results from:
  - A reduction in speed variability along the corridor
  - A decrease in the number of conflict points between vehicles
  - Improved sight distance for vehicles turning left
  - Enhanced pedestrian experience and neighborhood character
  - No right-of-way acquisition is required for most projects
  - Traffic volumes on streets subjected to road diets typically do not vary from the pre-diet condition, which indicates that function and level of service is not impacted (and may be enhanced) by the road diet
- Elimination of multiple threat pedestrian collisions (when a driver stops in one lane of a multi-lane road to permit a pedestrian to cross, and a vehicle in an adjacent lane strikes the pedestrian who is crossing in front of the stopped vehicle)

Challenges:

- Removing travel lanes, even on a lightly traveled corridor, can be contentious and necessitates effective public engagement and communication

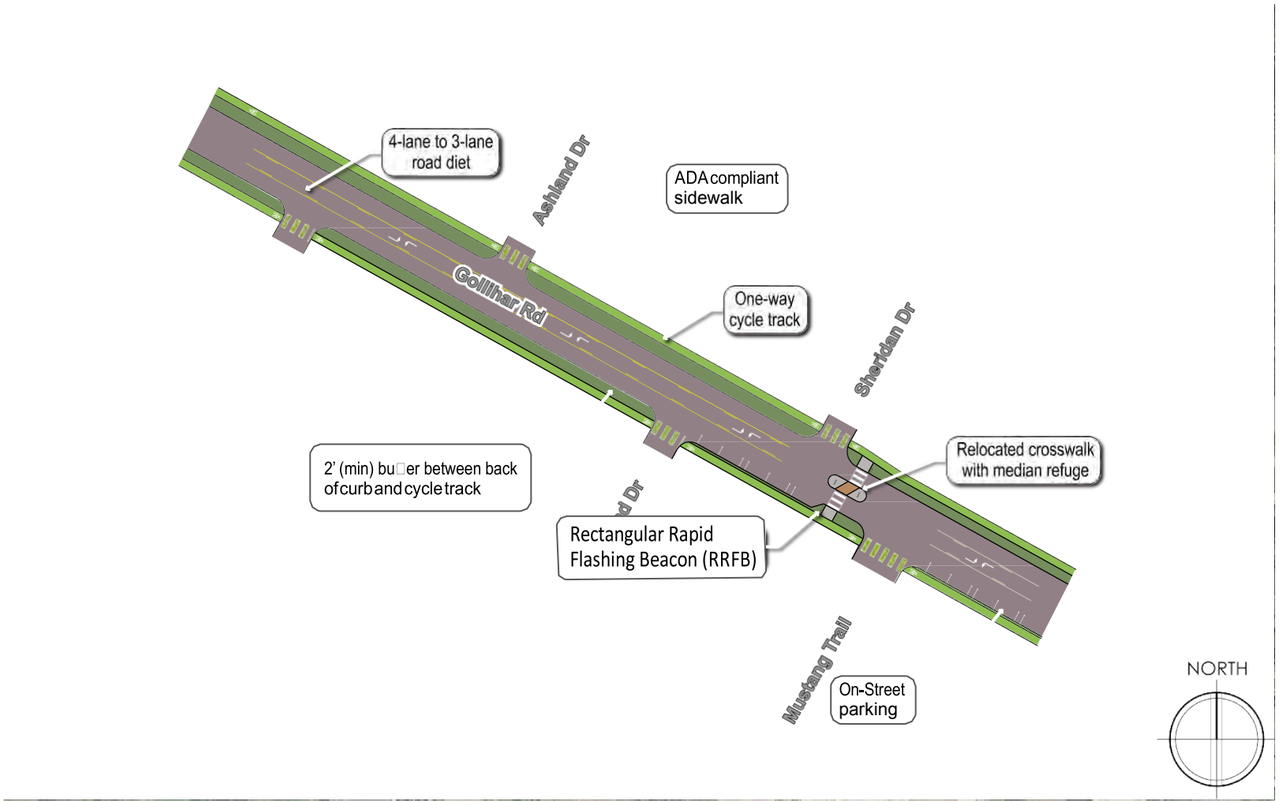


EXHIBIT A

SPECIALIZED TREATMENT: BICYCLE ROUTE STREET CROSSING

Description:

Bicycle boulevards and other bike facilities may be required to cross major streets at unsignalized locations. To facilitate safe crossing maneuvers, there are several treatments that may be used including high visibility crosswalk markings, median refuge islands, curb extensions (on streets with on-street parking), rectangular rapid flashing beacons (RRFBs), pedestrian hybrid beacons, or traffic signals.

Raised Median with Refuge:

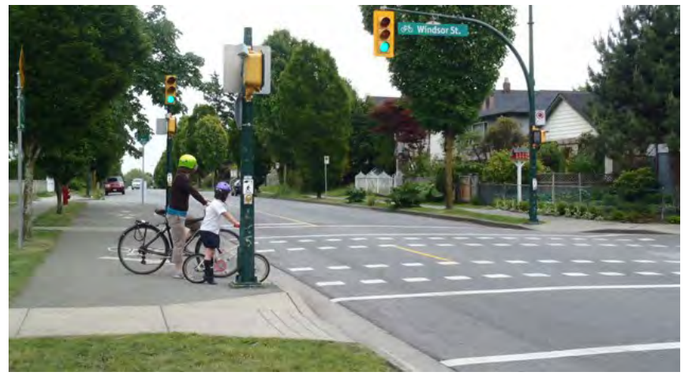
- Separates conflicts in time and location through use of median islands
- Creates a refuge for crossing bicyclists or pedestrians, providing them a safe resting point and opportunity for them to cross the roadway in two stages, which becomes increasingly important with higher traffic volumes and speeds
- Crossings may be raised to provide drivers with more visual cues of the crossing location and to help slow traffic or may be flush with the roadway using painted islands
- Angling the crossing through the median or island forces the bicyclist or pedestrian to face oncoming traffic and make better eye contact with approaching drivers

Rectangular Rapid Flashing Beacons:

- Bicyclist or pedestrian activated high intensity flashing beacons mounted beneath standard crossing warning signs that increase awareness of and visibility of non-motorized crossings
- Proven treatment in raising the percentage of drivers who yield to bicyclists and pedestrians at mid-block crossings to more than 80% yield rates at many locations
- Preferable to mount signs on both sides of the street and within the median (if one is present)

Pedestrian Hybrid Beacon:

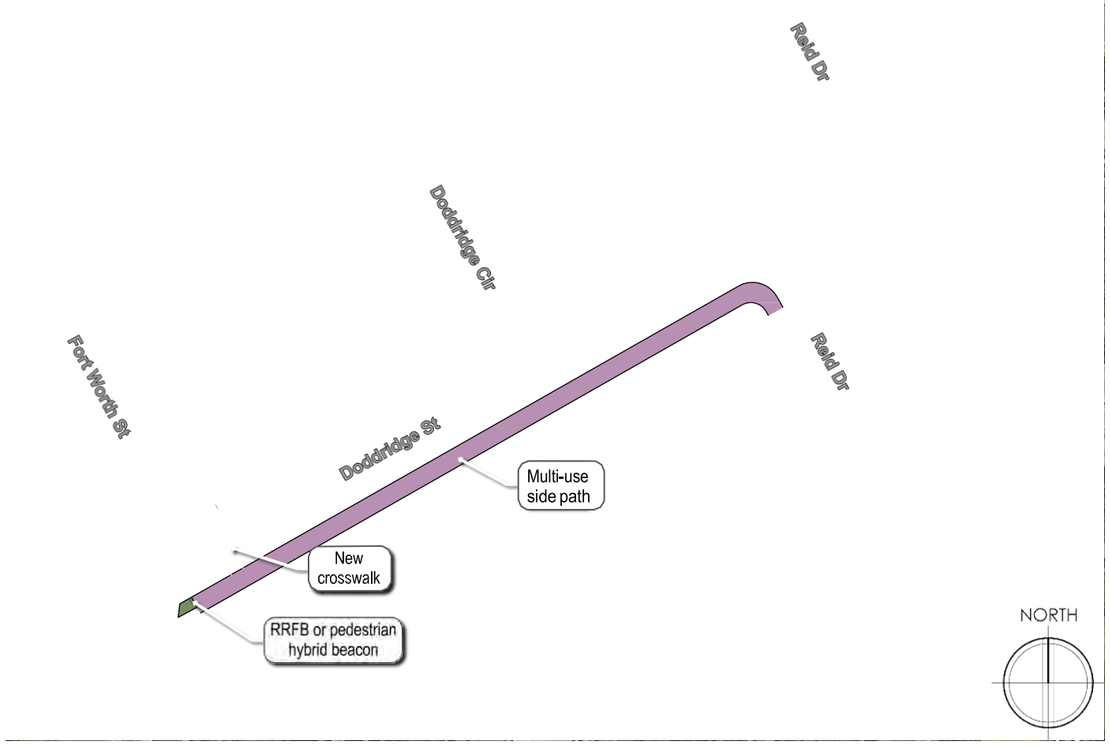
- Used to improve crossings for non-motorized users where side street vehicular or non-motorized traffic volumes do not meet the minimum warrant thresholds for installation of a traffic signal
- Also known as a HAWK (High-intensity Activated crossWalK), the beacon consists of two red lenses over a single yellow lens on the major street and includes pedestrian and/or bicycle indicators for the crossing movement
- May result in less delay for motor vehicle traffic compared to a full traffic signal because stopped vehicles are permitted to move if the crossing is clear once the beacon begins to flash red in a wig-wag pattern; this occurs during the normal pedestrian 'flashing don't walk' phase, which immediately follows the pedestrian 'walk' phase during a double solid red indication for motorists
- Have been shown to have similar driver yielding rates as RRFBs and are generally used on higher speed roadways with two or more travel lanes in each direction



(Top left) Angled median break forces bicyclist to face the direction of traffic he is about to cross. (Top right) High visibility ladder markings and median island at bicycle boulevard crossing. (Bottom Left) Rectangular rapid flashing beacons (RRFBs) at midblock crossing. (Middle right) Signalized crossing for a sidepath connecting two bike boulevard segments. (Bottom right) Pedestrian hybrid beacon with colored pavement bicycle crossing.

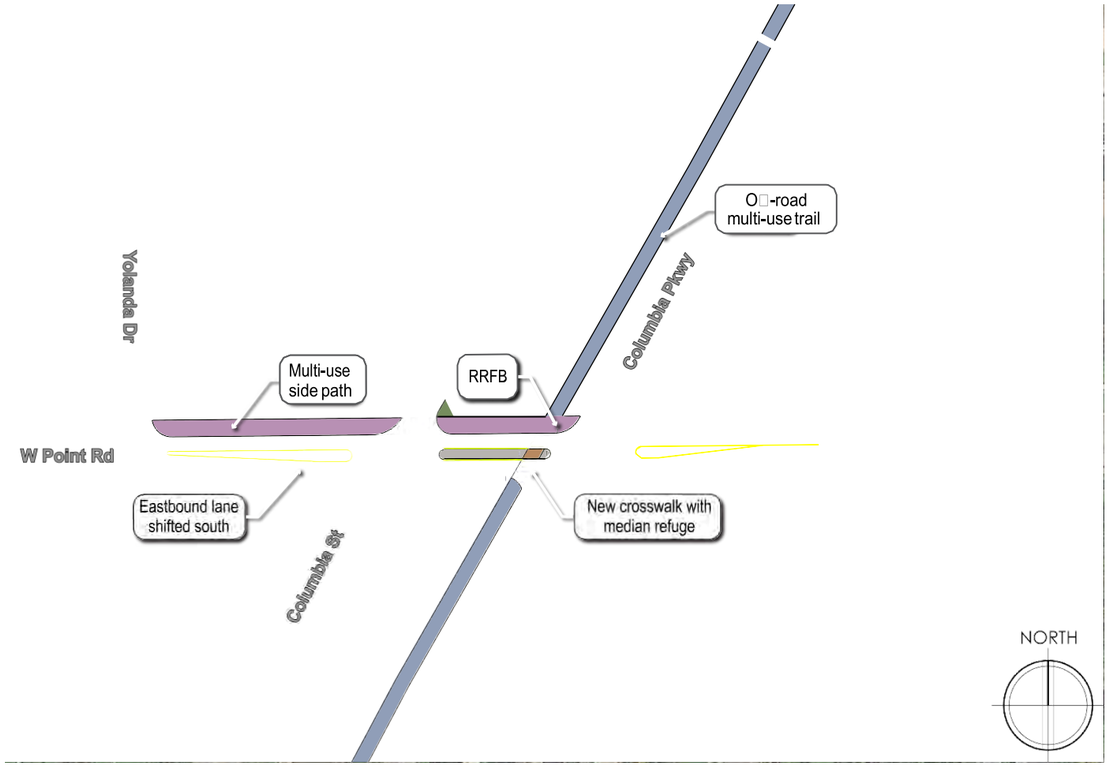
SPECIALIZED TREATMENT: BICYCLE ROUTE STREET CROSSING

Application: Doddridge Street at Fort Worth Street



- Crossing location links bike boulevard segments on Fort Worth Street to the north and Reid Drive to the south
- On-street parking lane on the south side of Doddridge St. is recaptured between Fort Worth Street and Reid Drive to provide a two-way sidepath between the two streets
- A curb extension is constructed in the parking lane at the western end of the sidepath
- Because there is no space for a median island with the four-lane undivided cross section, a high visibility crosswalk is used in conjunction with additional enhancements (RRFBs or preferably, a pedestrian hybrid beacon) to stop traffic for crossing bicyclists

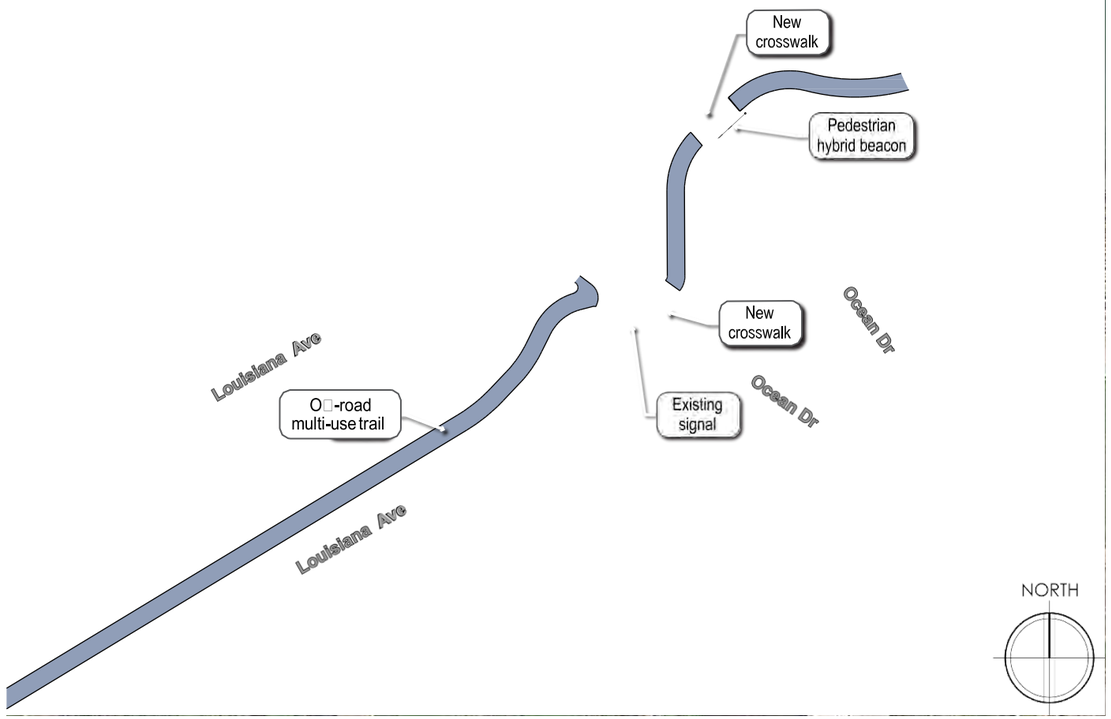
Application: Columbia Parkway Trail at West Point Road



- Location provides a two-stage crossing for the Columbia Parkway Trail at West Point Road, and links the trail to the bike boulevard on Yolanda Drive
- On-street parking area on the north side of West Point Road is recaptured to create a two-way sidepath between the Columbia Parkway Trail on the east side of the canal and Yolanda Drive
- The on-street parking area on the south side of West Point Road is recaptured in the immediate vicinity of the Columbia Street/Columbia Parkway intersection, with the eastbound lane shifted to the south to allow the provision of a center median refuge island for the trail crossing
- The median island nose is extended to the east of the trail crossing to provide a protected refuge area for crossing bicyclists and other non-motorized users, as well as to control the speed of northbound left turning vehicles
- The trail crossing may be supplemented with RRFBs at the roadway edges and in the median

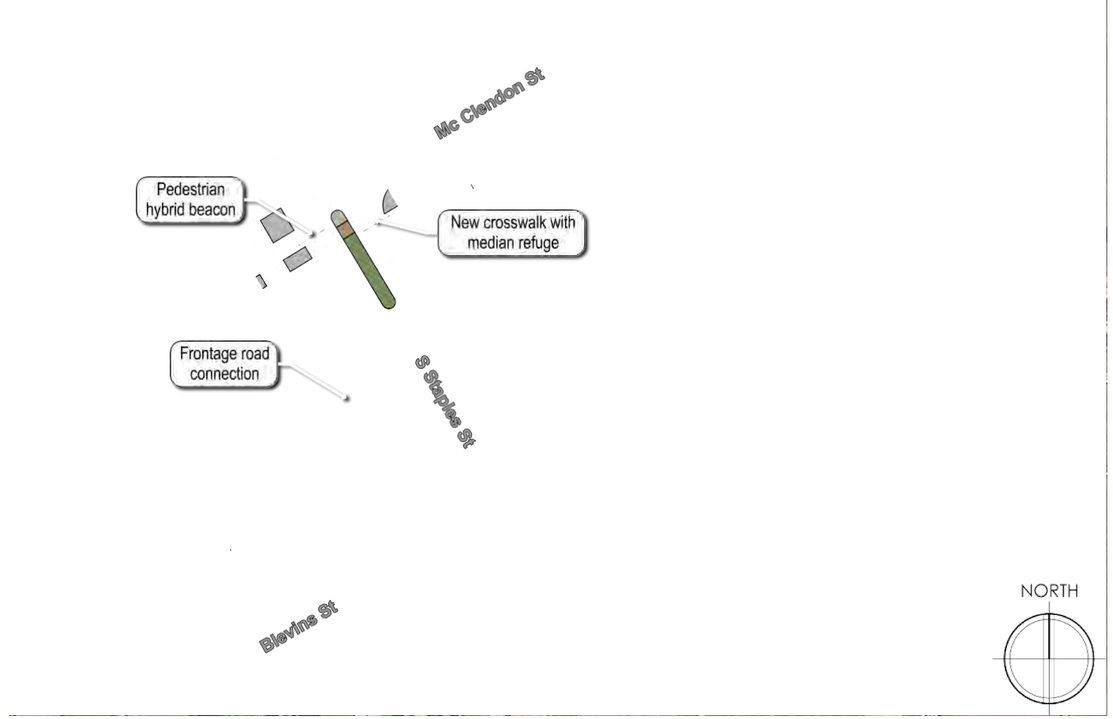
SPECIALIZED TREATMENT: BICYCLE ROUTE STREET CROSSING

Application: Louisiana Avenue at Ocean Drive



- Provides a crossing of Ocean Drive from the proposed trail in Louisiana Parkway to the existing trail along the east side of Ocean Drive
- Louisiana Parkway Trail would connect to the existing signalized intersection for southbound Ocean Drive where bicyclists and pedestrians would cross the west leg of Louisiana Avenue and the south leg of southbound Ocean Drive
- A pedestrian hybrid beacon would be required to stop traffic for non-motorized users wishing to cross the northbound lanes of Ocean Drive
- Motorist delay would be minimal due to non-motorized crossings, as the southbound traffic signal and northbound pedestrian hybrid beacon would operate independently with short clearance intervals due to the relatively short distance required to cross each direction in isolation

Application: Staples Street at McClendon Street



- Crossing location links bike boulevard segments on Blevins Street to the west and McClendon Street to the east
- Although Blevins Street and McClendon Street do not align, no sidepath is necessary along Staples Street due to the presence of the frontage road on the west side of Staples Street, which is also used as a short bicycle boulevard
- A median island with refuge provides a two-stage crossing not only for bicyclists, but also transit users as there are bus stops on each side of Staples Street that are in very close proximity to the marked crosswalk
- The median island is placed to avoid blocking vehicular left turn movements at the cross streets
- The crossing should be supplemented with RRFBs or, preferably, a pedestrian hybrid beacon

MATRIX OF BEST PRACTICES: **Will NOT be Adopted at This Time**

~~Installation of the right infrastructure in the right places is critical to catalyzing the change necessary for wa~~ ~~ther me~~ ~~tice rec~~ ~~ting inf~~ ~~egy inc~~ ~~tive co~~ ~~*cial Topics Narrative* or *Appendix* (see subsequent sections) to further clarify the recommendation.~~

EXHIBIT A

MATRIX OF BEST PRACTICES

**Cost of Implementation:

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MATRIX OF BEST PRACTICES

**Cost of Implementation:

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EXHIBIT A

****Cost of Implementation**:
Low - Potentially accomplished through process modification within limits of existing budgets

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		and/or take on responsibility for landscaping and maintenance				Neighborhood Services Depts.			ow

MATRIX OF BEST PRACTICES

**Cost of Implementation:

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EXHIBIT A

**Cost of Implementation:
Low - Potentially accomplished through process modification within limits of existing budgets

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		evaluates roadway capital projects on the basis of 6 complete street criteria						

MATRIX OF BEST PRACTICES

**Cost of Implementation:

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EXHIBIT A

CASE STUDIES

EXHIBIT A

CASE STUDIES

A. Bikeshare - Jurisdiction Owned and Operated

In August 2008, the District of Columbia became the first jurisdiction in North America to launch a bikesharing system. SmartBike D.C. offered 120 bikes at 10 stations in downtown D.C. and the Center City. Approximately 1,600 people joined SmartBike D.C. during its 2 years of operation.

