



**ALBUQUERQUE
STREETCAR EVALUATION**

Summary Report

Prepared for:



The City of Albuquerque

Prepared by:

 **LELAND CONSULTING GROUP**


FEHR & PEERS
TRANSPORTATION CONSULTANTS

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Albuquerque Streetcar cover image used courtesy of HDR, Inc.

Consultant Team

Leland Consulting Group

Chris Zahas, AICP, Managing Principal

Bill Cunningham, Managing Principal

Brian Vanneman, Senior Associate

Ted Kamp, Senior Associate

610 SW Alder Street, Suite 1008

Portland, OR 97205

Tel. 503.222.1600

www.lelandconsulting.com

Fehr & Peers Associates, Inc.

Carlos Hernandez, AICP, Senior Transportation Planner

Molly Veldkamp, Transportation Planner

621 17th Street Suite 2301

Denver, CO 80293

303.296.4300

www.fehrandpeers.com

Executive Summary

In 2006, the City of Albuquerque engaged engineering and transportation firm HDR Engineering, Inc. to conduct a feasibility analysis and preliminary engineering for a modern streetcar line, to be modeled after the successful new streetcars in Portland, Seattle, Tacoma, Tampa, Little Rock, and other cities. The proposed alignment runs through the City's historic and cultural core and serves many of the City's key destinations, including downtown, University of New Mexico, and the historic Route 66 Nob Hill district. Preliminary studies also included a potential extension to the Albuquerque Sunport. Like light rail, streetcars run on steel wheels on steel rails. Unlike light rail, streetcar stops are typically spaced every few blocks, allowing for frequent boardings and alightings, and enabling streetcars to function as "central city circulators." Analysis completed by HDR included studies on capital and operating costs, ridership projections, alignment alternatives, and street configurations.

In late 2006, in response to questions about the development impact and funding for the proposed streetcar, the Albuquerque City Council passed council resolution O-07-71, directing the formation of a "21st Century Transportation Task Force" and the commission of a cost-benefit study to review preliminary streetcar plans and to analyze the development potential that could be realized from a streetcar in Albuquerque. In response to this directive, the Mid-Region Council of Governments (MRCOG) retained the consultant team of Leland Consulting Group (LCG) and Fehr & Peers (F&P) to review the preliminary findings and conduct a cost-benefit analysis of the City's proposed modern streetcar line. The primary findings of the consultant team are:

- **Planning Context.** The City's large- and small-scale (sector) plans are highly supportive of the streetcar concept. For example, the City of Albuquerque and Bernalillo County Comprehensive Plan calls for Central Avenue to be the City's east-west "major transit corridor" and contain a vibrant collection of cultural, arts, and public uses and other mixed-use "activity centers."
- **Review of past analysis.** The past work completed by both the City and HDR is in general reliable and offers reasonable estimates of construction and operating costs, ridership, demographics, and other attributes of the line. Revised estimates for each of these attributes are also included in this report.
- **National comparison.** The proposed streetcar compares favorably to other similar streetcar lines built recently around the country. It would connect important transit supportive activity centers (downtown, Alvarado Transportation Center, UNM, Old Town, hospitals, etc.), it could drive considerable land use investment, and it would have high ridership (lower only than the Portland streetcar).
- **Recommended Alignment.** Through a cost-benefit analysis, the consultant team identified a "Recommended Alignment," running from downtown to San Mateo Boulevard. This section has the potential to catalyze the greatest amount of redevelopment and will serve the greatest amount of riders and transit destinations within a relatively compact distance. The Recommended Alignment measures best in terms of operations cost per passenger, investment leverage, and other cost-benefit metrics.
- **Land use benefits.** If complementary policies intended to continue and accelerate the City's central-area revitalization were implemented in conjunction with the Albuquerque Modern Streetcar, the streetcar would support considerable redevelopment. In the full Central Avenue corridor, Albuquerque could expect to add approximately 3,500 dwelling units and two million square feet of office, retail, and institutional space with a combined value of about \$1 billion between 2010 and 2030. Compared to existing growth projections that do not factor in a streetcar, this would mean a fourfold increase in the growth of dwelling units and a tenfold increase in the growth of commercial and institutional development in the corridor.

- **Transportation benefits.** In its first year of operation in 2011, the full streetcar alignment could be expected to serve about 6,400 riders in an average weekday, or 1.8 million riders per year. However, the number of riders will depend on the length of the route, the frequency of trains, and other operational details. The Recommended Alignment would carry about 5,000 riders per day assuming 10-minute headways during peak commute hours and would serve the three highest-volume destinations in ABQ Ride's current transit network: Downtown/ATC, UNM, and San Mateo Boulevard. The streetcar would travel at an average speed of between 12.5 and 14 miles per hour including station dwell times.
- **Downtown to Atrisco section.** The portion of the proposed alignment between downtown and Atrisco has fewer development opportunities and lower ridership potential. Thus, it could be considered for a second phase after the initial line is up and running. This section could, however, play a positive role in the City's tourist and convention business. If the City decides that supporting the local convention and tourist market is an important goal of the streetcar, the alignment section between downtown and the Rio Grande could be perceived to have a higher ratio of benefits to costs.
- **Capital and operations cost.** The Albuquerque Modern Streetcar is anticipated to cost \$28 million per mile to build. This figure includes double track along the entire alignment, a maintenance facility, intersection engineering, power, vehicles, and a contingency. Final engineering is yet to be completed and may alter that estimate somewhat, but it is similar to costs seen in other cities. Annual operating costs, assuming that the "full alignment" was built and frequent service (10-minute peak-hour headways), are estimated to be \$4.5 million per year during the first year.
- **Funding packages and sources.** Because the streetcar is both a land-use (redevelopment) and transportation project, the line should rely on several different funding sources, including the Quarter Cent Transportation Infrastructure Tax, a Tax Increment Development District (TIDD), and other sources. The analysis presents several alternative ways to pay for the capital and operating costs of the line. The Quarter Cent need not provide the majority of funding for the streetcar. For example, if a TIDD were implemented along with the Quarter Cent, only 14 percent of Quarter Cent revenues would need to go towards a downtown to San Mateo streetcar line, with 86 percent available for other transportation projects. Without a TIDD, 31 percent the Quarter Cent would need to be dedicated towards the streetcar for the same alignment.
- **Conditions for Success.** If the City decides to build the streetcar, it should also implement a number of "Conditions for Success." These complementary policies and actions include significantly increasing funding and staff to support redevelopment initiatives, reviewing zoning codes, attracting additional anchor uses, upgrading streetscapes and public spaces, increasing real and perceived safety in the corridor, and creating a unified brand and image to market the Central Corridor as a whole.

In conclusion, the Albuquerque Modern Streetcar is cost-competitive and would perform well when compared to modern and replica streetcars recently built in other cities. It would play a key role in increasing the level of development, investment, and employment in the Central Avenue corridor and would support broad public policy goals of revitalization and economic development. Many details still need to be refined in a final engineering phase, but this evaluation and cost-benefit analysis finds that it fulfills the strategic purposes of a modern streetcar line to serve as both a transportation and development tool.

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Background and Context

Project Background

In 2006, the City of Albuquerque engaged engineering and transportation firm HDR to conduct a feasibility analysis and preliminary engineering for a modern streetcar line, to be modeled after the successful new streetcars in Portland, Seattle, Tacoma, Tampa, Little Rock, and other cities. The proposed alignment runs through the City's historic and cultural core and serves many of the City's key destinations, including downtown, University of New Mexico, and the historic Route 66 Nob Hill district. Preliminary studies also included a potential extension to the Albuquerque Sunport. Like light rail, streetcars run on steel wheels on steel rails. Unlike light rail, streetcar stops are typically spaced every few blocks, allowing for frequent boardings and alightings, and enabling streetcars to function as "central city circulators." HDR's analysis included studies on capital and operating costs, ridership projections, alignment alternatives, and street configurations.

In late 2006, in response to questions about the development impact and funding for the proposed streetcar, the Albuquerque City Council passed council resolution O-07-71, directing the formation of a "21st Century Transportation Task Force" and the commission of a cost-benefit study to review preliminary streetcar plans and to analyze the development potential that could be realized from a streetcar in Albuquerque. In response to this directive, the Mid-Region Council of Governments (MRCOG) retained the consultant team of Leland Consulting Group (LCG) and Fehr & Peers (F&P) to review the preliminary findings and conduct a cost-benefit analysis of the City's proposed modern streetcar line.

This document summarizes the consultant team's findings, particularly with regard to the following main project goals:

1. Review and comment on projections of ridership, capital and operating costs, and other attributes of the proposed streetcar made by prior consultants and public agency staff.
2. Analyze the real estate development impact that can be expected as a result of the streetcar.
3. Combine costs (capital and operations) and benefits (ridership, real estate development, and others) into a cost-benefit matrix that can be used by decision makers to evaluate the project.
4. Make strategic recommendations about what other public actions should be implemented along with the streetcar if the City decides to proceed with the construction of the line.
5. Recommend additional financing strategies.

This document is organized as follows. First, the report reviews the background and context of the project, including a summary of recent land use and transportation plans developed by the City, and a review of other streetcar lines nationwide. Next, the benefits and costs of the streetcar line are evaluated separately, and then compared using a cost-benefit summary matrix. The primary benefits studied are the land use (redevelopment) and transportation (ridership) impacts, while the costs considered are the capital costs to build the line and annual operating funding to keep it running once it is built. This is followed by funding considerations, including principles, alternative funding packages for three different alignment options, and descriptions of individual funding sources. The report concludes with a series of strategic recommendations for the City, including the most beneficial alignment and phasing alternatives, and actions that should be pursued along with a streetcar line to maximize the urban revitalization benefit.

Figure 1 shows the streetcar route and proposed stations as evaluated in this report, as well as alignment sections and market areas into which the full alignment was divided in order that costs and benefits could be associated with specific geographical areas. This study area is slightly different than that which was studied by HDR. First, it extends slightly further at both the east and west ends. Secondly, it does not include the proposed Yale alignment to the Albuquerque Sunport, which is assumed to be a future extension and is not analyzed in this report. Each alignment section is comprised of two or three market areas. The shape of each market area is based on the “data analysis subzones” (DASZ) created by MRCOG in order to track the region’s population and employment. Additional information and calculations about each subject can be found in the Technical Appendices.

Figure 1. 2008 Proposed Streetcar Route, with Market Areas and Alignment Sections



Source: Leland Consulting Group, MRCOG

Figure 2. Modern and Vintage Streetcars in Portland, Oregon and Tampa, Florida



In addition to their physical differences, streetcars are operationally different from buses, light and heavy rail, and other modes of transit. They typically operate as “circulators” within downtowns and other close-in urban districts, tying together a major destinations and transit ridership generators. This role contrasts with light and heavy rail systems, which tend to be regional in scale, and connect a central city to suburban areas. In contrast with buses, which play a variety of roles in different transit systems, streetcars have been shown to attract more “choice riders” (i.e., those who have own cars but choose to ride transit) and have significant positive impacts on real estate and the adjacent urban environment. While streetcars have typically been deployed as short distance circulators, the technology does allow them to travel up to 50 miles per hour if given a dedicated right of way. Thus, their role can change when outside the central city. These functional differences are explained in greater detail in the discussion of individual peer systems below.

Planning Context

Like any other significant public infrastructure investment, the streetcar should respond to its planning context— that is, it should fulfill adopted public policies that have been set forth in past plans. For that reason, the project team reviewed a series of plans completed by the City of Albuquerque and other public agencies to determine whether the proposed streetcar is supportive of existing City policy. Many of the plans were created through processes of extensive citizen involvement and all have been approved by the City Council or other authoritative bodies.

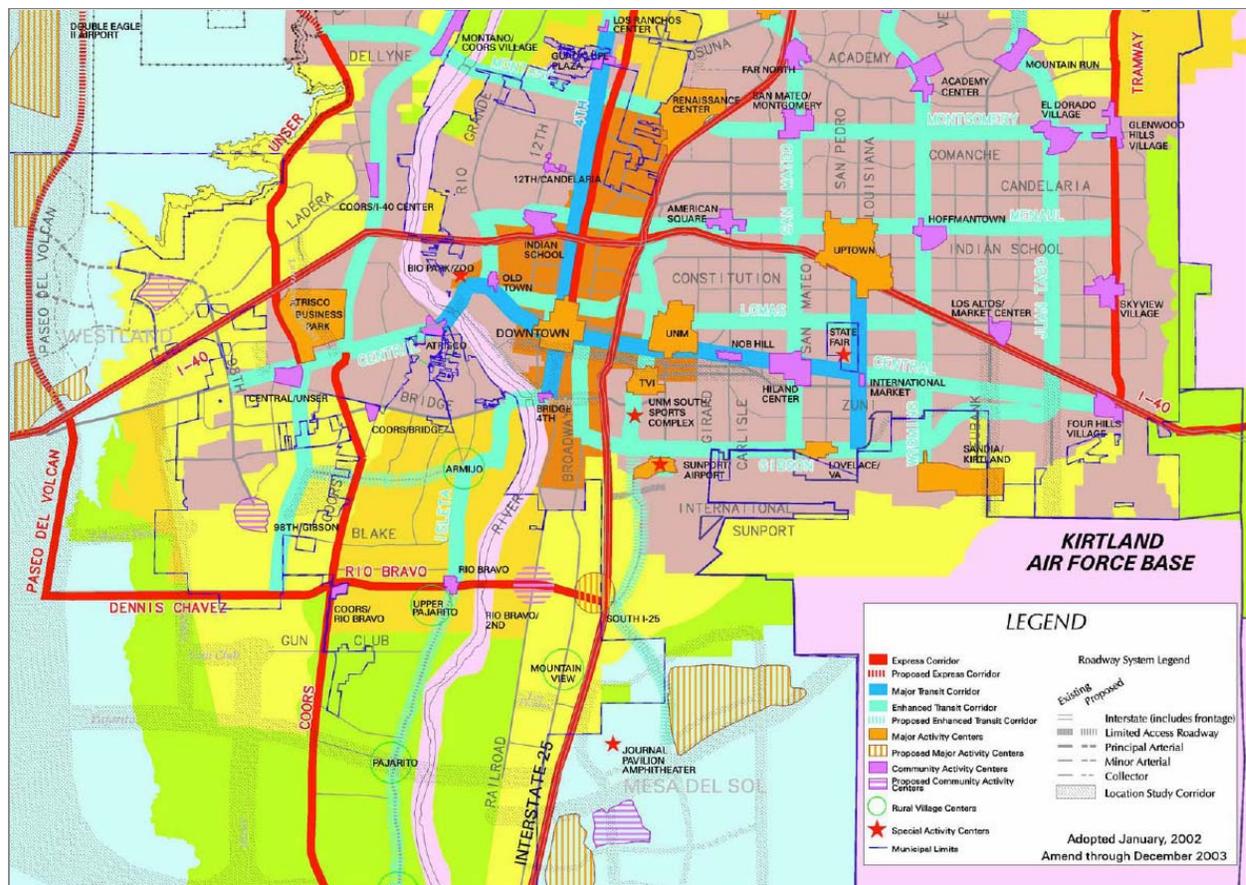
In general, existing plans strongly support both the streetcar concept, and a collection of uses adjacent to Central with the potential to maximize the land use-transportation benefits. Both large-scale and sector plans call for a vibrant “central urban area,” centered on downtown Albuquerque and other parts of the Central Corridor, which should continue to be the focus for culture, arts, and other civic activities. The *City of Albuquerque and Bernalillo County Comprehensive Plan* (last amended in 2003) calls for this central urban area to be connected to major “activity centers” of “high-density mixed land use” via three major transit corridors: Central Avenue, Fourth Street, and Louisiana Boulevard. The *Planned Growth Strategy* (2001), which along with the Comprehensive Plan forms the guiding planning policy for the City, is consistent with this vision. This strategy sets forth seven basic ideas; two of the most relevant are: “Develop first where infrastructure exists,” and

“Improve infrastructure in existing neighborhoods.” In addition, the Planned Growth Strategy identifies Downtown as one of several “priority centers” and Central as a “priority corridor.”

