PROJECT CONNECT
Central Texas High-Capacity Transit System Plan
Executive Summary

PREPARED FOR:
Capital Area Metropolitan Planning Organization
Capital Metropolitan Transportation Authority
City of Austin
Lone Star Rail District

PREPARED BY:
URS Corporation

IN ASSOCIATION WITH:
Knudson, LP
Rifeline
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project connect
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Leadership
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CITY OF AUSTIN

City Council
Lee Leffingwell, Mayor
Sheryl Cole, Mayor Pro Tem, Council Member Place 6
Chris Riley, Council Member Place 1
Mike Martinez, Council Member Place 2
Kathie Tovo, Council Member Place 3
Laura Morrison, Council Member Place 4
Bill Spelman, Council Member Place 5

Leadership
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Robert Goode, Assistant City Manager
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Council Member Kim Porterfield, City of San Marcos
Council Member George Antuna, Jr., City of Schertz
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Board Member John Langmore, Capital Metropolitan Transportation Authority
Board Member Mary Briseño, VIA Metropolitan Transit
Commissioner Tommy Adkisson, Bexar County
Commissioner Will Conley, Hays County
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## CONTENTS

**INTRODUCTION.** ........................................... 1
Mobility is Our No. 1 Issue ................................ 1
What is Project Connect? ................................. 3

**OUR REGION’S OUTLOOK.** ......................... 7
Local and Regional Growth ............................ 7
Travel Patterns and Congestion ....................... 8
Factors Shaping Growth ................................ 9

**DEVELOPING THE SYSTEM.** .................... 11
High-Capacity Transit Modes ........................ 11
High-Capacity Transit Corridors ...................... 13
Selecting the Right System for Central Texas 18

**THE SYSTEM PLAN.** ................................. 20

**SYSTEM PLAN ELEMENTS** ................................. 22
Bus on Express Lanes ................................. 24
Bus Rapid Transit .................................. 26
Urban Rail ........................................ 28
Commuter Rail .................................... 30
Regional Rail ...................................... 32
Optimization, Integration, and Interaction with Other Regional Mobility
Investment Priorities ................................ 34
Last Mile Connections .............................. 34
Local Bus and Facilities .......................... 35
Bike and Pedestrian Network ..................... 36
Car Share and VanPool ............................ 37

**SYSTEM PRIORITIZATION AND IMPLEMENTATION.** .... 38
Prioritization ....................................... 38
The System Plan Cost ................................ 39

**HOW DO WE PAY FOR THE SYSTEM?** .......... 40
Conceptual Funding Plan Assumptions ............ 40
Funding Sources .................................. 40
What Can We Pay For? ................................ 43
FUNDING: TWG Priorities and Recommendations ........ 44

**HOW WE ORGANIZE TO IMPLEMENT THE SYSTEM.** 45
Organizational Approaches .......................... 45
Our Approach ...................................... 46
ORGANIZATION: TWG Priorities and Recommendations .................. 48

**WHAT OUR PEER REVIEW SAID** .................. 49
American Public Transportation Association
(APTA) Peer Review .................................. 49
Action Item Work Plan ............................. 49

**NEXT STEPS.** .......................................... 51
System .............................................. 51
Funding .............................................. 53
Organization ....................................... 53
Public and Stakeholder Outreach ................. 53
Future Updates and the TWG ..................... 53
I’m struck...by the care and scrutiny that this group has given to transit issues. If we gave the same level of care and scrutiny to other issues as this group has given to transit, then we’d be a much better city.”

— City of Austin Council Member Bill Spelman

With an average of 150 new people and 70 new cars on our area’s roadways every day (according to the U.S. Census), our traffic problems aren’t just personally frustrating. Our prosperity, natural beauty and quality of life are all at risk if we don’t implement a well-thought-out, well-executed plan with real, tangible solutions.”

— Round Rock Mayor Alan McGraw

Our traffic solution can’t be based on discouraging people and companies from coming here. And we can’t just build miles and miles of roads — there simply isn’t enough money, land or time to keep up with our steady and rapid growth. We need a comprehensive approach, and Project Connect does that.”

— Lone Star Rail District Director Joe Black

The Transit Working Group analyzed a tremendous amount of data over this past year, to help us define a vision for a regional transit system to set Central Texas on a great path to move forward. The result is a plan that runs from Georgetown to Round Rock and Leander, takes several routes through the City of Austin and then continues on to Oak Hill and San Marcos.”

— Austin Mayor Lee Leffingwell

With San Marcos recognized as one of fastest growing cities in the U.S, located in the heart of our fast-growing area, we know that regional mobility is critical to the future of Central Texas...We see rail as vital to our future.”

— San Marcos Mayor Daniel Guerrero

We simply must begin to move on a transportation system that addresses our congestion and mobility challenges throughout the region. This interlocal agreement makes the initial down payment on the Project Connect high-capacity transit vision. Considering this agreement now makes clear that we are making a comprehensive evaluation of the City’s transit investments.”

— Austin Mayor Pro Tem Sheryl Cole
The Central Texas region is consistently included in national top ten lists for great places to live, to get a job, to be healthy, to enjoy live music and other entertainment. Our quality of life is due to our balanced mix of work, play and live across our region. From our educational institutions, natural environment, vibrant culture to our innovative business climate, Central Texas is poised to continue drawing people and business for decades to come.

Traffic congestion is the most obvious symptom of our diminished mobility. It costs our region—its people, business, and environment—time and money, and diminishes our quality of life. High-capacity transit must play a key role in improving mobility in Central Texas by providing reliable alternatives.

The Central Texas Region is a wonderful place to live, but not when you’re stuck in traffic.

We Need More Travel Choices

Current conditions highlight the drawbacks of depending too much on one mode of travel. A well-balanced regional transportation system includes all kinds of road and transit options—in the form of high-capacity transit (express lanes, bus rapid transit, passenger rail), park & rides, and bicycle/pedestrian facilities.

Central Texas Accolades

<table>
<thead>
<tr>
<th>Rank</th>
<th>Accolade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>In 2011, Forbes named the region (from Round Rock to San Marcos) the Number 1 Boom Town City.</td>
</tr>
<tr>
<td>1st</td>
<td>In 2008, Fortune Magazine named Georgetown Best Place to Launch a Small Business (received only perfect score).</td>
</tr>
<tr>
<td>1st</td>
<td>In 2010, Kiplinger’s named Austin 1st in 10 Best Cities for the Next Decade.</td>
</tr>
<tr>
<td>6th</td>
<td>In 2008, Kiplinger’s named Round Rock 6th Best Place to Live/Work/Play.</td>
</tr>
</tbody>
</table>
The Transportation-Business Link

Retention of existing regional employers is key to our sustained success as a region, but we also need to attract new companies to support the surge of people relocating to our region. A survey conducted by the Austin Chamber found that 68% of existing companies in the region cite transportation or access to transit as a concern. Important relocation criteria for corporations include ample workforce connections and evidence that cities are doing everything possible to address congestion. With transportation of concern to our existing companies and workforce and with additional companies moving or expanding in our region yearly, a focus on transportation is a must.

We Must Work Together

Rush hour traffic in Central Texas is already bad and with our population projected to double in the next 25 years, congestion is only going to get worse. Such extreme congestion threatens our region’s economic health and quality of life by reducing mobility.

Because there is no one solution or “magic bullet” to solve the region’s mobility issues, we must work together to improve mobility through a variety of solutions.

How Do We Compare to Other Regions?

How Do We Compare in High-Capacity Transit Service?

<table>
<thead>
<tr>
<th>2010 Metropolitan Statistical Area (MSA) Population</th>
<th>Austin</th>
<th>Charlotte</th>
<th>Dallas / Fort Worth</th>
<th>Denver</th>
<th>Las Vegas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010 Metropolitan Statistical Area (MSA) Population</td>
<td>1,720,000</td>
<td>1,760,000</td>
<td>6,370,000</td>
<td>2,540,000</td>
<td>1,950,000</td>
</tr>
<tr>
<td>Current No. of Stops/Station</td>
<td>CR</td>
<td>Total</td>
<td>CR</td>
<td>Total</td>
<td>CR</td>
</tr>
</tbody>
</table>
| Rush hour traffic in Central Texas is already bad and with our population projected to double in the next 25 years, congestion is only going to get worse. Such extreme congestion threatens our region’s economic health and quality of life by reducing mobility. Because there is no one solution or “magic bullet” to solve the region’s mobility issues, we must work together to improve mobility through a variety of solutions.

| Current No. of Stops/Station | 9 | 9 |
| Current No. of Stops/Station | LRT | SC | Total | SC | LRT | RR | Total |
| Current No. of Stops/Station | 15 | 11 | 26 | 55 | 10 | 91 |
| Current No. of Stops/Station | LRT | Total | BRT | Monorail | Total |
| Current No. of Stops/Station | 36 | 36 | 22 | 7 | 29 |
| Major Employers | Dell, IBM, 3M, University of Texas, State of Texas | Carolinas Healthcare System, Welf Fargo, Bank of America and Merrill Lynch, Charlotte-Mecklenburg Schools | Lockheed Martin, Wal-Mart Stores, AT&T, Citigroup, AMR Corp., Texas Instruments, Raytheon, Bell Helicopter | Wal-Mart Stores, Safeway, HCA-HeathOne, CenturyLink, Wells Fargo | Clark County School District, Clark County, Bellagio Hotel and Casino, MGM Grand Hotel and Casino, Mandalay Bay Resort and Casino |
**WHAT IS PROJECT CONNECT?**

Project Connect was developed by the project partners in the Central Texas region to coordinate transportation options for our growing community.

The Project Connect High-Capacity Transit System Plan provides a solid framework for moving forward with high-capacity transit in Central Texas, with the goal of including the fiscally constrained portions of the Project Connect System Plan in the Capital Area Metropolitan Planning Organization’s 2040 Regional Transportation Plan (CAMPO 2040) and implementing the components of the plan when fiscally feasible.

Project Connect development was guided by the Transit Working Group (TWG), which has served as the project Policy Advisory Group since November 2011.

**What Are the Goals of Project Connect?**

The purpose of Project Connect was to work with regional stakeholders and the community to define the first comprehensive high-capacity transit system for Central Texas. Project Connect is designed to answer the following three questions:

- **System:** How will high-capacity transit components in the CAMPO 2035 Plan and subsequent 2040 Plan work as a system?
- **Funding:** How will we pay for the system over the long term?
- **Organization:** How will our region organize to develop and operate the system?

**Planning Process**

Project Connect was focused on answering the three questions on system, organization and funding, with collaboration and input from the public, TWG and regional stakeholders. The project team began by analyzing the existing and projected travel conditions in the major corridors and evaluating transportation alternatives that would address the needs of those corridors. In the next step, conceptual organizational and financial models were developed. The third step involved proposing organizational and financial models tailored to Central Texas. Each step was accompanied by public and stakeholder involvement.

*The public and stakeholder involvement was part of each Project Connect step.*

**Central Texans agree that a high-capacity transit system plan is needed for the region...**

- Traffic congestion in Central Texas is a serious problem and must be addressed (97% strongly agree or agree).
- Because of Central Texas’s growth and constraints to expanding highways, alternative transportation options should be explored (81% strongly agree or agree).
- High-capacity transit can be an effective part of the solution for improving mobility in Central Texas (83% strongly agree or agree).

– *Project Connect surveys*
The partners worked with the stakeholders and community through the Project Connect process on the following:

- Develop an understanding of regional transportation challenges and opportunities
- Review the CAMPO 2035 high-capacity transit projects to optimize the regional transit system
- Determine an approach to organization for implementation of the regional high-capacity transit system
- Identify and compare the possible funding sources that would be acceptable for use in Central Texas
- Determine possible phasing for the corridors and associated elements of the high-capacity transit system

Plan Partners
The Project Connect partnership includes Capital Area Metropolitan Planning Organization (CAMPO), Capital Metropolitan Transportation Authority (Capital Metro), Lone Star Rail District (LSRD), and the City of Austin. Each partner is discussed below.