Meanwhile, Arlington County, VA was working on its own plans for a bikesharing system. Together, Arlington and the District reviewed proposals and selected an operator for a new bikesharing system in May 2010.

In August 2012, Alexandria, VA launched eight stations, becoming the newest member of the Capital Bikeshare community. In May 2013, Montgomery County became the latest DC-area jurisdiction to join the Capital Bikeshare program. Working together, the District of Columbia, Arlington County, Alexandria and Montgomery County are proud to bring an expansive, multijurisdictional transportation system to the region.

The Capital Bikeshare system is owned by the participating jurisdictions and is operated by Motivate, a Brooklyn, NY-based company that operates several other bikesharing systems including Citibike in New York City, Hubway in Boston and Divvy Bikes in Chicago. Capital Bikeshare ads describe the scope for the program: Capital Bikeshare puts over 3000 bicycles at your fingertips. You can choose any of the over 350 stations across Washington, D.C., Arlington and Alexandria, VA and Montgomery County, MD and return it to any station near your destination. Check out a bike for your trip to work, Metro, run errands, go shopping, or visit friends and family. Join Capital Bikeshare for a day, 3 days, a month, a year or try our new Day Key option, and have access to our fleet of bikes 24 hours a day, 365 days a year. The first 30 minutes of each trip are free. Each additional 30 minutes incurs an additional fee.

Entity: Capital Bikeshare
Location: Washington, D.C.
Website: www.capitalbikeshare.com

B. Nonprofit

In 2011, Boulder B-cycle launched a nonprofit program that allowed easy, low-impact transit for seasoned bikers, commuters, and visitors alike. In contrast to a standard bike rental, bike sharing allowed a community to share a fixed number of bikes through short station-to-station bike trips and provided an all around shakeup of traditional commute options.

Once a rider purchases an entry pass, they can take as many 30 minute trips as they want for the duration of that pass at no additional cost. Additional fees apply to all trips over 30 minutes, encouraging riders to check bikes that aren't actively being used back into stations. The mobile app's interactive, real-time map shows riders what stations might be close or most convenient plus updates riders on bike availability.

"Boulder B-cycle is part of the Boulder landscape and the Boulder experience" said James Waddell, Boulder B-cycle Executive Director. "When you think of Boulder you think of the scenery, bikes and of healthy, environmentally conscious people. Every time someone rides one of our bikes, that's gasoline saved, carbon emissions spared and calories burned."

In addition to offering seamless transit, Boulder B-cycle has crafted a handful of city-specific "tours" that give riders another way to experience Boulder culture. The brewery tour, for example, provides a map with best routes and nearby station details for eight local breweries.

B-cycle, LLC. is a wholly-owned subsidiary of Trek bikes based out of Waterloo, Wisconsin, where they design and manufacture the bikes and stations found in all B-cycle cities. On the software end, Trek designs the front end software with which users interact, the back end database that all B-cycle systems use, the B-cycle website platform, and the official B-cycle mobile app.

Entity: Boulder B-cycle
Location: Boulder, CO
Website: www.boulder.bcycle.com

C. Private for Profit

Deco Bike launched a 650 bicycle, 72 station system in March 2011 in Miami Beach, Florida and reached 180,000 rides by July 2011. Operations are active 24 hours per day, seven days per week. Their fee structure offers two monthly plans and several hourly block plans, but no annual fee. Revenue comes from advertising on the kiosks and membership fees only.

DecoBike is unique in the US, having funded the $4 million program entirely without public funding as a concessionaire for the City of Miami Beach. In order to use Miami Beach's public spaces for their kiosks, DecoBike pays the city 12% of membership fees and 25% of advertising revenue estimated to be worth $13 million to Miami Beach over the 6 year contract. Operating expenses are projected to be $1.8 million annually, with 1/3 covered by advertising revenue, and the remainder, and any profit, coming from user fees

Due to their agreement with Miami Beach, DecoBike is not allowed to advertise on the kiosks themselves. While allowing such ad placement would improve both DecoBike and Miami Beach's revenue take in the venture, public sentiment is that they would detract from the aesthetics of the neighborhood.

Entity: Deco Bike LLC
Location: Miami Beach, FL
Website: www.citibikemiami.com

EXHIBIT A

2 Accommodating Bikes on Transit

Houston, Texas, is home to one of the most successful light rail lines ever built in the U.S. in terms of ridership per track mile, boasting an average daily ridership of about 37,000 in September 2013. METRORail's Red Line consists of 18 cars that operate along a 7.5-mile route, beginning at the downtown campus of the University of Houston and ending near the Texas Medical Center.

In 2007, BikeHouston, a local bicycle advocacy organization, and the Citizen's Transportation Coalition joined forces to advocate for the implementation of bike racks on METRO buses. Houston METRO began accommodating bicyclists on buses by equipping the buses with the highly successful front-loading bike racks. However, for the light rail line, access for bicycles was severely limited, as bikes were only allowed between 9:00 a.m and 3:00 p.m, there were no bike racks available on the narrow-aisled cars, and METRO officials had previously contended that the introduction of safety racks would pose problems for safety and congestion.

As part of the long-term planning process, METRO began considering the details of light rail service expansion. During discussions of the expansion, METRO officials sought the input of BikeHouston representatives about their views of light rail service and possible impacts on the cycling community. The communication was also intended to inform bicycling stakeholders about construction activities that would be occurring around rail expansion in hopes that these issues could be communicated to the wider bicycling community through the BikeHouston network. Through these conversations, members of BikeHouston called attention to the limited accessibility issues and METRO listened to the concerns in an effort to better plan for future light rail service.

As the conversation progressed, the working group expanded to include the Rail Operations Center and Service Delivery staff, Safety and Security, Communications and Marketing, and Planning staff. The inclusion of representatives from these departments allowed METRO to better gauge the considerations of rider density during peak hours, configuration and safety of various bicycle storage alternatives, and current operating conditions. Later, METRO established additional dialogue with the communities where future rail will be installed and increased the bike working group to include the City of Houston's Bikeways, Parks, and Sustainability departments.

During the bike working group's study of ridership patterns, METRO planners saw an opportunity to change the hours that bicycles are permitted on board. To better accommodate cyclists, METRO expanded the bike-friendly hours on light rail to include all but peak-hour travel, defined as weekdays from 6:30 to 9:00 a.m. and 3:00 to 6:00 p.m. During weekends, bikes are now permitted at any hour. In addition to the expanded hours, METRO and BikeHouston also worked to consider a number of bicycle-storage alternatives, finally deciding on removing fixed seats from cars to provide space for bikes. Reviewing a variety of configurations on the Siemens cars, BikeHouston members and METRO officials gathered to test them, eventually deciding on a format that would remove two benches (four seats) from each end of the car.

In July 2010, Houston METRO began implementing the changes in the form of a 30-day trial period on 11 of the 18 Red Line cars. The program was initially "soft-launched," since there was uncertainty as to the public reaction and impacts on ridership. Eight total seats from each car were removed and replaced with standing space and overhead straps. By September 21, METRO judged the program a success and implemented the changes on all 18 cars, adding signage informing riders of the appropriate bike entry doors and storage areas. Furthermore, the incorporation of the Bikeways, Parks, and Sustainability departments to the working group has allowed METRO to begin planning better for bicyclists as it introduces light rail to new communities. Discussions thus far have included new mapping, wayfinding signage, and bike racks.

Spurred by media coverage, Houston METRO conducted informal surveys during the testing period using Twitter, Facebook, and other social media. Polling was done electronically and in-person, with overwhelmingly positive results. The public relations survey conducted resulted in greater than 95 percent positive feedback. In fact, not only did riders react positively to the expanded access for bicyclists, but the changes benefited multiple types of users, including passengers with disabilities, parents with children, and those riders preferring to stand.

In October 2013, there were 22,230 total monthly bike boardings on METRO vehicles (including buses and light rail cars). That figure is a 10 percent increase over the previous month and a 44 percent increase over the total from October 2012.

Rider feedback indicated that the seat removal and hours changes were beneficial to riders beyond the bicycling community. The Siemens rail cars have narrow aisles, which made navigating the cars difficult for riders with physical challenges and to those pushing strollers. With the removal of seats, many passengers have noted the improved navigability and improved options for securing wheelchairs, strollers, and bikes. Most importantly, though, this initiative signals that Houston METRO is planning for and promoting bicycling as part of a larger transportation network. According to METRO's associate vice president, Andrew Skabowski, "Its METRO being more mobile, if we can. The biking community is saying, 'Hey, we're not just for recreation anymore; we bike to work.' That's important to that community, and we're there to assist and get people to work."

With the March 2013 expansion of Houston's bike share program, B-Cycle, METRO is working on a report that includes recommendations for improving the transit-bike connection for bike share users.

The change was financially beneficial to Houston METRO. While the initial cost of the configuration change was a total of $7,791.12, with labor accounting for $3,150 and materials for the remaining $4,281.12, METRO also experienced a one-time savings of $8,640 by returning the removed seats to the stock of spares. Further, METRO also saves $3,960 annually for the decreased maintenance needs on the 18 cars.

Entity: HoustonMETRO
Location: Houston, TX
Website: www.ridemetro.org

3 Bike Repair Tool Kiosk

A-1 Builders in Bellingham has been a bicycle-friendly company for years. A decade ago, to mark the company's 50th anniversary, A-1 built a large covered space for bicycle parking at the downtown Community Food Co-op store.

Now, for its 60th anniversary, A-1 has built a covered community kiosk with a public bicycle repair station by the sidewalk outside its offices at 3310 Northwest Ave. Rick Dubrow, company president and an avid biker, said Bellingham and other communities would benefit from more bike-repair stations. “Our hope is that this is the first of many,” he said.

At first, the folks at A-1 were thinking about installing just a kiosk for community notices. Then, last September, Patrick Martin, a production manager at A-1, took his daughter to Evergreen State College in Olympia and saw a sturdy bicycle pump and repair station installed outdoors by some dormitories. He thought back to the idea of a kiosk, and realized a pump and repair station could fit inside. “I thought we should put the two together,” said Martin, who did much of the design work for the station.

A 12-by-12-foot concrete slab forms the base that is decorated with old bicycle parts—gears, tire rims, lengths of bicycle chain—embedded in the concrete.

The side walls of the kiosk have plastic-covered maps showing local bicycle routes, trails, parks, and Whatcom Transportation Authority bus routes. There's also a bulletin board for community notices. On the outside back wall of the kiosk hangs covered shelves for a small community lending library, where people can drop off and borrow books.

Inside the kiosk, bolted to the slab, is a vertical metal stand that holds a bicycle while it's repaired, tuned up or given air. Basic bicycle-repair tools hang from the stand, secured by long cables to prevent theft. A sticker on the stand has a QR code, so bikers with smartphones can scan the code to reach a website with short how-to videos about basic bicycle repairs. Bolted next to the stand is a sturdy, hand-powered bicycle pump.

Nearby on a shelf are two bicycle repair how-to books, also secured to prevent theft. A motion detector turns on several lights when people enter the kiosk at night, for nighttime repairs and for public safety. The installation cost about $16,000, much of which was covered by donations of money, materials and labor, Dubrow said.

Entity: A-1 Builders
Location: Bellingham, WA
Website: www.a1builders.ws/

4 School District Representation in Transportation Planning

The Phoenix School Safety Program was developed by a task force created following a collision involving a young student who ran into a busy street against a traffic signal. The task force included a local parent and individuals from the local police, transportation, highway safety, and law departments, as well as representatives from local schools.

The task force recommendations yielded eleven major changes. The solution was a combination of education, enforcement, and facilities improvement. Education measures included a new School Crossing Guard training video, which was produced in English and Spanish to be used in all subsequent training programs. A new training handbook (English and Spanish version) was developed and distributed, in addition to a “Safest Route to School” walking plan to encourage parents and students to safely walk to school. In addition, a School Safety Summit brought together the state's school and traffic officials to work together to implement the recommendations.

For enforcement measures, a school crossing safety audit was developed to help identify those areas of a school most in need of improvement. Phoenix also equipped schools with radar-controlled cameras mounted to vans to enforce the speed limit during school start and dismissal times. Other improvements included the installation of “SCHOOL” pavement stencils on roads approaching the school area, fluorescent yellow-green school warning signs, safety vests for guards, staggered crosswalks, and two trial active speed monitors that flash when a driver's speed exceeds the speed limit during school operating hours. An experimental in-pavement flashing crosswalk was installed at a local high school. Once activated by a pushbutton, the device issues verbal warnings to pedestrians that cars may not stop. Additionally, school staff developed a set of guidelines for drop-off and pick-up times to reduce congestion and spillover onto the street in front. Funding of $500,000 per year was provided by the City of Phoenix.

The program resulted in the most significant advance in safety at Arizona schools since the inception of the 15 mph school zone in 1950. The program reached 400 schools statewide, 6,872 speed citations were given, 11 Safest Route to School walking plans were completed, and 173 crossing safety audits were conducted.

Entity: City of Phoenix
Location: Phoenix, AZ
Website: www.phoenix.gov/streetssite/Pages/School-Safety.aspx

EXHIBIT A

5 Safe Routes to School (SRTS)

Rosa Guerrero Elementary is a Title 1 neighborhood school, and 75% of the 850 students live within walking distance, or 2 miles, of the school. Sidewalks are present in the neighborhood around the school, and approximately 30 percent of the students have permission from their parents to walk to school. One of the biggest barriers for students walking to Guerrero Elementary is the traffic at a busy intersection.

According to Carol Campa, former Safe Routes to School (SRTS) Program Coordinator for Texas Department of Transportation, the City of El Paso was awarded $10,000 in SRTS funds to develop a SRTS Plan and Program for Rosa Guerrero Elementary in 2007. The City selected a consultant and paid a service fee of $8,000 to assist in the development of Rosa Guerrero Elementary School's SRTS Plan. The remaining $2,000 was used to support PTA volunteers in developing an education and encouragement program for students, teachers and parents to promote the SRTS Program at the school.

SRTS coordinators increased school and community support and gained volunteers by offering education and training by the El Paso Police Department. The school also held two raffles, and offered other incentives to reward volunteers for their hard work.

The school added traffic enforcement signage that identified “Drop Off Zone,” “Pick Up Zone,” and “Students Crossing, Please Slow Down” as well as safety school stop signs for crossing guards, which made drivers aware of students and parents walking to school. Raising driver awareness led community members to feel safer walking to school.

The school provided incentives for parents and students who participated in the program. For example, each time a student walked to school, he or she received SRTS pencils and stickers. Teachers tracked students' progress by logging data into pamphlets purchased with federal funding. Students were rewarded with SRTS water bottles. Participating parents were given water bottles and SRTS walking logbooks to track their progress. All participating students were entered in a drawing for a bicycle that was held at the conclusion of the SRTS program.

Entity: TxDOT - Planning Section
Location: El Paso, TX
Website: www.saferoutesinfo.org/program-tools/find-state-contacts/texas

6 Bike Friendly Business Accreditation Program

In Los Angeles, 50% of trips are under 3 miles—a 10-15 minute trip for the casual rider. The Bicycle Friendly Business (BFB) Program is a citywide opt-in program that encourages businesses to embrace bicycle friendly practices in order to attract more local trips by walking and bicycling.

According to Mayor Eric Garcetti, “The Bicycle Friendly Business Program represents one of the many tools in our Great Streets toolbox. As we remake our streets to better serve our neighborhoods, the Bicycle Friendly Business Program will make it easier for Angelenos to choose to travel and shop by bike. We look forward to seeing you on the street!”

Councilmember Mike Bonin, who Chairs the City Council's Transportation Committee, recognizes that people on bikes also tend to know their neighborhood better, which builds community and makes neighborhoods safer:

“Our neighborhoods are stronger when people can live, work and shop at local businesses without needing their cars, and the Bicycle Friendly Business Program will help put neighborhoods first in Los Angeles. I'm excited to see the Bicycle Friendly Business Program expand throughout Los Angeles and I think the expansion of this program is a great sign that LADOT is heading in the right direction and making alternative transportation a priority.”

The citywide program gives businesses the opportunity to be recognized for making accommodations for staff and patrons who cycle by adhering to a variety of bicycle friendly practices. The program also provides bicyclists with a directory of local participating businesses that specifies the bicycle friendly amenities offered. The BFB program provides data resources to illustrate how bike friendly business practices translate into enhanced profitability.

Entity: City of Los Angeles - DOT
Location: Los Angeles, CA
Website: www.ladot.lacity.org/index.htm

7 Reducing Car Trips to School

Morton Way Public School in Brampton, Ontario, Canada has 877 early education and elementary students (Junior Kindergarten through Grade 5). During the past four years, Morton Way has sustained a successful walk-to-school program, wherein between 83 and 92 % of students walk or bike to school on specific days. Approximately 50 students travel to school-by-school bus because of distance.

Despite the success of the program, the Morton Way Community still felt there were too many students arriving by personal automobile, so they implemented a “25 Cars or Less” campaign. A “thermometer” display alerts drivers how many vehicles dropped off students the day before, and the daily school announcements update the students of progress. There are also signs displayed around the school promoting the “25 Cars or Less” campaign.

Entity: Morton Way Public School
Location: Brampton, ON (Canada)
Website: www.schools.peelschools.org/1510/Pages/default.aspx

8 Employer-driven Incentive Programs

St. Lukes Hospital - Boise, ID: At St. Luke's Hospital in Boise, personnel who ride 60 % of their workdays between May and September earn a $40 gift certificate to a local bike shop. The campus also boasts showers and bike racks. Scott Dohmen, the hospital's employee alternative transportation coordinator, says that the hospital has a commitment to providing incentives to those who ride to work “To promote alternative transportation, get the cars off the road and get people in shape.”

Clif Bar – Emoryville, CA: Clif Bar, which employs more than 300 employees at its Emeryville, CA headquarters, takes bike-to-work incentives to a whole new level. The company's Sustainability Benefits Program includes an incentive of up to $500 to buy or repair a commuter bike. Employees who walk, bike, carpool or take public transportation to work can also earn points for each trip — redeemable for rewards like cash, massages and Clif gear.

New Belgium Brewing – Fort Collins, CO: Cars are a rare sight at New Belgium Brewing's flagship brewery in Fort Collins. After a year on the job, each New Belgium employee receives a free limited release Fat Tire Cruiser bike, in honor of the company's best-selling Fat Tire Amber Ale. Employees can also borrow a cruiser from a fleet of shared bikes for local errands and lunch breaks.

Honest Tea – Bethesda, MD: Organic beverage maker Honest Tea gives its employees who either bike or walk to work $27.50 extra in their paychecks monthly. In addition, in the summer of 2007, the company bought each of its then 52 employees Jamis bikes. The company's president and 'TeaEO' Seth Goldman bikes about a mile to work every day, so he understands the perils of the bicycle commuter. When the company moved into its current office building in 2007, Goldman insisted on having showers installed in the bathrooms.

Patagonia (multiple locations): Patagonia's Drive-Less program provides a monetary incentive for employees to bike, walk, carpool or take public transit to work. It pays all U.S. and Canadian employees $2 per trip, up to two trips per day. Each employee can earn up to $500 (pre-tax) per year. In the first year of the program, more than 900 employees participated. As a collective result, in that first year Patagonia employees drove 690,000 fewer miles, cut CO2 emissions by 500,000 pounds and saved 25,700 gallons of fuel.