The following smaller-scale plans also support the streetcar concept: *Downtown 2010 Plan*, *Nob Hill Highland Sector Development Plan* (2007), *Huning Highland EDo Regulatory Plan* (2005), *UNM Campus Development Plan* (1996), and *UNM Student Housing Master Plan* (2007). The *Downtown 2010 Plan*, for example, calls for “further development of the transportation center to include light rail or fixed rail trolleys.” The Nob Hill Plan assumes “enhanced transit service along Central Avenue” and emphasizes that the street should be more oriented towards pedestrians, and feature more mixed-use development. The EDo plan proposes “a mix of uses, including housing and neighborhood services of a variety that can persuade people to return to the life and excitement of the center of the city,” and “quality transit.” The *UNM Student Housing Master Plan*, while not created by the City, also shows a focus on Central by calling for a gateway mixed-use development at Girard and Central, and anticipates demand for as many as 1,900 new resident students on the main campus by 2016.

Figure 3. City of Albuquerque and Bernalillo County Comprehensive Plan

Central Avenue (in blue) is identified as the City’s east-west Major Transit Corridor; Activity Centers shown in orange and purple.



Source: City of Albuquerque

Streetcar Peer Review

In order to evaluate the proposed Albuquerque streetcar, the project team reviewed several recently built or expanded streetcar systems. These systems serve as benchmarks against which the proposed Albuquerque Modern Streetcar can be measured. These streetcar systems can be separated into three categories:

- Modern systems: Portland, Oregon, and Seattle and Tacoma, Washington all utilize modern, European streetcars, typically operating at high frequencies.
- Replica systems: Tampa, Fla. and Little Rock, Ark. These are systems built within the last decade that use less expensive vehicles that are replicas of true vintage type trains. These systems typically have lower passenger capacity per vehicle and lower frequencies than the modern streetcars.
- Vintage systems: San Francisco, Philadelphia, Memphis, and others. Cities that have operated their vintage streetcar systems continuously or with brief interruptions during the 20th century and use actual vintage streetcars that have been upgraded for accessibility.

The first and second categories above are the most comparable to Albuquerque as all five modern and replica systems are relatively short (five miles or less), while the vintage systems feature multiple lines and much track mileage. These serve as the peer cities which are summarized in Table 1 on the following page.

Completed in 2001, the four-mile Portland Streetcar reintroduced the streetcar as a viable concept for urban transit, distinct from both light rail and bus service, and remains for most purposes the best model for modern streetcar service by meeting expectations for both transportation and redevelopment. It carries more than 8,000 passengers per day between major activity centers such as downtown Portland, Portland State University, Good Samaritan Hospital, the Pearl District, and the Northwest residential neighborhood. A 2008 study identified more than \$3.5 billion in real estate development that had taken place within three blocks of the line in the decade since the line's announcement in 1997, including 10,212 residential units and 5.4 million square feet of office, institutional, retail, and hotel space. A 2005 study shows that since 1997, "over half (55 percent) of all new development within the City's core has been constructed within one block of the streetcar line" (see Figure 4). New development within one block of the line has been built at more than 90 percent of the density allowed by the city, while development more than three blocks away has only used 45 percent of the allowed density.¹ Following Portland's example, the other modern and replica systems above were built, vintage systems have been expanded, and numerous other systems are being evaluated. However, each city's implementation reflects significant variations on goals, implementation, service standards, and other variables. Some of the general lessons of these streetcar projects follow.

Transportation and Land Use Impacts. While the most obvious benefit of transit projects is better mobility and accessibility, all five of the new streetcar lines have been implemented with the goal of redevelopment and land use change, and have delivered on that goal. With the exception of Seattle, whose streetcar only entered into operation in December 2007, all of the peer cities have seen the most intense urban development in their respective metro regions—in terms of residential,

¹ Portland Office of Transportation, *Portland Streetcar: Development Oriented Transit*, April 2008. Also see TriMet, *Eastside Transit Alternatives Analysis* (submittal to FTA), 2006, p. 3-36 - 3-52; and E.D. Hovee and Company, *Portland Streetcar Development Impacts*, 2005.

commercial, and regional civic uses—take place adjacent to or near the lines. This outcome cannot be attributed exclusively to the streetcars alone; in all cases, streetcars have been implemented along with complementary redevelopment policies which are described later. However, the national experience shows that streetcars are capable of catalyzing investment and “place making” in ways that buses are not.

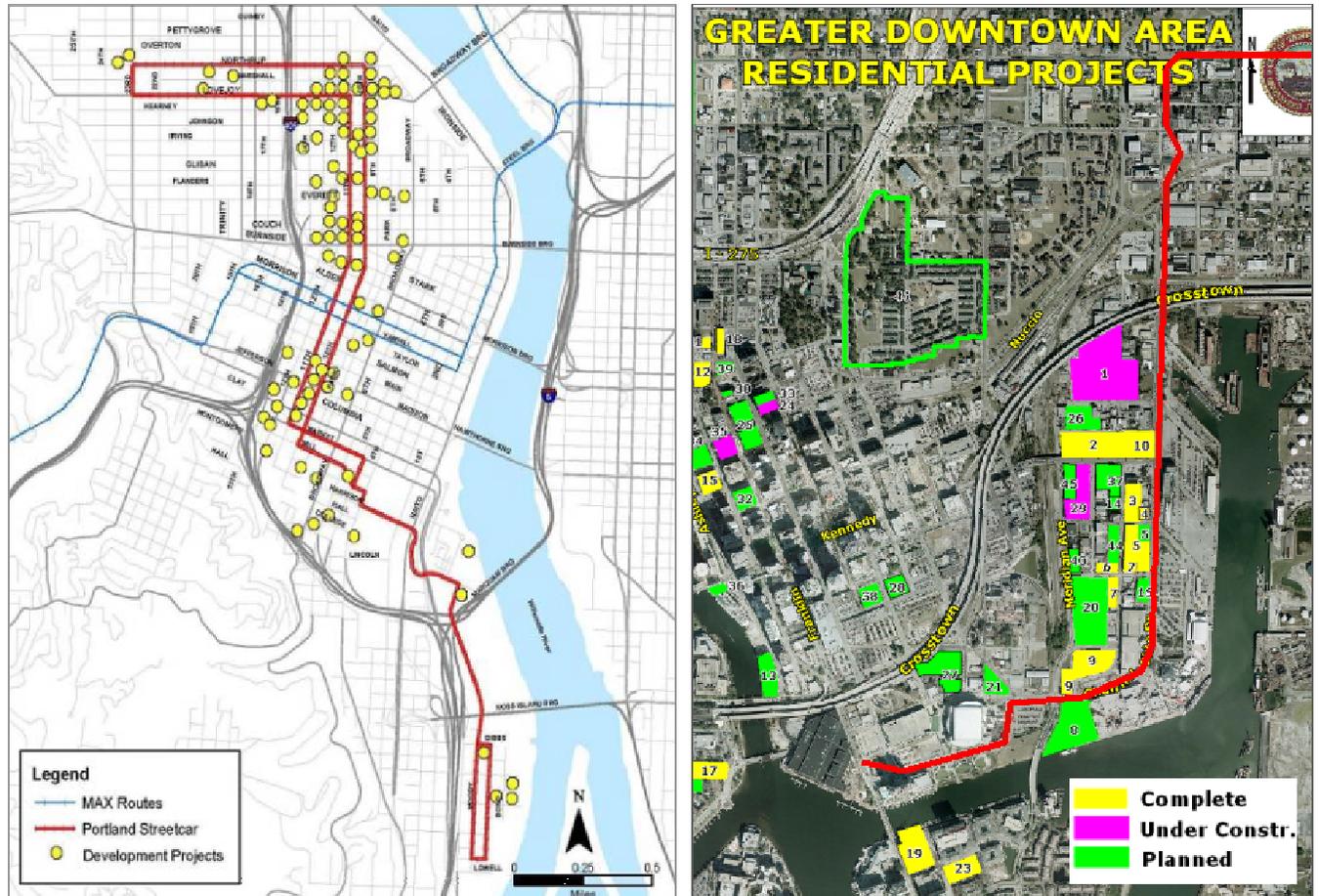
Table 1. Peer Streetcars: System Details, Operations, and Ridership

	Peer Systems				
	Tampa	Little Rock	Tacoma	Seattle	Portland
SYSTEM DETAILS					
Year Completed	2002	2004	2003	2007	2001
Vehicle Type	vintage	vintage	modern	modern	modern
Track Length (miles)	2.4	3.5	1.6	2.6	4.0
Stations	10	14	5	11	47
Streetcars	9	5	3	3	10
ROW	mixed flow	mixed flow	dedicated ROW	mixed flow	mixed flow
Routes	1	2	1	1	1
OPERATION DETAILS					
Fares	2	1	FREE	2	FREE to \$1.70
Service Hours	M-W 11a-10p Th 11a-11p F 11a-2a Sat 9a-2a Sun noon-8p	M-W 11a-10p Th-Sa 11- midnight Sun 11:00a-5p	M-F 5a-8p Sa 8a-10p Su 10a-8p	M-Th 6a-9p F-Sat 6a-11p Sun 10a-7p	M-Th 5:30a- 11:30p F 5:30a- 12:00am Sat 7:15a-11:45p Sun 7:15a- 10:30p
Total Weekly Service Hours	85	78	99	103	123
Peak Headway (minutes)	15	20	10	15	13
RIDERSHIP DETAILS					
Annual Ridership	435,000	200,020	740,000	330,000	3,476,764
Daily Ridership	1,490	685	2,925	1,300	10,001

Source: Fehr & Peers

Figure 4. Development in Central Portland and Tampa

Note the high concentration of recent development projects adjacent to the streetcar line in Portland (left), and Tampa's Channelside District (right). Additional Tampa development along the alignment falls beyond the map.



Source: Portland Streetcar, Inc., Tampa CRA.

While the land use changes in each streetcar corridor vary considerably based on the context, activity generators, general redevelopment environment, demographics, and other factors, the emphasis on a land use and transportation connection by both public and private sector advocates is consistent. Officials recently interviewed by the American Public Transportation Association (APTA) illustrate the point. According to former Tampa Planning Commissioner Michael English: “We wanted this part of town [Channelside] to be like LoDo in Denver. These kinds of higher density residential projects didn’t exist outside of downtown until the streetcar was built. We moved very quickly from renovating a few warehouses to a development boom.” Figure 4 above shows the recently built and planned development projects in the Channelside district and other parts of “greater downtown” Tampa. The majority of development, including 3,687 dwelling units built or under construction, has taken place within a quarter mile of the streetcar line. APTA offers a more nuanced assessment of Portland, Oregon: “While it was tempting to say the streetcar was responsible for leveraging all this development, that would not, of course, be entirely accurate. Rather, the streetcar was, it is said, part of a ‘perfect storm’ of planning and policy...” “The streetcar

was a device,” said Portland Streetcar Inc., CEO Rick Gustafson, “for changing attitudes and development priorities and creating the right decision-making environment.”²

One compelling example of combined land use and transportation planning is underway in Seattle, where the South Lake Union Streetcar has been operating on a 1.3-mile alignment between the lake and downtown since December 2007. The South Lake Union area is a former industrial zone being remade as a high density, mixed-use neighborhood under the branding “Rethink Urban.” Developers have lured high-tech and biotech employers and apartment and condo residents. Reflecting the impact streetcars have on new development, the streetcar is displayed prominently on developers’ web sites and marketing materials.³

The appraisals by APTA are consistent with LCG’s research and interviews with development professionals in Albuquerque and other cities, which suggest that, all other factors being equal, developers of urban communities will seek to locate their residential and commercial projects near a streetcar line when possible, because their customers in turn prefer these environments.

Figure 5. South Lake Union Web Site



Source: www.discoverslu.com

Conditions for Success. The dramatic redevelopment successes achieved by the peer cities did not necessarily come easily—even with their streetcar lines. In fact, in each of these cities, a number of other conditions for success were in place *along with the streetcar* that made dramatic land use change possible. These conditions for success include public and private actions, as well as broad demographic and economic circumstances somewhat beyond the control of each city. These conditions, and recommended actions to capitalize on their impact, are discussed at the end of this report.

Again, the Portland streetcar offers a number of valuable examples. *Leadership* played a role throughout, as elected and private-sector leaders defined a vision and plans for downtown and several other critical adjacent neighborhoods including the Pearl District. This led to a series of

² APTA and the Community Streetcar Coalition, *Street Smart: Streetcars and Cities in the Twenty-First Century*, p. 50.

³ Discover South Lake Union website: <http://www.discoverslu.com/>; accessed March 2008.

public private partnerships that were defined through development agreements and other documents that outlined the responsibilities required of the various partners. For example, developers would be required to meet certain minimum densities and affordable housing targets, while the City was required, among other commitments, to build roads, sidewalks and parks, demolish an off-ramp, and build the streetcar. Public *finance*— especially tax increment financing (TIF or TIDD in New Mexico), local improvement districts, and other tools—was critical to giving the City the funding muscle to make these improvements. High standards were maintained throughout the planning and implementation for a *multi-modal transportation system* and *urban design*. Portland's close-knit network of *destinations and events*, such as employment and recreation centers, and residential neighborhoods, were important as well. Unlike the actions described above, Portland's *demographics and economic conditions* are somewhat beyond the control of public or private sector leaders—Portland could not mandate that its regional growth rate be rapid at between one and two percent annually. However, a strong economy and a growing population in which a share of residents and employers prefer urban housing and jobs are key to successful revitalization. One lesson from Portland is that cities aspiring to a central area revitalization should be prepared to enact a broad range of measures—not just a streetcar—in order to reach their goals.⁴

Figure 6. Conditions for Success



Source: Leland Consulting Group

Funding Implications. Streetcar funding models will be covered in more detail later in this report, however, a review of the peer systems funding plans suggests some important lessons. First, because streetcars tend to be smaller scale relative to light rail systems both in terms of distance and cost, funding sources tend to be more locally based. For example, while the Federal Transit Administration (FTA) has provided a 50-50 or greater match for many regional light rail systems around the country, none of the streetcar peer cities received significant federal funding. This local nature of sources has driven a creative approach to funding.

⁴ Twete, Cheryl, Portland Development Commission powerpoint presentation, July 2007, and Portland Office of Transportation, "Portland Streetcar: Development Oriented Transit," April 2008.

Second, many cities have relied on private sector or development-related funding sources such as special assessment or local improvement districts, tax increment financing, parking districts, developer impact fees, and joint development. For example, Seattle's local improvement district generated \$24.8 million, or greater than half of the line's capital costs, and Portland's parking district generated \$28.6 million, also about half of the first phase costs.

Third, although the principles above are relatively consistent throughout the peer systems, the diversity and creativity of strategies can also be said to be a lesson: each city has assembled a unique set of funding sources to get their system rolling. This contrasts with FTA-funded projects, which traditionally are very competitive, time consuming, and unpredictable—but also more formulaic.

Benefits

The benefits that could be expected from the Albuquerque Modern Streetcar are discussed below in three categories: land use, transportation, and other benefits. Land use and transportation impacts are evaluated in the greatest depth in this report. Other benefits—including the streetcar’s potential impacts on growth management, sustainability, and city finance—are summarized briefly.

