

EXHIBIT B

TAX INCREMENT REINVESTMENT ZONE #3

APPENDIX:

# TRAFFIC AND PLANNING ANALYSIS

CORPUS CHRISTI TX | APRIL 2018



RCLCO

Kimley»Horn

GATEWAY  
PLANNING

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# APPENDIX

# MARKET ANALYSIS

**PREPARED BY  
RCLCO REAL ESTATE ADVISORS**

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## OBJECTIVES

RCLCO’s objective with this engagement is to inform the City of Corpus Christi about strategic areas of focus and timing of downtown redevelopment and revitalization. In addition to infrastructure improvements, the City of Corpus Christi hopes to coordinate policy and redevelopment efforts to create a vibrant downtown environment. In order to accomplish this objective, RCLCO analyzed the following land uses to inform redevelopment:

- » Rental Residential
- » For-Sale Residential
- » Retail
- » Office

## ECONOMICS & DEMOGRAPHICS

### *Household Density*

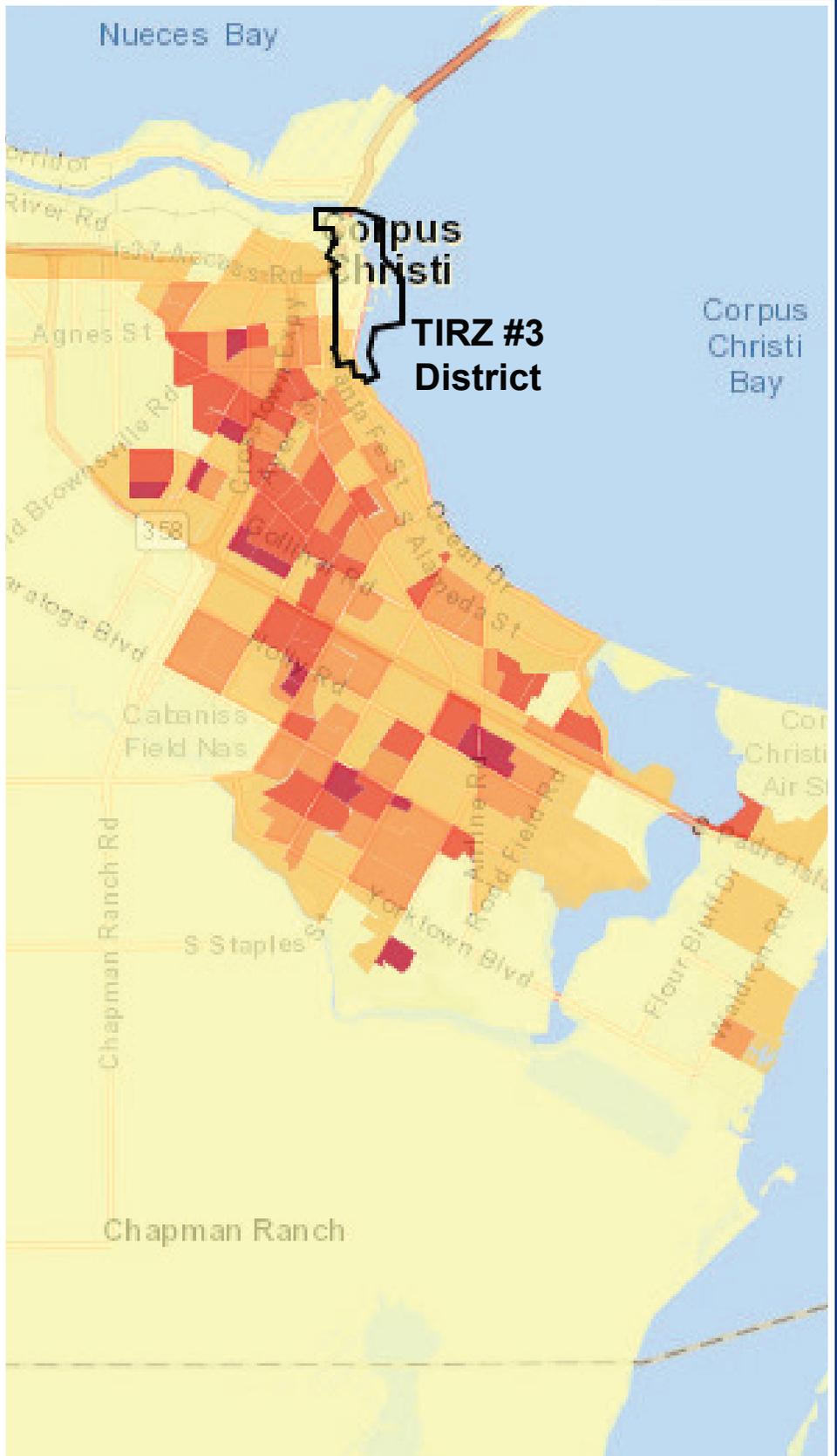
Over the past 10 years, the Corpus Christi Metropolitan Statistical Area (MSA) has grown at a moderate pace, with household growth averaging about 1.1% or roughly 1,850 new households, annually. Going forward, household growth in the MSA is expected to continue at this moderate pace.

In Corpus Christi, the majority of households are concentrated south of downtown along the Highway 358 corridor, between downtown and Flour Bluff. Unlike most other downtown districts, Downtown Corpus is one of the lowest household density blocks in the area, despite a relatively large concentration of employment (see page 32).

Currently, there are approximately 1,200 households in the Tax Increment Reinvestment Zone #3 (TIRZ #3) with significant opportunity for household growth downtown in the next five to ten years.

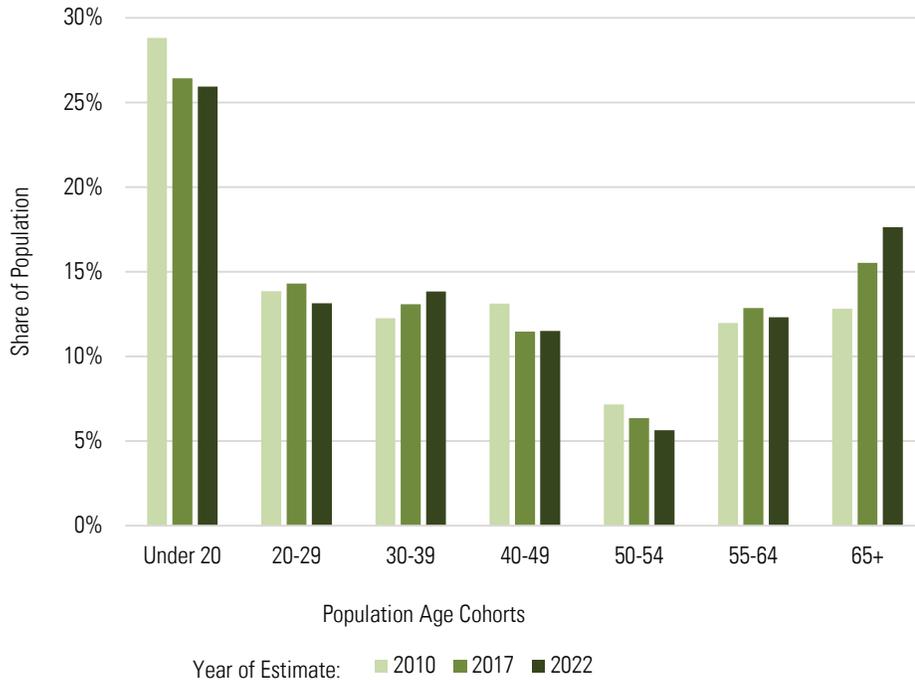
# HOUSEHOLD DENSITY BY BLOCK GROUP

Corpus Christi, TX MSA; 2017

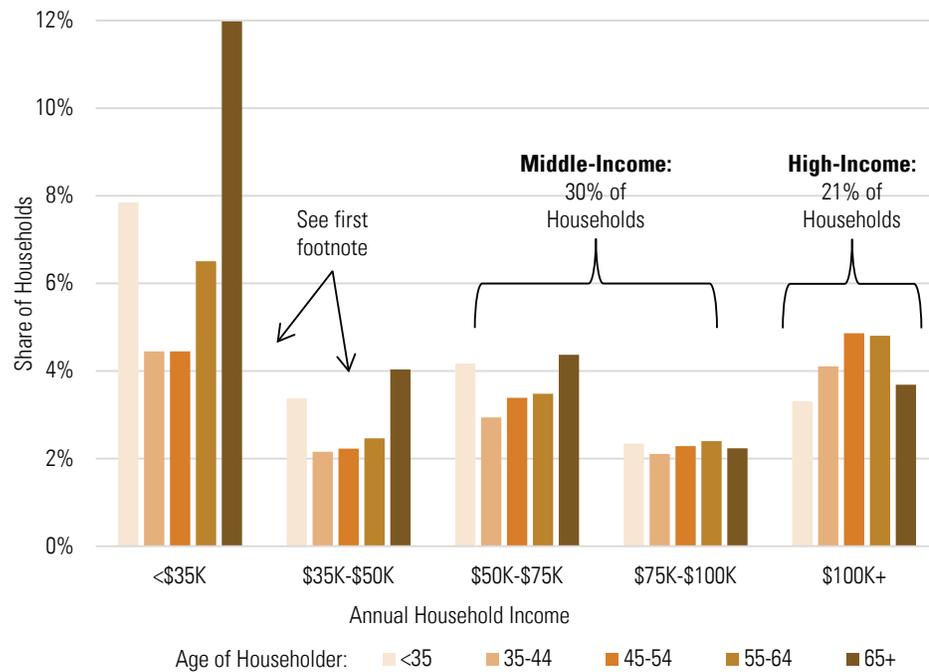


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Share of Total Population by Age Cohort and Year  
Corpus Christi, TX MSA; 2010, 2017, & 2022



Share of Total Population by Age Cohort and Year  
Corpus Christi, TX MSA; 2010, 2017, & 2022



### Age, Income, & Education

A increasing share of the Corpus Christi MSA population is aged 55+, suggesting growing support for age-targeted residential product to appeal to this demographic. Additionally, the only other demographic segment that is increasing proportionally is the 30-39 year old contingent. Though this group contains many family households, it also includes young professionals and pre-families which often demonstrate higher propensities for more mixed-use and walkable urban areas.

Though the large number of seniors and students skew the income distribution slightly lower, there is a high concentration of households are in middle-income brackets, with approximately 30% of MSA households earning between \$50,000 and \$100,000.<sup>1</sup> These income brackets can typically afford housing priced between \$140,000 and \$350,000<sup>2</sup> or \$1,250 to \$2,500<sup>3</sup> per month in rent, providing strong support for moderately priced housing options in central Corpus Christi.

**Education:** According to the Census Bureau, 27% of people over the age of 25 years old in the Corpus Christi MSA have an Associate's degree or higher, this is compared to the state of Texas with 35% of people having at least an Associate's degree.

<sup>1</sup> Though there is a large concentration of households earning below \$50K, this income bracket is largely comprised of households over the age of 55 who are retired (with income not indicative of household wealth) and households under the age of 35, which includes students.

<sup>2</sup> Based on mortgage payment sensitivities on a 30-year fixed rate mortgage with a 3.85% interest rate, 2.55% tax rate, 1.08% home insurance, 10%-20% down payment (1% PMI on loans under 20% down payment), and assumes typical households monthly debt payments of \$500.

<sup>3</sup> Rental rate range based on 30% of household income, conservative compared to the usual 3x multiple required by apartment operators.

SOURCE: Demographics - ESRI Business Analyst (2010, 2017, 2022); Mortgage assumptions- Nueces CAD, Redfin, Bankrate, CNBC, RCLCO

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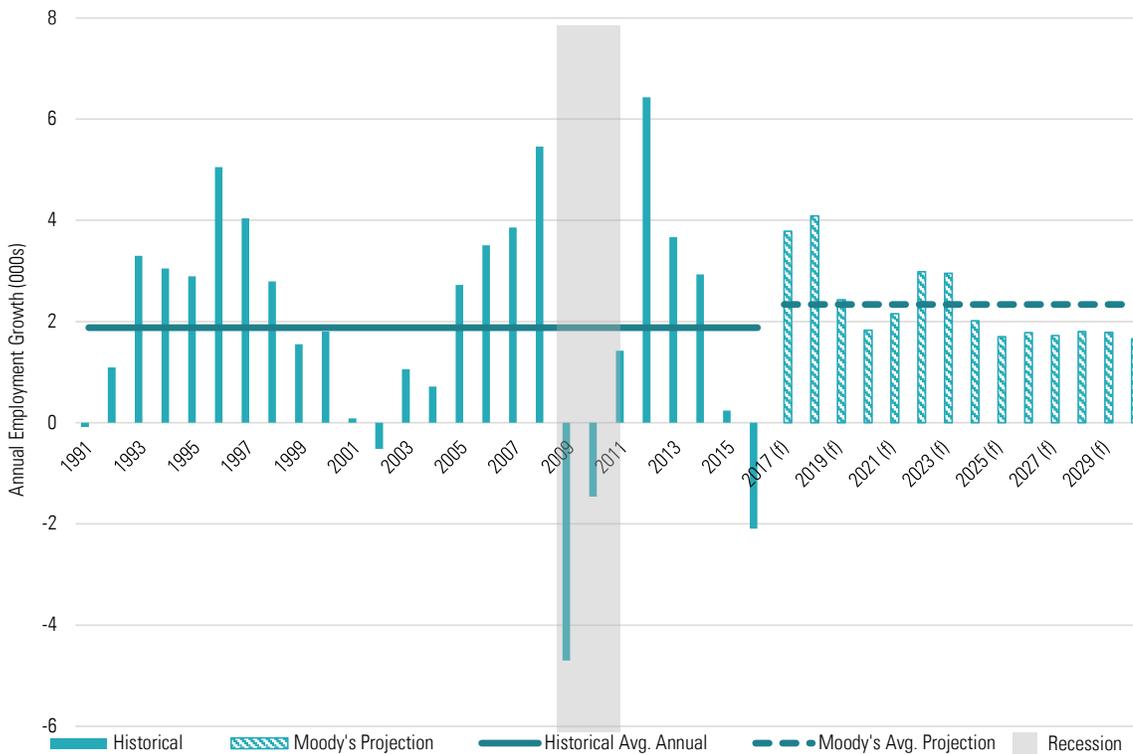
### Employment

The Corpus Christi MSA was one of the fastest metros to recover from the Great Recession\*, recapturing all job losses by April of 2012. Between 2011 and 2013, Corpus Christi added an annual average of over 5,000 jobs or a 2.8% compounding annual growth rate (CAGR), compared to the long-term average since 1990 of under 1,900 annual new jobs (1.2% CAGR).