Capital Metropolitan Transportation Authority (Capital Metro)
Capital Metro is Austin’s regional public transportation provider. The agency was established in 1985 by referendum and operates based on state legislative authority. The Capital Metro service area is 572 square miles and encompasses the cities of Austin, Leander, Jonestown, Lago Vista, Manor, Point Venture, San Leanna, Volente, and portions of Travis County, Hays County, and Williamson County, including the Anderson Mill area.

Capital Area Metropolitan Planning Organization (CAMPO)
CAMPO is the Metropolitan Planning Organization for the Central Texas region. CAMPO was established in 1973 and is governed by the Transportation Policy Board, comprised of regional and local officials. CAMPO coordinates regional transportation planning with counties, cities, Capital Metro, CARTS (Capital Area Rural Transportation System), the Texas Department of Transportation (TxDOT) and other transportation providers in the region and approves the use of federal transportation funds.

CAMPO’s planning area covers Bastrop, Caldwell, Hays, Travis, and Williamson Counties. Both the CAMPO Transportation Policy Board and Austin City Council voted in March 2013 to include Burnet County in CAMPO’s planning area. However, this occurred after the system plan process. Future updates to this System Plan will include Burnet County in the planning process.

Capital Metro provides more than 32 million trips per year on a system that includes:

- 50 Metro routes, one MetroRapid route, eight Express routes and 19 UT shuttle routes
- 3,000 bus stops
- MetroRail passenger rail service between the City of Leander and downtown Austin
- Nine MetroRail stations located along a 32-mile line
- MetroAccess service for passengers with disabilities
- Van and carpool coordination
- Freight rail service
- MetroBike shelters at major passenger facilities
- Cycling partnership programs
- Mobile ticketing app
City of Austin

Austin is a city of approximately 270 square miles with about 800,000 residents. It is the core city in the Austin–Round Rock–San Marcos Metropolitan Statistical Area (MSA). The City of Austin’s jurisdiction is mainly within Travis and Williamson Counties with a small portion in Hays County.

Lone Star Rail District (LSRD)

LSRD is an independent public agency authorized by the Texas Legislature in 1997 and created in 2002. Its primary purpose is to establish the LSTAR, which will be a 118-mile passenger rail service between Georgetown and San Antonio. LSRD is governed by a board of directors made up of representatives of member cities and counties, various planning and transit agencies, the business community, and general public. Its planning area covers Williamson, Travis, Hays, Comal, and Bexar Counties.

Other Partners

Texas Department of Transportation (TxDOT)

The TxDOT Austin District is located in the City of Austin, and its jurisdiction includes the following counties: Bastrop, Blanco, Burnet, Caldwell, Gillespie, Hays, Lee, Llano, Mason, Travis and Williamson. TxDOT made a presentation to the TWG as part of the Project Connect process on January 13, 2012 regarding their current and future projects and funding outlook. Additionally, the project partners have coordinated with the TxDOT Rail Division on existing and proposed rail projects including the MetroRail Red Line, LSTAR, and Urban Rail.

The Central Texas Regional Mobility Authority (CTRMA)

CTRMA is an independent government agency created in 2002 to improve the transportation system in Williamson and Travis counties. Its mission is to implement innovative, multimodal transportation solutions that reduce congestion and create transportation choices that enhance quality of life and economic vitality. CTRMA made a presentation to the TWG as part of the Project Connect process on February 24, 2012 regarding the MoPac Improvement Project, a managed lane project on MoPac Expressway, with potential to implement express bus service.

City of Austin Fast Facts

- Population estimate for 2012 was over 800,000
- The land area is approximately 270 square miles
- 13th largest city in the U.S.
- Led the top 30 U.S. metropolitan areas in population growth from 2010-2011
- 1 in 4 work trips in region are headed to the downtown Austin core

Lone Star Rail District Fast Facts

- Authorized by Texas Legislature in 1997 and created in 2002
- Governed by a 20 member board comprised of regional and local officials and leaders
- Established to develop passenger rail service
- Includes Bexar, Comal, Hays, Travis, and Williamson Counties
Ensuring Transparency

Transit Working Group (TWG)
As a committee of CAMPO, the TWG was charged with evaluating and providing input on the regional high-capacity transit plan for Central Texas, as well as exploring how the plan’s various components work as a system to fulfill the region’s transportation and future growth needs. Based on this charge, the TWG guided the development of Project Connect and provided recommendations on the three Project Connect goals: system, funding, and organization. The TWG is an appointed advisory body to CAMPO with 18 members.

Public and Stakeholder Outreach
The opinions and ideas of residents and stakeholders were an important source of input for Project Connect. For this reason, public and stakeholder outreach were carefully planned and executed to maximize the participation of individuals and organizations in the Central Texas region. Public outreach included open house meetings, media briefings, road shows (presentations to local organizations and interest groups), social media dialogues (on Facebook and Twitter), a webinar, a Regional Stakeholder meeting, a newsletter, a website that provided information and a video and PowerPoint presentation for each TWG meeting. Additionally, over 55 briefings were held with various organizations throughout the region during the project.

TWG Guiding Principles for System:

- Reliability/“Congestion proof”: transit should run on time, no matter what time of day.
- Connections between centers/regional connectivity: transit should connect activity centers.
- Economic development: the proposed system should create favorable economic development.
- Travel demand: there should be sufficient demand for the proposed system.
- Convenience/“True alternative”: transit should run at a convenient time for travelers. Stops should be located in reasonable proximity to travelers’ destinations, and transit should be as convenient as or more convenient than driving a car.

TWG functioned as the steering committee for Project Connect, and also provided a venue for public comment. Citizens provided valuable ideas and input throughout the Project Connect process.
LOCAL AND REGIONAL GROWTH

Due to the positive quality of life in our region and healthy job market, we continue to grow. Not only has population and employment growth been accelerating in the past decade, they are expected to continue at the same or an increasing rate.

Population

According to the US Census Bureau (USCB), the Austin-Round Rock-San Marcos MSA was the second fastest growing metropolitan population in America between 2010 and 2011. The population of the Austin-Round Rock-San Marcos MSA is projected to nearly double between 2010 and 2035 to 3.3 million, with most of that growth shared between Bastrop and Williamson Counties (increases of 190% and 143%, respectively). Williamson County is expected to see the highest absolute population growth (a little over 600,000). The City of Austin has the largest concentration of population in the region at over 840,000 estimated in 2013, becoming the 11th largest city in the nation and fourth-largest in Texas.

Employment

The City of Austin added the most jobs for a city in the region in absolute terms between 2000 and 2010 (close to 60,000). Employment in the Austin-Round Rock-San Marcos MSA is currently 880,000 and is expected to more than double to 1.64 million in 2035, an increase of 86%. Although many of the new jobs are expected to be located in Austin’s core, others will be located in suburban growth centers such as Tech Ridge in north Austin. Travis County is expected to see the highest absolute employment growth, adding just under 400,000 employees, with Williamson County following with just over 250,000 employees.
TRAVEL PATTERNS AND CONGESTION

The predominating travel patterns in Central Texas that result in the most delays are the trips to and from work, or “peak” period trips with the evening peak having the most delay. An occurrence of note is that the peak is spreading out into the mid-day time period (from 12:00 PM to 2:00 PM). According to the Texas Transportation Institute (TTI) 2012 Urban Mobility Report, congestion varies from day to day resulting in an increased unpredictability of how long it takes us to get to our destinations. TTI’s 2013 Mobility Investment Priorities Project Long-Term Central Texas IH 35 Improvement Scenarios Executive Summary also identified that 86% of traffic in the region is originating and terminating locally, which means our trips to work, home, shopping, entertainment, and school on a daily basis are causing the majority of our congestion. The popular belief is that trucks on Interstate Highway 35 (I-35) are the problem when, in fact, we the citizens are.

As of 2011, ten of the 100 most congested roads in Texas were located in Central Texas, according to TTI. Central Texas automobile drivers spend an average of 44 hours per year delayed due to traffic during rush hours. Most of these congested roads are major highways and arterials that serve to move Central Texas local travelers around the region to their destinations, as well as people and goods moving through our region. I-35 poses a particular problem for Central Texas. Not only is it a commuter route within Central Texas, it is also a major freight route between the Mexican border and the upper Midwest.

Central Texas Person-Hours of Delay in 2009 (Millions)

Source: TTI, 2011.

Highly Congested Roadways in Austin

TTI’s most recent Mobility Report for Austin (2012) shows that Austin has ranked fourth in the nation for four consecutive years, 2008-2011, on its travel time index. The travel time index is the difference between rush hour delay and peak flow delay.

2010 US Worst Travel Time Indices

Source: TTI, 2011.

According to the Mobility Report, Austin’s rankings indicate that the home to work trip is the biggest factor in the area’s congestion: fourth in travel time index, ninth in commuter stress index, yet 18th in annual hours of delay. Also, two other indicators are telling: in 2010, 59% of travel in Austin was congested (measured during peak hours), yet 49% of the system was congested. This combination shows that the worst congestion is concentrated in a limited number of roadways and that rush hour is the most congested time of the day.
FACTORS SHAPING GROWTH

With the explosive growth in both population and employment for our region and the existing and projected mobility challenges, CAMPO and the region’s counties and cities have established various plans to help shape growth for our continued prosperity. Land use, development, and transportation are inextricably linked, and planning for all is best done together.

CAMPO’s Centers Concept

CAMPO has identified areas of “preferred growth” known as activity centers. These activity centers consist of areas of existing substantial development throughout the CAMPO region, and CAMPO is focused on increasing the mix of land uses as well as the density of these activity centers in an attempt to focus development in the region and increase the self-sufficiency of these activity centers. CAMPO’s Centers Concept is the preferred growth scenario for Central Texas. Project Connect aims to link and promote CAMPO’s Center Concept planning by introducing high-capacity transit alignments and modes that support and enhance economic development opportunities within these established centers.

Midtown Commons located at the Crestview Station on the MetroRail Red Line is an example of successful economic development as a result of Capital Metro and developers working together to plan the land uses near high-capacity transit.
Local and Regional Plans Considered

**Land Use Plans**
- Envision Central Texas
- Bastrop County Comprehensive Transportation Plan
- Caldwell County Transportation Plan
- Hays County Transportation Plan
- Williamson County Transportation Plan Update
- Imagine Austin Comprehensive Plan
- Downtown Austin Plan
- Elgin Comprehensive Plan
- Georgetown 2030 Comprehensive Plan
- Round Rock Places & Spaces: General Plan 2020
- University of Texas Campus Master Plan Update
- State of Texas Capitol Complex Master Plan

**Transportation Plans**
- CAMPO 2035 Regional Transportation Plan
- Capital Metro All Systems Go!
- Capital Metro Future Connections Study
- Capital Metro Service Plan 2020
- Central Austin Transit Study
- Downtown Austin Plan Urban Rail Connections Study
- Austin-San Antonio Commuter Rail Project: 2004 Feasibility Study

**Local and Regional Plans Considered**

Project Connect also aims to support and enhance the existing land use plans from the various cities within the region that include “transit-friendly” development (i.e. higher-density, higher-intensity, and/or mixed-use development). Recognizing the inter-relationship between any proposed transit alignments and these transit-friendly land use plans creates synergy between the two which ultimately leads to an increased potential for success of both the transit facility and the various regional land use plans.

The existing and projected growth and mobility issues combined with the region’s various land use and transportation plans for addressing these opportunities and constraints is the base for the development of a full scale and inclusive solution, of which high-capacity transit is a part. Combined with road improvements, local bus, pedestrian and bike facilities, park-and-rides, car share programs, development patterns, and more, we can ensure that the future of region remains as bright and vibrant as the past.

“Austin’s traffic crisis isn’t just an annoyance. It’s a deadly serious threat to our quality of life in a dozen different ways. It threatens our economy, our environment, our safety, and the livability of our city and our region… It demands our most creative solutions…

There are over $500 million in dedicated funds for roadway projects in Travis County and plans for over $3 billion worth of projects… All of our investments in roads alone won’t fix the problem… To address traffic congestion, we must invest in a robust, truly multi-modal transportation system…

Project Connect has community leaders from throughout the region working with the City of Austin and Capital Metro, Lone Star Rail, and CAMPO to create a high-capacity transit plan that encompasses an area from Georgetown, Round Rock and Leander to Oak Hill, Kyle and Buda… Our region is working together like never before, and we’re making real progress. From Express Lanes on MoPac to Rapid Transit Service, we are moving forward.”

