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April 4, 2013

TO: Members of the MAG Transit Committee

FROM: Cathy Colbath, City of Glendale, Chair

SUBJECT: MEETING NOTICE AND TRANSMITTAL OF TENTATIVE AGENDA

Thursday, April 11, 2013 – 10:00 a.m.  
MAG Office, Suite 200, Ironwood Room  
302 North 1st Avenue, Suite 200  
Phoenix, AZ. 85003

A meeting of the MAG Transit Committee will be held at the time and place noted above. Please park in the garage under the building. Bring your ticket to the meeting as parking will be validated. Bicycles can be locked in the rack at the entrance to the parking garage. Committee members or their proxies may attend in person, via videoconference or by telephone conference call. Those attending video conference must notify the MAG site three business days prior to the meeting. Those attending by telephone conference call please contact MAG offices for conference call instructions.

Pursuant to Title II of the Americans with Disabilities Act (ADA), MAG does not discriminate on the basis of disability in admissions to or participation in its public meetings. Persons with a disability may request a reasonable accommodation, such as a sign language interpreter, by contacting Marc Pearsall or Jason Stephens at the MAG Office. Requests should be made as early as possible to allow time to arrange the accommodation.

Please be advised that under procedures adopted by the MAG Regional Council on June 26, 1996, all MAG committees need to have a quorum in order to conduct business. A quorum is a simple majority of the membership or twelve people for the MAG Transit Committee. If the Transit Committee does not meet the quorum requirement, members who have arrived at the meeting will be instructed a legal meeting cannot occur and subsequently be dismissed. Your attendance at the meeting is strongly encouraged. If you are unable to attend the meeting, please make arrangements for a proxy from your jurisdiction to represent you. Please contact Marc Pearsall at (602) 254-6300 if you have any questions or need additional information.

## TENTATIVE AGENDA

1. Call to Order

2. Approval of Draft March 14, 2013 Minutes

3. Call to the Audience

An opportunity will be provided to members of the public to address the Transit Committee on items not scheduled on the agenda that fall under the jurisdiction of MAG, or on items on the agenda for discussion but not for action. Citizens will be requested not to exceed a three minute time period for their comments. A total of 15 minutes will be provided for the Call to the Audience agenda item, unless the Transit Committee requests an exception to this limit.

4. Transit Program Manager's Report

Eileen Yazzie, the MAG Transit Program Manager will review recent transit planning activities and upcoming agenda items for other MAG committees.

5. Sustainable Transportation Land Use Integration Study – Recommendations and Findings

Eileen Yazzie will provide an update to the Transit Committee on the Sustainable Transportation Land Use Integration Study (ST-LUIS). The presentation will review the outcomes of the scenario modeling exercise, the study's recommendation of place types for high capacity transit and walkable communities, the local/community evaluation tool, the regional high capacity corridor evaluation process, and the overall recommendations and findings. Please refer to Attachment #1 for additional information.

### COMMITTEE ACTION REQUESTED

2. Approve Draft minutes of the March 14, 2013 meeting.

3. For information and discussion.

4. For information and discussion.

5. For information, discussion, and recommendation to accept the recommendations, key findings, and the three tools: 1) Place Types, 2) Local Toolkit, and the 3) Regional high capacity transit corridor evaluation and scenario planning process of the Sustainable Transportation and Land Use Integration Study; and consider using the regional corridor evaluation tool in the future Regional Transportation Planning process.

6. Southwest Valley Local Transit System Study

Jorge Luna will provide a status update to the Transit Committee regarding the completed Southwest Valley Local Transit System Study. The purpose of the study is to identify opportunities and strategies for improving the existing transit service in the Southwest Valley and develop a short, mid, and long range local transit plan that effectively provides circulation within the Southwest Valley and also connects to the regional transit system. Please refer to Attachment #2 for additional information.

7. Avondale-Goodyear Urbanized Area Federal Funds Programming

Alice Chen will provide an update to the Transit Committee. On March 27, 2013, the MAG Regional Council approved The MAG Regional Programming Guidelines for Federal Transit Formula Funds. In Section 702 of the Guidelines document, it was recommended that the utilization of Avondale-Goodyear Urbanized Area (AVN-GDY UZA) Federal Transit Funds be discussed during working group meetings comprising members of the AVN-GDY UZA. MAG will begin the coordination process with AVN-GDY UZA member agencies to discuss programming options. Additional materials may be provided at the meeting.

8. Unused Preventive Maintenance Funds

Eileen Yazzie will be informing the Committee of how unused preventive maintenance funds from small transit operators are allocated. Between FY2011 and FY2015, it is estimated that the region will contribute \$77.8 million in federal funds to transit operators for preventive maintenance (PM). MAG has an approved preventive maintenance distribution methodology that is documented in the MAG Regional Programming Guidelines for Federal Transit Formula Funds. In some cases, the

6. For information, discussion and possible action for acceptance of the Southwest Valley Local Transit System Study.

7. For information and discussion.

8. For information and discussion.

preventive maintenance funds allocated to smaller transit operators is more than their budget needs. In the past, the unused funds have been distributed back through the methodology to the other operators that still have unmet needs. It is anticipated that this situation will occur in FY2013, 2014, and 2015.

9. Request for Future Agenda Items

Topics or issues of interest that the Transit Committee would like to have considered for discussion at a future meeting will be requested.

10. Next Meeting Date

The next regular Transit Committee meeting is scheduled for Thursday, May 9, 2013, at 10:00 a.m. in the MAG Office, Ironwood Room.

Adjournment

9. For information and discussion.

10. For information and discussion.

**DRAFT MEETING MINUTES**  
MARICOPA ASSOCIATION OF GOVERNMENTS  
TRANSIT COMMITTEE

March 14, 2013  
Maricopa Association of Governments; Ironwood Room;  
302 N. 1<sup>st</sup> Avenue, Suite 200  
Phoenix, Arizona

MEMBERS ATTENDING

ADOT: Nicole Patrick	*Paradise Valley: Jeremy Knapp
Avondale: Rogene Hill	#Peoria: Maher Hazine
#Buckeye: Andrea Marquez	Phoenix: Neal Young
Chandler: Dan Cook for RJ Zeder	*Queen Creek: Chris Anaradian
El Mirage: Sue McDermott	#Scottsdale: Madeline Clemann, Vice Chair
Gilbert: Leslie Hart	Surprise: David Kohlbeck
Glendale: Matthew Dudley for Cathy Colbath, Chair	Tempe: Robert Yabes for Greg Jordan
*Goodyear: Cato Esquivel	*Tolleson: Chris Hagen
*Maricopa County DOT: Mitch Wagner	Valley Metro: Wulf Grote
Mesa: Jeff Martin for Jodi Sorrell	*Youngtown: Grant Anderson

\*Members neither present nor represented by proxy. + - Attended by Videoconference  
# - Attended by Audioconference

OTHERS PRESENT

Eileen Yazzie, MAG	Janice Simpson, Avondale
Marc Pearsall, MAG	Ken Kessler, Phoenix
Alice Chen, MAG	Ted Mariscal, Phoenix
Margaret Boone, MAG	Wendy Miller, Phoenix
Teri Kennedy, MAG	Ben Limmer, Valley Metro
Jorge Luna, MAG	Deron Lozano, Valley Metro
	Carlos Lopez, ADOT
	Abigail Cooksy-Williams, State of Arizona
	Mark Wavering, Gannett Fleming
	Scott Miller, HDR
	Jennifer Pyne, URS

### 1. Call to Order

The meeting was called to order at 10:03 a.m. by Vice Chair Madeline Clemann. She welcomed everyone in attendance and announced that a quorum was present. She noted that two members were also joining the meeting by teleconference; Andrea Marquez of Buckeye and Maher Hazine of Peoria. Vice Chair Clemann asked if there were any public comment cards, and there being none, proceeded to the next item on the agenda.

### 2. Approval of Draft February 14, 2012 Minutes

Vice Chair Clemann asked if there were any comments or corrections to the Draft February 14, 2012 meeting minutes. Hearing none, she called for a motion to approve the draft meeting minutes. Mr. Robert Yabes moved to approve the motion, Mr. Neal Young seconded, and the motion passed unanimously.

### 3. Call to the Audience

Vice Chair Clemann stated that she had not received any request to speak cards from the audience and moved onto the next item on the agenda.

### 4. Transit Program Manager's Report

Vice Chair Clemann invited Ms. Eileen Yazzie to brief the Committee with the Transit Program Manager's Report.

Ms. Yazzie presented a few brief items and completed her report. Vice Chair Clemann thanked Ms. Yazzie for her report and moved onto the next item on the agenda.

### CONSENT AGENDA ITEMS

\*5A. Federal Funds Regional Competitive Project Application

\*5B. Transportation Improvement Program (TIP)

Vice Chair Clemann requested that the Transit Committee proceed through the two consent agenda items regarding Federal Funds Regional CPA and the TIP. After brief discussion and clarification for members from Scottsdale, Mesa, and Valley Metro, she called for a motion to approve the consent agenda items. Mr. Robert Yabes moved to approve the motion, Mr. Jeff Martin seconded, and the motion passed unanimously.

## 6. Designing Transit Accessible Communities Study Update

Vice Chair Clemann requested that Alice Chen of MAG present and update on the MAG Designing Transit Accessible Communities Study.

Alice Chen noted that in December 2011, MAG initiated a study to help provide member agencies with additional tools and guidelines to provide better transit accessibility for pedestrians and bicyclists. The project would ultimately provide a set of documents that would serve as a pathway for MAG member agencies to build livable and multi-modal neighborhoods. A workshop was held in April to train and familiarize participants with the tool kit and implementation strategies.

Ms. Chen also noted that the purpose of the presentation was to provide an overview on the “Transit Accessibility Toolkit” element of the study, which contained information on lighting, information signage, wayfinding, seating, shelter, shade, adjacent land use, bicycle access and parking, pedestrian crossings, and sidewalks. For each of these elements, Ms. Chen presented visual examples, costs and appropriate applications, and planning/policy guidelines. She highlighted specific recommendations and findings in her presentation; and Site bus stops and bus shelters to take advantage of overflow lighting from existing street lights. She observed that 64% of transit riders said they would ride the bus more often if adequate schedule information was provided, and seating may also be incorporated into the design of the adjacent development including designing street walls along the property line to be at a height that allows passengers to use the wall as seating.

She further explained that bus shelters should be designed with a southern climate in mind, including conducting sun exposure studies. She also noted that 68% of transit riders said they would ride the bus more often if additional shade was provided, while 22% of riders said they arrived by bicycle. When asked if certain improvements would increase their use of transit, 52% of riders indicated adding a bicycle lane would increase their use of the transit system. She said that bus stops at mid-block could be located based on an evaluation of ridership and crossing opportunities and should not be determined by the ¼ mile spacing distance as it is currently. Through collaboration with the community, the local jurisdiction may be able to determine alternative options for bus stop placement or they may determine that the identified location is a critical need location.

Vice Chair Clemann thanked Ms. Chen for her presentation and asked if there were any questions or comments. After brief discussion, she thanked the Committee for their dialogue. Vice Chair Clemann then proceeded to the next item on the agenda.

## 7. Job Access Reverse Commute/5310 Elderly and Persons with Disability Program Update

Vice Chair Clemann requested that Alice Chen continue to present and update on the Job Access Reverse Commute/5310 Elderly and Persons with Disability Program Update.

She noted that under SAFETEA-LU, the MAG region was allocated \$1.8 million in FY 2012 specifically for JARC (Job Access Reverse Commute) eligible projects. With the passage of MAP-21, JARC dedicated funding was repealed. However, JARC projects are eligible under 5307

formula funds. In February 2013, MAG Regional Council approved City of Phoenix assume the role of Designated Recipient (DR) for the 5310 program previously held by the Arizona Department of Transportation. Under Section 703 of the Federal Formula Transit Programming Guidelines recommended for approval by Transit Committee on February 14, 2013, it was recommended that City of Phoenix coordinate both programs. Schedule, roles and responsibilities would be reviewed.

Ms. Chen also explained that MAP-21 went into full effect October 1, 2012, authorizing programs through 2014, but there were revisions, namely New Freedom 5317 (projects beyond ADA services) were repealed and now consolidated as an eligible program under Enhanced Mobility of Seniors and Individuals with Disabilities (5310). She added that there was no longer a single 5310 apportionment to the state; but now apportionments specifically for large urbanized, small urbanized and rural areas. DR's needed to be officially designated in large Urbanized Areas, 200,000 in population and funds could not be awarded until DR is on file with the FTA regional office, and as required by FTA guideline as the MPO, MAG initiated the process for a DR for the region.

She reiterated that 5310 – Mobility of Seniors and Individuals with Disabilities Program, and 5317 New Freedom eligible projects consolidated in program; JARC was repealed, project eligible under 5307 formula funds; New Freedom 5317 (projects beyond ADA services) were repealed now and consolidated as an eligible program under Section 5310 newly named, the Enhanced Mobility of Seniors and Individuals with Disabilities. She further noted that under SAFETEA-LU, the MAG region was allocated \$1.8 million in FY 2012 specifically for JARC eligible projects. With the passage of MAP-21, JARC dedicated funding was repealed, however, JARC projects were eligible under 5307 formula funds.