However, the collapse of oil prices in 2014, with West Texas Intermediate (WTI) Crude Oil price dropping from \$106/barrel to a low of \$30.32/barrel in February of 2016 negatively affected the local economy with stagnate employment growth in 2015 and job losses in 2016. Corpus Christi's dependence on the oil and gas industry is apparent based on the strong linear relationship between WTI Crude Oil prices and MSA employment, as total MSA employment typically increases as crude oil prices rise.

Near-term employment projections are strong after Hurricane Harvey's landfall, with robust projected employment gains in the Education and Healthcare, Construction, and Professional and Business Services industries.

### Historical and Projected Employment Growth Corpus Christi MSA: 1990-2030



NOTE: \*According to the National Bureau of Economic Research, "a recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales." The financial crisis began in December 2007 and ended in June 2009, but the Great Recession is often associated with the period between 2007 and 2012.

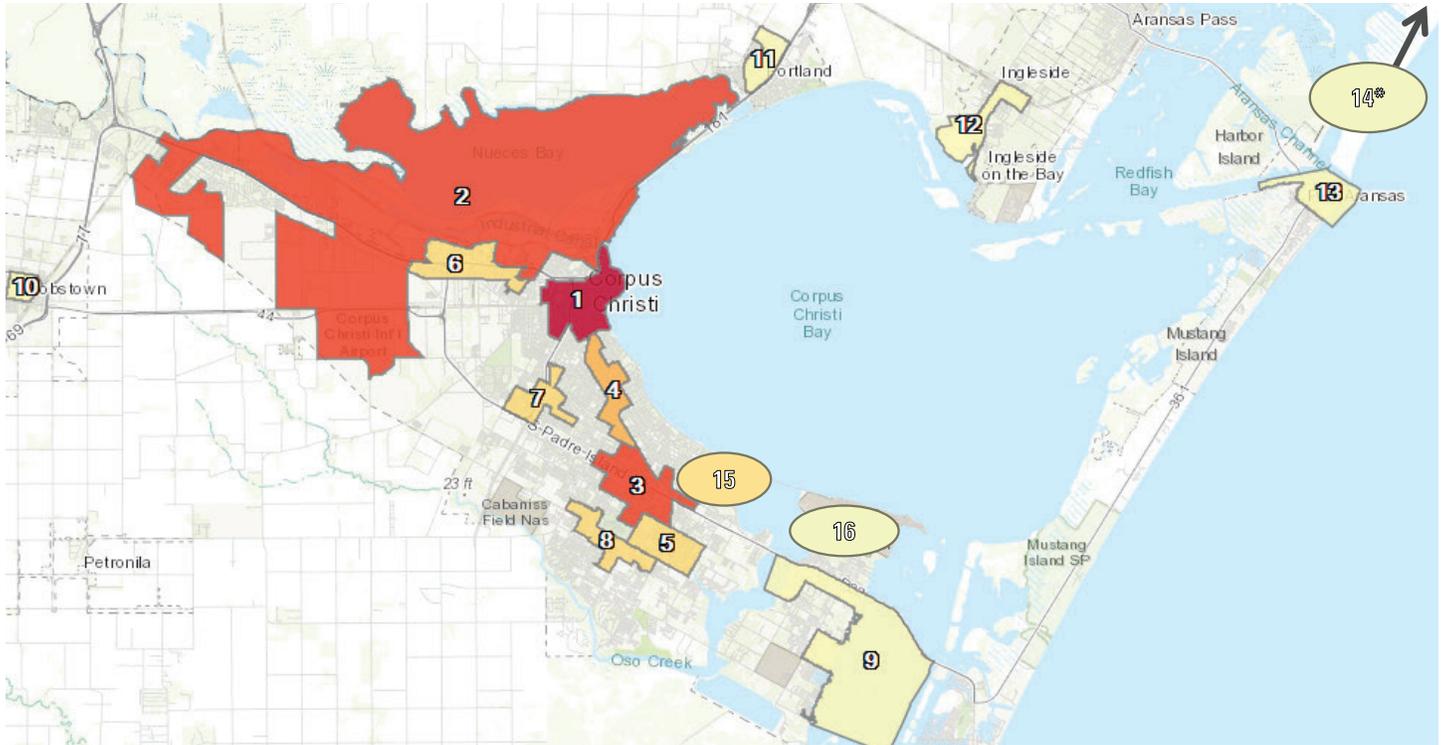
SOURCE: Moody's Analytics; Bureau of Labor Statistics; RCLCO

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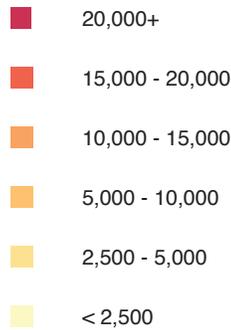
### Employment Cores

Downtown Corpus Christi is the most significant employment core in the MSA and accounts for approximately 15% of total employment and over 25% of total FIRE, STEM, and Professional Service employment.

### Top Employment Cores and Corridors Corpus Christi MSA: 2015



MAP KEY	CORE NAME	2015 JOBS
1	Downtown/Uptown	~20,000
2	Joe Fulton Trade Corridor	18,100
3	La Palmera/Sunrise	15,600
4	Staples St.	5,600
5	Airline Medical	4,600
6	I-37/Hwy 358	3,700
7	Crosstown/S. Padre	3,000
8	Saratoga/Staples	2,700
9	Flour Bluff	2,500
10	Robstown	2,100
11	Portland	2,100
12	Ingleside	2,000
13	Port Aransas	1,500
14*	Rockport	1,400
15	Texas A&M Corpus Christi	1,180
16	Naval Air Station	4,500



NOTE: \*Rockport not shown on map for scale and quality enhancements; The Flour Bluff employment core (#9) includes some sections that overlay over water given census geographical boundaries.

SOURCE: U.S. Census Bureau - Longitudinal Employer-Household Dynamics (2015); RCLCO

**PRELIMINARY MARKET OVERVIEW**

**Potential Areas of Redevelopment**

Given that most planned near-term\* infrastructure projects, such as Kinney Power Street Pump Station Improvements, McGee Beach Nourishment, Morgan Avenue (Ocean Drive to Staples Street) improvements, and Chaparral Street Phase Two improvements are located in close proximity to or within the TIRZ #3, RCLCO recommends focusing redevelopment efforts in the TIRZ #3, especially in the Marina Arts District. Planned infrastructure projects in the immediate area increase access and mobility, and are likely to enhance the TIRZ #3's desirability as an area of investment and development.

Beginning revitalization efforts with the Marina Arts District south of the I-37 Access Road can help build a residential base downtown, especially because there are a small number of planned multifamily and retail developments underway in this area.

After the Harbor Bridge is relocated, connectivity between the Marina Arts District and the SEADistrict will improve, encouraging development further north into the SEA District.

Another area of potential redevelopment to the south, the Agnes and Laredo corridors, serve as main thoroughfares to and from downtown. Investment in this area can also help increase the desirability of downtown and bring development to the TIRZ #3.



\* Near-term defined as 2018-2023

SOURCE: Department of Engineering Services at the City of Corpus Christi; RCLCO

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### *Downtown Development Growth Patterns*

In order to generate demand for a variety of land uses and weave together the existing attractions in downtown Corpus Christi, including the Whataburger Baseball Stadium, the Museum of Science and History, Art Museum and Water Park, it is first necessary to build a critical mass of full-time households in the downtown area. Unlike seasonal and temporary visitors, permanent residents located downtown represent the connective tissue that in turn supports additional retail and attracts employers, eventually transforming an area into a vibrant mixed-use district and lively 18-hour urban environment.



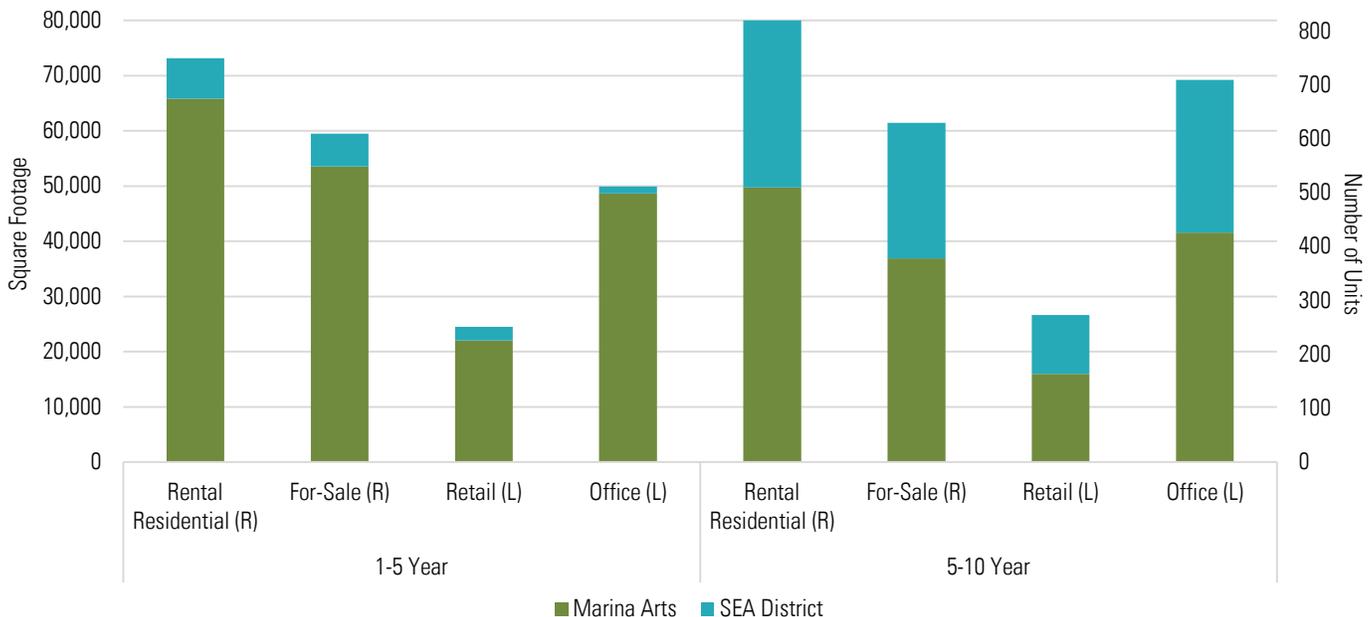
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### Downtown TIRZ #3: Redevelopment Opportunities

In the next five years, RCLCO recommends that the City of Corpus Christi focus redevelopment efforts primarily on the Marina Arts District, given that this area has the largest concentration of existing office and hotel towers, is slated to experience several infrastructure improvements, and has several planned and recently delivered apartment projects that represent a small and growing household base. In the longer-term, RCLCO recommends that the city continue to build out the Marina Arts District, and also begin investing more in the SEA District as the Marina Arts District stabilizes and major infrastructure projects, including the bridge demolition and associated improvements, are completed in the SEA District.<sup>1</sup> Land availability and the City’s ownership of parcels in the SEA District could create a more fluid environment for concentrated and coordinated development efforts. It is important to note that demand is dependent on the City actively engaging in downtown and illustrating renewed interest in the urban core.

LAND USE	1-5 YEARS	5-10 YEARS
<b>Rental Residential</b>	Develop new rental units in addition to currently planned units in the Marina Arts District to begin to increase household density in the TIRZ #3.	Potential for additional new units in the Marina Arts District and some units in the SEA District, especially near attractions, once the Nueces Bay Causeway bridge is relocated.
<b>For-Sale Residential</b>	Develop/renovate a modest amount of townhomes and SFD units, focusing on the Marina Arts District, with some neighborhood-scale townhomes and/or single-family dwellings in SEA District.	Continue to develop condos, townhomes, and small lot single-family units in the Marina Arts District. There is also increased opportunity for new for-sale product in the SEA District once the bridge is relocated as a more predictable environment emerges.
<b>Retail</b>	Establish basic neighborhood services e.g. a small grocer/market, pharmacy, and dining options in the Marina Arts District to support residential growth.	Create a small concentration of bars, restaurants, and shops to capture local demand from new households as well as serve visitors and tourists.
<b>Office</b>	Limited potential for new “class A” office in the short-term	Possible demand for new or renovated office space.

**Demand by Land Use, Timeframe, and District within the TIRZ #3**



SOURCE: CoStar (2017); ESRI (2017); RCLCO

<sup>1</sup> This analysis assumes 90% of development efforts focused in the Marina Arts District in the first five years, and 60% in the following five years. See demand slides for more detail on each land use. Demand for residential units in the chart above is using the upside scenarios.

