

# Analysis of the Proposed Las Vegas LLC Monorail

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## ABSTRACT

Using available data, this study analyzes the ridership and revenue projections for monorail proposed by MGM Grand-Bally's Monorail LLC (the "LLC Monorail"). It is concluded that:

- Daily ridership is likely to be in the range of 18,500 to 26,600, compared to the projected 54,200 (51 to 66 percent below the LLC Monorail projection).
- Net cash flow over the 32 year project horizon is likely to be in the range of minus \$712 million to minus \$1.368 billion. This compares to the LLC Monorail projection of plus \$346 million.
- Project revenues are unlikely to be sufficient to pay project obligations from 2004 through 2034.
- Project reserves are likely to be exceeded by accumulated cash flow deficits beginning somewhere in the 2006 to 2008 period.

Local taxpayers, state taxpayers and riders could be at risk in three ways:

- Diversion of tourist passengers from the Las Vegas Strip route to the LLC Monorail could reduce cross-subsidies to other RTC routes, necessitating service reductions or higher taxes.
- It is intended that the LLC Monorail will be operated cooperatively with a to be developed RTC fixed guideway from the north terminal to Cashman Field. A financial failure on the part of the LLC Monorail could lead to circumstances under which higher taxes might be sought to continue operation of the LLC Monorail as a part of the RTC system.
- In the event of a financial failure, the state could face higher bond interest rates, which would raise the cost of debt to state taxpayers.

As is the case with respect to all projections, factors such as the state of the economy, Las Vegas' uniqueness as a tourist destination and many others could generate actual results that are above or below these forecasts.

## SUMMARY OF CONCLUSIONS

This study analyzes the ridership and revenue projections for monorail proposed by MGM Grand-Bally's Monorail LLC (the "LLC Monorail"), which will replace the current MGM Grand to Bally's monorail and extend the route. Project consultants forecast that this system would carry 54,000 daily riders in 2003 and would earn a net profit of nearly \$350 million between 2003 and 2034. In 2003, the average fare per one way trip would be \$2.00.

The basic conclusion of this study is that the LLC Monorail is unlikely to achieve its ridership projections, revenue projections or financial obligations. Specific findings are as follows:

- The LLC Monorail is a local circulation system, similar in technology and function to downtown people movers and monorails in Seattle, Miami, Jacksonville and Detroit (Section 2).
- Because of its high tourist attraction and gaming, Las Vegas is a unique environment. Some differences will tend to be favorable toward LLC Monorail performance, while others will not. (Section 3).
- US and international ridership projections for projects similar to the LLC Monorail have often been overly optimistic (Section 4).
- The problem of inaccurate forecasts have been particularly acute with respect to systems projected to carry high passenger volumes. On average, actual ridership has averaged more than 70 percent below projections, with the most favorable result being a 28 percent negative error. The LLC Monorail is projected to be such a high volume system (Section 5).
- The ridership projections for the LLC Monorail rely substantially on the projections developed for the proposed Regional Transportation Commission (RTC) fixed guideway system. These projections are exceedingly optimistic, at ridership levels high among western European, North American and Australasian systems. The RTC projections are among the most aggressive in US transit history and could emerge as among the least accurate. The LLC Monorail is projected to carry more passengers per route mile than the New York subway, the London Underground and the Stockholm Metro, and more than double that of the most heavily used new rail systems in the United States. It is not likely that such an intensity of ridership would be attracted. (Section 6)
- The LLC Monorail projections assume that ridership would be considerably less sensitive to fare increases than the national experience (fare elasticity). If ridership falls in reaction to fare increases at the national rate, while all other LLC Monorail assumptions are preserved, the LLC Monorail would earn 80 percent less net income from 2003 to 2034 (Section 7)

- The Las Vegas Strip Bus route (#301) carries more than 10,000 tourist trips daily. On a route mile basis the LLC Monorail is projected to carry more than four times the ridership of the bus route (Section 8).
- The LLC Monorail projects that approximately 500 riders will switch from the bus route to the LLC Monorail. This means that more than 53,000 daily riders would be attracted from other modes, such as the existing monorail, taxicabs and walking. (Section 9).
- The LLC Monorail is projected to attract one-third of its ridership from the existing monorail that operates between the MGM Grand Hotel and Bally's. This is more ridership than is currently carried on the existing monorail. Moreover, the existing monorail charges no fare. It is likely that charging the \$2.00 fare level would reduce the potential passenger attraction from the existing monorail to between 5,700 and 8,200 daily, not the 18,000 used in the LLC Monorail projections (Section 10).
- The LLC Monorail is projected to attract one-third of its ridership from walking trips. However, the LLC Monorail would provide little or no travel time advantage for most walking trips. Further, walking is not simply a method of traveling from an origin to a destination. The Las Vegas Strip is one of the most visually stimulating streetscapes in the world, which is an important reason why walking is the most popular mode of travel among Las Vegas Strip visitors (Section 11).
- The LLC Monorail is projected to attract 20 percent of its ridership from taxicabs. This seems highly optimistic, because the LLC Monorail will provide virtually no travel time advantage. Moreover, taxicab users tend to be less price sensitive and are not likely to be attracted by the lower LLC Monorail fares (Section 12).
- The LLC Monorail is projected to have daily ridership far above the levels achieved by other local circulator systems in two-dimensional<sup>1</sup> dense downtown areas, despite charging a much higher average fare. This is not likely to be achievable (Section 13).
- The LLC Monorail is projected to have a fare recovery ratio (fare revenues divided by operating costs exclusive of debt service) that is 270 percent of any other transit system in the United States and nine times average. This seems optimistic (Section 14).
- According to the LLC Monorail *Ridership and Revenue Study*, there is a correlation between