Ms. Chen explained the roles and responsibilities of the process, specifically that City of Phoenix Public Transit Division was the DR, and administers of the program, management of grants, and quarterly reporting on each project. They would also procure capital items and contracts Ensuring all compliance, Federal GAO, and FTA regulations and certifications and assurances. She further noted with some background that in February 2013, the MAG Regional Council approved City of Phoenix assume the role of DR for the 5310 program previously held by the Arizona Department of Transportation. Under Section 703 of the Federal Formula Transit Programming Guidelines recommended for approval by Transit Committee on February 14, 2013, it was recommended that City of Phoenix coordinate both programs.

She noted that City of Phoenix would lead the JARC evaluation process coordinating with the MAG Human Services Division. Applications would be a coordinated effort between MAG Human Services Division and the City of Phoenix with final approval from MAG Regional Council. Then, the MAG Human Services Transportation - Coordination Staff, would coordinate the application and review process, with regional focus, MAG committee process, and ensure inclusion into the TIP/STIP. She then reviewed 2 maps of the region, and explained the tentative time-line schedule, for April through November.

Vice Chair Clemann asked if there were any further questions. After brief comment, Vice Chair Clemann then proceeded to the next item on the agenda.

## 8. ADOT Passenger Rail Study; Tucson to Phoenix

Vice Chair Clemann requested that Mike Kies of ADOT present and update on the ADOT Passenger Rail Study; Tucson to Phoenix.

Mr. Kies noted that the ADOT Passenger Rail Study had concluded a public outreach effort pertaining to several alternatives for alternative transportation modes between Tucson and Metro Phoenix. He explained the rationale for the study in that it originally came from the Passenger Rail Vision within BQAZ (Building a Quality Arizona) report, and also within the Statewide Transportation Framework Study and State Rail Plan. He noted that Intercity Rail provided a transit backbone option for the Sun Corridor. He also explained that the Passenger Rail Corridor Study Process began in 2011 and would proceed through January 2014, and include an Alternative Analysis (AA), Environmental Impact Statement (Tier 1), and Service Development Plan.

He said that there were seven preliminary alternatives between Phoenix and Tucson (One bus alternative on I-10 (as per FTA) and six rail alternatives) Some of the alternatives were non-Union Pacific mainline, or via I-10, via the proposed N-S Corridor & US60 or a combination of alternatives, such as the UPRR Southeast Branch), UPRR Tempe Branch, or UPRR Chandler Branch. He said the goal was to use the process to refine the seven down to two corridors this summer, then further refining down to one LPA (Locally Preferred Alternative) by fall 2013. Mr. Kies reiterated that ADOT had just completed a massive public outreach campaign, with over 6,600 completed comment forms, and over 30 public meetings and events, over 70 agency and stakeholder meetings along with highly visible social media and print/video media coverage. He noted the schedule and next steps, which included: ongoing coordination and support from local agencies; Spring 2013 - a Final Alternatives for EIS (Environmental Impact Statement); Fall 2013 - a Draft EIS; Fall 2013 - a 45 day public comment period and public hearings; and in Winter 2013 - a Final EIS and final report by early 2014.

Vice Chair Clemann thanked Mr. Kies again for his presentation and asked if there were any further questions. Hearing none, Vice Chair Clemann then proceeded to the next item on the agenda.

## 9. Request for Future Agenda Items

Vice Chair Clemann asked the Committee members if there were any issues that they would like added as future agenda items. Hearing no comments, she proceeded to the next item on the agenda.

## 10. Next Meeting Date

Vice Chair Clemann thanked the members and announced that the next meeting of the MAG Transit Committee would be held on Thursday, April 11, 2013 at 10:00 a.m. in the MAG Office, Ironwood Room. There being no further business, Vice Chair Clemann adjourned the meeting at 11:26 a.m.

Adjourn.

# MARICOPA ASSOCIATION OF GOVERNMENTS

## INFORMATION SUMMARY... for your review

**DATE:**

April 9, 2013

**SUBJECT:**

Sustainable Transportation - Land Use Integration Study (ST-LUIS)

**SUMMARY:**

The Sustainable Transportation and Land Use Integration Study (ST-LUIS) highlights the potential to move the region towards greater use of sustainable transportation modes – transit, walking and biking. The study provides a fresh look at ideas for transit investments and services that have been under previous consideration, and supports the creation of walkable and transit-oriented communities. The uniqueness of the ST-LUIS is the holistic approach taken to investigating transit's potential, by integrating real estate market analysis with transit corridor assessment and ridership modeling. The Study's focus on transit and supportive land use is joined up with recommendations for creating compact walkable places throughout the region.

ST-LUIS asks how the region can move toward sustainable transportation in ways that:

- Reflect market reality
- Recognize the high cost of high capacity transit, and
- Are consistent with the values and aspirations of member communities.

ST-LUIS was undertaken from 2010-2013 and completed in three phases: research and analysis, scenario planning and modeling, and the development of local and regional tools. The study was complemented by nine stakeholder activities. These activities included two business/public forums coordinated by the Arizona Chapter of the Urban Land Institute (ULI). The perspectives of participants from these forums were integral to understanding the market realities in local communities.

Based on the ST-LUIS investigation of market realities and research findings, and the study's testing of high capacity transit (HCT) scenarios in the MAG region, the overarching recommendations from the ST-LUIS are: 1) provide a high quality, productive transit system supported by compact walkable and transit-oriented places, and 2) create a small, focused rail network with an upgraded bus system that feeds the rail network and extends transit access to much of the region.

The Study's key findings are: 1) TOD demand will be driven by projected regional growth in population and jobs, and supported by demographic shifts, 2) transit-supportive and compact walkable development is achievable, with distinct opportunities in different parts of the region, 3) a small, compact, and selective HCT network is most productive, 4) a large rail network would oversupply land for transit-oriented development 5) targeted corridor modifications improve transit productivity, 6) regional transit mode share and regional access increase with a mix of LRT and upgraded bus services, and 7) existing conditions drive the pathway for future HCT service

The study was rooted on the projected demand for transit oriented development (TOD), which projects that in a future of 8.3 million people, 1 million (12%) will be the market for TOD; as well as a quarter, 1.1 million jobs from a future 4.4 million jobs would drive the TOD employment demand forward.

With this and other key findings, the study moved forward with a scenario planning and modeling exercise to offer three visions for future land uses, high capacity transit networks, transit ridership and transit productivity, using the project's market demand forecasts for TOD jobs and housing. The results of the scenario planning exercises provide high-level results rather than specific local recommendations. The scenario modeling exercise used the 44 recommended high capacity transit corridors from the MAG Regional Transit Framework Study, as the candidate corridors for analysis.

As part of the scenario planning exercise, the STLUIS created 3 place types: Compact Walkable, Transit Served, and High Capacity Transit (HCT) Oriented were created to reflect threshold densities and development patterns supportive of different transit modes. These land uses and were "applied" to station areas (½ mile) in the scenario planning process.

Transit service and capital investments included in each scenario were derived from an understanding of related studies, existing and future transit services, projected travel demand characteristics, land use and growth patterns, and regional connectivity. A brief summary of each scenario is provided below.

#### Enhanced Transit Scenario

The Enhanced Transit Scenario reflects a moderate expansion of the MAG Base Case scenario transit network (the RTP 2035 Network), as well as a reallocation of total regional growth to specify transit-oriented development (TOD) consistent with the ST-LUIS place types within one half mile of transit stations ("station areas"). The scenario includes 10 LRT, streetcar, and commuter rail corridors (including eight service corridors and two commuter rail corridors).

#### Transit Supply Scenario

This scenario reflects a very generous expansion of the Base Case scenario transit network, as well as a reallocation of total regional growth to direct transit-oriented and compact walkable development to station areas. This scenario includes all 44 corridors including LRT, BRT (mixed flow running, similar to the LINK), streetcar, and commuter rail corridors.

#### Refined Transit Supply Scenario

This scenario was generated after Scenario 1 and Scenario 2 were completed. This scenario tests a transit network that is more extensive than that of Scenario 1, but less extensive compared to Scenario 2. Transit network and land use assumptions were revised with the aim of increasing network productivity and reflecting constraints to HCT-supportive densities in some locations. This scenario includes 25 corridors including LRT, BRT (mixed flow running, similar to the LINK), streetcar, and commuter rail corridors.

Transit performance determined that the smaller Enhanced Transit Scenario was most productive.

As cities, towns, communities, neighborhoods, and transportation corridors are quite different throughout the region, the STLUIS recognizes that *One Size Doesn't Fit All* and created 3 tools for the region and its member agencies to use: 1) Place Types, 2) Local Toolkit - Community Pathways to Sustainable Transportation and Development Prototypes Catalogue, and the 3) Regional High Capacity Transit (HCT) Evaluation and Scenario Planning Process.

The study recommendations, findings and tools have set the stage for the region to move toward more sustainable transportation options by evaluating regional projects that support sustainable transportation, jump start the regional transportation plan process, consider upgrading transit services, and support municipal actions. A copy of the Key Findings and Recommendation Paper is enclosed and the seven working papers and employment/market analysis is available at [www.bqaz.org](http://www.bqaz.org).

**PUBLIC INPUT:**

The study process included seven stakeholder meetings and two public/private business meetings to define sustainable transportation for the MAG region, and coordinate findings, create useful tools and products from the study.

**PROS & CONS:**

PROS: This study takes a holistic approach in investigating the region’s high capacity transit network potential, by integrating real estate market analysis with transit corridor assessment and ridership modeling.

CONS: A shift in regional transportation, transit priorities, and discussions with local agencies on compatible land uses would be required to implement the recommendations for sustainable transportation services identified in the Sustainable Transportation Land Use Integration Study.

**TECHNICAL & POLICY IMPLICATIONS:**

TECHNICAL: To provide a data driven, analytical approach for testing different high capacity transit systems and their productivity, the scenario planning process established a two tiered screening and selection process of HCT candidate corridors, while evaluating the positive relationship with the more compact walkable and transit oriented land uses. The performance standards and indicators indicated that the future market for transit oriented development will support a small, focused rail network with an upgraded, high quality and productive bus system that feeds the rail network and extends transit access to much of the region, which should be supported by compact walkable and transit-oriented places.

POLICY: The Sustainable Transportation Land Use Integration Study provides a data driven, technical foundation for future policy discussions related to creating a more sustainable transportation network, and shifting transit investments and prioritization.

**ACTION NEEDED:**

Information, discussion, and recommendation to accept the recommendations, key findings, and the three Sustainable Transportation and Land Use Integration Study tools: 1) Place Types, 2) Local Toolkit, and the 3) Regional high capacity transit corridor evaluation and scenario planning process.

**PRIOR COMMITTEE ACTIONS:**

None

**CONTACT PERSON:**

Eileen Yazzie, Transportation Planning Project Manager, MAG (602) 254-6300.



# ► Sustainable Transportation & Land Use Integration Study

## Key Findings and Recommendations

March 2013



SUSTAINABLE TRANSPORTATION  
& LAND USE INTEGRATION STUDY



# 1. Project Overview

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### DEFINITION

## SUSTAINABLE TRANSPORTATION

“A transportation system that supports prosperity in Maricopa County by providing a variety of mobility options, offering walkable communities throughout the region and locating high capacity transit that will be chosen by households and businesses seeking excellent access to local and regional destinations.”

*ST-LUIS Stakeholder Group*

The **Sustainable Transportation and Land Use Integration Study (ST-LUIS)** highlights the potential to move the region towards greater use of sustainable transportation modes – transit, walking and biking.

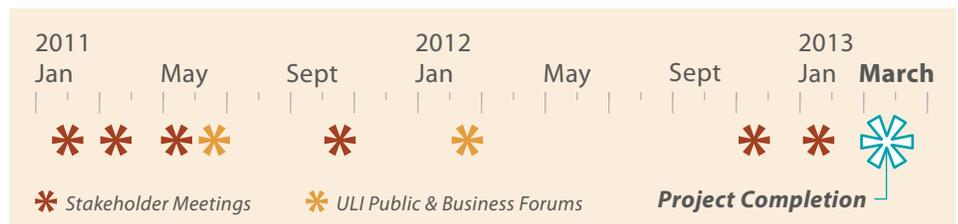
The study provides a fresh look at ideas for transit investments and services that have been under previous consideration, and supports the creation of walkable and transit-oriented communities. The uniqueness of the ST-LUIS is the holistic approach taken to investigating transit’s potential, by integrating real estate market analysis with transit corridor assessment and ridership modeling. The Study’s focus on transit and supportive land use is joined up with recommendations for creating compact walkable places throughout the region.

ST-LUIS was completed in three phases undertaken from 2010-2013, complemented by the stakeholder activities shown in Figure 1. These activities included two business/public forums coordinated by the Arizona Chapter of the Urban Land Institute (ULI). The perspectives of participants from these forums were integral to understanding the market realities in local communities. This document presents key study recommendations, findings, and a summary of the project’s research and analysis activities, scenario planning, and tools and strategies development.

ST-LUIS asks how the region can **move toward sustainable transportation** in ways that:

- Reflect market reality
- Recognize the high cost of high capacity transit, and
- Are consistent with the values and aspirations of member communities.

Figure 1: ST-LUIS Meetings and Forums



## 2. Achieving Sustainable Transportation - Key ST-LUIS Recommendations

Based on the ST-LUIS investigation of market realities and research findings, and the study's testing of high capacity transit (HCT) scenarios in the MAG region, the overarching recommendations from the ST-LUIS are:

**2.1 Provide a high quality, productive transit system supported by compact walkable and transit-oriented places.**

**2.2 Create a small, focused rail network with an upgraded bus system that feeds the rail network and extends transit access to much of the region.**

The ST-LUIS has created tools and implementation strategies for the region and local agencies to move to a more sustainable transportation system in the future. These are discussed further in the strategies on pages 18-21.