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### RESIDENTIAL MARKET OVERVIEW

#### Rental Apartment Market Overview

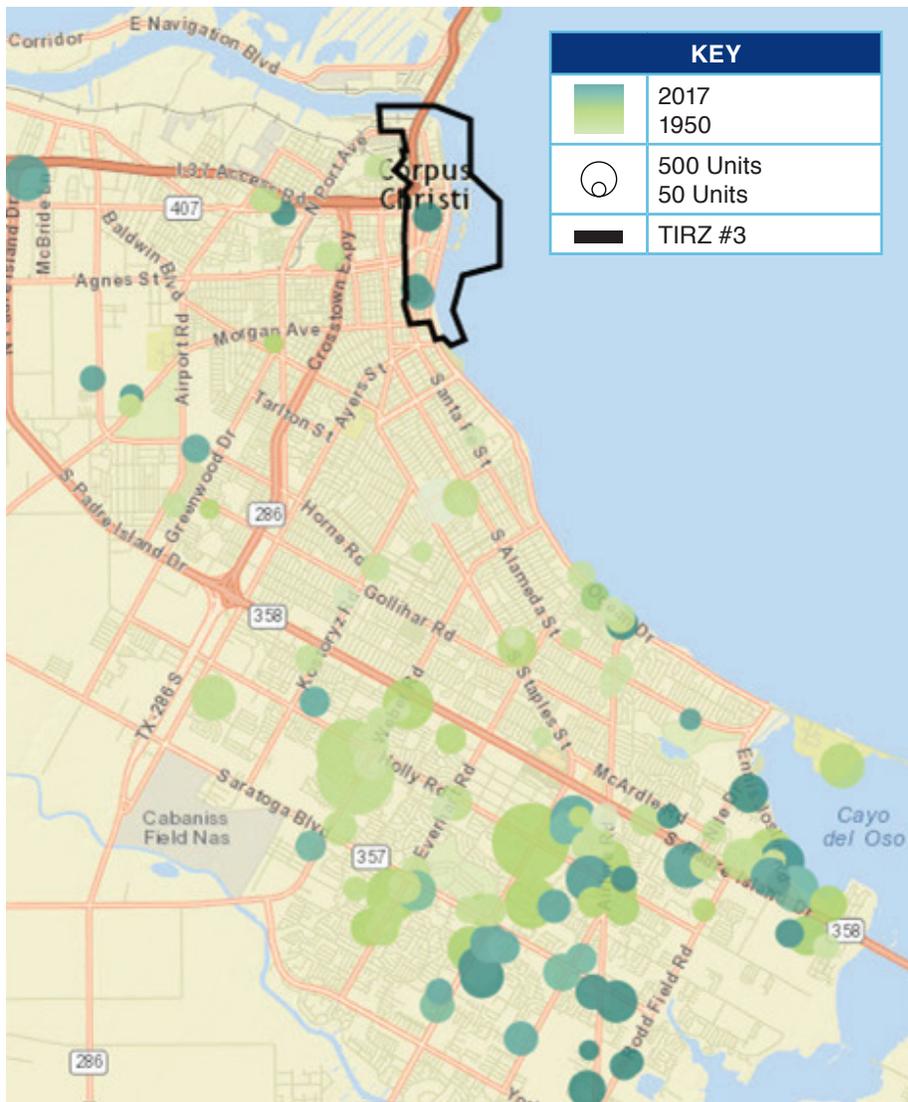
Historically, apartments have clustered south of downtown, adjacent to La Palmera Mall and Texas A&M University Corpus Christi.

Since 2012, multifamily rental occupancy has been relatively healthy, with an average occupancy of 93% (over 94% excluding 2016 and 2017) and net absorption of approximately 500 units, annually. However, after the delivery of more than 2,400 new units in 2016 and 2017 in conjunction to job losses due to the decline of oil prices, occupancy has dropped across the MSA to 90.8% in 2017.

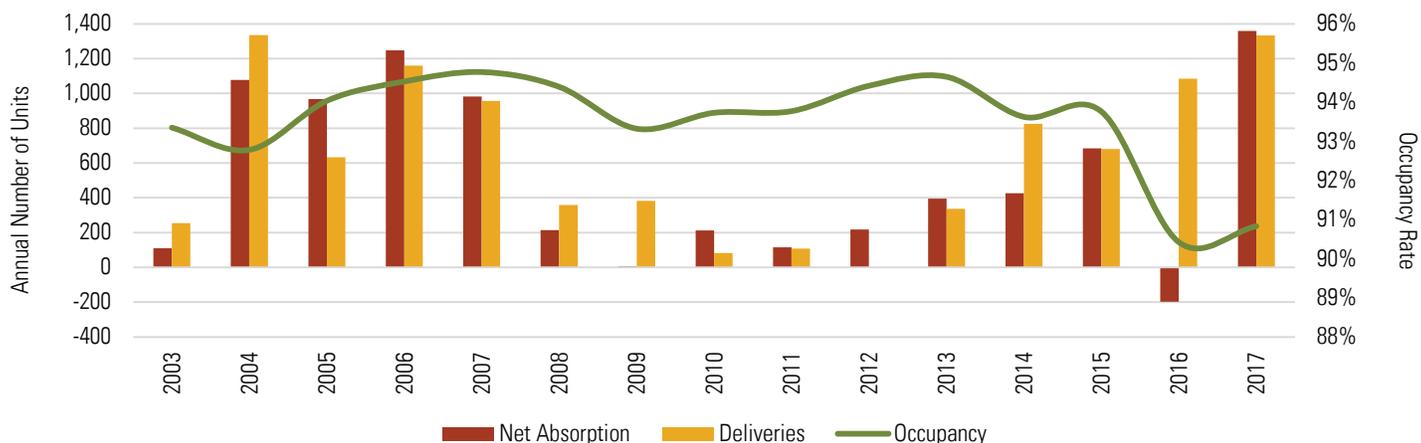
Recent deliveries have higher rents per square foot on average, with deliveries since 2010 demonstrating a 24% premium over the MSA average, which was \$1.06 in 2017.

SOURCE: Axiometrics; CoStar; ESRI; RCLCO

Map of Existing Multifamily Apartment Rentals  
Corpus Christi



Multifamily Net Absorption, Deliveries, and Occupancy  
Corpus Christi, TX MSA; 2003-2017



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### DOWNTOWN RENTAL APARTMENT MARKET

#### Recent Rental Apartment Trends

Although historically apartment development has concentrated south of downtown, the TIRZ #3 has seen significant multifamily development activity since 2010. Out of 22 total multifamily deliveries in the MSA since 2010, three of them are located in the TIRZ #3 District. However, all of these recent deliveries are located south of I-37 downtown, with no multifamily rentals in the SEA District to-date.

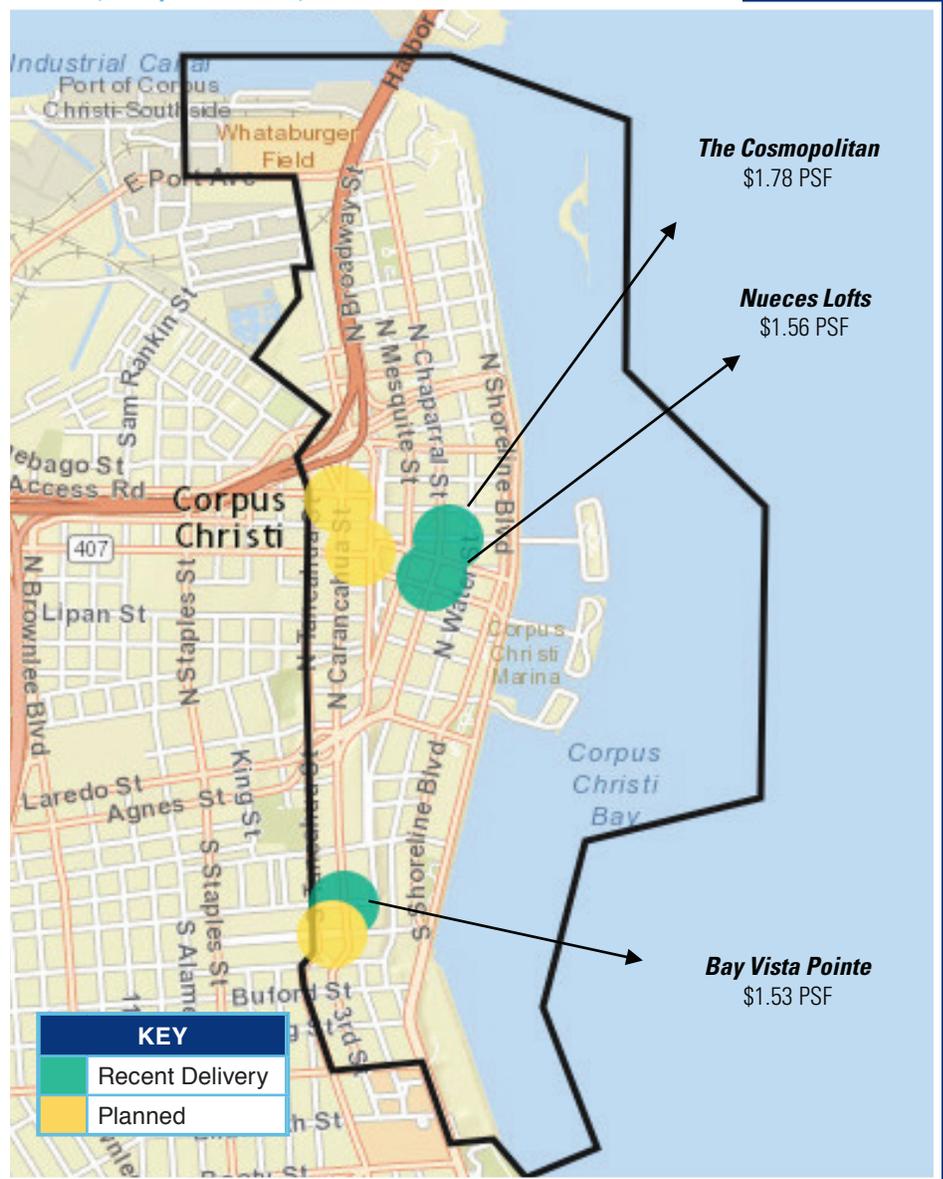
Most recently, Phase I of The Cosmopolitan was delivered in the TIRZ #3 in 2017; as of November 2017 the property was in lease up with a total of 89 units in Phase I and 76 units in Phase II. This new development is targeting much higher rents than the historical average in the MSA; at an average effective rent of \$1.78 per square foot, it is positioned at the top of the market.

#### Downtown Apartment Pipeline

In addition to the existing apartment supply downtown, there are several planned and incentivized TIRZ #3 multifamily projects worth noting. The Clock Tower Apartments and 600 Building plan for 149 and 126 units respectively, and are scheduled to deliver in the next two to three years.

There are also a couple of adaptive reuse projects, such as the Studio 21 Apartments and Broadway Lofts that fall within the TIRZ #3 boundaries; these planned renovation projects will deliver fewer than 50 units apiece.

Map of Recent and Planned Multifamily Developments TIRZ #3, Corpus Christi; 2010-2019



SOURCE: Axiometrics; Caller-Times; CoStar; ESRI; RCLCO

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### Key “First-Mover” Renter Segments

#### Student & Young Professional Residential Opportunity

There is an opportunity to capture demand for downtown apartments in Corpus Christi with the large pool of post graduates and students from two tertiary educational institutions in Corpus Christi.

Although Texas A&M University Corpus Christi is approximately eight miles from Interstate-37 and Shoreline Boulevard, there is an opportunity to capture some demand for downtown apartments from the enrollment pool of just over 12,000 students. Increasing the supply of multifamily rental housing downtown is especially pertinent given that 82% of all Texas A&M Corpus Christi students chose to live off-campus in 2016.

Downtown likely has greater appeal for particular groups of students, such as graduate students. Of the students enrolled in 2016, 2,242 were graduate students.

Graduate students have a high propensity to live off-campus, given their age and different family or household structures.

Additionally, Del Mar College represents another large pool of students that generate demand for downtown rentals, with approximately 12,000 students enrolled in community college courses in 2016. Del Mar College’s East Campus is only three miles from Interstate-37 and Shoreline Boulevard, and does not provide student housing; it is likely that a small share of these students might choose to live downtown with more available options in the market.

Furthermore, in national surveys, young professionals and post-graduates have indicated strong preferences for downtown urban living compared to other age groups; if given the choice, about 18% of people under age 35 would choose to live downtown.

### Annual Residential Demand Methodology

RCLCO projected future housing demand in the Corpus Christi MSA based on household projections, income and age distributions, and demonstrated propensities of ownership, turnover, and choosing new housing options.

In order to estimate downtown’s potential capture of future housing demand, RCLCO utilized two different capture methodologies: demonstrated preferences and stated preferences.

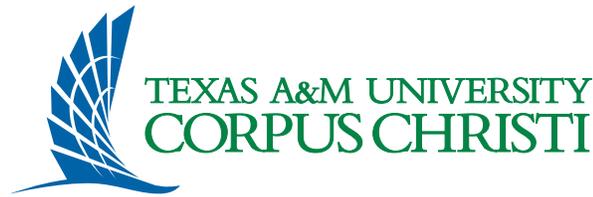
The first approach uses the TIRZ #3’s historical capture of rental and for-sale housing, though this approach is overly conservative given the existing supply-constrained downtown market.

The second approach utilizes national survey data with stated locational preferences to determine the percentage of households that would choose to live in an urban, mixed use downtown. RCLCO accounted for varying preferences of households to choose urban living by age and income level. Though this data provides a defensible upper bound for housing demand, Downtown Corpus Christi will need to enhance its offering of walkable, neighborhood services often associated with urban living before it can expect to capture levels illustrated by the consumer preference surveys.

The difference between the demonstrated demand and survey results from the National Association of Realtors provides a range of demand for residential units that should be taken into consideration when determining feasible development in downtown in the next five to ten years.