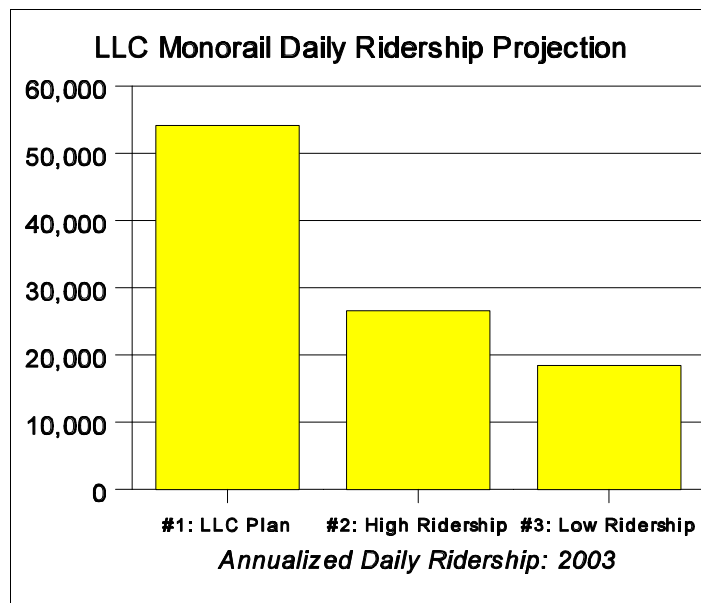
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<sup>1</sup> Two dimensional refers to dense commercial development that occurs both east to west and north to south. The Las Vegas Strip development is largely one-dimensional, south to north.

the number of hotel rooms and existing monorail ridership. Based upon the higher number of rooms that will be in hotels adjacent to LLC Monorail stations the daily ridership potential is approximately 34 percent lower than projected, assuming a \$0.00 fare. The \$2.00 average fare is expected to reduce ridership demand (Section 15).

- Advertising revenues appear to be exceedingly high and could be 50 percent to 90 percent lower than projected. A 50 percent reduction in advertising revenue would reduce net cash flow nearly one-half between 2003 and 2034 (Section 16).
  - As in the case of ridership projections, both US and international capital and operating cost projections have often been unreliable. Such cost overruns could have a negative impact on the financial performance of the LLC Monorail project. The completion guarantee of the builders reduces the potential for a capital cost overrun (Section 17).
  - Additional issues include a potential delay to comply with federal environmental regulations due to possible project integration with the RTC fixed guideway system and the potential for competition should a continuous monorail be developed on the west side of the Las Vegas Strip (Section 18).
  - Based upon the analysis above, two alternative projections were prepared and compared to the LLC Monorail project forecasts (referred to as Projection #1):.
5. Projection #2, the **High Ridership Projection**, adjusted for the impact of the \$2.00 average fare using the LLC Monorail fare elasticity factor of -0.20., This projection accepts all other LLC Monorail assumptions, including the aggressive advertising revenue projection and the LLC Monorail fare elasticity factor for subsequent fare increases between 2003 and 2034. Projection #1 assumes no capital or operating cost overrun. This projection yields 26,600 daily passengers in 2003, compared to the 54,200 LLC Monorail projection. Between 2003 and 2034, a net negative cash flow of 31 percent (minus \$712 million) would occur and revenues would be insufficient to pay obligations in all years from 2004 to 2033. The projected accumulated would be greater than debt service reserves and the general fund in 2008.
  6. Projection #3, the **Low Ridership Projection**, is considered to be the most likely scenario. Projection #3 adjusts for the impact of the \$2.00 fare, using the national -0.36 fare elasticity factor. This projection downwardly adjusts advertising revenues, uses the national fare elasticity factor for fare increases between 2003 and 2034, and assumes a 10 percent operating cost overrun. Projection #2 assumes no capital cost overrun. Between 2003 and 2034, a net loss of 60 percent (\$1.368 billion) would occur and revenues would be insufficient to pay obligations in all years from 2004 to 2034. The projected accumulated would be greater than debt service reserves and the general

fund in 2006 (Figure #1 and Table).



**Figure 1**

Calculation method described in text.

The LLC Monorail could not financially survive the smallest ridership projection error that has been typical of high volume fixed guideway projects. If ridership is as little as 17 percent short, the LLC Monorail would be incapable of meeting its financial obligations, even if all other project projections and assumptions proved accurate. ***Virtually no ridership projection for a high volume fixed guideway project has been accurate enough that if achieved in Las Vegas would enable the LLC Monorail to meet its financial obligations.*** Ridership projections for high volume fixed guideways have had an average error of 72 percent, and the most accurate has been an error of 28 percent (Section 4).

