

1 EXECUTIVE SUMMARY

Transportation is a critical function for the economy and quality of life for every community. By providing an essential link to life for a large portion of the community, the Corpus Christi RTA has established itself as a leader in public transportation. In 2011, the RTA carried over 6 million passenger trips on buses, paratransit vehicles, and ferries ranking it #1 among all small urban systems in the Southwest. That success gives the organization a great starting point to move into the next 20 years.

While the success is clear, there are numerous opportunities and challenges over the next 20 years that this plan seeks to address. A thriving local economy creates new resources for the agency but also brings additional transportation challenges. Changing demographics will make the personal auto less of an option for many, but requires new approaches to ensure fiscal sustainability. By anticipating these and other items on the future horizon, this Long Range Plan will assist the RTA to ensure it remains a service for which our community can be proud.

In keeping with the vision statement of the RTA, increasing mobility and enhancing the local economy are important in the goals of the plan. To that end, the plan sets a goal of increasing ridership to 10 million passenger trips over the next 10 years. Expanding usage aligns well with community goals of improving the safety, health, and environment of the region. Being a more transit-oriented community also offers an opportunity to create urban places in the community that are being more sought after by younger, educated individuals.

To meet this ambitious mark, the plan recommends:

- A Priority Transit Network of nearly 50 miles that increases the intensity of service in areas of the community where transit is already popular. This service would provide a substantial improvement in the mobility of most current customers (over 80% of all RTA boardings are near these corridors) while also offering a much more attractive product to potential riders. Higher frequency results in improved convenience and also makes the transit system more resilient to failures – important for anyone with a choice.
- A redesign of downtown services that is better tailored to the various markets in this part of the community.
- New flexible services that provide necessary service to lower density portions of the service area, but do so in a way that can improve both customer service and cost effectiveness. In addition, by adding a personalization component, these services can better meet the demands of older adults or people with mobility impairments.
- Strategic measures to ensure the growth of B-Line ridership remains at financially sustainable levels, and ensures this critical service remains available for those who need it. Some of these are to partner with other public and private providers to allow passengers to make trips in whatever way is most convenient to them, to pursue cost

sharing with providers of other services where paratransit is essential, and improvements to infrastructure to reduce barriers to use of other RTA services.

- Expanded waterborne transit to improve other connections within the service area. This type of service is significantly more costly than others which limits the scale of expansion. However, strategic improvements to new locations with a schedule tailored to forecast demand can add an additional amenity within the service area.
- A new customer service center near the existing Staples Street Station to add additional services at this location for customers and improve the urban environment in this area.
- An investigation of the suitability of a new transit station on the Westside of Corpus Christi to improve services in this area with high transit ridership and allow better transfers to reduce out-of-direction travel in this area. Additionally, new park and ride locations should be considered to improve access to the transit system.
- A commitment to enhance the passenger waiting experience by ensuring at least 95% of all boardings at fixed locations happen under cover of a station or shelter.
- Increase street maintenance contributions to an estimated \$75 million for local partners over next 20 years.

By moving forward on these major goals and others found in the Long Range Plan, the RTA will be able to effect more positive change in the communities in which it serves.

2 PLAN OVERVIEW

Why Transit?

Transportation is a critical component to the development and economy of any community. Transportation is both a cost on the economy and well-being of a community (e.g. transportation cost of goods, cost in money and time of a commute) and an avenue to access jobs, education, health care, and other activities that enhance quality of life. Public transportation is just one of several modes that people use to access various life activities and, as such, must be a component in improving transportation in the region.

A well planned transportation network is one that minimizes the various costs of travel and maximizes access. Specifically, a transportation network should address:

- **Safety** – The largest ‘cost’ of transportation is caused by the many crashes that result from motor vehicle travel. Traffic fatalities are the largest single cause of non-health related death in the U.S. and reduces national average life expectancy by 4 months. In addition, the amount spent on health care and property damage as a result of crashes is hundreds of dollars per capita. The first goal of improved transportation is minimizing the costs of motor vehicle crashes.
- **Economy** – A good transportation network is key to the economic health of a region. Whether through the existence of key facilities like an airport or seaport or how the transportation network creates access to a job market, transportation is important to making a region competitive. In addition, as movement of goods or people can be a major cost of business, minimizing such costs can improve competitiveness and provide significant economic benefits to a region.
- **Access** – Modern transportation networks permit individuals to access numerous activities in less time than once was possible. Access expands choices people have for jobs, educational opportunities, shopping, health care, recreation or other uses. What goods and services the typical person can access in a community is an important element, as well as how access is balanced for all members of a community. Certain age groups, low income households, and persons with disabilities are just a few groups who often have limited abilities of access depending on characteristics of the transportation network as well as the urban form of the community.
- **Health** – Several health problems in the U.S. and other places in the developed world have been linked to increased sedentary behavior by individuals. Contributing to this are the nature of work and travel that have become increasingly mechanized over the past century. There are numerous studies that correlate higher levels of active travel, walking and cycling, with improved health outcomes in countries and communities.

- **Energy & Environment** –Another cost of transportation is its share of energy consumption and the resulting environmental effects. Transportation is one of the largest uses of energy today and most of this energy comes from petroleum. Petroleum dependence causes economic risk given the historic volatility of its price that is highly affected by global events. Using so much of our energy to move ourselves from place to place makes less energy available for improved economic output and drives up the energy costs for other sectors. Environmental concerns include hazardous compounds such as ozone that result from vehicle exhaust and contribute to respiratory disorders. Finally, the possible effects of climate change due to greenhouse gas emissions are likely to be particularly costly to coastal areas in the communities served by the RTA.
- **Costs** – The costs of transportation include public costs of roadway and sidewalk infrastructure and numerous services such as transit operations, traffic control, traffic enforcement, and emergency services for crashes. The City of Corpus Christi estimates that the long term roadway maintenance costs for its roadways at over \$900 million. New capacity and roads required by new development, particularly in currently undeveloped areas will add to this amount. The Texas Department of Transportation maintains many area roadways and maintaining these facilities is an additional cost. For example the estimated cost of a new Harbor Bridge is over \$800 million. Finally, the over \$20 million necessary for transit operations is yet another large public cost.

While public costs are substantial, these are dwarfed by the aggregate private cost of transportation. Based on the number of private vehicles and typical annual costs, over \$1 billion is spent annually by households for transportation. Transportation trails only housing in categories of uses of personal income. This level of expenditure can be a particular burden to households struggling financially. It is notable, for example, that many communities with high foreclosure rates in the recent economic downturn were places with high percentages of residents making long distance commutes.

Given these various considerations, effective transportation planning can influence a variety of sustainability and quality of life issues for the community. While personal auto use is easily the most popular and convenient mode, it also is the one that creates the most community costs based on the various aspects above: autos are, by a wide margin, the least safe, least healthy, and least sustainable mode of transportation, both environmentally and fiscally. As a result, mainstream transportation planning has moved from simple accommodation of current preferences to a holistic view of how transportation decisions influence community outcomes. Measures that encourage usage of other modes can bring significant positive community impacts and is best practice in transportation planning.

No single factor influences personal travel decisions more than convenience. The RTA's ability to influence personal choices is limited to having a product sufficiently convenient to meet the needs of a larger number of people and reminding the public of the personal and community impacts of their choices. While convenient public transportation is not always a sufficient cause of a great community, it is a necessary one.

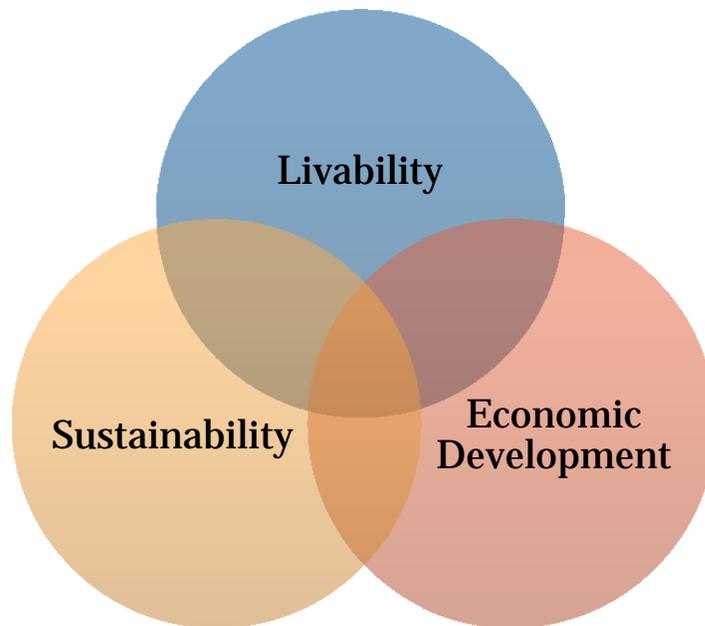
What should the RTA Look Like in 20 Years?

Every transit system either intentionally, or unintentionally, makes decisions about the types and intensity of services it will provide. These decisions usually have a degree of impact on the community with respect to its economic development, livability, and sustainability.

- **Economic Development** –Positive economic development means employment opportunities are available to a wide spectrum of community residents.
- **Livability** – community residents, regardless of age, income levels, or disability, have safe, reliable and enjoyable access to the daily needs and desires of life.
- **Sustainability** –The form and function of the community can be sustained, environmentally and financially, over an extended period.

These three outcomes exist in a relationship that is completely interdependent, one on the other (as illustrated in Figure 1). To a degree, a change in one factor, or outcome, will result in a change in the others due to the interrelationship.

Figure 1



There are two principles that are both inherent and immutable in making decisions about public transportation investments:

- There are always choices to be made about the balance of public transportation investments that will be different in every community. The desired outcomes for the community drive the emphasis of public transportation investments. The “right” choices are those that move the community toward desired outcomes.
- Transit can contribute positively to the community, but it remains one part, albeit an important part, of the transportation system that contributes to positive community outcomes. Nevertheless, public transportation cannot be all things to all people.

It is with that background that the RTA needs to establish guidance for future public transportation investments that yield the desired results in the community. The long range planning process has tested several approaches that have included differing emphasis areas and their impact on community outcomes. These approaches have been vetted through a variety of

means including surveys, stakeholder interviews, community workshops, and workshops with the RTA Board and staff. What follows is reflective of common themes and directions that have arisen from that process. At the same time, the plan reflects an ambition to make transit a more transformative force in the community than it has been to date.

Stakeholder and Community Input

The vision of the long range plan is to sustain and build on the strengths of the current system and in so doing continuously improve the utility of the RTA to the community.

While the planning process found desire for the RTA to stretch into new modes, the most common theme that emerged was to build on the strengths of the existing system. There is broad recognition within the community that the RTA provides access and mobility for a significant portion of the community, who without these services, would be extremely mobility limited, thus reducing access to employment, education, shopping, medical services and recreation. A finding in the outreach process was that this is a commonly held goal for the RTA that few wish to vacate.

