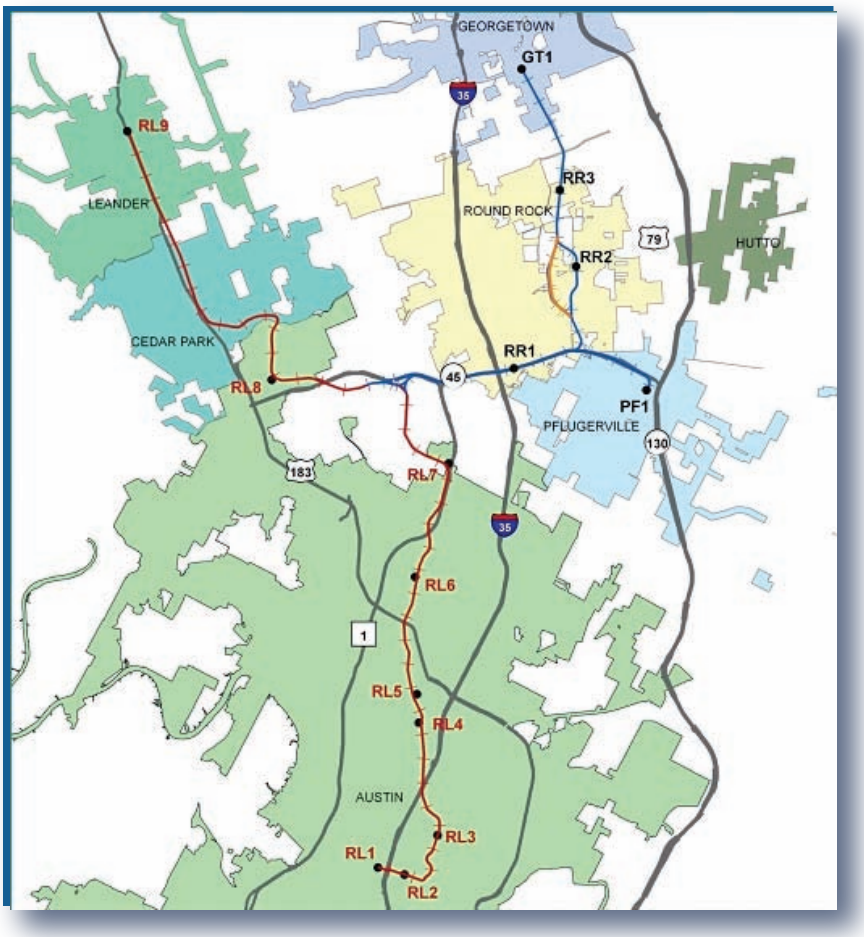
City of Round Rock

Central Texas Regional Mobility Authority

Round Rock–Georgetown–Pflugerville Rail Link



Fatal Flaw Analysis

Executive Summary

Prepared by

The Goodman Corporation

and

Huggins/Seiler & Associates

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The Goodman Corporation is a nationally recognized transportation and urban planning consulting firm possessing a wide range of planning skills complemented with a unique understanding of the governmental processes for funding and implementing complex publicly sponsored transportation and land use initiatives.

3200 Travis Street, Suite 200 Houston, Texas 77006

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Executive Summary

Background

The Central Texas Regional Mobility Authority (CTRMA) and the City of Round Rock funded a fatal flaw analysis of a commuter rail line which would link the cities of Round Rock, Georgetown, and Pflugerville to the Capital Metro (CMTA) Red Line. The study was conducted by The Goodman Corporation between April and November 2009.

Purpose

The purpose of the analysis was to determine whether commuter rail is a viable future mobility option for Williamson County and Northeast Travis County, a rapidly growing part of the greater Austin area. The analysis measured potential ridership, reviewed rail service options, estimated the cost to build and operate the rail link, and considered environmental impacts, economic benefits, the financial capacity of local governments to support the proposed project, and governance options.

Description

The Round Rock/Georgetown/Pflugerville (RR/GT/PF) Rail Link is an 18.3 mile branch that would connect the CMTA Red Line, just north of Howard Station, to Round Rock and Pflugerville along the SH45 right of way, and to Georgetown, along the now-abandoned Missouri-Kansas-Texas (MKT) rail corridor. Five stations are planned for the system: three stations in Round Rock, one in Georgetown and one in Pflugerville.

Cost to Construct

The cost to develop the proposed rail link is estimated to be $340 million or $18.6 million per mile. Cost estimates include design, purchase of rights of way, construction of the rail track bed, bridges, turnouts, etc., purchase of vehicles, signalization, and double-tracking along the Red Line to increase vehicle capacity for commuter rail operations.

Because the link relies on the SH45 right of way, about $77 million in cost is generated by the construction of bridges to link the proposed RR/GT/PF Rail Link to ground-level infrastructure and to elevate the line above the auto traffic at key points. The engineering and construction cost to design and build a line that travels along and above the SH45 right of way is significant.