Jamba Juice – Emeryville, CA: Jamba Juice offers a set of bright orange loaner bikes for employees to use for errands and lunch breaks, as well as plenty of space for bike commuters to park their own rides. The company has also developed an extensive wellness program that includes health insurance premium discounts in exchange for completing challenges, such as participating in Bike to Work Day, attending a bicycle repair class, or going on a practice ride. Jamba Juice has become known in the area for its bike-friendly ways and was identified as one of the most bike-friendly businesses of the year by local advocacy group Bike East Bay.

EXHIBIT A

9 Safe Routes To School Coalition/Task Force

Many Denver schools struggle with traffic congestion and environmental pollution, and, like many communities, an increasing number of children engage in less daily physical activity than is recommended by healthcare professionals, contributing to Denver's growing childhood obesity epidemic. Denver's Safe Routes to School (SRTS) program use a variety of strategies to facilitate safe walking and biking to school. Additionally, successful SRTS programs involve the whole community: parents, children, schools, the city, residents, neighborhoods, non-profit organizations and public health agencies.

SRTS programming utilizes a Coalition made up of partners from Denver Environmental Health, Denver Public Schools, Denver Public Health, Denver Public Works, Bicycle Colorado, BikeDenver, Safe Routes to Schools National Partnership, WalkDenver, Livewell Colorado and others. Together, this Coalition is actively working to develop systematic programming so that all Denver communities can achieve state and regional Safe Routes to Schools goals.

Entity: City of Denver - Department of Environmental Health
Location: Denver, CO
Website: www.denvergov.org

10 Neighborhoods Funding Pedestrian Improvements

The Ida Culver House in the Greenwood neighborhood of Seattle has 600–foot section of walkway along First Avenue NW that was designed and constructed in 1993–94. It is used by the residents of the Ida Culver House and was the only section of the block without an asphalt walkway or concrete sidewalk. The residents were awarded a Small and Simple Matching Fund projects grant by Department of Neighborhoods (DON) to fund the project. Key factors used to evaluate the walkway were parking, drainage, and ease of construction. Elimination of parking can make a walkway less desirable to residents. Closing open ditches to accommodate a walkway is expensive. Slopes that would require stabilization make construction difficult and more expensive. None of these factors was an issue at this site. The walkway was estimated to cost $12,000 ($20 per linear foot for a five–foot wide walkway). DON provided $5,000 and Ida Culver House $7,000. When the project was completed under budget, the remaining $2,000 was returned to the residents. The walkway provides pedestrians with a firm, stable walking surface that separates them from cars traveling along the adjacent roadway.

Budget	
DON Small and Simple Projects Fund	$7,000
Ida Culver House	$5000
Total	$12,000

Entity: City of Seattle - Department of Neighborhoods
Location: Seattle, WA
Website: www.seattle.gov/neighborhoods/

11 Special Maintenance Agreements

Over the years, the Seattle Engineering Department (SED) had received a number of requests for traffic control at a particular neighborhood intersection. Investigation revealed high speeds, (85% of the traffic was going 31 mph or faster), high volumes (1,215 cars per day), and high accident rates (five accidents in the last three years). Although the community had requested traffic control for each of the four previous years, the intersection did not compete successfully for a traffic circle until 1995*. Additional complications included special design because of difficult intersection geometry. As with all traffic circles funded by SED, the Engineering Department and community volunteers landscape the circle in the spring following construction and a community volunteer maintains the traffic circle.

Budget SED Neighborhood Traffic Control Program $6,500
Total $6,500

* SED's Neighborhood Traffic Control Program receives funds to build seven to fifteen traffic circles a year. With over 600 annual requests for traffic circles, priority is given to those intersections with high accidents, speeds, and volumes. If an intersection does not compete well for SED funding, communities are encouraged to apply to the Department of Neighborhoods for Matching Funds.

Entity: City of Seattle - Public Utilities
Location: Seattle, WA
Website: www.seattle.gov/util/

12 Wayfinding/Bicycle Maps

Oakland residents lacked a comprehensive guide to walking and biking in their city, making it difficult to know the availability and quality of walking and bicycle routes. A generous grant from the State of California Office of Traffic Safety mandated an education project targeting the general population of pedestrians. The Oakland Pedestrian Safety Project used the grant to create a map that highlights walkways, bikeways, landmarks, civic destinations such as schools and libraries, neighborhood names, historic networks of paths, major transit routes, and street grades. The back of the map features bike and pedestrian safety tips, a primer on pedestrian design improvements, recommended walks, and walking tour information. The 18,000 maps printed were distributed to neighborhoods and community organizations, bookstores, bike shops, schools, and recreation centers.

The map was a collaboration between the Oakland Heritage Alliance and local volunteers, who all helped survey existing pathways and staircases. City archivists aided in the effort by finding the names of most of Oakland's old neighborhoods. An experienced designer and publisher was contracted to produce the map. Funded by the State of California Office of Traffic Safety, total costs came to $48,000 including staff time, street grade surveys, map design, and map printing. The project took 6 months from concept to printing.

Walk Oakland! has generated excitement and positive feedback from neighborhood groups and school kids. It is expected that the map will serve as a starting point for further projects to encourage both walking and better pedestrian-friendly design. Demand has been high, and it is expected that another printing will be necessary in the near future.

Entity: Rufus Guides
Location: Oakland, CA
Website: www.rufusguides.com/oakland.html

13 Cyclovia

Boulder's Cyclovia is a full day event that takes over several miles of road that brings the Boulder community together in a free outdoor setting, promoting healthy and active living among neighbors. Hundreds of vendors within 10 different zones provide free activities such as dance, climbing, kayaking, cycling workshops, rodeo, running, walking tours of downtown Boulder, yoga, Frisbee, and more. Some workshops are bi-lingual, drawing more participants. People bike, dance, walk, rollerblade, scooter, or travel by some other active mode to get between the zones. Many of the vendors that Boulder Green Streets works with are socially and environmentally responsible companies and organizations, providing the participants of Cyclovia with knowledge about what their local community businesses have to offer.

In 2012, around 15,000 people participated in Cyclovia, with 65% arriving to the event by alternative means. In an attempt to increase the number of participants to 20,000 and also increase the number of people arriving by bike, walking, or any alternative to a car, Boulder Green Streets added a new innovation and creativity zone, developed an interactive event app, recruited more socially and environmentally responsible business and organizations to participate, and committed to becoming a zero waste event. Boulder Green Streets supports Boulder businesses and government groups that offer health and active living services and products, as well as local non-profit partners offering programs in sustainability health services and active living, as part of its promotion of healthy, active, and sustainable living.

Entity: Boulder Green Streets
Location: Boulder, CO
Website: http://www.bouldergreenstreets.org

EXHIBIT A

14 Safe Passage Enforcement

Until 2014, Chattanooga police had never enforced the safe passing law—even though it had been on the books since 2007. In general, the safe passage laws present practical challenges to police. Chattanooga Police Chief Fred Fletcher—who has placed new emphasis on enforcing the law—came to the department after serving as a police liaison to the cycling community in Austin, Texas, where officers get training on how to eyeball a three-foot violation. A good rule of thumb, Fletcher said, is to gauge whether the officer on a bike can reach out and touch the car; if so, it's closer than three feet. Despite being a big believer in the training, Fletcher wanted to try new equipment that would improve officers' ability to identify violations. He knew an Austin-based software firm called Codaxus was developing a device to support safe passing laws. The device uses an ultrasound detector to measure the distance between a car and a cyclist. "You can obviously tell the difference between 36 inches and 10 inches," said Chris Stanton, a co-founder of Codaxus. However, the margin between two feet and three feet is more subtle, especially when cars are moving quickly. Technology can provide a more precise measurement, Stanton said.

The Codaxus device uses an ultrasound detector to measure the distance between the car and the cyclist. A separate camera attached to the handlebars of the bike records a reading of the distance as well as the license plate and model of the vehicle. In Chattanooga, judges have agreed to consider the video archives as evidence of motorists violating the law. Judges have agreed to mandate bike safety classes in lieu of fines for motorists who have been cited. If someone refuses to take the class, however, they could face a maximum fine of $50. In most cases, officers try to use the technology to educate motorists about the law, even going as far as replaying the video to show how the close encounter feels from a biker's perspective. "We're trying to increase empathy and understanding," Fletcher said. "It's clear that very few people are intentionally putting people at risk." The department is trying to raise awareness about the law through marketing too. Some police vehicles have signs on windows that diagram the required distance between vehicles and bikes.

Entity: City of Chattanooga
Location: Chattanooga, TN
Website: http://www.chattanooga.gov/police-department

15 Bicycle Diversion Program

A bicycle "diversion" program allows offending cyclists to take a cycling safety workshop as an alternative to paying a traffic fine, thus diverting them from the system. A new CA law signed by Governor Jerry Brown will make it possible for bicyclists who are ticketed for certain infractions to attend a class on safe bicycle riding and thus reduce their fines.

"When a bicyclist is ticketed for a moving violation in California, they by default receive the same monetary fine as when driving a motor vehicle. This means that with court fees added a stop sign violation can cost around $200, and running a red light around $400," explained Assembly member Richard Bloom.

"The penalty should be determined so as to encourage safe behavior and not so punitive that it discourages bicycling altogether, especially for low-income individuals who rely the most on bicycling for everyday transportation."

The objective of the diversion alternative is a reduced fine and a more educated and knowledgeable bike rider.

Bike East Bay has been working with other advocacy groups to formulate the best programs for local needs. Los Angeles County Bicycle Coalition, the City of Long Beach, and the San Francisco Bicycle Coalition have all expressed interest in creating diversion programs. Davis already has an on-campus diversion program and is interested in expanding it citywide. The cities of Huntington Beach and Alameda both used to have programs but suspended them because of a legal prohibition against them in the existing vehicle code. The Marin County Bicycle Coalition already has a diversion program, which it has been able to run because of strong local support from the police and courts.

Bike East Bay currently incorporates a diversion program into its regular educational offerings. Like Davis, UC Berkeley has its own police department that issues citations on campus. For on-campus infractions, ticketed bicyclists can attend a class, bring proof of attendance to the police, pay a fee, and have the ticket destroyed. The fee, around $50, is much less than what they would have to pay for a ticket if it went through the court system.

"Most police departments will hold a ticket for anywhere from thirty to sixty days before sending it on" to the courts, says Robert Prinz, Education Coordinator for Bike East Bay. "So if ticketed cyclists attend one of our classes during that time, the ticket never gets sent to the courthouse, so there are no added-on fines, no court costs at all." This system greatly simplifies the entire process by limiting the exchange of money to a single transaction between the ticketed individual and the police.

Bike East Bay funds its classes through grants, and receives a flat fee for its classes, no matter how many students show up for it. This way it doesn't need to rely on a minimum number of students—nor on a minimum number of ticketed bicyclists— to support its education program and, it can make the classes available to anyone who wants to take them.

There are 33 cities in the East Bay, and Bike East Bay would need to set up agreements with local police departments in all of them. Once a program is approved, said Prinz, individual officers don't even need to have a lot of knowledge about the program. "UC Berkeley police use a sticker on the back of citations that have information about our classes," he said, which include a phone number and information about signing up for classes.

Entity: Bike East Bay
Location: California (Statewide)
Website: www.bikeeastbay.org

16 Reduce Off-street Parking Requirements

The cities of Ann Arbor, Michigan, Columbus, Indiana, and Sacramento, California—three cities of different sizes, with different development contexts, and in different parts of the country—have each reduced or eliminated off-street parking requirements downtown and in mixed-use areas, yielding a range of benefits.

Lifting onerous parking requirements has promoted infill development by creating more buildable area on infill properties, opening the door to projects that renew derelict building or activate what were previously inactive hardscapes or garbage-strewn lots while helping to create the density that defines a vibrant walkable urban core.

None of these three cities has experienced parking shortage or economic losses because of the reduction in required parking. Today, Sacramento's parking code aligns with the visions espoused in the general plan allowing planners to review projects and approve projects wherein developers are given the discretion to decide how much (or how little) parking to install.

Entity: City of Sacramento
Location: Sacramento, CA
Website: www.portal.cityofsacramento.org/Economic-Development/

17 Bicycle Counts

Cambridge has one of the highest percentages of bike commuters in Greater Boston and now, the city has a way to show it off.

If you find yourself biking down Broadway Street in Kendall Square, you can now check out how many cyclists came before you that day. The city installed a bike counter displaying the number of cyclists who passed through the area, according to city spokesperson Cara Seiderman. The new contraption, which displays in big green numerals the daily count of cyclists who have passed the spot, will supplement the city's bike census, taken every two years. During those counts, employees spread out over 17 locations for four hours and record the cyclists they see. The city then extrapolates that data to come up with the number who pedals through the area. Seiderman said they will not be doing away with the manual count, but officials hope the new bike counter will be more accurate and easier. “We know that a lot of people are traveling by bicycle in Cambridge and that the numbers have been increasing for more than a decade,” City Manager Richard C. Rossi said in a statement. Officials think the counter is a way to show how many people are out biking, and making sure people know “bicyclists count.” However, Seiderman said they are also excited about the valuable data they will be able to collect. “If you can get 24/7 data, you have a much better picture of what the patterns are,” she said. “We can see if they're biking year-round or biking through the rain.”

Officials believe the counter is the first of its kind in the state. With it, Cambridge joins the ranks of such bike-friendly cities as Portland, OR, and Montreal. The counter from the Montreal-based Eco-Counter company was funded by a $25,000 grant from the Helen and William Mazer Foundation. The machine resets at midnight, ensuring a fresh daily count. A less prominent estimate of the annual bike tally is also be displayed.

Entity: City of Cambridge
Location: Cambridge, MA
Website: www.cambridgema.gov/traffic/news/2015/07/permanentbicyclecounteronbroadway

EXHIBIT A

SPECIAL TOPICS NARRATIVE

EXHIBIT A

SPECIAL TOPICS NARRATIVES

1 Bike Share Programs

A Bike Share is a non-motorized transportation service, typically structured to provide users point-to-point transportation for short distance trips (usually around ½ to 3 miles), that allows users to pick up a bicycle at any self-serve bike station in the network and return it to another bike station near their destination. Since 2010, bike share systems have been introduced in over 30 cities in the US and have supported over 36 million bike share trips.

As bike share grows more common, it is increasingly becoming a key urban amenity for global cities. Bike share programs extend the reach of existing transit, make one-way bike trips possible, and eliminate some barriers to riding such as bike ownership, storage, maintenance and concerns about theft. Bike share can provide new mobility options for people of all income levels and can play a key role in improving public health by facilitating an active lifestyle.

Bike share has evolved significantly since its inception in 1965, when Amsterdam city council member Luud Schimmelpennink proposed the world's first public bike share system as a way to reduce automobile traffic in the city center. He proposed that 20,000 bicycles be painted white and distributed for pick-up and drop-off anywhere in the city center, free of charge. When the city council rejected the proposal, Schimmelpennink's supporters distributed fifty donated white bikes for free use around the town.

The next attempt at a bike-share system occurred in La Rochelle, France in 1993, which offered a free, but more regulated, program that allowed the public to check out bicycles for two hours. Cambridge, England, implemented a similar system in the same year. This type of free bicycle rental system, also known as a “bicycle library,” reduced problems with theft and vandalism since users were required to show identification and leave a deposit in order to use the bicycle. However, these bicycle libraries also required the user to return the bike to the same place from which it had been checked out, limiting the usefulness of the system as a point-to-point transit option.

In order for a bike share system to be efficient and well utilized, it must be properly planned and designed. The density of bike share station and nearby destinations is a key consideration in planning bike share programs, which is why central business districts are often well suited for implementing such programs, particularly in the pilot phase.

Definitions

- Bike Share Station: structure that holds the automated customer terminal/kiosk and docks that dispense bikes.
- Dock: mechanism that retains bikes in an upright and locked position.
- Terminal: self-serve kiosks, like those found at transit locations, where users can get information and make payments to check out bicycles.
- Rebalancing/Redistribution: process by which bicycles are redistributed throughout the service area to ensure that each bike share station has an appropriate ratio of available docks and bikes to ensure optimum service; typically 50% bikes to 50% open docks.
- Station-less bike share: emerging technology that utilizes an electronic locking system based on GPS and wireless communications (cell phone). Security and checkout infrastructure is located on each bike to transmit usage and location data and monitor maintenance and unauthorized use.

Business Models

Publicly Owned and Operated: The jurisdiction pays the up-front capital cost, and owns the infrastructure and equipment (i.e. bicycles and bike stations). The jurisdiction may work with a private contractor which handles membership management, customer service, marketing, bicycle redistribution, data management, and maintenance of stations and bicycles. Under such an arrangement, the government accepts financial responsibility for the program, while the private contractor accepts liability exposure.

Nonprofit: A nonprofit organization manages operations and service. The nonprofit may be explicitly created for the operation of the bike share program, or bike sharing service may be added to the purview of an existing organization. Local jurisdictions typically participate in one of two ways in this model: 1) the nonprofit organization receives startup funding and some funding for operations from local and state governments; and/or 2) the local jurisdiction acts as a fiscal agent to request federal funding and passes funds to the nonprofit. This model removes most of the financial liability from the jurisdiction and places it on the nonprofit organization, which is responsible for both fundraising and managing operational revenues and expenditures.

Private/for Profit: A private company provides, owns and operates the service; government involvement may be limited to certain aspects of planning for the stations, such as the issuing of necessary public space permits. To cover permitting costs for the use of public space, the private bike share company may be required to provide a percentage of profits (typically around 10-25%). To generate additional profits, the bike sharing company may sell advertising space on its bicycles and/or stations. It is important to note that several successful European bike share models, including Paris and Barcelona, use this approach.

System Planning and Design

Station Location (see-attached map of proposed station locations)

- Station spacing is key
- Where feasible, stations should be located:
  - Where increased population and job densities positively impact ridership
  - Proximal to transit stops or hubs to facilitate connectivity
  - Along existing network of bike infrastructure or on streets that are accommodating to bicycles in scale and activity
  - In locations that are clearly visible from multiple approaches and maximize pedestrian circulation and accessibility
  - Between multiple destinations that generate activity at different time of day

Station Density and Level of Service

- Target density: 8-16 stations per square half mile and is highly context dependent
- Target supply: 10-30 bikes per 1K residents/tourists in the program coverage area
- Target docking space to bike ratio: 2-2.5 docking spaces per bike in system

Station Type and Design

Manual vs. Automated: Systems can be either manual or automated. In a manual system, an attendant records the user's information and helps with checking bikes in and out (including payment). Automated systems allow users to check bikes in or out and make payments electronically, either at the terminal or kiosk or directly at the docking station. These types of systems often use specialized key cards.

Modular vs. Permanent: Modular stations are designed to be moved to allow maximal flexibility in network configuration. They are typically constructed on a base that is then bolted into the concrete or asphalt; many modular station designs include solar power. Permanent stations typically takes typically involve excavation and trenching to reach the power source.

Docking Styles

Docking Spaces: Each space docks one bicycle. The number of spaces determines the size of the station's footprint, enabling station size to be adjusted to fit the available space. This style of dock takes up more space per bike than cycle parking areas but may be better suited for an urban environment. Bicycles are checked out at either the terminal or at the actual docking space, depending on the station design.

Cycle Parking Area: Bicycles are stored on racks in a secured area. Cycle parking areas are a good option for larger stations (more than 50 bicycles) because cycle parking racks can hold more bikes per square meter than docking spaces. At stations with cycle parking areas, bicycles are checked in and out manually or through a turnstile. Because these stations require a secure area that is fenced or walled off, they can be more intrusive in the urban landscape.