## 3. Key ST-LUIS Findings

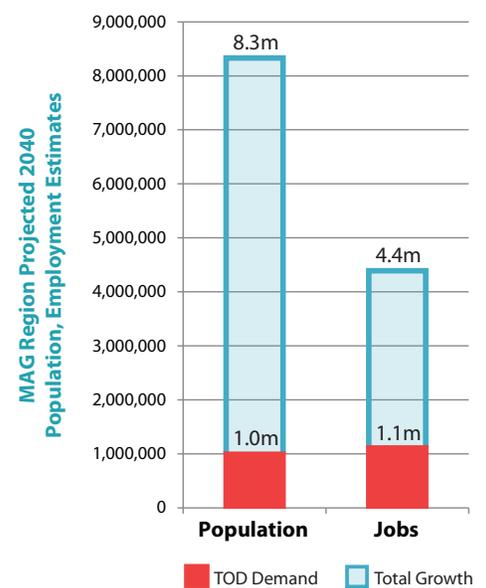
### 3.1 TOD Demand Will Be Driven by Projected Regional Growth in Population and Jobs, and Supported by Demographic Shifts

Overall regional growth is the fundamental factor fuelling demand for Transit-Oriented Development (TOD) and walkable communities. Growth in knowledge-based industries and demographic changes are the two key factors for growth in transit-oriented place types. Figure 2 illustrates the projected demand for TOD within the future regional growth of population and jobs. These trends are discussed in the *4.1 Research & Analysis* section, and in greater depth in project background documents.

### 3.2 Transit-Supportive and Compact Walkable Development is Achievable, with Distinct Opportunities in Different Parts of the Region

The outlook for transit-oriented and compact walkable places in the MAG region is good with specific forms depending largely on market conditions. The ST-LUIS market analysis and financial feasibility analysis demonstrate that the strongest locations for new higher density development are mixed use employment centers in the core locations of Downtown Phoenix, Downtown Tempe, and Downtown Scottsdale. These employment centers can support the densities

Figure 2: Regional Population and Employment Projections



Source: Woods and Poole; MAG; Strategic Economics 2011

that correspond to **HCT Oriented** place types, ranging from 2-3 story townhomes to 5-7 story mixed use buildings.

There are other places in central locations—such as Camelback Corridor—that can offer relatively dense, walkable, bike-friendly environments, but that command slightly lower prices than the large employment centers. In these locations, the **Transit Served** place type will typically be achievable with likely product types including 2-3 story townhomes, 2-3 story apartments, and 3-4 story office buildings.

The market conditions necessary to support compact walkable development are far more widespread than are locations with the market strength required to support Transit Served and HCT Oriented development. There are many locations that have promise as places that could transition from conventional large-lot single family housing to the **Compact**

**Walkable** place type that supports sustainable transportation.

The place types convey the development characteristics that need to be present on an area-wide basis in order to support transit productivity and increased walk and biking. However, these characteristics will be found elsewhere in localized cases as well. The densities and the characteristics described are likely to continue to be found in contexts where higher densities and walkable character are valuable components of placemaking and identity, such as mixed use downtowns in places with low centrality that may not be directly served by high capacity transit.

### 3.3 A Small, Compact, and Selective HCT Network Is Most Productive

A compact, small HCT system comparable to the “Enhanced Transit” Scenario with 10 corridors served

by Light Rail Transit (LRT), streetcar or commuter rail, yields greater productivity than a larger system and offers a strong fit with projected TOD demand. The projected annual average boardings per vehicle revenue hour decreased by 23% when the number of rail corridors was expanded from 10 to 24. The smaller HCT network also maximizes land use integration with transit investments, due to a good fit between station area acreage and projected TOD demand.

### 3.4 A Large Rail Network Would Oversupply Land for Transit-Oriented Development

The ST-LUIS market analysis, productivity and mode share findings indicated a finite demand for transit-oriented and transit-supportive land use. The Transit Supply scenario included a total of 352 stations along 24 HCT corridors. The TOD market

#### PLACE TYPES

The ST-LUIS uses three ‘place types’ to categorize different areas in the region into groups with shared transportation and land use characteristics. These are described in detail on pages 15-16.

SUBURBAN (Not a ST-LUIS Place Type)  
 NON-TOD

**COMPACT WALKABLE**  
 CW

**TRANSIT SERVED**  
 TOD

**HCT ORIENTED**  
 TOD

Table 1: Scenario Characteristics

	TRANSIT				STATION AREA PLACE TYPES		
	Modes	Corridors	Miles	Stations	TOD 	TOD+CW 	Non-TOD 
<b>Enhanced Transit Scenario 1</b>	Rail Corridors (LRT, Streetcar, Commuter Rail)	10	160	124	124	-	-
	BRT Corridors	-	-	-	-	-	-
	<b>Total</b>	<b>10</b>	<b>160</b>	<b>124</b>	<b>124</b>	<b>-</b>	<b>-</b>
<b>Transit Supply Scenario 2</b>	Rail Corridors (LRT, Streetcar, Commuter Rail)	15	268	193	106	66	21
	BRT Corridors	9	167	159	-	-	159
	<b>Total</b>	<b>24</b>	<b>435</b>	<b>352</b>	<b>106</b>	<b>66</b>	<b>180</b>
<b>Refined Transit Supply Scenario 3</b>	Rail Corridors (LRT, Streetcar, Commuter Rail)	10	158	123	111	3	9
	BRT Corridors	14	209	200	1	32	167
	<b>Total</b>	<b>24</b>	<b>366</b>	<b>323</b>	<b>112</b>	<b>35</b>	<b>176</b>

demand was able to supply about half of the stations with TOD Place Types (HCT Oriented or Transit Served). The remaining 180 stations are linked with compact walkable and/or suburban land uses since the TOD demand was met.

This imbalance between supply and demand for TOD contributes to the lower productivity of the larger HCT systems, as noted in Finding 3.3. Table 1 summarizes the transit network characteristics and station area place types by scenario.

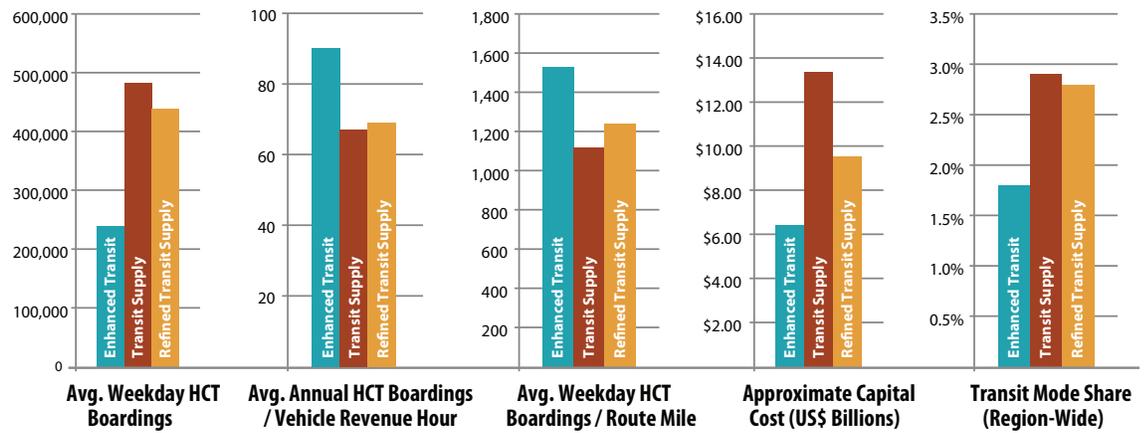
### 3.5 Targeted Corridor Modifications Improve Transit Productivity

Adjustments to the planned corridors and networks made during upcoming planning phases are very likely to improve forecast productivity relative to the ST-LUIS projections. Careful modification and evaluation of specific alignments, stop locations, corridor length, connecting pedestrian improvements, land use shifts, and mode will be part of subsequent stages of planning for an Enhanced Transit system, with productivity gains likely.

### 3.6 Regional Transit Mode Share and Regional Access Increase with a Mix of LRT and Upgraded Bus Services

To increase regional transit use and productivity, a mixed network of both LRT and high quality bus services will generate the greatest transit productivity share as well as giving more households and communities

Figure 3: Productivity Metrics by ST-LUIS Scenario



improved options for travel throughout the region. LRT alone does not meaningfully increase the regional transit mode share. A high quality bus system that complements rail services, walk, bike and land use strategies is essential to shifting people from single occupant vehicles to transit. While upgraded bus services may include “true” Bus Rapid Transit (BRT) with exclusive guideways, lower-cost upgrades to provide all-day reliable and fast service can provide the quality envisioned by the study.

### 3.7 Existing Conditions Drive the Pathway for Future HCT Service

The HCT Supportiveness Analysis assessed existing corridor conditions such as land use, transit-supportive densities, and current transit demand to gauge a corridor’s potential to support future HCT service. Corridors with transit-supportive jobs and populations as well as demographic characteristics supporting transit ridership generally performed well in the corridor-level analysis for each scenario. Current transit-supportive conditions play a significant role in whether a corridor can sustain and support upgrades to HCT service in the future. Increased presence of the

factors listed as HCT screening criteria will, over time, improve conditions for productive transit service and for TOD.

Continuing attention to existing conditions is particularly important because ridership of existing low-income and transit-dependent populations is taken into account most strongly in this part of the study.

#### PRIMARY HCT SCREENING CRITERIA

- Total Residents
- Percent Minority Population
- Percent Low-Income Households (under \$20,000 per year)
- Total Jobs
- Transit-Supportive Job Density (jobs / acre)
- Transit-Supportive Density (jobs + residents / acre)
- Average Daily Weekday Boardings
- Average Daily Weekday Boardings / Mile

# 4. Project Summary

The ST-LUIS effort was organized into three broad components. Each is summarized in this section.

## 4.1 RESEARCH & ANALYSIS

The *Research and Analysis* component provided the foundation of the Sustainable Transportation and Land Use Integration Study, set the parameters for the *Scenario Planning* component, and informed the development of the *Tools & Strategies* component.

### Investigating the Opportunity for TOD

ST-LUIS included a range of activities to investigate the opportunity to create TOD, as shown in Table 2.

Through this investigation it was found that:

- **The commute trip is a critical factor in transit productivity.** Though work trips are less than

20% of total trips, work trips make up close to 60% of transit trips nationally.

- **Some business sectors are more likely to be near transit than others.** Jobs in industry sectors that have a tendency to cluster near transit include: Government; Information; Finance and Insurance; Real Estate; Professional, Scientific and Technical Services; Management of

Companies and Enterprises; Arts, Entertainment, and Recreation; and Accommodation and Food Services (based on national studies from the Center for Transit-Oriented Development).

- National research shows that **higher job density at station areas has a greater impact on increasing ridership** than does higher residential density, though both factors build transit use.

Table 2: ST-LUIS Activities and Outcomes

ST-LUIS ACTIVITIES				OUTCOMES
<b>Transit-Oriented Development (TOD) and walkable communities</b>	Research	Best Practices	Local Precedents	ST-LUIS Place Types and Local Toolkit
<b>Understanding the real estate market</b>	Development feasibility	Regional growth	Forecast Demand (jobs & housing)	Estimate of demand for jobs and housing in station areas
<b>Corridor Potential</b>	Current Conditions	Past Plans and Studies	Services and Modes	Corridor screening results and Transit Service Characteristics

*“The Phoenix Metro region has historically ignored the business community in this conversation. ST-LUIS has been instrumental in moving this conversation forward in terms of understanding the role that employment plays in public transportation.”*

**Dena Belzer**  
 ULI Forum 2

## Key Factors Impacting Transit Ridership

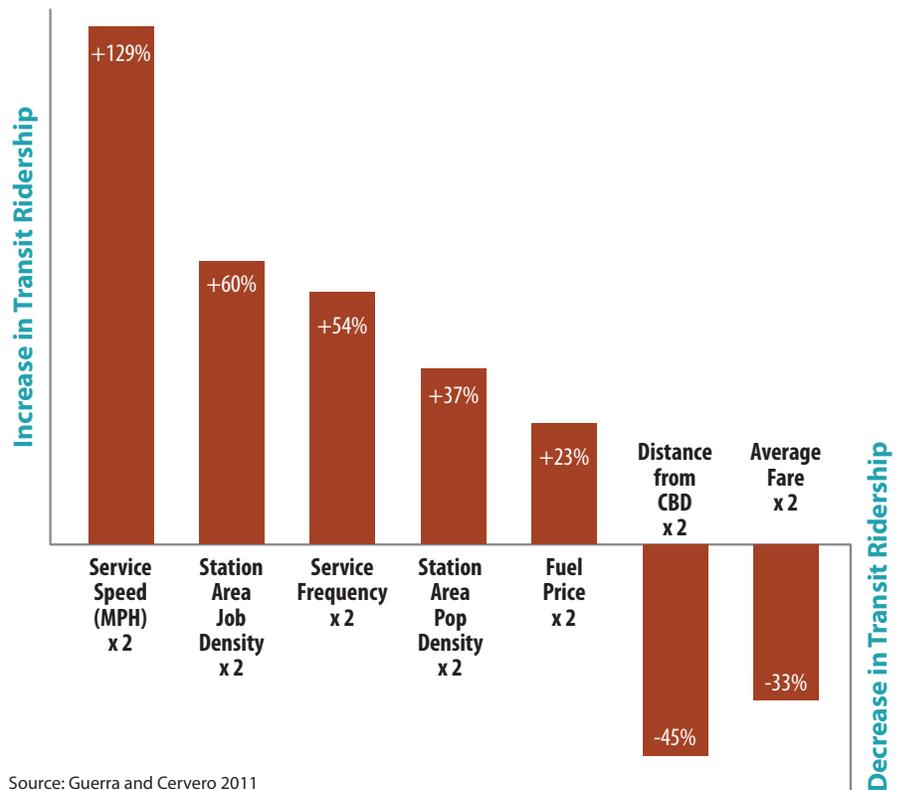
Academic research and practical experience have identified factors having significant impact on transit ridership.