Cost to Operate

Depending on the frequency of service and type of vehicle, the estimated cost to operate the service ranges from $5.5 million to $10.0 million annually. Cost estimates were based upon per unit costs derived from the Red Line budget, which were extended to estimated quantities for the RR/GT/PF Rail Link.

Capacity Constraints

The study identified existing capacity limitations to an increase in the number of train movements on the Red Line as delineated below.

Red Line Track: Based on a study completed by the CMTA, the Red Line can support up to 12 vehicles per hour (or one vehicle every five (5) minutes), if the Red Line is double-tracked from Howard Station to downtown Austin. Demand for regional commuter rail service is generated from the existing Red Line to Leander, and may be generated from the proposed CMTA Green Line to Manor/Elgin, and the RR/GT/PF Rail Link. Assuming vehicle capacity of the Red Line was shared equally among these three lines, it would limit RR/GT/PF Rail Link vehicles to four (4) per hour. This capacity limitation severely restricts the number of vehicles that can be operated on the proposed rail link.

Vehicle Type: A conservative estimate of ridership in 2030 for the RR/GT/PF Rail Link is 2,900 daily riders. Currently, that ridership estimate cannot be fully accommodated for two reasons. First, there is a capacity constraint on the number of vehicles that can operate on the Red Line/proposed rail link, as discussed above. Second, there are limitations on the types of vehicle that can be used, which is primarily defined by CMTA's current choice of vehicle for the Red Line. The choice of vehicle affects how many seats are available each hour for passengers and, thus, impacts the cost effectiveness of the system. The use of a vehicle similar to that operated by the CMTA on the Red Line would only serve about 70 percent of the conservative demand estimate for 2030. A similar but longer vehicle would serve 90 percent of the conservative demand estimate for 2030.

A double-decker vehicle could serve in excess of 100 percent of the projected 2030 demand. However, there is currently no double-decker vehicle that can operate on the Red Line simultaneously with CMTA vehicles due, in part, to Federal Railroad Administration (FRA) regulations. While there is an FRA waiver process whereby vehicles which are differently compliant may be allowed to operate simultaneously, to date, no system has been granted this type of waiver. Further study to determine the feasibility of converting the system to support double-decker vehicles is needed and continued monitoring the other national systems is needed to determine if they are successful in securing this type of waiver, which allows compliant and non-compliant vehicles to mix.

Stations: Longer vehicles that could serve more passengers would require changes to the configuration of the Downtown Station and potentially other stations, such as the Lamar Station, due to platform length limitations. Currently, vehicle length is limited to the length of a block in downtown Austin. Changes to station design would need to be considered if longer vehicles were

employed. These changes could include grade separation or special treatments at adjacent intersections.

Resolution of the system's capacity constraints is necessary for the future viability of the proposed RR/GT/PF Rail Link. Otherwise, this becomes a "fatal flaw" to any future development of the proposed link.

Travel Time

A trip on the RR/GT/PF Rail Link is expected to take between 45 and 60 minutes, depending on the station. This travel time, when coupled with the additional time needed to both travel from home to the station and then from the station to the workplace, may not offer a significant advantage to the commuter over the existing alternate facilities of Loop 1/MoPac or IH-35. As currently modeled by CAMPO, the projected time is about 20 minutes more than an equivalent commute by auto. However, the current CAMPO model does not reflect peak-period conditions, when drive times can be considerably longer, nor does it reflect decreases to future capacity caused by funding restrictions. Further study, using a new CAMPO model currently in development, is needed to more precisely determine the potential time advantage.

Quality of Trip

The quality of the trip is partly determined by the rider's level of comfort. In this study, the percentage of demand met assumes that 100 percent of the seated capacity and 50 percent of the standing capacity of each vehicle is used. This industry rule-of-thumb may be too aggressive for a trip that can take over 45 minutes. If passengers are unwilling to stand for this period of time, then the percentage of demand served will decrease, further eroding the cost effectiveness of the service.

The quality of the trips is also determined by the number of transfers required. Because many people who are projected to use the rail do not live or work close to a station, most will be required to take a "three-seat ride." This is not uncommon for commuter rail service which generally requires commuters to drive to a station, transfer to the rail line, and then take another mode (usually a bus) to get to their work destinations. These two impacts to quality, when combined with a potential lack of a time advantage, may make the proposed rail link a less desirable commuter option when compared to the auto and/or express bus trip.