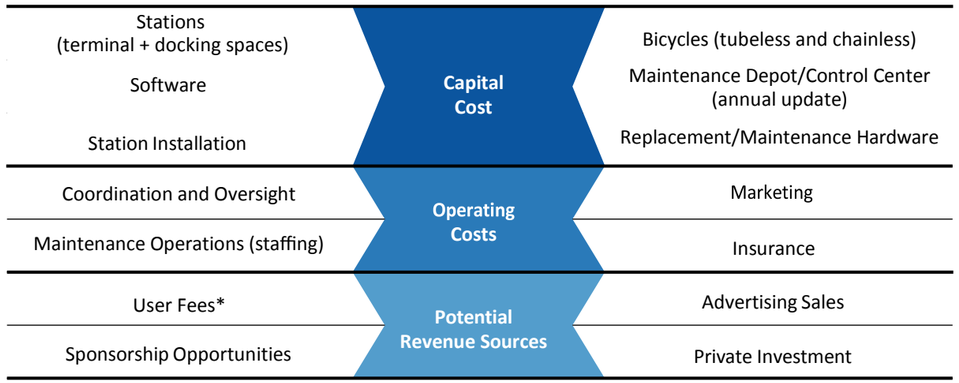
Software and Payment Mechanisms

Most systems use card technology (smart cards, magnetic cards, or credit cards) to check bikes in and out. Key considerations include:

- How customers register and pay for the system
- How bikes are check in and out from docking spaces
- How information is transmitted both internally for management and externally for customers

Table 9: Financial Models for Bike Share Programs

Capital Cost and Financing



*User Fees - Depends on business model and relative importance of defraying system costs

Option	Range ($)
Hourly	$2 - $8 (first 15 min. free)
Individual Daily Membership	$3 - $30
Individual Weekly Membership	$9 - $30
Individual Monthly Membership	$20 - $40
Individual Annual Membership	$13 - $95
Corporate Annual Membership	$35 - $50 /employee**

**Corporate Annual Memberships can include unlimited free trips up to 30 minutes

Sponsorship Opportunities

- Whole system capital cost underwriting
- Whole system operations underwriting
- Individual station capital cost underwriting
- Individual bicycle capital cost underwriting
- In-kind marketing support

Indirect Savings

- Reduced shuttle operation/costs by area hotel
- Increased pedestrian traffic to area restaurants and retail
- Increased transit ridership
- Effective expansion of CBD/tourist district

Advertising Sales

- Individual station
- Individual bicycle

FIGURE

3

PRELIMINARY PROPOSED BIKE SHARE STATION LOCATIONS

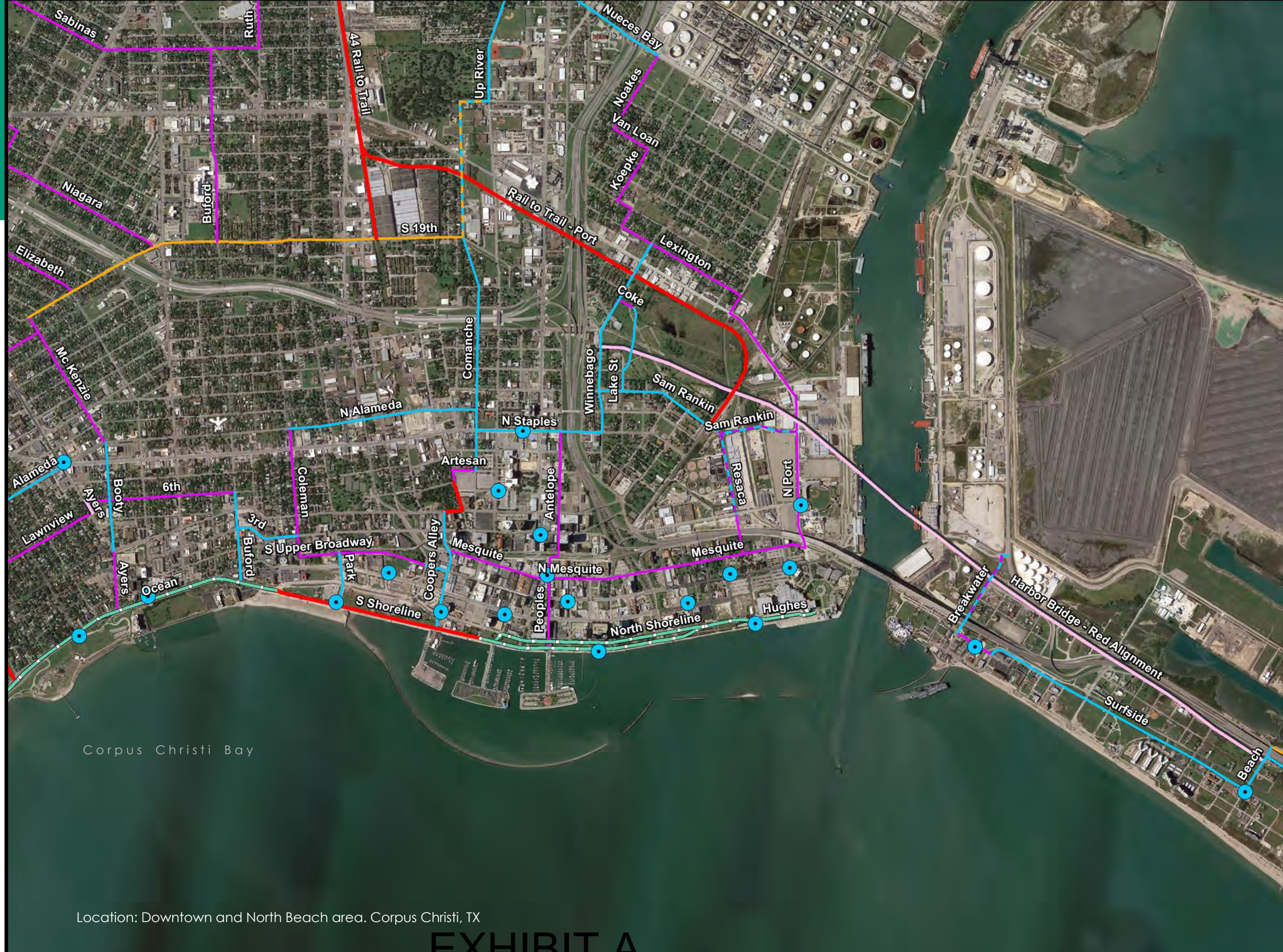
Preliminary Proposed Bike Share Stations

Low Cost/Rapid Implementation

- Bike Boulevard
- Bike Boulevard as Intermediary Treatment
- Buffered Bike Lane
- Buffered Bike Lane as Intermediary Treatment
- Multi-use Sidepath (one side) as Intermediary Treatment

Strategic Capital Investment

- 1-way Cycle Track (both ways)
- Multi-use Sidepath (one side); pink indicates side of street on which facility should be installed
- Off Road Multi-use Trail
- TBD: Corridor study recommended



Location: Downtown and North Beach area. Corpus Christi, TX

EXHIBIT A

NORTH

2 Walking School Buses and Bicycle Trains

Walking together to Badin Elementary School in Badin, North Carolina.

A walking school bus and bicycle train both consist of groups of students accompanied by adults that walk or bicycle a pre-planned route to school. Routes can originate from a particular neighborhood or, in order to include children who live too far to walk or bicycle, begin from a designated parking lot. They may operate daily, weekly or monthly. Often, they are started in order to address parents' concerns about traffic and personal safety while providing a chance for parents and children to socialize.

Walking school buses and bicycle trains can be loosely structured or highly organized. For example, walking buses or bicycle trains can be as simple as neighborhood families deciding to walk or bicycle together, possibly sharing parental chaperoning on a rotating basis. More formal, organized walking school buses and bicycle have a coordinator at the school or district level who recruits volunteers and participants, creates a schedule and designs a walking route. While requiring more effort, more structured walking school buses and bicycle trains offer the opportunity to involve more children.

Quick steps to a walking school bus or bicycle train Loose/informal structure:

1. Invite families who live nearby to walk or bicycle as a group
2. Pick a route and take a test walk or ride
3. Decide how often the group will travel together
4. Start walking or bicycling

Highly organized/formal structure:

1. Determine the amount of interest in a walking school bus or bicycle train
2. Contact potential participants and partners and identify a coordinator
3. Identify route(s)
4. Identify a sufficient number of adults to supervise walkers or bicyclists; (The Centers for Disease Control recommends one adult per three children for children ages 4 to 6 and one adult for six children for older elementary children ages 7 to 9 (2000); for bicyclists, one adult per three to six children is recommended)
5. Finalize logistical details including setting a time schedule, training volunteers and promoting participation
6. Promote and host a kick-off event
7. Track participation
8. Make changes to the activity as needed

3 Local Improvement Districts

A Local Improvement District (Improvement District) is a method of financing capital improvements constructed by the city that provide a special benefit to the properties within the boundary of the Improvement District. The Improvement District formation process leads to the sale of bonds and the retirement of those bonds via annual payments paid by the property owners within the district. The Improvement District assessments become liens on the benefitted properties.

Existing language for municipal laws:
City of Corpus Christi, TX (Ord. No. 027066, § 8, 12-1-2006)
Assessment and improvement districts -

(a) The city shall have the power to establish assessment districts, in the manner hereinafter provided, for the purpose of constructing public improvements within said districts and to provide that the cost of making any such improvements shall be paid by the property owners owning property specially benefited by reason of making the improvements. The city may levy a special assessment as a lien against any such property and issue certificates of obligation covering the cost of such improvements bearing interest not to exceed the maximum legal rate. No assessment district shall be created without first submitting the question to a vote of the qualified voters in the city who own real estate in the proposed district. If the returns of the election show that two-thirds or more of the qualified voters of the city who own real estate in the proposed assessment district voting in the election voted in favor of the proposition, the city council shall create the assessment district and establish its boundaries. All matters pertaining to any assessment lien for public improvements shall be made in substantial compliance with the laws pertaining to street improvements.

(b) The city shall have power to establish improvement districts, in the manner hereinafter provided, in order to assist in the development of commerce, tourism, resort activity, and convention accommodation for the promotion of the welfare of the city. Within any such improvement district, the city council shall have the power to lease, sublease or provide for the installment sale of any city-owned improved or unimproved land, or any interest therein, for any governmental or private use, at its fair market value as determined by the city council without the necessity of voter approval. The term of any such transaction shall not exceed sixty years. An improvement district under this subsection shall be established by the council subject to approval by a majority vote of the qualified voters of the city voting at an election called for approval of the establishment of the district. The metes and bounds description of any such district, as approved by election, shall be kept on file in the office of the city secretary as part of the public records of the city, and any improvement district established by Charter amendment prior to the adoption of this provision shall be maintained in full force and effect and shall be subject to the provisions of this section.

City of Portland, TX
Request by property owners for street improvements study -

The owners of real property abutting a public street located within the city may request of the city a preliminary engineering study and report concerning improvement of all or part of such street by presenting to the city engineer a letter of request for consideration of a street improvement project. The request shall be submitted on forms made available by the office of the city engineer. Such letter of request must specify the proposed length and location of the portion of the street for which the study is requested, and must be signed by persons constituting at least fifty-one (51) percent of the property owners and owning at least fifty-one (51) percent of the property frontage involved in the requested improvement study. Such letter of request shall designate one (1) property owner residing on such street as the representative of the property owners filing the request for communications with the city engineer and city staff.

4 Special Maintenance Agreements

Planning for and investing in operation and maintenance (O&M) is key to maximizing the return on investments in bicycle infrastructure. Traditional centralized systems for O&M, which are the responsibility of municipalities and utilities, may not be adequate to address all O&M needs in the face of conflicting budgetary priorities; in such cases, community- or user-based systems for supporting O&M may yield increased efficiency, benchmarking, raise awareness/debate, and improved resource allocation. The keys to improving operation and maintenance—and hence resource efficiency and sustainability—are the availability of accurate information about the relative condition of infrastructure and the distribution of clear roles and responsibilities.

The creation of special maintenance agreement between municipalities and neighborhoods allow the neighborhoods to spearhead maintenance of bicycle infrastructure. Under such agreements, the neighborhood may commit to keeping the bicycle infrastructure free of litter, debris and graffiti, and/or agree to be responsible for a variable number of cleanups each year for a specific duration of time.

5 Cyclovia

Cyclovia is a Spanish term that means cycle way, either a permanent bike path or the closing of certain streets or cyclists and pedestrians. Cyclovia has its origins in Columbia and the inspiration is credited to Bogotá. Each Sunday and on public holidays from 7am until 2pm certain main streets of Bogotá, Cali, Medellin, and other municipalities are closed to cars to grant runners, skaters, and bicyclists safe and unfettered use. At the same time, stages are often set up in city parks and aerobics instructors, yoga teachers and musicians lead people through various performances.

Cyclovias have gained a following in Australia, Argentina, Belgium, Canada, Chile, Costa Rica, Ecuador, Guatemala, Mexico, New Zealand, Peru, and in a number of cities in the United States. Successful US cyclovias include Durham, NC; Fort Collins, CO; and in the Lone Star State in Austin, Fort Worth, El Paso, and San Antonio.

6 Safe Passage Citation Fee Structure

Law enforcement plays an essential role in supporting bicycle travel by reducing unsafe operation of motor vehicles and bicycles and by reminding the public about the legal rights and duties of road users. Police officers, prosecutors, and judges should treat bicyclists as full and equal road users in the investigation, citation, and prosecution of traffic laws, and in assigning fault/liability and awarding damages. The State of Texas Safe Passage Law S.B. No. 1416, effective September 1, 2015, requires cars to provide cyclists with a three foot buffer; trucks must allow six feet of clearance. The City of Corpus Christi adopted an analogous ordinance on May 15, 2012, under which violations are considered a Class C misdemeanor, punishable by a fine of no more than $500.

Opinions vary about preferred fee structure for violations of Safe Passage ordinances. Data from other communities suggests that law enforcement officials may be more inclined to cite motorists for violating Safe Passage laws if the fee is minimal (~$50 for first time offenders, up to ~$150 for repeat offenses). Critics of this perspective argue that the number of citations issued is limited by the challenge of enforcing the law, i.e. observing the violation and judging the distance, rather than by enforcement officials' opinion about the severity of the penalty. Likewise, proponents of stricter penalties argue that the law is designed to protect vulnerable users—cyclists—and thus must be stringent enough to inspire motorists to change their behavior. Local law enforcement officials should be party to any local dialogue aimed at optimizing Safe Passage laws and fee structure at the local level.

7 Rules and Codes for Safe Cycling

Potential fodder for local safe cycling codes includes:

<u>Basic Rules of the Road</u>

1. First come, first served – Everyone on the road is entitled to the lane width they need. This includes the space behind, to each side and the space in front. If you want to use someone else's space, you must yield to whoever is using it.
2. Drive on the right half of the road - n the United States, everyone must drive on the right-hand side of the roadway.
3. Stop/yield before entering a busier roadway - When you come to an intersection, if you do not have the right of way, you must yield.
4. Look/yield before moving laterally - If you want to change lanes, you must yield to traffic that is in your new lane of travel.
5. Practice destination positioning at intersections -Bikes can share the same lane with other drivers. If a lane is wide enough to share with another vehicle (about 14 feet), ride three feet to the right of traffic. If the lane is not wide enough to share, “take the lane” by riding in the middle.
6. Practice speed positioning between intersections - The slowest vehicles on the road should be the furthest to the right. Where you position yourself on the road depends on the location of any parked cars, your speed, and your destination. Always pass on the left.

<u>Signaling</u>

Bicyclists are required to use the proper hand signals when turning, changing lanes or stopping:

- Reduced shuttle operation/costs by area hotel
- Increased pedestrian traffic to area restaurants and retail
- Increased transit ridership
- Effective expansion of CBD/tourist district

EXHIBIT A

Helmet Laws

Most states require the use of bicycle helmets to some degree, often for children under the age of 16 or 18, and local ordinances in many US cities exceed requirements in their respective states by requiring helmets for cyclists of all ages. The following are examples of municipal bicycle helmet laws within the state of Texas.

City	Ages	Effective Year
Arlington	Under 18	1997
Austin	Under 18	1996/97
Bedford	Under 16	1996
Benbrook	Under 17	1996
Coppell	Under 15	1997
Dallas	Under 18	1996/2014
Fort Worth	Under 18	1996
Houston	Under 18	1995
Southlake	Under 15	1999

Local codes addressing helmet use typically include language such as: Any person from the ages of (defined locally), riding or otherwise moving on a bicycle, including any passenger thereon and/or person being towed thereby, on any public area in the City shall wear an approved helmet, and shall have either the neck or chin strap of the helmet fastened securely while the device is in motion.

Standard Definitions: “Approved helmet” means a head covering designed for safety that shall meet or exceed the requirements safety of standards adopted by the U.S. Consumer Product safety Commission (CPSC) 15 USCS 6004, or such subsequent nationally recognized standard for helmet performance as the city may adopt. The helmet must be equipped with either a neck or chinstrap that shall be fastened securely while the wheeled-vehicle is in motion.

“Bicycle” means every device propelled solely by human power upon which a person or persons may ride, having two tandem wheels either of which is eleven inches or more in diameter, or three wheels, any one of which is more than twenty inches in diameter. Within this ordinance, the term “bicycle” shall include any attached trailers, side cars, and/or other device being towed by a bicycle.

Lights and Reflectors

In virtually every state, bicyclists are required to have red lights on the back and white lights on the front while riding at night. Details vary between individual state and local laws.

Texas: Must have a white light on the front and a red reflector or red light on the rear (for riding at night): (551.104b, effective September, 2001).

Riding on Sidewalks

Some communities—particularly in those with robust bicycling infrastructure—may opt to enact codes that prohibit bicyclists over a certain age (13 in San Francisco, for example) from biking on sidewalks. However, in communities with fledgling cycling culture and/or particularly dominant driving culture, the adoption of local codes that expressly permit cycling on city streets and sidewalks as a by right use (except where explicitly indicated otherwise by signage or other equivalent notification) may help to foster cycling culture by alleviating uncertainty among the general public and law enforcement officials about where cyclists are permitted. Such codes should clearly indicate that cyclists must yield to pedestrians on all shared facilities.

Stop Signs and Stoplights

As with motorists, bicyclists must come to a complete stop at all stop signs and red lights. Consistent enforcement of this particular requirement, where covered state and/or local codes, can be an important strategy in promoting safe cycling and fostering a sense of equity among motorists who may otherwise be critical of what they perceive as disproportionate leniency for cyclists.

As with enforcement of Safe Passage ordinances among motorists, the fee structure for enforcement of stop sign/red light violations by cyclists is an important consideration, and local law enforcement officials are key stakeholders in the discussion. Officials may be less inclined to cite cyclists if they perceive the penalties to be unduly stiff; conversely, if fees for violators are not sever enough, they will not inspire the desired change in behavior and may be perceived as inequitably by motorists, thus breeding resentment.

Encroachment on Bicycle Infrastructure

Local codes must provide clear, explicit authority for citation of encroachments and/or degradation of public cycling infrastructure. Parked vehicles, overgrown foliage, trash receptacles, and other such infringements on bike infrastructure pose a very serious safety risk to the cycling public and must be addressed swiftly and with the appropriate severity so as to deter repeat offense. The creation, as recommended in this plan, of a dedicated telephone hotline and smartphone application for use by the public in reporting such encroachments can be a meaningful contribution to the efficiency of code enforcement operations, but the efficacy of such a tool depends on the passage of local codes that allow for appropriate response by code enforcement officials.

Applicability of Traffic Laws

Sample language: Every person riding a bicycle upon a street or sidewalk shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by the laws of this state declaring rules of the road applicable to vehicles, this Code XXX or other ordinances of this city applicable to the driver of a vehicle, except as to those provisions of laws and ordinances which by their nature can have no application, and except as otherwise provided in this chapter available code language.

8 Bike Safety Classes in Lieu of Fines

DriveKind RideKind was jointly developed by the Austin-based nonprofit Please BE KIND to Cyclists (Please BE KIND) and the Texas Department of Transportation (TxDOT) to promote safe driving practices by motorists as they share Texas roads with vulnerable road users such as cyclists and pedestrians. The mission of DriveKind RideKind is to educate and inspire all road users to encourage personal responsibility and foster behavioral change to enhance safety.

The program includes a video and program guide. The program guide is made up of 7 sections and corresponding video segments:

Section 1: A True Story
Section 2: Awareness
Section 3: Infrastructure
Section 4: Distractions
Section 5: Crashes
Section 6: Sharing the Road
Section 7: Personal Responsibility

The program includes topics for class discussion and key take-a-ways. Instructors, school owners and administrators, and the public are welcome and encouraged to request, view, download, and share the DriveKind RideKind video. Most notably the program is free and implementation is flexible. Municipalities can develop 1-2 hour long classes or half-day workshops with the program focusing on aspects of the program that address specific community needs.

9 Standard Contracting Language for Construction Zones

When planning major roadway projects, construction and development guidelines should require contractors to provide continuous access to pedestrian and bicycle infrastructure so as to minimize disruption to the commuting public. The Traffic Control Plan that is typically developed as part of the planning process for roadway projects is the appropriate place to address this need.

Language found in the General Notes for Traffic Control might be enhance to read as follows:

Contractor shall provide continuous access to all business and residential driveways during the construction period. Contractor shall also provide safe and well-signed continuous access to pedestrian and bicycle infrastructure and/or alternate pedestrian and bicycle infrastructure during construction period."

10 Bicycle Counts

One of the more significant problems for advocates of active mobility is the dearth of accurate bicycle use data. Knowing how many people are bicycling informs demand for infrastructure, provides feedback on the value of existing facilities, identifies needed improvements, helps compare safety between modes, and bolsters local support for active mobility. The lack of data is also problematic when apportioning transportation dollars.

There is national recognition of the need to collect more and better data for bicycling. The Federal Highway Administration (FHWA) has launched a "Bicycle-Pedestrian Count technology Pilot Program" with ten Metropolitan Planning Organizations to collect this data.

At the state level, a Washington State Department of Transportation research initiative, in conjunction with Portland State University developed a bicycle and pedestrian miles traveled metric estimate for Washington State. A second phase is underway to develop tools for implementation of the methodology.