From the information available, it is likely that there is a considerable risk that the LLC Monorail will be unable to meet its ridership projections, revenue projections or financial obligations (Section 19).

Summary of Projections			
	Projection #1 LLC Monorail Plan	This Study	
		Projection #2 Highly Ridership	Projection #3 Low Ridership
Annualized Daily Ridership: 2003	54,181	26,612	18,462
Planned Net Cash Flow: 2003-2034 (Millions)	\$346	\$346	\$346
This Case Net Cash Flow: 2003-2034 (Millions)	\$346	(\$712)	(\$1,368)
Variation: 2003-2034 (Millions)	\$0	(\$1,058)	(\$1,714)
Fare Recovery Ratio: 2003-2034	274.1%	134.6%	81.2%
Revenues/Expenses: 2003-2034	15.2%	-31.3%	-60.2%
Years Financial Obligations Met by Cash Flow	32 of 32	2 of 32	1 of 32
First Year Financial Obligations Not Met by Cash Flow	NA	2004	2004
Year Negative Result Exceeds Reserves & Funds	NA	2008	2006

- Local taxpayers, state taxpayers and riders could be at risk in three ways:
  1. While the LLC Monorail is projected to attract only one percent of its ridership from the Las Vegas Strip Route (#301), there is the potential that higher diversion could threaten the fiscal viability of the RTC bus system. Route #301 appears to earn an operating profit that is used to support other routes in the system. The riders who would be diverted are likely to be full fare paying tourists, which could have a disproportionately negative impact on the financial performance of Route #301. This could reduce funding for other routes, necessitating service reductions or higher taxes.
  2. It is intended that the LLC Monorail will be operated cooperatively with a to be developed RTC fixed guideway from the north terminal to Cashman Field. A financial failure on the part of the LLC Monorail could lead to circumstances under which higher taxes might be sought to continue operation of the LLC Monorail as a part of the RTC system.
  3. In the event of a financial failure, the state could face higher bond interest rates, which would raise the cost of debt to state taxpayers (Section 20).

As is the case with respect to all projections, factors such as the state of the economy, Las Vegas' uniqueness as a tourist destination and many others could generate actual results that are above or below these forecasts.



## 1. INTRODUCTION

A monorail is proposed for development by MGM-Grand-Bally's Monorail LLC (the LLC Monorail). The LLC Monorail is a public transit fixed guideway<sup>2</sup> that would operate in the Las Vegas Strip area, over a 3.9 mile route<sup>3</sup> from the MGM Grand Hotel to the Sahara Hotel. It would be generally placed behind the hotels and casinos on the east side of the Las Vegas Strip. It is projected that up to nine trains of four monorail cars would operate, up to every 3.9 minutes during peak travel periods.<sup>4</sup> The average one-way fare per passenger would be \$2.00, and increased \$0.25 every four years. It is projected that the LLC Monorail would carry more than 54,000 riders a day in 2003<sup>5</sup> (19.776 million annually).<sup>6</sup> In the longer term, the LLC Monorail could be integrated with the proposed Regional Transportation Commission (RTC) fixed guideway system.

This study analyzes the planning documents prepared for the LLC Monorail project, especially with respect to ridership and revenues. The source documents are project planning documents, especially the annual financial projections (*Draft Analysis Base Case*) and the *Ridership and Revenue Study*. The LLC Monorail operating revenue and cost projections are recreated in Table A-4 (Appendix).

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<sup>2</sup> Fixed guideways include conventional rail systems, such as light rail and subways, automated people movers, and monorails and any technology in which transit vehicles operate and are controlled on a fixed facility (track).

<sup>3</sup> 20,642 feet.

<sup>4</sup> Salomon Smith Barney, *The Las Vegas Monorail: Preliminary Overview*, October 1999.

<sup>5</sup> Available cost projections use a lower ridership figure for 2003, on the assumption that the LLC Monorail would begin operation after the start of the year. For the purposes of evaluating initial ridership, this study presumes that the system would operate through the entire year of 2003, consistent with the projections in the *Ridership and Revenue Study*. The financial analysis, however, is based upon the projections as included in the *Draft Analysis Base Case* (October 3, 1999, 3:22 p.m.).

<sup>6</sup> URS Greiner Woodward Clyde, *Forecasts of Ridership and Revenue for the Proposed Seven-Station Las Vegas Monorail System*, October 1999 and August 13, 1999 (drafts). Hereinafter referred to as *Ridership and Revenue Study*.

## **2. LOCAL CIRCULATION TRANSIT SYSTEMS**

The LLC Monorail is similar in technology, operating environment and customer market to systems that have been built in Miami, Detroit, Jacksonville and Seattle. The primary function performed by these systems is to provide local circulation within a fairly small area --- usually a downtown area, or in the case of Las Vegas, the tourist oriented Las Vegas Strip.

- The Miami system (Metromover) is unique in being a part of a larger regional metro (elevated) rail system. As a result Miami's Metromover attracts not only circulation trips within downtown, but is also used by commuters to begin or complete their journey to work.
- The Seattle system is a monorail that was built for the 1962 World's Fair.
- The Jacksonville system (Skyway) is a monorail that is similar in technology to the proposed LLC Monorail.
- The Detroit and Miami systems are fully automated people movers (not monorails), with rail vehicles operating on elevated tracks.