Vehicle Compliance

The CMTA will operate non-FRA compliant vehicles on the Red Line. This means that the Red Line vehicles cannot, under current FRA guidelines, operate on the same track and during the same periods as heavier, more crash-worthy FRA compliant vehicles, like freight trains. This factor will create a challenge for the proposed RR/GT/PF Rail Link because it limits the type of

rail cars that can be considered for use – especially in light of the interest in larger vehicles to increase capacity to serve demand. Increased capacity to serve demand will improve the system's cost-effectiveness, a key measure of competitiveness when pursuing federal funding, and a significant factor for local decision-makers when weighing regional mobility options.

Environmental Concerns

The proposed alignment traverses environmentally sensitive regions at the juncture where the RR/GT/PF Rail Link would enter the Red Line. Here, two cave preserves, Chaos and Beck, are home to an endangered species. These caves were protected as a part of an agreement that allowed the construction of SH45 and cannot be "taken" unless another similarly sized property with similar environmental characteristics can be secured to replace them. Given the region's development pressures, identifying a suitable replacement property may be difficult.

Transit Oriented Development

The Federal Transit Administration has recently revised its New/Small Starts guidelines to place greater emphasis on a proposed project's transit-oriented development (TOD) potential. The RR/GT/PF Rail Link has significant TOD potential, which can enhance its competitiveness for FTA New Starts funding and play an important role in the system's long-term financial feasibility. Special districts can be created around key rail stations to capture the added tax value generated from future mixed-use development. This added value can create revenue streams to defray the future operating cost of the proposed rail link.

Financial Capacity to Build

Up to 80 percent of the capital development cost for the proposed rail link is allowable under FTA New/Small Starts guidelines, however a more equitable split of the cost between federal and local resources is needed if the project is to be competitive for federal funding. Assuming a more conservative 50 percent/50 percent cost sharing, $170 million of local capital development cost would be distributed on a pro-rata basis with those stakeholders benefitting from the proposed commuter rail link. This study indicates that Round Rock, Georgetown, Pflugerville, and Williamson County have the bonding capacity to shoulder the local development cost of the proposed rail link. However, the project would consume a significant amount of future bonding capacity and would require the passage of local referendums in support of funding the project.

Financial Capacity to Operate

Identifying funding sources to meet the operating cost of the proposed rail link creates a more problematic challenge to local stakeholders, whose budgets are already stretched to meet existing non-transit services. Fare box revenues can support a portion of operating costs, as can special districts associated with TOD's. However, these revenue streams are insufficient and, to some

extent, uncertain. The identification of sufficient and secure funding streams that can be dedicated to the support of annual operating costs is vital to the future success of the project.

The financial capacity of the stakeholders to fund operations, therefore, is potentially a fatal flaw. This fatal flaw can be resolved by implementing a new source of locally based tax and/or fee revenues. This solution will require action by state legislators and most likely a local referendum.

Dedication of SH45 Right of Way to Commuter Rail

The proposed alignment would dedicate the available SH45 right of way in support of commuter rail. The Texas Department of Transportation, at the request of the City of Round Rock and the CTRMA, completed the SH45 Engineering and Constructability Preliminary Fatal Flaw Review in January 2010. The review finds that the existing right of way is insufficient to accommodate both commuter rail and high-occupancy vehicle (HOV) lanes. Furthermore, it may interfere with future direct connectors and make future highway capacity improvements difficult.

Regional Context

The $340 million cost to develop the proposed rail link represents a significant capital investment in a mobility alternative for the region. It is important to understand how this investment, along with other proposed mobility improvements like the Austin Urban Rail Project, rail to the airport, and the proposed intercity rail between San Antonio and Austin, fits into a Regional Mobility Strategy that comprehensively links regional growth and sustainability with mobility objectives. These mobility objectives should be defined in terms of reduced vehicle miles travelled, energy consumption, and pollution, and enhanced quality of life.

The greater Austin region could benefit from a comprehensive Regional Mobility Strategy which demonstrates its ability to meet regional objectives. Each proposed major capital investment in mobility should demonstrate how it fits into the overall Regional Mobility Strategy from the standpoint of financial responsibility, and environmental, energy, and quality of life objectives, as well as the goal of creating seamless mobility options for the future.

Conclusions and Recommendation

Conclusion 1: The feasibility assessment/fatal flaw analysis has identified potential fatal flaws; however, there also appear to be strategies available to resolve these potential fatal flaws.

Conclusion 2: The availability of existing right of way for the creation of an express mobility linkage from Georgetown to Round Rock/Pflugerville to the Red Line (or central Austin) provides an opportunity to develop a relatively lower cost mobility option for the region.

Conclusion 3: The benefits of the proposed RR/GT/PF Rail Link in terms of cost effectiveness, economic development potential, and reaching mobility objectives such as reductions in vehicle miles travelled and energy consumption and improvements to quality of life, can better be determined within the context of an overall Regional Mobility Strategy.

Recommendation: The study did not identify any fatal flaws that prohibit the rail link project from moving forward. Completing an alternatives analysis, which considers commuter rail, as well as all other feasible alternatives, is recommended.