Land Use Benefits

As the review of peer lines across the country shows, streetcars have the potential to shape and guide redevelopment in urban areas by spurring adjacent higher density residential, commercial, and institutional development. This catalytic role of the streetcar is the “land use benefit” that the City of Albuquerque and most of the other streetcar cities have hoped for.

A number of planning efforts, including the *Planned Growth Strategy* and others reviewed above, have established that ongoing revitalization of the downtown and other parts of central Albuquerque are highly desirable. City leaders and residents hope that this area will continue to be the historical, educational, and cultural center of the City, while also attracting a greater share of residential and employment growth that can reduce the pressure for the region to expand outwards.

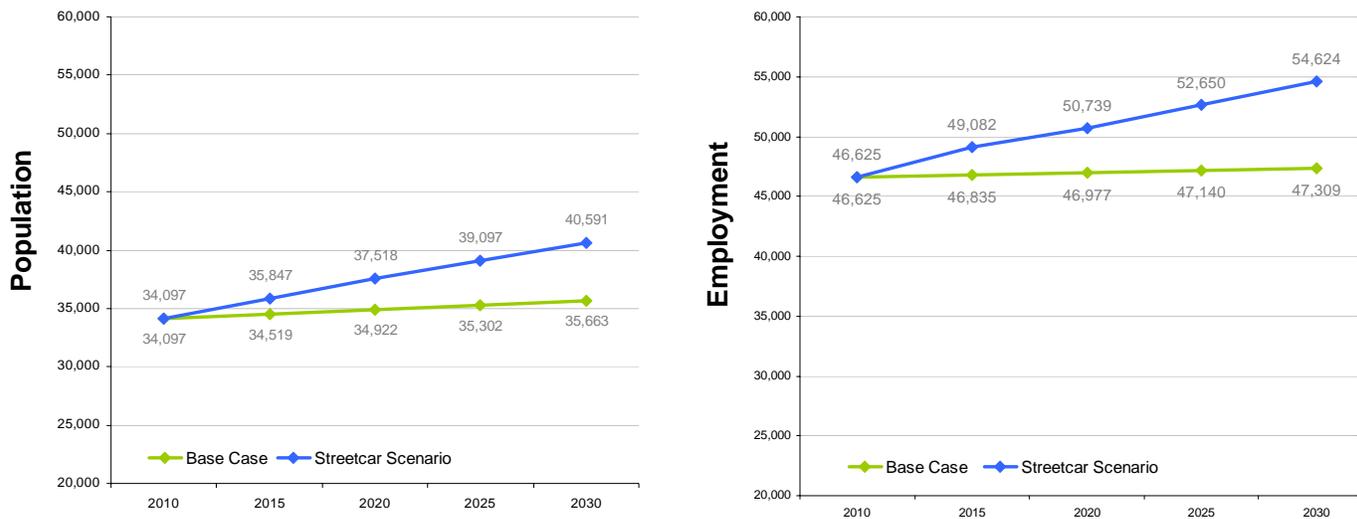
Methodology. As discussed earlier, while streetcars, urban development and revitalization go hand in hand, there are usually many factors in play and it is difficult to isolate and precisely quantify the impact of a streetcar line on new development. In other words, while national case studies show that a streetcar line implemented *along with* complementary downtown revitalization policies spurs redevelopment, there is insufficient evidence to claim that a streetcar implemented *alone* will spur redevelopment. Thus, the methodology of this analysis assumes that the streetcar is implemented along with a number of urban revitalization tools, some of which are already in place in Albuquerque while others would need to be added.

To estimate the development impact of the streetcar, the project team developed a land use model, the Streetcar Scenario, which assumes the construction of the streetcar in conjunction with a number of other public actions that will promote growth in the corridor. The outcomes of this scenario are based on population, employment, and demographic trends observed in Albuquerque; redevelopment in the streetcar peer cities; and redevelopment in other cities nationwide that have pursued successful downtown revitalization strategies.

The Streetcar Scenario was compared to a “Base Case” scenario, which follows the population and employment projections made by MRCOG in its most recent regional forecast for each of the seven market areas (Figure 1) in the Central Corridor (*2030 Socioeconomic Forecasts for the MRCOG Region*, MRCOG, 2007).⁵

These two development scenarios were projected for the years 2010 to 2030, as shown in Figure 7. As would be expected, the Streetcar Scenario projects considerably greater population and employment growth in the corridor. An explanation of the rationale that informed the Streetcar Scenario is below.

⁵ Note that, in order to update the MRCOG forecasts from the original base year, 2004, to the Streetcar Evaluation base year, 2010, residential Base Case projections were adjusted slightly upward to reflect the higher actual residential growth seen after the report’s publication.

Figure 7. Population and Employment Growth in the Central Corridor, 2010 – 2030

Source: Leland Consulting Group, MRCOG

The Central Avenue Corridor in 2010. Most Albuquerqueans are familiar with today's Central Avenue and its adjacent uses. As defined here, the Corridor includes an approximately one-half mile area on either side of Central Avenue, extending from just to the east of San Mateo Boulevard, to just west of Atrisco Boulevard. In 2010, the Corridor is expected to contain approximately 34,097 residents and a total of 46,625 service and retail employees.⁶ Put another way, the Corridor contains 4.1 percent of the regional population, 18.9 percent of its service employment, and 9.2 percent of its retail employment. Both the residential and employment environments vary considerably. Residential neighborhoods run the gamut from traditional single-family areas such as Reynolds Addition, to most the region's most popular emerging higher-density urban neighborhoods, including downtown, EDO, UNM, and Nob Hill. Similarly, employment in the Corridor ranges from standalone shops and strip malls to downtown's high-rise towers. Six of the region's ten largest employers have a major presence in the Corridor, including UNM, Presbyterian Hospital, the City of Albuquerque, State of New Mexico, Lovelace Hospital, and UNM Hospital. These employers anchor the Corridor today and will help drive the job outlook there in the future.

Local and National Demographics. Socioeconomic measures, both in the Albuquerque region and nationally, are important indicators of the Central Avenue Corridor's growth potential. At the regional level, the Albuquerque metro area population is expected to continue to grow at rate of about 1.3 percent per year through 2030, with the fastest growth taking place before 2020.⁷ This ongoing population growth, a combination of internal population growth and in-migration to New Mexico and the Southwest, will introduce about 252,000 new residents to the region between 2010 and 2030. These new residents, along with the current population, indicate that demand for new

⁶ MRCOG's definition of "service employment" includes the following: government, education, health, arts, recreation, financial, insurance, real estate, administration, management, professional/technical employment and other services. There are also approximately 3,100 manufacturing, agriculture, and other employees in MRCOG's "basic employment" category, but because these types of employment are expected to grow relatively little in the Corridor itself they are not analyzed here.

⁷ MRCOG, *2030 Socioeconomic Forecasts by Data Analysis Subzones for the MRCOG Region, Methodology and Forecast Summary*, July 2007.

housing will be strong throughout the region, and that there will be a large pool of potential new residents in Central Avenue Corridor.

Of course, population and potential for growth are only one part of the equation—demographics and consumer preferences are another. Nationally, data indicate that homebuyers and renters are increasingly drawn to “urban” living, including anything from townhomes and small-lot single family homes to high rise apartments and condos. This is due to a number of factors, including an increasing interest in the vitality and activity associated with city living; a rise in one- and two- person households; couples waiting longer to have children; and “empty nest” baby boomers looking for opportunities to downsize and simplify their lifestyles. This demographic surge has fueled the urban living boom during the last two decades in almost every large American downtown, as well as pushed developers to create a new generation of denser suburban communities like Mesa del Sol. For example, leading Western downtowns in cities such as San Diego, Denver, Portland, and Seattle grew between 1.5 and 5.3 percent annually in the 1990s, and all grew significantly faster than their respective cities and regions; that growth is expected to continue and accelerate.⁸ Each of these cities has made major transit and public realm investments in their downtowns and central cities. A compilation of major consumer preference studies for housing showed that approximately 38 percent of American households would choose to live in a higher-density townhouse, apartment, or condo within easy walking distance of goods and services.⁹ These studies indicate that about 100,000 of the 252,000 new residents expected in Albuquerque between 2010 - 2030 would prefer a denser, urban neighborhood like those found along the Central Avenue corridor.

In addition, a number of demographic measures that typically demonstrate the depth of the urban housing market are quite similar to other cities where close-in housing has boomed, and suggest that Albuquerque may be poised to build on and accelerate the infill it has already seen in downtown, EDO, Nob Hill, and other areas. Table 2 shows that Albuquerqueans’ income, education, household sizes, and current housing types are similar to other cities. This similarity in demographics lends confidence to the assumption that the type of urban development assumed in this analysis is achievable in Albuquerque.

⁸ Brookings Institution, *Who Lives Downtown*, 2005, and other studies; and Metropolitan Institute at Virginia Tech, Leland Consulting Group email correspondence, 2008.

⁹ Nelson, Arthur C., *Sustaining the Next 100 Million*, presentation and report, 2008.

Table 2. Demographic Attributes of Albuquerque and Comparison Cities

Attribute	City			
	Albuquerque	Denver	Portland	Tampa
Population				
2007 Total Population	503,375	578,062	551,302	337,828
2007 Households	211,870	248,070	234,726	139,984
Income				
Median Household Income, 2007	\$49,750	\$52,548	\$52,206	\$43,959
Households Incomes > \$50,000	58%	62%	61%	52%
Education				
Population with Bachelor's or Advanced Degree	32%	35%	33%	25%
Household Size				
1 and 2 Person Households	64%	70%	68%	65%
Average Household Size	2.33	2.28	2.29	2.34
Housing Type, 2000				
Detached Single Family	58%	48%	60%	58%
Large Multifamily (>20 units)	13%	23%	15%	13%

Source: ESRI Business Analyst, Leland Consulting Group

Another confirmation of the depth and direction of housing opportunities in the Central Avenue Corridor is an extensive survey on housing and general preferences of the central city commissioned by the Downtown Action Team in 2005. The results of this study are similar to the national studies mentioned earlier. For example, the survey showed that approximately 34 and 26 percent of the 600 Albuquerqueans surveyed were either interested or somewhat interested in living in a townhouse or loft in a 2 to 4 story building, respectively. Thirty-three percent of homeowners would rather walk than drive to shops and restaurants, and 49 percent of renters would rather walk to work.¹⁰ These findings are consistent with results from around the country and show that although most Americans will continue to live in single-use suburban areas, much of the *net growth* in housing in the early 21st century will be in urban and mixed-use suburban areas.¹¹

Commercial and Institutional (Employment) Development. Based on development patterns observed in the peer cities and elsewhere, the streetcar can also be expected to help catalyze “commercial and institutional” (also referred to as “employment”) development—new buildings that contain office, retail, hotel, educational, medical, public sector, tourism-related, and other employment space. LCG used MRCOG’s broad service and retail employment categories to define existing employment patterns and forecast growth for the Streetcar Scenario. If the streetcar were implemented along with other favorable central area policies, Albuquerque could see as much as two million square feet of employment development added to the more than 11 million square feet of employment-related area estimated to be in the corridor today.

¹⁰ Albuquerque Downtown Action Team, *Albuquerque Downtown Perception Study*, 2005.

¹¹ Nelson, Arthur C., *ibid.*

While the strength of commercial and institutional redevelopment in central Albuquerque in recent decades has been very inconsistent, several trends suggest that substantial growth potential exists. First, according to UNM's Bureau of Business and Economic Research (BBER), four employment sectors will grow between two and three percent annually and will drive the metropolitan and state economies: health care, professional services, information, and education. Just behind these growth sectors are government and tourism employment.¹² All six sectors are concentrated in the Central Corridor, with prime examples including UNM, Presbyterian and other hospitals, city and county offices, and downtown finance and law firms. And even though much office space has followed residential development to the suburbs during the past half-century, most American downtowns—including sprawling regions such as Dallas, Houston, and Atlanta—contain between 20 and 30 percent of their region's office space in the downtown. Albuquerque's downtown currently fits this model, and the Streetcar Scenario projects that downtown will maintain its share of the regional office market. Finally, the same urban infill trends projected to shape housing choices are expected to influence employment decisions. More and more, business location is being driven not only by land, rent, and tax costs, but also by the quality and variety of the surrounding context, which is critical to attracting workers. Compounding this trend are ever increasing gas prices, which drive employers to locate in places that are central to where most of their workers live. Confirming these trends, the Urban Land Institute recommends that investors "Focus on urban infill and suburban nodes, catering to businesses and employees 'moving back in for greater convenience.'"¹³

Retail tends to follow residential and other commercial development—it goes to where the people are. Thus, as residents and jobs continue to return to the Corridor, retail should as well. Recent positive signs include the Century Theaters, trendy nightlife downtown, and the announcement that Urban Outfitters will locate in the consistently popular Nob Hill area.

Built evidence. In addition to analyzing local and national demographic trends, LCG surveyed residential and commercial projects recently built and planned for the Central Corridor and interviewed developers and other members of the planning and development community. During the five-year period between 2004 and 2009, more than 600 residential units will have been added to the corridor. Some of the most successful are middle-market projects with broad appeal, such as the 180-unit Lofts at Albuquerque High which opened in 2006 (pictured in Figure 8 below), and the Silver Street Lofts, just west of downtown. Developers are now planning more ambitious projects, including the nine-story Anasazi in downtown, whose owners have also floated a proposal for a 30-story tower nearby. All the developers interviewed felt that, as long as they are able to offer reasonably priced residential units, the market for urban housing will continue to be strong. Furthermore, they stated that the streetcar would add another asset to the area which would make centrally-located living more appealing to potential residents. One real estate professional stated that, "We've talked repeatedly about the light rail. There are people who don't want a car to get between the hospital, downtown, UNM, and Santa Fe."

¹² Waldman, Dr. Lawrence A., *The New Mexico Economy: Recent Developments and Outlook*, Bureau of Business & Economic Research, presentation, January 2008.

¹³ Urban Land Institute and PriceWaterhouseCoopers, *Emerging Trends in Real Estate*, 2008.

Figure 8. The Lofts at Albuquerque High

Source: Albuquerque Downtown Action Team

Redevelopment Capacity. While this report projects significant demand for residential, commercial and institutional redevelopment in the Central Corridor, it is likely that demand will exceed capacity over the long term in some parts of the corridor. This is due to the level of development already in the corridor, fragmented land ownership, and current zoning and height limits. If the current zoning remained as-is throughout the study period until 2030, the Streetcar Scenario would result in approximately 1,600 fewer dwelling units and 100,000 less square feet of commercial and institutional development. In other words, there may be long-term constraint on residential development, but less constraint on commercial and institutional development.

In order to qualify redevelopment capacity, LCG used the “improvement ratio” of parcels to estimate their capacity for redevelopment, shown in Figure 9 below. This ratio is the value of built improvements on a site as a percentage of total (improvements plus land) property value. A largely-vacant parcel would have a low improvement ratio, while a high rise office building would have a high improvement ratio.