At the same time, there is also a desire for the RTA to begin reaching into a larger market share of people who presently provide their mobility through use of an auto. There is also a commonly held view that the RTA should find ways to contribute to the economic vitality of the area through development of partnerships that result in new infrastructure and new services, but that these ventures should not necessarily be the centerpiece of the mission of the RTA.

Integration with Community Plans

Corpus Christi recently adopted the Integrated Community Sustainability Plan. The plan presents a guiding principle for future planning decisions in Corpus Christi. The plan direction begins to set a new balance for Corpus Christi recognizing that there are areas within the older portions of the city that are perfect locations for re-development. These nine re-development “nodes” have been identified to improve the density and accessibility of the city by encouraging significant re-development within the envelope of current city development (see Figure 2 below). The plan does not necessarily hobble edge or suburban development, but also recognizes the need for the city to accelerate development of mixed use neighborhoods while taking advantage of existing city infrastructure rather than extending infrastructure further toward the less developed edges of the city.

The Long Range Plan specifically establishes six of the nine re-development focus areas for enhancements to current capital facilities and services to assist the city in reaching the objectives established in the Integrated Community Sustainability Plan. Neither of these plans will occur quickly. This plan is a twenty year plan that is dependent on on-going availability of revenue to sustain and improve current facilities and services. The Integrated Community Sustainability Plan depends on development market forces to advance its goals. Neither plan is assured of full success, but the goal is for the two plans to work together in a way that meets Corpus Christi’s goals for a more sustainable community and meet’s the RTA’s goals of increasing ridership, improving service and enhancing facilities.

Figure 2: Destination Nodes Plan



Source: Corpus Christi Integrated Community Sustainability Plan

Long Range Challenges

As with any progressive plan, there are challenges for the RTA's long range vision. These challenges range from issues related to the way the transit system is funded to issues related to the development pattern of the community. The purpose here is not to enumerate all the challenges, but to highlight those of greatest significance.

Finance

The RTA is totally dependent on the economic well-being of the Coastal Bend region to support its operation. Today more than 80 percent of all funds used to support RTA operations flow directly from the 0.5 percent sales tax collected within the taxing boundary. Compared to many other transit systems in the United States, the RTA has weathered the economic recession very well. This is due to a combination of sound financial management practices and a local economy that has remained remarkably stable through the recessionary period. In addition, while many communities are anxiously awaiting signals that economic growth is beginning to accelerate, Corpus Christi has witnessed a significant up-tick in economic activity, and therefore sales tax revenue.

This situation is, at the same time, fortunate and unfortunate for the RTA. The on-going growth of sales tax revenue supports the system well and has allowed on-going investments in new services and facilities. However, the demonstrated instability of sales tax collections as seen in other communities also means the RTA must be cautious about over-extending the system to protect against serious structural financial issues in the face of an economic downturn. This means that during times of significant economic growth the RTA will appear to be very well funded, while in times of economic sluggishness, the system will appear to be just getting by. The

challenge for the RTA is to continue to operate and fund a system that meets community needs and is financially sustainable without lapsing into the temptation to become financially over-extended.

Community Structure

Corpus Christi has several areas of significant economic activity, but one of the larger and most problematic, from a transit perspective, is the development that has occurred along South Padre Island Drive. The design of the roadway system and the auto dominance of the urban form in the area form a challenge for serving the many popular destinations in the area. While better solutions for transit service in the area may be available, reaching those solutions will require joint action by the City, TXDOT, and the RTA to be successful.

Aside from the economic activity along SPID, the development pressure in Corpus Christi has largely been focused on the Southside for both residential and new commercial (but not mixed use) development. To date, the vast majority of this development is not a form that allows transit to serve them efficiently or effectively. This presents the agency with the difficulty of being unable to serve much of the city's newest development as cost effectively as other parts of the city. Also, current congestion levels on the Southside are not at a level to significantly discourage private travel, and the costs of fuel and parking (almost universally free) are not high enough to change travel behavior. These conditions may change over time, thus implying a need on the part of the RTA to test conditions for viable transit markets and match those markets with appropriate forms of service which could include flexible or demand responsive modes to meet some of the most critical needs.

The good news for transit service as referenced earlier is that Corpus Christi has realized to some extent that the status quo of development patterns is not sustainable. The city sustainability plan embraces development types consistent with successful public transit and encourages greater redevelopment of areas where the RTA already has strong usage. As redevelopment, emphasis "nodes" become reality, the travel activity associated with them will improve RTA performance and ridership, and the development itself can be aided by convenient public transit. This improvement may allow the system more flexibility to offer less traditional forms of service in areas where traditional transit service cannot flourish.

Operating Environment

Not unique to Corpus Christi, but a challenge for nearly every urban transit system, is how to improve operations and financial viability in an operating environment that continues to create delays and slows the system, thus requiring more resources to provide the same level of service. The current operating situation for the RTA is less than optimal as many routes operate with significant reliability issues. In a transit system like the RTA that depends on transfers but operates at relatively low frequencies, the lack of reliability routinely costs passengers 30 to 60 minutes of delay in their daily travels. Schedules can, and will, be improved, but these improvements will require the investment of additional resources to maintain connectivity while addressing the reliability issue.

In many cases, transit delays are experienced at high volume arterial intersections. Often there are engineering solutions to address the delays experienced by transit at these locations, often labeled "transit priority measures." These engineering solutions tend to be notoriously unpopular with the predominant transportation system users, drivers of private vehicles, since the auto driver perceives they are being disadvantaged to provide an advantage to transit. Consequently,

the implementation of these inexpensive solutions becomes the subject of public controversy and is thus not pursued by the local municipality. That does not mean that these solutions should not be investigated by the RTA where they would be especially beneficial, but with the understanding that implementation won't always happen quickly.

Demographics

News to no one, America is aging. Baby Boomers will, over the next two decades, swell the percentage of the US population that is above 65 years old to levels never before seen in American history. Elected leadership and transportation planners alike are very aware of this impending shift and continue to consider how our transportation systems - auto, transit, trains, planes - will adapt to a larger portion of the population who are older. Of special interest are large numbers of drivers likely to have worsening eyesight, decreased reaction times, and a substantial spectrum and incidence of physical and mental issues that negatively impact motor and navigational skills. The expectation for nearly all Boomers is that they will continue to be part of the mobile society that has developed over the last century.

For the RTA the challenges will be no less daunting than for these aging individuals. How to help people navigate a transit system that they have never before experienced, ensuring the system can accommodate a wide variety of mobility-limiting challenges, providing information to people who are accustomed to simply getting in their car are just a few of the issues facing the RTA in adapting to this coming reality. Today, the system is fully accessible, but the accessibility features available are really necessary for only a relatively small portion of the riding population. What would happen if the incidence of passengers who depend on these accessibility features increases from current levels to substantially greater amounts? One example is that today most transit buses have two or three spaces for people who use mobility devices. In Corpus Christi, on occasion, all existing spaces are occupied and people are turned away as a result. If the percent of customers who use mobility devices increases, how will the RTA accommodate these needs?

The B-Line is a door to door service for people who because of some type of disability cannot use a traditional fixed-route bus. This service provides significant mobility to those in the community in that situation. However, the service is very expensive compared to traditional fixed route service – about 10 times more per trip – and the amount of service provided is based on demand and is thus not always predictable. The aging and longevity of Americans will most certainly place new demands on the B-Line (and systems like it in every city) that will require additional funding. This is happening simultaneously with the need to adapt the fixed route system for those who can continue to use it but are also becoming mobility limited due to the effects of aging.

Given that this “Silver Tsunami” will come ashore over a period of nearly two decades, the impacts will be experienced slowly but steadily. The RTA will continue to deal with the challenges, but it is very important to recognize that this demographic shift will create a significant financial impact into the future.

The Long Range Plan

The plan that follows this introduction will guide the RTA through many of the challenges listed above while improving service to the community, providing impetus for better community outcomes, and addressing some of the problems of today's system. Long range plans cannot be

clairvoyant; changes in the community, in society, in finance all defy predictability. So, while this long range plan presents a very adaptable vision for the RTA over the next twenty years, it is also necessary to understand that modifications to respond to changing conditions are inevitable. The purpose of this introduction is to recognize that dynamic, but at the same time to encourage RTA policy makers and planners to consider modifications to the plan within the framework of what already exists, weighing the provisions of this plan against the implications of what is today unknown and adapting the framework accordingly.

The plan has been designed to assist the RTA in developing the transit system to build on current strengths, such as the high ridership corridors like Staples, Ayers, and Leopard, while addressing problems of the current system, such as declining reliability, a confusing route structure, and lack of productivity in some parts of the system. Implementation will be an on-going effort over the entire span of the plan, addressing the most serious deficiencies first, and then adding to the strengths of the system as resources permit. In addition the plan embraces the concept that the RTA is more than just a service provider and has both a role and a stake in the economic development and quality of life in the community. From a capital and service investment perspective, the projects identified in the plan are those that will grow ridership and lead to more positive community outcomes.

3 FIXED ROUTE NETWORK

CURRENT SYSTEM STRENGTHS AND ISSUES

Demand Patterns

Transit corridors with significant transit trip attractors are found along Port Avenue (Routes 16, 21, 23, and 37), Morgan Avenue (Routes 16 and 23), and Staples Street (Routes 17 and 29), and along corridors leading to downtown such as Leopard Street (Route 27), and 19th Street (Route 21). There are also significant transit trip attractors along Ayers Avenue (Routes 19, 24, and 31), Alameda Street (Route 5), and around the employment and retail developments on both sides of South Padre Island Drive – near Greenwood Road (Route 24) and along McArdle Road (Routes 31 and 66) and Tiger Lane/Corona Street/Williams Drive (Routes 8 and 17)

Stop level ridership data and route-by-route profiles show that origin-destination travel patterns are strongly oriented toward downtown, areas on the city's Westside, and along the suburban shopping centers on both sides of South Padre Island Drive (SPID).

Route Structure

The network today does not have a clear and legible structure. The historical route structure tends to be radial emanating from Staples Street Station, although this characteristic has been modified over the past few years with the orientation of routes to serve the growing SPID corridor and Southside of the city. The SPID corridor is particularly difficult to serve due to the one way, multi-lane, high speed, and very wide design of the freeway frontage roads. While the design allows adjacent property owners maximum auto access, it poses a very difficult, uncomfortable, and often dangerous environment for transit patrons.

There are routes serving long corridors that generate good ridership such as Routes 5, 27, and 29, and there are short one-way loop routes and route segments serving neighborhood level travel (e.g. Routes 12 and 24) that depend on a transfer to connect with the rest of the system. There are also several routes forcing transfers, especially in the outlying transfer centers such as Route 4 and 34, and several over-specialized routes that provide neighborhoods with multiple, sometimes low frequency services that tend to compete with each other (e.g. Routes 16, 32, 37, 63, and 66).