EXHIBIT A

11 Performance Measures

Periodic program evaluation is critical to assess progress toward stated plan objectives. Program evaluation provides accountability to the public (and those who fund projects or programs) and thus may help bolster community support for program investments and expansion.

Category	Metric	Suggested Evaluation Period	Source of Data
Quality of Bicycle Infrastructure	Total percent build out of Bicycle Mobility Network	Annual	Municipal Engineering Dept./MPO
	Number of miles of bike infrastructure (built in conformance with Bike Mobility Plan in terms of location and infrastructure type) per capita	Annual	Municipal Engineering Dept./MPO
	Total annual municipal capital spending on bicycle infrastructure	Annual	Municipal Engineering Dept.
	Proportion of respondents (to community survey implemented every 3-years) who cite the poor condition of existing bike facilities as a reason for not riding more often	3 Years	MPO
Bicycle Safety	Number (city-wide) of reported bike/vehicle interactions	Annual	Municipal Police Depts.
	Number (city-wide) of reported vehicle crashes of any* type	Annual	Municipal Police Depts.
	Number (City-wide) of fixed (permanent) signs related to safe cycling installed within the project area	Annual	Municipal Traffic/ Engineering Dept.
	Total annual municipal expenditures on bike safety outreach/awareness (PSAs, vehicle wraps, city-sponsored safety courses)	Annual	Municipal PIO/ and/or PD
	Percentage of grade schools (grades 1-12) with some form of designated Safe Routes to School Program	Annual	School Districts
	Proportion of respondents (to community survey implemented every 3-years) who cite not feeling safe from vehicles on existing bike facilities as a reason for not riding more often	3 Years	MPO
	Proportion of respondents (to community survey implemented every 3-years) who cite feeling that local drivers are too aggressive toward cyclists as a reason for not riding more often	3 Years	MPO
Bicycle Demand	Bicycle counts on select corridors as part of existing municipal traffic count program; when possible, counts should be instituted on a given corridor before and after the construction of infrastructure prescribed in this plan	Annual	Municipal Traffic/ Engineering Dept.
	Bike boardings on transit on a route-specific basis as a proportion of available rack space	Annual	RTA
	Number of zero-car households, total and per demographic categories (race, gender, household income level)	10 Years	Census
	Number of bike commuter rates, total and per demographic categories (race, gender, household income level)	10 Years	Census
	Number of registered Strava Metro commuters and in the number of commuter trips logged per month	Annual	Strava/MPO
	Number of requests submitted monthly through telephone hotline/smartphone app regarding encroachments/repair on bike infrastructure	Annual (average monthly totals)	Municipal Streets Dept.
	Percentage of students (grades 1-12) who bike to school at least one day per week	Annual	School Districts
	Proportion of respondents (to community survey implemented every 3-years) who report riding a bike (for any reason) at least once per week	3 Years	MPO
	Proportion of respondents (to community survey implemented every 3-years) who indicate that the vision defined in this plan accurately describes their vision for the future of their community	3 Years	MPO
	Number of business certified as Bike Friendly Businesses**	Annual	Chamber of Commerce (or other sponsor of BFB Certification Program)

**data from other communities suggest that the installation of bicycle infrastructure is associated with a reduction in vehicular crashes of all types)*

***through certification program recommended in this plan*

EXHIBIT A

APPENDICES

EXHIBIT A

APPENDICES

Appendix A: Stakeholder Engagement Database

Stakeholders				Outcome			
Category	Type	Level	Entity	Notes	Flyer Distribution	People Spoken To	Interviews Counts
Bicycle Destinations	Gym	Flour Bluff	Flex Fit 24/7 Gym	Left 5 fliers, 1 poster	5		
Bicycle Destinations	Gym		Freedom Fitness	Left stack of 10	10		
Bicycle Destinations	Gym		Golds Gym	Left stack of 10	10		
Bicycle Destinations	Gym		Flex Fit 24/7 Gym	Left stack of 10	10		
Bicycle Destinations	Gym		All Good Downtown Fitness	Left stack of 10	10		
Bicycle Destinations	Pool		Greenwood Swimming Pool	City - Coordinated with ST	0		
Bicycle Destinations	Pool		Oso Swimming Pool	City - Coordinated with ST	0		
Bicycle Destinations	Pool		HEB Swimming Pool	City - Coordinated with ST	0		
Bicycle Destinations	Pool		Santa Fe Swim Club	Posted 2 posters on bulletin board and left flyers	22		
Bicycle Destinations	Pool		Collier Swimming Pool	Poster	0		
Bicycle Destinations	Pool		Corpus Christi Natatorium	Poster	0		
Bicycle Destinations	Rec. Center		Joe Garza Recreation Center	City - Coordinated with ST	0		
Bicycle Rack	City		City Hall Bike Rack	Posted Flyer pouch	25		
Bicycle Rack	Community		Seawall Pier	Posted Flyer pouch	25		
Bicycle Rack	Community		Cole Park Bike Rack #1	Posted Flyer pouch	25		
Bicycle Rack	Community		Oleander Point Bike Rack #1	Posted Flyer pouch	50		
Bicycle Rack	Community		Oleander Point Bike Rack #2	Posted Flyer pouch	50		
Bicycle Rack	Community		Cole Park Skate/Bike Park	Posted Flyer pouch and 1 poster	56		
Contact Point	Business		West Business Association	MPO Director PowerPoint presentation	0		
Contact Point	Chamber of Commerce		Corpus Christi Hispanic Chamber of Commerce	Leah has been in contact with Ginny about session and sending out info, coming to 7/23 meeting	0		
Contact Point	Club		Cub Scout Pack 259	Parents emailed	0		
Contact Point	Club		Boy Scout Troop 3	Posters, 30 flyers and emailed parents	30		
Contact Point	Community		Corpus Christi Apartment Association	Attended July 23, 2015 meeting	0		
Contact Point	Community		Corpus Christi Downtown Management District	Attended July 23, 2015 meeting	0		
Contact Point	Community		Nueces County Community Action Agency	Attended July 23, 2015 meeting	0		
Contact Point	Community		South Texas Environmental Professionals	MPO Director PowerPoint presentation	0		
Contact Point	Community		Corpus Christi Parks and Recreation Dept.	Left materials to be placed at Pools, Rec Centers, and Senior Centers	20	15	3
Contact Point	Community		Boys & Girls Club - Corpus Christi	Posters, left flyers, 4 interviews	10	4	4
Contact Point	Economic Development		San Patricio Economic Development Corp.	Meeting with group July 26, 2015	0		
Contact Point	Economic Development		Port of Corpus Christi	Left flyers to be distributed to employees	25		
Contact Point	Health		Nueces County Medical Society	In contact with Paula			
Contact Point	Service Industry		Greater Corpus Christi Hospital Association	July 1?			
Contact Point	Tourism		Coast Bend Regional Tourism Council	Attended meeting?			
Contact Point	Transporation		Regional Transportation Authority	Coordinated with Gordon - setting up meeting with			
Contact Point	Transportation		Regional Transportation Authority	Also coordinated with Gordon - setting			
Contact Point	Transportation		TxDOT	Not sure who Teri Kaplan is			
Contact Point			American Society of Civil Engineers	Emailed flyer			
Event	Business		Young Professional Business Association	Attended July 14, 2015 meeting, short discussion			
Event	Community		ArtWalk	8 surveys, spoke to 50 people	50	50	8
Event	Community		Corpus Christi Ride In Theater	Spoke to many people, handed out flyers, announcement to crowd	50	20	
Event	Community		NAACP Juneteenth	5 interviews, 3 in depth. Handed out fliers to approx 40 people. Spoke with several of them and directed them to the online site for further info	40	45	5
Event	Community		Downtown Farmer's Market	Distributed 15 Flyers, excellent reception, possible interview contact Ryan Drum, Downtown Delivery on bikes	15	15	
Event	Community		A La Mano (Food Truck Friday)	Handed-out out 50 flyers	50	50	
Event	Community		Bay Jammin Movies and Music	Distributed 20 flyers, discussed project with several people. 1 interview	20	20	1
Event	Community		CC7D Brews & Film Crews	Distributed 50 flyers	50	50	
Event	Community		Corpus Christi 4th of July Fireworks	Planning to do in July			
Event	Meeting		Physical Activity Coalition for Nueces County	Gave a presenation			
Event	Meeting		Air Quality Group	Attended July 17, 2015 meeting			
Event	Meeting		Transportation Planning Committee	Gave a presentation			
Event	Sporting		Portland Dog Park 5K	Conducted 5 in-depth interviews, spoke to approx 20 individuals. Handed out fliers, and discussed project with attendees	20	25	5
Event	Sporting		Beach to Bay	Handed out flyers, good reception from community, spoke with local rider Rodney Matthews about new bike plan	100	100	
Event	Sporting		It's Your Life 5K	Set up booth, discussion with several parents and bike riders, contact with Alcohol & Drug Abuse Program	20	20	
Event	Sporting		Stache Dash	Spoke to & gave flyers to over 50 people, conducted 5 interviews	50		5
Event	Sporting		Corpus Christi Hooks Games	June 23, 2016, 80 flyers before game, 40 flyers in game, 8 interviews	120		8
Event	Sporting		Olympic Day Celebration	Passed out about 20 flyers, conducted 2 interviews. Had small conversation about project with several people	20	22	2
Flyer Location	Bar		House of Rock	Left stack of flyers near bike rack	20		
Flyer Location	Business		Bechtel	Left posters			
Flyer Location	Business			Left 10 posters			

Appendix B: Steering Committee Invitees

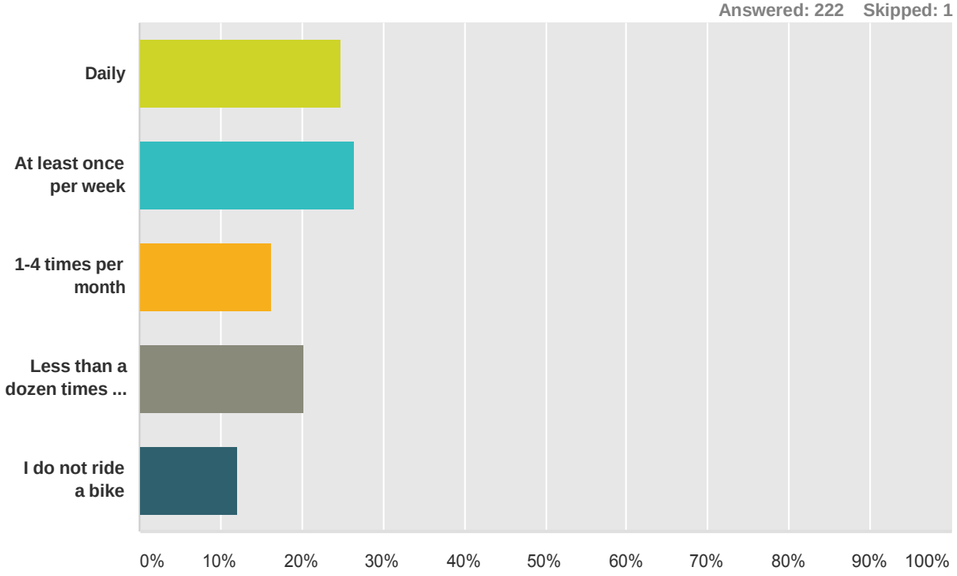
Entity	Delegate	Title
Corpus Christi EDC	Lain Vasey	CEO/President
Corpus Christi ISD	Dr. Roland Hernandez	Superintendent
City of Gregory	Robert Meager	Chief of Police
City of Portland	Brian DeLatte, P.E.	Assistant City Manager
	Jamie Pyle, P.E.	Director of Public Works
Coastal Bend Center for Ind. Living	Judy Telge	Director of Development
City of Corpus Christi Bicycle & Pedestrian Subcommittee	Gretchen Arnold	Chair
Capital Programs	Jeff Edmonds, P.E.	Director of Engineering Services
	Jerry Shoemaker, P.E.	Senior Program Manager
Development Services	Dan Grimsbo	Director of Development Services
Island Strategic Action Committee	Greg Smith	Chair
Parks & Recreation	Jay Ellington	Director
	Stacie Talbert Anaya	Assistant Director
Corpus Christi Police Department	Michael Markle	(Then) Interim Police Chief
	Mark Schauer	Assistant Chief of Investigations Bureau
	Ronald Zirbes	Senior Officer
Street Maintenance & Repairs	Dan Grimsbo	Director of Development Services
Transportation Advisory Commission	Scott Harris, P.E.	Chair
Traffic Engineering	Dr. Raymond Chong, P.E.	Director of Traffic Engineering
Convention & Visitors Bureau	Elvia Aguilar	Director of Brand Management
Corpus Christi Housing Authority	Gary Allsup	Director
Del Mar College	Mark Escamilla	President
Downtown Management District	Terry Sweeney	Executive Director
North Beach Community Association	Carrie Robertson Meyer	President
Nueces County	Glen Sullivan, P.E.	Director of Public Works
Port of Corpus Christi Authority	Natasha Fudge, P.E.	Project Engineer/Planner
Regional Transportation Authority	Gordon Robinson, PMP	Director of Planning
San Pat County	Dolores Hinojosa	ROW Coordinator
San Patricio County EDC	Becky McMillon	Director
SEA District Association	Bill Durril	General Manager
TAMUCC	Amanda Drum	Executive Director, Strategic Engagement & Initiatives
TxDOT- Planning	Victor Vourcos, P.E.	Director of Development Services

EXHIBIT A

Appendix C: ANSWER IT! Online Survey and Data Summary

Q1 How often do you ride a bicycle?

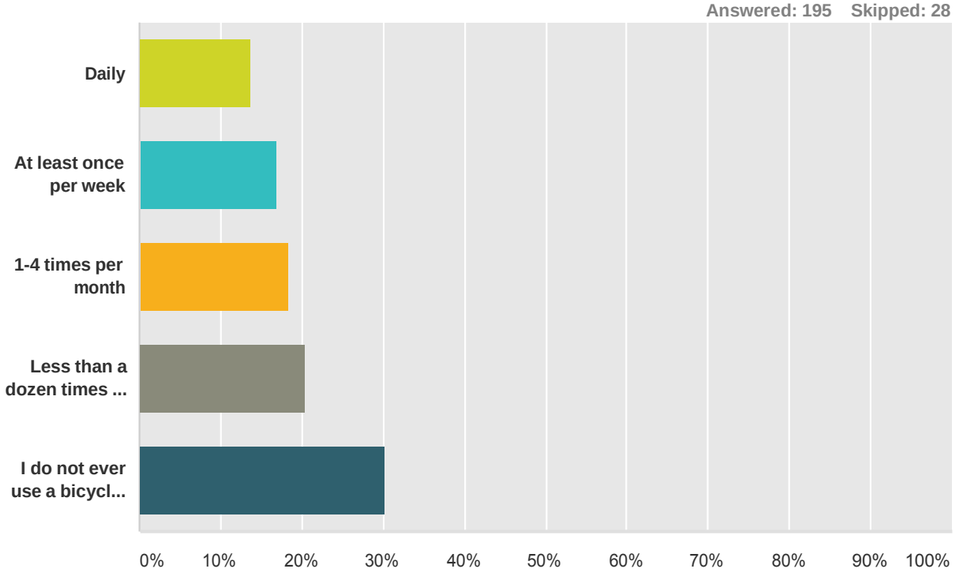
Answered: 222 Skipped: 1



Answer Choices	Responses	
Daily	**24.77%**	55
At least once per week	**26.58%**	59
1-4 times per month	**16.22%**	36
Less than a dozen times per year	**20.27%**	45
I do not ride a bike	**12.16%**	27
Total		**222**

Q2 How often do you use a bicycle for TRANSPORTATION (instead of a car or bus to reach a destination)?

Answered: 195 Skipped: 28

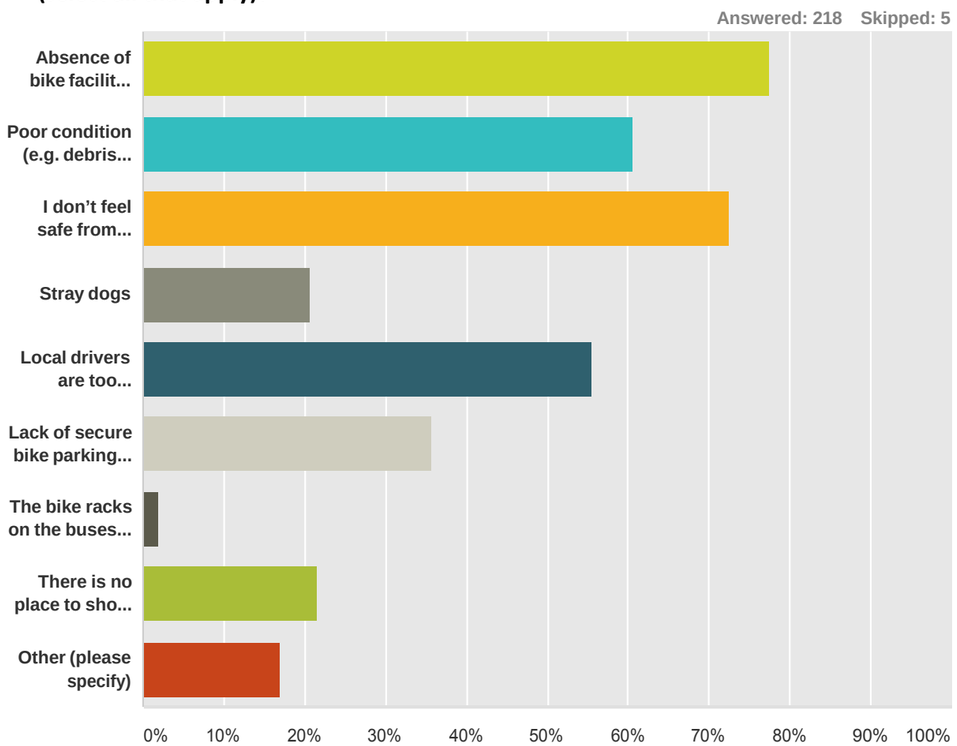


Answer Choices	Responses	
Daily	**13.85%**	27
At least once per week	**16.92%**	33
1-4 times per month	**18.46%**	36
Less than a dozen times per year	**20.51%**	40
I do not ever use a bicycle for TRANSPORTATION	**30.26%**	59
Total		**195**

Appendix C: ANSWER IT! Online Survey and Data Summary (con't)

Q3 Which of the following prevent you from riding a bike more often (select all that apply)?

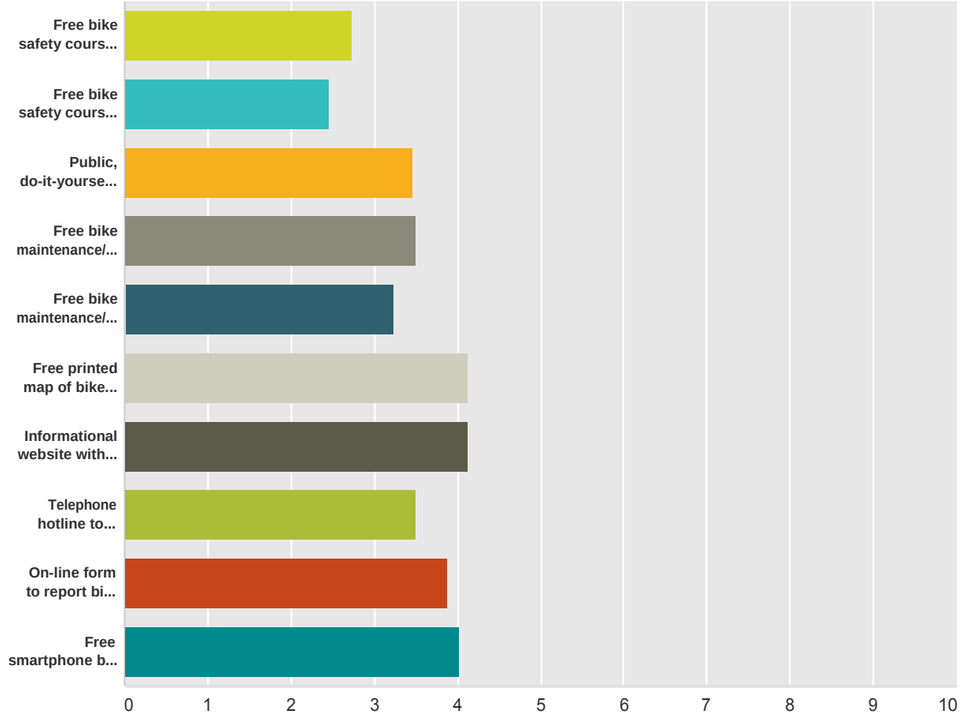
Answered: 218 Skipped: 5



Answer Choices	Responses	
Absence of bike facilities (e.g. bike lanes or paths) along the streets on which I'd like to ride	77.52%	169
Poor condition (e.g. debris in bike lane) of existing bike facilities	60.55%	132
I don't feel safe from vehicles on the existing bike facilities	72.48%	158
Stray dogs	20.64%	45
Local drivers are too aggressive toward cyclists	55.50%	121
Lack of secure bike parking at my destination(s)	35.78%	78
The bike racks on the buses I ride are usually full	1.83%	4
There is no place to shower and/or change where I work	21.56%	47
Other (please specify)	16.97%	37
Total Respondents:		218

Q4 How likely would you be to use each of the following amenities?