These factors include service speed and frequency, station area job and population density, and distance from the central business district (CBD). Increasing values for these key factors results in either an increase or decrease in ridership, as shown in Figure 4.

Many of the factors supporting transit use have been shown to support walking and cycling as well. These include:

- Mixed use neighborhoods and districts at compact densities
- Local street networks with high connectivity
- Travel demand management/ incentives, including parking management

Figure 4: Change in Transit Ridership Resulting from Doubling Key Factors



Source: Guerra and Cervero 2011

## Shifting Demographic Trends

A variety of trends, both locally and nationally, will support the success of walkable communities in the region.

National studies have demonstrated a growing demand for housing in compact, “walkable” neighborhoods near transit. Many households are interested in compact housing types in pedestrian-oriented neighborhood with good access to amenities, transportation options, and shorter commutes. TOD demand nationally in

the coming decades will be influenced by a variety of trends:

1. **An increasing number of smaller households:** 79 million Baby Boomers (who prioritize public transportation, walkability, and access to amenities, and are more receptive to living in smaller housing units on smaller lots) are approaching retirement.
2. **Changing consumer preferences among Millennials and knowledge workers toward authentic**

### places and convenient lifestyles:

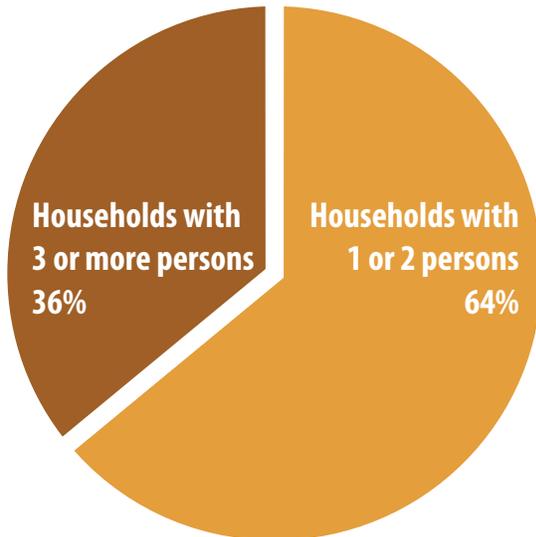
85 million Echo Boomers (who prefer walkable, mixed use neighborhoods short commutes) will enter the housing market for the first time.

3. **Disincentives to driving** including high gas prices, drive the search for alternatives to single-occupancy vehicle trips/commutes.

Local demographic shifts will support the growth of walkable communities in the region, as shown in Figure 5.

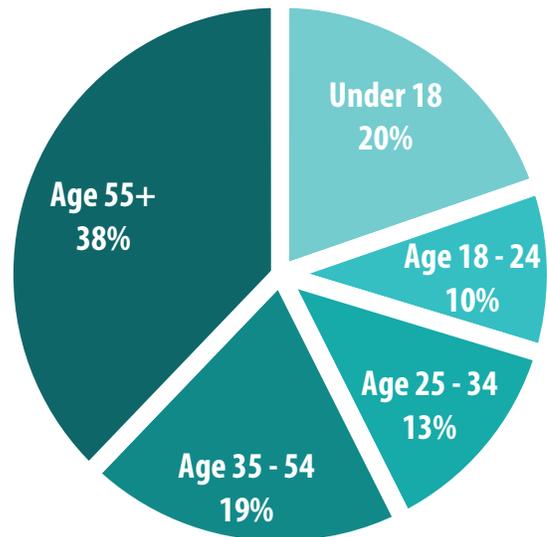
Figure 5: 2010-2040 Regional Growth Characteristics

### Population Growth by Household Type Maricopa County 2010-2040



Source: Woods and Poole, Strategic Economics 2011

### Population Growth by Age Maricopa County, 2010-2040



#### Sources:

Belden Russonello & Stewart, *The 2011 Community Preference Survey* (Washington D.C.: National Association of Realtors, March 2011).  
*Ibid* and Joint Center for Housing Studies of Harvard University. *State of the Nation's Housing*, 2011.

## Future Success Means Responding to Today's Challenges

The region faces a number of challenges to creating transit-supportive communities. Today, existing and planned development patterns are largely low density, as seen in Figure 6.

Infill development at TOD and walkable densities is hindered in some locations by zoning that allows densities in excess of those currently supported

by the real estate market. In addition, the region has significant supply of underutilized built space as well as vacant properties available which may slow TOD development.

Success requires regional collaboration in investment decisions, so regional assets—those attracting many people, such as major medical, educational and cultural institutions—will locate in places where high capacity transit can be provided efficiently and linked to the region.

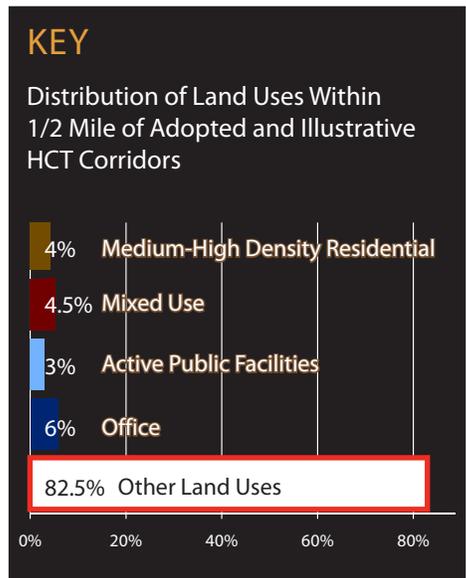
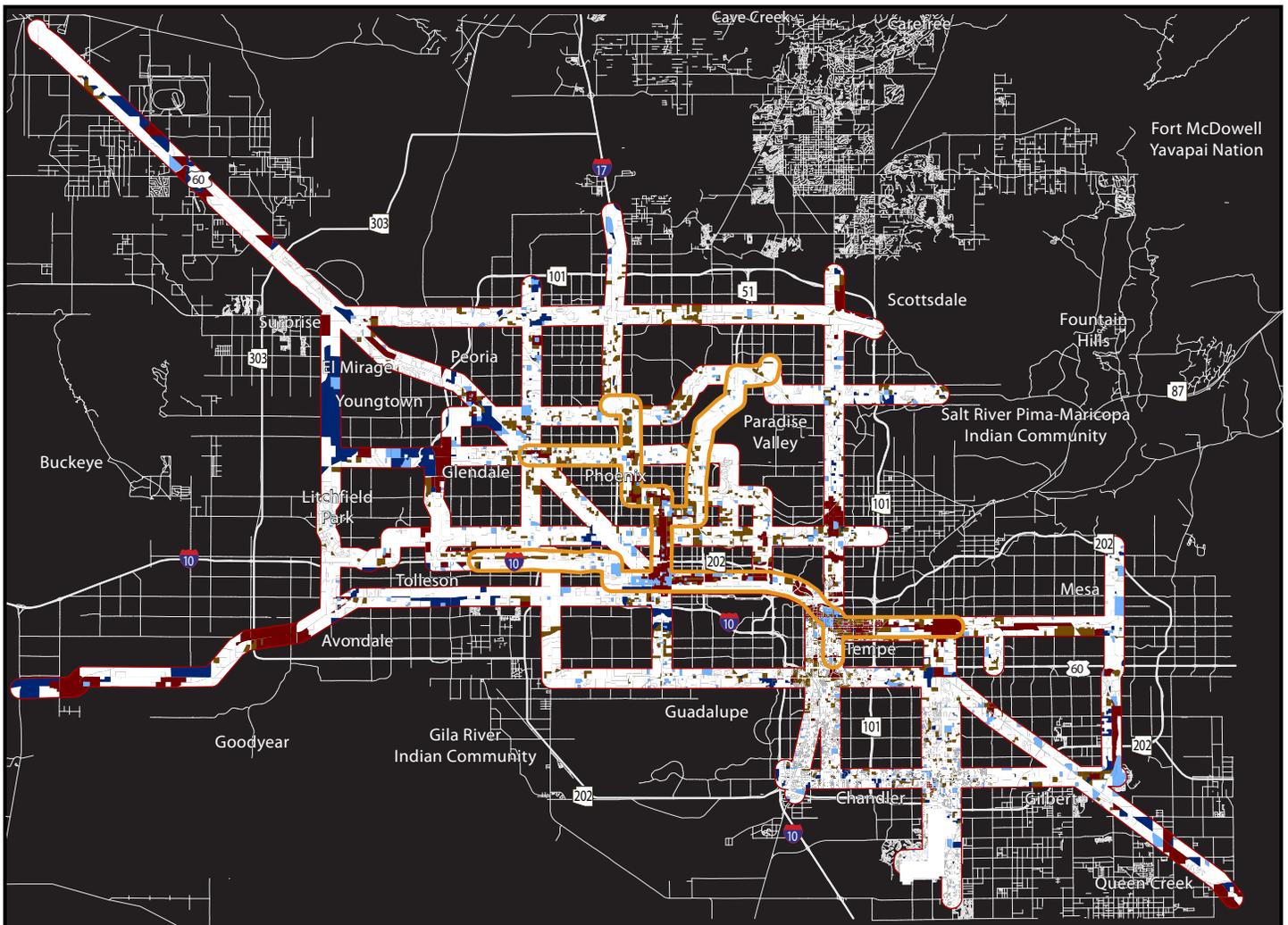


Figure 6: 2010 Regional Transportation Plan (RTP) Illustrative HCT Corridors & 2009 General Plan Land Uses



## 4.2 SCENARIO PLANNING AND MODELING

A central part of the ST-LUIS is the use of Scenario Planning to investigate: *What would happen if the region made changes to development patterns with the specific objective of supporting transit productivity and non-motorized transportation, while meeting market demand for TOD? Scenario planning offers the opportunity to envision the region’s future land uses and the productivity of its high capacity transit network.*

The ST-LUIS scenarios offer three visions for future land uses, high capacity transit networks, transit ridership and transit productivity, using the project’s market demand forecasts for TOD jobs and housing. The results of the scenario planning exercises provide high-level results rather than specific local recommendations.

Transit performance was analyzed through coordinated use of two modeling tools. Together they **reflect the influence on transit ridership of localized features** including development density, walkability and feeder bus service.

ST-LUIS Scenario Planning has been a valuable tool for investigating policy and investment options. MAG and partner agencies may wish to address some of the limitations of Scenario

Planning in future activities. Table 3 explains what ST-LUIS Scenario Planning does and doesn’t accomplish.

### Shared Scenario characteristics

Each of the three scenarios matches a high capacity transit network with assumptions for station-area land uses that use ST-LUIS place types that illustrate three different sets of development characteristics that support walkable communities with different levels of transit investment.

The scenarios reflect:

- Expected regional population growth to over 8 million people
- Results of ST-LUIS analysis of candidate HCT corridors (from the Regional Transit Framework Study—RTFS)

- Investigation of real estate market, transit-supportive job sectors, location and density of existing job centers
- Use of ST-LUIS place types to streamline scenario design

*“The winning strategy is about differentiation rather than everybody doing standard out-of-the-box TOD. The path of success is different for every community.”*

**Ellen Greenberg**  
ULI Forum 2

Table 3: What Does ST-LUIS Scenario Planning Accomplish?

ST-LUIS SCENARIO PLANNING	
DOES...	DOESN'T...
Test three land use and transit corridor patterns	Test additional scenarios of interest
Incorporate MAG socioeconomic data and ST-LUIS market findings	Reflect location-specific opportunities
Use MAG’s Regional Transit Framework Study (RTFS) corridors as input	Evaluate all corridor combinations
“Imagine” population and job growth directed to HCT station areas	Reflect localized existing conditions
Use a hybrid modeling method: Direct Ridership Model (DRM) and MAG 4-step model	Reflect benefits of compact walkable development outside station areas
Provide generalized results and recommendations	Make specific corridor recommendations
Include HCT corridors and assumptions for feeder bus services	Include specific local transit proposals

## ST-LUIS Place Types

The place types were created to reflect threshold densities and development patterns supportive of different transit modes, and were “applied” to station areas in the scenario planning process. Figure 7 provides an overview of each place type. Additional detail regarding place types is included on pages 15 and 16.