Mayor Leffingwell’s 2013 Mayor’s State of the City Address, February 5, 2013
The regional opportunities and constraints guided the creation of the Project Connect high-capacity transit system “Vision Map”. It is these four C’s and a G (4Cs&G) that point to a need for a more robust multi-modal transportation network in Central Texas:

- **Congestion**: This roadway condition generated by an increased number of vehicles and slow speeds is an increasing problem for Central Texas roadways, including those in the core.

- **Core**: The region’s core includes the University of Texas at Austin (UT), the state Capitol complex, and the Central Business District (CBD), and is a large activity center that draws people from around the region.

- **Constraints**: Natural and cultural resources, existing land uses and lack of existing right-of-way (ROW) constrain expansion of existing forms of transportation infrastructure in the areas of most need.

- **Centers**: CAMPO’s Centers Concept calls for growth and supporting infrastructure to be concentrated into identified activity centers around the Central Texas region.

- **Growth**: Population and employment growth in Central Texas has been increasing for the last decade and is anticipated to double by 2035.

### HIGH-CAPACITY TRANSIT MODES

One of the first steps in the Project Connect system planning process included defining the term high-capacity transit and identifying the various high-capacity modes and their applicability within the corridors. This is not an exhaustive list of all transit modes, but rather those that were determined to be most viable for the corridors studied based on technical analysis, industry standards, potential for federal funding, and history as proven technologies.

#### Definition of High-Capacity Transit

- Any form of public transit that travels in its own lane or ROW for at least a portion of its route

- Any form of public transit that has transit priority (traffic signals designed to hold a green light slightly longer when transit vehicles approach)

- High-capacity transit vehicles make fewer stops, travel at higher speeds, have more frequent service, and carry more people than local service transit, such as typical city buses

Based on the above definition, a subset of transit technologies was established as the focus of Project Connect in order to advance the overall public transportation component of the CAMPO 2035 Plan, including regional rail, commuter rail, urban rail, bus rapid transit (BRT), and transit on express lanes. There are other transit modes that are less often considered during system planning processes including monorail and gondolas. These modes tend to be more specialized, so their use is less common. There are successful examples in the U.S., including Portland, Oregon and New York. These modes could be considered for the shorter alignments in more densely populated areas during the individual Vision Map element corridor studies.
<table>
<thead>
<tr>
<th>What are our high-capacity options for transit?</th>
<th>What is it, where does it go, and when do I use it?</th>
<th>How many people can it carry per hour during rush hour?*</th>
<th>How fast does it go on average?</th>
<th>How often does it stop?</th>
<th>When can I get on?</th>
<th>Real World Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Rail</strong></td>
<td>Regional Rail service connects different cities and regions, typically using existing railroad lines. Typically used to travel longer distances between large cities.</td>
<td>Carries 600 - 2,400 passengers</td>
<td>Average speed 60 - 75mph</td>
<td>Stops 3 - 15 miles apart</td>
<td>Rail runs every 30 min. during rush hour and every 1 - 3 hours all other times</td>
<td>The Capitol Corridor between San Jose and Sacramento in Northern California is an example of regional rail. Locally, the Lone Star Rail District is planning the LSTAR regional rail line between Georgetown and San Antonio, with nine stops in our Region.</td>
</tr>
<tr>
<td><strong>Commuter Rail</strong></td>
<td>Commuter Rail trains operate on railroad tracks that carry riders to and from work in a region. Typically used to travel from suburbs to central cities.</td>
<td>Carries 400 - 1,400 passengers</td>
<td>Average speed 30 - 50mph</td>
<td>Stops 1 - 5 miles apart</td>
<td>Rail runs every 30 min. during rush hour and every 1 - 3 hours all other times</td>
<td>Capital Metro’s MetroRail Red Line between Leander and downtown Austin is a local example of commuter rail.</td>
</tr>
<tr>
<td><strong>Urban Rail</strong></td>
<td>Urban rail is an electrified service that can operate in mixed traffic, in its own lane, or in separate ROW. Urban Rail is a hybrid between Light Rail and Streetcar in terms of technology and service. Typically used to travel in urban locations and can be used to link transit systems.</td>
<td>Carries 700 - 2,000 passengers</td>
<td>Average speed 10 - 30mph</td>
<td>Stops every 2 - 4 blocks up to 0.5 miles apart</td>
<td>Rail runs every 10 min. during rush hour and every 15 min. all other times</td>
<td>Portland’s rail systems are similar to Urban Rail. Locally, the City of Austin is planning Urban Rail to provide service into and out of Central Austin.</td>
</tr>
<tr>
<td><strong>Bus Rapid Transit</strong></td>
<td>Bus Rapid Transit (BRT) operates in mixed traffic or its own lane. It usually consists of longer buses with more technology in them to speed up your trip. For example, many BRT buses communicate with traffic lights to keep lights green longer. Typically used to travel within a city and between close-in suburbs and the city.</td>
<td>Carries 700 - 1,300 passengers</td>
<td>Average speed 15 - 30 mph</td>
<td>Stops 0.5 - 1 mile apart</td>
<td>Buses run every 10 min. during rush hour and every 15 min. all other times</td>
<td>Locally, Capital Metro MetroRapid BRT lines between south and north Austin are a local example of BRT.</td>
</tr>
<tr>
<td><strong>Bus on Express Lanes</strong></td>
<td>Express, or managed, lanes are highway lanes that are free to registered van pools and transit vehicles, and tolled for all other vehicles. The toll rate changes throughout the day based on how much traffic is on the managed lanes in order to keep the lanes fully used without being too busy. Typically used to travel within a city and between close-in suburbs and the city.</td>
<td>Carries 400 - 900 passengers</td>
<td>Varies. Typically toll rate adjusted to maintain a minimum average speed of 50 mph</td>
<td>Multiple stops within close proximity near termini with 5 - 25 miles of non-stop service in between</td>
<td>Buses run every 10 min. during rush hour and every 30 min. all other times</td>
<td>Katy Managed Lanes are operated by the Harris County Toll Road Authority in Houston, TX. Locally, the Central Texas Regional Mobility Authority is currently planning express lanes along Mopac Expressway in Austin.</td>
</tr>
</tbody>
</table>

* The passenger ranges show the number of passengers in the early years (low end) and in 2035 (high end). This calculation is based on average vehicle capacity multiplied by the frequency of service during rush hour and by the number of transit vehicles for a one hour period in one direction only. The passenger graphics represent the average of the low end and high end numbers.
After establishing the high-capacity transit modes that were viable within the CAMPO region, the Project Connect technical team with input from the community, stakeholders and the TWG developed potential high-capacity transit corridors. These corridors were established in order to focus in on areas of the region that have the highest propensity for high-capacity transit investments to succeed.

Several parameters for identifying the various high-capacity transit corridors in the CAMPO region were analyzed including:

- Existing transportation networks
- Existing travel patterns
- Location of CAMPO Centers
- Employment density
- Population density

Data for each of the parameters above were gathered and compiled resulting in the analysis that provided general guidelines for establishing the boundaries of the initial nine high-capacity transit corridors for consideration by the TWG and the public.

These include:
- North
- Northeast
- East
- Southeast
- South
- Southwest
- West
- Northwest
- Central

The corridors and their boundaries were flexible during the system planning effort to capture data and patterns outside a hard defined geographic line. Those corridors were developed to frame the transportation needs within individual corridors, across corridors, and ultimately across the region.

Identifying the High-Capacity Transit Corridors
“Gaps” Considered to Identify Additional Corridors

After the technical team developed the initial nine high-capacity corridors, the TWG and the public were asked to identify “gaps” in the corridor map. These “gaps” are areas that are not covered by the nine corridors but that could be potentially viable for high-capacity transit. The TWG- and the public-identified gaps were subjected to a preliminary screening analysis to determine if these gaps fell within the existing initial nine corridors, or if they were truly additional corridors that were potentially viable for high-capacity transit.

After reviewing the identified gaps, the technical team determined that the majority of the gaps were already covered by the existing nine corridors. However, an additional circumferential corridor extending from Dripping Springs, southeast to San Marcos, east to Mustang Ridge, northeast to Bastrop, north to Elgin and Taylor, and northwest to Georgetown was added.

An initial analysis was performed by the technical team on the “gap” corridors discussed above. This analysis looked at population and employment densities as well as existing travel patterns and land use patterns. As a result of this initial analysis, the additional “gap” corridors identified above were screened out of further analysis due to low population and employment densities and more suburban and rural land use patterns that are not currently conducive to high-capacity transit. It should be noted that although these gap corridors were screened out, this entire process is iterative, and these corridors will be re-evaluated in future high-capacity transit system planning updates.

Gaps Identified by the community and TWG that are conducive to high-capacity transit fall within the Project Connect corridors.
Corridor Evaluation and Prioritization

Specific high-capacity transit corridor criteria were established based on the 4Cs&G, and applied to each identified corridor with TWG desired weighting, resulting in a rating of High, Medium, or Low. Based on this rating, each corridor falls into one of the following groups: High, Medium-High, Medium, or Low. The High and Medium-High corridors were then carried into the project/system screening process. The Medium and Low-ranked corridors are considered “vision” corridors for future consideration. The matrix with results is provided on the following two pages.

It is important to note that these corridor rankings are fluid based on changing regional conditions and the specific policies of the various municipalities. In this way, the high-capacity corridor evaluation matrix provides local municipalities with a toolbox of criteria, some of which the municipalities have direct control over. If the municipalities alter their policies, they can potentially affect the overall ranking of the corridors and become more viable for high-capacity transit in the future.
## Project Connect High-Capacity Corridor Criteria

<table>
<thead>
<tr>
<th>Factor</th>
<th>Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Centers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of CAMPO Centers</td>
<td>The number of CAMPO activity centers located within each corridor</td>
</tr>
<tr>
<td></td>
<td>Transit-supportive Economic Development</td>
<td>Qualitative assessment of corridor jurisdictions’ commitment to transit</td>
</tr>
<tr>
<td></td>
<td>Building Permits within existing TOD Centers</td>
<td>The number of building permits within existing TOD center boundaries between 2006 and 2010 within each corridor</td>
</tr>
<tr>
<td><strong>Congestion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Estimated congestion in corridor (2010)</td>
<td>Quantitative assessment of highly congested highway and arterial mileage divided by total mileage within each corridor for 2010</td>
</tr>
<tr>
<td></td>
<td>Projected congestion in corridor (2035)</td>
<td>Quantitative assessment of highly congested highway and arterial mileage divided by total mileage within each corridor for 2035</td>
</tr>
<tr>
<td></td>
<td>Total Vehicle Hours Traveled per mile (2010)</td>
<td>Quantitative assessment of total vehicle hours traveled per mile on highways or major arterials within each corridor in 2010</td>
</tr>
<tr>
<td></td>
<td>Total Vehicle Hours Traveled per mile (2035)</td>
<td>Quantitative assessment of total vehicle hours traveled per mile on highways or major arterials within each corridor in 2035</td>
</tr>
<tr>
<td><strong>Core</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Transportation demand (2010) per acre</td>
<td>Quantitative assessment of the number of origin and destination trips within each corridor divided by the number of acres in each corridor</td>
</tr>
<tr>
<td></td>
<td>Transportation demand (2035) per acre</td>
<td>Quantitative assessment of the number of origin and destination trips within each corridor divided by the number of acres in each corridor</td>
</tr>
<tr>
<td></td>
<td>Trips to core (2010) per acre</td>
<td>Total number of trips to the core by corridor in 2010 per acre</td>
</tr>
<tr>
<td></td>
<td>Trips to core (2035) per acre</td>
<td>Total number of trips to the core by corridor in 2035 per acre</td>
</tr>
<tr>
<td><strong>Constraints</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmental Suitability</td>
<td>Preliminary assessment of the environmental sensitivity (environmental and built) within each corridor</td>
</tr>
<tr>
<td></td>
<td>Existing Rail ROW</td>
<td>Preliminary assessment of the existing rail ROW in each corridor</td>
</tr>
<tr>
<td><strong>Growth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Projected (2035) Population</td>
<td>Quantitative assessment of total projected (2035) population by acre within each corridor</td>
</tr>
<tr>
<td></td>
<td>Projected (2035) Employment</td>
<td>Quantitative assessment of total projected (2035) employment by acre within each corridor</td>
</tr>
<tr>
<td></td>
<td>Equity</td>
<td>Preliminary quantitative assessment of Environmental Justice populations within each corridor based on 2000 census data</td>
</tr>
</tbody>
</table>
# Project Connect High-Capacity Corridor Evaluation