Answered: 211 Skipped: 12



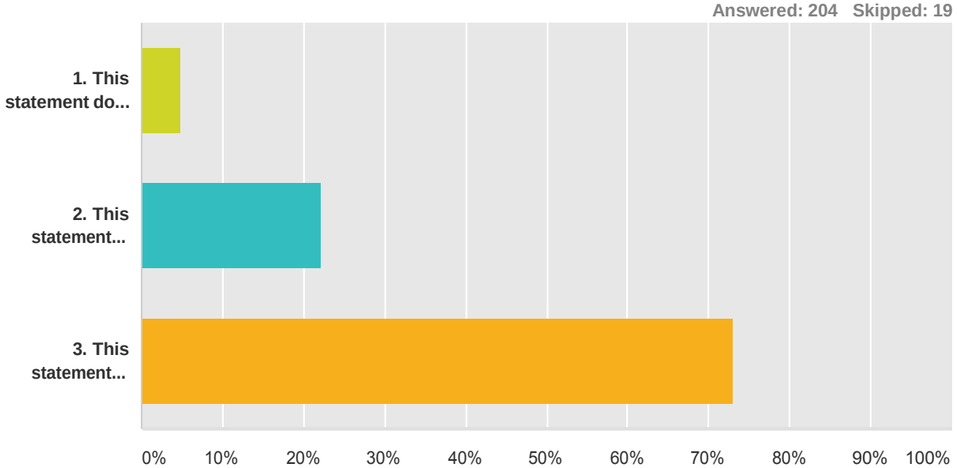
	1 - Very Unlikely	2 - Unlikely	3 - Somewhat Likely	4 - Likely	5 - Very Likely	Total	Weighted Average
Free bike safety course if o for the weekend	24.04% 50	21.63% 45	25.00% 52	15.38% 32	13.94% 29	208	2.74
Free bike safety course if o for the evening hours on weekends	29.70% 60	26.24% 53	20.79% 42	14.36% 29	8.91% 18	202	2.47
Public, do-it-yourself bike tool/repair kiosks at popular locations around thecommunity	11.11% 23	11.59% 24	26.57% 55	20.77% 43	29.95% 62	207	3.47
Free bike maintenance/repair course if o for the weekends	11.48% 24	13.40% 28	18.66% 39	25.36% 53	31.10% 65	209	3.51
Free bike maintenance/repair course if o for the evening hours onweekdays	16.67% 34	16.67% 34	18.63% 38	22.55% 46	25.49% 52	204	3.24
Free printed map of bike route network that identifies location and facility type (e.g. on street bike lane, separated cycle track, o ff-road trail, etc.)	5.26% 11	1.44% 3	16.75% 35	27.75% 58	48.80% 102	209	4.13
Informational website with maps and a schedule of events, such as education programs for cyclists	3.81% 8	5.24% 11	11.90% 25	30.95% 65	48.10% 101	210	4.14
Telephone hotline to report bike facility maintenance issue/safety concern	6.31% 13	14.56% 30	26.70% 55	28.16% 58	24.27% 50	206	3.50
On-line form to report bike facility maintenance issue/safety concern	7.25% 15	4.83% 10	18.84% 39	30.43% 63	38.65% 80	207	3.88
Free smartphone bike route planning app	5.80% 12	5.80% 12	16.43% 34	23.67% 49	48.31% 100	207	4.03

Appendix C: ANSWER IT! Online Survey and Data Summary (con't)

Q5 **How accurately does the following statement describe your vision for the future of your community?**

The metropolitan area of the Coastal Bend is a place where walking and biking are integral to the community culture and represent viable, safe travel and recreation options for residents and visitors of diverse abilities.

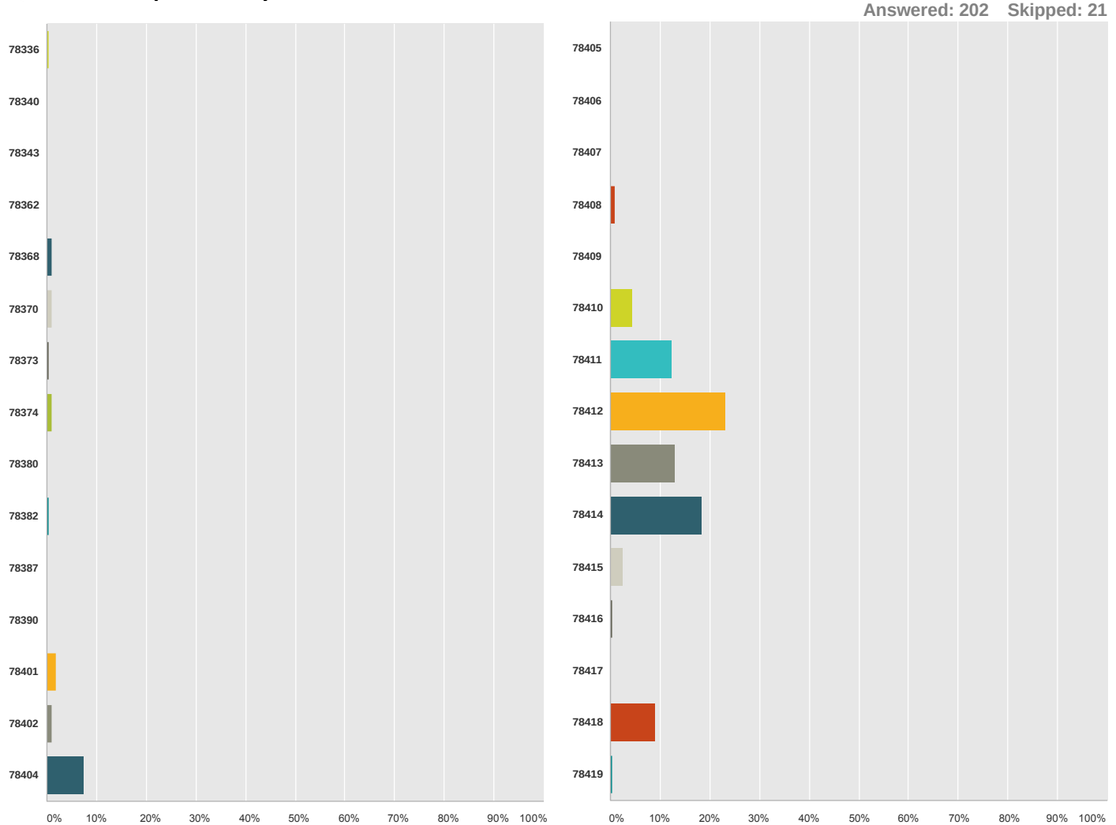
Answered: 204 Skipped: 19



Answer Choices	Responses	
1. This statement does not describe my vision for the future of my community at all.	**4.90%**	10
2. This statement partially describes my vision for the future of my community.	**22.06%**	45
3. This statement accurately describes my vision for the future of my community.	**73.04%**	149
Total		**204**

Q6 **In which zip code do you live?**

Answered: 202 Skipped: 21

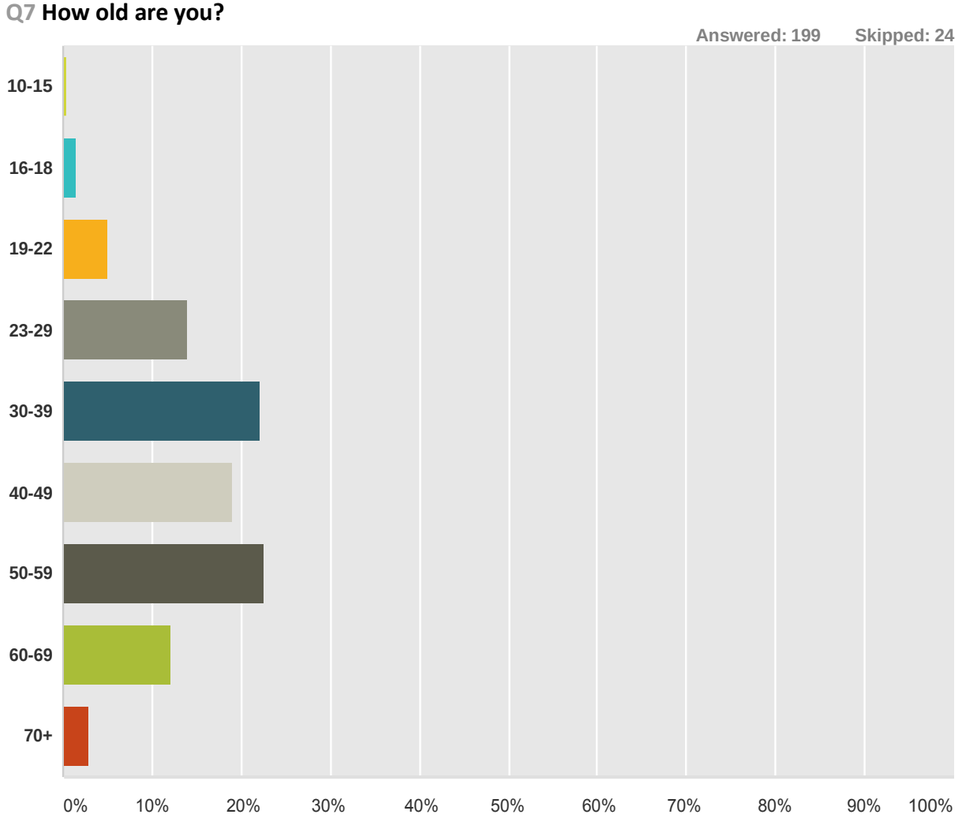


Answer Choices	Responses	
78336	**0.50%**	1
78340	**0.00%**	0
78343	**0.00%**	0
78362	**0.00%**	0
78368	**0.99%**	2
78370	**0.99%**	2
78373	**0.50%**	1
78374	**0.99%**	2
78380	**0.00%**	0
78382	**0.50%**	1
78387	**0.00%**	0
78390	**0.00%**	0
78401	**1.98%**	4
78402	**0.99%**	2
78404	**7.43%**	15

Answer Choices	Responses	
78405	**0.50%**	1
78406	**0.00%**	0
78407	**0.00%**	0
78408	**0.99%**	2
78409	**0.00%**	0
78410	**4.46%**	9
78411	**12.38%**	25
78412	**23.27%**	47
78413	**12.87%**	26
78414	**18.32%**	37
78415	**2.48%**	5
78416	**0.50%**	1
78417	**0.00%**	0
78418	**8.91%**	18
78419	**0.50%**	1
Total		**202**

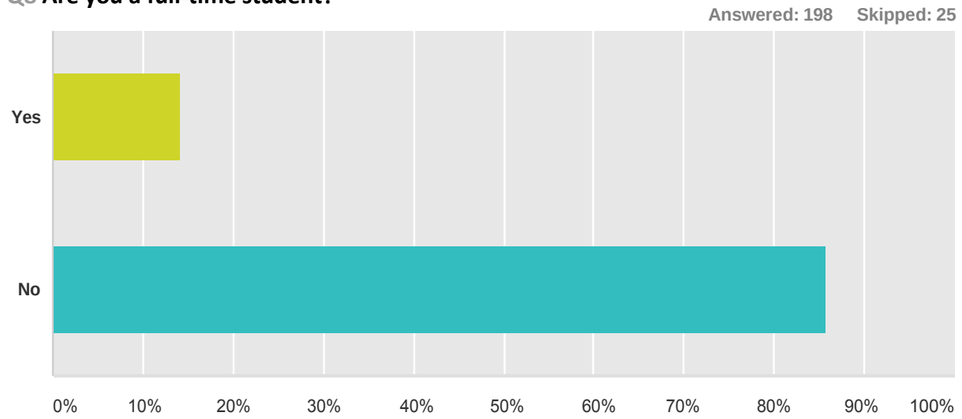
Appendix C: ANSWER IT! Online Survey and Data Summary (con't)

Q7 How old are you?



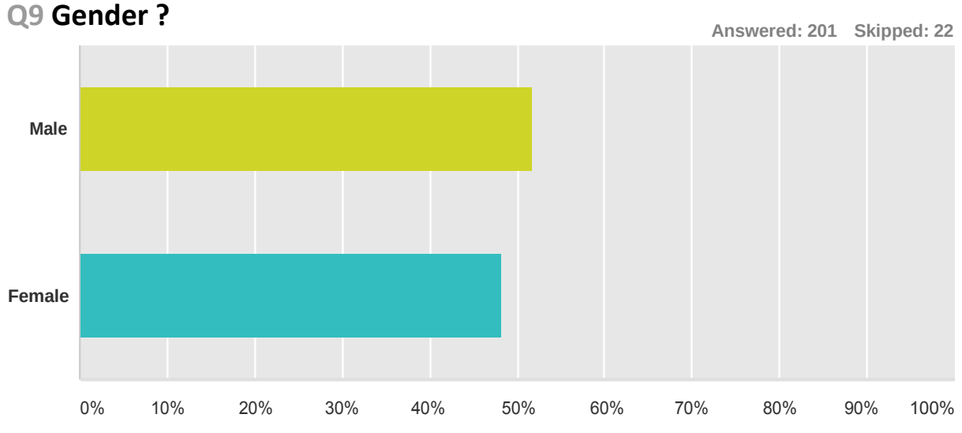
Answer Choices	Responses	
10-15	0.50%	1
16-18	1.51%	3
19-22	5.03%	10
23-29	14.07%	28
30-39	22.11%	44
40-49	19.10%	38
50-59	22.61%	45
60-69	12.06%	24
70+	3.02%	6
Total		199

Q8 Are you a full-time student?



Answer Choices	Responses	
Yes	14.14%	28
No	85.86%	170
Total		198

Q9 Gender ?



Answer Choices	Responses	
Male	51.74%	104
Female	48.26%	97
Total		201

Appendix D: Presentation Locations

Date	Audience
03/10/2015	City of Corpus Christi City Council
04/01/2015	Corpus Christi Regional Transportation Authority
04/10/2015	Corpus Christi Chamber of Commerce Infrastructure Group
04/13/2015	Coastal Bend Bays and Estuaries Foundation
05/07/2015	City of Corpus Christi Mayor's Breakfast
05/13/2015	Texas Society of Professional Engineers, Corpus Christi Chapter
05/14/2015	City of Corpus Christi Mayor's Fitness Council
05/20/2015	City of Corpus Christi Transportation Advisory Committee, Bicycle & Pedestrian Subcommittee
06/01/2015	Corpus Christi Cycling Club, Corpus Christi Triathlon Club, i-quack/South Side Cycling Club
06/04/2015	Flour Bluff Business Association
06/04/2015	Corpus Christi Greater Hospitality Association
06/24/2015	Physical Activity Coalition for Nueces County
07/07/2015	Local Emergency Planning Committee
07/07/2015	City of Portland City Council
07/14/2015	Young Business Professionals
07/17/2015	Corpus Christi Air Quality Group
07/23/2015	Portland Chamber of Commerce
08/27/2015	Nueces County Safe Communities
09/21/2015	City of Corpus Christi Transportation Advisory Committee, Bicycle & Pedestrian Subcommittee
09/22/2015	Island Strategic Action Committee (select officers)
09/23/2015	Braselton Homes
09/23/2015	North Beach Community Association
10/22/2015	Corpus Christi Association of Realtors
11/03/2015	American Diabetes Association
11/19/2015	City of Corpus Christi Ad Hoc Infrastructure Committee (Chair only)
12/08/2015	West Oso Integrated School District
01/05/2016	City of Corpus Christi Transportation Advisory Committee (including Bicycle & Pedestrian Subcommittee)
01/11/2016	Portland Rotary Club
02/08/2016	Portland Integrated School District

Appendix E: Community Events Attended

Public outreach at fifteen events during the summer of 2015 included project introduction and overview, distribution of informational flyers, and in-depth interviews with receptive participants. The intent was to reach a greater diversity of community members than would typically have participated by attending a public meeting.

Date	Event	Reached	Note
05/16/2015	Beach to Bay	100	Flyers & people
05/27/2015	Farmer's Market	15	Flyers & people
05/29/2015	A La Mano (Food Truck Fridays)	50	Flyers & people
05/30/2015	It's Your Life 5K	20	Flyers & people
06/05/2015	Art Walk	38	Flyers & people; 8 In-depth Interviews
06/13/2015	Juneteenth	35	Flyers & people; 5 In-depth Interviews
06/13/2015	Portland Dog Park / 5K Bike Race & Pet Karnival	25	Flyers & people; 5 In-depth Interviews
06/17/2015	CC7D Brew & Film Crews	50	Flyers & people
06/19/2015	Olympic Day Celebration	43	Flyers & people; 1 In-depth Interviews
06/19/2015	Garcia Library	32	Flyers & people; 1 In-depth Interviews
06/20/2015	Stache Dash 5K	50	Flyers & people; 6 In-depth Interviews
06/23/2015	Hooks Baseball Game (Tuesday night)	120	Flyers & people; 8 In-depth Interviews
06/24/2015	McDonald Library	–	Flyers
07/18/2015	Ride-In Theater	4	In-depth Interview
07/23/2015	BMX Interviews	20	Flyers & people; 2 In-depth Interviews

Appendix F: Poster and Flyer Locations

In an effort to supplement the outreach done at community events, flyers and posters were left at businesses and organizations around the project area to bring awareness to the public about the project. At each location, stacks of 10 or more flyers were left in easily accessible areas. If a bulletin board or poster area had room, a poster was left as well. Locations were selected both to cover a wide geographic area and to target specific bike-friendly or bike-accessible businesses. Approximately 900 flyers were left at more than 50 businesses.

6 Points

Hester's

Bleu Frog Mercantile

Price's Chef Restaurant

Good Shepherd Resale

South Side

Natatorium

Brinca

Big Bowl Korean BBQ

Smoothie King

Flex Fit Gym

Gold's Gym

B&J Pizza

Fuzzy's Taco Shop

Goodwill

Small Planet

RowZone

Siagon Café

Alameda & Texan Trail

Island Yogurt Shop

Freedom Fitness

Marble Slab

Downtown

Executive Surf Club

House of Rock

Axis Tattoo

Youga Yoga

All Good Downtown Fitness

Carl's Fine Flowers

Hester's By the Bay

Art Museum

Portland/Gregory

Hibbett Sports

Gregory City Hall

Academy

City Pool & Community Center

Portland First United Methodist Church

La Iguana Restaurant

Portland City Hall

West Side

Boys & Girls Club Greenwood

La Michoacana

McDonald Library

Flour Bluff

La Playa

Fun Trackers

La Palma

Coffee Waves

Flex Fit 24/7

Papa Murphys

Other

Colier Pool

HEB Pool

Greenwood Pool

Joint Venture Theads

Garcia Library

La Retama Library

Neyland Library

Harte Library

Hopkins Library

Flyer Sample

EXHIBIT A

Appendix G: Interview Protocol

What is your primary reason for riding a bicycle?

- Transportation
- Recreation
- Exercise
- Other _____

How often do you ride a bicycle?

- Every day
- At lease once a week
- 1-4 times a month
- Less than a dozen times yearly
- I do not use a bike

Where do you ride your bicycle?

- Streets
- Destinations
- On street or on sidwalk How

many miles do you typically ride to get to your job/destination?

Why do you use a bike for transportation as opposed to a car or public transportation?

What improvements do you think could be made to make your commute easier?

What improvements do you think could be made to encourage more people to use bicycling as a form of transportation?

How accurately does the following statement describe your vision for the future of your community? (Select one)

The urban area of the Coastal Bend is a place where walking and biking are important to the community culture and represent practical, safe travel and recreation options for residents and visitors of all levels of ability.