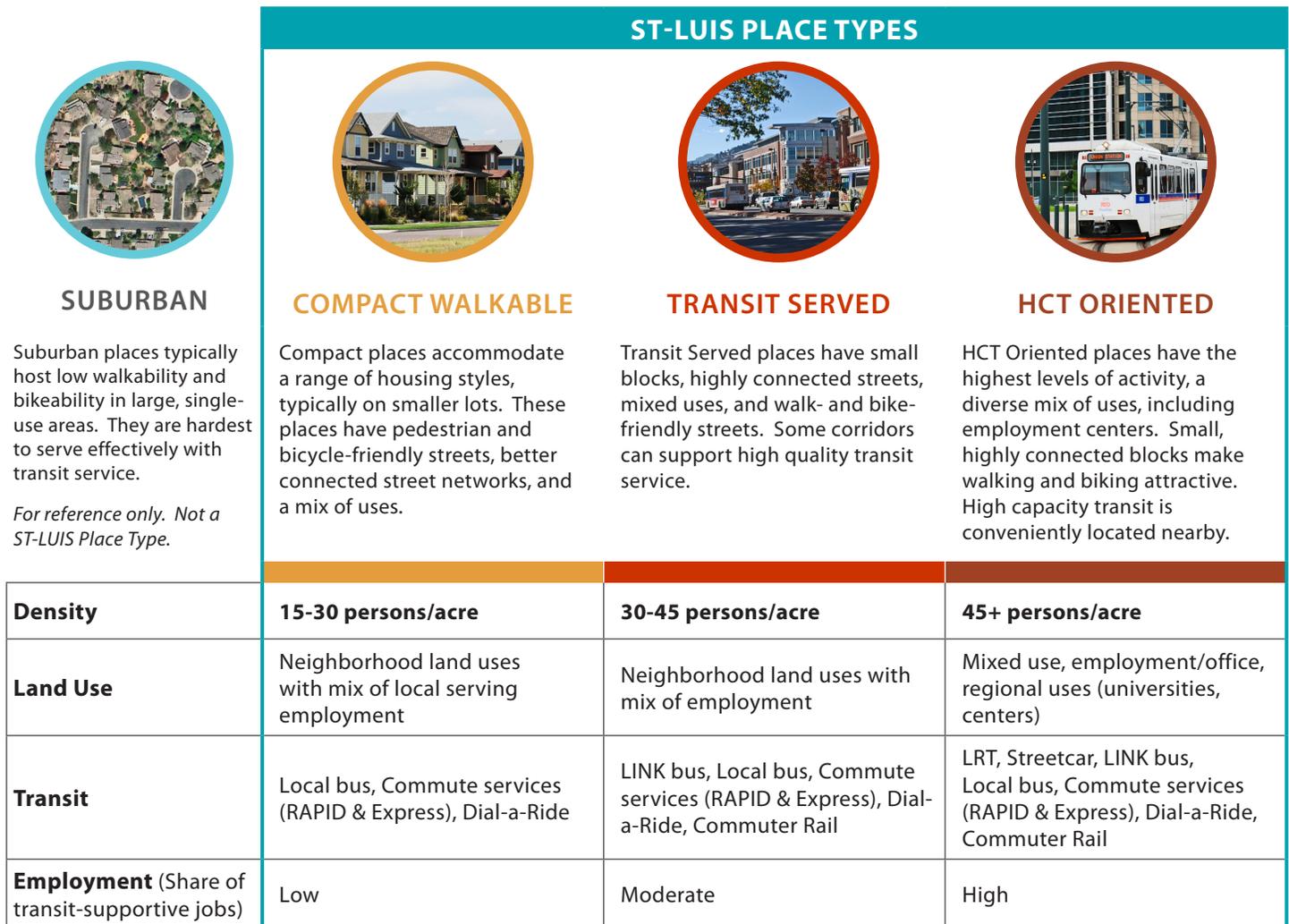
### Factors in designing place types:

- Densities supportive of different travel choices and modal productivity
- Densities supported by regional real estate market demand
- Existing and planned densities (especially in core sub-areas)
- Transit-supportive job sectors

### Factors in applying place types:

- Centrality (proximity to the region’s core)
- Location in specific core sub-areas (custom densities)
- Location in or out of employment cluster
- Inner or outer station area (1/4 or 1/2 mile radius)
- Special uses (e.g., Arizona State University)

Figure 7: ST-LUIS Place Type Overview



## ST-LUIS Scenarios

The three ST-LUIS scenarios—*Enhanced Transit*, *Transit Supply*, and *Refined Transit Supply*—are compared in Figure 8, which shows the relative transit network size of each scenario, as well as each transit corridor's service type.

Figure 8: ST-LUIS Scenario Corridor Maps by Corridor Service Type

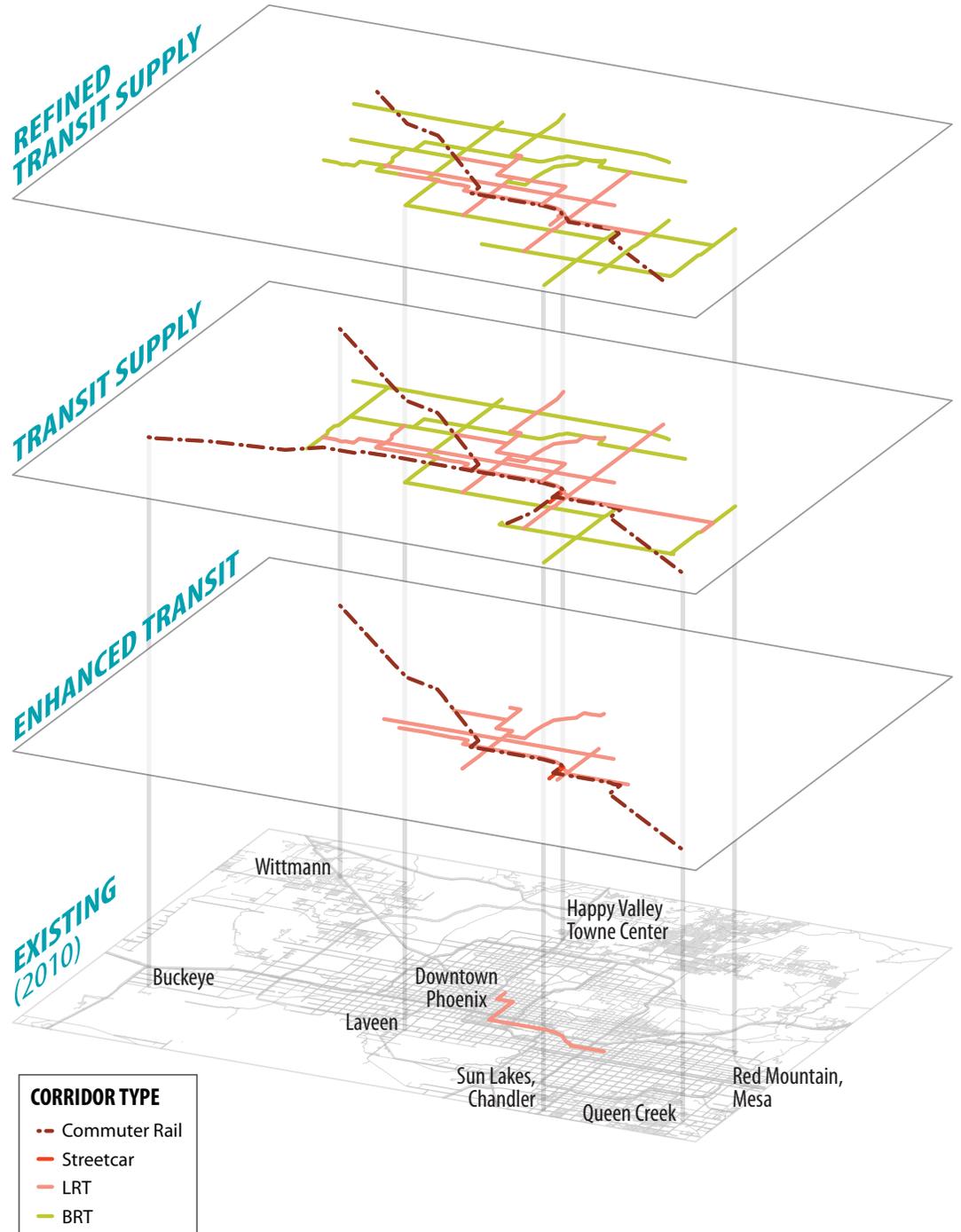
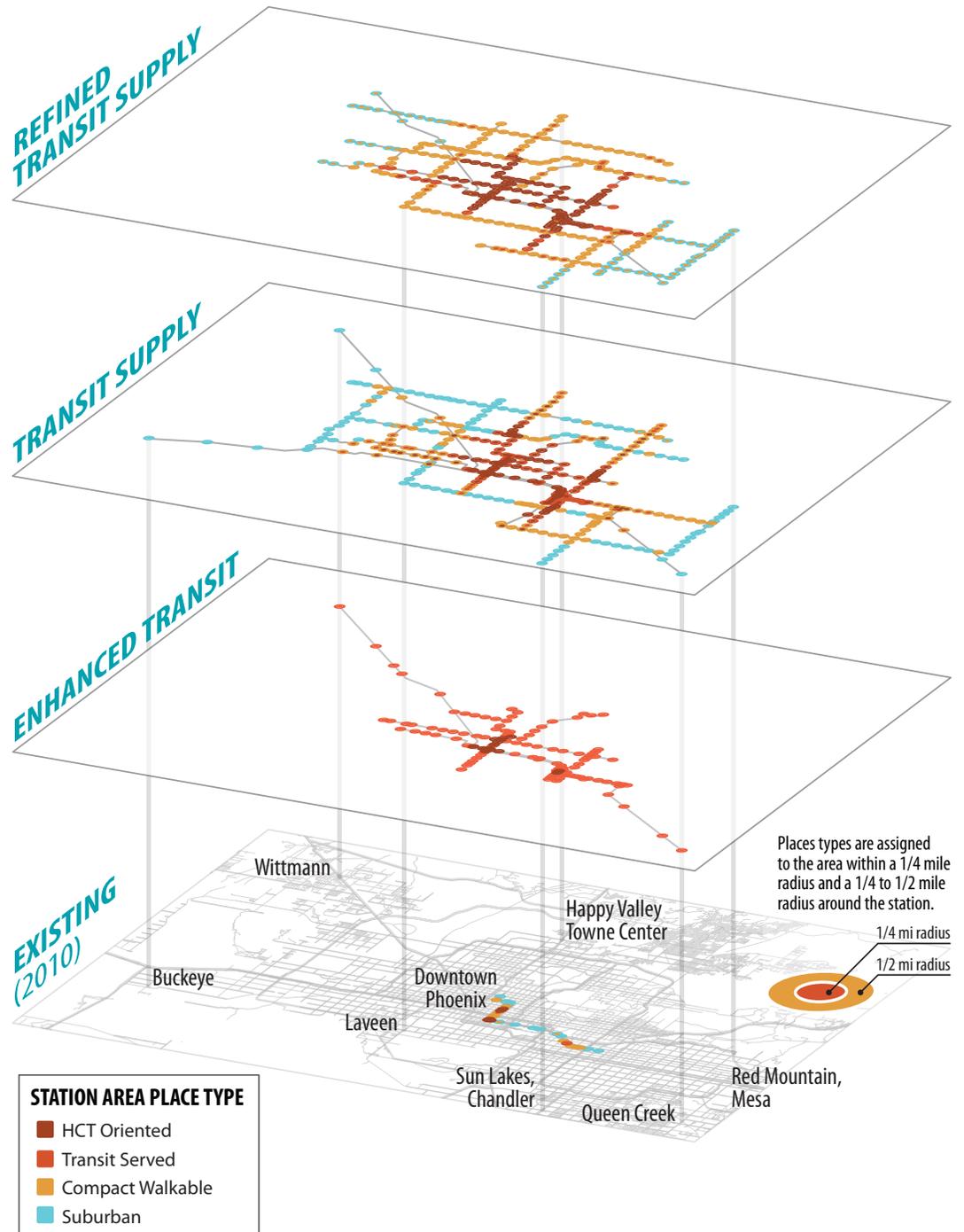


Figure 9 depicts the station area place type assignments for each scenario. Place types for may differ between the inner (1/4 mile radius) and outer (1/4 to 1/2 mile radius) station areas.

Figure 9: ST-LUIS Scenario Station Area Maps by Place Type



## Scenario Modeling Results

ST-LUIS Scenario Modeling revealed that the small, compact and selective HCT network in the Enhanced Transit scenario was the most productive, had the best fit with regional TOD demand, and represented the lowest capital cost. Table 4 summarizes the characteristics of each scenario its modeling results.

## Scenario Modeling Key Findings

- Upgraded bus services will complement HCT, feed the rail network and provide a needed increase in regional access.
- BRT services can range from “BRT-light” similar to the current LINK

service, to full BRT with dedicated guideway. HCT modes are expected to include LRT, streetcar and commuter rail.

- Optimizing the transit system, relocating or consolidating stops, and truncating unproductive line segments can improve productivity.
- Downtown Phoenix station areas will have the highest sustainable mode share in the region (about 20% of trips with origins or destinations in the station areas) and can serve as a benchmark for measurement.