<table>
<thead>
<tr>
<th>Factor</th>
<th>Criteria</th>
<th>North</th>
<th>Northeast</th>
<th>East</th>
<th>Southeast</th>
<th>South</th>
<th>Southwest</th>
<th>West</th>
<th>Northwest</th>
<th>Central</th>
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</thead>
<tbody>
<tr>
<td><strong>Centers</strong></td>
<td>Number of CAMPO Centers</td>
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<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Transit-supportive Economic Development</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Building Permits within existing TOD Centers</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Congestion</strong></td>
<td>Estimated congestion in corridor (2010)</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
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</tr>
<tr>
<td></td>
<td>Projected congestion in corridor (2035)</td>
<td>Medium</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
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<tr>
<td></td>
<td>Total Vehicle Hours Traveled per mile (2010)</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
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<td>Medium</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td><strong>Core</strong></td>
<td>Transportation demand (2010) per acre</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
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<tr>
<td></td>
<td>Transportation demand (2035) per acre</td>
<td>High</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
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<td>High</td>
</tr>
<tr>
<td></td>
<td>Trips to core (2010) per acre</td>
<td>High</td>
<td>Low</td>
<td>High</td>
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<tr>
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<td>Trips to core (2035) per acre</td>
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<td>High</td>
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</tr>
<tr>
<td><strong>Constraints</strong></td>
<td>Environmental Suitability</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
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</tr>
<tr>
<td></td>
<td>Existing Rail ROW</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td><strong>Growth</strong></td>
<td>Existing (2010) Population</td>
<td>High</td>
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<td>Medium</td>
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<td>Low</td>
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<td>Low</td>
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<td>Medium</td>
<td>Low</td>
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</tr>
<tr>
<td></td>
<td>Equity</td>
<td>Medium</td>
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<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td></td>
</tr>
</tbody>
</table>
SELECTING THE RIGHT SYSTEM FOR CENTRAL TEXAS

The corridor evaluation identified the Central, North, Northeast, Southwest, and East corridors as the corridors most suited for high-capacity transit at this point in time. Therefore, the systems were focused on serving these particular corridors.

A series of system concepts based on a predominant mode – commuter rail, BRT, and urban rail, were developed resulting in a range of systems from “Commuter Rail-centric” to “BRT-centric” and “Urban Rail-centric.” While the various systems focused on a particular high-capacity transit mode, all of the systems still contained all of the modes to some degree.

These three system concepts allowed the technical team, TWG, and community and public stakeholders to visualize and discuss the differences and the pros and cons of different modes along different corridors. These systems also represented a range of system costs, with the BRT scenario being the lower cost option, the commuter rail scenario representing the medium cost option, and the urban rail scenario representing the higher cost option.
The Results

Based on TWG and public comments, a system evaluation matrix consisting of five screening criteria was used to evaluate each hybrid scenario against the TWG-identified system priorities, as seen below. The TWG priorities include:

- **Reliability/congestion proof**: Reliability was assessed using the percentage of dedicated lanes as a proxy measure. The more dedicated lanes a mode uses, the less it is hampered by congestion.

- **Regional connectivity**: This was measured by counting how many CAMPO Activity Centers each scenario served.

- **Economic development**: Economic development potential was assessed by totaling the number of acres that either are urban and vacant, or have the potential to be redeveloped, that each scenario touched.

- **Travel demand**: This was measured by estimating the potential daily boardings for each scenario.

- **Convenience/true alternative**: Convenience was measured by the total number of stations each scenario provided. The more stations there are, the more stations people will be able to get to, and the closer they can get to their ultimate destinations.

---

### Project Connect Vision Map

Through technical analysis and community and stakeholder leadership input, our future high-capacity system became clear.

---

### A Hybrid of High-Capacity Transit Solutions Resulted in All “High” Scores During System Evaluation

<table>
<thead>
<tr>
<th>TWG Priority</th>
<th>Criterion</th>
<th>Hybrid</th>
<th>Commuter Rail</th>
<th>BRT (25% dedicated ROW)</th>
<th>BRT (50% dedicated ROW)</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability/“Congestion Proof”</td>
<td>Dedicated Lanes (%)</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Regional Connectivity</td>
<td>Total CAMPO Centers Served</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Economic Development</td>
<td>Urban Vacant/Redevelopment Acres</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Travel Demand</td>
<td>Rough Daily Boardings</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Convenience/True Alternative</td>
<td>Total Stations</td>
<td>High</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>
WHEREAS, the Transit Working Group (TWG), a subcommittee of the Capital Area Metropolitan Planning Organization (CAMPO), has deliberated for nearly 18 months on issues of regional mobility and connectivity; and

WHEREAS, the Transit Working Group (TWG) and the public agree that traffic congestion will double in the next 25 years and high-capacity transit is an important part of the solution for improving mobility in Central Texas and will also provide new travel options between Central Texas and the San Antonio metropolitan area; and

WHEREAS, high-capacity transit is an essential component of the Capacity Transit Vision, as endorsed by the TWG. At this system planning stage, alignments, stations, routes, and modes of transit are conceptual only. Corridor studies are the next planning stage to determine specific alignments, stations, routes, and modes. An online interactive version is available at http://www.projectconnect.com/connect/project-connect-interactive-map
**SYSTEM: TWG Priorities and Recommendations**

1. High-capacity transit projects should increase the people-moving capacity of the transportation network.
2. High-capacity transit should use existing ROW as effectively as possible.
3. System plan phasing should prioritize areas of heavy congestion and where data support high ridership based on land use, economic development, employment, and travel patterns.
4. High-capacity transit projects should maximize dedicated ROW where financially and physically reasonable.
5. Future corridor studies should strive for a “true alternative” to driving:
   - Quality competitive trips between and within activity centers
   - Seamless connectivity between high-capacity transit components
6. All of the following high-capacity transit modes should be considered as components of the transportation network for our region:
   - Transit on Express Lanes
   - Bus Rapid Transit (BRT)
   - Commuter/Regional Rail
   - Urban Rail
7. **System Map**
   - Recommend park-and-rides with safe places to park
   - Dedicated ROW must include a discussion on the feasibility of each street to support it
   - Use a data-driven approach to evaluate different dedicated ROW scenarios
   - Look at the benefits and possibility of converting BRT corridors to rail in the future

**Project Connect Approvals and Letters of Support**

**TWG**
- Approval Project Connect Vision Map, June 22, 2012
- Approval Project Connect System Financial Plan, April 12, 2013
- Approval Project Connect Conceptual Organizational Approach, May 10, 2013
- Resolution Project Connect System – System, Funding, and Organization, June 7, 2013

**Project Connect Partners**
- Austin City Council – Resolution, August 29, 2013
- Capital Metro Board – Resolution, June 21, 2013
- Lone Star Rail District – Resolution, October 4, 2013

**Resolutions/ Letters of Support**
- Austin Area Research Organization, September 4, 2013
- Congress for the New Urbanism—Central Texas Chapter, June 3, 2013
- Downtown Austin Neighborhood Association, June 5, 2013
- Greater Austin Chamber of Commerce, March 28, 2013
- Hutto, December 5, 2013
- Movability Austin, May 26, 2013
- Round Rock, December 5, 2013
- San Marcos, August 20, 2013
- University of Texas Student Government, April 24, 2013
- Georgetown, January 28, 2014
The Project Connect High-Capacity Transit System Plan is envisioned to be a mix of Express Bus on Express Lanes, BRT, Urban Rail, Commuter Rail, and Regional Rail. However, the foundation of any successful system is the local bus network and other means for last mile connections, so potential transit patrons choose to ride.
We all know this region faces tremendous transportation challenges as our population grows. Traffic congestion has replaced our seemingly endless summer heat as the number one complaint … Congestion here is constant.

We must change the way people get around our community. Specifically, we must convince many more people to leave their cars behind and use mass transit in their daily lives.

To do this, we cannot just add capacity to our existing transit system and hope the riders come. We must find new ways to easily and conveniently meet the daily transportation needs of Central Texans, so that mass transit becomes their preferred choice for getting around.”

— Capital Metro President/CEO Linda S. Watson
Within Central Texas, express, or managed, lanes will be highway lanes that registered vanpools and transit vehicles use for free, and that all other users pay a toll to use. The toll rate is variable throughout the day in order to keep the express lanes free-flowing while still fully occupied and utilized. Transit on express lanes is typically used for travel within a city and between close-in suburbs and the city. A real-world example is the Katy Managed Lanes operated by the Harris County Toll Road Authority in Houston.

Basic operational characteristics of Transit on Express Lanes include:

- Provides commuter and core transit service in the peak travel times or rush hour by piercing rings of congestion
- Both bus and registered vanpool would utilize the express lanes
- No cost for transit vehicles and riders, providing cost-effective transportation for customers while increasing the carrying capacity of the express lanes
- With one vanpool trip capable of replacing up to 10 or more single occupant auto trips, Capital Metro’s Rideshare program will work with the express lane projects to increase the capacity of the corridors in which they are implemented
Although the CTRMA MoPac Improvement Project is not in itself a high-capacity transit project, the Project Connect System Plan calls for express buses to use the express lanes free of charge. Express lanes will have a variable toll rate to keep the speed in the express lane constant. CTRMA’s other projects include 183A and the Manor Expressway. Currently, one managed lane in each direction is under construction on MoPac between Lady Bird Lake and Parmer Lane. The environmental document, an Environmental Assessment, was completed in August 2012 and construction is underway. The project is scheduled for completion in late 2015, and Express Buses are slated to utilize the Express Lanes free of toll fees.

CTRMA has agreed to allow express buses on express lanes, providing the bus patrons with an efficient and more reliable service without the express lane variable toll.

I-35 Express Lanes
Texas Department of Transportation along with the City of Austin and other transportation partners is working to identify strategies to improve I-35. The purpose of this I-35 improvement program is to identify effective short-term (3-5 years) to mid-term (6-10 years) strategies to improve mobility and connectivity for all modes of transportation (pedestrians, bicycles, automobiles, transit, trucks, and emergency vehicles) along and across the I-35 corridor in the Capital Area. Beginning in August 2011, the I-35 corridor, encompassing the area between SH 130 (north of Georgetown) and Centerpoint Road (south of San Marcos), is being evaluated for improvements including the possibility for both North and South lanes for Express Lanes which Express Buses could utilize.
BRT is a public transport bus service which aims to combine bus lanes with high-quality and enhanced bus stations, vehicles, amenities and branding to achieve the performance and quality of a light rail system, with the flexibility, cost and simplicity of a bus system. BRT operates in mixed traffic or in its own lane. It usually consists of longer buses with ground level boarding and advanced technology—for example, signal priority which allows the bus to communicate with traffic lights to hold them green until the bus has passed through the intersection. BRT is typically used to travel within a city and between close-in suburbs. The Metropolitan Area Express (MAX) in Las Vegas and the HealthLine in Cleveland are examples of BRT.