### National Renter Propensity to Choose Urban Downtown Living, by Age and Income\*

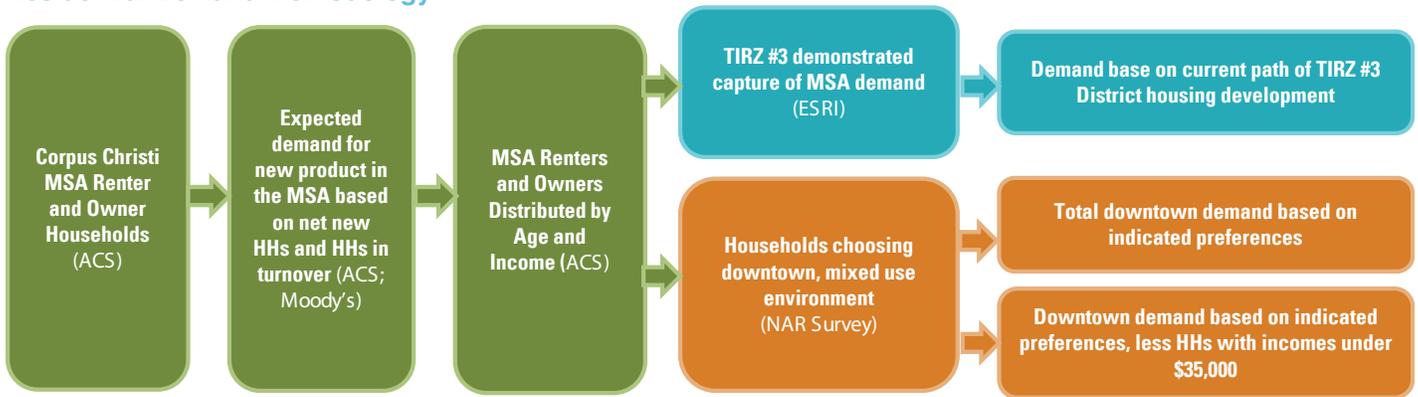
INCOME	UNDER 35	35-54	55+
Less than \$35,000	15%	15%	9%
\$35,000-\$50,000	16%	12%	3%
\$50,000-\$75,000	25%	17%	11%
\$75,000+	18%	8%	9%
<b>TOTAL</b>	<b>18%</b>	<b>13%</b>	<b>8%</b>



*SOURCE: Del Mar College; \*National Association of Realtors – 2011 Preference Survey n=2,000+; Texas A&M Corpus Christi; RCLCO*

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### Residential Demand Methodology



SOURCE: US Census American Community Survey 2012-2015; ESRI Business Analyst; Moody's Economy.com; National Association of Realtors – 2011 Preference Survey; RCLCO

### Downtown Rental Demand

Currently, with both the limited rental housing stock and limited neighborhood retail services offered downtown, there are only about 1,000 renter households living in the TIRZ #3 out of about 68,000 estimated renters in the MSA, meaning only about 1.5% of renters are living downtown.

However, national survey data indicates that without supply constraints, 13% of renters would likely choose to live in an urban, mixed use, downtown environment.

There is some variation in renters' indicated preferences to live downtown depending on age and income. Therefore, RCLCO filtered estimated annual demand for downtown rentals into segments. It should be noted that renters with children, or families, demonstrate similar proclivities to live downtown as other renters.

Despite the current lack of households, downtown is also a major employment core with between 19,000 and 21,000 employees. With additional neighborhood services, the TIRZ #3 has the potential to be a vibrant, walkable downtown with an "18-hour" live-work-play environment.

Overall, once more services and amenities are in place, the Corpus Christi TIRZ #3 should aspire to capture demand for about 160 rental units annually, the estimated demand for rentals based on national preferences and households with incomes over \$35,000.

### 10-Year Demand for Multifamily Units, by Age and Income; Corpus Christi TIRZ #3

INCOME	UNDER 35 YOUNG PROF.	35-54 MATURE PROF. & FAMILIES	55+ EMPTY NESTERS	TOTAL
\$35,000-\$50,000	100	47	20	167
\$50,000-\$75,000	492	175	73	740
\$75,000+	396	226	71	693
<b>Total \$35,000+ Demand</b>	<b>988</b>	<b>448</b>	<b>164</b>	<b>1,600</b>

### Aggregated Long-Term Demand for Multifamily Units; Corpus Christi TIRZ #3

	10-YEAR AVERAGE ANNUAL	5-YEAR DEMAND*	TOTAL 10-YEAR DEMAND
Demonstrated Demand	30	150	300
<b>\$35,000+ National Preferences Demand</b>	<b>160</b>	<b>750</b>	<b>1,600</b>

NOTE: The projected 5-year demand is less than the 10-year on an annual basis, since demand is projected to increase over the long-term.

SOURCE: US Census American Community Survey 2012-2015; ESRI Business Analyst; National Association of Realtors – 2011 Preference Survey; RCLCO



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### Resale Housing Market Overview

There is a healthy stock of resale housing in the Corpus Christi MSA, with resale transactions in line with the last real estate cycle (2001-2007), averaging about 4,750 transactions annually between 2010 and 2016.

In the past few years, months of inventory has been in line with the typical equilibrium level of 5-6 months. The long-term average of nine months is above typical equilibrium levels, which suggests that historically there has been an excess of resale product in the Corpus Christi market, possibly due to seasonal home listings along the coast.

Although resale home prices stagnated during the recession, there has been significant growth in home prices in the past five years, which was aided by the large influx of employment growth caused by the oil boom. Despite the decline of oil prices, home values have continued to rise. Between 2012 and 2017, the MSA median resale price increased by approximately 30% while MSA median household income only increased by 16%, significantly impacting affordability in the local market.

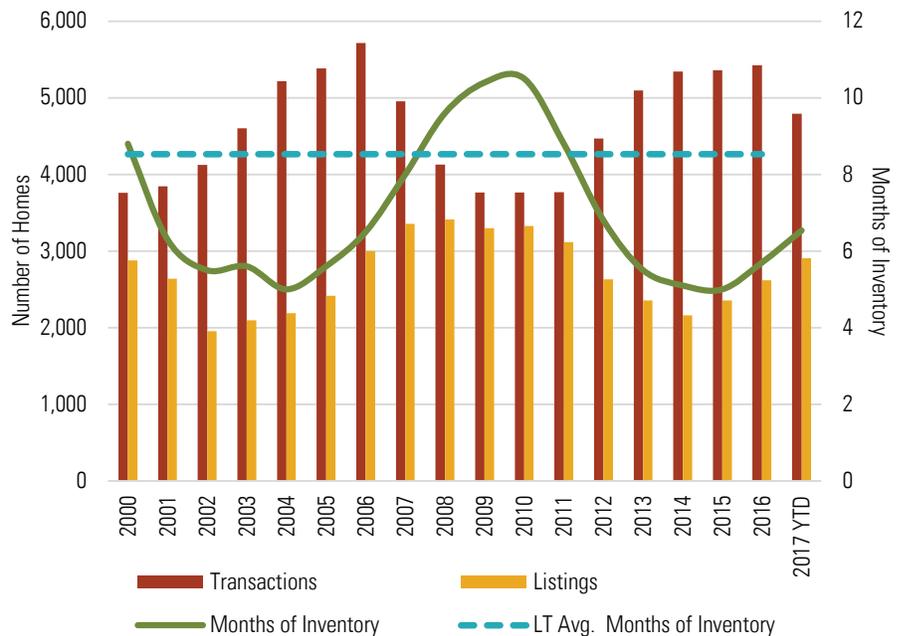
The median resale price in the MSA was \$185,000 in 2016. Assuming the average national down payment of 11%, RCLCO estimates that a household with an annual income of approximately \$65,000 could afford the median home price.<sup>1</sup>

### Downtown For-Sale Residential Demand

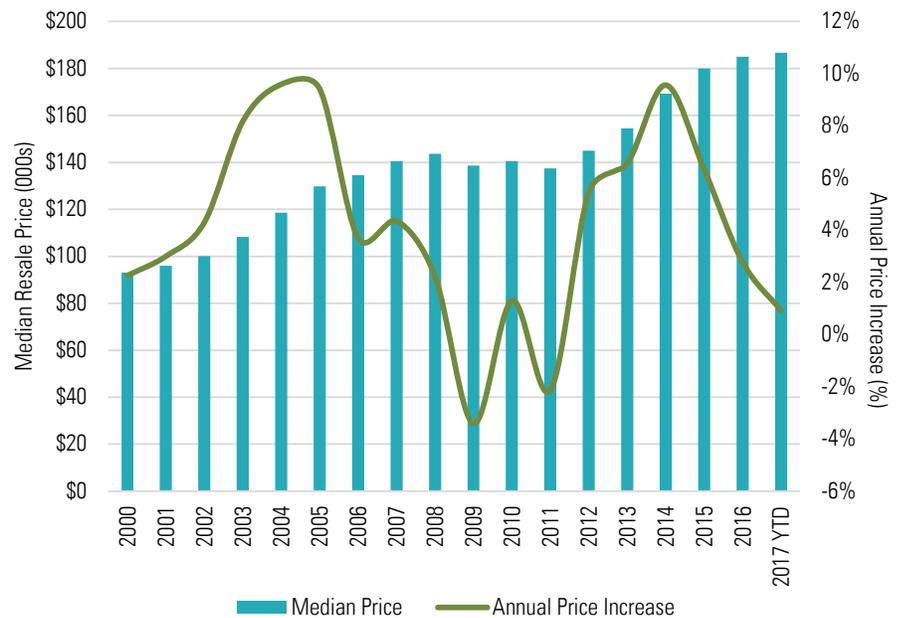
Currently, there are only about 200 owner households living within the TIRZ #3 in downtown Corpus Christi. This represents a 0.15% capture of homeowners across the MSA; if this share of owners were to stay consistent with historic trends, downtown would expect very little demand for for-sale residential product (see demonstrated demand).

<sup>1</sup>Mortgage Assumptions Assumes a 30-year, 4.25% fixed rate mortgage and an 11% down payment with a 0.75% PMI rate. Additionally, calculations factor in a property tax rate of 2.55%, homeowners insurance of more than \$2,000 annually, and \$450 in other monthly household debts.

### Existing Home Transactions, Listings, and Months of Inventory; Corpus Christi MSA; 2000-November 2017



### Median Resale Home Values; Corpus Christi MSA; 2000-November 2017



NOTE: There is limited data available for the Corpus Christi Local Market Area (LMA). With a difference of only 1%-3% in median home prices between the MSA and LMA, and the fact that only two complete years of inventory data are available for the LMA, RCLCO believes the MSA provides more insight than the local market area.

SOURCE: Texas A&M Real Estate Center; RCLCO

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However, without constraints on for-sale housing supply, national survey data indicates that about 6% of owner households would likely choose to live in an urban, downtown environment.

There is some variation in owners' indicated preferences to live downtown depending on age and income. Therefore, RCLCO segmented estimated annual demand for downtown for-sale product into categories. It should be noted that buyers with children, or families, demonstrate similar proclivities to live downtown as other home buyers.

RCLCO recommends that the Corpus Christi TIRZ #3 should aspire to capture demand for up to 121 for-sale units annually, the estimated demand for for-sale product is based on national preference data, restricted to households with household incomes over \$35,000. Demand in the first five-years is likely below the long-term 10-year demand, as the area needs to establish itself as an appealing residential neighborhood through the introduction of rental housing and services.

### RETAIL + OFFICE MARKET OVERVIEW

#### Retail Market Overview

Retail in the Corpus Christi MSA overwhelmingly consists of highway or major corridor-oriented retail, especially along Highway 358.

With a lack of recent deliveries, overall retail vacancies have been shrinking since the Great Recession.

According to data from CoStar, overall Corpus Christi MSA rents have stayed relatively consistent, hovering near \$12 per square foot (NNN<sup>1</sup>) since 2012, with annual averages fluctuating slightly between \$11.50 and \$12.85 over this same time period.

<sup>1</sup>A triple net lease (NNN) is a lease agreement where the tenant is responsible for the ongoing expenses of the property, including real estate taxes, building insurance, and maintenance, in addition to paying the rent and utilities.

SOURCE: ESRI Business Analyst; CoStar; RCLCO

### 10-Year Demand for For-Sale Units, by Age and Income

#### Corpus Christi TIRZ #3

INCOME	UNDER 35 YOUNG PROF.	35-54 MATURE PROF. / FAMILIES	55+ EMPTY NESTERS	TOTAL
\$35,000-\$50,000	50	48	26	124
\$50,000-\$75,000	78	101	35	214
\$75,000+	406	401	95	902
<b>Total \$35,000+ Demand</b>	534	550	156	1,240

### Demand for For-Sale Housing Units

#### Corpus Christi TIRZ #3

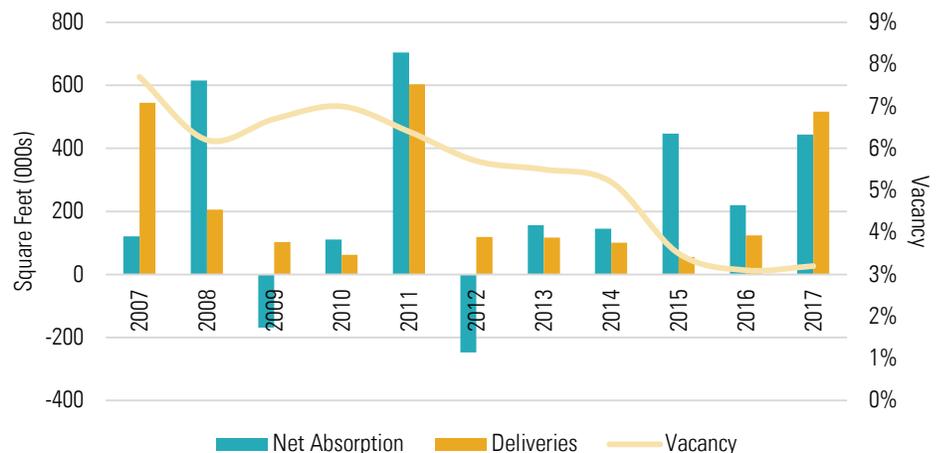
	10-YEAR AVERAGE ANNUAL	5-YEAR DEMAND*	TOTAL 10-YEAR DEMAND
<b>Demonstrated Demand</b>	2	10	20
<b>\$35,000+ National Preferences Demand</b>	124	610	1,240

NOTE: The projected 5-year demand is less than the 10-year on an annual basis, since demand is projected to increase over the long-term.

SOURCE: US Census American Community Survey 2012-2015; ESRI Business Analyst; National Association of Realtors – 2011 Preference Survey; RCLCO

### Retail Net Absorption, Deliveries, and Vacancy

#### Corpus Christi, TX MSA; 2007-2017



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The largest retail cluster is La Palmera Mall, located along Highway 358, which offers over 100 restaurants and shops with over one million square feet of retail space. The adjacent Sunrise Mall offers an additional 700,000 square feet of retail; however, after a period of high vacancies and eventual foreclosure in 2008, the Sunrise Mall is likely in need of redevelopment.