Figure 10 below illustrates the interaction of residential redevelopment demand and capacity. In some of the “hot” redevelopment areas—particularly EDO, UNM, Nob Hill, and San Mateo—the demand for infill residential is likely to be considerably higher than the number of dwelling units that can fit on the developable parcels

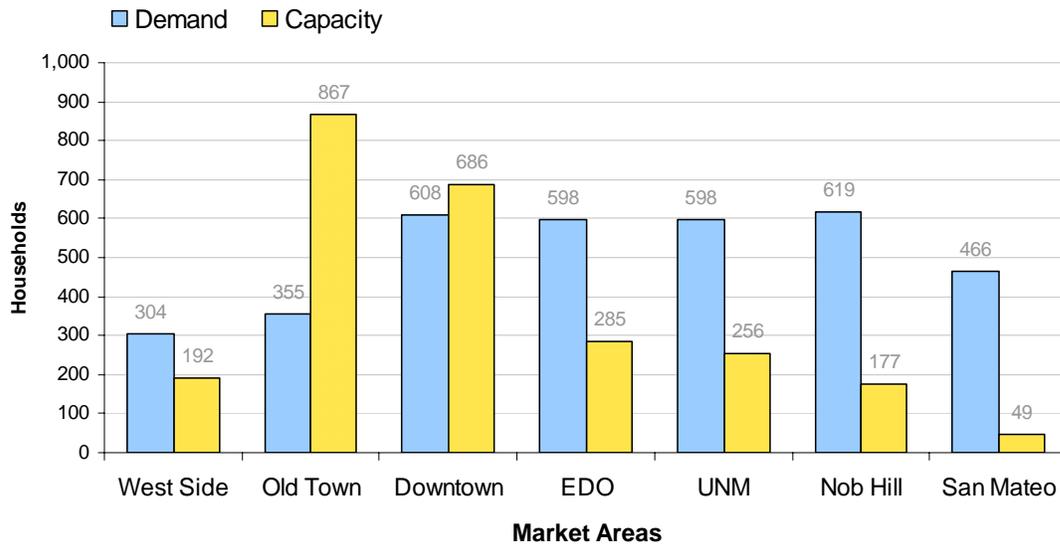
Figure 9. Redevelopment Capacity in Downtown, EDO, and the UNM Market Areas

Parcels in red, orange, and yellow are most likely to redevelop; hatched parcels indicate tax-exempt ownership.



Source: Leland Consulting Group, Bernalillo County Assessors Office.

Figure 10. Long Term Residential Demand and Current Capacity by Market Area



Source: Leland Consulting Group

Current zoning regulations are also a constraint on development. Existing zoning preserves the density of single-family neighborhoods near Central Avenue. Only the relatively limited number of parcels that actually front onto Central or other main streets are allowed to increase to three, four, or sometimes five stories. While in many cases this represents a dramatic increase in development scale from one-story retail, other cities experiencing high demand for central city living permit buildings that are five, 10, or even 20 stories. Therefore, in order to maximize the leverage of a public transit investment along Central Avenue, the City may need to revisit zoning and height allowances in selected areas.

However, several factors will limit the severity of capacity constraint in the corridor. First, commercially zoned land could be rezoned to allow residential or mixed-use development, which would considerably increase capacity for housing without allowing a greater amount of total development. Second, the constraint is long-term: most or all will probably not become acute until 2020 or later, at when developers begin to have more difficulty locating viable sites for redevelopment. By that time, attitudes about what land uses are appropriate in the corridor may be different. Finally, this analysis does not take into account the development capacity of tax-exempt or publicly-held land, because its potential cannot be easily quantified using property value data.¹⁴ Thus there is an indefinite amount of acreage held by public agencies, UNM, Presbyterian, and other tax-exempt owners that could accommodate additional residents and employees.

Comparison of the Two Scenarios. Compared to the Base Case, the Streetcar Scenario projects approximately four times as much residential development (3,549 compared to 856 new dwelling units), more than ten times as much commercial and institutional development (1.95 million square feet compared to 188,000 square feet of new development), and more than five times as much total development value generated in the corridor during the 2010 – 2030 study period. Again, as seen in other cities, streetcars are an important component to achieving this level of new investment.

Table 3. Growth Potential in the Central Corridor, 2010 - 2030

Scenario	Growth Demand, 2010 - 2030			
	Population	Households	Commercial Area (sf)	Development Value (\$M)
1. Base Case	1,566	856	188,603	\$192
2. Streetcar Scenario	6,495	3,549	1,947,567	\$1,059
Ratio (1) to (2)	4.1	4.1	10.3	5.5

Source: Leland Consulting Group, MRCOG

The following assumptions were used to develop the Streetcar Scenario between 2010 and 2030:

- **Residential Development:** The corridor's population will grow more slowly than the region, but at about the same rate as Bernalillo County (0.9 percent annually). This is also conservative compared to the growth of popular Western U.S. central cities and downtowns in the 1990s and 2000s, which have typically grown faster than their respective regions.

¹⁴ The value of built improvements on tax-exempt land is not consistently recorded, which makes the improvement ratios measured for exempt land highly unreliable.

- **Service Employment:** The corridor will capture 8.0 percent of the region's new service employment, a considerably smaller share than the 18.9 percent of the region's service employees who currently work in the corridor. This capture rate is consistent with the projected high growth sectors of the regional and state economies and the amount of office and service employment contained in other American downtowns and central cities.
- **Retail Employment:** In general, the location of retail employment and development follow residents and employees; retail is also attracted to tourism. Thus, the corridor is expected to essentially maintain the corridor's current share of regional retail employment, 9.2 percent. This will mean the addition of about 2,000 retail employees and 500,000 square feet of retail development (about the equivalent of two ABQ uptowns).¹⁵

¹⁵ In addition, the following assumptions were used throughout the development of both land-use scenarios: the average size of new households is 1.83 persons (source: ESRI Business Analyst), the average dwelling unit is 1,000 square feet including common areas, and the average value of new development is \$175 and \$225 per square foot for residential and employment development, respectively.

Transportation Benefits

The second primary benefit of the streetcar evaluated by the project team was its transportation impacts, measured largely through the projected daily and annual ridership of the line. Of course, enabling greater mobility and accessibility, as measured by ridership, is an important success indicator for any transit project.

The goals of the transportation analysis were to provide an overview of the alignment, in the local context and compared to peer systems, review the ridership projections made by HDR, and estimate ridership for the full alignment and alignment sections in future years.¹⁶

Alignment Overview

Destinations. As stated elsewhere, the Central Avenue alignment is characterized by a strong set of major destinations, arguably superior to those connected by any of the peer systems. The full Albuquerque line would connect the City's downtown, and centers for educational, medical, tourist, convention and transit uses. No other system connects all those uses. For example, the Tampa streetcar does not extend to the city's downtown and only serves a small branch university campus. Portland's line misses its convention center and only skirts the city's downtown. Albuquerque's strong set of destinations suggests that its ridership potential is high.

Current transit. The alignment is currently served by ABQ Ride's 766 Rapid Ride and Route 66 bus lines, which carry more than 10,000 riders per day combined. As envisioned by the Comprehensive Plan, Central Avenue is the City and region's most-used transit corridor. The Rapid Ride line is a higher-speed commuter bus line with stops spaced approximately every half mile. The 66 likely serves those making shorter trips—its stops are spaced at least every quarter mile, and thus the line moves at a slower average speed. The operations scenarios discussed below assume that the 66 line would either operate fewer hours or would be discontinued within the streetcar alignment altogether, as there would be no operational advantages to running three types of transit in the corridor, and in fact, the three modes could cause greater congestion for each other and motorists. This is a logical step in the evolution of transit in Albuquerque. As rail transit represents a higher service level over buses, it is appropriate to locate it in the area with the highest bus ridership. This would allow for ABQ Ride to deploy resources from the Route 66 to other areas in the City where improved bus service is needed.

¹⁶ Additional details about ridership, operating scenarios, and operating costs can be found in the appendices and in HDR's memos "Re: Albuquerque Streetcar Ridership Forecasting – Alternatives Analysis" and "Re: Evaluation of Operations Options" from September 2006.

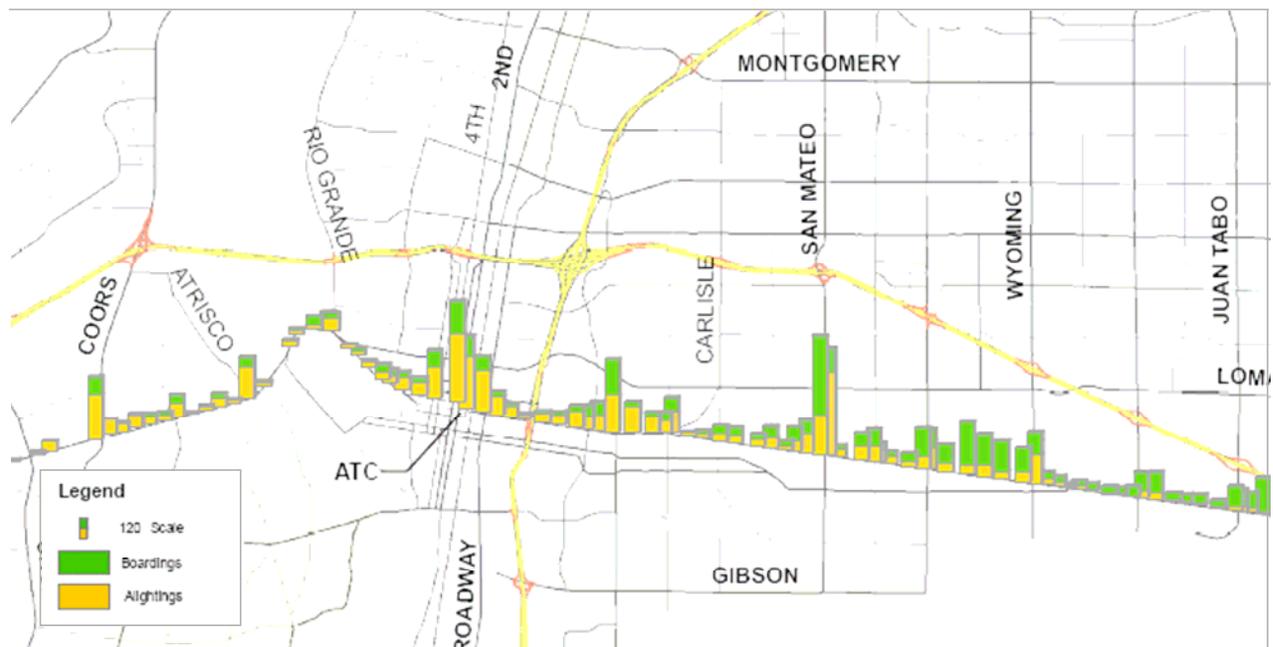
Key Transit Destinations. Using ABQ Ride data, the project team analyzed both lines 66 and 766 boarding and alighting (exiting) data to assess the characteristics of ridership in the corridor. While also indicative of potential total ridership, this analysis was first undertaken to understand ridership behavior and how that would synchronize with the proposed Modern Streetcar alignment. The analysis showed that a large share, 75 percent, of the boardings and alightings for the 66 take place within the full streetcar alignment, meaning that most of the transit ridership in the corridor takes place entirely within the area to be served by the streetcar.

As shown below in Figure 11, ABQ Ride's data also clearly shows the location of three bus stop locations that see by far the highest levels of boardings and alightings within the corridor (and likely the region): Downtown/Alvarado Transportation Center (ATC), UNM, and San Mateo Boulevard. While Figure 11 shows only Route 66 westbound activity, the high activity at these stops is relatively consistent on both lines and in both directions. While downtown and the UNM were expected to be popular destinations, the magnitude of activity at San Mateo is less obvious, and is likely due to a combination of transfers from the 140 bus line and employees and shoppers heading to and from a number of nearby retail and employment destinations.

While the three peak stops are clear, the 66 also shows relatively high levels of boarding and alighting throughout the line, representing a diverse set of trips and on- and off-points. This type of behavior is consistent with the streetcar's intended role as a circulator.

Finally, the ridership data show that while certain recreational and cultural centers—the Rio Grande and Old Town, for example—are definitely “major destinations,” residents and tourists are not using transit to reach them in high numbers.

Figure 11. Route 66 Bus, Westbound Boardings and Alightings



Source: Fehr & Peers, ABQ Ride.

Note: Data is for westbound trips in the AM and PM peak hour periods, gathered in 2006.

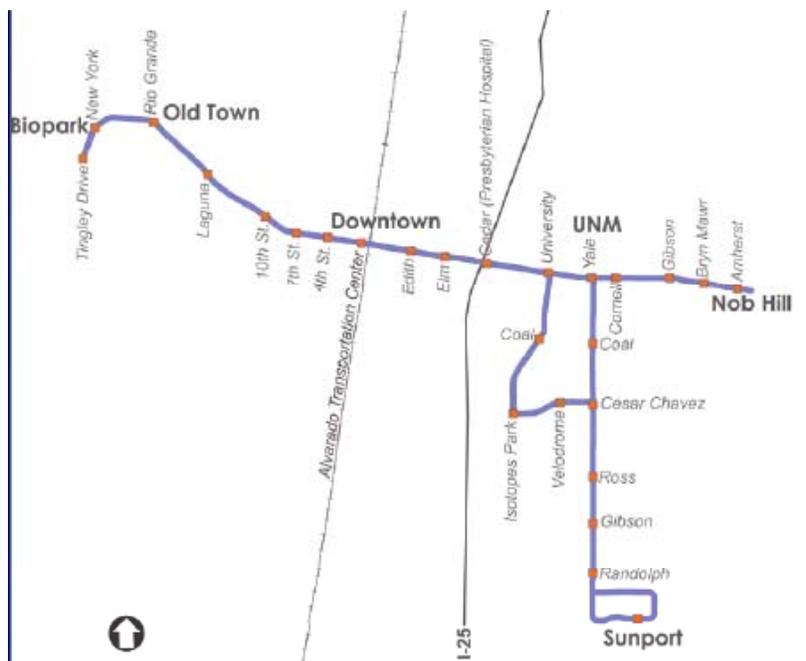
Review of HDR Ridership Estimates

The project team conducted a review of HDR's ridership estimates, which were completed assuming an approximately eight-mile, two-line streetcar network, serving both the Central Avenue Corridor and Sunport Corridor, as shown in Figure 12 below.

HDR created ridership estimates based on a number of operational characteristics (frequency, route) and fare structures (fares ranging between free and \$2.00). For the recommended route and most likely fare structure (\$1.00), total ridership for the two alignments was projected at 7,100 per average weekday in the projected opening year of 2009, and increasing to 10,700 in the year 2025. These projections do not include any boardings generated by stadium events or Sunport passengers. HDR estimates that the streetcar would travel at between 12.5 and 14 miles per hour in most operating scenarios, including dwell time at stations and stop time at intersections and in traffic. At 12.5 miles per hour, the travel time from Atrisco to San Mateo would be 30 minutes, and the travel time from San Mateo to Fourth St. downtown would be 18 minutes (travel times for alignment sections A, B, and C would be 12.0, 10.6, and 7.7 minutes, respectively). Due to posted speed limits, the streetcar's maximum operating speeds would be 25 miles per hour in the central business district and 35 miles per hour in most other areas outside downtown.

Along the Central alignment, the HDR estimates are based on reasonable expectations about ridership demand based on residential and employment projections. There were some anomalies in the land use projections for the Sunport line, but those are not addressed here as this analysis is focused on the Central Avenue alignment. However, since the current analysis studied a Central Avenue alignment that extends further east and west of the line analyzed by HDR, the consultant team prepared a new ridership estimate in order to benchmark expected ridership along the revised alignment.

Figure 12. HDR Proposed Basic Route Map



Source: HDR

Supplemental Ridership Analysis and Methodology

The preliminary HDR ridership analysis suggests the opening year ridership range could be 5,000 to 7,000 riders on a typical weekday. The range is based on fare structure elasticities, alignment alternatives, and varying operation plans. This ridership level is most closely related to the Portland Streetcar system, however specific details about the ridership were incomplete as HDR was put on hold pending the outcome of this cost benefit analysis. In an effort to provide a more detailed basis of this cost and benefits, Fehr & Peers worked from the HDR preliminary ridership analysis to understand the potential ridership composition.