Basic operational characteristics of BRT include:

- Provides commuter and core transit service in the peak travel times or rush hour by piercing rings of congestion
- Very flexible technology that can be used in a wide variety of settings
- Operation within the existing street network in dedicated ROW or mixed traffic (i.e., operation within the same ROW as cars, trucks, and other forms of transport)
- Ability to add service within high density, narrow ROW with minor impacts to the existing environment
Capital Metro MetroRapid

Capital Metro held its groundbreaking ceremony for its BRT service, MetroRapid, in September 2012 and opening in January 2014. MetroRapid reaches destinations up to 20-30% faster than a local bus in many cases. With completion of the second line, MetroRapid will have 76 stops along both lines, and plans a rush-hour headway of ten minutes and remainder of the day service every 12-15 minutes. Features of MetroRapid include:

- Signal priority – buses can hold green lights green
- Transit priority lanes – semi-exclusive ROW in the downtown Austin area
- Limited stops – stops will be up to a mile apart
- Multiple-door boarding – passengers will be able to board at back doors to reduce wait time at stops
- Mobile-phone based ticketing
- Real-time arrival information – electronic message boards at stops will let passengers know how far away the bus is

MetroRapid’s grand opening on January 29, 2014 was a success marked by the new BRT buses at capacity with standing room only during the rush hour service.
Urban rail is an electrified system—using poles and overhead wires—that can operate in mixed traffic, in its own road lane, or in a separated ROW. Urban rail’s technology and service are a hybrid between light rail transit and streetcar. This type of transit is typically used to circulate within densely urbanized areas and travel to nearby activity centers and is often used to link numerous elements of transit systems.

Basic operational characteristics of Urban Rail include:

- Provides commuter and core transit service in the peak travel times or rush hour by piercing rings of congestion
- Expands capacity of existing infrastructure by carrying more people in a lane of traffic than single occupancy vehicles
- Able to operate in constrained ROW on public streets in either mixed traffic or dedicated lanes
- Able also to operate in exclusive ROW at higher speeds than traffic
- Encourages investment and economic development near stations
- Very flexible technology that can be used in a wide variety of settings
- Ability to add urban rail service within high density, narrow ROW with minor impacts to the existing environment
Central Corridor High-Capacity Transit Study

The Central Corridor High-Capacity Transit Study is the first jointly managed project by the Project Connect partners and marks an evolution of the City of Austin Urban Rail Program. Begun in June 2013, the Central Corridor Study objective is to determine the next high-capacity transit investment for the region, with a focus on Central Austin. This phased decision-making process will answer two questions: “Where are we going...next?” and “How will we get there.” More specifically, Phase 1, completed in December 2013, selected a priority sub-corridor for advancement into Phase 2, which will select a Locally Preferred Alternative (LPA) by June 2014.

The selection of a Central Corridor priority sub-corridor came following a comprehensive evaluation of ten radial corridors around Austin’s Downtown, Capitol Complex, and University of Texas Core. The evaluation considered 12 criteria comprising 55 individual performance measures, focused around addressing five problem areas: Congestion, Constraints & Growth, Regional Core, Activity Centers, and System. Two sub-corridors, East Riverside and Highland consistently outperformed the others under a variety of evaluation weighting scenarios. The project team recommendation to advance East Riverside and Highland, along with the Core, into Phase 2 for project definition was endorsed by the Central Corridor Advisory Group (CCAG), Austin City Council, and Capital Metro’s Board of Directors. Lone Star Rail District’s Board of Directors’ Executive Committee is scheduled to take action in February 2014.

In addition to endorsing the selection of the Central Corridor priority study area, the CCAG, Council and Capital Metro Board all recognized the need for ongoing system planning and project development activities for the next tier of three sub-corridors, East Austin, Lamar, and Mueller, directing staff to identify additional funding necessary to conduct those efforts.

Phase 2 of the Central Corridor Study will select an LPA, defined by a service profile, mode, and alignment. Concurrent with these efforts, the Project Connect partners will develop a funding plan and governance approach to support the defined project.
Commuter rail carries riders between work and home, and is typically used to travel between suburbs and central cities. Locally, Capital Metro’s MetroRail Red Line between Leander and downtown Austin is an example of commuter rail in the CAMPO region.

Basic operational characteristics of Commuter Rail include:

- Can take advantage of existing railroad lines due to its ability, within federal regulatory requirements, to operate mixed with freight trains or with time separation arrangements; repurposing existing rail lines minimizes the need for new ROW to be acquired.
- Can use off-the-shelf existing diesel or electric rail technology.
- Able to operate at higher average speeds than most other modes due to its extensive use of exclusive ROW.
MAKING PROGRESS ALREADY...

MetroRail Red Line

The city’s first commuter rail line, the MetroRail Red Line, between Leander and downtown Austin began operations in March 2010. The service runs from Monday through Saturday, with peak-hour headways of half hour, with limited midday service and limited nighttime service on Fridays and Saturdays. There are nine stations along the line, and current ridership is 2,400 average daily riders. The distance between the two terminal stations is about 32 miles. The Red Line operates on a former Southern Pacific branch line, and Capital Metro shares the railway with freight carriers, using temporal separation to ensure that passenger rail operations do not mix with freight rail operations.

MetroRail Red Line Improvements to Come...

In 2013, Capital Metro was awarded a $11.3 million federal grant as part of the fifth round of the Transportation Investment Generating Economic Recovery, or TIGER, discretionary grant program. The grant will allow Capital Metro to advance a number of rail improvements equaling over $27.3 million, including:

- Railway and signal timing improvements that will help reduce vehicle delays and rail traffic congestion
- Commuter rail improvements, including additional sidings and double tracking in the most critical areas, which are projected to increase ridership capacity by 15% and reduce commute times by five to ten minutes
- Freight rail enhancements, including the replacement of several bridges, and rail rehabilitation and realignments that will increase speeds and enhance safety while doubling freight capacity and improving reliability

Design and environmental clearance are underway for these important improvements.
Regional rail service connects different cities and regions, generally using existing railroad lines and often use FRA-compliant rail vehicles. FRA-compliant vehicles meet the safety standards of FRA to run on the same tracks at the same time as freight trains. It is typically used to travel longer distances between cities. An example is the Capitol Corridor between San Jose and Sacramento in Northern California.

Basic operational characteristics of Regional Rail include:

- Can take advantage of existing railroad lines due to its ability, within federal regulatory requirements, to operate mixed with freight trains or with time separation arrangements; repurposing existing rail lines minimizes the need for new ROW to be acquired.
- Can use off-the-shelf existing diesel or electric rail technology.
- Able to operate at the highest average speed compared to other modes due to its extensive use of exclusive ROW and relatively long station spacings; can also, however, mimic the characteristics of commuter rail.
The LSTAR is a regional and commuter rail service planned by LSRD to run between Georgetown and San Antonio with stops at activity centers in our region. The portion of the LSTAR project within the Project Connect System and CAMPO Region extends from Georgetown to San Marcos. LSRD proposes up to 32 trains per day, including midday and evening service, seven days a week, with up to 16 new stops. The LSTAR is proposed to take 75 minutes to get from downtown Austin to downtown San Antonio; it will travel 118 miles, connecting the cities of San Antonio, Schertz, New Braunfels, San Marcos, Kyle and Buda, Austin, Round Rock, and Georgetown. The project will be entering the Environmental Impact Statement (EIS) phase early in 2014.

The railroad that LSRD plans to use for its commuter rail service is currently a Union Pacific freight rail corridor. Part of the LSTAR project is to relocate the pass through Union Pacific freight rail trips to a new corridor to be located east of IH 35. LSRD and Union Pacific have executed a memorandum of understanding (MOU) to continue to work together on this project, and LSRD is currently conducting engineering, environmental, and economic studies for the new freight rail line from Taylor to Seguin.

The portion of LSTAR between Georgetown on the north and San Marcos on the south is included in the Project Connect Vision Plan.
OPTIMIZATION, INTEGRATION, AND INTERACTION WITH OTHER REGIONAL MOBILITY INVESTMENT PRIORITIES

The Project Connect System Plan included optimization and integration opportunities for the system and how the elements of the plan will interact with other regional mobility investments including:

- Freight rail interaction
- CAMPO 2040 – Regional Mobility Plan
- Additional highway capacity
- Existing and future bus network and paratransit
- Intelligent Transportation Systems (ITS) solutions
- Passenger and maintenance facilities
- Bicycle and pedestrian integration
- Preservation of existing ROW

ITS solutions let you know when the next train or bus is arriving in real time.

LAST MILE CONNECTIONS

Whether a rider has a short walk, bike ride, or drive to a park-and-ride to reach a system station the journey between home and station is a major factor in people’s decision to choose to ride transit. For this reason it is important that last mile connections are made with various options.

The foundation for any high-capacity transit system plan and last mile connection is the local bus network. It is anticipated that as each element of the system plan moves into the next stage of project development, corridor Studies, some local bus routes would be adjusted to feed the system by delivering riders to the system and/or be removed if redundant with the system element.

Additionally, other existing and proposed ways to move people to and from the system from their origination to their destinations provide a fully functional transportation system and allow citizens to choose to ride transit. These include bicycle and pedestrian access, as well as car and bike share programs, discussed next.

Local buses can serve as the last mile connection and get you from the rail or BRT stop to your destination.

MetroRapid BRT service has bike racks so you can peddle from the BRT stop to your final destination.
LOCAL BUS AND FACILITIES

Capital Metro connects people, jobs and communities by providing quality public transportation choices for the greater Austin community. As of January 2014, the Capital Metropolitan Transportation System is comprised of 82 bus routes and almost 3,000 bus stops. Capital Metro has 20 Transit Centers serving 528.79 square miles in the greater Austin metropolitan area. During the Fiscal Year 2013 Capital Metro managed 113,425 weekday boardings or over 34.2 million annual boardings. Service is operated under contract through one service partner—CARTS—and three different service providers, First Transit, StarTran and Veolia. Capital Metro offers the following bus services:

Local Service: Local service to downtown Austin and the University of Texas.

Limited & Flyer Service: Skips stops to provide a premium bus service.

Feeder Service: Service between neighborhoods and transit centers.

Crosstown Service: Routes that bypass downtown Austin.

Special Service: Circulator routes (University of Texas), MetroRail connector routes and special services including the Night Owl services.

Express Service: Commuter service with limited-stop service to/from the University of Texas, downtown, and Park & Rides.

MetroRapid: Limited-stop service along North Lamar and South Congress via downtown. (To be in operation January 2014)


Fourteen (14) routes are designed specifically to serve the University of Texas and six routes provide Night-Owl service to several communities from downtown Austin. Service is provided seven days per week with service reductions during the weekends and at night. Night service generally operates from 10:00 pm or 11:00 pm with night owl routes operating Tuesday through Sunday from about midnight to about 3:30 am.
BIKE AND PEDESTRIAN NETWORK

Just as a robust local bus network is important to bring riders into the transit network, so too are bicycle and pedestrian facilities.

Bike and Pedestrian Trails

Bike and pedestrian trails provide both connections to final destinations and recreational uses. As noted in the City’s 2009 Bicycle Plan Update, the Austin region has a 1,451-mile bicycle network, including 49.5 miles of multi-use paths, 131 miles of bicycle lanes, 287 miles of paved shoulders, and 984 miles of shared lane and wide curb lane streets. The City of Austin continues to implement a multifaceted bicycle network, now installing nearly 45 miles of new bicycle facilities per year (up from less than 10 miles per year in 2008).

While Austin’s robust trail system is well known, other communities in Central Texas are also adding connections. The Cities of Round Rock, Georgetown, and Kyle have a total of 33 miles of trails, and are planning for more.

Bicycle and Transit Integration

To serve our region’s transportation needs better Project Connect Partners will consider the following when implementing the high-capacity transit Vision Map.

- **Safe protected facilities to major transit stations.** About 55% of Austin bicyclists feel safe using a dedicated trail or protected bicycle facilities. The City has already implemented cycle tracks and dedicated bikeways, and facilities like these will help new bicyclists feel more comfortable.

- **Short bicycle trips.** The city plans to build protected facilities radiating out from stations with a 2 - 3 mile radius, equivalent to the ¼ - ½ mile walking radius. Providing non-motorized access to transit stations can increase the value and density of the surrounding land.

- **High-capacity, controlled-access bicycle parking at major transit stations.** Simple bike racks are exposed to potential vandalism and inclement weather. Capital Metro installed the first bicycle parking facility, a 30-bike-capacity shelter, at the MetroRail Kramer Station and plans to build six more in 2014.