### Downtown Retail Opportunity

Given the lack of recent retail deliveries in the MSA and limited existing neighborhood-serving retail in the TIRZ #3, there is an opportunity for a limited amount of neighborhood retail development downtown, contingent on the addition of new investment and household growth.

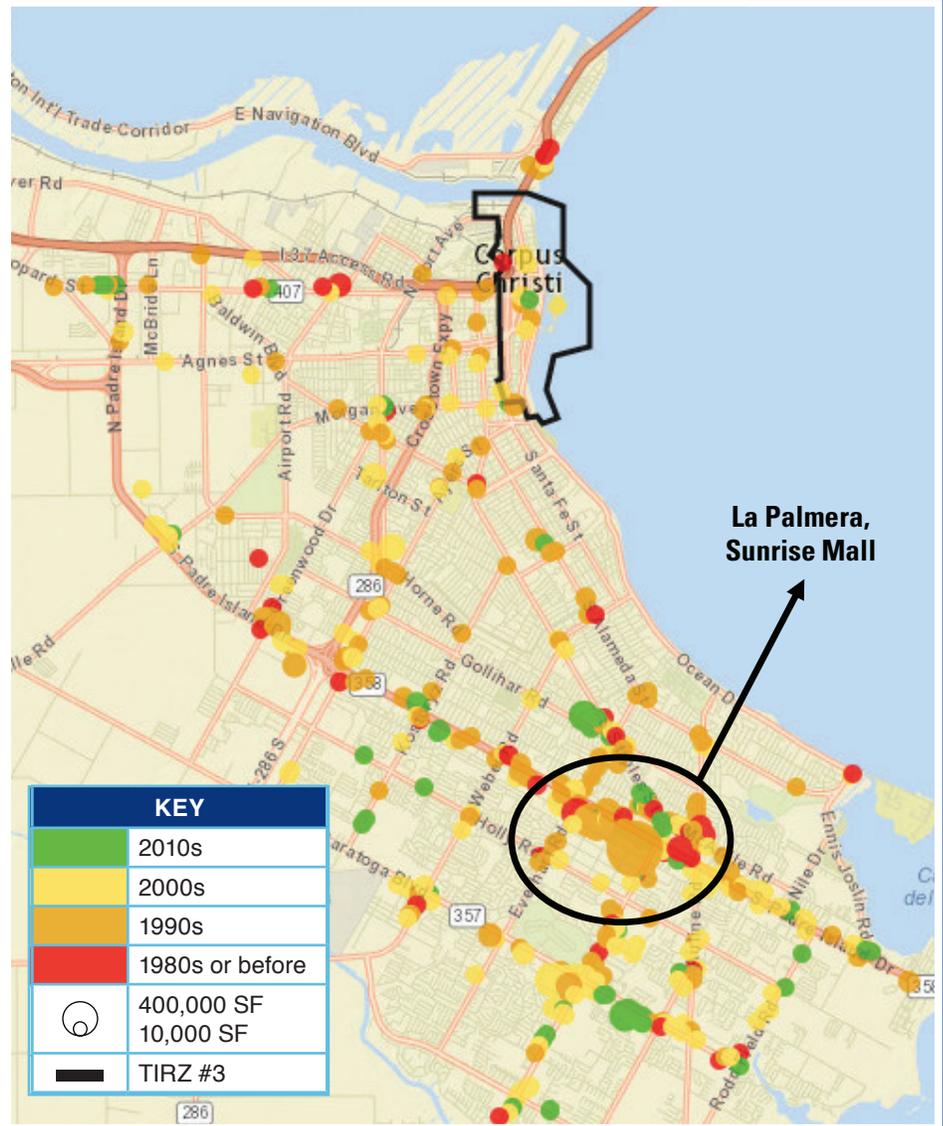
Most of the existing retail in the TIRZ #3 is supported by seasonal visitors, convention attendees, and shoppers who do not reside downtown, illustrated by the surplus of retail spending in the chart below. Although there is a small cluster of retail in the TIRZ #3 south of Interstate-37 in the Marina Arts District, there are only two restaurants in the SEA District to the north, where many key attractions and hotels are located.

Currently, there is a deficit of key neighborhood retail services downtown, with no pharmacy or grocery located in the TIRZ #3 to serve local residents. Therefore, if the TIRZ #3 realizes the forecasted demand for new households, the TIRZ #3 area can expect to capture a modest amount of neighborhood retail, up to approximately 23,000 to 25,000 square feet in the next five years, with support for an additional 25,000 to 27,000 square feet in the five to ten-year timeframe.

This addition of retail would help limit the retail leakage over the next five years with a small market/grocery, and result in demand for a few additional restaurants, cafes, or other small retail establishments. This demand is based on household spending patterns and the ratio of new retail space demanded per new household in the MSA.<sup>1</sup> Most of the potential market demand is concentrated in the Marina Arts District area of the TIRZ #3, where there is more demand for households and a higher concentration of employees, with more limited retail opportunities in the SEA District over the next five years until infrastructure improvements are complete.

<sup>1</sup> Households typically spend about a third of total retail spending on neighborhood retail, which includes good purchased in brick and mortar stores outside of major malls, lifestyle centers, and power centers. On average, there has been 53 square feet of new retail space per new household in the Corpus Christi MSA between 2012-2016.

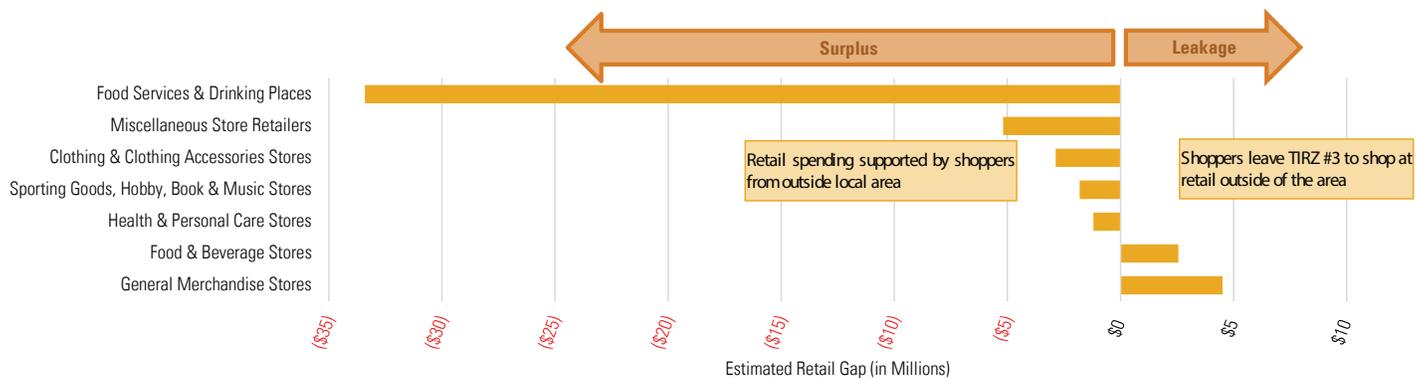
### Map of Existing Retail Properties by Year Built Corpus Christi MSA



SOURCE: ESRI Business Analyst; CoStar; RCLCO

## EXHIBIT B

### Retail Surplus and Leakage; TIRZ #3, Corpus Christi; 2017



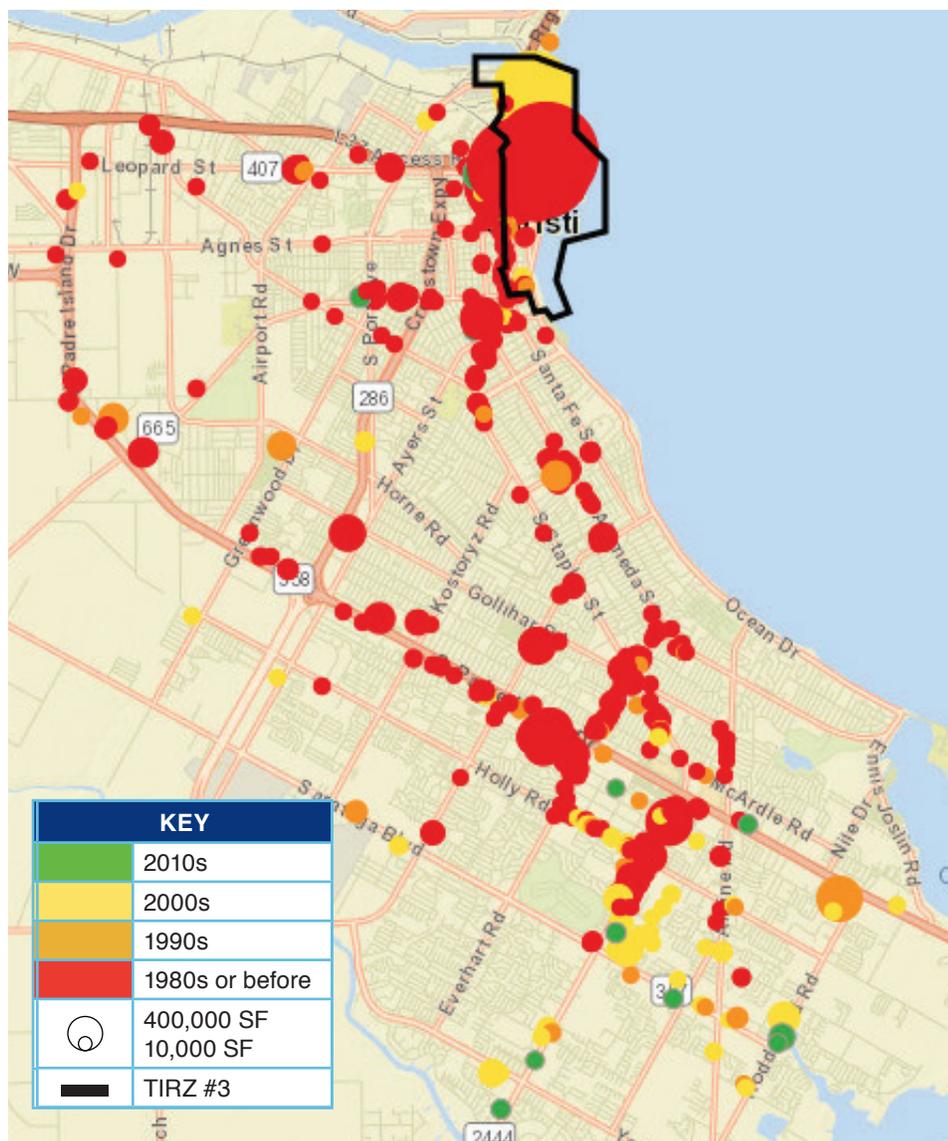
SOURCE: ESRI Business Analyst (2017) – Retail Expenditures; CoStar (2017); RCLCO

### Office Market Overview & Opportunity

As the most significant employment core in the Corpus Christi MSA, the downtown TIRZ #3 accounts for about four million square feet of the ten million total office square feet in the Corpus Christi MSA. Despite this large concentration of office space, the majority of existing downtown office space was constructed before 1990. Additionally, The Corpus Christi MSA has added limited new office space in recent decades given the clustering of employment in industries requiring limited traditional office space, such as the education and healthcare, construction, manufacturing, transportation, and leisure and hospitality sectors. Furthermore, Corpus Christi Regional Economic Development Corporation lists four target industries going forward, including specialty steel production, oil and natural gas, aerospace, and entrepreneurship and small businesses, none of which are significant users of new, “Class A” office space.

Therefore, the opportunity for new, office space in TIRZ #3 is likely limited going forward, especially given the significantly higher office rents that would need to be achieved to support new construction.

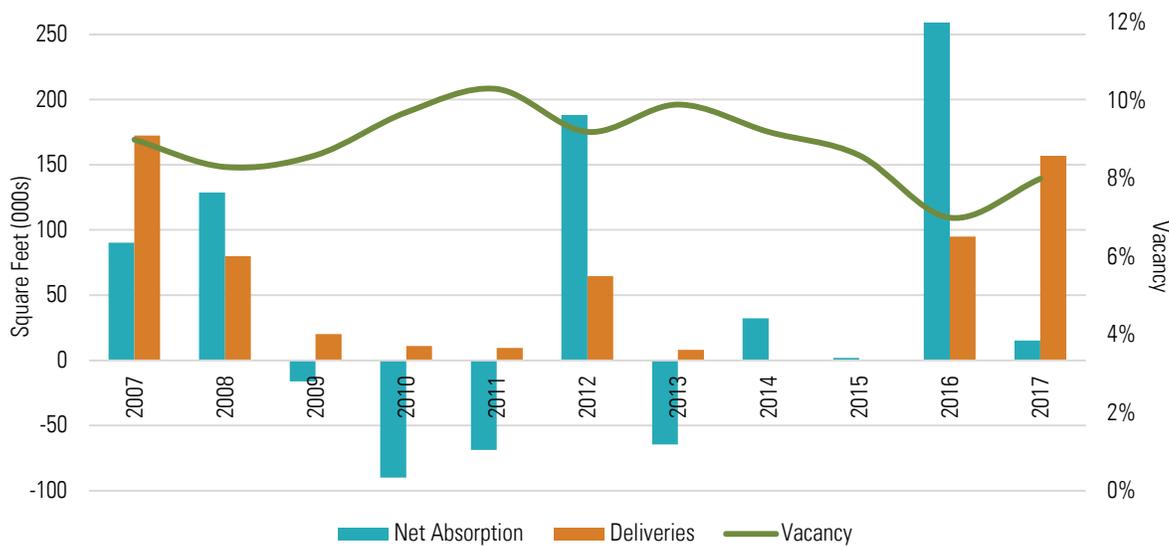
### Map of Existing Office Properties by Year Built Corpus Christi, TX MSA; October 2017



SOURCE: CoStar (2017); RCLCO

## EXHIBIT B

### Office Net Absorption, Deliveries, and Vacancy Corpus Christi, TX MSA; 2007-2017



SOURCE: CoStar (2017); RCLCO

Based on the historical capture of absorption in TIRZ #3, the area could support up to 50,000 square feet over the next five years, with support for approximately 70,000 square feet over the next five to ten years;<sup>1</sup> though this is contingent on more households moving to the area and the delivery of neighborhood services. Most of the modest demand for this office would be concentrated in the Marina Arts District of the TIRZ #3, especially in early years.