Methodology. The supplemental ridership analysis completed by Fehr & Peers provides additional detail to understand where potential ridership may be transferred from existing bus service as well as sources of new ridership. Two data sources were used to complete the supplemental ridership analysis. There are other sources and methods that could be used to forecast ridership, but too little research exists to support their inclusion in the model. Therefore, the supplemental ridership forecast prepared by Fehr & Peers is conservative, based on the most reliable data available, and in keeping with national best practices in forecasting streetcar ridership. The two data sources are listed below.

1. The first source is year 2007 Boarding and alighting data from the Route 66 bus line grown at seven percent until 2010, a considerably lower growth rate than recently experienced by ABQ Ride (see below). This data provides a basis to evaluate the captive transit riders that are likely to use a streetcar system if it replaced the Route 66. Based on detailed boarding and alighting data provided by ABQ Ride, it appears reasonable that about 75 percent of riders would shift to the streetcar if Route 66 service between Atrisco and San Mateo was discontinued, since this is the proportionate share of the 66 that rides within the proposed streetcar corridor. This 75 percent represents 6,000 of the 66's projected total of 8,000 weekday riders towards the end of 2010. Of this shift it appears that 20 percent would be in the Atrisco to Fourth Street section, 50 percent would be in the Fourth to Girard section, and 30 percent would be in the Girard to San Mateo section. During the early phases of the system this shift would represent a large part of the streetcar's ridership. However, beyond 2011 the ridership will likely grow as a result of second factor listed below. It is also important to note that bus to streetcar ridership transfers are not uncommon in metropolitan areas building rail networks from bus systems (for example, Denver's Fastracks Program and the Seattle Streetcar).
2. The second source is new ridership from residential and commercial redevelopment adjacent to the streetcar corridor. The basis of this work is recently published travel survey data from residents and employees living or working near the Portland streetcar system in redeveloped projects.¹⁷ The data provides guidance on potential ridership induction that could result from redeveloping near a streetcar system if all other multimodal factors are present (paid parking, bus service, pedestrian connections, bicycle network, etc.). This data was applied to the Albuquerque streetcar corridor redevelopment forecast to understand potential ridership that may result from redevelopment. It is also important to note that this method assumes that most of this new ridership is not anticipated to start using the system until after 2015. Credit for redevelopment projects that are likely to be completed between 2008 and 2010 along the streetcar corridor are not included in the calculation.

¹⁷ <http://www.cts.pdx.edu/seminars.htm>

Other factors that are likely to influence ridership on the Albuquerque streetcar system are listed below, but were not quantified in the supplemental ridership analysis prepared by Fehr & Peers. In all cases, there is reason to believe that each of the factors listed below could increase ridership—but not enough peer-reviewed, reliable data upon which to base a specific projection is available.

- **Rail Ridership Premium.** One factor not included in the ridership estimates is a streetcar “ridership premium”—the increase in ridership one would expect from attracting riders who do not ride buses today, but would be inclined to ride rail transit due to its higher quality service and comfort. While most transportation professionals believe that such a premium exists, the reported quantitative impact on ridership varies widely and is difficult to project based on experience elsewhere. Transit riders tend to prefer rail transit because it is usually quieter, smoother, more comfortable, offers more light and larger windows, more attractive, and travels on better-defined routes. For example, when the bus line carrying less than 500 daily riders through downtown Tacoma was replaced with a streetcar line, ridership jumped to 2,400. When Minneapolis built its Hiawatha light rail line, ridership was 65 percent higher than predicted, and 40 percent of riders were new to transit—they had not been bus riders before. However, not all new rail lines beat expectations so dramatically.¹⁸
- **Tourism.** New ridership resulting from tourists traveling between lodging and entertainment destinations was not included in the estimate, because the induction rates and travel survey from tourists are not well documented in this specific application. However, providing a more frequent connection between major lodging destinations in the downtown to Old Town Plaza and Nob Hill could have an additional positive contribution to ridership.
- **Transfers from ABQ Ride and Rail Runner.** The Route 66 is the only ABQ Ride route in the supplemental ridership analysis that was assumed to be discontinued. All other ABQ Ride routes were assumed to remain in place, and some would allow passengers to make connections to the streetcar. It may also be possible to reroute Route 66 buses to provide a streetcar link to outlying east and west side neighborhoods that currently do not have ABQ Ride service. Both factors could have a positive contribution to the streetcar ridership beyond the supplemental ridership analysis proposed by Fehr & Peers. Similarly, potential new transfers from the Rail Runner system were not considered in the supplemental ridership analysis proposed by Fehr & Peers. As ridership continues to grow on the Rail Runner, transfers to the ABQ Ride system are likely to increase.
- **Significant system ridership increases.** System wide ridership on ABQ Ride has been growing at 20 percent annually over the last few years. In contrast, between 2011 and 2030, the streetcar’s projected annual ridership increase due to new development is much lower—between 3 and 5 percent. Thus, this ridership analysis is conservative, given the historic higher growth rate of ridership in the Central Corridor, and economic factors such as high fuel prices that are resulting in more transit usage

As shown in Table 4 below, the project team estimates that a full Central Alignment could expect approximately 6,400 boardings per day, or 1.83 million annually during the first year of service in 2011. By 2030, due to the new development anticipated in the corridor, ridership could be expected to approximately double, to 12,000 boardings per day or 3.5 million per year. Alignment Section B is

¹⁸ Littman, Todd. *Rail Transit in America: A Comprehensive Evaluation of Benefits, Report Summary*, p. 35. Victoria Transport Policy Institute, 2004.

expected to carry nearly half of the total ridership, with Section C carrying nearly one-third, and Section A carrying the least of the three sections, just more than one-fifth.

Table 4. Ridership Estimates by Alignment Segment

	Alignment				
	A	B	C	B & C	Full
2011 - Opening Year					
Av. Weekday	1,277	3,189	1,898	5,087	6,364
Annual	366,759	916,161	545,354	1,461,515	1,828,275
2030					
Av. Weekday	2,499	6,218	3,485	9,703	12,202
Annual	717,945	1,786,453	1,001,233	2,787,687	3,505,632

Source: Fehr & Peers. Figures are based on the high service level operating scenario.

The data displayed in Table 4 is based on a high service level operating scenario, with 10-minute headways during weekdays from 7:00 a.m. to 6:00 p.m., and 15 to 20 minute headways during all other times on both weekdays and weekends. Unless otherwise noted, all figures cited in this report are based on the high service level scenario. Two other operating scenarios assuming less frequent service were also developed.¹⁹

National Comparison. The Albuquerque Modern Streetcar compares favorably to the peer system ridership figures shown in Table 6 on page 31. Nationally, only Portland's streetcar, with 10,000 riders per weekday, moves more people than projected for Albuquerque. The Tacoma streetcar's daily ridership is 2,500, Tampa's is 1,500, and the Seattle and Little Rock lines carry slightly fewer.

Other Benefits

Although the project team was primarily asked to evaluate the streetcar's potential transportation and land use impacts, the rail line has the potential to introduce a number of other benefits. While these are not quantified in this report, the community and decision makers should take them into account when considering transit investments. These "secondary" benefits include environmental sustainability (by decreasing particulates, carbon dioxide, and other emissions), health (facilitating neighborhoods in which residents can walk and use other active modes of transportation), fiscal (reducing regional infrastructure costs by pursuing compact development), growth management (reduces sprawl, preserves agricultural land and open space), affordability (reduces household transportation costs), and safety (reduces accidents involving automobiles and pedestrians).

Numerous studies have shown that public transit has a positive impact in these areas, but to the relatively recent resurgence of streetcars, few studies quantify the impact of the streetcar per se. For example, the study *Rail Transit in America: A Comprehensive Evaluation of Benefits* found that, on average, cities that have extensive rail transit systems have fewer traffic fatalities, lower per

¹⁹ The medium (moderate) operations scenario assumes the streetcar operates at 10-minute headways during the weekday peak periods only (7:00 – 9:00 a.m. and 4:00 – 6:00 p.m.) and 15 to 20 minute headways at all other times. The conservative assumes the streetcar operates at 20-minute headways at all times.

capita transportation expenditures, lower per capita vehicle mileage, lower transit operating costs, and a population that tends to drive less as a percentage of all trips.²⁰

Figure 13. Primary and Secondary Benefits of Transit

Primary Impacts
Transportation
Increases accessibility and mobility
Increases transportation options
Increases mobility for transit dependent: children, elderly, disabled, and others
Reduces auto congestion for drivers and other travelers
Land Use and Economic Development
Spurs residential and commercial land development
Facilitates place-making
Increases city and regional desirability
Marketing and branding impacts on subject corridor
Secondary Benefits
Tourism and Regional Identity
Fiscal
Reduction in regional infrastructure costs
Growth Management
Contains sprawling development
Preserves agricultural land and open space
Environment and Sustainability
Impacts on vehicle miles traveled
Impacts on carbon emissions
Impacts on particulates and local pollutants
Impacts on paved areas and impervious surfaces
Affordability
Reduces household transportation costs
Safety
Reduction in injuries and fatalities from auto accidents
Health
Facilitates walking and bicycling, and the development of walkable neighborhoods
National Security
Reduces dependence on foreign oil

Source: Leland Consulting Group, Victoria Transport Policy Institute.

²⁰ Littman, Todd. *Rail Transit in America: A Comprehensive Evaluation of Benefits, Report Summary*, p. 14. Victoria Transport Policy Institute, 2004.

Costs: Capital and Operations

Capital Costs. Based on a review of the capital costs incurred during the construction of other recent streetcar lines, HDR's estimate of \$28.0 million per average double-track mile is considered reasonable and appropriate. This figure includes track construction, power, systems, intersection changes, signal installation and changes, stations, vehicles, one maintenance facility (\$13 million), construction management, construction soft costs, a construction contingency (28 percent or \$5.3 million per mile), and a project reserve (\$2 million per mile). It is important to note that HDR's average capital cost per mile figure accounts for varying construction costs along the Central Avenue line. In particular this figure accounts for areas near downtown that will require highly specialized engineering, special traffic control, and custom structures. Sections that will require less engineering detail have a lower cost per mile, but those segments would also be subject to system-wide costs such as the maintenance facility. For reference, Portland's streetcar cost \$25 million per mile (in 2001) while Seattle's short line cost \$20 million per mile (2007). Tacoma spent \$51 million per mile, though that city's system was constructed in a dedicated lane and to "light rail standards" to allow heavier light rail trains to run on it in the future.

At the estimated cost per mile, the entire 6.3-mile alignment from Atrisco to San Mateo could be expected to cost approximately \$176.4 million. Note that HDR's work examined a number of potential alignment scenarios, some of which included a single track rail couplet on Central and Copper or other streets. Additional engineering and costing work would need to be completed in order to arrive at final estimates for those alternatives, although the total track length would not change considerably.

Operations Costs. Based on a review of nationwide streetcar operating costs and prior calculations, HDR's operations estimates are considered reasonable and appropriate. The project team estimated operations costs for three different operating "service level" scenarios: high, medium, and low. The high service level scenario, which would offer 10-minute headways between 7am and 6pm on weekdays, would cost \$4.5 million annually for the full alignment. The medium scenario assumes 10 minute headways during the weekday a.m. and p.m. peak hours and 15-20 minute headways at all other times. The low service level scenario assumes that the streetcar operates on 20 minute headways at all times.

These estimates are based on an operating cost of \$130 per streetcar revenue hour, inflated at 3 percent annually through 2030. This cost is based on the National Transit Database (NTD) record of active streetcar systems in North America and is consistent with the cost data used in HDR's September 12, 2006 "O&M Cost Assumptions Memorandum". The operating cost methodology follows NTD standard reporting procedures (NTD Final Rule 49 CRF Part 630) and account for "all the direct costs of the labor, capital, and material resources used exclusively in the production of the delivery of the service." This includes all forms of track maintenance, labor costs, and incidental cost of operating the system.

The operations costs for the Albuquerque streetcar are in line with those of peer systems. However, the systems vary in terms of design and operations plans, which in turn affect operations costs. For example, Portland's four-mile line contains 15 more stations than anticipated along the 3.8-mile B and C alignment in Albuquerque which increases the time needed to complete route. The additional route time requires six additional vehicles to service, and creates higher labor, power, and

maintenance costs needed to operate those vehicles. This is one of the reasons why Portland's current system has comparable length and operations plans the Albuquerque's downtown to San Mateo alignment, but a higher operating cost.

Cost-Benefit Summary

In order to better evaluate the costs and benefits of the streetcar, the project team created the matrices below. The “full alignment” (Atrisco to San Mateo) was analyzed in the three alignment sections described above. Each section was then compared on the basis of benefits and cost-benefit measures.

Two different measures of cost per passenger were used. The first, operations cost per passenger, is the FTA’s primary operational efficiency metric and is simply the annual operations cost divided by the annual ridership (in this case, for the opening year, 2011). This metric can be easily compared to other transit systems around the country. The second, capital cost per passenger, is simply the total capital cost of the line divided by the first-year ridership. This metric is useful because it can be easily calculated for other streetcar lines.

Alignment Section Comparison. Alignment Section B is rated higher than the others in terms of projected initial ridership, residential and employment redevelopment, investment leverage, and major destinations served. It also has the lowest operations and capital costs per rider, largely a result of the high level of ridership expected in that segment. Section C is rated second in each of these categories. Finally, Section A rates the lowest in each of these categories.

Investment leverage is a metric used to measure the cost-effectiveness of public investments. A typical threshold for good leverage is 4 or 5 to 1. In such a project, the private sector invests 4 or 5 dollars for every 1 public dollar spent. Alignment Sections B and C, and the Full Alignment, easily meet this leverage ratio.

National Peer Comparison. As Table 6 shows, the Albuquerque Modern Streetcar compares very favorably to the other streetcar systems. By both cost per passenger metrics, it performs better than all other lines with the exception of Portland. For example, Albuquerque’s operations cost per passenger on the Recommended Alignment in 2011 is projected to be \$2.13, while Tampa, Little Rock, and Tacoma spend \$5.52, \$4.25, and \$5.32 respectively. The Albuquerque streetcar is less efficient on a dollars-per-passenger basis than Portland, but ridership there has had seven years to mature—from about 4,900 weekday riders in 2001, to 10,000 this year. In terms of the redevelopment metrics, Albuquerque is expected to perform well, similar to Little Rock, but not as well as Tampa or Portland, where the magnitude of redevelopment has far exceeded expectations. However, the leverage ratios for Albuquerque, as well as Tampa, Little Rock, and Portland, are all above the 4 or 5:1 threshold.