- **Bike share for access to last mile(s) Central City destinations at end of trip.** Austin B-cycle, funded by a $1.5 million federal grant and a $500,000 private grant from local companies, began in December 2013 with 110 bikes at 11 stations focused on downtown. By March 2014, the system will expand to 40 stations.

Pedestrian Amenities

Safe and continuous pedestrian connections improve safety, accessibility, and mobility for all pedestrians, which in turn encourages walking as a viable mode of transportation and increasing the reach of the high-capacity transit network. Pedestrian facilities that are compliant with the Americans with Disabilities Act (ADA) are required for new construction, and upgrading facilities that do not comply has been a focus in the region.

Going beyond ADA requirements, Smart Growth America has organized a nationwide movement in the creation of Complete Streets, which are designed to enable safe access for people of all ages and abilities, regardless of mode. Complete Streets allow automobiles, transit vehicles, bicycles, and pedestrians to safely coexist and complement each other.

Austin City Council passed a resolution on December 12, 2013 creating a comprehensive Complete Streets Policy. Since 2005, the City of Austin has constructed 100 miles of sidewalks, including nearly 2,500 new curb ramps. New facilities are focused around areas with heavily pedestrian traffic and schools, as part of the City’s Sidewalk Prioritization Plan. In 2013, the City of Austin created a Pedestrian Advisory Council to advise policymakers, City staff, and developers on such issues as safety, the sidewalk network, transit and development-pattern issues, and a comprehensive approach to creating more walkable places in Austin.
CAR SHARE AND VANPOOL

Car Share

Car sharing is a type of car rental focused on short periods of time, often by the hour or day. They are often most attractive to customers who make only occasional use of a vehicle. Car sharing was first used in dense urban environments, but now may be offered at transit stations and other activity centers in suburban environments. They have grown in popularity over the past decade. Car share vehicles are often small and economical and increasingly are being powered by alternative fuels. Two care share programs are now operating in Austin:

- Car2Go began local operations in 2010 with 300 vehicles in the Austin area. The service requires a membership and vehicles may be found via a downloadable smartphone app (used to locate and reserve vehicles). Cars may be found at dedicated on-street parking spaces with Car2Go signs, rather than at a single centralized location, like other rental car companies operate. Vehicles are available for one-way, point-to-point service, which is charged by the minute (with hourly and daily rates also available).

- Zipcar, which began operating in Austin in 2011, is the largest car share provider in the world. Zipcar charges a one-time application fee, an annual fee, and a reservation charge, and rents its vehicles hourly or by the day, via on-line, telephone, or smartphone reservation systems; smartphone apps can also be used to locate cars. Access cards are required to unlock the vehicle, where the keys are located. Vehicles must be returned to where they originate.

Vanpool

Traditionally, five or more people share a vanpool with vans ranging in size between seven and fifteen passengers. This can reduce commute costs for individuals involved, as riders share the cost of the vehicle, fuel, maintenance and any parking or tolls. Vanpools form quickly and serve locations that other transit services do not or cannot serve cost effectively.

In some cases, an employer may elect to subsidize the cost of the vanpool and the vehicles’ operating costs. In other cases, the vehicles are provided and maintained by a municipality or transit agency or in partnership with a third-party provider.

Capital Metro offers a vanpool service for at least five participants that includes a late-model van, maintenance and insurance. Capital Metro covers the first $600 of the cost of the van ($500 in FY2015).

Project Connect Partners will consider including car share vehicle access at transit stations in their future planning studies for the elements of the high-capacity Vision Map.
SYSTEM PRIORITIZATION AND IMPLEMENTATION

PRIORITIZATION

The System was prioritized based on the corridor analysis and ranking process defining the corridors with the highest need and propensity for high-capacity transit to succeed, with consideration of the input received from the TWG, stakeholders, and the public. The cost and potential for funding availability were then used to determine the timeframes for potential implementation, further refining the prioritization. A review of successful transit systems across the U.S. also helped shape the system prioritization focusing the sequencing of the elements to provide the best service to the transit user from first element implementation to last.
**THE SYSTEM PLAN COST**

The System would consist of approximately 230 miles of high-capacity transit projects and cost approximately $4.0 billion for capital costs, an additional $763 million with the added capital maintenance and ancillary facilities, and approximately $152 million for annual operating costs.

As is typically the case with system level planning, Project Connect utilizes order-of-magnitude capital cost estimates because detailed engineering and final determination of mode or alignment location occur later in the planning process. As a particular project or element in the system plan moves through the stages of project development, more detailed information is gained and estimates are continually refined. The estimates in this system plan will be updated and refined as projects move forward and are closer to implementation.

All capital costs are in 2012 U.S. Dollars, and were calculated based on approximate order-of-magnitude costs for similar transit systems in the U.S. The estimates include all capital costs for a reasonable system build-out including guideway, stations, power systems, and vehicles. A per-mile capital cost was then assigned to each segment of the Vision Map as a function of:

- **Functional Density (CBD, Urban, Suburban, Rural)** – It is assumed that costs increase relative to the density of the existing built environment.

- **Transit Mode (Urban Rail, Bus Rapid Transit, Commuter Rail)** – Comparable costs were determined by reviewing similar projects across the U.S. by mode. Urban Rail was compared to both streetcar and light rail projects. BRT was estimated differently depending on whether it was assumed to be a dedicated-lane service or only an upgrade to normal mixed-flow local bus service. Regional rail was assumed to be equivalent to commuter rail for this cost analysis.

- **Type of Existing Conditions (Greenfield – undeveloped, Greenfield – developed, Existing Railroad, Abandoned Railroad, Local Street, Arterial Street, Highway)** – These classifications were used to determine the probable extent of capital improvements that would be necessary per mode based on the existing conditions.

### Operations and Maintenance Costs

Project Connect utilizes order-of-magnitude annual operating cost estimates. All estimates were done in 2012 U.S. Dollars. The most recent National Transit Database operating cost data was used to determine operating costs as a function of the number of vehicles for the three modes. The number of vehicles was determined based on the assumed frequency of service, average speed, and length of route for each mode type; frequencies and speed are consistent with what is shown on the Transit Fact Sheet.

<table>
<thead>
<tr>
<th>Mode</th>
<th># of Vehicles</th>
<th>Annual O&amp;M Per Vehicle</th>
<th>O&amp;M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Express Bus</td>
<td>21</td>
<td>$572,000</td>
<td>$12,000,000</td>
</tr>
<tr>
<td>BRT</td>
<td>24</td>
<td>$705,000</td>
<td>$16,800,000</td>
</tr>
<tr>
<td>Urban Rail</td>
<td>58</td>
<td>$1,380,000</td>
<td>$80,000,000</td>
</tr>
<tr>
<td>Commuter Rail</td>
<td>39</td>
<td>$763,000</td>
<td>$29,800,000</td>
</tr>
<tr>
<td>Regional Rail</td>
<td>11</td>
<td>$1,200,000</td>
<td>$13,200,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>116</strong></td>
<td><strong>$8,052,000</strong></td>
<td><strong>$151,800,000</strong></td>
</tr>
</tbody>
</table>

Typically when developing a financial plan for a long range regional system plan, a broad-brush method is employed due to the lack of detailed engineering and final determination of mode or alignment location. As a particular project or element in the system plan moves through the stages of project development, more detailed information is gained and estimates are continually refined. The estimates in this system plan are considered to represent the “envelope of affordability” for the implementation of high-capacity transit in our region.

The identification of funds continues as Corridor Studies are undertaken and/or as regional municipalities provide feedback or support on funding sources.

**CONCEPTUAL FUNDING PLAN ASSUMPTIONS**

Dozens of funding plan iterations were tested and were comprised of multiple combinations of bonds/grants, project schedules and funding implementation to find an “envelope of affordability” that was accepted by the TWG and partnering agencies.

**FUNDING SOURCES**

**Capital Metro’s Existing Funding**

Prior to investigating new sources of revenue, it is helpful to understand Capital Metro’s existing revenue stream. Similar to other transit agencies across the country, sales taxes represent the largest component of Capital Metro’s revenue, contributing approximately 80% of the revenue budget. Presently, this revenue is limited by a statewide 2% limit on local option sales taxes.

**TWG Guiding Principles for Funding:**

- Communities that benefit from service should participate financially – *pay to play*.
- Financial contributions from benefiting participants should be equitable – *fair share/equal effort*.
- Focus should be on revenue sources that grow over time – *pay as you grow*.
- FTA New Starts funding is awarded based on a very competitive basis. It is assumed that some transit investments will receive some level of federal participation. For the purposes of the Project Connect funding plan, it was assumed that on average 25% of project capital costs would be covered by federal funding sources.
- Utilizes authorized and enabled funding sources prior to introducing new revenue sources that require legislative action.
- Integrated system implementation rather than sequenced individual subsystems/modes.
- Maintain and account for growth in the existing Capital Metro System.
- Farebox recovery based on industry standards for each individual mode of service.
- Cost assumptions incorporate an annual capital maintenance program and the implementation of transit system support facilities and programs including: regional fare structure system components, bus and rail maintenance facilities, etc.
Project Connect Funding Sources and Financing Mechanisms

The funding sources that were included for consideration in the Project Connect Conceptual Funding Plan were based on the discussion with the public, stakeholders and consensus of the TWG. They represent existing sources, some that are not currently in place but could be implemented without referenda and then some sources that would require legislative action and referenda at some point in the future. The plan also utilizes funding mechanisms to assist with implementing portions of the plan earlier.

**Funding Sources Considered**

- **Existing Sources**
  - CMTA Dedicated Sales Tax
  - Property Tax Value Capture (TIF)
  - On-Street Parking
  - GO Sources (Short Term Debt)
    - Park-n-Ride Fees
    - Interest Income
  - GO Sources (Long Term Debt)
    - Park-n-Ride Fees
    - Interest Income

- **Referenda Sources**
  - Private Investment
  - Express Lane Revenue

- **Existing Sources**
  - Passenger Fares
  - Freight Usage Fee
  - Sales Tax Increment

- **Future Sources**
  - GO Sources (Long Term Debt)
  - Vehicle Emissions Tax
  - Other Potential Sources
    - Vehicle Registration Fee
    - Mobility Use Tax
    - Off-Street Parking Fee

**Local Control Partnerships**
- Existing Local Authority
- Fed/State Govt Authorization
- Voter Authorization
- Legislature Authorization