## EMPLOYMENT CONCENTRATIONS IN DOWNTOWN CORPUS CHRISTI

### *Downtown Employment: Geographic Information Systems Analysis*

After the discussion with City Council, staff, and key stakeholders, RCLCO believed it would be helpful to provide some clarification on several questions and concerns raised about the concentration of employment in Downtown Corpus Christi as well as the takeaways from one active apartment project.

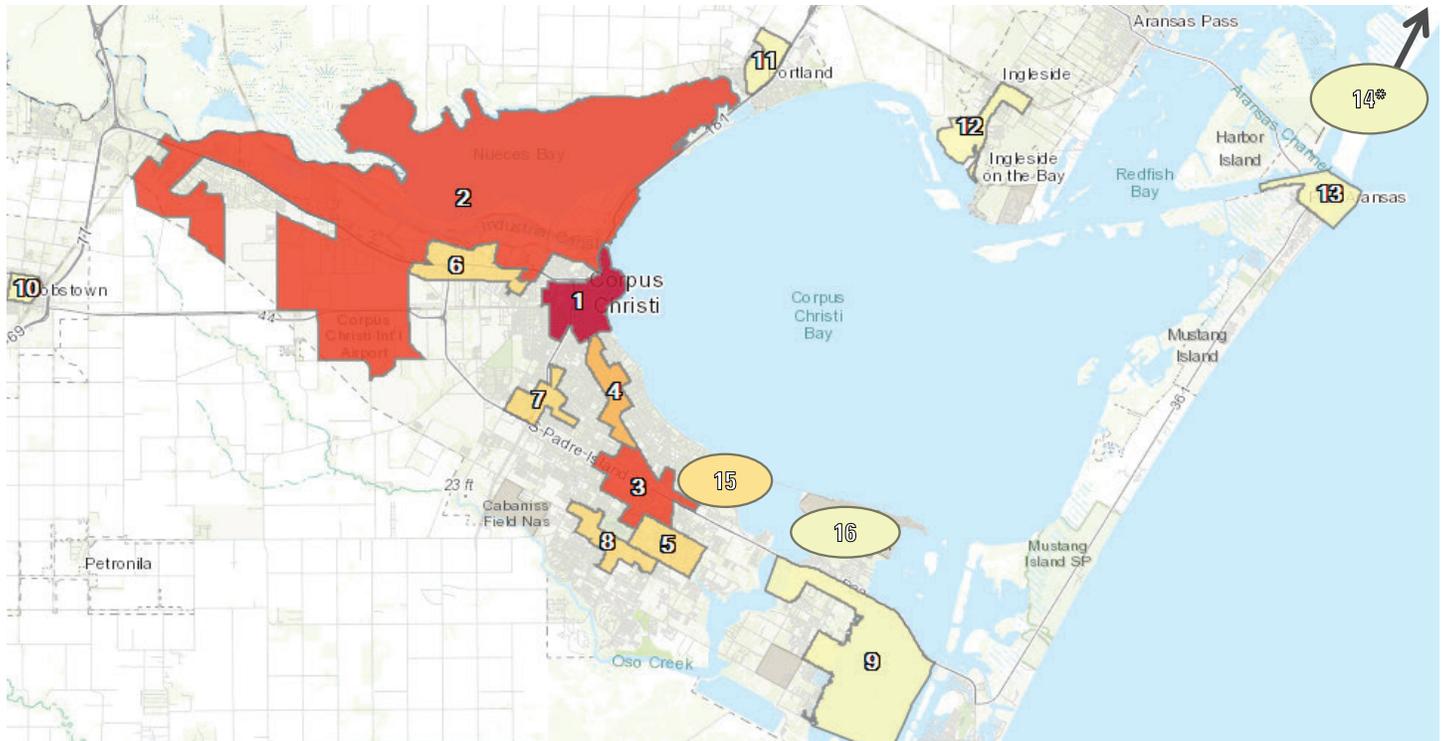
RCLCO's employment cores map for the Corpus Christi Region represents the most recent 2015 US Census Bureau Longitudinal Employer-Household Dynamics data on local employment by block group. RCLCO's employment cores are based on a GIS analysis of employment densities of US Census block groups;<sup>2</sup> therefore, geographic definitions may be untraditional and slightly different from definitions used by other organizations in the past. The US Census' data is aggregated from administrative records and therefore employees may be counted at the location of the corporate or public headquarters instead of satellite offices or campuses and vice versa, depending on data collection methods. Without a comprehensive local survey of all employers in Downtown Corpus Christi, the US Census provides one of the most accurate estimates for employment on a local level.

<sup>1</sup> This is based on the TIRZ #3's share of MSA office absorption from 2012-2016, excluding years where office absorption in the TIRZ #3 was negative.

<sup>2</sup> The US Census Bureau defines "Block Groups" as "statistical divisions of census tracts, [that] are generally defined to contain between 600 and 3,000 people, and are used to present data and control block numbering." The employment cores map is comprised of aggregated block groups. Downtown/Uptown is defined by block groups 483550010001 through 483550013002 and 483550064002.

## EXHIBIT B

### GIS Employment Cores Map, Corpus Christi, TX



\* Rockport not shown on map for scale and quality enhancements; The Flour Bluff employment core (#9) includes some sections that overlay over water given census geographical boundaries.

SOURCE: U.S. Census Bureau - Longitudinal Employer-Household Dynamics (2015); RCLCO

MAP KEY	CORE NAME	2015 JOBS	
1	Downtown/Uptown	~20,000	20,000+
2	Joe Fulton Trade Corridor	18,100	15,000 - 20,000
3	La Palmera/Sunrise	15,600	10,000 - 15,000
4	Staples St.	5,600	5,000 - 10,000
5	Airline Medical	4,600	2,500 - 5,000
6	I-37/Hwy 358	3,700	< 2,500
7	Crosstown/S. Padre	3,000	
8	Saratoga/Staples	2,700	
9	Flour Bluff	2,500	
10	Robstown	2,100	
11	Portland	2,100	
12	Ingleside	2,000	
13	Port Aransas	1,500	
14*	Rockport	1,400	
15	Texas A&M Corpus Christi	1,180	
16	Naval Air Station	4,500	

## EXHIBIT B

### Downtown Employment: Zip Code Approach

In order to provide a second data point that supports these original employment estimates, RCLCO utilized a different methodology to estimate the number of employees working in Downtown Corpus Christi. Instead of using the cores identified in the employment core map on the previous page, which were identified based on a GIS analysis of employment density, RCLCO performed this second analysis specifically on the 78401 zip code to provide a more standardized geography.

As of November 2017, the 78401 zip code contains over four million square feet of occupied office space according to CoStar. Assuming a range of occupied office space per office-using employee of 379 square feet (the Corpus Christi MSA-wide ratio which is likely overly conservative) and a more normalized ratio of 300 square feet, RCLCO estimates a range of 10,700 to 13,500 office-using employees in the 78401 zip code alone.

However, given the large concentration of tourism, service, and healthcare professionals, RCLCO assumes that only 50% of employment in Downtown Corpus Christi is office-using employment, which equates to 21,000 to 27,000 total employees in the 78401 zip code (for reference the MSA ratio of office-using employment is 14%). Running several sensitives on this analysis, even if office space in the 78401 zip code had a vacancy rate closer to 30%, a hypothetical anomaly for traditional central business districts across the US, total employment would still range between 16,000 to 20,500 in the 78401 zip code alone.

### Estimated Employment Using Occupied Office Space (Vacancy Rate as of November 2017)

ESTIMATED EMPLOYMENT IN 78401			
Total Office Square Feet (2017)	4,405,125		
Vacancy Rate (Nov. 2017)	7.7%		
Occupied Office Square Feet (2017)	4,063,837		
Office Square Feet per Employee	300	350	379
Total Office-Using Employees	13,546	11,611	10,712
Share of Office-Using Employment	50%		
TOTAL ESTIMATED EMPLOYEES	27,092	23,222	21,424

### Estimated Employment Using Occupied Office Space (Extreme Vacancy Scenario)

ESTIMATED EMPLOYMENT IN 78401			
Total Office Square Feet (2017)	4,451,660		
Vacancy Rate (Assumption*)	30.0%		
Occupied Office Square Feet (Assumption)	3,116,162		
Office Square Feet per Employee	300	350	379
Total Office-Using Employees	10,387	8,903	8,214
Share of Office-Using Employment	50%		
TOTAL ESTIMATED EMPLOYEES	20,774	17,807	16,428

*NOTE: \*See the last sentence in the last bullet for additional details.*

*SOURCE: CoStar (2017); Moody's Economy.com; ESRI Business Analyst; RCLCO*

## EXHIBIT B

### Downtown Employment: Economic Framework Market Analysis

The Economic Framework Market Analysis, provided by the City of Corpus Christi, uses the same source for office data as RCLCO, which is CoStar. Though it is unclear how exactly the W-ZHA report defines the CBD, the 78401 zip code is likely relatively similar. With that said, the W-ZHA report shows approximately 4.5M square feet of available office space\* in the CBD, similar to the 4.4M of total (occupied and vacant) office space identified by CoStar in RCLCO's analysis .

Though the W-ZHA report points out several buildings with a high percentage of office space available downtown, which is typically higher than vacant space (see the definition for Available Space below), the overall office availability rate of the nine properties surveyed on Page 12 of the W-ZHA report equates to only 16%. These properties are all included in RCLCO's analysis as well.

*\*NOTE: CoStar defines available office space as the total amount of space that is currently being marketed as available for lease or sale in a given time period. It includes any space that is available, regardless of whether the space is vacant, occupied, available for sublease, or available at a future date.*

SOURCE: City of Corpus Christi; RCLCO

### W-ZHA Report Exhibit, Page 12

Office Sub-Market Statistics Corpus Christi Office Market 4th Quarter 2013		
Sub-Market	Sq. Ft.	
Central Business District	4,497,000	46%
South Side	2,213,000	23%
Mid-City	1,486,000	15%
West Side	658,000	7%
Other*	873,000	9%
Total	9,727,000	100%

\* The data from the "2013 Texas Metro Market Overview" is not consistent. The "Other" category was created to compensate for total supply discrepancies.

Source: CoStar Group and Burbach Associates; Texas Real Estate Center at Texas A & M University, "2013 Texas Metro Market Overview Data"; W-ZHA

## DOWNTOWN EMPLOYMENT: CONCLUSION

### Results

In conclusion, after using multiple methodologies to estimate total employment in Downtown Corpus Christi, RCLCO stands by estimates of a strong employment base in the downtown area that makes it the largest employment core in the Corpus Christi MSA. While the exact number of employees is difficult to estimate without a detailed survey of all employers, RCLCO collaborated with the City of Corpus Christi and the Corpus Christi Regional Economic Development Corporation to arrive at an employment figure that is both supported by data and defensible from a local market perspective. To date, this estimate stands at roughly 19,000-21,000 employees in the downtown core. RCLCO recognizes the inherent flaws with national data sets used in the original estimates of employment, but after collaborating with local officials and referencing multiple data sources, RCLCO believes the 19,000-21,000 estimate is conservative and defensible.

### Additional Factors & Concerns

RCLCO's analysis for residential demand in Downtown Corpus Christi is based on US Census household characteristics, projected regional household growth, and renter household preferences. While employment concentration is of course an important factor in sizing the opportunity for residential development, RCLCO's residential demand models are based on household projections instead of employment projections.

The success or failures of a single property with a single orientation, product program, and pricing schedule should not be used to address potential demand across the entire market. First entrants into an emerging neighborhood often have mixed results. Additionally, the development of residential properties in a place like Downtown Corpus Christi could help spur additional demand for both office and retail development – employers, particularly office-using employers, are increasingly seeking walkable mixed-use environments to help both attract and retain talent. Furthermore, these types of places are also draws for employers that may not be considering Corpus Christi currently.

## CRITICAL ASSUMPTIONS

Our conclusions are based on our analysis of the information available from our own sources and from the client as of the date of this report. We assume that the information is correct, complete, and reliable.

We made certain assumptions about the future performance of the global, national, and local economy and real estate market, and on other factors similarly outside either our control or that of the client. We analyzed trends and the information available to us in drawing these conclusions. However, given the fluid and dynamic nature of the economy and real estate markets, as well as the uncertainty surrounding particularly the near-term future, it is critical to monitor the economy and markets continuously and to revisit the aforementioned conclusions periodically to ensure that they are reflective of changing market conditions.

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We assume that the economy and real estate markets will grow at a stable and moderate rate to 2020 and beyond. However, stable and moderate growth patterns are historically not sustainable over extended periods of time, the economy is cyclical, and real estate markets are typically highly sensitive to business cycles. Further, it is very difficult to predict when an economic and real estate upturn will end.

With the above in mind, we assume that the long-term average absorption rates and price changes will be as projected, realizing that most of the time performance will be either above or below said average rates.

Our analysis does not consider the potential impact of future economic shocks on the national and/or local economy, and does not consider the potential benefits from major “booms” that may occur. Similarly, the analysis does not reflect the residual impact on the real estate market and the competitive environment of such a shock or boom. Also, it is important to note that it is difficult to predict changing consumer and market psychology.

As such, we recommend the close monitoring of the economy and the marketplace, and updating this analysis as appropriate.

Further, the project and investment economics should be “stress tested” to ensure that potential fluctuations in revenue and cost assumptions resulting from alternative scenarios regarding the economy and real estate market conditions will not cause failure.