- This statement does not describe my vision for the future of my community at all
- This statement partially describes my vision for the future of my community
- This statement accurately describes my vision for the future of my community

In which zip code do you live? _____

How old are you? _____

Are you a full time student? Yes____No ____

Appendix G: List of Interviewees

Interview	Gender	Age	Student/ Non-Student	Zip	Interview	Gender	Age	Student/ Non-Student	Zip
1	M	65	N	78374	26	M	39	N	78413
2	F	65	N	78374	27	M	29	N	78413
3	F	12	S	78374	28	M	28	N	78413
4	F	45	N	78374	29	F	28	N	78413
5	F	42	N	78374	30	M	54	N	78414
6	F	65	N	78374	31	F	45	N	78414
7	F	38	N	78374	32	M	72	N	78414
8	M	12	S	78374	33	F	35	N	78414
9	F	12	S	78374	34	M	43	N	78414
10	M	10	S	78374	35	F	11	S	78414
11	F	35	N	78404	36	F	63	N	78414
12	F	46	N	78404	37	M	50	N	78414
13	M	53	N	78404	38	M	23	N	78415
14	M	14	S	78405	39	M	23	N	78415
15	M	43	N	78405	40	M	35	N	78415
16	F	56	N	78410	41	F	19	S	78416
17	F	54	N	78411	42	M	8	Y	78416
18	M	43	N	78411	43	M	14	Y	78416
19	M	63	N	78411	44	F	65	N	78418
20	F	25	S	78412	45	M	63	N	78418
21	M	16	S	78412	46	M	33	3	78418
22	M	16	S	78412	47	M	5	S	78418
23	M	17	S	78412	48	M	24	S	78418
24	F	17	S	78412	49	M	34	N	78418
25	M	22	N	78413	50	M	15	S	–

EXHIBIT A

Appendix H: Targeted Vetting of Preliminary Bicycle Mobility Network

Date	Entity	Delegate	Title
05/16/2015	City of Portland	Jamie Pyle, P.E.	Director of Public Works
	City of Portland	Brian DeLatte, P.E.	Assistant City Manager
09/04/2015	Convention & Visitors Bureau	Elvia Aguilar	Director of Brand Management
	Downtown Management District	Terry Sweeney	Executive Manager
	SEA District Association	Bill Durrill	General Manager
09/17/2015	North Beach Community Association	Carrie Robertson Meyer	President
09/21/2015	Texas A&M University Corpus Christi	Dr. Amanda Drum	Executive Director, Strategic Engagement & Initiatives
	Regional Transportation Authority	Gordon Robinson, PMP	Director of Planning
	City of Corpus Christi	Scott Harris, P.E.	Chair, Transportation Advisory Commission
	City of Corpus Christi	Gretchen Arnold	Chair, Bicycle & Pedestrian Subcommittee
09/23/2015	City of Corpus Christi	Tom Niskala	Consultant, Capital Programs
	City of Corpus Christi	Sara Munoz	Senior Engineer, Traffic Engineering
	City of Corpus Christi	Dr. Raymond Chong, P.E.	Director of Traffic Engineering
	City of Corpus Christi	Stacie Talbert Anaya	Interim Director, Parks & Recreation
	City of Corpus Christi	Annika G. Yankee	Senior Project Manager
	City of Corpus Christi	Mark Schauer	Assistant Chief of Investigations Bureau
	City of Corpus Christi	Ronald Zirbes	Senior Officer
	City of Corpus Christi	Jerry Shoemaker, P.E.	Senior Program Manager, Capital Programs
	City of Corpus Christi	Andy Leal, P.E.	Assistant Director, Street Operations
Invite Sent	City of Corpus Christi	Greg Smith	Chair, Island Strategic Action Committee
Invite Sent	San Patricio County EDC	Becky McMillon	Director of Finance
	City of Gregory	Chief Robert Meager	Chief of Police
Invite Sent	NAS/CCAD	Col. Pouge	Email request. graphic sent

Appendix I: Sample Resolution in Support of Implementation of the Bicycle Mobility Plan

1. WHEREAS, That the [Adopting Body] has a vision that the community is a place where walking and biking are integral to the community culture and represent viable, safe travel and recreation options for residents and visitors of diverse abilities and

2. WHEREAS, the [Adopting Body] has a goal of improving the health of its residents and the air quality of the community;

3. WHEREAS, both obesity and insufficient physical activity are creating significant health problems for Americans, leading to increased risk of heart disease, diabetes, endometrial, breast, and colon cancers, high blood pressure, high cholesterol, stroke, liver and gallbladder disease, sleep apnea, respiratory problems, and osteoarthritis;[1]

4. WHEREAS, a primary contributor to obesity is lack of sufficient physical activity; [2]

5. WHEREAS, bicycling is a safe, low-impact aerobic activity, enjoyed by millions of Americans, and provides a convenient opportunity to obtain physical exercise while traveling to work, shops, restaurants, and many other common destinations;[3]

6. WHEREAS, bicycling frequently provides a practical alternative to driving, since 28 percent of all car trips are to destinations within one mile of home,[4] 40 percent of all trips are two miles or less from home,[5] and around 30 percent of commuters travel five miles or less to work;[6]

7. WHEREAS, bicycling can greatly increase access to important services and provide more range of travel for people who do not own or cannot operate a car, including our increasing aging population, children and youth, people who are low-income, and those with disabilities or medical restrictions on driving due to issues like seizure disorders or vision impairments; [7]

8. WHEREAS, replacing car trips with bicycle trips improves air quality by reducing the amount of carbon dioxide emissions, in light of the fact that transportation sources account for nearly one third of all such emissions in the United States, an average motor vehicle emits 8.8 kilograms of carbon dioxide per gallon of gasoline that it burns, and biking emits essentially none;[8]

9. WHEREAS, asthma rates are at their highest levels ever, with nearly one in 10 children and almost one in 12 Americans of all ages suffering from asthma, and replacing motor vehicle trips with bicycle trips reduces the pollutants that directly contribute to asthma in both children and adults;[9]

10. WHEREAS, replacing car trips with bicycle trips reduces congestion and wear and tear on roads, improving quality of life for residents and providing a financial benefit for [Jurisdiction];

11. WHEREAS, providing safe, convenient, and adequate bicycle parking is necessary to encourage increased use of bicycles as a form of transportation; [10]

EXHIBIT A

Appendix I: Sample Resolution (con't)

12. WHEREAS, cities that have improved bicycle infrastructure, including parking, have seen a measurable increase in bicycle trips;[11]

13. WHEREAS, in light of the foregoing, [Adopting Body] desires to adopt and implement the Strategic Plan for Active Mobility to (1) develop of a cohesive, strategic network of bicycle facilities that accommodates a diversity of riders (2) enhance bicycle mode share for trips of all types (3) promote health and wellness through bicycling, and (4) enhance safety for bicyclists.

SECTION 1. The City Council of the City of Corpus Christi, Texas supports the implementation of the Corpus Christi's Metropolitan Planning Organization's Strategic Plan for Active Mobility.

NOW THEREFORE BE IT RESOLVED, BY THE [ADOPTING BODY]:

Attest:

City of Corpus Christi

Rebecca Huerta, City Secretary

Nelda Martinez, Mayor

---

[1] Centers for Disease Control and Prevention. *Overweight and Obesity: Health Consequences.* Atlanta: CDC, 2012. Available at: www.cdc.gov/obesity/causes/health.html.

[2] Centers for Disease Control and Prevention. *Overweight and Obesity: Causes and Consequences.* Atlanta: CDC, 2012. Available at: www.cdc.gov/obesity/causes/index.html.

[3] *See* Active Living Research. *Active Transportation: Making the Link from Transportation to Physical Activity and Obesity, Research Brief.* 2009. Available at: www.activelivingresearch.org/files/ALR_Brief_ActiveTransportation.pdf.

[4] *See* America Bikes, League of American Bicyclists. *Factsheet: National Household Travel Survey.* Available at: www.bikeleague.org/resources/reports/pdfs/nhts09.pdf; *see also* T. Litman. *"Short and Sweet Analysis of Shorter Trips Using National Personal Travel Survey Data."* Victoria Transport Policy Institute (February 22, 2012) at 3. (41% of all trips are 3 miles or less (and 67% of those are by car), and 19% of all trips are 1 mile or less (and 42% of those are by car)). Available at: www.vtpi.org/short_sweet.pdf.

[5] *See* America Bikes, League of American Bicyclists. *Factsheet: National Household Travel Survey.* Available at: www.bikeleague.org/resources/reports/pdfs/nhts09.pdf; *see also* Rails-to-Trails Conservancy. *Turning Potential into Practice: Walking and Biking as Mainstream Transportation Choices.* 2007. Available at: www.railstotrails.org/resources/documents/whatwedo/TrailLink%2007%20Program_Mobility.pdf (citing FHWA 2006).

[6] Research and Innovative Technology Administration, Bureau of Transportation Statistics. "Figure 2 On a typical day, how many miles one-way do you travel from home to work?" *Omnistats*, 3(4): 2003. Available at: www.bts.gov/publications/omnistats/volume_03_issue_04/html/figure_02.html.

[7] US Department of Transportation, Federal Highway Administration. *Federal Highway Administration University Course on Bicycle and Pedestrian Transportation, Lesson 8: Pedestrian Characteristics.* July 2006, p. 1-10. Available at: www.fhwa.dot.gov/publications/research/safety/pedbike/05085/pdf/lesson8lo.pdf; Office of the Prime Minister, Social Exclusion Unit. *Making the Connections: Final Report on Transport and Social Exclusion*. Feb. 2003, p. 1-7. Available at: http://webarchive.nationalarchives.gov.uk/+/http://www.cabinetoffice.gov.uk/media/cabinetoffice/social_exclusion_task_force/assets/publications_1997_to_2006/making_transport_2003.pdf.

[8] U.S. Department of Transportation, Federal Highway Administration. *The 'Carbon Footprint' of Daily Travel: NHTS Brief.* 2009. Available at: http://nhts.ornl.gov/briefs/Carbon%20Footprint%20of%20Travel.pdf.

[9] *See*, *e.g.,* C. Paige. "Pediatric Asthma Linked to Car Emissions." *Boston Globe*, March 2, 2008. Available at: www.boston.com/news/local/articles/2008/03/02/pediatric_asthma_linked_to_car_emissions/; Environmental Working Group's Auto Asthma Index (and sources cited therein). Available at: www.ewg.org/sites/asthmaindex/about/; R. Rabin. "Asthma Rate Rises Sharply in U.S., Government Says." *New*

[10] *See, e.g.*, Vanderbilt T. "What Would Get Americans Biking to Work? Decent Parking." *Slate*, Aug. 17, 2009. Available at: www.slate.com/id/2225511/; *see also, e.g.,* City of New York Department of City Planning, Transportation Division. *The New York City Bicycle Survey: A Report Based on the Online Public Opinion Questionnaire Conducted for Bike Month 2006.* 2007. Available at: www.nyc.gov/html/dcp/pdf/transportation/bike_survey.pdf at p.15 (NYC commuters report a lack of safe storage for bicycles as a leading reason for not commuting by bike).

[11] *See, e.g.,* Marin County Bicycle Coalition *Economic Benefits of Bicycling in Urban Environments* . Available at: www.marinbike.org/Resources/EconomicBenefitsOfBicycling.pdf (citing a 118%-125% increase in bicycle use in Marin County over the last ten years due to improvements in infrastructure, including pathways, shared use lanes, intersection improvements and bicycle parking; and pointing to increased revenue due to retail purchases by bicyclists with adequate access to infrastructure and parking*; ee also* J. Dill and T. Carr. "If You Build Them, Commuters Will Use Them - Another Look." Transportation Research Board 2003 Annual Meeting (cities with higher levels of bicycle infrastructure (bike lanes and paths) witnessed higher levels of bicycle commuting). Available at: www.palgrave-journals.com/jphp/journal/v30/nS1/full/jphp200856a.html.

Appendix J: Drive Kind Ride Kind Program Guide

DriveKind RideKind

Our Mission:
To educate and inspire all road users toward safe behavioral change and to encourage personal responsibility.

Please BE KIND to Cyclists is pleased to add to your instructional toolbox, an educational video promoting safety for both motorists and cyclists.

This video, titled **DriveKind RideKind**, was jointly developed by Please BE KIND to Cyclists and the **Texas Department of Transportation (TxDOT)** to promote safe driving practices by motorists as they share Texas roads with vulnerable road users such as cyclists and pedestrians.

Please BE KIND to Cyclists developed the DriveKind RideKind video under a TxDOT grant, specifically for: driver education instruction and schools, defensive driving classes, commercial driving schools, law enforcement academies in Texas, as well as the general public.

The DriveKind RideKind video is correlated to the Texas Education Agency's (TEA) Program of Organized Instruction for Driver Education and Traffic Safety.

Instructors, school owners, administrators and the general public are welcome and encouraged to view, download and share the DriveKind RideKind video at no cost at **DriveKindRideKind.org**.

1

Curriculum - Program Guide

Section 1 : A True Story
Section 2: Awareness
Section 3: Infrastructure
Section 4: Distractions
Section 5: Crashes
Section 6: Sharing the Road
Section 7: Personal Responsibility

TEA Program of Organized Instruction (POI) for Driver Education and Traffic Safety

POI 1.1.1: Introduction (legal and responsible reduced-risk driving practices)
POI 1.1.3: Right-of-Way
POI 1.1.5: Controlling Traffic Flow
POI 1.1.7: Cooperating with Other Roadway Users
POI 3.1.1: Visual Attention, Mental Attention and Communication
POI 4.1.1: Driving Practices
POI 4.1.2: Fatigue
POI 4.1.3: Aggressive Driving
POI 5.1.1: Risk Factors
POI 5.1.2: Space Management
POI 6.1.1: Environmental Characteristics
POI 7.1.1: Distractions
POI 7.1.2: Multi-task Performances
POI 9.1.1: Adverse Weather and Reduced Visibility Conditions
POI 12.1: Personal Responsibility

2

Resources

Please BE KIND to Cyclists
www.BEKINDtoCyclists.org
www.facebook.com/PleaseBEKINDtoCyclists

Texas Department of Transportation, Driver Resources
www.txdot.gov/driver.html

Texas Transportation Code, Title 7. Vehicles & Traffic, Sec. 551, "Operation of Bicycles..."
www.statutes.legis.state.tx.us/docs/tn/htm/tn.551.htm

National Highway Traffic Safety Administration, Bicycle Resources
www.nhtsa.gov/Bicycles

Texas Department of Transportation, Bicycle Resources
www.txdot.gov/driver/share-road/bicycles.html

Texas Safe Routes to Schools
www.txsaferoutes.org/

Texas Education Agency's Education Service Center, Region XIII, Driver Training Division
www4.esc13.net/drivers/

Texas Education Agency's Program of Organized Instruction for Driver Education and Traffic Safety - November 2009
www4.esc13.net/uploads/drivers/docs/instructionalobjectives_1.pdf

Texas Commission on Law Enforcement, Academy Training Providers
www.tcleose.state.tx.us/content/training_providers_academy.cfm

Texas Department of Motor Vehicles Commercial Driver Education
www.dmv.org/tx-texas/cdl-education.php

Texas Department of Public Safety Driver Licensing
www.txdps.state.tx.us/DriverLicense/

Texas Department of Public Safety Commercial Driver Licensing
www.txdps.state.tx.us/DriverLicense/CommercialLicense.htm

Official US Government Website on Distracted Driving
Distraction.Gov

Smart Growth America, Dangerous by Design 2014
www.smartgrowthamerica.org/research/dangerous-by-design/dbd2014/regional-data/

10

Appendix J: Drive Kind Ride Kind Program Guide (con't)

Appendix K: Model Bicycle Parking Ordinance

Developed by ChangeLab Solution
Edited for use by Corpus Christi Metropolitan Planning Organization

TABLE OF CONTENTS

Appendix K: Model Bicycle Parking Ordinance (con't)

An Ordinance of [Jurisdiction (e.g. the City of_____)] Providing for Bicycle Parking and Adding to the [Jurisdiction] [Zoning/Planning/Municipal/County] Code.

SECTION I.
[ARTICLE/CHAPTER] OF THE [JURISDICTION] [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ AS FOLLOWS:

"BICYCLE PARKING REQUIREMENTS FOR NEW DEVELOPMENT AND MAJOR RENOVATIONS."

§ 1. PURPOSE: The purpose of this section is to provide sufficient safe and convenient bicycle parking in New Developments and Major Renovations to encourage bicycling as a form of transportation, reducing traffic congestion, air pollution, wear and tear on roads, and use of fossil fuels, while fostering healthy physical activity.

§ 2. DEFINITIONS: Unless the context clearly requires otherwise, the following terms shall have the following meanings:

(A) "Bicycle Parking Space": A physical space that is a minimum of [2.5] feet in width by [6] feet in length with a vertical clearance of at least [7] feet that allows for the parking of one bicycle, and if located outside, is hard surfaced and well drained.

(B) "Bike Locker": A lockable enclosure consistent with industry standards that (i) can hold one bicycle, (ii) is made of durable material, (iii) is designed to fully protect the bicycle against [insert specific local weather concerns, e.g.: rain, snow, ice, high winds], (iv) provides secure protection from theft, (v) opens sufficiently to allow bicyclists easy access, and (vi) is of a character and color that adds aesthetically to the immediate environment.

(C) "Bike Rack": A device consistent with industry standards that (i) is capable of supporting a bicycle in a stable position, (ii) is made of durable materials, (iii) is no less than [36] inches tall (from base to top of rack) and no less than [1.5] feet in length, (iv) permits the securing of the bicycle frame and one wheel with a U-shaped lock, and (v) is of a character and color that adds aesthetically to the immediate environment.

(D) "In-Street Bicycle Parking": A portion of a vehicle parking lane or other area on a roadway that is set aside for the parking of bicycles**.**

(E) "Long-Term Bicycle Parking": Bicycle parking that is primarily intended for bicyclists who need bicycle parking for more than 3 hours and is fully protected from the weather.

(F) "Long-Term Bicycle Parking Space": A Bicycle Parking Space that provides Long-Term Bicycle Parking.

(G) "Major Renovation": Any physical improvement of an existing building or structure, excluding single-family dwellings and multi-family dwellings with 4 or fewer units, that requires a building permit and has an estimated construction cost equal to or exceeding [$250,000], excluding cost of (1) compliance with accessibility requirements for individuals with disabilities under governing federal, state, or local law, and (2) seismic or other structural safety retrofit.

(H) "New Development": Any construction of a new building or facility that requires a building permit, excluding single-family dwellings and multi-family dwellings with 4 or less units.

(I) "Short-Term Bicycle Parking": Bicycle parking primarily intended for bicyclists who need bicycle parking for 3 hours or less.

(J) "Short-Term Bicycle Parking Space": A Bicycle Parking Space that provides Short-Term Bicycle Parking.

§ 3. **BICYCLE PARKING SPACES REQUIRED**: Short-Term and Long-Term Bicycle Parking Spaces shall be required for all New Development and Major Renovations.

(A) **Required Number of Bicycle Parking Spaces**: All New Development and Major Renovations shall provide at least the number of Short-Term and Long-Term Bicycle Parking Spaces identified in the table in this subsection [Section II, § 3(A)]; however, the number shall not fall below a minimum of [2] Short-Term and [2] Long-Term Bicycle Parking Spaces, regardless of other provisions herein, except that multi-family dwellings that have private garages (or equivalent separate storage space for each unit) are not required to provide any Long-Term Bicycle Parking Spaces. Where the calculation of total required spaces results in a fractional number, the next highest whole number shall be used. Up to half of the required Short-Term Bicycle Parking Spaces may be replaced with Long-Term Bicycle Parking Spaces.

General Use Category	Specific Use	Number of Short-Term Bicycle Parking Spaces Required	Number of Long-Term Bicycle Parking Spaces Required
Residential	Multi-Family Dwelling with more than 4 units: (a) *without* private garage or equivalent separate storage space for each unit (b) *with* private garage or equivalent separate storage space for each unit	[.05] per bedroom or [1] per [20] units or [.05] per bedroom or [1] per [20] units	[.05] per bedroom or [1-4] per [4] units None

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General Use Category	Specific Use	Number of Short-Term Bicycle Parking Spaces Required	Number of Long-Term Bicycle Parking Spaces Required
Commercial	Office Building	[1] per each [20,000] sq.ft. of floor area	[1-1.5] per [10,000] sq.ft. of floor area
	General Retail	[1] per each [5,000] sq.ft. of floor area	[1] per [10,000-12,000] sq.ft. of floor area
	Grocery	[1] per each [2,000] sq.ft. of floor area	[1] per [10,000-12,000] sq.ft. of floor area
	Restaurant	[1] per each [2,000] sq.ft. of floor area	[1] per [10,000-12,000] sq.ft. of floor area
	Parking Garage	[2] spaces	[1] per [20] motor vehicle spaces
	Outdoor Parking Lot	[1] per [20] motor vehicle spaces	[2] spaces
Civic	Non-assembly cultural (e.g., library, government buildings)	[1] per each [8,000 -10,000] sq. ft. of floor area	[1 -1.5] per each [10-20] employees
	Assembly (e.g., church, theater, stadiums, parks)	Spaces for [2-5] per cent of maximum expected daily attendance	[1- 1.5] per each [20] employees
	Schools (K-12)	[1] per each [20] students of planned capacity	[1] per each [10-20] employees and [1] per each [20] students of planned capacity for grades 6-12
	Colleges and Universities	[1] per each [20] students of planned capacity	[1] per each [10-20] employees and [1] per each [10] students of planned capacity or [1] per each [20,000] sq. feet of floor area, whichever is greater
Industrial	Manufacturing and Production, Agriculture	[2] spaces (Can be increased at discretion of Planning/Zoning Administrator)	[1] per [20] employees

(B) If the New Development or Major Renovation is for a use not listed in the above table, the number of Bicycle Parking Spaces required shall be calculated on the basis of a similar use, as determined by the [Planning Director/Zoning Administrator].