## **3. THE UNIQUENESS OF LAS VEGAS**

Las Vegas is a unique environment. With a majority of the world's largest hotels, the Las Vegas Strip represents one of the most geographically concentrated tourist destinations. Some characteristics of Las Vegas' uniqueness would seem to auger well for LLC Monorail ridership.

- There is a large concentration of both hotel rooms and casinos.
- The Las Vegas Strip bus route carries 10,000 daily tourist riders at a \$2.00 fare.
- There is a tendency on the part of tourists to visit more than one casino, which could translate into LLC Monorail demand.
- Visitors have a comparatively high discretionary amounts for spending.

Other factors of Las Vegas' uniqueness, however, are not positive with respect to the potential for LLC Monorail ridership.

- The gaming industry is very competitive. The casinos that are not directly served by the LLC Monorail are likely to respond quickly and effectively to any threat of losing business to locations that are directly served.

- The existing market for transit along the Las Vegas Strip, while large in relation to the bus route, is comparatively small in relation to the overall tourist travel market along the Las Vegas Strip.
- The Las Vegas Strip is one of the most visually striking built environments in the world and is the locus of outdoor activity in the area. As a result, walking represents by far the largest amount of tourist trips along the Las Vegas Strip. The LLC Monorail, however, would operate behind the hotels on the east side of the Las Vegas Strip.
- The Las Vegas Strip does not have the land use patterns (such as a two-dimensional development) and employment base that generates much of the ridership in the dense downtown areas in which local circulators operate (such as for lunch trips).

#### 4. US AND INTERNATIONAL RIDERSHIP PROJECTION RELIABILITY

The greatest portion of LLC Monorail revenues would be paid by customers riding the system. As a result, the reliability of the passenger projections is crucial.

Ridership projections for new fixed guideway systems have been comparatively unreliable. Urban fixed guideway projects have consistently attracted fewer passengers and generated less passenger revenue than projected. With respect to federally financed projects opened in the 1980s, ridership averaged 59 percent below projections.<sup>7</sup>

Some of the most inaccurate ridership projections have occurred with respect to local circulator projects similar to the proposed LLC Monorail.

- Miami's Metromover (people mover) was projected to carry 41,800 riders daily by 1988 and missed its projection by nearly 75 percent. The system is carrying 13,400 daily riders in 1999 -- 68 percent below projection despite a more than doubling of the route's length.<sup>8</sup>
- Jacksonville's downtown monorail was to have carried 10,000 daily riders in its original alignment and 38,000 when completed. In 1996 the monorail was carrying under 1,000 daily riders --- 90 percent below the 10,000 projection.<sup>9</sup> The system has since been nearly tripled in length, and ridership has risen to 1,800. Two new stations will be added to the present seven in

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<sup>7</sup> Don Pickrell, *Urban Rail l Transit Projects: Forecast Versus Actual Ridership and Costs* (Washington, DC: Urban Mass Transportation Administration, US Department of Transportation, October 1989).

<sup>8</sup> *Metro-Dade Transit*

<sup>9</sup> Data from National Transit Database.

2000. It seems doubtful that ridership on the completed system will reach 2,500 and that the 38,000 daily ridership projection will be missed by more than 90 percent.

- Detroit's downtown people mover was projected to carry 67,700 daily riders in the late 1980s. In 1996, the system carried fewer than 7,000 daily riders, approximately 90 percent below the projection.<sup>10</sup>

A recent National Academy of Sciences report evaluated the international experience in transportation system projections (such as fixed guideways) and found:<sup>11</sup>

*Traffic forecasts that are off by 20 to 60 percent when compared with actual development are frequent in large transportation projects.*

## 5. HIGH VOLUME FORECASTS: THE RECORD

The experience, however, with high volume ridership projections has been even less accurate. The most inaccurate ridership projections have occurred with respect to systems projected to carry more than one million annual passengers per route mile.<sup>12</sup> ***Virtually no such projection has been close to accurate.***

Perhaps the most unreliable fixed guideway related transit system ridership projections occurred in Miami, where that city's metro rail system was to have carried 240,000 daily riders.<sup>13</sup> Actual ridership fell 85 percent short, and a decade later carries less than 50,000 daily riders --- still approximately 80 percent below projection. Overall, Metro Dade's consultants projected at least 300 percent bus and rail higher ridership than occurred. The Miami system projections became a national "laughing stock" and attracted the attention of a weekly presidential radio address, when President Reagan noted that it would have been less expensive to lease each new passenger a Rolls Royce.

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<sup>10</sup> Ridership is now considerably lower, due to an unrelated building collapse that temporarily closed part of the system.

<sup>11</sup> Mette K. Skamris and Bent Flyvbjerg, "Accuracy of Traffic Forecasts and Cost Estimates on Large Transportation Projects," *Transportation Research Record* (Washington, DC: Transportation Research Board, National Research Council), 1996.

<sup>12</sup> Calculated from National Transit Database data. A route mile is a mile of two way route (for example, if the ends of a route are 10 miles apart, there would be 10 route miles).

<sup>13</sup> Pickerel.