In addition, we assume that the following will occur in accordance with current expectations:

- » Economic, employment, and household growth.
- » Other forecasts of trends and demographic and economic patterns, including consumer confidence levels.
- » The cost of development and construction.
- » Tax laws (i.e., property and income tax rates, deductibility of mortgage interest, and so forth).
- » Availability and cost of capital and mortgage financing for real estate developers, owners and buyers.
- » Competitive projects will be developed as planned (active and future) and that a reasonable stream of supply offerings will satisfy real estate demand.
- » Major public works projects occur and are completed as planned.

Should any of the above change, this analysis should be updated, with the conclusions reviewed accordingly (and possibly revised).

### **GENERAL LIMITING CONDITIONS**

Reasonable efforts have been made to ensure that the data contained in this study reflect accurate and timely information and are believed to be reliable. This study is based on estimates, assumptions, and other information developed by RCLCO from its independent research effort, general knowledge of the industry, and consultations with the client and its representatives. No responsibility is assumed for inaccuracies in reporting by the client, its agent, and representatives or in any other data source used in preparing or presenting this study. This report is based on information that to our knowledge was current as of the date of this report, and RCLCO has not undertaken any update of its research effort since such date.

Our report may contain prospective financial information, estimates, or opinions that represent our view of reasonable expectations at a particular time, but such information, estimates, or opinions are not offered as predictions or assurances that a particular level of income or profit will be achieved, that particular events will occur, or that a particular price will be offered or accepted. Actual results achieved during the period covered by our prospective financial analysis may vary from those described in our report, and the variations may be material. Therefore, no warranty or representation is made by RCLCO that any of the projected values or results contained in this study will be achieved.

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Possession of this study does not carry with it the right of publication thereof or to use the name of "Robert Charles Lesser & Co." or "RCLCO" in any manner without first obtaining the prior written consent of RCLCO. No abstracting, excerpting, or summarization of this study may be made without first obtaining the prior written consent of RCLCO. This report is not to be used in conjunction with any public or private offering of securities or other similar purpose where it may be relied upon to any degree by any person other than the client without first obtaining the prior written consent of RCLCO. This study may not be used for any purpose other than that for which it is prepared or for which prior written consent has first been obtained from RCLCO.

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# APPENDIX: STAKEHOLDER SUMMARY

## BROADENING STAKEHOLDER CONSENSUS

Throughout the stakeholder interviews, open houses, discussions and presentations, key themes and topics have arisen. While the viewpoints and beliefs on level of investment in Downtown and the greater TIRZ #3 district vary, stakeholders overall felt that Downtown needs to be an area of significant reinvestment, especially in regard to the significant investment surrounding the Harbor Bridge replacement.

During the open house on November 28, 2017, the community was asked “What is the most important project to you?” and then invited to respond in one to three words for the results to be shown on a live stream feed. At the same time, stakeholder participants were invited to visit large-scale project maps located throughout the room to identify projects or areas they liked/supported and those that they did not. This gave the project team the opportunity to talk in more detail about specific project improvements, recommendations and to test the potential for significant infrastructure investments.

The feedback received during this open house reflected many of the same sentiments heard over the past nine months about the need for better connectivity, walkability and safety throughout downtown roadways and neighborhoods. That disconnection was most predominantly felt between the SEA District and the Marina Arts District where the current entertainment destinations require heavy auto-dependency and where the Harbor Bridge project stands to have the greatest impact in terms of street reconnection.

The following is a summary of public comments received during this open house:

### *Two-Way Conversion*

1. Some members of the public expressed opposition to converting any one-way downtown streets to two-way streets. Concerns included the lack of space for large vehicles and delivery trucks to pass each other, the challenge parallel parking creates for people trying to park and trying to pull out of a parking space, and the confusion created when some streets are two-way, and others remain one-way.
2. Other members of the community suggested that the proposal to convert some downtown streets to two-ways should be extended to all downtown streets.
3. A third contingent of residents supported the one to two-way conversion as proposed by the consultant team.



*Open House (November 2017)*



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### *TxDOT Projects*

1. Two community members indicated concern regarding TxDOT's closure of the Lipan Street Crosstown overpass. City staff did have an opportunity to explain that this is not a project that can be changed or influenced as an outcome of this City traffic and planning analysis, and the residents were understanding.
2. Three separate red pins signaled concerns regarding extension of Belden, Power, and Tancahua Streets in the SEA District once the current Harbor Bridge is removed. Neither City staff nor consultants had an opportunity to discuss the concern or concerns to better understand the potential issue/s identified.

### *Chaparral Street*

1. Community members indicated that the intersection of Kinney and Chaparral is confusing and needs to be a prioritized project.
2. Some expressed concern regarding the street width and ability to accommodate two-way traffic.
3. One comment suggested that the signals on Chaparral Street be set to flashing red instead of having the expense of taking out signals and replacing with stop signs.
4. A couple comments received suggested closing a couple blocks of Chaparral to vehicles and making it a pedestrian street only, possibly for special events.
5. One comment noted that special attention needs to be made to work in sections, incrementally in Phase 2 to avoid repeating problems from the first phase of this project.
6. Two red pins signaled general concern regarding the Chaparral Phase 2 project.
7. Two green pins signaled general support for the Chaparral Phase 2 project.

### *Proposed Infrastructure Projects and Policy Recommendations with Greatest Support*

- Water Taxi (8 green pins)
- Pedestrian Improvements (5 green pins)
- Wayfinding (5 green pins)
- Sea Wall (5 green pins)
- Staples Street Extension (4 green pins)
- Agnes/Laredo Gateway (4 green pins)

### *General*

There was some concern expressed by residents regarding the City's ability to efficiently execute infrastructure construction projects.

# APPENDIX: ONE - TWO WAY

# INTERSECTION CONVERSIONS

## ONE TO TWO-WAY CONVERSIONS IN DOWNTOWN - INTERSECTIONS

Street Name	Intersection	Existing Conditions	Improvements*	All-Way Stop Considerations**
Mesquite Street	Belden St.	All-Way Stop	Stripe stop bar for all four approaches. Install stop sign and all way plaque on northbound approach (2). Remove one way signs northbound approach (2).	N/A
	WB IH-37	Signalized Intersection	Stripe stop bar on northbound approach. Stripe lane assignment arrows on all approaches. Install new mast arm, two signal heads, ILSN, VIVD camera for new northbound approach. Move southbound signal heads to line up with the new one lane approach. Remove one way signs on eastbound approach. Adjust the southbound VIVD detection zones. Retime signal.	N/A
	EB IH-37	Signalized Intersection	Stripe stop bar on northbound approach. Stripe lane assignment arrows on all approaches. Install new mast arm, two signal heads, ILSN, VIVD camera for new northbound approach. Move southbound signal heads to line up with the new one lane approach. Remove one way sign on pedestrian pole and remove do not enter sign. Adjust the southbound VIVD detection zones. Install striped or raised bulb out on southwest corner to guide eastbound right turn drivers away from parallel parking spaces. Retime signal.	N/A
	Mann Street	Two-way stop on parking lot exit and Mann St approaches	Stripe crosswalk on southbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove no left turn sign on northwest corner (1) and one way signs on northeast and southwest corners (2). Put pedestrian crossing signs on back of existing ped signs (2).	N/A
	Twigg Street	Stop sign on southbound Mesquite St approach and for westbound right turns on Twigg St, free flow through movement on Twigg St	<p>OPTION 1 - Stripe stop bar on northbound approach. Stripe stop bar and crosswalk on southbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way sign on northeast and southeast corners (2). Install stop sign on northbound approach. Adjust one flasher around to use for the northbound approach. Redesign eastbound approach so that Lower Broadway intersects with Twigg St. Redesign eastbound approach so that Lower Broadway ties into Twigg St and the right turn lane of the eastbound approach no longer needs to be a forced right turn.</p> <p>OPTION 2 - Due to Harbor bridge relocation, free flow movement on Twigg St might not be justified anymore. Consider changing this intersection to an all way stop if warranted. Recommendations listed are for an all way stop: Stripe stop bar on all four approaches. Stripe stop bar and crosswalk on southbound approach due to segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way sign on northeast and southeast corners (2). Install stop sign on east, west and northbound approach. Adjust flashers to all red for all approaches. Redesign eastbound approach so that Lower Broadway ties into Twigg St and the right turn lane of the eastbound approach no longer needs to be a forced right turn.</p>	N/A
	Taylor Street	Signalized Intersection	Stripe stop bar and crosswalk for both north and southbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way (4), no right turn (1), and no left turn (1) signs. Adjust right signal head for southbound approach. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.

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Street Name	Intersection	Existing Conditions	Improvements*	All-Way Stop Considerations**
<b>Mesquite Street</b>	Starr St	Signalized Intersection	Stripe stop bar and crosswalk for both north and southbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way signs on northeast and southwest corners. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Peoples St	Signalized Intersection	Stripe stop bar on north and southbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way sign on northeast corner and no left turn sign on northwest corner. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Schatzell St	Signalized Intersection	Stripe stop bar and crosswalk on both the north and southbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Install two signal heads for northbound approach. Remove one way sign on southwest corner. Add one way sign to northwest corner for new northbound traffic to see that Schatzell is only westbound. Add one no right turn to southeast corner. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Lawrence St	Signalized intersection	Stripe stop bar and crosswalk for all approaches with segment and intersection surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove all one way signs (4). Install signal pole and two signal heads on the northwest corner, one signal head on the northeast corner, and one signal head on the southwest corner. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	William St	Signalized intersection	Stripe stop bar and crosswalk on north and southbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way signs on northeast and southwest corners (2). Install two one way signs for northbound traffic to see that William is only westbound. Install left signal head on the northwest corner and remove signal heads for the eastbound approach that is no longer there. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	John Sartain	Signalized intersection	Stripe stop bar and crosswalk on north, south and westbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Install do not enter signs (2) and lane use sign (1) on the eastbound approach for all westbound traffic. Install no left turn sign on northbound approach and no right turn sign on southbound approach. Remove all four one way signs. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Coopers Alley	Two-way stop controlled on Coopers Alley approaches	Four Options - Improvement Concept Exhibits	N/A

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<b>Street Name</b>	<b>Intersection</b>	<b>Existing Conditions</b>	<b>Improvements*</b>	<b>All-Way Stop Considerations**</b>
<b>Chaparral Street</b>	Mann St	Two-way stop controlled on Mann St approaches	Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way (4) and no right turn (1) signs.	N/A
	Twigg St	Signalized Intersection	Stripe stop bar and crosswalk on all approaches with segment and intersection surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove DO NOT ENTER signs (2) and install pole and mast arm, two signal heads, radar detection for westbound approach. Adjust existing signal heads and radar detector for new southbound approach. Remove all one way signs (4) and no left turn sign (1). Remove lane assignment sign on eastbound approach mast arm. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Taylor St	Signalized intersection, bulb out on all corners	Stripe stop bar and crosswalk on north and southbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Uncover signal heads for southbound approach. Remove one way (2), no right turn (1) and no left turn (1) signs. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Starr St	Signalized intersection, bulb out on all corners	Stripe stop bar and crosswalk on north and southbound approaches and the crosswalks on the east and west legs with segment and intersection surface improvements. Stripe lane assignment arrows for all approaches. Uncover signal heads for southbound approach. Remove one way signs on northwest and southwest corner for westbound traffic (2). Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Peoples St	Signalized intersection, bulb out on all corners	Stripe stop bar and crosswalks on north and southbound approaches with segment surface improvements. Stripe lane assignment arrows for all approaches. Uncover signal heads for southbound approach. Remove one way sign on southeast corner for eastbound traffic (1). Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Schatzell St	Signalized intersection, bulb out on all corners	Stripe stop bar on all approaches with segment surface improvements. Stripe lane assignment arrows for all approaches. Uncover signal heads for southbound approach. Relocate one way signs on northwest and southwest corners for westbound traffic (2) for southbound traffic. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Lawrence St	Signalized intersection, bulb out on all corners	Modify bulb outs on all corners to allow for two-way traffic on Lawrence St. Stripe stop bar on all approaches with segment surface improvements. Stripe lane assignment arrows for all approaches. Uncover signal heads for southbound approach. Swap out the two 10' ped poles for taller signal poles and install two signal heads for westbound traffic. Remove all one way signs (4). Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.

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Street Name	Intersection	Existing Conditions	Improvements*	All-Way Stop Considerations**
Chaparral Street	William St	Signalized intersection, bulb out on all corners	Stripe stop bar on westbound, northbound and southbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Uncover signal heads for southbound approach. Relocate one way signs on northwest and southwest corners for westbound traffic (2) to southbound traffic. Retime signal	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	John Sartain	Signalized intersection	Stripe stop bar and crosswalk on all approaches with segment and intersection surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Uncover signal heads for southbound approach. Install two signal heads for westbound traffic. Remove all one way signs (6). Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Coopers Alley	Signalized intersection, raised bulb out at southeast corner	Stripe stop bar and crosswalk on southbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Uncover signal heads for southbound approach. Stripe for southbound shared left-right turn only lane use. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
Twigg Street	Mesquite St.	Stop sign on southbound Mesquite Street approach for westbound right turns on Twigg St., free flow through movement on Twigg St.	<p>OPTION 1 - Stripe stop bar on northbound approach. Stripe stop bar and crosswalk on southbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way sign on northeast and southeast corners (2). Install stop sign on northbound approach. Adjust one flasher around to use for the northbound approach. Redesign eastbound approach so that Lower Broadway intersects with Twigg St. Redesign eastbound approach so that Lower Broadway ties into Twigg St and the right turn lane of the eastbound approach no longer needs to be a forced right turn.</p> <p>OPTION 2 - Due to Harbor bridge relocation, free flow movement on Twigg St might not be justified anymore. Consider changing this intersection to an all way stop if warranted. Recommendations listed are for an all way stop: Stripe stop bar on all four approaches. Stripe stop bar and crosswalk on southbound approach due to segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way sign on northeast and southeast corners (2). Install stop sign on east, west and northbound approach. Adjust flashers to all red for all approaches. Redesign eastbound approach so that Lower Broadway ties into Twigg St and the right turn lane of the eastbound approach no longer needs to be a forced right turn.</p>	N/A
	Chaparral St	Signalized intersection	Stripe stop bar and crosswalk for both north and southbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove one way (4), no right turn (1), and no left turn (1) signs. Adjust right signal head for southbound approach. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.