(C) If the Major Renovation has an estimated construction cost of between [$250,000] and [$1,000,000], excluding the cost of (1) compliance with accessibility requirements for individuals with disabilities under governing federal, state, or local law, and (2) seismic or other structural safety retrofit, the number of Bicycle Parking Spaces required by subsections [Section II, § (3)(A)-(B)], shall be reduced by 50 percent; however, the minimum requirement of [2] short-term and [2] long-term bicycle parking spaces shall still apply.

§ 4. BUILDING PERMITS AND CERTIFICATES OF OCCUPANCY: Prior to issuance of a building permit for New Development or a Major Renovation, the submitted plans must include specific provisions for bicycle parking that are consistent with the requirements of this Ordinance. No certificate of occupancy for said building permit shall issue at the conclusion of the project until [Jurisdiction] finds that the applicable provisions of this Ordinance have been complied with.

§ 5. EXISTING BICYCLE PARKING AFFECTED BY CONSTRUCTION: In the event that the [Jurisdiction] has authorized a permit holder to remove existing bicycle parking in the public right-of-way due to construction, the permit holder shall replace such bicycle parking no later than the date of completion of the construction. At least [7] days prior to removal of such bicycle parking, the permit holder shall post, in the immediate vicinity of the bicycle parking area, a weather-proof notice, with a minimum type size of [1] inch, specifying the date of removal. In the event that any bicycles remain parked on the date of the removal, such bicycles shall be stored for a reasonable period, not less than [45] days, and a conspicuous, weather-proof notice shall be placed as close as feasible to the site of the removed bicycle parking containing information as to how to retrieve a removed bicycle.

If bicycle parking is likely to be removed, pursuant to this section, for more than [120] days, it shall, to the extent possible, be temporarily re-sited, in coordination with [insert appropriate department, such as Department of Public Works], to a location as close to the original site as feasible, pending completion of the construction. If the temporary site is not clearly visible from the original site, the permit holder shall post a conspicuous, weather-proof notice in the immediate vicinity of the original site informing bicyclists of the location of the temporary site.

§ 6. BICYCLE PARKING STANDARDS - GENERAL:

(A) All Bicycle Parking Spaces shall be:

(1) well lit if accessible to the public or bicyclists after dark;

(2) located to ensure significant visibility by the public and building users, except in the case of Long-Term Bicycle Parking that is located in secured areas;

(3) accessible without climbing more than one step or going up or down a slope in excess of [12] percent, and via a route on the property that is designed to minimize conflicts with motor vehicles and pedestrians.

(B) All In-Street Bicycle Parking and Bicycle Parking Spaces located in a parking facility shall be:

(1) clearly marked; and

(2) separated from motor vehicles by some form of physical barrier (such as bollards, concrete or rubber curbing or pads, reflective wands, a wall, or a combination thereof) designed to adequately protect the safety of bicyclists and bicycles.

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(C) All Bike Racks shall be located at least [36] inches in all directions from any obstruction, including but not limited to other Bike Racks, walls, doors, posts, columns, or exterior or interior landscaping.

(D) Unless Bicycle Parking Spaces are clearly visible from an entrance, a sign indicating their location shall be prominently displayed outside the main entrance to the building or facility, and additional signs shall be provided as necessary to ensure easy way finding. A "Bicycle Parking" sign shall also be displayed on or adjacent to any indoor room or area designated for bicycle parking. All outdoor signs required by this subsection [Section II, § 6(D)] shall be no smaller than [12] x [18] inches and utilize a type size of at least [2] inches. All indoor signs required by this subsection [Section II, § 6(D)] shall be no smaller than [8] x [10] inches and utilize a type size of at least [5/8] inch.

§ 7. ADDITIONAL REQUIREMENTS APPLICABLE TO SHORT-TERM BICYCLE PARKING ONLY: All Short-Term Bicycle Parking Spaces shall contain Bike Racks and shall meet the following requirements, in addition to the requirements in [Section II, § 3] above:

(A) Location:

(1) Short-Term Bicycle Parking must be located either (a) within [50] feet of the main public entrance of the building or facility, or (b) no further than the nearest motor vehicle parking space to the main public entrance (excluding parking for individuals with disabilities), whichever is closer. If the New Development or Major Renovation contains multiple buildings or facilities, the required Short-Term Bicycle Parking shall be distributed to maximize convenience and use.

(2) Short-Term Bicycle Parking Spaces may be located either (a) on-site or (b) in the public right-of-way (e.g., sidewalk or In-Street Bicycle Parking), provided that an encroachment permit is obtained for the installation and the installation meets all other requirements of [indicate the law governing encroachments on public rights-of-way]. If Bike Racks are located on public sidewalks, they must provide at least [5] feet of pedestrian clearance, and up to [6] feet where available, and be at least [2] feet from the curb.

(B) Bike Rack Requirements: Bike Racks used for Short-Term Bicycle Parking must be securely attached to concrete footings, a concrete sidewalk, or another comparably secure concrete surface, and made to withstand severe weather and permanent exposure to the elements.

§ 8. ADDITIONAL REQUIREMENTS APPLICABLE TO LONG-TERM BICYCLE PARKING ONLY: Long-Term Bicycle Parking shall be provided in either (1) Bike Lockers or (2) indoor rooms or areas specifically designated for bicycle parking (including designated areas of an indoor parking facility), and shall satisfy the following requirements, in addition to those set forth in [Section II, § 3] above:

(A) Location: Long-Term Bicycle Parking may be located either on- or off-site. If located off-site, it shall be no more than [300 feet] from the main public entrance.

(B) Requirements for Indoor Long-Term Bicycle Parking: Long-Term Bicycle Parking located in designated indoor rooms or areas shall contain Bike Racks or comparable devices. Such rooms shall be designed to maximize visibility of all portions of the room or designated area from the entrance. Supplemental security measures (such as limiting access to a designated indoor bike parking room to persons with a key, smart card, or code) are optional.

§ 9. MOTOR VEHICLE PARKING SPACE CREDITS:

(A) For every [6] Bicycle Parking Spaces provided, the number of required off-street motor vehicle parking spaces (excluding parking spaces for individuals with disabilities) on a site shall be reduced by [1] space.

(B) To encourage the installation of showers at non-residential sites, the number of required off-street motor vehicle parking spaces for such sites shall be reduced as follows: A credit of [1] space shall be provided for the first shower installed, with additional off-street motor vehicle parking credits available at a rate of [1] space for each additional shower provided per [25] required Bicycle Parking Spaces. In order to claim these credits, which shall be in addition to the bicycle parking credits provided for in [Section II, § 9(A)], shower facilities must be readily available for use by all employees of the New Development or Major Renovation.

§ 10. (optional) MODIFICATION OF REQUIREMENTS: In the event that satisfying all of the requirements of [Section II] would be (a) infeasible due to the unique nature of the site, or (b) cause an unintended consequence that undermines the purpose of this Ordinance, a property owner (or designee) may submit a written request to the [Planning Director/Zoning Administrator/other Local Administrator or designee] for a modification of the requirements of [Section II]. The request shall state the specific reason(s) for the request, provide supporting documentation, and propose an alternative action that will allow the purposes of this Ordinance to be fulfilled as much as possible.

SECTION II

[ARTICLE/CHAPTER] OF THE [JURISDICTION] [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ "BICYCLE PARKING REQUIREMENTS FOR PARKING FACILITIES."

§ 1. PURPOSE: The purpose of [Section III] is to provide sufficient safe and convenient bicycle parking in parking facilities so as to encourage bicycling as a form of transportation, which in turn reduces traffic

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congestion, air pollution, wear and tear on roads, and use of fossil fuels, while fostering healthy physical activity.

§ 2. DEFINITIONS: The definitions set forth in [Section II, § 2] shall apply to [Section III], unless the context clearly requires otherwise.

§ 3. LICENSING CONDITIONS: As a condition of the issuance or renewal of a license required by the [Jurisdiction] for a parking facility, parking facilities shall provide [1] Bicycle Parking Space per each [20] vehicle parking spaces provided, with a minimum of [6] Bicycle Parking Spaces. Where the calculation of total required spaces results in a fractional number, the next highest whole number shall be used.

§ 4. LOCATION: All Bicycle Parking Spaces required by [Section III] shall be located in an area, preferably on the ground floor, that (i) can be conveniently and safely accessed by bicycle and by foot in a way that minimizes conflicts with motor vehicles, (ii) is not isolated, and (iii) maximizes visibility by parking facility patrons and attendants. If the licensed parking facility has multiple entrances, the required Bicycle Parking Spaces may be spread out among the multiple entrances. Bicycle Parking Spaces shall be accessible without climbing more than one step or going up or down a slope in excess of [12] percent.

§ 5. BIKE RACKS: All Bicycle Parking Spaces required by [Section III] shall contain Bike Racks and shall be well lit if accessible to the public or bicyclists after dark or if in an interior or darkened location. All Bike Racks shall also provide a clearance of at least [36] inches in all directions from any obstruction (including but not limited to other bike racks, walls, doors, posts, columns or landscaping), and shall be separated from vehicles by some form of physical barrier (such as bollards, concrete or rubber curbing or pads, reflective wands, a wall, or a combination thereof) designed to adequately protect the safety of bicyclists and bicycles. All Bike Racks located outdoors shall also be securely attached to concrete footings and made to withstand severe weather and permanent exposure to the elements.

§ 6. SIGNAGE: Parking facilities shall also install prominent signs, no smaller than [12] x [18] inches and utilizing a type size of at least [2] inches, in or near each entrance that advertise the availability of bicycle parking, and the location, if it is not visible from the entrance.

§ 7. CONTRACTUAL LIMITS ON LIABILITY: [Section III] shall not interfere with the rights of a parking facility owner (or designee) to enter into agreements with facility users or take other lawful measures to limit the parking facility's liability to users, including bicycle users, with respect to parking in the parking facility, provided that such agreements or measures are otherwise in accordance with the requirements of [this Ordinance] and the law.

SECTION III.

[ARTICLE/CHAPTER] OF THE [JURISDICTION] [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ "BICYCLE PARKING REQUIREMENTS FOR SPECIAL EVENTS INVOLVING STREET CLOSURES."

§ 1. PURPOSE: The purpose of [Section IV] is to provide sufficient safe and convenient bicycle parking at special events involving street closures to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, air pollution, wear and tear on roads, and use of fossil fuels, while fostering healthy physical activity.

§ 2. CONDITIONS ON STREET CLOSURE PERMITS: As a condition of a permit for the closure of a street for a special event in which the daily number of participants is projected to be [1,000] or more, monitored bicycle parking shall be provided by the event sponsor (or a designee) for at least [1] % of expected daily participants beginning [½ hour] before and ending [½ hour] after the time of the event each day of the event.

§ 3. REQUIREMENTS FOR MONITORED PARKING: Monitored bicycle parking shall include the presence, at all times, of one attendant, or more as needed, to receive bicycles, dispense claim checks, return bicycles, and provide security for all bicycles.

§ 4. LOCATION: All monitored bicycle parking shall be located within [500] feet of at least one regular entrance or access point to the event.

§ 5. PUBLICITY AND SIGNAGE: All publicity, including signs, for the event shall state the availability of monitored bicycle parking, its location, and cost, if any. All event maps shall include the location of monitored bicycle parking. If monitored bicycle parking is not within eyeshot of each entrance, signs shall be provided to ensure easy way finding.

§ 6. INSURANCE COVERAGE AND FEES: The event sponsor or designee must provide insurance coverage for the monitored bicycle parking in case of damaged or stolen bicycles, and may charge users a fee to cover the cost of providing the monitored parking.

SECTION IV.

[ARTICLE/CHAPTER] OF THE [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ "REMOVAL OF ABANDONED BICYCLES."

§ 1. PURPOSE: The purpose of [Section V] is to ensure the reasonably prompt removal of bicycles abandoned in Bicycle Parking Spaces so as to encourage bicycling as a form of transportation, which in turn reduces traffic congestion, air pollution, wear and tear on roads, and use of fossil fuels, while fostering healthy physical activity.

Appendix K: Model Bicycle Parking Ordinance (con't)

§ 2. DEFINITIONS: The definitions set forth in [Section II, § 2] of this Ordinance shall apply to [Section V], unless the context clearly requires otherwise.

§ 3. REMOVAL REQUIREMENTS: On [a quarterly basis], owners of property (or a designee) subject to [Sections II or III of this Ordinance] shall remove, from all Bicycle Parking Spaces associated with their property, including those located on the public right-of-way, bicycles that have been abandoned. A bicycle shall be deemed to be abandoned if it has not been removed after having been tagged with a notice of removal for [2] weeks for Short-Term Bicycle Parking Spaces or [4] weeks for Long-Term Bicycle Parking Spaces. However, a bicycle shall not be deemed to be abandoned if the bicyclist and property owner (or designee) have a written agreement regarding provision of long term storage covering the time period in question. Abandoned bicycles may be donated to non-profits that reuse bicycles or may be disposed of in any lawful manner.

SECTION V.

[ARTICLE/CHAPTER] OF THE [JURISDICTION] [ZONING/PLANNING/MUNICIPAL/COUNTY CODE] IS HEREBY ADDED TO READ "IMPLEMENTATION OF ORDINANCE."

§ 1. REGULATIONS AND PROCEDURES: The [Planning Director/Zoning Administrator and/or other relevant local administrator(s)] [is/are] authorized to promulgate new and amend existing rules, regulations, procedures or forms as necessary or appropriate to implement the provisions of [this Ordinance].

§ 2. TRAINING: [Jurisdiction] shall periodically make trainings or training materials available to planners and other employees involved in the implementation and enforcement of [this Ordinance].

§ 3. REPORTING: The [Planning Director/Zoning Administrator] shall provide an annual report to the [Adopting Body] regarding the implementation of this Ordinance that shall, at a minimum, include the following information relevant to the preceding year: (1) the number of Short and Long-Term Bicycle Parking Spaces created pursuant to [Sections II and III], and the number of events for which special event bicycle parking was provided under [Section IV] ; (2) (if applicable) a brief summary of each request for modification received and action taken in response thereto; and (3) any other information learned that would improve future implementation of [this Ordinance] and its goals.

SECTION VI. STATUTORY CONSTRUCTION:

(A) All ordinances or parts thereof that conflict or are inconsistent with this Ordinance are repealed to the extent necessary to give this Ordinance full force and effect.

(B) If any section or portion of this Ordinance is judicially invalidated for any reason, that portion shall be deemed a separate and independent provision, and such ruling shall not affect the validity of the remaining portions of this Ordinance.

SECTION VII.

EFFECTIVE DATE: This Ordinance shall be effective [upon passage (insert other date if desired)] ("Effective Date"), except that:

(A) [Section II, § 3] ("Bicycle Parking Spaces Required"), and [Section II, § 4] ("Building Permits and Certificates of Occupancy") shall only apply to New Development and Major Renovations for which a building permit is issued on or after [120] days from the Effective Date.

(B) [Section III] ("Bicycle Parking Requirements for Parking Facilities") shall apply to Parking Facilities that were licensed prior to the Effective Date, and have less than [180] days remaining on their license, as follows: [1/2] of the required number of Bicycle Parking Spaces shall be provided no later than [120] days from the expiration of the parking facility's license, with full implementation required no later than [180] days from the expiration of the parking facility's license.

(C) [Section IV] ("Bicycle Parking Requirements for Special Events Involving Street Closures") shall not apply to events for which the temporary street closure was authorized pursuant to an application submitted prior to the Effective Date.

EXHIBIT A

KEY MAP

Appendix L:
Priority Sport Routes for Road Bikes

Routes

- Central City Loop
- Lamar Park Group Guide
- North Side Circuit
- Oso Bay Loop

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Appendix L:
Priority Sport Routes for Road Bikes

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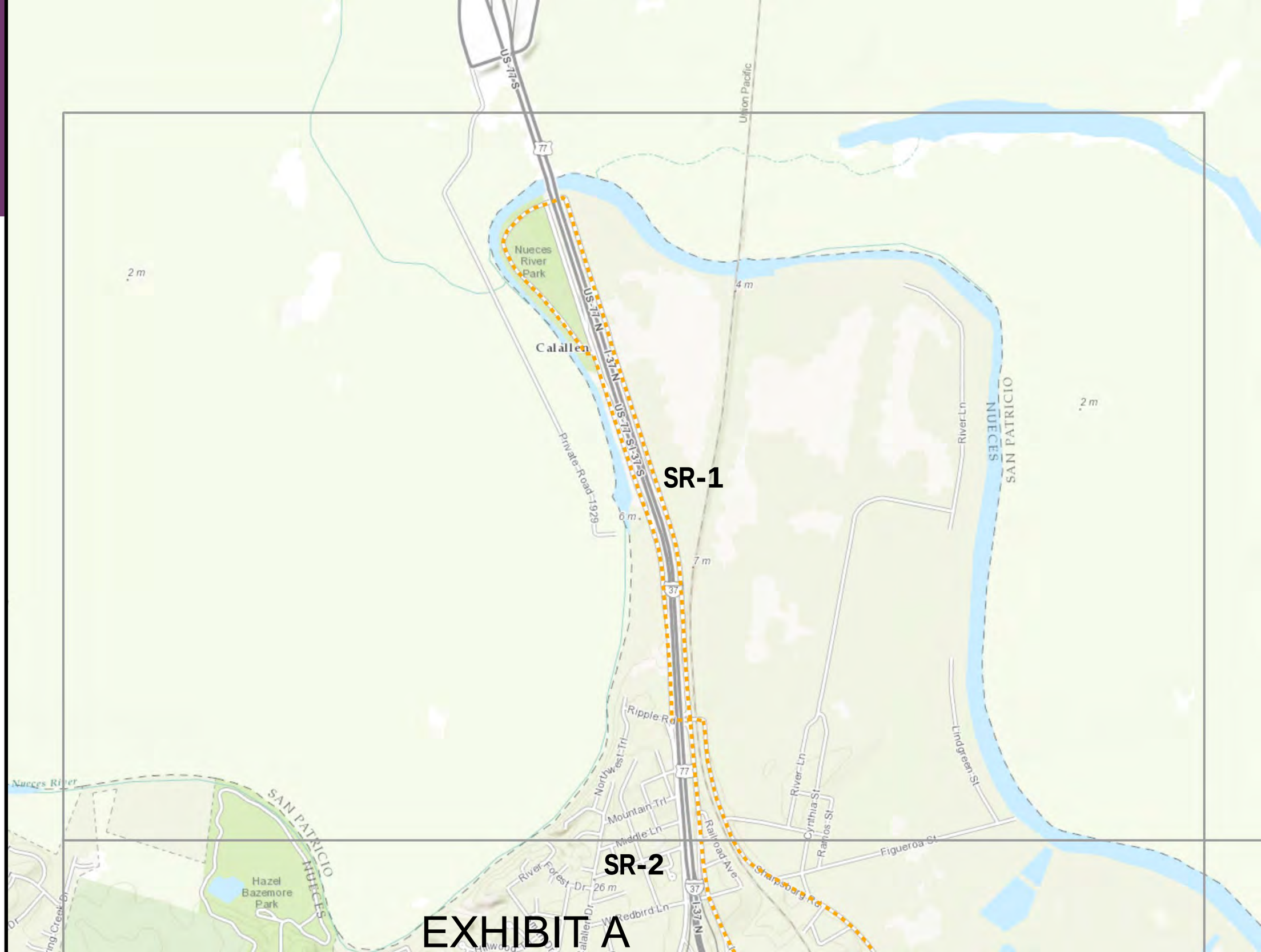

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NORTH

SR-1

SR-2

SR-3

SR-4

3 m

19 m

1 m

3 m

SAN PATRICIO
NUECES

Harney Rd

Castle Ridge Dr

Castle Valley Dr

Sessions Rd

Wellwood St

Allison Dr

Joe Fulton Intl Trade Corridor

Guth Rd

Hart Rd

Mesa Dr

Western Dr

Nolford Pl

Hart Cemetery

Church St

Wandering Creek Dr

Pernitas Creek Dr

Jackie Eden Field

Windsor St

Phillips Cir

Blades St

Brendel Ln

Butler Rd

Guess Dr

Violet Rd

Annaville Rd

Mayfield Dr

Leonard Dr

Birdwood Ln

Timbergrove Ln

Stonewall Blvd

Starlite Ln

McKinzie Rd

Deer Run Dr

I-37 N

I-37 S

37 Access Rd

Up River Rd

McKinzie Ln

River Run Blvd

Twin River Blvd

Hearns Ferry Rd

13 m

22 m

23 m

21 m

Costal Bend State Veterans Cemetery

Leopard St

Heizer Dr

Hurst Dr

Eastwood Dr

Redbud Dr

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EXHIBIT A

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The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

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