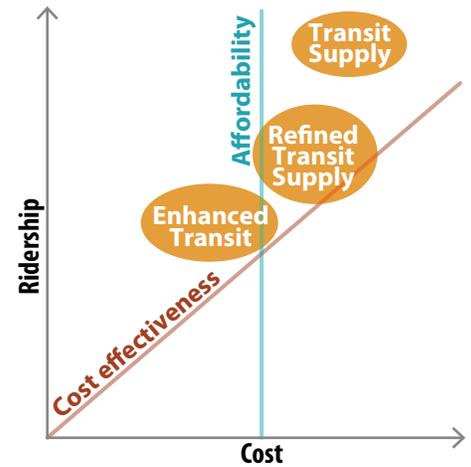


Figure 10: Conceptual Scenario Cost Effectiveness and Affordability Curves

Table 4: Scenario Summary

ST-LUIS SCENARIO	COMPARISON TO 2013 HCT NETWORK	MODE IN ST-LUIS NETWORK	STATION AREA PLACE TYPES	WHAT WE LEARNED FROM THE MODELING RESULTS
<b>Enhanced Transit</b>	Modest Expansion	HCT (LRT, Streetcar, Commuter Rail) Feeder bus	Transit served and high capacity transit oriented place types forecast by ST-LUIS Market Analysis	<ul style="list-style-type: none"> <li>• Highest productivity</li> <li>• Best fit with TOD demand</li> <li>• Lowest cost</li> <li>• Least geographic coverage</li> <li>• Lowest total ridership</li> </ul>
<b>Refined Transit Supply</b>	Generous Expansion	HCT (LRT, Streetcar, Commuter Rail)	Transit served and high capacity transit oriented place types forecast by ST-LUIS Market Analysis	<ul style="list-style-type: none"> <li>• 2nd highest productivity</li> <li>• 2nd poorest fit with TOD demand</li> <li>• 2nd highest cost</li> <li>• Good geographic coverage</li> <li>• 2nd highest ridership</li> </ul>
<b>Transit Supply</b>	Very Generous Expansion	BRT (with and without dedicated guideway) Feeder bus	Compact Walkable and/or suburban land uses where TOD land uses unlikely to be achieved	<ul style="list-style-type: none"> <li>• Lowest productivity</li> <li>• Poorest fit with TOD demand</li> <li>• Highest cost</li> <li>• Excellent geographic coverage</li> <li>• Highest total ridership</li> </ul>

## 4.3A TOOLS - ONE SIZE DOESN'T FIT ALL

The ST-LUIS tools support local and regional stakeholders in advancing plans for transit investments and services, supporting walkable and bikeable communities, enacting policies that support sustainable transportation, and guiding transit-oriented development. The three tools work together and recognize that there is not a *One Size Fits All* solution, allowing the region and local agencies to evaluate transportation and land use options in a market-based and data-driven approach.

### ST-LUIS Place Types

The ST-LUIS place types describe and illustrate three kinds of places that offer the best opportunities for supporting sustainable transportation in the MAG region, based on the study's investigation of research findings, best practices and local precedents.

The place types can be used:

- To characterize **existing conditions**,
- To describe an **ideal condition**, and
- To communicate a **future vision** as a basis for actions.

Some characteristics are common to all three place types. All depend on

appropriate density and land use mix to support walkability, and a high level of street network connectivity. In successful walkable communities, these measurable characteristics are paired with the less-tangible qualities of authentic character, attractive public realm, and placemaking that contribute to identity and value. Figure 11 (see following page) provides information on some of the features that are distinct for the different place types.

As noted in Figure 11, the market conditions necessary to support Compact Walkable development are far more widespread than are locations with the market strength required to support Transit Served and HCT Oriented place types.

ST-LUIS market analysis and continuing national trends suggest that the places where new TOD is most likely will be in the region's central core because it has the advantages of existing density, mix of uses, and a central location. In place with these assets, high capacity transit can reinforce and strengthen the region's opportunity for economic development involving knowledge based industries and the subset of employees who will work for these businesses and who want an urban life style. Although not every part of the region will be able to directly support this type of activity, the entire region will benefit from a strong core and a thriving knowledge based economy.



### COMPACT WALKABLE

15-30 persons/acre



### TRANSIT SERVED

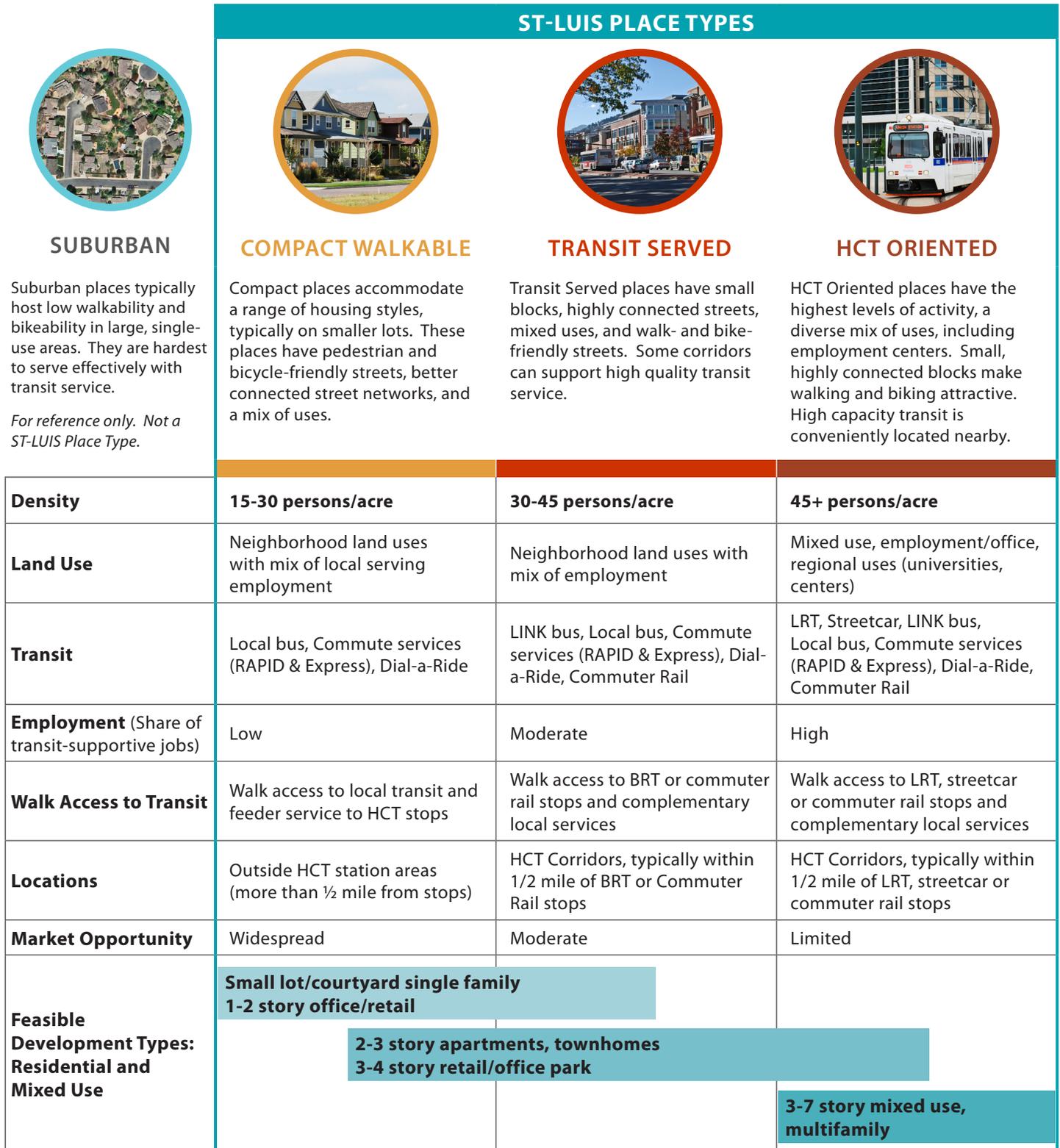
30-45 persons/acre



### HCT ORIENTED

45+ persons/acre

Figure 11: Place Type Characteristics



## Local Toolkit: Pathway Tools

The ST-LUIS provides two tools to assist local users in the region “synch up” transportation and land use plans. *Pathway Tool 1* allows practitioners to explore place type characteristics, consider a specific community’s present status and future vision for development, and review pathways to move toward more sustainable transportation solutions and development patterns. *Pathway Tool 2* provides design and development prototypes that synch up with the three recommended ST-LUIS place types.

Pathways support the transition to places that support sustainable transportation while responding to demographic and market trends. ST-LUIS Pathways are about...

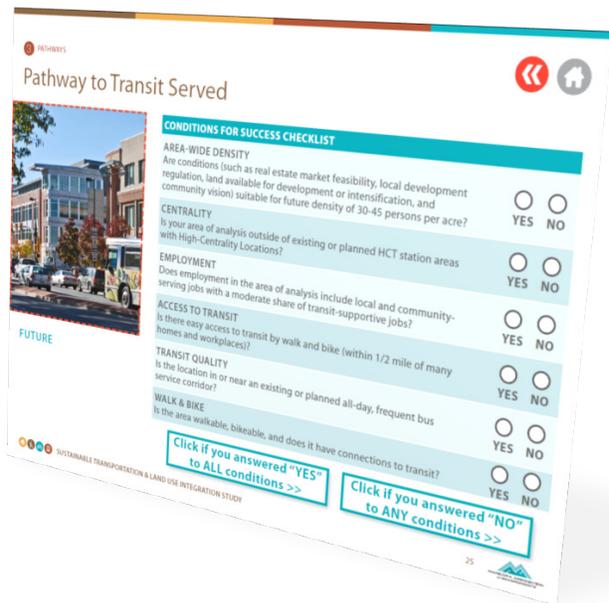
- ... Communities choosing to transition to integrated land use, urban design and mobility systems,
- ... Responding to market demand
- ... And supported by the actions of regional agencies,
- ... With the aim of moving toward sustainable transportation.

**One size doesn’t fit all.** Successful Pathways will reflect:

- Local conditions
- Community values and future visions
- Strength of local real estate market
- Location in the region
- Regional growth projected
- Regional plans for transit investments and services

### Pathway Tool 1: Community Pathways to Sustainable Transportation Interactive Tool

- Pathway choices
- Place Type Profiles
- Place Type Dashboards
- Reference Materials



### Pathway Tool 2: Development Prototypes Catalogue

- Prototypes
- Local Precedents
- Fit with ST-LUIS Place Types

## Regional HCT Corridor Evaluation and Scenario Planning Process

ST-LUIS establishes a scenario planning process that can be used in further design and testing of regional land use and HCT networks. The HCT corridor evaluation is done in a two-step process that focuses on demographic,

land use conditions, transit/bus ridership criteria, and commute conditions. The evaluation process can easily be replicated and integrated into future regional decision-making efforts.

The process includes:

- Screening and selection of candidate HCT corridors

- Specification of transit service characteristics
- Real estate demand forecasting
- Assignment of place types to station areas
- Modeling of transit ridership
- Evaluation of results

## 4.3B STRATEGIES - MOVING TOWARD SUSTAINABLE TRANSPORTATION

Moving forward with the ST-LUIS will mean advancing the following strategies.

### Strategy 1: Redefine Regional Projects

ST-LUIS recognizes that projects that advance sustainable transportation locally have value to the entire region—by enabling safe, active transportation, supporting transit use, and walkable communities.

The region should continue and expand regional support for projects that have a local focus, including:

- Complete Streets
- Safe routes to school
- Trails and bikeways
- New car ownership/share models
- First / last mile transit access projects, and
- Local transit services.

### Strategy 2: Use the ST-LUIS to jump start the RTP Process

The Regional Transportation Plan (RTP) update should move forward with HCT network planning based on ST-LUIS results. Implementing activities include:

- Convene discussions with affected municipalities and the regional agency regarding local commitment and HCT corridors
- Model a combined HCT and upgraded bus system
- Evaluate transit projects as part of overall multi-modal corridor mobility, considering highway, streets, intelligent transportation systems (ITS), bicycle and pedestrian networks.

- Conduct more detailed corridor planning
  - Targeted corridor modifications (extent and alignment)
  - Recognize existing conditions
  - Reconcile ST-LUIS evaluation criteria with federal funding guidelines
- Complement corridor-level planning with strategic planning for nodal development

### Strategy 3: Upgrade Transit Services

Implementing the ST-LUIS Recommendations for upgraded transit services means improving transit quality, offering a mix of complementary services, and enabling easy, safe and comfortable multi-modal trips.

*“Phoenix’s light rail is already a success. We should be looking at TOD as an opportunity to plan long term.”*

**Mayor Scott Smith (Mesa)**  
ULI Forum 1

*“My suggestion to MAG and Valley Metro is to embrace the development community more actively, as well as the brokerage community, learn where the employment centers are, where those employees live, and create appropriate mechanisms to move those people that would encourage them to take mass transit.*

*Look at the airlines. Do they have one size plane for every market? No. Look at our bus system, how many different bus sizes do we have?”*

**Mark Singerman**  
ULI Forum 2

High quality transit is bus or rail service that provides all day (peak and off-peak) service with a long span of service and frequencies of at least 15 minutes during daytime hours, with high reliability, safety and customer experience, providing access to job centers and other major regional destinations. In conjunction with quality transit service, transit signal priority, queue jump lanes, bulb outs, stop consolidation, in-line management strategies, and technology upgrades can aid network productivity. Table 5 describes key characteristics for ST-LUIS transit modes. These high quality services should be complemented by an array of services serving local and

focused markets such as those in the list below. The complementary services will not all have the characteristics of all-day frequent service.

A mix of services that complement high capacity transit will extend the system’s reach and respond to specific needs. These services may include community bus for smaller communities, local feeders to rail stops, and continued and expanded peak-oriented express services. BRT services may also have varying levels of investment, with both all day, frequent rapid-type services similar to LINK, as well as more capital-intensive BRT with dedicated guideways and rail-like amenities.

The transit system should be designed and operate so multi-modal trips are easy and attractive relative to the choice of driving alone. Multi-modal trips include trips on multiple transit modes as well as trips accessing transit by foot or bike. Supportive strategies include reliable and widely available route and schedule information, comfortable and safe walk and bike access to bus and rail stops, easy transfers with coordinated schedules and stop design, provision for bikes on transit vehicles and secure bike parking at transit stops, and fare integration throughout the network regardless of operator or mode.