**EXHIBIT B**

<b>Street Name</b>	<b>Intersection</b>	<b>Existing Conditions</b>	<b>Improvements*</b>	<b>All-Way Stop Considerations**</b>
<b>Twigg Street</b>	Water St	Signalized Intersection, bulb out on all corners	Stripe stop bar and crosswalk on east and westbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Use existing signal heads for westbound approach. Remove do not enter (2), one way (5) and no right turn signs (1). Retime signal.	N/A
	Shoreline Blvd	T intersection, stop controlled on the Twigg St approach	Stripe the stop bar and a shared through-right pavement marking arrow on the eastbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Restripe median area of Shoreline Blvd to allow northbound traffic on Shoreline to turn left onto Twigg St. Move yield/one-way signs to southern median instead of at the circle. Install yield/one-way signs at circle for westbound traffic. Remove one way signs on the northwest corner and median of Shoreline Blvd.	N/A
<b>Starr Street</b>	Water St	Signalized intersection, bulb out on all corners	Stripe stop bar and crosswalk on westbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Remove one-way sign (1) and no right turn sign (1) on northbound approach and no left turn signs (2) on southbound approach. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Shoreline Blvd	T intersection, but technically only northbound and southbound approaches, with northbound left turn onto Starr Street.	Stripe stop bar and crosswalk on eastbound approach with segment surface improvements. Install stop sign for eastbound approach. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Restripe median area of Shoreline Blvd to one lane for northbound traffic to u-turn or turn left onto Starr St, and one lane for eastbound traffic to turn left onto Shoreline Blvd. Relocate and rotate yield and one way traffic sign on southern median area of Shoreline Blvd to accommodate new eastbound traffic.	N/A
<b>Peoples Street</b>	Water St	Signalized intersection, bulb out on all corners	Stripe stop bar and crosswalk on new westbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Install two signal heads and VIVD camera for new westbound traffic. Install do not enter signs (2) on northwest and southwest corners facing new westbound traffic. Remove one-way signs (2) on southeast corner. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Shoreline Blvd	Signalized intersection, with bulb out on all corners	Stripe stop bar and crosswalk on eastbound approach with segment surface improvements. Install signal pole, mast arm, two signal heads and VIVD camera for new westbound traffic through the median area of Shoreline Blvd. Stripe lane assignment arrows on all approaches. Restripe median area of Shoreline Blvd to one lane for northbound left turning and westbound through traffic, and one lane for southbound left turning and eastbound through traffic. Remove one way sign (1) and no right turn sign (1) for southbound approach, do not enter sign (1) in striped median area, no left turn sign for northbound approach, and wrong way (1) and right turn only sign (1) for westbound approach. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
<b>Schatzell Street</b>	Water St	Signalized intersection, bulb out on all corners	Stripe stop bar and crosswalk, with shared through-left and right turn only pavement marking arrows for two lanes on westbound approach with segment surface improvements. Stripe shared through-left pavement marking arrow on southbound approach and shared through-right pavement marking arrow on northbound approach. Remove one way signs (4).	N/A
	Shoreline Blvd	T intersection, but technically only northbound and southbound approaches.	Stripe stop bar and crosswalk on eastbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Install stop sign on eastbound approach. Restripe median area on eastbound approach to mimic the existing lane assignment seen on Twigg St at Shoreline Blvd. Relocate stop/one-way signs in circle/median for eastbound approach. Install no right turn sign for southbound traffic. Relocate City Hall sign.	N/A

## EXHIBIT B

Street Name	Intersection	Existing Conditions	Improvements*	All-Way Stop Considerations**
<b>Lawrence Street</b>	Lower Broadway	Stop controlled on the northbound Lower Broadway approach, free flow for Leopard/Lawrence eastbound approach	Stripe eastbound approach to transition from two lanes to one lane. Stripe crosswalk, with right turn only pavement marking arrow on westbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Install right turn only (1) and additional do not enter (2) signs for all westbound traffic. Remove one way sign on southeast corner.	N/A
	Mesquite St	Signalized intersection	Stripe stop bar and crosswalk for all approaches with segment and intersection surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Remove all one way signs (4). Install signal pole and two signal heads on the northwest corner, one signal head on the northeast corner, and one signal head on the southwest corner. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Chaparral St	Signalized intersection, raised bulb out at southeast corner	Modify bulb outs on all corners to allow for two-way traffic on Lawrence St. Stripe stop bar on all approaches with segment surface improvements. Stripe lane assignment arrows for all approaches. Uncover signal heads for southbound approach. Swap out the two 10' ped poles for taller signal poles and install two signal heads for westbound traffic. Remove all one way signs (4). Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Water St	Signalized intersection, bulb out on southeast corner	Stripe stop bar and crosswalk on east and westbound approaches with segment surface improvements. Stripe lane assignment arrows for all approaches. Install striped or raised bulb outs. Uncover signal heads for westbound approach. Remove all one way signs (3). Retime signal.	N/A
<b>William Street</b>	Water St	Signalized intersection, bulb out on all corners	Stripe stop bar and crosswalk on westbound approach with segment surface improvements. Remove no left turn (2), no right turn (2), and one way (3) signs. Stripe lane assignment arrows on all approaches. Retime signal.	N/A
	Shoreline Blvd	T intersection, but technically only southbound approach.	Stripe stop bar and crosswalk on eastbound approach with segment surface improvements. Stripe lane assignment arrows for all approaches. Install striped or raised bulb outs. Install stop sign and right turn only on eastbound approach. Remove one way (2) signs for the southbound approach.	N/A
<b>John Sartain Street</b>	Mesquite St	Signalized intersection	Stripe stop bar and crosswalk on north, south and westbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Install do not enter signs (2) and lane use sign (1) on the eastbound approach for all westbound traffic. Install no left turn sign on northbound approach and no right turn sign on southbound approach. Remove all four one way signs. Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.

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Street Name	Intersection	Existing Conditions	Improvements*	All-Way Stop Considerations**
<b>John Sartain Street</b>	Chaparral St	Signalized intersection	Stripe stop bar and crosswalk on all approaches with segment and intersection surface improvements. Stripe lane assignment arrows on all approaches. Install striped or raised bulb outs. Uncover signal heads for southbound approach. Install two signal heads for westbound traffic. Remove all one way signs (6). Retime signal.	If all-way stop is warranted, operate as all-way flash with existing signals; City to confirm necessary equipment to function. Otherwise, signal poles can be taken down and replaced with stop signs.
	Water St	Signalized intersection, bulb out on all corners	Stripe stop bar and crosswalk on east and westbound approaches with segment surface improvements. Stripe lane assignment arrows on all approaches. Install two signal heads and VIVD Camera for westbound traffic. Remove all one way (3), no left turn (1), and do not enter (1) signs. Retime signal.	N/A
	Shoreline Blvd	T intersection, stop controlled on the John Sartain St approach	Stripe stop bar and crosswalk on eastbound approach with segment surface improvements. Stripe lane assignment arrows on all approaches. Remove no left turn (1), no right turn (1), one way (1), do not enter (2) signs and left stop sign (1) on the eastbound approach.	N/A

*\*In addition to the listed improvements, pedestrian facility improvements are needed to meet ADA standards. This study does not go into details of providing these specific pedestrian facility improvements, such as ADA compliant curb ramps, sidewalks, pedestrian signal heads and push buttons, for each intersection and segment.*

*\*\*City to perform an all-way stop study for each intersection*

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# APPENDIX: ONE - TWO WAY

# ROADWAY SEGMENTS

## ONE TO TWO-WAY CONVERSION - ROADWAY SEGMENTS

Street Name	Roadway Segment	Existing Conditions	Improvements*
Mesquite Street	Belden to WB IH-37	Two lanes southbound with small right turn bay	Surface improvements, stripe solid double yellow line (270') to have one northbound lane and one southbound through lane and one southbound right turn bay
	WB IH-37 to EB IH-37	Two lanes southbound	Surface improvements, stripe solid double yellow line (85')
	EB IH-37 to Mann Street	Two lanes southbound with two striped on-street parallel parking spots on west side	Surface improvements, stripe parallel parking spots and solid double yellow line (150')
	Mann Street to Twigg Street	Two lanes southbound with four striped on-street parallel parking spots on the west side	Surface improvements, stripe parallel parking spots and solid double yellow line (140')
	Twigg Street to Taylor Street	Two lanes southbound with striped on-street parallel parking spots on both side of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (275')
	Taylor Street to Starr Street	Two lanes southbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (260')
	Starr Street to Peoples Street	Two lanes southbound with striped on-street parallel parking on both sides of the street; loading zone close to intersection	Surface improvements, stripe parallel parking spots and solid double yellow line (280')
	Peoples Street to Schatzell Street	Two lanes southbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (75')
	Schatzell Street to Lawrence St.	Two lanes southbound with on-street parallel parking on east side	Surface improvements, stripe parallel parking spots and solid double yellow line (285')
	Lawrence Street to William Street	Two lanes southbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (265'), rotate parking sign (1) to face the correct direction of traffic
	William Street to John Sartain	Two lanes southbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (265')
	John Sartain to Coopers Alley	Two lanes southbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (495'), remove do not enter sign by Richline building, rotate no parking commercial loading zone sign (1) to face the correct direction of traffic
Chaparral Street	Mann Street to Twigg Street	Two lanes northbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (230'), remove wrong way signs (2)
	Twigg Street to Taylor Street	Two lanes northbound with striped on-street parallel parking on both sides of the street	Surface Improvements, modify angled parking to become parallel parking on both sides of the street, stripe solid double yellow line (290'), rotate parking signs (2) to face the correct direction of traffic
	Taylor Street to Starr Street	One lane northbound with striped on-street angled parking on both sides of the street	Surface improvements, modify angled parking to become parallel parking on both sides, stripe solid double yellow line (300'), rotate no parking commercial loading zone sign (1) to face the correct direction of traffic
	Starr Street to Peoples Street	One lane northbound with striped on-street angled parking on both sides of the street	Surface improvements, modify angled parking to become parallel parking on both sides, stripe solid double yellow line (300')
	Peoples Street to Schatzell Street	One lane northbound with striped on-street angled parking on both sides of the street	Surface improvements, modify angled parking to become parallel parking on both sides, stripe solid double yellow line (190')

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Street Name	Roadway Segment	Existing Conditions	Improvements*
<b>Chaparral Street</b>	Schatzell Street to Lawrence St.	One lane northbound with both parallel and angled parking on both sides of the street	Surface improvements, stripe solid double yellow line (305')
	Lawrence Street to William Street	One lane northbound with both parallel and angled parking on both sides of the street	Surface improvements, stripe solid double yellow line (290')
	William Street to John Sartain	One lane northbound with on-street parallel parking on both sides of the street	Surface improvements, modify angled parking to become parallel parking on both sides, stripe solid double yellow line (290'), rotate parking signs (2) to face the correct direction of traffic
	John Sartain to Coopers Alley	One lane northbound with striped on-street angled parking on both sides of the street	Surface improvements, modify angled parking to become parallel parking on both sides, stripe solid double yellow line (440'), rotate 25 mph speed limit sign to face the correct direction of traffic
<b>Twigg Street</b>	Mesquite to Chaparral	Two lanes eastbound, no parking	Surface improvements, stripe solid double yellow line (275'), rotate speed limit (1), no parking (2). Remove traffic signal ahead sign (1) to face the correct direction of traffic. Relocate dual post sign to south side of the street.
	Chaparral to Water Street	Two lanes eastbound, no parking loading zone on south side	Surface improvements, stripe solid double yellow line (290'), rotate 5 min parking signs (2) and private property towing sign (1) to face the correct direction of traffic.
	Water Street to Shoreline Blvd	Two lanes eastbound with on-street parallel parking on both sides	Surface improvements, stripe solid double yellow line (315'), rotate do not enter sign (1) to face Twigg St and no parking sign (1) to face the correct direction of traffic, install do not enter sign (1) at Omni exit for new westbound traffic, remove one way sign (1)
<b>Starr Street</b>	Water Street to Shoreline Blvd	Two lanes westbound with on-street parallel parking on both sides	Surface improvements, stripe parallel parking spots and solid double yellow line (315'), remove one way signs (4)
<b>Peoples Street</b>	Water Street to Shoreline Blvd.	Two lanes eastbound with striped on-street parallel parking on north side, loading on south side	Surface improvements, stripe parallel parking spots and solid double yellow line (310'), remove one way signs (3)
<b>Schatzell Street</b>	Water Street to Shoreline Blvd	One lane westbound with striped on-street parallel parking on both sides on north leg, and two lanes westbound with striped on-street parallel parking on south side of south leg	Surface improvements, stripe parallel parking spots and solid double yellow line on both legs (590'), stripe for two eastbound lanes, one westbound lane that opens up to two and a striped median buffer, remove one way signs pointing left (2), install one way signs pointing right (2) on south leg
<b>Lawrence Street</b>	Mesquite St. to Chaparral Street	One lane eastbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (285'), rotate 2 hour parking sign (1) to face the correct direction of traffic
	Chaparral Street to Water Street	Two lanes eastbound with on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (295')
<b>William Street</b>	Water Street to Shoreline Blvd.	Two lanes westbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (310'), remove one way sign (1)

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Street Name	Roadway Segment	Existing Conditions	Improvements*
<b>John Sartain St</b>	Mesquite Street to Chaparral St	Two lanes eastbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (280'), rotate no parking commercial loading zone sign (1) to face the correct direction of traffic
	Chaparral Street to Water Street	Two lanes eastbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (280')
	Water Street to Shoreline Blvd	Two lanes eastbound with striped on-street parallel parking on both sides of the street	Surface improvements, stripe parallel parking spots and solid double yellow line (320'), remove one way signs (3), remove lane assignment sign (1)

*\* In addition to the listed improvements, pedestrian facility improvements are needed to meet ADA standards. This study does not go into the details of providing these specific pedestrian facility improvements, such as ADA compliant curb ramps, sidewalks, pedestrian signal heads and push buttons, for each intersection and link.*

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