Similar problems have occurred with respect to projects opened in the 1990s. For example, the Los Angeles “Green Line” was projected to carry 65,000 daily passengers in 1994 and 103,000 by 2003.<sup>14</sup> Actual ridership was less than 20,000 in 1997, three years and 70 percent behind projection.<sup>15</sup> However, in response to ridership shortfalls, transit agencies have become more conservative in their ridership projections by reducing ridership estimates shortly before system openings or simply projecting lower ridership earlier in the planning process.

Among the high volume projections, the average error has been 72.2 percent, and the smallest projection error was 27.7 percent in Washington, DC (Table #1). The LLC Monorail is projected to carry ridership of 5.1 million passengers per route mile and is therefore near the high end of the range of heavy ridership projections that have been characterized by chronic inaccuracy.

Table #1 Projected and Actual Ridership per Route Mile: High Volume Fixed Guideway Systems			
System	Annual Ridership per Route Mile (Millions)		Variation
	Projected	Actual	
Baltimore Metro	4.0	1.7	-58.6%
Buffalo Light Rail	4.3	1.4	-68.3%
Detroit Downtown People Mover	7.0	1.2	-83.3%
Jacksonville Monorail	5.0	0.5	-90.0%
Los Angeles Green Line Light Rail	1.3	0.4	-69.2%
Los Angeles Metro	7.4	2.1	-71.8%
Miami Metro	3.4	0.5	-85.2%
Miami Downtown People Mover	6.2	1.6	-73.7%
Pittsburgh Light Rail	2.6	0.9	-66.2%
Washington Metro	2.8	2.0	-27.7%
Average	4.4	1.2	-72.2%
Includes systems for which annual projected ridership per route mile was more than one million.			
Los Angeles data compares the original projection with the most recently released projection, based upon the lower rate of usage on segments already opened.			
Sources: Calculated from Pickrell, National Transit Database, Los Angeles County Transportation Commission and Federal Transit Administration “3j” reports.			

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<sup>14</sup> *Los Angeles Metro Green Line Norwalk-El Segundo*, Los Angeles County Transportation Commission, 1989.

<sup>15</sup> *Bus and Rail Performance Report*, Los Angeles County Metropolitan Transportation Authority, 1997.

The state of the ridership forecasting art has simply not advanced to the point that high volume projections are reliable.

## **6. THE LLC RIDERSHIP PROJECTION: OPTIMISTIC FOUNDATIONS**

The LLC Monorail ridership projection is based upon a modification of the Regional Transportation Commission's (RTC) projections for its "Resort Corridor Major Investment Study," which anticipates construction of an 18 mile long fixed guideway. RTC's consultants projected daily ridership of 331,000 in 2020. The Las Vegas route would carry more than five times the ridership of any other single route fixed guideway system in the nation. The 2020 ridership projection would make the Las Vegas RTC system the most intensively used rail (guideway) system in the US, exceeding the boardings per line mile of all systems operating in the United States (Table #A-1, Appendix)

- The guideway would be 23.1 percent more intensively patronized than the New York City subway system and 373 percent more intensively used than the Chicago Transit Authority's elevated system (these are higher volume heavy rail or metro systems, as opposed to light rail or monorail systems).
- The guideway ridership would be substantially more intensively patronized than the most highly patronized new (post 1970) rail systems --- 177 percent more intensively used than Washington's Metro and 474 percent more intensively used than San Francisco's BART (these are higher volume heavy rail or metro systems, as opposed to light rail or monorail systems).
- Guideway ridership intensity would be seven times or more that of St. Louis, San Diego and Portland, which are considered the most successful new light rail systems in the nation.

Moreover, the RTC fixed guideway boardings per line mile would rank Las Vegas fifth among systems in highly automobile dependent countries of Western Europe, Australia, New Zealand, Canada and the United States (Table #A-2, Appendix).

- Las Vegas would rank behind only Vienna, Paris, Rome and Milan
- The Las Vegas rail line is projected to be 104 percent more intensively used than London's Underground and only 34 percent less intensively used than the Paris Metro.

Overall, including both the fixed guideway and bus services, RTC's consultants project 774,000 daily transit boardings in 2020. Indeed, Las Vegas's annual transit boardings per capita in 2020 would be approximately 125, behind only New York at 145 (1997).<sup>16</sup> Las Vegas per capita ridership would be

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<sup>16</sup> Based upon Las Vegas metropolitan population projection of 2.114 million in 2020.

more than 50 percent higher than second ranking Honolulu and nearly 75 percent above third ranking San Francisco. The increase in transit ridership from current levels would be approximately 400 percent.

Unlike New York, Boston, Philadelphia, Chicago and Washington, Las Vegas residents do not have a strong proclivity toward transit ridership. Such a tendency relies on historical factors that do not exist in Las Vegas, such as a dense central city, a dense and central business district characterized by two directional depth (east-west and north-south), and high levels of radially oriented transit service operating toward the central business district without requiring a transfer. These differences between Las Vegas and other urban areas call into question the reasonableness of the RTC ridership projections.