## Project Connect Funding Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Geography / Purpose</th>
<th>Avg. Annual Yield / Total in Plan (2012$ in millions)</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTA 5309 – Bus &amp; Bus Facilities</td>
<td>Federal Source Distributed Regionally/Capital</td>
<td>$2/$69</td>
<td>Funding additional bus facility and buses in late 2020s and into early 2030s</td>
</tr>
<tr>
<td>FTA 5309 – New Starts</td>
<td>Federal Source Distributed Regionally/Capital</td>
<td>$13/$451</td>
<td>FTA New Starts program funds 25% of transit investments – 33% of urban rail and commuter lines, but no New Starts are assumed in the LSRD investment.</td>
</tr>
<tr>
<td>Regional Infrastructure Funds and Station Program</td>
<td>Regional/Capital</td>
<td>$5/$183</td>
<td>Funds from CAMPO that are treated as a low interest loans during the course of the Plan. Station program is a small capital revenue from municipalities to augment stations – they could take the form of Public Investment District (PID) or resources directly from the municipality.</td>
</tr>
<tr>
<td>Tax Increment Financing (TIF)</td>
<td>Regional/Capital – O&amp;M</td>
<td>$18/$613</td>
<td>Property tax TIFs in ¼ mile districts around all commuter rail stations (Capital Metro &amp; LSRD) and ¼ mile districts around portions of Urban Rail outside of the downtown core – assumes 36% of property tax growth assigned to transit.</td>
</tr>
<tr>
<td>Sales Tax Increment or Other Local Funds</td>
<td>Regional/Capital – O&amp;M</td>
<td>$20/$695</td>
<td>Sales tax in non-Capital Metro cities municipal-wide – assumes 28% of sales tax growth assigned to transit. Major sales tax generators like Dell and the Outlet mall in San Marcos removed. This was the most controversial element of the Funding Plan and may need to be revisited on a city by city basis – to adjust the geography or identify another funding source with similar yield.</td>
</tr>
<tr>
<td>City of Austin General Obligation (GO) Bond Repayment</td>
<td>Austin/Capital</td>
<td>$14/$475</td>
<td>Revenues identified to repay the initial bond for Urban Rail.</td>
</tr>
<tr>
<td>Public Improvement District (PID)</td>
<td>Austin/Capital</td>
<td>$1/$40</td>
<td>Downtown and Mueller PIDs supporting Urban Rail.</td>
</tr>
<tr>
<td>Fare Revenue</td>
<td>Regional/O&amp;M</td>
<td>$20/$690</td>
<td>Fares generated by transit system at standard levels by mode based on percentage of operating cost not ridership projections.</td>
</tr>
<tr>
<td>Austin-Capital Metro ILA Return</td>
<td>Austin/Capital</td>
<td>$1/$46</td>
<td>These are Capital Metro sales tax receipts being transferred to the City for transportation projects. Capital Metro would be relieved of this debt for the express purpose of contributing these funds to Urban Rail development.</td>
</tr>
<tr>
<td>Austin On-Street Parking Fees</td>
<td>Austin/O&amp;M</td>
<td>$5/$190</td>
<td>Increased parking fees in urban core with revenues assigned to Urban Rail O&amp;M. Increases the cost of driving to urban core incentivizing transit use.</td>
</tr>
<tr>
<td>Managed Lane Revenues</td>
<td>Regional/O&amp;M</td>
<td>$3/$103</td>
<td>Managed lane revenue from capacity improvements on MOPAC and I-35 assigned to express bus O&amp;M on these facilities.</td>
</tr>
<tr>
<td>Trackage Rights</td>
<td>Regional/O&amp;M</td>
<td>$4/$140</td>
<td>Assume a portion of freight usage fees on MetroRail Red Line and LSRD assigned to commuter rail O&amp;M.</td>
</tr>
</tbody>
</table>

Source: URS, 2013.
**Project Connect Financing Mechanisms**

<table>
<thead>
<tr>
<th>Source</th>
<th>Geography / Purpose</th>
<th>Avg. Annual Yield/ Total in Plan (2012$ in millions)</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Austin GO Bond</td>
<td>Austin/Capital</td>
<td>$275</td>
<td>Initial bond for Urban Rail.</td>
</tr>
<tr>
<td>Regional Bond/ TIFIA</td>
<td>Regional/Capital</td>
<td>$1,500</td>
<td>Future bonds – modeled at 30 year repayment, with 3-4.5% interest and varying payment plans for principal and interest.</td>
</tr>
<tr>
<td>Short-term Debt</td>
<td>Regional/Capital</td>
<td>$183</td>
<td>Use of regional infrastructure funding paid back in 10 years with 2% interest.</td>
</tr>
</tbody>
</table>

Source: URS, 2013.

**WHAT CAN WE PAY FOR?**

The Vision Map identifies $4 billion in high-capacity transit investments over a 30-year period and then another $400-800 million in ancillary capital costs that will be required to maintain and support that system. The Vision Map will also require $152 million annually in O&M costs once the full system is built-out which translates to an additional $2 billion in O&M costs over the course of the 30-year plan.

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**Future Needs**

Based on the Project Connect Conceptual Funding Plan, after 2040 additional funding sources will need to be legislatively approved to complete the Vision Map. The TWG voted on which future funding sources to attempt to get legislatively approved for use by 2024, and based on the results it was determined that all funding sources should be considered including:

- Emissions Tax
- Mobility Use Tax
- Vehicle Registration Fee
- Off-street Parking Tax/Transaction Fee
- Local Option Sales Tax

Based on the Project Connect Conceptual Funding Plan, the timing of elements of the Vision Map that are already progressing in project development stages, and best appropriate transit implementation requirements general phasing of the plan was developed. From the present to 2040 approximately 50% of the Vision Map can be implemented and funded. Funded in the Project Connect Conceptual Plan up to 2040 are the following investments:

- BRT – 15 miles
- Express Bus – 56 miles
- Regional Rail – 74 miles
- Commuter Rail – 32 miles (includes upgrades, double tracking of the Red Line)
- Urban Rail – 12 miles (double track)
FUNDING: TWG PRIORITIES AND RECOMMENDATIONS

1. Partners in the region should be required to participate financially if they will benefit from the system (“pay to play”).
2. Contributions from participating communities should be equitable (each pay a “fair share” or make an “equal effort” in funding).
3. Revenue sources used should grow with the community’s growth (“pay as you grow”).
4. PROPERTY TAX VALUE CAPTURE DISTRICTS [i.e., tax increment financing (TIF) districts such as Tax Increment Reinvestment Zones (TIRZ) or Transportation Infrastructure Zones (TIZ)] at rail stations are a regionally acceptable local funding source for vision.
5. SALES TAX INCREMENT ALLOCATION is a regionally acceptable local funding source for vision.
6. PRIVATE INVESTMENT is a regionally acceptable local funding source for vision.
7. ON-STREET PARKING is a regionally acceptable local funding source for vision.
8. New funding sources should be considered in the future as identified below (these may require legislative approval/change):
   - Emissions Tax
   - Vehicle Registration Fee
   - Local Option Sales Tax
   - Mobility Use Tax
   - Off-street Parking Tax/Transaction Fee
9. Seeking new revenue sources for use by 2024 is a reasonable approach.
10. The conceptual system funding plan is viable and reasonable.
11. Funding sources in the conceptual plan include:
   - Federal New/Small Starts (25% of capital costs on average)
   - Passenger Fares
   - Freight Usage Fees
   - Value Capture – Tax Increment Financing (TIF) districts such as Tax Increment Reinvestment Zones (TIRZ) or Transportation Infrastructure Zones (TIZ), Public Improvement District (PID), Municipal Management District (MMD)
   - Sales Tax Increment Allocation – Sets level of participation from jurisdiction but each jurisdiction could use other funding source if desired to meet set level
   - On Street Parking Fees
   - Capital Metro Sales Tax
   - City of Austin General Obligation (GO) Bonds Funding
   - Private Investment (Public Improvement Districts/Municipal Management Districts)
   - Express Lane Revenues
   - Regional Infrastructure Funding (CAMPO)
12. Financial Capacity
   - Identified sources within existing jurisdictional legal authority
   - Funds approximately 49% of the Vision Map
   - Components:
     - BRT – 15 miles
     - Express Bus – 56 miles
     - Regional Rail – 74 miles
     - Commuter Rail – 32 miles (upgrades, double tracking)
     - Urban Rail – 12 miles (double track)
     - Maintenance facilities, fare collection, replacement vehicles
   - Funding from Capital Metro for new high-capacity transit projects is contingent on current local bus and MetroRail Red Line services being fully funded.
   - Utilizes bonds (would require referendum) and federal Transportation Infrastructure Finance and Innovation Act (TIFIA) loans to establish financial capacity for major expenditures
   - Adding an additional new funding source in 2024 potentially extends financial capacity to 60% of the investments outlined in the Vision Map, along with additional operating funds
As in many other regions, Central Texas’ transportation infrastructure and services are provided by different jurisdictions. The goal is for these solitary entities to maximize efficiency and manage resources, so that the customer has a seamless experience of the transit and overall transportation system. For a customer’s seamless transit experience to become reality, the entities must have a unified approach to project planning and implementation.

**GOAL:** Create an outcome-oriented and customer-focused approach to organizing high-capacity transit.

- Operate the system as a seamless or "single system" from a community or customer service viewpoint
- Assure the system is professionally managed and accountable
- Provide for the alignment and coordination of local, commuter, and regional transit services
- Accommodate the character of services to be delivered including the potential inclusion of Regional Rail, Urban Rail, BRT, and Express Bus and expanded Commuter Rail services
- Provide for expansion or growth of the service area
- Provide for the jointly or consolidate funding of the system and for growth
- Recognize and accommodate the different funding roles of participating entities

**ORGANIZATIONAL APPROACHES**

Different organizational approaches were reviewed, and the TWG selected an approach that is flexible and can grow with time as needed from a predominately coordinated approach to a more integrated approach.

Reorienting each partner’s organizational approach to problem solving and service delivery has been important to advancing the Project Connect effort to date. Working jointly to plan a regional system and develop a pooling approach to resource sharing and funding has enabled the system plan to become a reality.

**GENERAL MANAGEMENT APPROACHES**

**COORDINATED**
- Separate operators
- Issues resolution focus
- Informal processes or relationship oriented
  - Philadelphia
  - Portland
  - San Francisco
  - Seattle

**COLLABORATIVE**
- Single provider of common functions
- Joint management of multiple operators
- Formalized relationships
  - Atlanta
  - Chicago
  - Minneapolis
  - San Diego
  - New York

**INTEGRATED**
- Single operator
- May include joint staffing
- Unified command & control
  - Charlotte
  - Dallas/Fort Worth
  - Salt Lake City
OuR APPROACH

To develop an organizational approach for regional high-capacity transit it is important to understand the differing roles that may be played by local governmental entities in funding, and therefore in governing the development and/or operations of the system. The conceptual funding plan for high-capacity transit identified two types of participation roles for local government entities. The first role is that of Investor-Owners who take the responsibility for planning and funding the capital investments associated with the system and have the following ongoing responsibilities for the system:

- Expansion planning and capital financing or guarantees
- Day-to-day system operations & maintenance (maintain the “state of good repair”)
- Safety & security
- Business functions administration
- Risk/liability management
- Freight operations coordination
- Federal regulations compliance

As the owners and operators of the system, it is their responsibility to meet the customer service expectations of the communities served by the system and individual riders.

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**TWG GUIDING PRINCIPLES FOR ORGANIZATION**

- Focus on regional services and the long-term
- Continue coordinating/collaborating with local transit services
- Use a non-political, appointed governance approach to management
- Use an approach that is scalable and adaptable over time by mode and allows partnering
- Identify the services to be organized first, then address values questions
- Further evaluate if one agency over all modes approach is achievable or desirable
- Focus on the rail organizational approach, then coordinate with bus and rail modes
- Urban and commuter services should be included, but may be addressed differently
- For users, the system should have the appearance and seamless functionality of a “single system”
- Planning should cover all modes and all operators

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**Flow of Funds**

Source: Knudson LP, 2013.
The second type of participant role is that of Client Communities interested in securing service from the system for their community in return for providing funding to the system’s operations. By procuring service from the system for their communities, Client Communities take on the role of representing the users of the system and take on the following responsibilities of assuring the service provided meets community needs within their provided local ridership funding:

- Local funding level review and service level recommendations (“where, when and how often”)
- Station area economic development decisions (land use decisions)
- Local station improvement recommendations/contributions

Investor-Owners fill the role of providing credit worthy sources of funding to cover debt issuance repayment, provide any necessary grant guarantees and make other contributions such as transit ROW or facilities. Client Communities fill the role of providing O&M or non-debt funding through their commitments for service from the system.