While the long corridors with heavier ridership run on major corridors, the smaller loop routes are solutions to deal with non-corridor based movements and serve new suburban developments south of South Padre Island Drive. Mid-route one-directional splits and service duplications are the result of serving neighborhood level travel needs, often school trips. There are also many important destinations that are in the fringes of the service area, such as Texas A&M University-Corpus Christi and the Naval Air Station/Corpus Christi Army Depot, which force the system to lengthen services.

SERVICE DESIGN PRINCIPLES

Based on these observations and many others, the following restructuring goals and service design principles were defined for the future transit network. The Long Range Plan is important for establishing a direction for completely rethinking how the RTA bus network functions. The

specifics of the plan are likely to move as conditions change and the results of initial changes inform later plans. What should be constant, however, is the application of the following principles for improving service to RTA existing and future customers.

Service Restructuring/Efficiency Goals

- Implementing a systems approach with more emphasis on how all routes work together to increase mobility for customers, rather than simply evaluating route performance as independent units.
- Maintain current service coverage, but reduce service duplication and route complexity.
- Introduce flexible, or on call services in appropriate markets.
- Rationalize service structure, concentrating service in fewer corridors and reducing out-of direction deviations. To the extent possible, serve neighborhood areas via nearby arterials and collectors.
- Improve effectiveness of transit centers by connecting low frequency routes with high frequency and long-haul routes.
- Augment quality and reliability of service through better scheduling and on-time performance. This may require setting different route running times for peak times, particularly for routes that cross SPID where the heaviest peak traffic congestion is observed.
- Reduce passenger wait times and travel times by providing more effective connections at transit centers, improving frequencies, and reducing delays on traffic hot-spots to the extent possible.
- Reduce transfers as possible by reducing route segmentation and creating interlines of routes with high transfer exchange rates.

Service Design Principles

- Develop a route structure comprised of Primary, Standard, and Basic levels of service as described in RTA's Service Standards.
- Maintain special service types such as express Commuter Routes, Downtown Circulators, and University Shuttles where specific trip patterns demand.
- Identify a network of primary transit corridors with weekday peak and midday frequencies of 15 minutes or better, operating 7 days a week with a minimum of 17 hours of service.
- Design route schedules where routes overlap for more than a mile to minimize headways along the corridor.
- Design routes or interline sets with schedule cycles that allow for efficient clock-face headways, e.g. 15, 30, 60 minutes. For example, if a route is designed such that it requires 70 minutes to complete a round trip, but the desired frequency is 60 minutes, the service requires two buses to maintain the desired frequency with significant "left-over" time at both ends of the route. A more efficient design would be to truncate the route to a 60 minute cycle, thus requiring only one bus to operate a 60 minute frequency or to interline the route with another route that could utilize the "left-over" time.

LONG TERM SERVICE NETWORK

Primary Transit Network

The Primary Transit Network (PTN) is a new designation of services created by the RTA's Board of Directors to improve service in high usage corridors and to improve travel time for longer, regional passenger trips. Corridors in the PTN are designated for frequent transit service, defined as at least every 15 minutes for weekdays, 7 day a week operation, with at least 17 hours of service (from 5:30 am – 10:30 pm). All points on the PTN can be accessed to any other point with no more than one transfer. Typical PTN stop spacing is greater than typical bus services.

The PTN is designed to be the backbone of the system from which to grow service in the future and to serve as an attachment point for other general bus services. The idea of providing a long service span, 7 days a week and frequent service is to provide an identifiable network of service that can be relied upon for all trips, at all times, and with much less need for customers to modify their personal schedule to use transit. Stops along the corridors are all sheltered. Additionally, this would be a committed service once designated, so customers know that residences or jobs served by the PTN will always be accessible through higher quality transit. The service levels of the PTN can be created via a single route or multiple routes with coordinated schedules operating on the corridor.

The following corridors are included in the long-range build-out of the PTN, listed in the general order in which they should be implemented:

- Staples Street
- Tanchahua/Carancahua/Ayers
- Leopard Street (east of State Highway 358)
- 19th Avenue/Port Avenue
- Downtown-Uptown Connection
- Morgan Avenue
- SPID Corridor
- Southwest
- Alameda Street
- West Leopard
- Flour Bluff

The West Leopard and Flour Bluff corridors are both programmed into the long range financial plan and would be beneficial in bringing frequent service to the most common longer distance trips in the current transit system. However, as these are longer corridors which will be especially costly, implementation should only follow an increase in existing demand for these services.

Some members of the public were interested in seeing a higher level of service eventually other than 'just buses' such as light rail or Bus Rapid Transit (BRT). The current funding sources of the RTA only permit the less costly varieties of BRT, with substantial stations, new vehicles, and traffic signal priority. Even these improvements would be contingent on additional federal funds via discretionary sources such as Very Small Starts and would require a higher level of demonstrated demand than currently present on any singular corridor. Minimally, daily ridership should exceed 3,000 passengers per day in a corridor before BRT is considered.

Notably, the service levels in both service span and frequency of the RTA Primary Transit Network are similar to BRT and would not require substantial new operating costs.

Standard Service

Standard service should be applied to well utilized corridors where the PTN application is not appropriate. Examples would be highly utilized services along residential streets, areas where demand is lower than the PTN, or where trip patterns are more local. Service hours and days will be generally similar to the PTN, but without the high frequencies. Bus stops spacing is moderate and roughly meets typical industry practice for bus service. This level of service will often also be found on corridors beyond the extent of the PTN.

Areas and corridors that would fit this category would be well-used residential routes in Hillcrest and Molina, arterials with moderate boarding levels such as Weber Road or Kostoryz Road, and corridor segments beyond the PTN such as Staples Street south of Williams Drive and Morgan Avenue west of Baldwin Boulevard.

Basic Routes

Basic routes provide more minimal fixed-route service to areas with lower demand. These services are in corridors with sufficient demand to justify fixed routes, but only marginally so. These routes operate at least once an hour during the day, and service span is less than the PTN or Standard Service. Many of these routes will be in developing parts of the community where densities are fairly high, but development patterns make transit use difficult. Managing stop spacing is less critical on these routes, given the lower usage.

Figure 4 depicts a representative future fixed-route network, showing how Standard and Basic services are used to feed and augment the Primary Transit Network.

Figure 3 Primary Transit Network (PTN) 2030

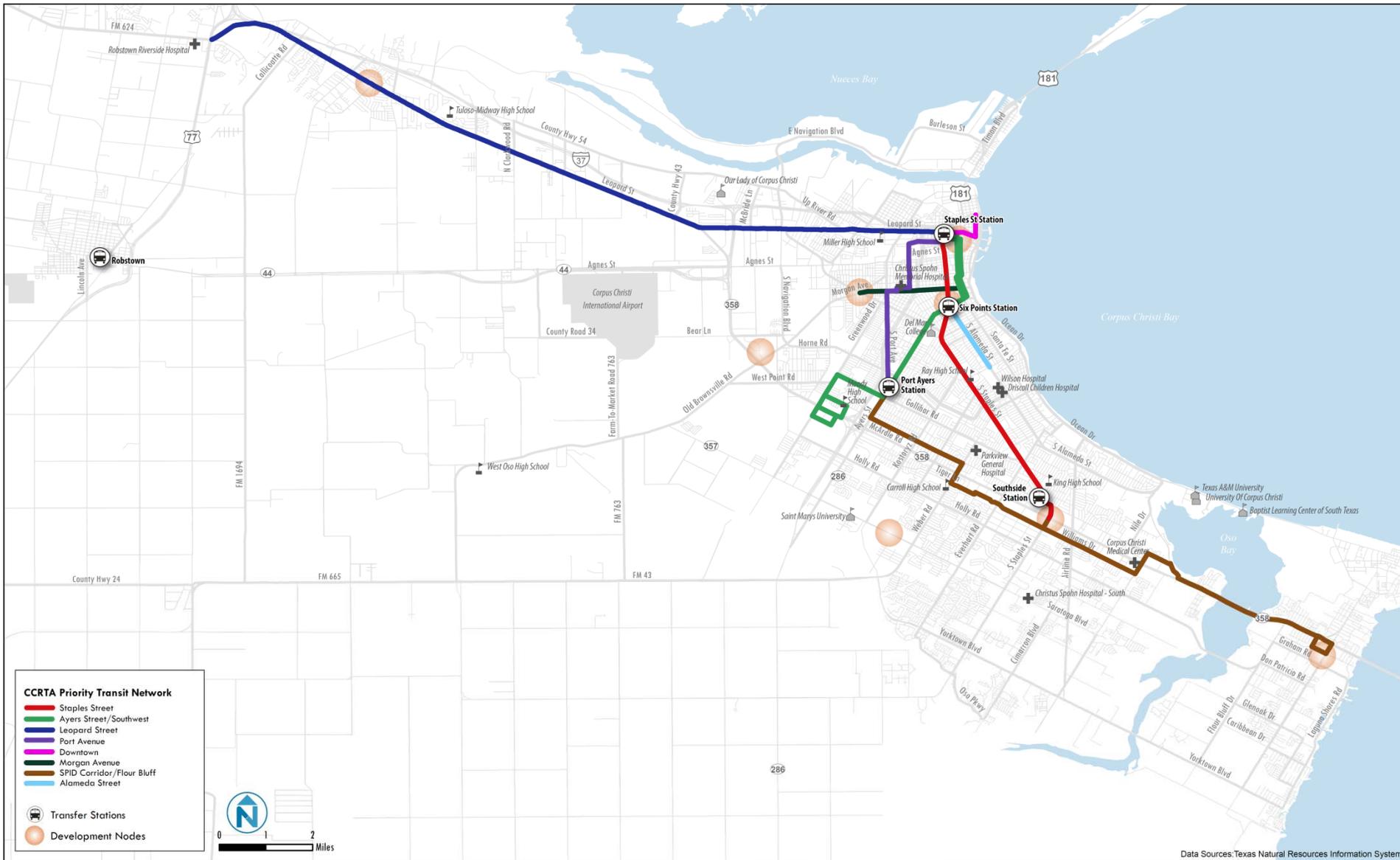
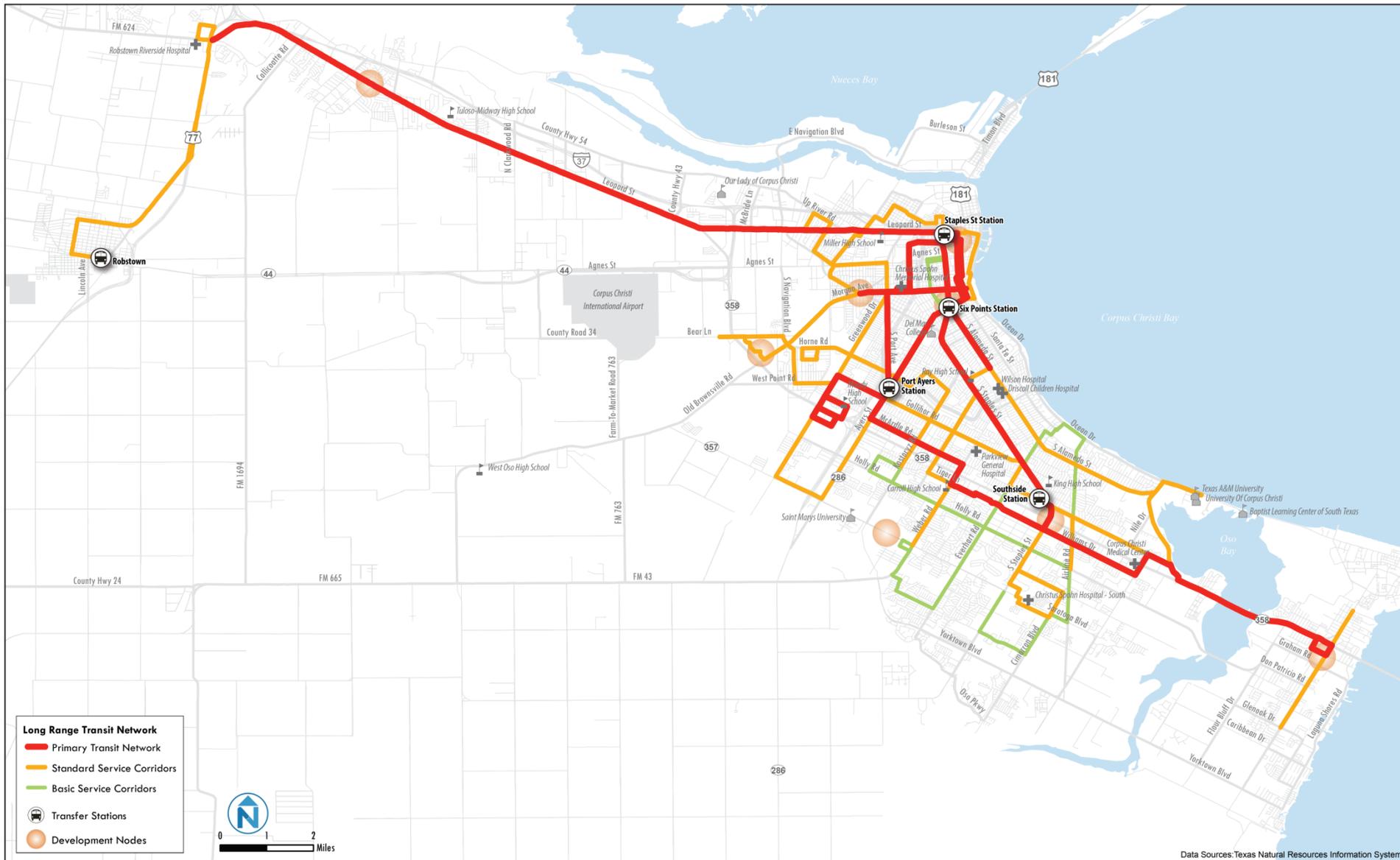