Moreover, the factors that differentiate Las Vegas from the more dense US urban cores are even more evident in the foreign urban areas. Urban areas outside the United States tend to be more densely populated and have more dominant centrally oriented travel patterns (“transit friendly” travel patterns). It would therefore be astonishing for the intensity of fixed guideway ridership in Las Vegas to exceed that of Madrid, London or Stockholm or other cities that are dominated by early 20<sup>th</sup> century or even late 19<sup>th</sup> century cores.

Tourist usage in Las Vegas is comparatively substantial, representing approximately one-third of the Las Vegas Strip bus route (#301). This, however, is not enough to compensate for the substantial difference between the RTC model projections and the actual experience in other US and international applications.

The RTC model’s rail ridership projections may be the most aggressive ever produced in the US transit industry and appear to be consistent with the particularly inaccurate experience with high volume system projections. The RTC rail projection could be as inaccurate as the highly criticized projections that were the product of consultant studies in Miami (Section 4). This is of concern, because as little as a 17 percent reduction in ridership relative to projection to produce a net loss over the period of 2003 to 2034 (in such a case, LLC Monorail revenues would be insufficient to pay operating expenses and debt service from 2008 to 2027). This tolerance for error is considerably less than the most accurate high volume passenger projection, at minus 28 percent.

The LLC Monorail is projected to carry 5.2 million passengers per route mile in 2004, which would rank it well above such high volume rail systems as the New York subway, the London Underground and the Stockholm Metro. The LLC Monorail is projected to carry more than twice as many passengers per mile as the most heavily used new rail systems in the United States (Los Angeles Metro and Washington Metro). It is not likely that such an intensity of ridership would be attracted.

## **7. RIDERSHIP RESPONSE TO FARE INCREASES (ELASTICITY)**

LLC Monorail plans indicate that passenger fares would be increased 25 cents every four years. The projections use a fare elasticity assumption that for each 10 percent increase in fares there will be a 2 percent reduction in ridership (-0.20 price elasticity). This is barely one-half the public transit industry standard of -3.6 percent for each 10 percent increase in fares (-0.36 price elasticity).<sup>17</sup> for urbanized areas of more than one million.

The elasticity factor of -0.20 percent could be optimistic. If the actual LLC Monorail experience reflects the national transit elasticity factor, and all other LLC Monorail projections are met, ridership would be 12 percent lower. Net cash flow would drop more than 80 percent (a reduction of more than \$285 million from 2003 to 2034). The overall profit on operations would fall to 2.6 percent (from 15.2 percent).

## **8. COMPARISON TO THE LAS VEGAS STRIP BUS ROUTE**

One indicator of the demand for public transit service in the LLC Monorail service area is ridership on the Citizen's Area Transit Las Vegas Strip bus route (#301). Route 301 carries approximately 30,000 passengers daily (approximately 10 million annually), of which approximately one-third are tourists (10,000).<sup>18</sup> Route 301 operates over an alignment that is more than double the length of the LLC Monorail. On a per route mile basis, the LLC Monorail is projected to carry more than four times the ridership of Route 301.<sup>19</sup>

## **9. LLC MONORAIL RIDERSHIP ATTRACTED FROM THE BUS**

The LLC Monorail is projected to attract only one percent of its ridership from buses,<sup>20</sup> or approximately 500 daily riders. The balance of the LLC Monorail ridership is projected to come from other modes. This means that more than 53,000 daily riders would be attracted from other modes, such as the existing monorail, taxicabs and walking. It seems doubtful that there is such a large untapped market for transit service in the Las Vegas Strip, as is indicated by the following analysis.

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<sup>17</sup> For urbanized areas of more than one million population. The industry standard for all areas, small and large, is -0.40. Source: American Public Transit Association.

<sup>18</sup> RTC *Hotel Visitor Intercept Survey*, May 1996.

<sup>19</sup> In 2003, the LLC Monorail is projected to carry approximately 5.1 million riders per route mile. Route #301 carries approximately 1.3 million riders per mile.

<sup>20</sup> Carter Burgess memorandum to John Toth, Clark County Traffic Management Division, item #4 (September 10, 1999).



## 10. LLC MONORAIL RIDERSHIP ATTRACTED FROM THE EXISTING MONORAIL

The existing monorail operates from the MGM Grand Hotel to Bally's. Daily ridership is 12,800<sup>21</sup> and no fare is charged. It is projected that one-third of the LLC Monorail ridership will come from the existing monorail. There are two reasons that this projection could be unachievable:

- One third of the projected LLC Monorail ridership would be 18,000 daily rides, 5,200 more (41 percent more) than are currently carried on the existing monorail.<sup>22</sup>
- The LLC Monorail would charge an average fare of \$2.00, rather than the free fare operation of the existing monorail. When fares increase, ridership typically declines. With respect to the longer term LLC fare increases planned for the LLC Monorail, project planners have assumed that each 10 percent increase in fares will result in a two percent reduction in ridership (-0.20 fare elasticity). In contrast, national research has found transit's fare elasticity to be -0.36 (above).<sup>23</sup>