Table 5. Streetcar Cost-Benefit Matrix

	Albuquerque Alignment Section				
	A Atrisco to Fourth	B Fourth to Girard	C Girard to San Mateo	B & C Fourth to San Mateo	Full Atrisco to San Mateo
Length (miles)	2.5	2.2	1.6	3.8	6.3
Cost (\$ Millions)					
Capital	\$70.0	\$61.6	\$44.8	\$106.4	\$176.4
Capital Cost Per Mile	\$28.0	\$28.0	\$28.0	\$28.0	\$28.0
Operations (2011)	\$2.2	\$1.3	\$1.3	\$3.1	\$4.4
Benefits					
Average Weekday Ridership	1,277	3,189	1,898	5,087	6,364
Annual Ridership ¹	366,759	916,161	545,354	1,461,515	1,828,275
Residential Growth (dwelling units)	659	1,805	1,085	2,890	3,549
Employment Development (sf)	435,262	1,022,438	489,868	1,512,306	1,947,567
Total Redevelopment Value (\$ M)	\$213.3	\$545.9	\$300.1	\$846.0	\$1,059.3
Cost-Benefit Metrics					
Operations Cost Per Passenger ²	\$6.00	\$1.41	\$2.37	\$2.13	\$2.41
Capital Cost Per Passenger ³	\$191	\$67	\$82	\$73	\$96
Net New Residential Units Per Mile	264	820	678	761	563
Employment Redev. Per Mile (sf)	174,105	464,744	306,168	397,975	309,138
Investment Leverage ⁴	3.0	8.9	6.7	8.0	6.0
Destinations					
Tingley Beach/Rio Grande	✓	-	-	-	✓
Bio Park	✓	-	-	-	✓
Old Town	✓	-	-	-	✓
Downtown	✓	✓	-	✓	✓
ATC	-	✓	-	✓	✓
Presbyterian Hospital	-	✓	-	✓	✓
UNM	-	✓	-	✓	✓
Nob Hill	-	✓	✓	✓	✓
San Mateo	-	-	✓	✓	✓

Source: Leland Consulting Group, Fehr & Peers. 1. Ridership shown for Albuquerque is for opening year 2011; ridership for other lines is for the most recent year for which data is available. 2. Opening year operations cost divided by opening year ridership. 3. Capital cost for alignment section divided by opening year ridership. 4. Investment value divided by streetcar capital cost. "sf": square feet. Note: Ridership, cost, and operations shown for A, B, C, B&C, and Full Alignment represent individual segments as forecasted in opening year 2011. B & C alignment assumes an operating plan with more vehicles and thus is greater than the sum of B and C. See Appendices for details.

Table 6. Streetcar Peer Systems Review

	Peer Systems				
	Tampa	Little Rock	Tacoma	Seattle	Portland
Length (miles)	2.4	3.5	1.6	2.6	4.0
Cost (\$ Millions)					
Capital	\$53.0	\$27.2	\$81.0	\$52.1	\$100.0
Capital Cost Per Mile	\$22.1	\$7.8	\$50.6	\$20.0	\$25.0
Operations (2010)	\$2.4	\$0.9	\$3.9	\$2.0	\$4.8
Benefits					
Average Weekday Ridership	1,490	685	2,925	1,300	10,001
Annual Ridership ¹	435,000	200,020	740,000	330,000	3,476,764
Residential Growth (dwelling units)	3,687	-	-	-	10,212
Employment Development (sf)	-	-	-	-	5,400,000
Total Redevelopment Value (\$ M)	\$1,000.0	\$200.0	-	-	\$3,500.0
Cost-Benefit Metrics					
Operations Cost Per Passenger ²	\$5.52	\$4.25	\$5.32	\$6.06	\$1.38
Capital Cost Per Passenger ³	\$122	\$135	\$109	\$158	\$29
Net New Residential Units Per Mile	1,536	-	-	-	2,553
Employment Redev. Per Mile (sf)	-	-	-	-	857,143
Investment Leverage ⁴	18.9	7.4	-	-	35.0

Source: Leland Consulting Group, Fehr & Peers, American Public Transit Association, Transportation Research Board, National Transit Database, Reconnecting America, Seattle Streetcar Network and Feasibility Analysis. Additional information obtained from transit agencies, municipalities, and organizations via phone in December 2007 by Fehr & Peers.

Funding

This section contains recommendations about how to fund the capital and operating costs of the Albuquerque Modern Streetcar. It begins with a review of principles that should guide the selection of appropriate funding mechanisms. This is followed by a summary of specific potential funding packages that would meet the funding requirements for the proposed alignment alternatives. The section concludes with detailed descriptions of the main funding sources that the streetcar is expected to use.

Funding Principles

While funding for transit systems such as buses and light rail are relatively similar from city to city, particularly as it pertains to Federal Transit Administration (FTA) sources, the experience from cities that have built streetcars is that there is no common model for funding modern streetcar systems in America today. While the similarities in specific funding packages from city to city are few, there are key similarities in the guiding principles behind each city's funding mix that provide lessons for Albuquerque in assembling an appropriate mix of funding sources.

1. **Identify two to four primary funding sources:** While having a range of funding tools is the best strategy, between two and four of those sources should significantly fund a majority of the capital costs (75 percent or more). Once a majority of the project has been funded, backfill the remaining costs with smaller funding tools.
2. **Achieve a balance of sources that reflects the variety of users and beneficiaries:** The funding strategy should seek to balance funding sources from a variety of levels (local, regional, state, federal) as well as from both public and private sectors, which will allow for greater leverage on any given source. A combination of funding sources mitigates the risk that any one should be unavailable and jeopardize the project.
3. **Partner with the private sector:** Since the streetcar will be a powerful development tool, partner with developers, landowners, and institutions to maximize the potential for these groups. Only then will they be willing to contribute in proportion to the potential benefits.
4. **Expect any funding plan to be a work in progress:** Some of the sources listed below are contingent on grant awards and other approvals (MTP, CIP, state funding, and others), while other sources will require additional analysis to confirm their revenue generation capacity (particularly TIDD). Thus, while the basic makeup of each funding plan should remain consistent, some shifting will occur.

Streetcar Funding Packages

Figure 14 below shows three different funding packages, based on three different potential alignments: Section B only, Sections B and C, and the Full Alignment. The packages are a reflection of the principles listed above. The primary funding sources are the Quarter Cent Transportation Infrastructure Tax and Tax Increment Development District (TIDD, the mechanics of both sources are described below). Since its initial approval in 2000, the Quarter Cent tax has been used to fund a wide variety of transportation improvements. A TIDD, on the other hand, is a development-related public finance tool: As redevelopment in the corridor increases, the revenue potential of the TIDD increases. Thus, it is a good match for the streetcar and other projects that help to spur redevelopment.

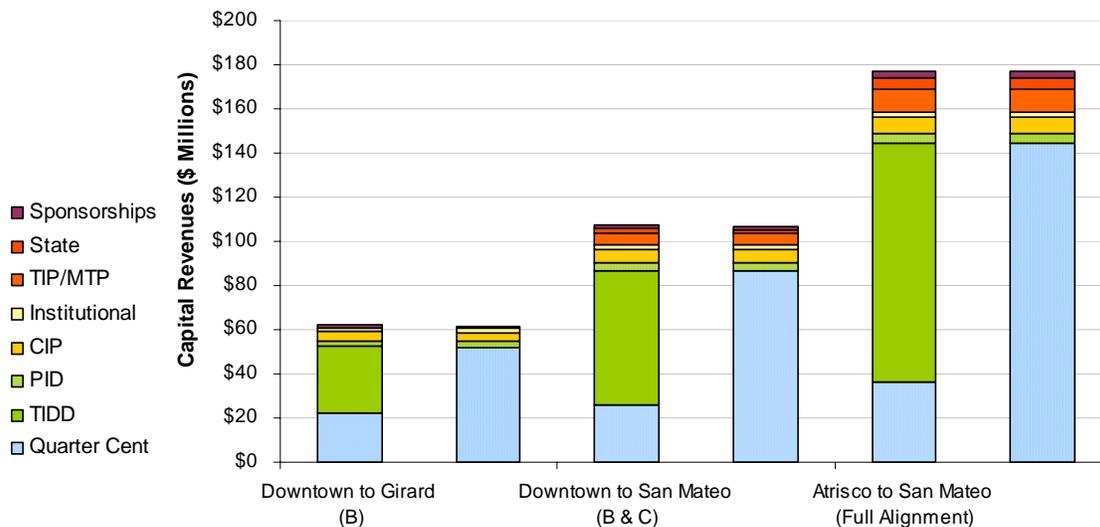
Table 7 shows the precise allocations expected from each funding source, as well as the share of both the Quarter Cent tax and TIDD expected to be directed towards the streetcar for each package. For example, the recommended funding package for Alignment Sections B and C assumes that 18 percent of Quarter Cent revenues generated between 2011 and 2020 would go towards the streetcar if combined with a TIDD; the remaining 82 percent would be available to fund other road, transit, or pedestrian-serving projects.

The other sources of funding come from other entities that frequently fund transportation projects or will benefit from the streetcar. These include a Public Improvement District (PID); the City's Capital Implementation Plan (CIP); Institutional Contributions, likely from UNM, Presbyterian Hospital, and possibly from other large organizations located adjacent to the line; Metropolitan Transportation Plan (MTP / TIP); Public Improvement District (PID); State sources; and sponsorships.

All the packages assume that the majority of operations costs of the various alignments (85 percent) will be paid through Quarter Cent tax revenues, in part because the 2006 Quarter Cent renewal proposal was structured in that way.²¹ Both capital and operations costs are included in the percent share displayed for the Quarter Cent. For example, for the Alignment Sections B and C with TIDD funding alternative, approximately seven percent of total Quarter Cent tax receipts would go towards capital and seven percent would go towards operations, for a total of 14 percent. 86 percent of Quarter Cent revenues would be available for other projects.

Note that TIDD and PID district areas have been scaled to fit each alignment section. For example, the TIDD proposed for Alignment Section B covers downtown, EDO, and the UNM area, but not Nob Hill, Old Town, or other areas.

²¹ The remaining 15 percent of operations costs is expected to be covered by boarding fares.

Figure 14. Streetcar Funding Packages**Table 7. Streetcar Funding Packages**

	Alignment					
	Downtown to Girard (B)		Downtown to San Mateo (B & C)		Atrisco to San Mateo (Full Alignment)	
	With TIDD	No TIDD	With TIDD	No TIDD	With TIDD	No TIDD
Cost (\$ Million)						
Capital	\$61.6	\$61.6	\$106.4	\$106.4	\$176.4	\$176.4
Operations (2011)	\$1.3	\$1.3	\$3.1	\$3.1	\$4.4	\$4.4
Percent of Funding Source Allocated to Streetcar						
Quarter Cent						
To Capital	6%	15%	7%	24%	10%	40%
To Operations	3%	3%	7%	7%	10%	10%
Total	9%	18%	14%	31%	21%	51%
TIDD	9%	0%	14%	0%	21%	0%
Capital Funding Sources						
Quarter Cent	\$22.4	\$52.2	\$25.6	\$86.6	\$36.6	\$144.2
TIDD	\$30.2	-	\$61.2	-	\$107.7	-
PID	\$2.5	\$2.5	\$3.8	\$3.8	\$4.6	\$4.6
Institutional	\$2.0	\$2.0	\$2.0	\$2.0	\$2.5	\$2.5
CIP	\$4.0	\$4.0	\$6.0	\$6.0	\$7.5	\$7.5
TIP/MTP	-	-	\$5.0	\$5.0	\$10.0	\$10.0
State	-	-	\$2.0	\$2.0	\$5.0	\$5.0
Sponsorships	\$1.0	\$1.0	\$1.5	\$1.5	\$3.0	\$3.0
Total	\$62.0	\$61.6	\$107.1	\$106.9	\$176.8	\$176.8
Operations Funding Sources						
Quarter Cent	\$1.1	\$1.1	\$2.6	\$2.7	\$4.1	\$4.0
Farebox	\$0.2	\$0.2	\$0.5	\$0.5	\$0.7	\$0.7
Total	\$1.3	\$1.3	\$3.1	\$3.1	\$4.7	\$4.7

Source, Figure and Table: Leland Consulting Group

Note: Some numbers may not sum correctly due to rounding. 2011 operations funding sources in excess of opening year operations costs are set aside in an operations fund to pay for future years' operations costs.

Individual Funding Source Descriptions

As part of the Streetcar Evaluation, the project team conducted in-depth analysis of two major funding sources, as well as a basic analysis of a number of other sources.

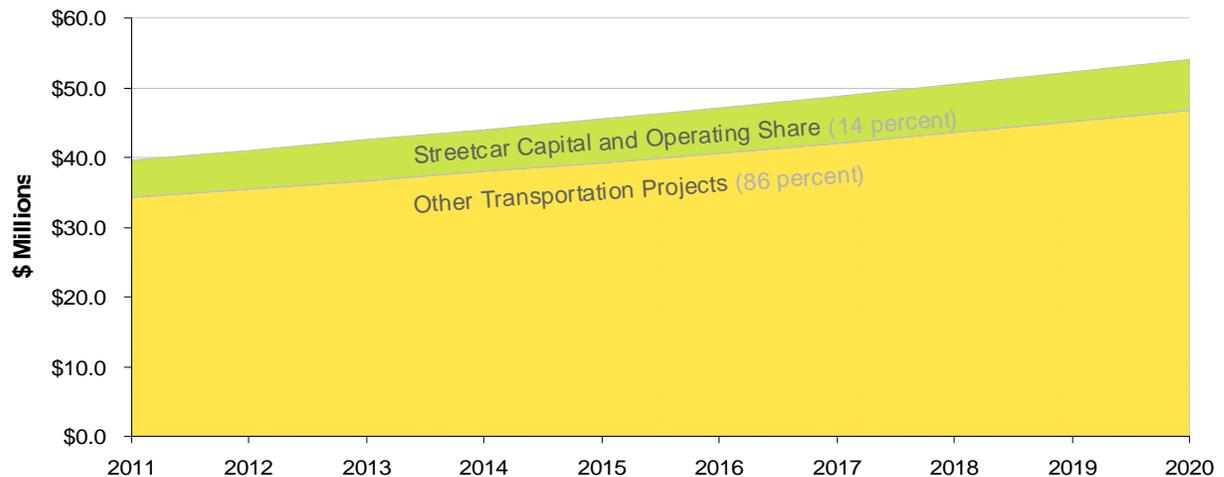
Quarter Cent Transportation Infrastructure Tax

Description. The Quarter Cent tax is a local option GRT tax that, since its first approval in 2000, has been assessed on applicable businesses operating within the City of Albuquerque. Between 2000 and 2009, the tax is projected to generate about \$279 million, and has been used to rehabilitate 1,880 miles of streets, increase ABQ Ride service hours by 38 percent, and add 14 miles to the trail and bikeway network, among other transportation programs.

In 2006, a proposal to extend the tax to 2020 was presented to City Council, but ultimately not approved. LCG was asked to examine the potential of the Quarter Cent and alternate ways of structuring the fund allocations. The 2006 proposal recommended that 40 percent of the funds generated be directed towards streetcar capital and operating costs, while the remaining 60 percent would go towards a mix of other programs, including street maintenance, deficiencies, and rehabilitation, transit (ABQ Ride), and trails. All scenarios described here assume that the Quarter Cent would be renewed for a ten year period between 2011 and 2020.

Revenue Potential. The City projects that Quarter Cent tax receipts would begin at \$39.7 million per year in 2011, escalate at approximately 3.5 percent annually, and thus generate about \$54 million per year at the end of the period in 2020. Figure 15 shows how Quarter Cent revenues would be allocated based on the B and C Alignment Funding Package shown above.