Figure 4 Future Transit Network Showing PTN (Red), Standard (Orange), and Basic (Green) Routes



Express Commuter Routes

Commuter connections are services providing specialized commuter bus service. Currently, three routes connecting Park & Ride lots to the Naval Air Station/Corpus Christi Army Depot are operated by the RTA. Past attempts to offer park & ride services to other locations have not demonstrated a demand, but over time this group of routes may need to grow beyond what can be discerned currently about the future network. An additional seasonal commuter service currently provided is Route 65 to resorts on Padre Island. The plan recommends operating this service year-round and should be expanded to provide better connectivity to Port Aransas. Figure 5 depicts the Express Commuter Routes. All routes in this category include:

- Route 50 – Calallen Park and Ride to NAS
- Route 51 – Gregory Park and Ride to NAS
- Route 53 – Robstown/Wal-Mart Park and Ride to NAS
- Route 65 – Mustang Island / Port Aransas Connector

Downtown Shuttles

The 2006 Downtown Redevelopment Committee (DRC) Report established a vision for Downtown Corpus Christi: “*Downtown Corpus Christi is a safe, clean, pedestrian friendly community comprised of a central business district, arts and culture, sports and entertainment areas. This unique, vibrant waterfront community will provide local residents, tourists, and families opportunities to enjoy its fine restaurants, shops, and residential facilities.*”

Downtown Corpus Christi needs key projects to catalyze positive growth and momentum. Strategic investment in a multi-modal transportation system is one of the principal ways by which this momentum can be catalyzed. The confluence of key community and transit planning efforts have created a social and political landscape that is favorable for transit oriented development in the center city which includes Uptown, Downtown, the SEA District, Destination Bayfront and the waterfront. From a visitor’s perspective, the North Beach area is also a place that houses several Corpus Christi attractions. To realize the center city vision, the City requires a convenient downtown circulation system that will help connect important locations, serve as a catalyst for pedestrian-oriented development, and promote the downtown experience. Further, the circulation system should support the concept of a “park once” downtown where people feel that there is a way to navigate the attractions in the area without needing to move their autos. Ideally, visitors to the area should be able to check into a downtown hotel and experience all parts of the center city without ever using a car.

Downtown Corpus Christi is currently served by transit in the form of three rubber-tired trolley lines and a seasonal ferry service. The trolleys run on 30-minute or 60-minute headways and on routes that are neither easy to understand nor convenient. This is reflected in the relatively low amount of usage of these services and their low levels of productivity. Further, the existing system has not had a notable effect on development or the retail environment.

The two main components of Corpus Christi’s downtown—the bar and restaurant district to the south and the arts and entertainment district to the north, for which there is only a single point of ingress/egress—are currently separated by the IH 37/US 181 corridor. This geography results in severe congestion and undesirable pedestrian-vehicle conflict conditions after special events of almost any size. Moving the current somewhat disjointed transit circulation system to a recognizable and useable downtown circulation system could provide reliable connectivity between the north and south lobes of downtown. Additional circulation is needed to connect downtown with Uptown and the rest of the transit system for employees in the area.

A goal for a downtown circulator system would be to promote private investment in the form of human scale development. The suite of new land use codes under development as part of the City’s Integrated Community Sustainability Plan will facilitate this fundamental shift toward more compact, mixed-use development. Strategically, the RTA has to approach downtown circulation from a partnership perspective, and will utilize a multi-pronged strategy pointed at improving the sustainability, sense of place, and pedestrian environment of the center city. A map depicting one possible approach to downtown circulation is included as Figure 6.

Downtown circulation needs to accomplish the following:

1. Typical bus service should be expanded in the downtown area and North Beach to serve the traditional transit markets such as people going to work or other uses. These services should connect to the balance of the RTA transit system at Staples Street Station.

2. Pedestrian extender service within downtown to increase the number of activities accessible without an automobile. Moving visitors to attractions via pedestrian and transit use will result in more trips to multiple destinations and allow the agglomeration of attractions to become more cohesive places. This type of service must be both simple in route structure and frequent to be effective. Vehicle types more appropriate to the local area should be explored. One vehicle type considered for this type of service was a streetcar; however, based on financial analysis done for the long range plan, construction and operation of a streetcar would require substantial new funding sources, as existing RTA resources are insufficient.
3. A land version of the Harbor Ferry to connect major attractions in downtown to North Beach. Because of the circuitous route travelling to North Beach, a simple, frequent service is unlikely to be financially viable. Rather, a transportation vehicle like the Harbor Ferry that is an attraction in and of itself, but using a land route, should be considered. In some waterfront communities these types of vehicles have taken several forms including open air buses, amphibious vehicles, and vehicles with unique coach bodies like fishes, etc.

Secondly, the RTA will continue to seek out opportunities for financial partnerships that will allow synergistic impacts of land use and transit to gain maximum advantage. The RTA has the ability to be a catalyst of vibrant, pedestrian-oriented land uses in downtown. There are several other projects of note that could impact downtown development, such as placement of the new Harbor Bridge, development of Destination Bayfront, development of new housing in downtown targeted for mixed income occupancy, new hotels, as well as many other potential developments that could occur in a twenty-year span of time. In response to those, the RTA will be open to financial partnerships resulting in outcomes like:

- Contributions to new areas that become “people places” where a transit focus is needed to add to the human scale.
- Development of unique, green vehicles for center city circulation. Note that several transit systems in the US are beginning to experiment with rapid charge electric buses. The electric drive train offers much greater flexibility in vehicle design and could result in vehicles that have exteriors and interiors specifically designed to meet Corpus Christi’s unique waterfront and weather conditions and be green and very quiet at the same time.

Figure 6: Downtown Circulation Concept



4 RURAL AND LOW DENSITY SERVICES

Corpus Christi Regional Transportation Authority consists of a very large service area of over 840 square miles. While the urban portions of Corpus Christi have sufficient population densities to support fixed-route transit, many portions of the RTA's service area lack enough density to warrant traditional bus service. Further, many of these areas are unlikely in the future to gain enough population that fixed-route service becomes justified. None the less, transportation needs exist in these communities that contribute to the RTA. Furthermore, since the rural portions of the service area have a larger share of older adults, these areas will likely become increasingly more dependent on forms of transportation aside from the personal auto.

Part of the mission of the RTA is to meet the basic mobility needs of as many residents of the service area as practicable. While from an efficiency and ridership perspective it would be highly desirable for everyone to reside in dense neighborhoods where transit can operate effectively, the reality is that condition is unlikely to be the case over the life of this long range plan. The need to provide a mobility safety net to citizens in rural and less populated areas needs to be addressed. The strategy for RTA over the life of this plan will be to meet those needs by deploying demand responsive service areas and flexible route services in those areas.

The benefits of deploying demand response zones over fixed routes are:

- Rural fixed routes that currently exist offer a very low service level, making them very inconvenient. Given the low amount of service, a customer needs some level of control to make the service convenient. Simply stated, if there is just one customer on the bus, why cannot the operator take that customer directly to their destination?
- In rural settings fixed-route alignments are, at best, educated guess work. Existing infrastructure is often minimal in these areas. Given these facts, establishing a new fixed route often means placement of expensive bus stop infrastructure prior to having any indication of actual usage. This is investing limited funds in infrastructure with no known rate of return. Demand response and flexible services do not need that level of infrastructure for implementation.
- Residents of rural areas tend to be older than urban portions of Corpus Christi. A more personalized form of service can often meet the needs of this population group, especially if disabilities or poor infrastructure limit their ability to reach fixed stops.

One example of a current flexible service is the Flexi-B service delivered to Port Aransas. This service is not currently very cost effective, but provides a basic connection for Port Aransas residents to Corpus Christi. There is an important difference in the existing Flexi-B and what is imagined by the long range plan. The Flexi-B operates completely independent of other RTA services, taking customers directly to final destinations. While that is a convenience to the

passenger, a better approach is to connect passengers to the fixed-route system so as not to duplicate services offered.