Because dividing by zero produces a mathematically undefined result, it is not possible to calculate the impact of a fare increase from the present level using fare elasticity factors. Moreover, even if a low fare were charged, such as \$0.25, the resulting fare elasticity calculation would produce a negative ridership figure, which is an impossible outcome. This reflects the fact that the fare elasticity factor becomes less accurate as the size of an individual fare increase rises. To estimate the impact of a fare increase on existing monorail ridership, it was instead assumed that the \$2.00 fare would be reached in a series of rapid fare increases (for example weekly) that would take the fare from \$0.25<sup>24</sup> to \$2.00. Such a strategy is very likely to result in higher ridership than a single fare increase from zero to \$2.00. Such a technique produces, by definition, a smaller passenger reduction than an immediate fare

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<sup>21</sup> *Ridership and Revenue Study.*

<sup>22</sup> This factor illustrates a serious concern with respect to the ridership projections. It is clear that charging a \$2.00 fare instead of no fare would reduce ridership. Yet the projection is that more people would be diverted from the existing no-fare monorail than currently ride. This could indicate that the ridership projections have not taken sufficient account of the impact of higher fares. This theme is developed later in the report.

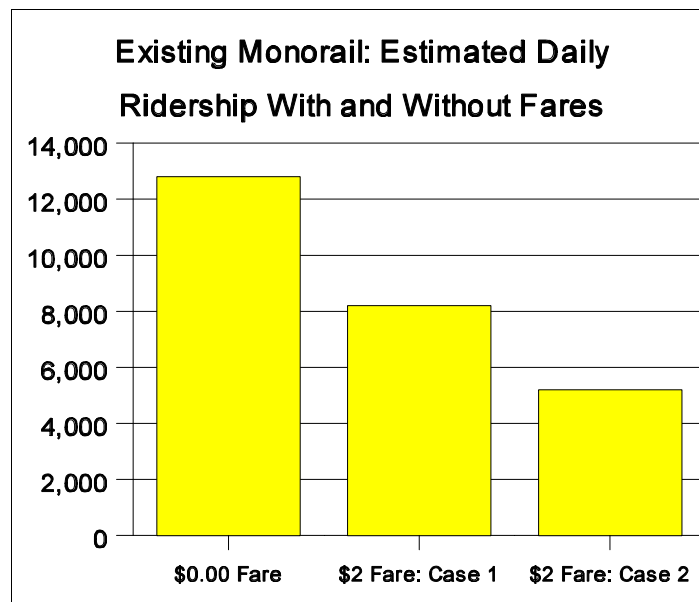
<sup>23</sup> Data for urbanized areas of more than one million population, American Public Transit Association.

<sup>24</sup> To make calculations possible, it is assumed that the present fare is \$0.25, instead of the actual \$0.00.

increased from \$0.00 to \$2.00, because the overall fare increase is less. Two estimates were produced (Figure #2).

- The first case assumed the -0.36 national transit fare elasticity factor, with individual fare increases of 12.5 percent.<sup>25</sup> It is estimated that there factors would reduce daily ridership from 12,800 to 5,700.
- The second case assumed the -0.20 fare elasticity used in the planning of the LLC Monorail, with individual fare increases of 12.5 percent (the same percentage as the projected LLC Monorail fare increase in 2007, from \$2.00 to \$2.25).<sup>26</sup> It is estimated that there factors would reduce daily ridership from 12,800 to 8,200.

These calculations would suggest that the existing monorail could contribute, at most, 15 percent of the projected 54,000 daily ridership --- less than one-half the 18,000 projected.



**Figure 2**  
Calculation method described in text.

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<sup>25</sup> The final fare increase would be less than 33.3 percent, so that the \$2.00 fare is reached. Fare increases of this magnitude are considered within the range of reliability with respect to the fare increase elasticity factor.

<sup>26</sup> The final fare increase would be less than 12.5 percent, so that the \$2.00 fare is reached.

## 11. LLC MONORAIL RIDERSHIP ATTRACTED FROM WALKING

It is projected that one-third of the LLC Monorail ridership, or 18,000 in 2003, will be composed of people who would have otherwise walked.<sup>27</sup> Walking represents the most popular mode of travel for visitors to the Las Vegas Strip. It is estimated that there will be approximately 135,000 daily walking trips in the entire Las Vegas Strip in 2003.<sup>28</sup>

In the public transit industry, it is generally accepted that the “catchment” area<sup>29</sup> around a station is one-quarter mile. For visitors beginning or ending their trips on the west side of the Las Vegas Strip, the LLC Monorail stations will be at least a quarter of a mile walk away.

As a result of these long walks to the LLC Monorail stations, visitors beginning or ending their trips on the west side of the Strip will experience trip times that are little better than that of the Las Vegas Strip bus (Route #301). These necessary walks will be made longer in both time and distance by the signalized crossings or pedestrian bridge crossings of Las Vegas Boulevard South, and the generally circuitous walks through crowded casinos on the east side of the street. For example:

1. With respect to trips between the MGM Grand Hotel and the Sahara Hotel (from one end of the LLC Monorail route to the other):
  - Visitors with origins or destinations on the west side of the Las Vegas Strip are likely to find the bus to require five minutes more than the LLC Monorail, if the other end of the trip is on the east side.
  - Visitors traveling from origins to destinations on the west side of the Las Vegas Strip are likely to experience longer travel times.
  - Visitors with origins and destinations on the east side of the Las Vegas Strip could save up to 10 minutes by using the LLC Monorail.<sup>30</sup>

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<sup>27</sup> Carter Burgess memorandum to John Toth, Clark County Traffic Management Division, item #4 (September 10, 1999).