In addition, the values that underpin the financial plan were considered important to directing how the various interested parties would participate in the organizational approach to system oversight or input:

- Pay to Play – local communities that provide financially to the system should have appropriate participation in the system’s organizational approach
- Pay as You Grow – organizational participation should be initiated and grow over time based on the system’s commitment for service and the type and level of a community’s financial participation
- Fair Share/Equal Effort – a local community’s organizational role should correspond with its type and level of financial participation

Planning and Prioritization Initiators Process

- System plan reconsiderations
  - Reprioritizations
  - Corridor study findings
  - Funding issues
  - Etc.
- New service extensions/requests
- Periodic system reviews/updates

Source: Knudson LP, 2013.
1. The values that underpin the funding plan also direct the organizational approach to system management:
   - Pay to play—local communities that provide financially to the system should have appropriate participation in the system’s organizational approach
   - Fair share/equal effort—a local community’s organizational participation role should correspond with its type and level of financial participation
   - Pay as you grow—organizational participation should be initiated and then grown over time based on the system’s commitment for service and the type and level of a community’s financial participation

2. The regional organization to implement the TWG vision should:
   - Have a regional services orientation over the long term
   - Continue to coordinate with local transit services
   - Stress professional, non-political management of the system
   - Be scalable and adaptable over time and by mode, and seek to partner with local communities and other entities

3. The organizational approach is headed in the right direction.

4. Client Communities should participate through a Regional Service Committee providing input on the following:
   - Service Level Recommendations (“where, when, and how often”)
   - Annual Contribution Review
   - Station Area Economic Development (land use decisions)
   - Local Station Improvements

5. Investor-Owners should provide system oversight through an Integrated System Management committee and managing partner approach covering the following:
   - Debt Issuance – Capital Financing
   - Grants – Guaranteeing Entities
   - Day-to-Day Management
     - System Operations & Maintenance (“state of good repair”)
     - Safety & Security
     - Business Administration
     - Operations Liability
     - Freight Operations Coordination
     - Federal Regulations Compliance
WHAT OUR PEER REVIEW SAID

AMERICAN PUBLIC TRANSPORTATION ASSOCIATION (APTA) PEER REVIEW

In December 2012, on behalf of APTA, five executives from transit agencies around the country came to Austin to formally assess the progress of both Project Connect and the Urban Rail project. The APTA Peer Review process is well established as a valuable resource to the public transit industry. The purpose of the peer review was to offer an industry resource to assist the project team and stakeholders in optimizing the strategies for implementation of Project Connect and Urban Rail. The panel objectively evaluated the projects and recommended several best practices for the project’s next steps. The panel conducted this peer review through documentation review, briefings, and interviews with regional partner staff, consultants and external stakeholders.

ACTION ITEM WORK PLAN

<table>
<thead>
<tr>
<th>Category</th>
<th>Next Steps / Action Item</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td>Process</td>
<td>Define and prioritize regionally significant transportation projects</td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>Complete Project Connect System Plan report</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Project Connect System Plan executive summary due early 2014. The Project Connect System Plan report will document the high-capacity transit phasing that went into development of the conceptual funding plan.</td>
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<tr>
<td></td>
<td>Define and prioritize regionally significant transportation projects</td>
<td>In Progress</td>
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<tr>
<td></td>
<td>Participate in CAMPO 2040 Plan process</td>
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<tr>
<td></td>
<td>Develop conceptual implementation plan for Project Connect with priority phasing and funding</td>
<td>Complete</td>
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<tr>
<td></td>
<td>Complete Project Connect System Plan report</td>
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<td></td>
<td>Project Connect System Plan executive summary due early 2014.</td>
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<tr>
<td></td>
<td>Establish a long-term transportation vision</td>
<td>Complete</td>
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<td></td>
<td>Adopt Project Connect Vision</td>
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<tr>
<th>Category</th>
<th>Next Steps / Action Item</th>
<th>Status</th>
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<tbody>
<tr>
<td>Process</td>
<td>Include local bus system in high-capacity transit system plan</td>
<td>Complete</td>
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<tr>
<td></td>
<td>Address role of local bus system in regional high-capacity transit vision in Project Connect System Plan report</td>
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<tr>
<td></td>
<td>Project Connect System Plan executive summary due early 2014.</td>
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<tr>
<td>Transparency</td>
<td>Convene transportation/mobility summit</td>
<td>Complete</td>
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<tr>
<td></td>
<td>Participate in CAMPO 2040 Plan process</td>
<td></td>
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<tr>
<td></td>
<td>2040 Plan kick-off summit held May 17th, 2013, more process to come!</td>
<td></td>
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<tr>
<td>Organization</td>
<td>Speak to FTA with one voice</td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>Sign multiparty Project Connect High-Capacity Transit Interlocal Agreement (ILA)</td>
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<tr>
<td></td>
<td>Agreement signed and executed December 2013.</td>
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<tr>
<td></td>
<td>Consider Capital Metro as partner team leader</td>
<td>Complete</td>
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<td>Sign multiparty Project Connect High-Capacity Transit Interlocal Agreement (ILA)</td>
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<tr>
<td>Organization</td>
<td>Determine organization</td>
<td>Complete</td>
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<tr>
<td></td>
<td>Sign multiparty Project Connect High-Capacity Transit Interlocal Agreement (ILA).</td>
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<tr>
<td></td>
<td>Agreement signed and executed December 2013.</td>
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<tr>
<td></td>
<td><strong>Focus on organization as next step</strong></td>
<td>In Progress</td>
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<tr>
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<td>Sign multiparty Project Connect High-Capacity Transit Interlocal Agreement (ILA).</td>
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<td></td>
<td>Agreement signed and executed December 2013.</td>
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<td></td>
<td><strong>Formalize partnership</strong></td>
<td>In Progress</td>
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<tr>
<td></td>
<td>Sign multiparty Project Connect High-Capacity Transit Interlocal Agreement (ILA).</td>
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<tr>
<td></td>
<td>Agreement signed and executed December 2013.</td>
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<tr>
<td>Process</td>
<td><strong>Capital Metro to develop 20-year finance plan</strong></td>
<td>In Progress</td>
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<tr>
<td></td>
<td>Capital Metro to hire a financial planning consultant.</td>
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<tr>
<td></td>
<td>Pool funding sources from partners</td>
<td>Complete</td>
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<tr>
<td></td>
<td>The conceptual system-level funding plan was endorsed by the TWG and will be documented in the Project Connect System Plan executive summary due early 2014.</td>
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</tr>
<tr>
<td>Education</td>
<td><strong>Build the case beyond issue of congestion</strong></td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>Document link between transit and land use; demonstrate affordability benefits; document connection with neighborhood plans; document environmental benefits; document economic benefits.</td>
<td></td>
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<tr>
<td></td>
<td>To be addressed in Project Connect System Plan executive summary due early 2014.</td>
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<tr>
<td></td>
<td><strong>Build the case beyond issue of congestion</strong></td>
<td>Planned</td>
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<tr>
<td></td>
<td>Draft ‘Business Plan.’</td>
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<td></td>
<td>To be addressed in Project Connect System Plan executive summary due early 2014.</td>
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<tr>
<td></td>
<td><strong>Have TWG members serve as ambassadors</strong></td>
<td>In Progress</td>
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<tr>
<td></td>
<td>Develop TWG member roadshow.</td>
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<tr>
<td></td>
<td>Advocacy not part of Project Connect partner agencies’ mission. The TWG is a subcommittee of the CAMPO Board and not subject to the direction of Project Connect partners. Project Connect will continue its efforts to engage and equip the community with information.</td>
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<tr>
<td>Engagement</td>
<td><strong>Add new stakeholders not currently engaged (environmental groups and businesses)</strong></td>
<td>Planned</td>
</tr>
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<tr>
<td></td>
<td><strong>Energize stakeholders</strong></td>
<td>In Progress</td>
</tr>
<tr>
<td></td>
<td><strong>Add new stakeholders not currently engaged (environmental groups and businesses)</strong></td>
<td>Planned</td>
</tr>
<tr>
<td>Transparency</td>
<td><strong>Consolidate project information into one source</strong></td>
<td>Complete</td>
</tr>
<tr>
<td></td>
<td>Create single-source Project Connect website with all related project’s information published.</td>
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<td></td>
<td>Phase 1 of new Project Connect website launched June 2013. Phase 2, completed site, will be live Summer 2013.</td>
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<tr>
<td></td>
<td><strong>Consolidate project information into one source</strong></td>
<td>Complete</td>
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<tr>
<td></td>
<td>Decommission various websites. Phase 1 of new Project Connect website launched June 2013 with links to existing websites as interim measure. Phase 2, completed site, will be live Summer 2013 and other sites will be subsequently decommissioned.</td>
<td></td>
</tr>
</tbody>
</table>
The system elements of this plan will inform the CAMPO 2040 planning process and some or all elements will appear as the proposed high-capacity transit system in the CAMPO 2040 Plan. The Project Connect System Plan will be updated every five years to continue to inform future CAMPO Plan updates.

Typically, after System Planning in the project development process come Corridor Studies for the individual corridors to determine the most appropriate mode and alignment or combination of modes and/or alignments for each corridor to meet the transportation needs. Currently the two corridors with the highest propensity for transit to succeed are the North and Central Corridors. Both of these corridors currently have more detailed corridor studies under way. As individual Corridor Studies are completed they will be incorporated into this Project Connect System Plan as Addendums.

High Priority Corridors

High Priority Corridors have the highest potential for high-capacity transit to succeed due to existing and projected travel patterns and growth. Corridor studies, the next phase in project development, are underway for both the North and Central Corridors.
North Corridor

Capital Metro is working with the cities of Austin, Pflugerville, Round Rock, Georgetown and Hutto along with Project Connect partners on a planning effort intended to:

- Improve long-term mobility and access in the North Corridor area (extending from Georgetown to downtown Austin)
- Support regional growth objectives and encourage transit-friendly development
- Meet community needs in a way that promotes access to transportation and affordable housing and that creates better connections to jobs and schools, all of which foster more livable communities.

The study process includes four main steps: defining the transportation problems and issues in the corridor; determining reasonable and feasible transportation alternatives and improvements; analyzing, evaluating and refining alternatives; and selecting the locally preferred alternative. The locally preferred alternative may include several of the modes presented previously. Organizational and funding strategies will be developed to advance the locally preferred alternative to implementation, and the results of the effort will inform future updates of the Project Connect High-Capacity Transit System Plan.

Central Corridor

The City of Austin and Capital Metro are leading the Project Connect Central Corridor Study, which includes a planned downtown circulator envisioned as a hybrid of light rail transit and streetcar technology. As discussed in the Urban Rail section, the project is currently being reviewed based on the recommendations provided during the Project Connect outreach.

Medium-High Corridors

Medium-High Corridors are areas of emerging growth in population, employment, and travel patterns, like in Travis and Hays Counties of the Southwest Corridor. These corridors also contain unique characteristics that make implementing high-capacity transit attractive. Examples include the existing Capital Metro owned railroad ROW that extends through Manor to Elgin in Bastrop County, and the exiting MetroRail Red Line service to Leander in Travis and Williamson Counties. A corridor study is underway which contains portions of the Southwest Corridor through the LSRD LSTAR regional rail project. Improvements in...
the Northwest Corridor are further along in the project development process in engineering and environmental through the successful award of a federal grant to make improvements to the existing MetroRail Red Line. The East Corridor is next for moving into Corridor Study as funding becomes available and conditions continue to strengthen the likelihood for transit to succeed.

**Medium and Low Corridors**

These corridors are considered “vision” corridors that, while not currently viable for high-capacity transit, will be re-evaluated during future updates for the System Plan or as conditions warrant further consideration.

**Funding**

The next step for funding is to continue the local community funding discussions begun during Project Connect and the LSRD LSTAR project. The result of these discussions will be local funding inter-local agreements (ILAs) followed by the Project Connect Conceptual Funding Plan implementation. Additional funding for future corridor studies is being investigated, as well.

**Organization**

The next step for organization is to develop and implement the following ILAs:

- Regional System Owners Funding ILAs
- High-Capacity Transit Organization ILA

**Public and Stakeholder Outreach**

An enhanced website and new logo for Project Connect were unveiled in June 2013. Any additional outreach activities associated with Project Connect will be associated with Project Connect North, Project Connect Central, LSTAR, and/or other corridor studies in the future.

**Future Updates and the TWG**

The system elements of this plan will inform the CAMPO 2040 planning process and some or all elements will appear as the proposed high-capacity transit system in the CAMPO 2040 Plan. The Project Connect System Plan will be updated every five years to continue to inform future CAMPO Plan updates. For each five-year update a regional TWG will be convened to guide the planning process and approve the new system plan. Additionally, as individual corridor studies are completed they will be incorporated into this System Plan as Addendums and the Vision Map will be updated to reflect the latest approved corridor study results.

“The transit vision offers a smart, comprehensive regional network that will benefit our entire region. Now it’s time to roll up our sleeves and get to work on the next investment to connect and enhance our regional transportation system.”

— Capital Metro President/CEO

Linda S. Watson
For more information see: www.projectconnect.com