Candidate Areas

Areas with RTA's service boundaries that may be suitable for deployment of demand response or flexible services, as depicted in Figure 7, include:

- The western portions of Nueces County -- alternatives here include a zone that serves the western small cities with a Robstown fixed route or two zones that would overlap in Robstown with one to the south covering Bishop and Driscoll and one to the west covering Agua Dulce and Banquete. It should be noted that the RTA is presently providing a pilot fixed route service in Agua Dulce and Banquete, as well as regular service to Bishop and Driscoll. While it is not accurate to say no one is using these two services, it is accurate to say that resources being invested could reach a wider range of people if deployed as a flexible, or demand response service.
- The area in the near west of Nueces County – this zone could include Clarkwood, Sea Breeze apartments, the Airport, and other isolated areas of residential development in this part of the county. Given the long range improved service envisioned for the RTA headquarters, this zone could be anchored at that location and offer significant access into the balance of the RTA system.
- Gregory and surrounding area – This zone would serve the area around Gregory as well as the northern portion of North Beach and would be anchored at Staples Station.
- The developing edge of the Southside – This area would likely be comprised of two different demand response or flex zone areas – one that serves the area around Yorktown and one farther east serving the area around Rodd Field. These two zones could tie into fixed route services at Southside Station.
- The Naval Air Station Corpus Christi and Laguna Shores – Both areas are presently served with fixed-route service, but the level of usage is likely to make demand response service more cost-effective. Service to both areas could be anchored in Flour Bluff.
- Padre Island – A zone anchored at Flour Bluff would offer service to this area with many of the same development characteristics of the Southside. New tourist attractions in this area will create a demand for a workforce that will most likely come from other part of Corpus Christi.
- Port Aransas – This area has an existing fixed route – the Port Aransas Shuttle. To be more effective, the shuttle needs to be simplified, but could permit customers to request deviations within Port Aransas.

5 B-LINE

The B-Line is a curb-to-curb service provided by the Corpus Christi Regional Transportation Authority for persons with disabilities. The Americans with Disabilities Act requires the RTA to provide paratransit service within $\frac{3}{4}$ mile of fixed-route services. B-Line offers a critical link to many activities for those who need it, and it's important for the RTA to continue offering quality service to these individuals. At the same time, the service is expensive; as a result, strategies to provide some of these trips by alternate methods should be explored.

Relationship with Flexible Transit

Presently the RTA offers B-Line paratransit service everywhere in its service area. B-Line trips to areas outside the $\frac{3}{4}$ mile buffer of fixed routes require a surcharge as part of the fare and are a small subset of B-Line trips overall. At the same time, many other residents in the rural parts of the service area who are not necessarily eligible for B-Line service have no services at all. A long range potential is to offer a service in these areas that can serve the majority of needs for both ADA eligible individuals as well as people who have a variety of other mobility limitations but who are not ADA eligible. The type of service available is described in the preceding chapter and does not need to be repeated here. The important part of this strategy is to recognize that it may be possible to provide greater mobility for the community by combining services in rural areas.

The strategy of combining B-Line and general public services may not be workable in all of the areas served by the B-Line. In these cases an alternative approach that maintains the B-Line as a separate service should be considered. For example, the RTA is currently providing a significant number of B-Line paratransit trips to Robstown residents. Since these are costly trips for an operator based in Corpus Christi, the potential for reaching an agreement with REAL or Paisano Express, one of the other two providers that travel through Robstown, should be explored. A similar situation may also exist in the town of Gregory, which is also in the B-Line service area.

Other Coordination Opportunities

There are currently no cost-sharing agreements with human service agencies whose clients are transported on the B-Line. This includes service to riders who are Medicaid eligible and travelling to medical appointments. The opportunity for capturing some of the Medicaid transportation funding for these trips should be explored.

There are also no cost sharing arrangements with for-profit dialysis clinics, even though their patients constitute the third largest group of B-Line riders (after "daycare" and "work"), and the number is growing. Over 14,000 dialysis trips were provided in 2011, which represented a growth of over 12% from 2010. This is much higher than the overall growth in ridership. Besides the potential for financial contributions from the clinics, another possibility is to negotiate with the clinics about changing the patients' schedules to make it more efficient for the B-Line to provide

service to people who use dialysis services. A strategy should be pursued to negotiate dialysis appointment times for B-Line customers that allows for multi-passenger trips to the clinics and to best fit people from various geographies into fewer trips. It should be clear that it is likely not possible to reduce the number of times per day a B-Line vehicle arrives or departs to or from dialysis clinics to a mere handful, but that the trips that are made can be made more efficient.

Another strategy worth pursuing is the use of taxis in some capacity in the provision of paratransit service. RTA has used taxis in the past to provide service to seniors and people with disabilities. Currently, three taxi companies operate in Corpus Christi with only one having an accessible vehicle. Given that there is presently only one accessible taxi vehicle, the focus of this strategy should be on trips used by individuals who do not depend on mobility aids. Also notable is that the majority of paratransit trips do not require a wheelchair accessible vehicle. Often due to the physical condition of people immediately following dialysis, the use of taxis for the return ride home can greatly improve service quality to this group of customers.

Short-Term Recommendations:

- Lower the productivity goal to 2.6 passenger trips per hour in recognition of changing travel patterns and the extremely low trip denial rate.
- While maintaining the program's goal of zero denial rates, allow for more than the current extremely low 0.00001% denial limit in recognition of the number of variables beyond the provider's control that can lead to trip denials.
- Consider expanding the amount of time spent on each eligibility assessment.
- Remove the policy of granting presumptive eligibility to applicants awaiting their determination, except in a limited number of cases where there is an emergency need.
- Coordinate the practice of documenting accessibility barriers when conducting path-of-travel assessments with capital programming of RTA so that some barriers might be removed to allow individuals access to fixed route transit.
- Change the no-show policy to reflect the proportion of trips that result in no-shows, rather than absolute numbers of no-shows.

Long-Term Recommendations

- Explore coordination opportunities with Paisano Express, REAL, or others for service in the western end of RTA's service area, particularly as a means of shifting Robstown paratransit trips to a less costly option. Establish design guidelines for operating this service through these providers.
- Explore the potential for using taxis in the provision of paratransit service, particularly during peak hours when the fleet is at capacity or during late evening hours.
- Explore the potential for developing a volunteer driver program based on the model used in Ft. Worth, where riders find their own drivers who are reimbursed for gas expenses.
- Explore the potential for cost sharing with dialysis or chemotherapy clinics or others whose clients have a particular need for the B-Line.

6 FERRIES

Harbor Ferry

The Harbor Ferry is a seasonal passenger-only ferry service provided by the Corpus Christi Regional Transportation Authority from Downtown Corpus Christi to the North Beach neighborhood. The Harbor Ferry docks downtown at the Peoples Street T-Head and in North Beach next to several visitor attractions including the Texas State Aquarium and the USS Lexington. It has been in operation since 1993, although its service was suspended in 2007 and 2010, and it only ran partial service in 2009. In 2011 it recorded 52,951 passengers, its highest ridership ever, with fares set at \$3 per roundtrip.

In 2012 it is operating from March 10-November 25. It operates daily in its first week, which corresponds with Spring Break, and on weekends until Memorial Day. From Memorial Day until Labor Day it operates daily, and from Labor Day until the end of its season at Thanksgiving it will operate on weekends only. This season a second vessel supplements service provided by the Independence. The second vessel is available in case of mechanical problems or capacity issues. The Harbor Ferry service is paid for by the RTA but operated by a private company, HMS Global Maritime. The long range plan for the Harbor Ferry includes:

- Extensions of ferry season and service span – that is, the ferry would operate more days for more of the year and operate longer hours each day.
- The fare charged for the Harbor Ferry should be reviewed with an eye toward improving the farebox recovery of the ferry. Presently, at \$3.00, the ferry is priced considerably under market value for the trip, which is closer to \$5 to \$6. People using the ferry are using it for discretionary travel and the fares should be adjusted to reflect that reality. While not specifically recommended in the long range plan, it may be appropriate for the RTA to set a farebox recovery target for the ferry to ensure fares and operating costs remain at a healthy ratio.
- Further development of the Harbor Ferry terminal as not just a boat slip, but a place of focus and importance on the waterfront.
- If demand continues to escalate as it did in 2012, it may be appropriate to consider acquisition of a larger vessel for the service rather than depending on deployment of a secondary vessel as a capacity buffer. For RTA this should be a decision based primarily on the financial considerations. When the combined use of the Independence and a secondary vessel exceeds the costs for a larger vessel operated throughout the service period, then acquisition of a larger vessel is indicated as an appropriate action. It is also recommended that the RTA continue to use a charter scheme both for operations and vessel acquisition. The current seasonal operation is an ideal fit for a chartered vessel. For

vessel acquisition, a capital purchase of the vessel only makes financial sense if the optimum size of the vessel can be established and the vessel is deployed nearly year around. Otherwise, it becomes a very expensive asset that, when idle, offers no potential for gaining revenue for the RTA while at the same time continuing to accumulate on-going costs for mooring and off-season maintenance.

Port Aransas Ferry

Many stakeholders were interested in the expansion of ferry service to Port Aransas. There is currently a ferry service in Port Aransas, consisting of small car ferries that shuttle back and forth across the Corpus Christi Ship Channel between Port Aransas and Aransas Pass. It is operated by the Texas Department of Transportation. A Corpus Christi-Port Aransas ferry would be passenger only, probably using the Harbor Ferry dock in Downtown Corpus Christi and a dock at the Port Aransas marina.

HMS Global Maritime, the company which operates the Harbor Ferry service for the RTA, estimates that a Corpus Christi-Port Aransas ferry would take 43 minutes in each direction. The service would require \$445,000 to plan and build infrastructure for, and a boat could cost between \$3 and \$6 million.

Operating a high speed ferry is substantially more expensive than any service the RTA currently provides including the existing Harbor Ferry. Using only its current funding streams, the RTA could fund only a very limited demonstration service, operating only on weekends during the summer. Given the high costs, a more robust Port Aransas ferry can only be pursued by RTA with very strong financial commitments from other beneficiaries of the potential service.