Table 5: ST-LUIS Transit Service Characteristics Assumptions

	PEAK HEADWAY (MINUTES)	OFF-PEAK HEADWAY (MINUTES)	SPEED (MPH)	PEAK HOURS/DAY	OFF-PEAK HOURS/DAY
<b>LRT</b>	12	12	20	6 hours	15 hours
<b>BRT</b>	15	30	17.5	6 hours	15 hours
<b>Commuter Rail</b>	30	0	45	6 hours	0 hours
<b>Streetcar</b>	15	15	15	6 hours	15 hours

*“We can plan all we want. The market decides where development goes.”*

*“If you want to build higher density urban infill in this region you’re going to have to change the way government thinks. All of the incentives today are in place to encourage growth on the urban fringe.”*

**Participants**

ULI Forum 1

## Strategy 4: Support Municipal Action

Local government action is essential in supporting a move to sustainable transportation. The ST-LUIS tools provide support for local decisions about development design, characteristics and transportation types.

**1. Support transition to walkable communities** with densities, transportation and urban form characteristics included in the ST-LUIS place types. The ST-LUIS Community

Pathways to Sustainable Transportation interactive tool (see page 17) focuses on these strategies, highlighting the following factors:

- Density (jobs + housing)
- Mixed land uses
- Connectivity
- Complete Streets
- Parking management
- Transit, walk and bike networks and services appropriate to their place types

**2. Form partnerships between municipalities and transit operators** to start transit service as appropriate, and prioritize services and investments that support pathways to sustainable transportation. Coordinated investments can increase the speed and reliability of transit trips, for instance.

**3. Use “policy levers” identified in ST-LUIS to improve the feasibility outlook for higher density housing:** reduced parking requirements in station areas, higher site coverage, and allowing horizontal mixed use.

*“If local governments really want to see the shift to the urban core, as sought after by the new demographics, then they have to get with it and be more sophisticated in their ability to support good projects and their ability to make it more difficult to just go build houses in the next cotton field.”*

**James Lundy**

ULI Forum 1

Table 6: First Steps to Prioritize Services and Investments Supporting Sustainable Transportation

	FIRST STEPS
<b>Improve walkability</b>	<ul style="list-style-type: none"> <li>Remove barriers to transit stops and stations</li> <li>Develop contiguous walking paths and sidewalks that connect to local and regional networks</li> <li>Provide clearly marked pedestrian crossings and traffic signals with countdown signals</li> <li>Provide bulb outs and wider medians to reduce effective crossing distance</li> </ul>
<b>Increase speed and reliability</b>	<ul style="list-style-type: none"> <li>Include signal priority, in-lane transit stops, and transit-only lanes in corridor planning and capital investments</li> <li>Synchronize traffic signals with bus schedules to improve speed and reliability</li> <li>Improve coordination between traffic operations control centers and transit operators</li> </ul>
<b>Improve waiting areas</b>	<ul style="list-style-type: none"> <li>Invest in covered shelters, seating, landscaping, and other rider amenities</li> <li>Provide real-time transit arrival information</li> <li>Prioritize maintenance and upkeep of waiting areas</li> </ul>

**4. Tailor regulations and design guidelines for infill opportunities.**

Real estate industry representatives who participated in the study emphasized the need for regulations and guidelines specifically addressing

typical infill conditions, such as small parcel sizes that may not satisfy standard on-site parking standards. Locations within HCT station areas will warrant reduced parking requirements.

Table 6 outlines a number of possible first steps for local governments to take toward prioritizing services and investments supporting sustainable transportation.

**Beyond the Study - Next Steps**

MAG and municipalities are already involved in many supportive activities that move the recommendations and strategies of the ST-LUIS forward. The region will need to continue to move

forward and answer questions not resolved through the project. These include:

- More detailed planning activities
- Continued emphasis on implementation activities

supporting the transition to walkable communities and TOD

- Implementation of a walk/bike/transit system that supports transitions to walkable communities and sustainable transportation

# Glossary

TERM	DEFINITION
<b>Bikeability</b>	The comfort, safety, and appeal of cycling in a given place. Highly bikeable places have “comfortable” (or safe, pleasant, and convenient) environments for cyclists, including nearby destinations, a network of bicycle lanes, vehicle door buffers, protected turn lanes, high visibility signage and pavement markings to alert drivers to the presence of cyclists, secure bicycle parking (e.g. bicycle racks, lock boxes), and well-lit streets and sidewalks.
<b>Bus Rapid Transit (BRT)</b>	A rubber-tire based transit mode that is more reliable, is faster, and has a higher capacity than traditional rubber-tire services due to implementation of transit priorities measures such as transit signal priority, bulb outs, queue jump lanes, off-fare boarding, etc. BRT in the context of the ST-LUIS is similar to the existing Valley Metro LINK bus service. Full BRT with significant capital infrastructure including dedicated bus lanes and guideways, similar to the Health Line in Cleveland, Ohio, or the EmX in Eugene, Oregon, is not assumed as part of the ST-LUIS.
<b>Centrality</b>	A place’s proximity to the core of the metropolitan area, the densest concentration of jobs and housing near the geographic center of the region, or other job center. Places with high centrality have a significant number of jobs in transit-supportive categories (see Glossary 2 of 2). The highest centrality places are downtown employment centers like Downtown Phoenix or places with major institutional uses like Tempe.
<b>Commuter Rail</b>	Rail transit operating on a fixed guideway during peak periods in peak directions, typically having fewer stops than LRT and Streetcar and covering longer distance trips. Commuter rail train capacity is typically significantly higher than LRT and vehicles are designed for longer-distance trips (often with seats and tables).
<b>Density</b>	The number of residents and/or jobs in a given area; defined as “people per acre” for this study, combining the number of residents and jobs together. Density is typically regulated through controls on units per acre for residential development or floor area ratio (FAR) for commercial development.
<b>Development Prototype</b>	An illustrative building description that fits the density and urban design parameters of one or more specific Place Type(s).
<b>Dwelling Units per Acre (DU)</b>	The number of residential units divided by the number of acres of property on which they are located. This is a measure of residential density.
<b>Floor Area Ratio (FAR)</b>	The ratio between the area of a building and the area of the parcel on which it sits, typically measured in square feet. This is a measure of commercial density.
<b>High Capacity Transit (HCT)</b>	A frequent, reliable, high-speed, and high capacity form of transit that operates in a fixed guideway (such as rails), typically within a semi- or fully-segregated right-of-way. HCT systems have enhanced and branded passenger stations that may include amenities such as level boarding, real-time information provision, and off-board fare payment. HCT systems are considered more “permanent” and have the potential to generate land use and development impacts at stations and along corridors. In 2013, the types of HCT under consideration for the ST-LUIS are Light Rail Transit (LRT) and Streetcar.

## Glossary (*continued*)

TERM	DEFINITION
<b>High Quality Transit Service</b>	Bus or rail service that provides all day (peak and off-peak) service with a long span of service and frequencies of at least 15 minutes during daytime hours, with high reliability, safety and customer experience, providing access to job centers and other major regional destinations.
<b>Local Serving Employment</b>	Jobs associated with local serving businesses and services, including schools, local retail businesses, personal services, medical offices not associated with major hospitals, real estate offices and bank branches. Home-based businesses and small-scale craft-based businesses may also be included.
<b>Light Rail Transit (LRT)</b>	LRT is a frequent, reliable, high-speed, and high capacity form of transit that operates in a fixed guideway (e.g. rails), typically within a semi- or fully-segregated right-of-way. LRT systems have enhanced and branded passenger stations that may include amenities such as level boarding, real-time information provision, and off-board fare payment. LRT systems are considered more “permanent” and have the potential to generate land use and development impacts at stations and along corridors.
<b>Neighborhood Land Uses (or “land use mix”)</b>	Housing mixed with local serving uses, including parks, schools, places of worship, community centers and child care, and neighborhood retail and services.
<b>Place Type</b>	Classification of an area based on its dominant land use, design, and transportation system characteristics. Describes current conditions and/or future vision, and helps guide local planning decisions with regional goals.
<b>Station Area</b>	An area with a radius of 1/4 or 1/2 mile around a transit station. A 1/2 mile station area covers approximately 500 acres.
<b>Streetcar</b>	Streetcar is a form of rail transit with similar amenities and characteristics to LRT, but typically provides localized circulation, for instance within a downtown or business district. Streetcar stops more frequently than LRT, operates slower than LRT due to its operating environment (which may include pedestrian malls and urban arterials), and generally operates with shorter train cars and thus lower capacities than LRT.
<b>Transit-Oriented Development (TOD)</b>	<p>Transit-Oriented Development (TOD) is a type of community development that includes a mixture of housing, office, retail and/or other commercial development and amenities integrated into a walkable neighborhood or district and located within a half-mile of quality public transportation.</p> <p><i>Adapted from the Center for Transit-Oriented Development, <a href="http://www.ctod.org">http://www.ctod.org</a></i></p>
<b>Transit-Supportive Jobs</b>	Jobs in industry sectors that have a tendency to cluster near transit, based on national studies from the Center for Transit-Oriented Development. Sectors include: Government; Information; Finance and Insurance; Real Estate; Professional, Scientific and Technical Services; Management of Companies and Enterprises; Arts, Entertainment, and Recreation; and Accommodation and Food Services.
<b>Walkability</b>	The comfort, safety, and appeal of walking in a given place. Highly walkable places have “comfortable” (or safe, pleasant, and convenient) environments for pedestrians, including features like very close-together destinations, small blocks, continuous sidewalks, shade, safe street crossings, and buffers from adjoining traffic (e.g. planting strips, street furniture).



# ST-LUIS Project Materials

Related ST-LUIS project materials are available online. Use the following links to access these documents.

## ST-LUIS PROJECT WEBSITE

<http://www.bqaz.org/sustainOverview.asp?mS=m16>

## RESOURCES: LOCAL TOOLKIT

Community Pathways to Sustainable Transportation Interactive Tool  
Development Prototypes Catalogue

<http://www.bqaz.org/sustainResources.asp?mS=m16>

## WORKING PAPERS & MEMORANDA

Working Paper One - Regional Transportation Framework and Issues

Working Paper Two - Moving Toward Sustainable Transportation

Working Paper 3A: Supportive High Capacity Transit (HCT) Corridor Technical Analysis, Scenarios 1 & 2

Working Paper 3B: Supportive High Capacity Transit (HCT) Corridor Technical Analysis, Scenario 3

Working Paper Four: Study Recommendations Report

MAG ST LUIS – Market Study Memorandum

MAG ST LUIS – Employment Analysis Memorandum

<http://www.bqaz.org/sustainPapers.asp?mS=m16>

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## IMAGE CREDITS

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Other photos: Ellen Greenberg unless otherwise noted

Aerial imagery: Google Earth

# **ATTACHMENT #2**

**Agenda Item 6**



# Southwest Valley Local Transit System Study

## EXECUTIVE SUMMARY 2013

Avondale | Buckeye | Goodyear | Litchfield Park | Tolleson | West Phoenix | Maricopa County

*The Maricopa Association of Governments (MAG) Southwest Valley Local Transit System Study (SWVLTSS) was conducted to assess the transit service needs within the Southwest Valley of the MAG region. The study area includes portions of the City of Phoenix, City of Avondale, City of Goodyear, City of Tolleson, City of Litchfield Park, Town of Buckeye, and unincorporated Maricopa County. These communities worked with MAG and Valley Metro to consider short-, mid-, and long-term strategies to improve local transit service cost-effectively within the Southwest Valley.*

### Local Transit Provides Options

Earlier this year residents were asked: if a fully funded local transit system is implemented in the Southwest Valley, how might it affect your life and how you get around your community?

#### Residents shared their visions...

- ▶ *After walking a short distance, I board a small bus which takes me to the store, library, city hall, medical appointment or school.*
- ▶ *Instead of being a carpool mom, my child rides the local bus to meet his friends at the park or movie theatre.*
- ▶ *During the week, I ride the local bus to a regional transit center where I transfer to a Valley Metro bus or ride the light rail to downtown Phoenix or other major employment centers.*



### Residents Speak Out

During spring 2012, more than 2,100 residents listed their transportation needs and helped create a vision for a local transit system by participating in an online survey and a Southwest Valley Transit Summit.