Figure 15. Quarter Cent Allocations for Recommended Alignment



Source Leland Consulting Group, City of Albuquerque

Tax Increment Development District (TIDD)

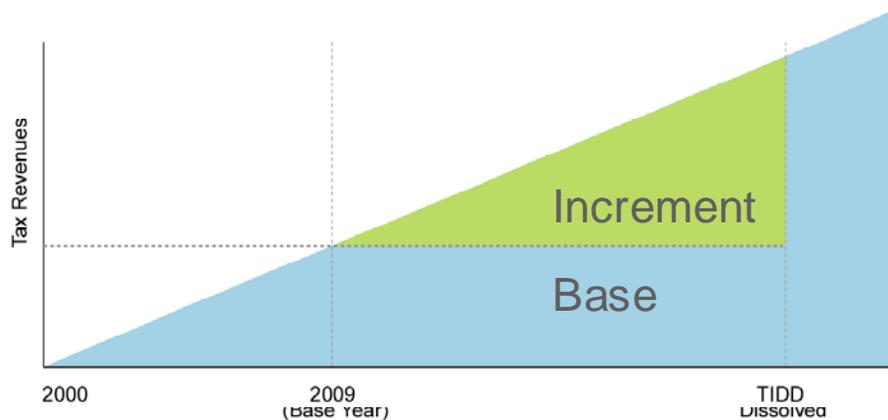
Description. In 2006, the New Mexico Legislature passed the Tax Increment for Development Act, which enabled TIDDs. A TIDD district is an area, usually defined by a city or county, that captures 75 percent of the increase in gross receipts and property taxes (the “increment”) generated within its

boundaries above the amount collected in the year of formation (the “base”). The increment can then be bonded to create up-front capital funds. Thus, TIDDs allow a city to borrow against future tax revenues in order to build infrastructure today. The rationale is that without the infrastructure investment early-on, revitalization and related tax growth would take place at a much lower rate or not at all. By setting a base and directing only 75 percent of the increment towards the TIDD, the City and State continue to receive an annually increasing revenue stream during the life of the TIDD. At the end of the TIDD, tax revenues return to their normal distribution to the various taxing districts. Figure 16 below shows the basic TIDD model.

Currently, only two TIDDs have been proposed in the state, both in new suburban developments in the Albuquerque region: Mesa Del Sol (approved) and SunCal (still awaiting approval).

Although TIDDs are somewhat similar to New Mexico’s Tax Increment Financing (TIF) areas, TIDDs are expected to typically cover larger areas, capture gross receipts taxes in addition to property taxes, and are subject to a vote of property owners and residents located in the district.

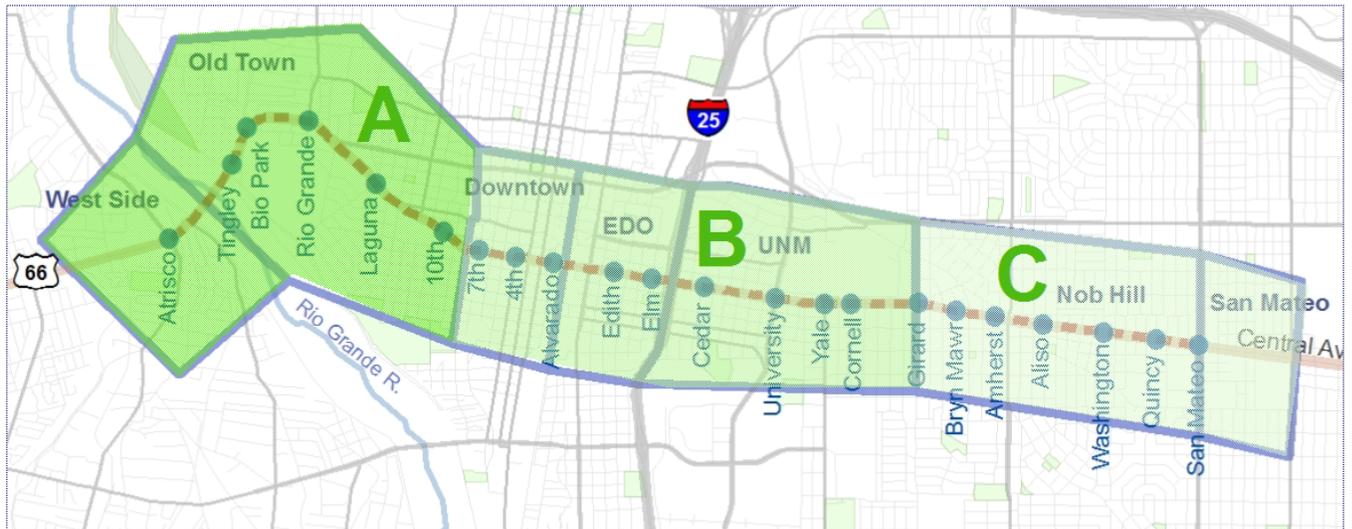
Figure 16. How TIDD Works: Conceptual Model



Revenue Potential. LCG estimated a range of revenue scenarios. Two of the greatest uncertainties are whether or not the State of New Mexico will participate in the district and what amount of business activity and redevelopment occur in the corridor. LCG created three different TIDD areas, shown below, to approximate the districts that might be designated by the City along with a streetcar implementation and funding plan.

The revenue potential of each district, assuming either a 10 or 20-year bonding period and strong growth based on the Streetcar Scenario, is shown in Table 8. Unless otherwise noted, a 20 year TIDD timeframe is used in this report. If the State participates and the Streetcar Scenario is assumed, a TIDD including the entire Central Corridor could generate as much as \$512.7 million; without State participation, this amount is likely to be closer to \$216 million. Only a portion of this revenue would be expected to go towards the streetcar (as shown in Table 7), with the majority likely funding a variety of other revitalization and infrastructure projects.

Figure 17. Tax Increment Development District Areas



Source: Leland Consulting Group

Table 8. TIDD Funding Potential by Alignment Section and State Participation

TIDD Variables		Alignment Section					Full
		A	B	C	B & C		
10 Year Bond	With State GRT	\$19.7	\$114.3	\$34.8	\$149.1	\$168.7	
	Without State GRT	\$8.3	\$48.0	\$14.6	\$62.6	\$70.9	
20 Year Bond	With State GRT	\$69.1	\$331.4	\$112.1	\$443.5	\$512.7	
	Without State GRT	\$29.1	\$139.6	\$47.2	\$186.9	\$216.0	

Source: Leland Consulting Group.

The fiscal impact off a Central Avenue TIDD to the City could potentially be very positive if the State participates in the district. This is because of the potential to capture within the district the State’s 3.8 percent GRT, which normally goes directly to the state treasury. In the full alignment 20-year TIDD scenario, the district would allow the City to capture several hundred million dollars that would ordinarily be sent directly to the State. The funding packages on 27 assume that State participation in the TIDD.

Additional Notes. TIDD has been identified as a good funding match for the streetcar for several reasons. First, as shown above, TIDD is a powerful revenue generator, one of the most important tools in the municipal financing toolkit. For example, the Mesa Del Sol TIDD is expected to generate \$394 million for a wide range of infrastructure projects. Second, no TIDDs currently exist in Albuquerque’s central urban area—exactly the type of area for which the TIDD legislation was passed. The TIDD legislation directs that districts should be formed in order to encourage (among other goals): job creation, historical area redevelopment, mixed-use transit oriented development, and meeting long range planning goals.²² The streetcar is in many ways a classic urban renewal project: it will serve as a catalyst to spur real estate redevelopment that generates the TIDD

²² New Mexico Legislature. “Tax Increment Development Act,” HRTC/HB 462, 2006, page 19.

increment. Finally, a TIDD would generate considerable revenue for the City to spend on other urban revitalization projects, enabling it to lay the groundwork and complete the complementary projects that will maximize the development impact and leverage from a streetcar.

There are several keys to success and related uncertainties for a Central Avenue TIDD district. First, a TIDD district should fund a range of projects such as street improvements, public spaces, infrastructure, and other projects, in addition to the streetcar. Second, as identified above, State participation is very important because it will more than double the revenue potential of any district. However, the State is currently reevaluating its policy towards TIDD participation, and may create high thresholds to justify forgoing revenue. Third, predictable *private sector* business growth is critical. Large existing employers such as UNM, hospitals, and especially public sector agencies generate much less taxable revenue than private employers.

Other Funding Sources

In addition to the two key funding sources discussed above, the recommended funding plan includes a range of other tools that should be tapped to support the project, each of which is discussed below. Refer to Figure 14 and Table 7 for details on the recommended funding levels from each source.

Capital Implementation Plan (CIP). The CIP, a City of Albuquerque fund, allocates approximately \$80 million per year to a wide variety of City capital projects including transportation, cultural facilities, public safety, infrastructure, and parks. Project applications are accepted on a biennial cycle, with 2009 CIP applications due in the spring of 2008. In the past few years, ABQ Ride has received between \$5 and \$8 million per year from the CIP, usually to purchase replacement buses. Given the streetcar's transportation function, the funding strategy recommends that a similar amount could be directed towards the streetcar in the 2011 CIP.

Transportation Improvement Program/Metropolitan Transportation Plan (TIP/MTP). The MTP is the regional long-range transportation plan, while the TIP is the short range spending plan. Funds come from regional, state, and federal transportation sources. Both are administered by MRCOG along with a regional advisory board. Based on a review of past funding allocations for major transportation projects, LCG estimates that the streetcar could secure \$5 to \$10 million. The amount of revenues allocated by the TIP to projects varies widely depending on the scale of each project. For example, the I-40 and San Mateo Interchange will receive \$45 million over the next four years, while some trail segments will receive several hundred thousand dollars.

Public Improvement District (PID). A PID, known in most other parts of the country as a Local Improvement District (LID), involves the levying of an additional property tax on parcels within a defined district. The additional tax must be proportionate to the benefit being received by the properties and is subject to a vote of all property owners within the district. In the case of the streetcar, a reasonable estimate for the annual levy is between 0.6 and 1.3 mils (or between 0.06 and 1.3 percent). At these rates, the bonded revenue potential would be between \$3.0 and \$5.5 million, assuming the district is the same size as the TIDD district used above.

PIDs have been used successfully to contribute to streetcars funding packages in both Seattle and Portland. Seattle and Portland generated \$24.8 and \$9.6 million respectively from their LIDs, both of which were formed with broad support by property owners. A PID is especially important due to the fact that it is initiated by the private sector. This forces the private sector to become advocates for

the project and sends a significant goodwill gesture to the public by contributing to the project's funding.

State transportation funds. State transportation funds play an important role in many of Albuquerque's major transportation investments, such as I-40 and I-25 improvements and Rail Runner express train service, and are usually allocated through the MTP/TIP process. Based on a review of past allocations, LCG estimates that between \$2 and \$5 million could be secured for the streetcar.

Advertising and Sponsorships. Based on the experiences of the streetcar peer cities, LCG projects that between \$1 and \$3 million in sponsorship revenues could be attracted to help fund the streetcar line, due to the visibility and uniqueness of the marketing opportunity. ("Sponsorships" here indicates large, longer-term, often one-time contracts likely to fund capital costs, whereas "advertising" is repeated, ongoing, and more likely to fund Streetcar operations.) Such a revenue target is aggressive—requiring a well-organized marketing effort—but achievable based on the experiences of recent streetcar and rail lines.

Recent successful efforts to raise sponsorship and advertising dollars for streetcars have not always required that the lines themselves be extraordinarily successful. The allure of sponsoring a streetcar can transcend the line's value measured just in terms of ridership. For example, the City of Tampa raised more than \$2.5 million in capital funds for its streetcar line (which carries 1,500 riders per day) from an energetic marketing campaign. Tampa sold naming rights to the line itself to local TECO Energy for \$1 million, and naming and branding of cars, stations, and individual seats to a variety of companies and individuals generated the remaining \$1.5 million.

Other Funding Sources Not Included in Funding Packages

The following funding sources were not included in the proposed funding packages above because they are considered too speculative. However, each of these sources could be examined in greater detail to determine conclusively whether or not they could generate money for the streetcar's capital or operations budgets.

Federal Transit Administration (FTA). The project team did not conduct an in-depth evaluation of FTA grants as a funding source due to the reasons listed below. The FTA program best suited to the streetcar is Small Starts, which provides transit funding of \$75 million or less to projects with a total capital cost of \$250 million or less; in theory, this should include a mix of streetcar and BRT projects. Small Starts funding poses several challenges, however. First, as currently applied, the FTA's project ranking criteria strongly favor BRT projects at the expense of streetcars due to an emphasis on distance traveled and lack of emphasis on land use impacts. Second, Albuquerque may be at a disadvantage because its population and transit ridership is smaller than other applicant cities. Third, the application and grant award process is time consuming, and it would be difficult for Albuquerque to secure the funds in a reasonable time frame given the above challenges. Finally, an FTA grant award comes with a number of "strings" attached, including labor, environmental, and buy-America requirements. All of these could significantly increase capital costs and the buy-

America requirement is currently impossible to satisfy as there are no modern streetcar manufacturers in the U.S.²³

Federal Legislative Appropriation. An appropriation, distinct from the FTA grants described above, is a project-specific allocation written into a federal spending bill by a state congressional representative. Representatives often include appropriations for capital projects important to their constituencies, but this process is more political than technical, and thus cannot be included in this report.

Lodgers Tax and/or Hospitality Fee. Because streetcars in other cities (particularly Tampa and Little Rock) are oriented towards serving visitors and tourists, there is a possible connection between new tourist riders and the streetcar in Albuquerque. Thus, there may be a case to use revenues generated by tourism to fund some streetcar costs, particularly operations costs. The combination of the Lodgers Tax and Hospitality Fee results in a 6 percent surcharge on hotel room rentals within the City. This is the maximum surcharge allowed by state statute, and thus, any revenue to be directed towards the streetcar would come from reallocating existing revenues or future growth in receipts, but not an increase in the tax rate. However, both of these sources are currently fully allocated, primarily towards marketing and promotion conducted by the Albuquerque Visitors and Convention Bureau, and towards debt service payments for the Convention Center.

Transit Impact Fees. These fees are currently being implemented or evaluated in a number of cities across the country, such as Portland and Sacramento. Albuquerque currently levies *transportation* impact fees to recapture the cost of auto facilities, utilities fees, and other impact fees, but does not have a transit impact fee. A study demonstrating a nexus between new development and additional demand for transit services would be necessary before a fee could be implemented.

Parking Revenues. Portland paid for approximately half of its Phase 1 streetcar line (\$28.6 million) with a small increase in parking rates in city-owned garages and the dedication of revenues from parking meters in a newly-expanded part of the City's parking district. Based on an initial inquiry, LCG believes that central Albuquerque's parking market is not robust enough to fund transit improvements along with other needed improvements to the parking system. However, if residential and commercial and institutional development continues to intensify, the demand for parking could become great enough to generate revenue surpluses. In this case, creating a "park once" environment where residents and employees can ride transit after parking could become reasonable and feasible. This may be more appropriate for future streetcar extensions.

²³ However, Oregon Iron Works, located in Clackamas, Oregon, is currently building a prototype streetcar vehicle that will be able to meet these requirements when certified.

Recommendations

This section describes the consultant team's recommendations in terms of phasing construction and concludes with a recommended set of actions that should be implemented in conjunction with a streetcar in order to fully realize the corridor revitalization and best leverage the public transit investment with private investment in redevelopment projects.

Phase 1 Alignment

The project team believes that, based on the cost-benefit analysis summarized here, the Task Force should consider funding and building Alignment Sections B and C from 4th Street to San Mateo. Section A should be reserved for a future second phase.

Section B clearly rates highest in terms of ridership, projected residential, commercial and institutional growth, destinations, and the related cost-benefit measures. Section C follows closely in those indicators. Combined, the two sections connect the three destinations with Albuquerque's highest transit boardings and alightings (downtown, UNM, and San Mateo), as well as several other important destinations.

Even if funding were available to build the entire alignment all at once, it makes sense to phase development to ensure that each segment can be successful immediately upon completion. There is a danger in building segments "before their time" where ridership and the land use impact will be low, as it represents an inefficient leverage of public funds. A phased approach also follows the model set by other cities, particularly Portland, that have built their systems incrementally through extensions. As initial phases are completed and operating successfully, incremental extensions can be made to the ends of the line to extend service outward. These phases need not be far apart in time – indeed, Portland's initial 2001, 2.4-mile starter line has been extended three times to 4.0 miles, and proposals for another extension of 3.6 miles is far along in the planning and funding process.