7 FACILITIES

Existing Stations

The RTA has five developed bus stations in order to facilitate transfers between bus routes. Given the large number of transfers on the bus network, stations are important to ensure maximum amenity for passengers. Stations vary in their functionality and need. Current stations are:

- **Staples Street** – Works well as a center to access downtown and transfer between regional routes, local routes, and downtown and Shoreline circulators. However, the route network is excessively oriented to this point in many cases, particularly with routes operating on the Westside of the city. The station is located in a once urban environment that has since deteriorated and been replaced by suburban-style institutional uses.
- **Six Points** – Is not more than a major intersection where four routes serving downtown come together: Routes 17 and 29 which operate as a single corridor on Staples Street, Route 5 which operates in a parallel corridor (Alameda Street), and Route 19 which could provide most transfer opportunities down Ayers Street. The station is in the most urban environment of all RTA stations, and service to the station could be improved by at least one route connecting this point to city's Westside. Currently all these trips must funnel and often transfer through Staples St. Station, forcing longer than necessary travel times.
- **Port Ayers** – Provides a good junction location for north-south services (Routes 19, 21, 23 and 24) and east-west services (Routes 31, 32, and 37), while essentially being the single gateway to the Southwest part of the city. The current service network has somewhat over-emphasized this location as seen in the unnecessary deviation of Route 21. Some routes currently terminating here could be easily redesigned as through services. The Station is surrounded by older strip development, but with surprisingly good pedestrian infrastructure.
- **Southside** – Is a necessary junction to serve outlying urban areas but the location is less than ideal as it requires that routes deviate from the main transit intersection (Staples Street and McArdle Street). This makes some route deviations awkward and inefficient such as Routes 6, 26, and 29. These should be addressed, where possible, through better through routing. This could also reduce the number of routes that are cut short such as Routes 8, 31 and 66 that force transfers and add a double transfer to reach any major destination other than Southside. Additionally, Southside Station lacks a pulsing scheme such as found at Staples Street Station and Port Ayers Station. All of these combine for services taking too long to get from one place to another. For a transit station that serves a major community destination and travel generator, the pedestrian environment of the location is poor. This makes the nearby La Palmera Mall and other retail destinations arduous for transit patrons to access.
- **Robstown** – Provides a central location for various routes on the western side of Nueces County, and currently serves Routes 27, 34, and 67 along with commuter Route 53. This location should be utilized as a centralizing point on several flexible services considered for this part of the service area. The vast majority of boardings at this location are on Route 27 going to Five Points and Staples Street Station.

Customer Service Center & Other Future Facilities

A major project for the RTA is the planned move of the existing customer service functions from leased space near 6 Points Station to a new Customer Service Center adjacent at Staples Street Station. The most obvious advantage of this move is to locate customer service to the most utilized station of the RTA. Additionally, some administrative functions that logically should be in proximity to passengers – such as B-Line eligibility, planning, and marketing – will be located at the facility as well. Finally, the RTA is working to include other services that many passengers find important, such as county veterans' and social services in the Customer Service Center.

The financial long range plan also accommodates several additional transfer stations and/or park & ride lots into the future. The primary need in this regard is a transfer location that could simplify services on the city's Westside where a large number of RTA boardings occur. Most services on this side of the community feed into Staples Street Station or Port/Ayers station, meaning many trips from one part of this area to another require out-of-direction travel. Creating more direct routing often results in additional transfer opportunities and where these are great enough, an off-street station is recommended. In the design of the bus network created by the plan, the area near Morgan and Port becomes an intersection of several corridor alignments and transfers among them can be facilitated with a new station.

Bus Stops

The RTA serves over 1,400 bus stops throughout its service area, and much of the travel time of passengers are spent waiting here for buses. During the development of the plan, numerous stakeholders expressed their desire to see the RTA do a better job providing amenities to customers waiting for services at bus stops. Not only do coverings protect passengers from inclement weather and rain, but also the intense sun this region experiences during summer months.

Currently, the RTA has about 200 shelters and sunshades deployed throughout the service area. This amount leaves too many customers without shade while waiting for the bus. Several goals should be strived for in better meeting the needs of customers. First, all stops along the Primary Transit Network recommended by the plan should have shelters. Further, to ensure other areas receive adequate treatment, the RTA will establish a goal of sheltering 95% of passengers at fixed stops, dramatically increasing the number of passengers who have cover at their stop. Finally, different shelter options should be explored to make sure shelters that are deployed sufficiently protect against various weather elements. This goal can be achieved with progressive investment in amenities over the next 5-7 years.

8 FINANCIAL PLAN

Cost Projections

RTA 20-year projections for operational and capital costs were estimated for the services, facilities, and programs included in this plan. Capital costs include the new Customer Service Center in 2013, and other new transit stations in future years. The new center is expected to cost up to \$20 million in 2013 and 2014. There is also a new CNG fueling facility and related maintenance facility modifications being completed for \$3.2 million. Also included in the capital costs are new fleet purchases for fixed route (35 and 40 foot vehicles) and smaller buses for flexible and paratransit services. Bus stop improvements and RTA contributions to roadway maintenance are also part of the long-term capital budget. Annual capital costs range between \$4 and \$19 million between 2013 and 2032 (\$275 million total).

Overall, planned operational costs are forecast to grow by from current \$26 million to almost \$62 million by 2032, with much of the growth due to compounding inflation. New services are planned which also contribute to growth, but proportionately a much larger share of the overall growth is due to inflation. Importantly, the plan directs a larger share of operating costs to provision of services than current.

Street Improvement Program

The second largest capital cost category in the plan (behind revenue vehicles) is contributions to partner communities for street improvement. The amount of this annual expense has varied over the history of the RTA, but it has been a long-standing policy choice of the RTA Board to provide a level of financial assistance for street maintenance to local jurisdictions in recognition of the wear and tear induced by RTA's buses as well as pedestrian improvements and emergency transportation services. Over the course of the long range planning process, the administration of the RTA has had discussions with the City of Corpus Christi to revise RTA's annual contribution to street maintenance. The outcome of those conversations has been an increase in the amount that has typically been transferred between the two bodies and a formula for future allocations. The RTA will seek greater transparency of funds provided, as this has been an issue within the public debate on road funding.

RTA has also provided funding to the other incorporated jurisdictions within the service area. All of these areas are much smaller than Corpus Christi and have fewer bus services. However, the RTA desires to have a program with an equitable distribution among jurisdictions while also ensuring program changes do not negatively affect partners. For other communities, the amount that has been determined is the greater of historic contribution level and the same percentage of receipts received by Corpus Christi.

Figure 8: 2012-2032 Cost Projections

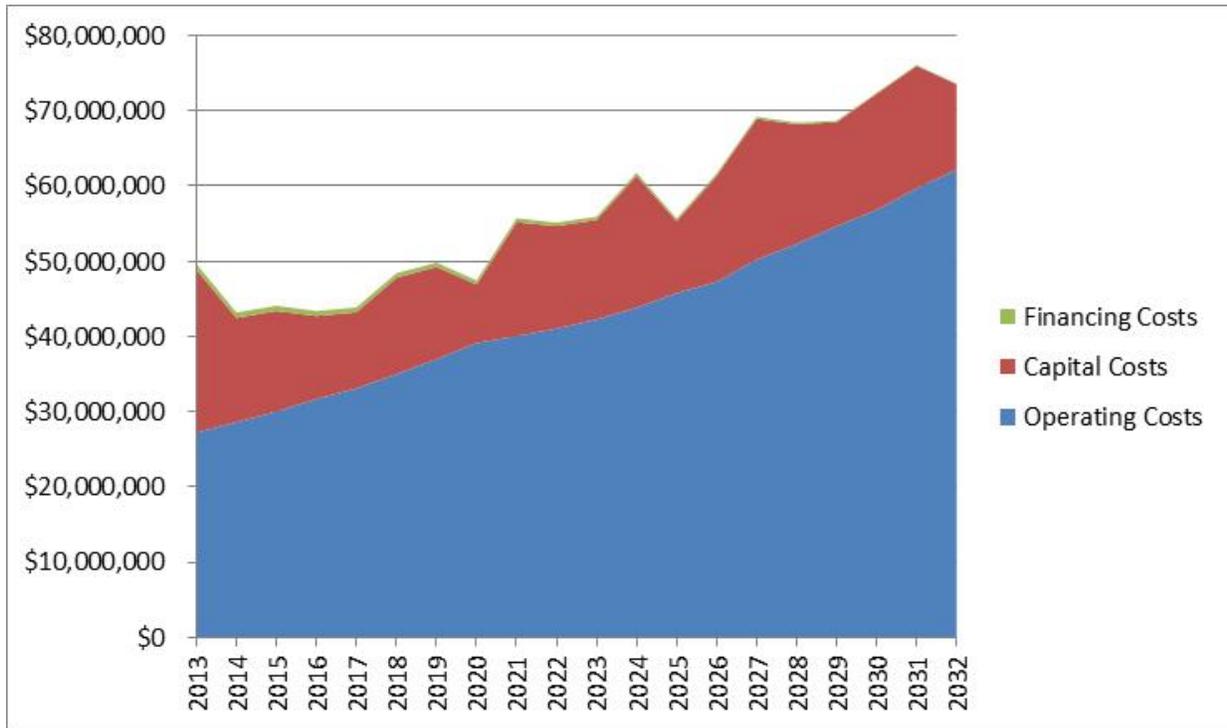
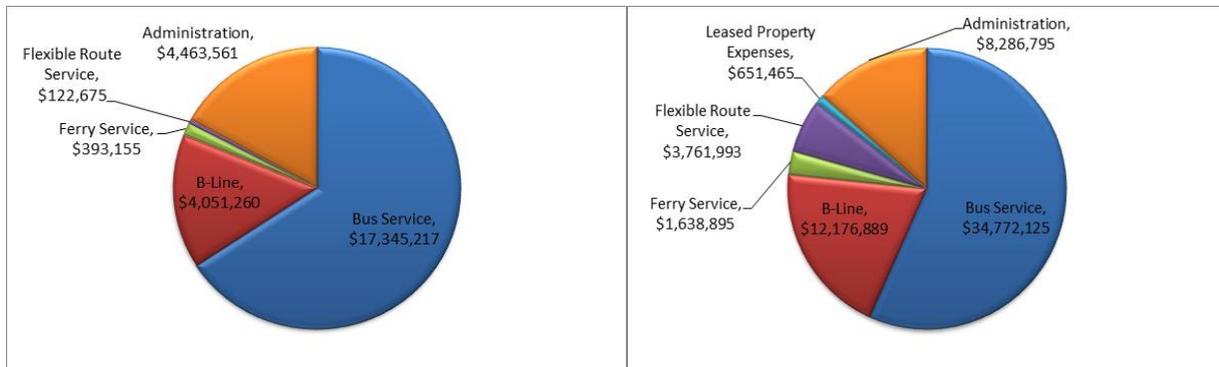