Most of the participants agreed the Southwest Valley needed a local transit system which was:

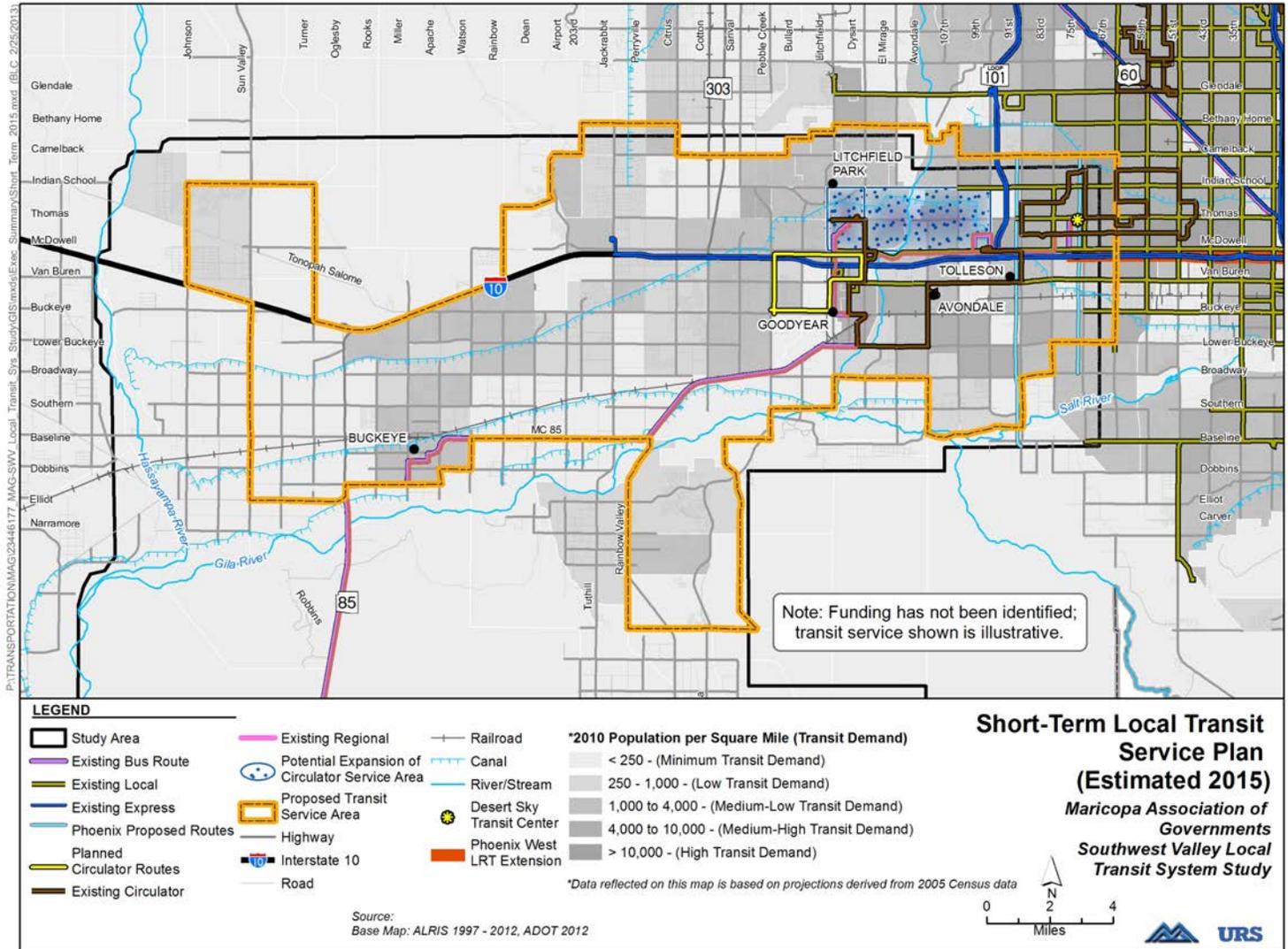
**Accessible** – easy-to-use route map and passenger information that are available to all generations.

**Affordable** – a simple, low-cost fare policy.

**Convenient** – frequent service, 7 days a week with service to key activity centers: downtowns, medical facilities, employment centers, shopping and schools.

**Multi-modal** – a total transit system which provides for transfers between local buses, regional buses, dial-a-ride, express buses and light rail.

**Regional** – easy transfers to Valley Metro buses, express buses, and light rail with service to major employment centers such downtown Phoenix, Luke Air Force Base and Palo Verde Nuclear Generating Station.

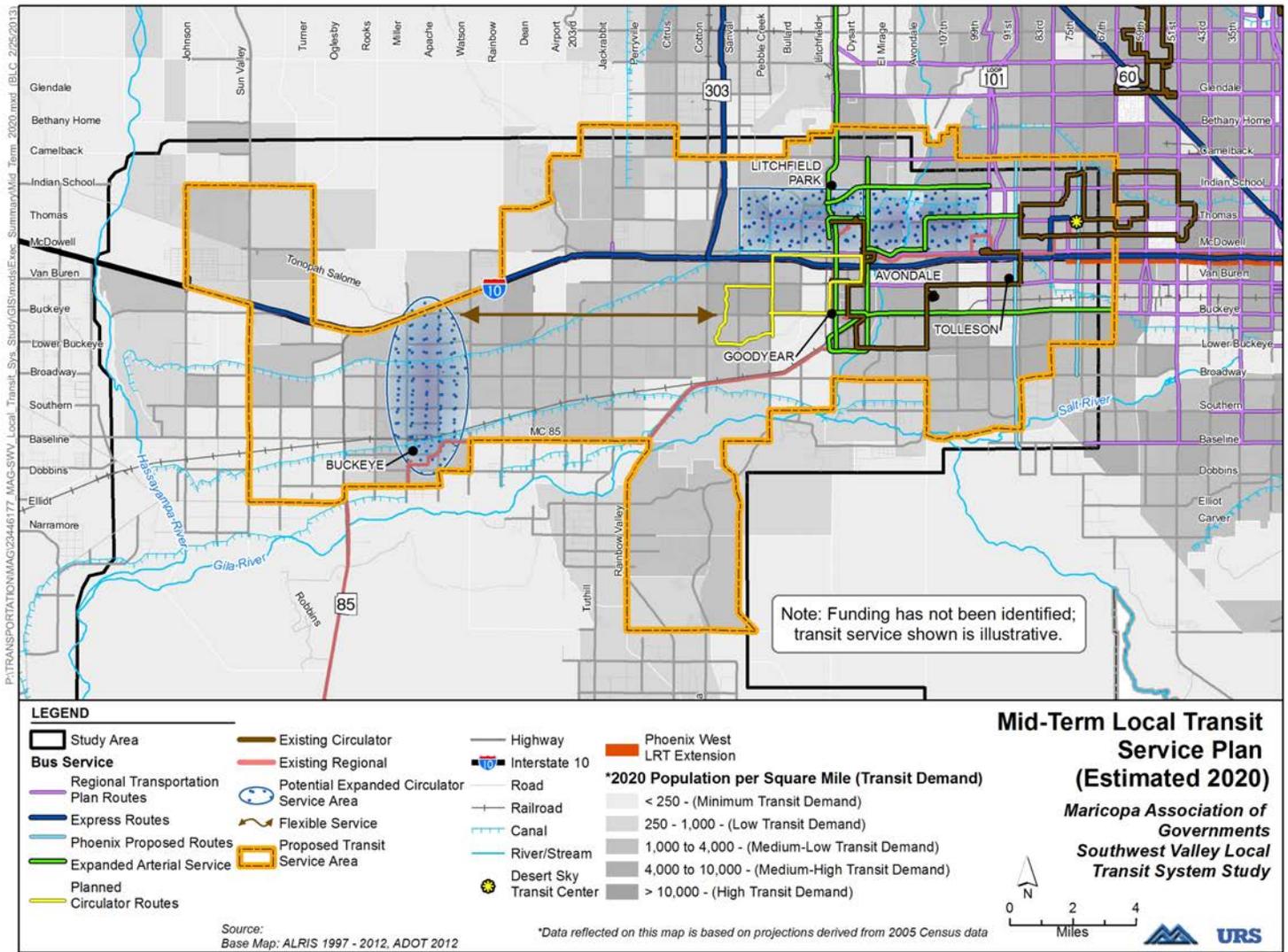


## Short-Term Recommendations – What Can Be Done Now?

In advance of any major funding initiative, short-term recommendations focus on reducing travel times and expanding services to meet needs as well as building a collaborative foundation for longer term, subregional efforts like expanding the arterial grid system into the service area.

### The short-term recommendations identified in this plan include:

- Improving service on existing arterial fixed route service (on McDowell and Van Buren) to 30 minute frequency, interlining, or providing expanded hours of service.
- Building on the success of the ZOOM circulator by increasing service area to the north and/or increasing capacity.
- Initiating the previously recommended circulator services in Goodyear
- Conducting a localized planning study to investigate a circulator service plan in Buckeye.
- Establishing an ongoing planning group or other institutional structure for continuing coordination among the jurisdictions who wish to advance the mid- and long-term implementation steps.
- Promoting transit through partnerships with local businesses and coordinated land use-transportation decision making.

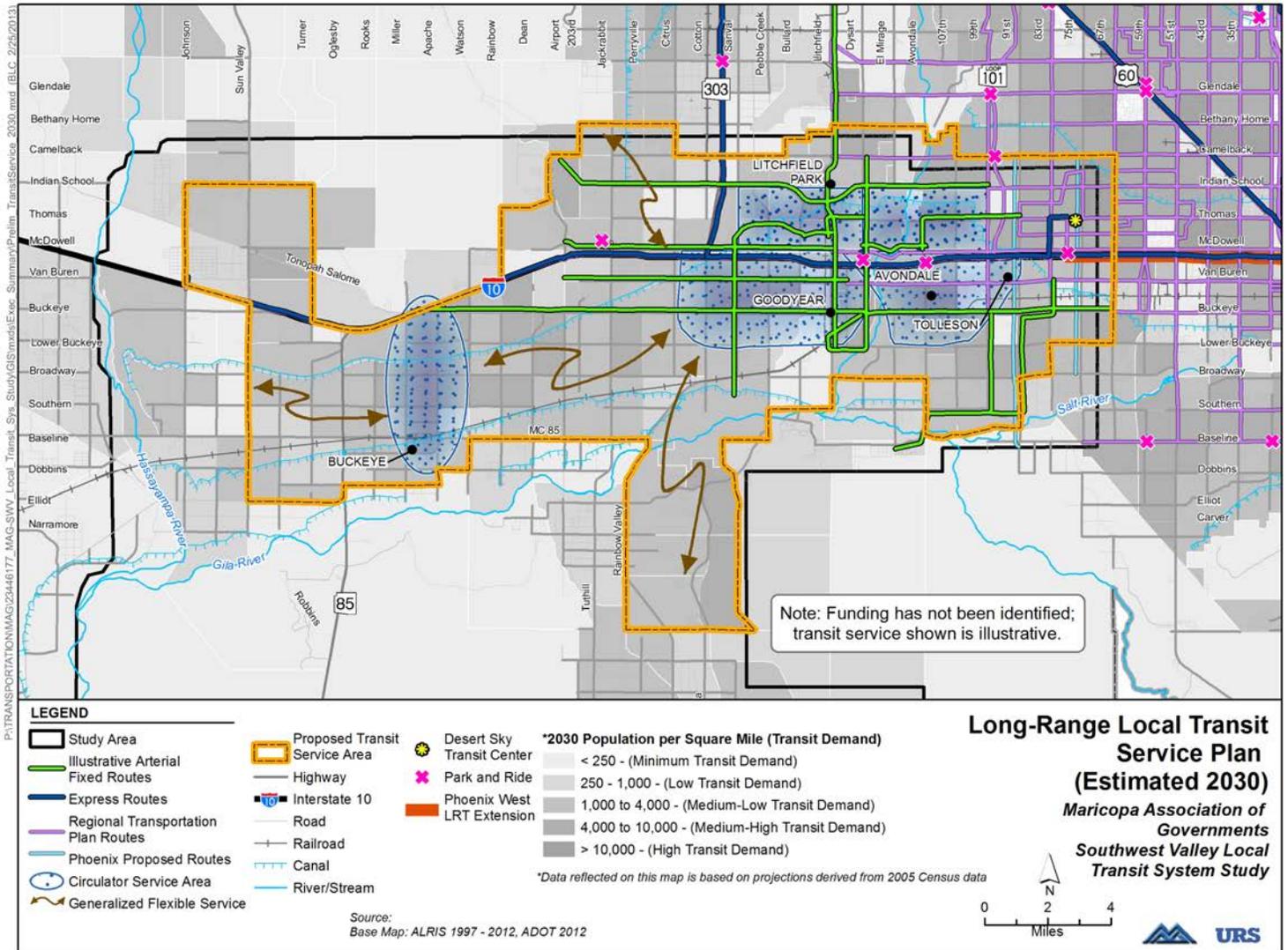


## Mid-Term Recommendations – Expanding Service by 2020

The mid-term (2020) recommendations focus on areas that are projected to support productive transit at that time. It is also recommended that the performance of transit service be reviewed periodically to determine any modifications to respond to the actual pace and type of development that occurs.

### The mid-term recommendations identified in this plan include:

- Expanding east-west fixed route bus service on major arterials west to Litchfield Road, providing 30 minute service or matching the connecting service levels.
- Introducing north-south fixed route service on a major arterials such as Litchfield and/or Dysart Roads.
- Expanding circulator service area in Goodyear, and modifying all continuing circulator services to respond to conditions.
- Initiating pilot circulator service in Buckeye.



## Long-Term Recommendations – Advancing Transit in the Southwest Valley

Over the long-term, the transit system would need to be built out to levels that are projected to be transit-supportive based on current land use plans. The timing for long-term recommendations is contingent on funding and the realization of the projected pace of development. The implementation steps include expansion of more services into the central portion of the service area and continual refinements to service to meet or exceed transit service performance goals.

### The long-term recommendations identified in this plan include:

- Expanding the service area for arterial fixed route transit service farther west.
- Improving service frequencies as appropriate on productive routes.
- Identifying opportunities for flexible service (such as route deviation or demand responsive, non-ADA service that is reservations-based or that serves specific activity centers).
- Continuing to modify circulator routes or operations to respond to changes in conditions.

### Implementing and Funding New Transit Services

A key step in implementing new transit service is to obtain dedicated, sustainable funding for operating costs. Local transit services may be funded through a commitment of general funds, an existing or new transportation tax, and leveraging federal funds. In pursuing major investments like expanded arterial service, collaboration among communities will benefit services that cross city boundaries.