In addition to costs and benefits, the funding strategy outlined above plays an important role in the recommendation to phase implementation. By building only Sections B and C in a first phase, the City will be more likely to build a successful initial line, while also retaining most of its Quarter Cent and TIDD funding capacity for other projects.

Future Extensions

While moving a Phase 1 alignment forward, the City and stakeholders should begin planning for future streetcar extensions and start to assemble the funding packages to pay for them. While the cost-benefit ranking for Alignment Section C was not as high as the other sections, this route will serve several of Albuquerque's most significant cultural destinations, including Old Town, the Rio Grande and BioPark, and museum area. As the first phase opens successfully, and plans show a future extension westward, a self-fulfilling prophecy can form where redevelopment begins in anticipation of the streetcar, making conditions even more suitable.

Several other alignments that have not specifically been reviewed in this report should also be considered, including: the Sunport alignment, which was part of the system studied by HDR; alignments on Fourth Street and Louisiana, the two other "major transit corridors" identified in the Comprehensive Plan; San Mateo, which parallels Louisiana and currently carries heavy transit volumes; or a spur to the museum center, an option discussed by the Task Force.

Figure 18. Potential Streetcar Extensions



Source: Leland Consulting Group. Phase 1 Recommended Alignment in blue; not all destinations are shown.

There are a number of funding sources that could potentially pay for the capital costs of future phases, and these should be analyzed for financial strength and availability, and then assembled into a complete package as soon as possible or concurrently with alignment planning efforts. If implemented, TIDD in particular would be able to fund tens of millions of dollars of improvements for Albuquerque's central city, and has a reasonable funding connection to future streetcar extensions. If the City decides to build future extensions, then the other sources described above should also be strongly considered, including: CIP, MTP/TIP, district tools (PID and/or SAD), GRIP or other state programs, and federal funding sources. While the FTA currently has not funded any streetcar systems, this may change and FTA policies and grant guidelines should be followed closely. In all cases, streetcar advocates should attempt to balance funding for the streetcar with other multi-modal improvements.

Additional Analysis

Due to the incomplete nature of the engineering work completed to this point, a number of additional decisions about the streetcar's final physical and operational attributes still remain to be made and should be addressed if the City decides to move forward with the project. These attributes include physical alignment features, such as station area, median, and intersection designs; the location of the maintenance facility; operational attributes such as frequency and hours of operation; and interaction with existing bus lines along the corridor.

Fitting the Pieces Together: Conditions for Success

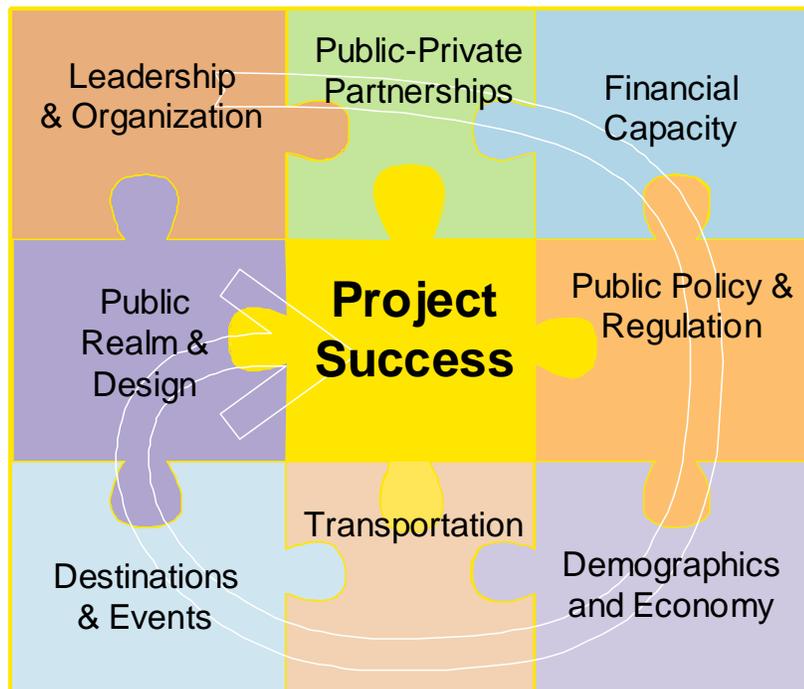
In the streetcar peer cities reviewed across the country, streetcars—however successful—are not seen as ends unto themselves, but usually as a means to reach a larger goal: the revitalization of the downtown or central city area. Further, the new rail lines are just one among a number of ways to reach this goal. The other tools and

requirements which are usually in place for revitalization to occur—or “Conditions for Success”—will be critical to a positive implementation of the proposed streetcar and ultimately the revitalization of Albuquerque’s central urban area, and are shown in Figure 19. For a description of the role that each of these conditions played in the implementation of the Portland Streetcar, see page 9.

The Conditions for Success described here include public and private sector actions, and also some conditions that are to some degree beyond the control of the public or private sector (such as demographics and regional economic health). Regardless of the group that is the driving force behind the condition, each (even those beyond public sector control) has been shown to be important to revitalization. Conditions also vary in terms of the degree to which they are present in Albuquerque. There are some conditions that Albuquerque already meets or exceeds, others that the City is in the process of implementing, and others that are hardly present at all. Somewhat greater emphasis is given here to the conditions that Albuquerque will need to work on to reach

All of the actions recommended below should help Albuquerque to attract more residents, employers, tourists, and transit users to its center. Ultimately, these complementary actions are about leverage – establishing the conditions, policies, and environment to maximize private investment and the revitalization impact of this important investment in transit infrastructure.

Figure 18. Conditions for Successful Redevelopment



Source: Leland Consulting Group

Leadership and Organization

Leadership and organization are essential to successful revitalization. The first steps to a vibrant central city are a compelling vision and supporting plans, and outspoken leaders from the public and private sectors who can communicate and gather support for the vision and plans.

Current Strengths	Recommended Actions
<ul style="list-style-type: none"> ▪ Vision. A positive vision for a vibrant and active downtown and central urban area has been established through the Comprehensive Plan, other plans, and outreach by the mayor and other public officials. 	<ul style="list-style-type: none"> ▪ Continue to gather broad public and private support for the vision for Central Albuquerque and the Modern Streetcar, and communicate it to a wide audience. ▪ Identify and engage project “champions” from many different backgrounds. ▪ Think now about setting up an organization to market the Central Avenue corridor, and possibly own and manage the streetcar itself. While various districts along the corridor have their own organizations, there is no single entity in place to bring the entire corridor together to coordinate all of the efforts. With a streetcar linking the districts, such coordination is critical. This group should be able to communicate the importance and “tell the story” of Central Albuquerque effectively. ▪ Review the example set by the founders of the country’s best new urban districts, especially in their communication of the appeal of complete live, work, and play environments. Vulcan Development, with its “Rethink Urban” slogan, has done an excellent job of packaging the Seattle streetcar and other transportation options together with other urban amenities, and is one marketing model that leaders in Albuquerque can look to for sharp ideas. ▪ Work to build bridges between public and private sector leadership; see Public Private Partnerships below.

Public-Private Partnerships

Public-private partnerships have proven invaluable for most complex projects intended to dramatically improve urban environments—whether the project is a streetcar, events center, parks and public spaces, or district-wide mixed-use redevelopment. Major urban redevelopment efforts like the Denver’s Central Platte Valley, San Francisco’s South of Market, and Seattle’s South Lake Union are all the result of public-private partnerships.

Current Strengths	Recommended Actions
<ul style="list-style-type: none"> ▪ Partnerships such as the Downtown Action Team, the Convention and Visitors Bureau, and groups convened to shape sector plans, are good models on which to base future partnerships. 	<ul style="list-style-type: none"> ▪ For truly transformative partnerships, engage the private sector (including employers and developers), and other parts of the public sector (such as UNM, Presbyterian Hospital, and other institutions). Give property owners and developers, whose role in plan implementation is critical, a seat at the table with meaningful roles and responsibilities. The Portland and Seattle Streetcars were both championed and partly funded by business owners and developers. ▪ Recognize that strong public-private partnerships may be necessary not just for the streetcar, but also the events center, Rail Yards, and other important revitalization efforts. ▪ Identify additional site-specific locations for public private partnerships and transit oriented development.

Financial Capacity

Financial capacity from the public sector, private sector, and other sources such as community development corporations and nonprofits must be in place. Without capital, project champions have little leverage to turn visions into reality.

Current Strengths	Recommended Actions
<ul style="list-style-type: none"> ▪ Public sector tools for such as the CIP and regional TIP allocate funds for major capital projects. ▪ Private sector urban residential developers have a demonstrated ability to raise funds. ▪ Investments in central area nonprofit such as the Downtown Action Team, HDIC, and others. 	<ul style="list-style-type: none"> ▪ Consider adding additional powerful public financing tools—especially TIDD and PID—in the central area. Strengthen other tools, especially TIF. ▪ Ensure that capital and operating allocations made by the CIP, TIP, and others funds support the goals of a revitalized central urban area and growth management.

Public Policy and Regulation

Public policy should result in plans that accurately reflect the aspirations of the community and its leadership, and provide the proper regulations, staffing, and incentive systems to bring about desired outcomes.

Current Strengths	Recommended Actions
<ul style="list-style-type: none"> ▪ Both large and small scale plans (such as the Comprehensive Plan and Nob Hill/Highlands sector plan, respectively) define an vision for the central area that emphasizes a pedestrian- and transit-oriented, vibrant, mixed-use area. 	<ul style="list-style-type: none"> ▪ Redevelopment Agency: The City should increase the capacity of the current Metropolitan Redevelopment Agency to take on the task of transit-oriented development, including creating staff positions or a special department. Tampa, Portland, and Seattle all have active redevelopment agencies that were able to purchase and resell key properties, negotiate agreements with developers, and fund catalytic redevelopment projects, among other roles. Portland's development agreements with Hoyt Street Properties and other developers were critical to achieving synergy between transportation and land use successes. In conjunction with this effort, the Agency (or a new one to be formed) should be in charge of forming and operating the TIDD. ▪ Zoning: In order to realize the full redevelopment potential of the streetcar, the City's zoning code should be reviewed to ensure that it allows adequate levels of development in terms of height and density, that it is clear and objective rather than convoluted, and that high-quality urban design is encouraged or required. As highlighted in the capacity section above, a number of areas in the corridor are expected to develop as higher-density, mixed-use districts, but development opportunities there are often effectively limited to three stories at most. In addition, LCG identified approximately 120 different zoning designations within the corridor, which may result in confusion on the part of landowners and developers about planning expectations and process. ▪ Development Incentives: In order to attract investment, the corridor should be the <i>easiest</i> place to do business. Therefore, the City should supplement strong design guidelines with development incentives for projects that meet the letter and spirit of the vision. These incentives could include expedited permitting for supportive projects, fee waivers, predevelopment assistance, and anything else that speeds up the process and increases certainty. Projects that meet the highest standards or provide certain types of public amenities (such as public plazas, bicycle features, affordable housing, or other features) could also be awarded density bonuses.

Demographics & Economy

Although a city's demographics and economy are in some ways beyond the control of the public sector, both strong economic growth and the demographics that favor urban live and work environments make central city revitalization possible.

Current Strengths	Recommended Actions
<ul style="list-style-type: none"> ▪ The corridor currently contains the demographics indicators required for urban housing: small households, high incomes, and high levels of educational attainment. In addition, surveys have shown that, citywide, between a third and half of all residents prefer the attributes of urban to suburban living. ▪ Strong regional population growth is projected in coming decades. ▪ Excellent employment anchors, such as UNM, hospitals, and professional sectors downtown, which include six of the region's 10 largest employers, and are expected to continue to grow. 	<ul style="list-style-type: none"> ▪ Continue to attract the key residential markets listed at left, and the Generation X, Y, and downsizing Baby Boomer markets. Prospective urban residents are usually seeking the kinds of exciting, mixed-use, pedestrian-oriented environments that the City has called for in its plans. ▪ Provide the necessary infrastructure for existing employers to grow, and attract additional employers—such as film, creative, sustainable industries, and professional services-- to the central area.

Transportation

The overwhelming majority of the land in the public sector's control—including streets, sidewalks, parking, and trails—serves a transportation function. Thus, the greatest role that the City can play in improving the urban environment is through the ongoing encouragement of a high-quality multi-modal transportation system that enables easy pedestrian, bike, and transit movement as well as cars.

Current Strengths	Recommended Actions
<ul style="list-style-type: none"> ▪ The corridor contains the City's most pedestrian, bike, and transit-oriented sections due to its interconnected street network and usually well maintained streets and 	<ul style="list-style-type: none"> ▪ Build and operate the streetcar from downtown to San Mateo Boulevard in order to create an attractive high-quality transit link connecting the City's biggest transit destinations and important activity centers. ▪ Refine the preliminary engineering work completed by HDR and

<p>sidewalks.</p> <ul style="list-style-type: none"> ▪ Rail Runner is a unique transportation asset in the region. 	<p>the City, and make final decisions about alignment variations, operational characteristics, maintenance facility location, and other details. Seek capital cost savings where possible during the final engineering process.</p> <ul style="list-style-type: none"> ▪ Implement additional transportation improvements identified by the Task Force. ▪ Continue to expand Rail Runner service.
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Destinations and Events

Destinations and events are a key to both the desirability of an urban living or working environment, and ridership on transit lines.

Current Strengths	Recommended Actions
<ul style="list-style-type: none"> ▪ The Corridor currently contains a strong mix of employment, residential, educational, retail, historic, cultural, and nightlife centers. ▪ The Corridor hosts a health mix of events including those at Civic Plaza, ArtsCrawl and others, and Balloon Fiesta related events. 	<ul style="list-style-type: none"> ▪ Continue to “connect the dots” by setting public policy that encourages important activity and transit generators in the central urban area in general, and along the streetcar line specifically. ▪ Events Center. The proposed events center will bring thousands more tourists and visitors to the Central Corridor, many of whom can use the streetcar to arrive and even make other trips for shopping and dining. ▪ Retail. Attract additional retailers—including tourist, regional, and local serving—to the central area. Review the Downtown Action Team’s recent Retail study for additional strategic direction. Work to locate local serving retailers like grocery stores, dry cleaners, and coffee shops in the area in order to allow the growing residential population to meet their daily needs without a car.

Public Realm and Urban Design

Great urban environments are made up of great parks, plazas, and streetscapes, and the well-designed buildings that frame them. Both the public and private sector are critical to bringing about these places and spaces.

Current Strengths	Recommended Actions
<ul style="list-style-type: none"> ▪ The corridor is home to most of the City's historic and heritage buildings, including ▪ Sidewalks and streetscapes have been improved in downtown and elsewhere. 	<ul style="list-style-type: none"> ▪ Continue to make improvements or expansions of streetscapes, street furniture, pedestrian amenities, plazas, parks and the park network. Ensure that central area residents have easy access to parks and open spaces. ▪ Encourage quality design through the tools described above in the Public Policy and Regulation section. ▪ Create iconic or "gateway" catalyst projects at key locations, such as on Central near the UNM through public-private partnerships. ▪ Safety and security. Regardless of whether or not safety is actually an issue in the Central Corridor, the perception that the area may be unsafe is an issue—especially as Albuquerque's central residential market attempts to transition from a niche market for 20 and 30 somethings to more of a broader market including downsizing baby boomers and others.