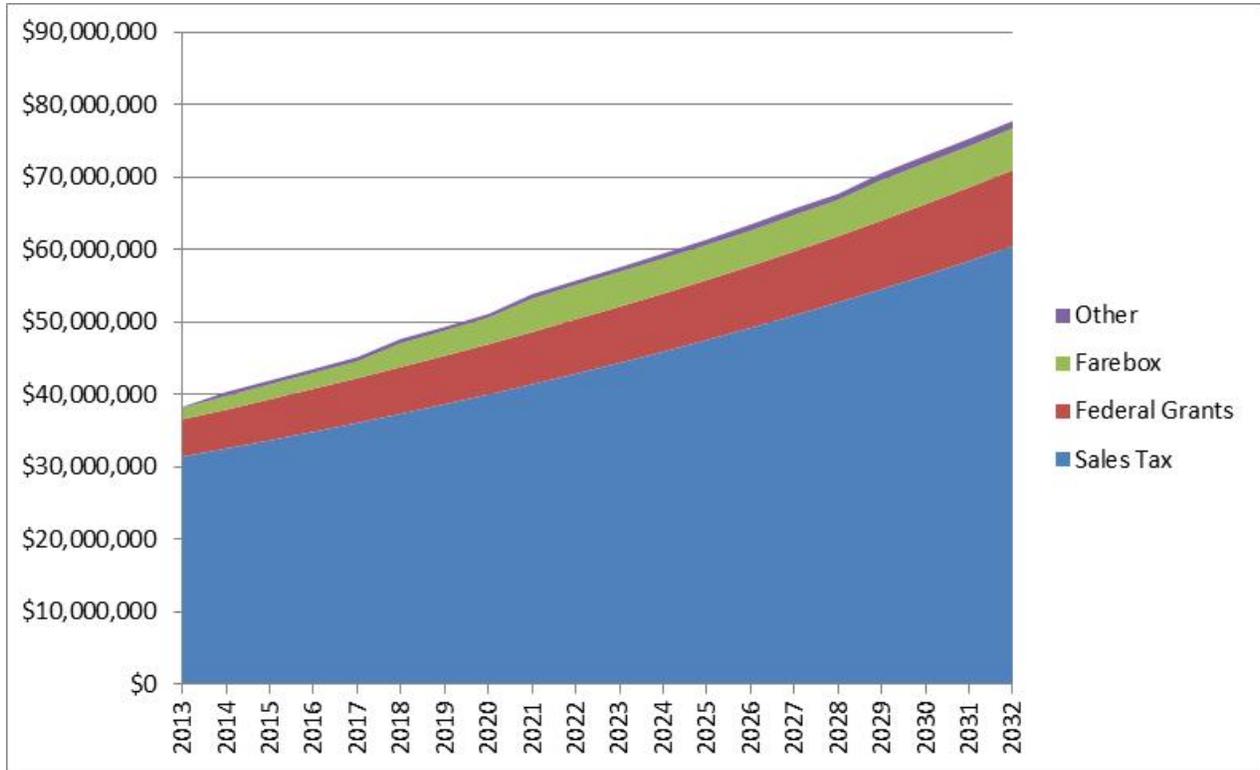
Figure 9: Operating Cost Comparison 2012 & 2032



Revenue Projections

Major revenue sources for the RTA come from sales tax, farebox revenue, and federal grants. A one-half cent sales and use tax is the primary funding source for RTA operations. According to the 2011 Comprehensive Annual Financial Report, sales tax revenues have grown at a rate higher than the rate of growth of operational expenses, 5.1 and 4.5 percent respectively, and both are well-above price inflation over the same period. In this 20-year projection, sales tax revenue is conservatively expected to grow at a rate of 3.5 percent. Farebox revenue and federal grant revenue make up less than \$10 million in annual revenues for the RTA.

Figure 10: 2012-2032 Projected Revenue by Source



Sales Tax Revenue

Sales tax revenue makes up the most significant portion of the RTA annual operating budget, at 82.7 percent in 2012.¹ Sales tax revenue has remained a stable funding source for the RTA over the past decade, with a steady 3.2 percent annual growth rate, and increases in every subsequent year except for 2003 and 2009. Sales tax receipts for September 2011 were 20.2 percent higher than the same month in 2010. The RTA attributes this growth to economic recovery following the 2009 recession, as well as oil and gas drilling in South Texas.

¹ Corpus Christi Regional Transportation Authority. *2012 Annual Budget Fiscal Year Ending December 31, 2012*. Available online at <http://ccrta.org/wp-content/uploads/2012-Budget1.pdf>

Figure 11: Revenue by Source (Image Courtesy of Corpus Christi RTA)

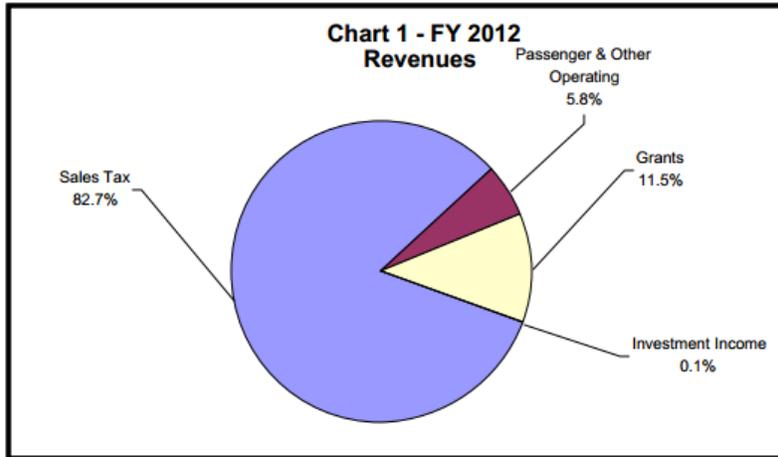
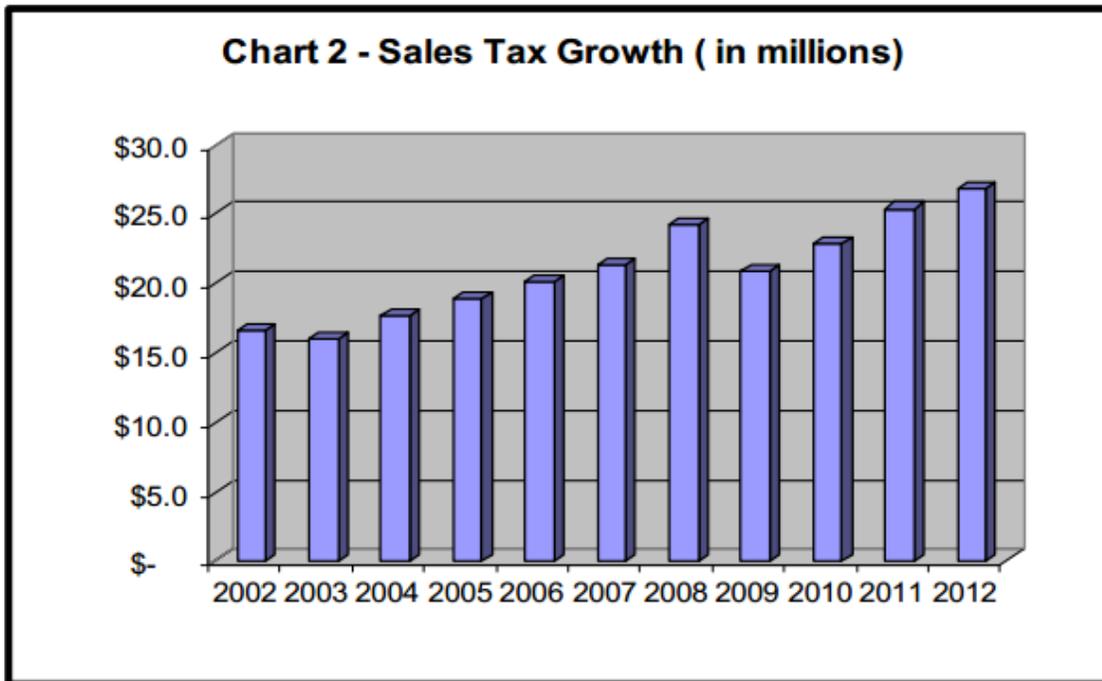


Figure 12: Sales Tax Growth (Image Courtesy of Corpus Christi RTA)



Grant Funding

The RTA has historically received FTA Urbanized Area Formula Program 5307, New Freedom Program 5317, and Job Access/Reverse Commute 3037 and 5316 grant funding. Recent legislation (Moving Ahead toward Progress in the 21st Century or MAP-21) consolidated these programs into several formulas (Sections 5307, 5310, and a new 5339) and tied overall increases with anticipated inflation. While federal funding over the past 15 years has nearly doubled, federal funds are forecast to grow only with inflation, as the federal deficit is likely to make new transit investment more difficult. A portion of the FTA formula is based on revenue miles, and this portion is expected to grow as RTA adds service in the future.

Overall Revenue and Expenses

The overall financial outlook for the RTA is strong. Long-term projections show RTA will be capable of expanding its street maintenance program, endure a growing elderly and disabled demand, maintain a modern fleet, develop new flexible services, and increase bus and ferry service without reducing reserves. The fluctuations in capital costs due to fleet replacement schedules and major programmed capital projects will potentially lead to an inconsistency in shortfall/surplus years. The aggregate capital costs can be afforded over the course of the 20 year plan. The RTA should develop a more specific five year capital plan to control capital costs. The reserve funds of the RTA are kept healthy throughout the long-range financial plan, though, as a proportion of operating costs, not as large as in the recent past.

Figure 12: Overall Revenue and Cost Outlook



Sensitivity to Business Cycles

Every area faces cycles where economic growth will lag for a period of time and then begin to rebuild. The most recent of these in Corpus Christi was experienced between 2008 and 2011. Sales tax revenues dropped between 2008 and 2009 and did not rebound to amounts greater than 2008 until 2011. For now, growth has returned, and RTA is seeing record sales tax collections. This is, at the same time, a blessing and a curse. The blessing is that the agency has resources to invest in new services and needed infrastructure. The curse is the temptation to over-invest which could, in leaner times, result in a financially unsustainable transit agency. The Coastal Bend region has been very fortunate through the most recent recession. Sales tax revenues have quickly rebounded and are now at record levels. Few other locations in the country are enjoying a rebound that robust. Many continue to see revenues below the peak levels of 2008 and 2009. Nearly universally, transit agencies have had to pull back on services, raise fares, and delay planned capital investments. While the scale of the recent recession may be a once in a lifetime event, it has pointed out the necessity for tax supported agencies to carefully consider the consequences of normal business cycles. A transit agency's most valuable benefit to the community it serves is the service that is provided on the street every day. Without the operators guiding the buses

through their routes, investments in bus stops, transit centers or maintenance bases lose their public value. So it is important to understand the influence of business cycles on the capacity of the system to continue to provide a given level of service.

To that end, the long range financial model was tested using several different variations of assumptions of growth and inflation, along with timing of periodic downturns. The results are that the system remains sustainable, even with these various assumptions, although the scale and timing of some improvements will be impacted. Review of the plan and its projects will be on conducted an ongoing basis, and particularly if actual results vary significantly from the assumptions in the plan. Any review should:

1. Ensure that all future investments in service and/or capital are consistent with the direction of the long range plan.
2. Update the long range financial scenarios to adjust projects included in the plan and the timing of each.

9 SERVICE DESIGN AND PERFORMANCE GUIDELINES AND STANDARDS

WHY GUIDELINES?

This principles of the Long Range Plan will guide and direct agency activities through the year 2032. The Long Range Plan objectives are intended to allow the delivery of transit services that:

- Are efficient and sustainable
- Provide equitable and just transportation options to a diverse traveling public
- Integrate with other local projects and priorities

As part of the overall effort to look to the future, the RTA Board adopted a new Service Standards Policy in June 2012. The plan outlined in this document is fully consistent with those standards and depends on the policy directions contained within the standards for successful implementation. To ensure there is an understanding of how the Long Range Plan and the Service Standards Policy complement each other, a summary and extract of the Service Standards is repeated below. Only those standards that apply directly to the plan, as opposed to service adjustments, have been included here. The full service standard policy is available from the RTA.

I. PURPOSE

1. Policy Goals

The RTA operates a family of services that is designed to be consistent throughout the service area. While the service area is diverse in its needs and demand for transit services, the goal of this policy is to ensure equitable treatment throughout the service area. Decisions on services provided or modifications to services provided are to be based on conditions that exist relevant to the services provided. These standards address when, where, and how the RTA obligates itself to provide transit services to the community it serves.

2. Non-Discrimination

For any RTA service, no person shall be denied access or shall be provided a different level of access based on race, ethnicity, gender, religious or other affiliation, or presence of a disability. No person wishing to use RTA transit services shall be denied service granted they have paid the requisite fare and adhere to all

RTA rules. Further, in provision of services, all requirements of Title VI of the Civil Rights Act of 1964, Presidential Executive Order 12898 on Environmental Justice, and the Americans with Disabilities Act (ADA) will be adhered to at all times in the services provided and by persons employed by the RTA or its contractors.

II. BUS SERVICE DELIVERY STANDARDS

RTA operates the following types of bus services:

Primary Transit Network (PTN): These are routes identified by the RTA Long Range Plan and that serve as the backbone of service delivery. These corridors connect major hubs or serve areas of very high ridership.

Standard Routes: Local routes operate within the Corpus Christi urban area in areas with high to medium demand and connect various areas with RTA stations or Emphasis Corridors.

Connector Routes: These routes connect outlying portions of the service area with the urban area at major stations. Connector routes may be demand response in outlying areas, but have fixed stops within the urban area.

Local Circulators: These routes serve lower density areas where demand is low to medium and provide a basic level of service.

Flexible Routes: These routes serve specific stops via a designated schedule, but may be scheduled as a demand response service within a designated zone provided the ability to adhere to fixed timepoints. Flexible service is appropriate in low demand areas.

Demand Response Service: Demand response service is provided in areas where demand is very low. Service is offered in a designated zone and should connect passengers to fixed-routes for out-of-zone trips.

Commuter Routes: These are express services traveling point-to-point for commuters. These routes typically operate morning and evening trips matching specific shift times.

Downtown Routes: Service that operates to connect short trips downtown and to North Beach and is geared toward providing workers or visitors with access to various attractions.

Shuttle Services: Shuttle service is a higher frequency, short service offered for specific trip attractors such as a university where parking is limited or difficult.

Route Directness Standard

RTA bus routes shall be designed to operate as directly as possible between its terminals as possible to minimize passenger travel time. Routes shall operate on major arterial streets to the extent possible. There may be situations in which a route deviates from the preceding to serve particularly large traffic generators. Deviations from arterial streets should be very rare on Transit Emphasis Corridors and Standard Routes, but are more permissible for Local Circulators. When a deviation exists or is being considered, the gain in convenience to those passengers who are boarding or alighting during the deviation must be balanced against the additional travel time for the passengers traveling through.

All RTA bus routes are two-way service. Exceptions are permissible for one-way streets. Terminal loops shall be avoided when possible through the use of terminal interlines and not exceed 15 minutes of scheduled run time.

Service Frequency

Bus headway is defined as the interval of time between buses traveling in any given direction (inbound or outbound) on any given route. Headways shall vary between peak periods and off-peak periods where demand dictates, in order to minimize operating expenses and provide the most efficient service during weekday peak demand periods.

In order to make transferring as convenient as possible and enable consistent 'pulsing' between routes, headways of 10, 15, 30, and 60 minutes will be employed where practical and feasible within fiscal and contractual constraints. Such headways also make passenger schedules simpler to remember.

The following are **maximum** guidelines for RTA service frequency for each service category:

Emphasis Corridors: 15 minutes weekday peak and midday / 30 minutes during other periods.

Standard routes / Downtown routes: 30 minutes weekday peak and midday / 60 minutes during other periods.

Local circulators / Flexible services: 60 minutes during all times weekdays. Operated on evenings, Saturday and Sunday as demand warrants.

Service Duplication

Whenever possible, service duplication is to be avoided to reduce system waste. Service duplication is essentially the servicing of the same geographic area during the same time period by multiple routes. To avoid duplication, routes operating on the same road segment for one mile or longer must have schedules that create improved frequency on the corridor to the extent possible. Additionally, routes will not serve two parallel streets less than $\frac{1}{4}$ mile apart for more than $\frac{1}{2}$ mile.

Timed Connections

Because direct service from every origin and destination is impractical, transfers are unavoidable. Where system design requires transfers between routes, those transfers shall be timed whenever practical. Service Development will determine where timed connections are to exist and adjust schedules accordingly. Because actual arrival and departure times will vary from what is scheduled, buses may need to wait for connecting routes. When possible, time should be added to bus schedules at timed connections to accommodate the volatility of bus schedules. Buses will wait up to 10% of their headway to permit connections, regardless of requests by passengers.

Hours of Operation

Hours of operation refer to the time between the first and last trip operated on a route. As the various routes are designed to work as a complete system, a consistent span of service among routes is desirable.

Span of Service Hours is defined as the hours that service will operate at any given point within the system. The span of service varies by route according to demand and may be limited to peak hour service only. Minimum span of service for each Service Category is:

Weekday

Emphasis Corridors / Standard.....5:30 am to 10:30 pm
Connector / Local / Flexible.....6:00 am to 8:30 pm
Commuter / Shuttle / Downtown.....Varies

Saturday

Emphasis Corridors / Standard.....6:30 am to 10:30 pm
Connector / Local / Flexible.....6:30 am to 8:30 pm
Commuter / Shuttle / Downtown.....Varies

Sundays and Holidays

Emphasis Corridors / Standard.....8:00 am to 8:00 pm
Connector / Local / Flexible.....8:00 am to 7:00 pm
Commuter / Shuttle / Downtown.....Varies

Due to operations considerations and financial constraints, some variation in days operated and start / end times among routes are expected. Variation from this standard for specific routes will have reasons for the variation documented.

Service periods are identified as peak and off-peak and are defined as follows:

Peak

Morning Peak..... 6:00 a.m. – 9:00 a.m.
Afternoon Peak 3:00 p.m. – 6:00 p.m.

Off-Peak

Early Morning.....before 6:00 a.m.
Midday9:00 a.m. – 3:00 p.m.
Evening.....6:00 p.m. – 8:00 p.m.
Late Nightafter 8:00 p.m.
Weekend service is considered off-peak all day.

On-Time Performance

To ensure that transit riders have confidence that the service will perform reliably in accordance with the public timetables prepared and distributed by RTA, on-time performance standards have been established. Service should deviate as little as possible from the published timetables. Early departures from timepoints that risk leaving on-time passengers and late arrivals to timepoints are considered deviations from on-time performance. This standard applies to every stop on a route that could reasonably be considered a timepoint based on published customer information.

It is impossible to achieve and maintain 100% on-time performance due to varying traffic and weather conditions, ridership activity, road construction, detours, accidents and other service interruptions. Nevertheless, every effort will be made to ensure that all RTA buses operate on-time. The following on-time performance standards shall apply:

- Early departures of any kind.....Less than 1%
- Arrivals over 3 minutes late.....Less than 20%
- Arrivals over 5 minutes late.....Less than 5%
- Arrivals over 10 minutes late.....Less than 1%

III. BUS STOPS

Bus Stop Accessibility

All bus stops will be accessible by providing a surface for waiting for the bus and an accessible path onto the vehicles. Existing non-conforming stops will be improved to meet this requirement in accordance with RTA Transition Plan.

The RTA is committed to maximizing access to services by all individuals in compliance with the RTA Accessibility Policy. Accessibility improvements for bus stops should not necessarily be limited to what is required by the ADA.

Bus Stop Amenities

Bus Shelters

Bus shelters are important amenities for ensuring passenger comfort. The selection of a shelter location depends on the physical characteristics of a site, the number of boardings at a location, and whether the location acts as a transfer location. Bus shelters will be provided at bus stop locations where the number of daily passenger boardings is twenty-five (25) or more per day as feasible. To improve the customer experience, shelters should be provided at other locations where boardings among several nearby stops equal 25 or more.

New or replaced bus shelters shall be installed or positioned so as to permit a wheelchair or mobility device user to enter from the public way and to reach a location, having a minimum clear floor area of 30 inches by 48 inches, entirely within the perimeter of the shelter. Shelters will be connected by an accessible route to the boarding area. Shelters will contain customer information and trash receptacles.

Bus Benches

Bus benches will be provided at bus stop locations where the number of daily passenger boardings is ten (10) or more per day as feasible or where several nearby stops equal 10 or more boardings.

Geographic Equity

RTA bus stop amenities of all types will be geographically representative of all ridership – that is, within a geographic area with a certain proportion of bus ridership, the proportion of bus stop amenities should be similar. Plans for adding bus stop amenities or changing their location will be approved by the RTA Title VI Officer.

IV. MINIMUM ACCEPTABLE SERVICE

The RTA will maintain a minimum service level for all portions of its service area that meet particular demographic thresholds. Communities that contribute to the RTA financially shall have a minimum level of general purpose service that is appropriate given the size and activity within each.

Small Communities

For all incorporated places or Census Designated Places with fewer than 50,000 residents, the following service requirements will apply. Demographic data for the purposes of this requirement will be from most recent decennial census or American Community Survey, whichever is more current.

Service levels will be based upon the sum of total population and employment for areas in which complete data is available. For all other areas, total population alone will be used as a metric.

Population + Employment	Population Only	Minimum Service Level	
		Local	Connector
10,000+	7,000+	70 hours / wk	60 trips / wk
5,000+	3,500+	40 hours / wk	30 trips / wk
2,000+	1,250+	N/A	20 trips / wk
750+	500+	N/A	10 trips / wk

Large Community & Unincorporated Areas

For larger geographic areas – communities with 50,000 or more people – and unincorporated parts of the service area, minimum service requirements will be based on Census Tract population density. Each tract wholly or partially within large communities and unincorporated parts of the service area will be evaluated. Minimum revenue hours are totals for all routes and services located in or adjacent to each Census Tract.

Population Density (people/sq. mile)	Minimum Revenue Hours
1,000+	100 / wk
500+	75 / wk
200+	30 / wk

Service Type

While level of service minimums are established by this section of the Service Standards, type of service shall remain dependent on historic or anticipated demand levels. Generally, when demand is less than five passengers per hour, demand response type services are likely to be most cost effective. Demand over 15 passengers per hour should have fixed stops and schedules. Hybrid flexible routing services may also be appropriate. Road conditions and passenger demographics should also be considered in determining service type.

Maximum Limit of Requirement

The total of all services which do not meet fixed-route service standards as described in Section V and are provided due to minimum levels described in this section shall not exceed 10% of all general purpose service hours offered by the RTA.