<sup>28</sup> Based upon the 1996 RTC estimate of 119,000 and increased by two percent annually to 2003.

<sup>29</sup> Maximum distance that most people are willing to walk to a transit stop.

<sup>30</sup> Assumes 15 minutes walking time from west side hotels to LLC Monorail stations, five minute walking time from hotels to the Las Vegas Strip bus, waiting time of five minutes for the bus, and two minutes for the LLC Monorail. The Las Vegas Strip bus is

2. With respect to somewhat shorter trips, such as between the MGM Grand Hotel and Harrah's Imperial Palace Hotel:
  - the bus is likely to be faster for people beginning or ending their trips on the west side of the Las Vegas Strip.
  - Visitors with origins and destinations on the east side of the Las Vegas Strip could experience travel time savings of up to eight minutes by using the Monorail.
3. With respect to trips of one mile or less, visitors on both sides of the Las Vegas Strip are likely to find that walking time will be competitive with or take less time than a trip by LLC Monorail, because of the long walks required to reach the LLC Monorail stations behind the hotels on the east side of the Las Vegas Strip.

Part of the uniqueness of Las Vegas is that walking trips may be undertaken as much for the experience as to reach a particular destination. The Las Vegas Strip is one of the most visually stimulating streetscapes in the world, which may be why walking is the most frequent method of travelers for visitors to the Las Vegas Strip. There are many tourist attractions, ranging from the many world class theme resorts (such as Bellagio, the Venetian, Paris, Luxor, Treasure Island, etc.) to strip malls that cater to passers by.

Generally, walkers are divided into three categories:<sup>31</sup>

- Approximately 59 percent of such trips take less than 30 minutes, which means that the LLC Monorail would provide virtually no time advantage, because of the extra time required to walk to and from the stations.<sup>32</sup>
- Approximately 12 percent of walking trips take from 30 to 50 minutes, indicating distances of slightly more than one to two miles.<sup>33</sup> Either the Las Vegas Strip bus route or the LLC Monorail would provide some time savings, but both require paying a fare of \$2.00.

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assumed to operate at an average of nine miles per hour, while the LLC Monorail is assumed to require 27.5 minutes, including terminal dwell time, to complete a round trip of 3.9 miles.

<sup>31</sup> LLC Monorail "Stated Preference" study.

<sup>32</sup> Assumes an average walking speed of 2.5 miles per hour.

<sup>33</sup> At a walking speed of 2.5 miles per hour.

- Approximately 28 percent of walking trips take more than 50 minutes, which could provide greater time savings. People walking for this period of time today could save substantial time by taking the Las Vegas Strip bus route, yet they do not. For people walking for this long, it is possible that the purpose of the trip involves not only the destination, but also the visually attractive streetscape of the Las Vegas Strip. It seems unlikely that they would use the LLC Monorail.

There is already a transit alternative to walking along the Las Vegas Strip that makes possible point to point trips nearly as rapid as the LLC Monorail --- the Las Vegas Strip bus. Yet, a far larger number of visitors walk than take transit. It seems unlikely that the LLC Monorail will attract the projected ridership from people who walk along the Las Vegas Strip.

## **12. LLC MONORAIL RIDERSHIP ATTRACTED FROM TAXICABS**

It is projected that the LLC Monorail will attract approximately 20 percent of its ridership from taxicabs (11,000 daily riders). There are likely to be approximately 70,000 daily trips by taxicab in the Las Vegas Strip in 2003,<sup>34</sup> which means that more than 15 percent of taxi passengers would be expected to switch to the LLC Monorail.

The taxicab market is comparatively price insensitive. Taxicab fares between the locations that will be served by the LLC Monorail range from \$4.50 to \$10.50,<sup>35</sup> considerably more than the proposed \$2.00 one-way LLC Monorail fare. It is therefore unlikely that a large number of taxicab passengers will be attracted by the lower fare.

Taxicabs generally pick up and drop off passengers closer to their destinations (such as at the front door of hotels). Finally, taxicabs are not restricted to heavily congested Las Vegas Boulevard South, and can use less congested roadways, such as Paradise Road and Industrial Boulevard. It is unlikely, therefore, that destination to destination, the LLC Monorail will provide a material time savings for taxicab passengers.

Finally, the Las Vegas taxicab market, like other markets, is dynamic, not static. The principle is illustrated by the English Channel ferry companies, which responded effectively to the new competition provided by the tourist oriented high speed rail and rail shuttle services operated through the new channel tunnel (Eurotunnel). The result has been patronage well below projection and far worse than projected financial performance. It likely that the Las Vegas taxicab will similarly respond to any serious competitive threat posed by the LLC Monorail.

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<sup>34</sup> Based upon the 1996 RTC estimate and increased by two percent annually to 2003.

<sup>35</sup> *Ridership and Revenue Study*.

The percentage of ridership anticipated to be attracted from taxicabs therefore appears to be optimistic.

### 13. COMPARISON TO OTHER LOCAL CIRCULATORS

The ridership projections are so high that LLC Monorail would be by far the most productive local circulator system in the nation.

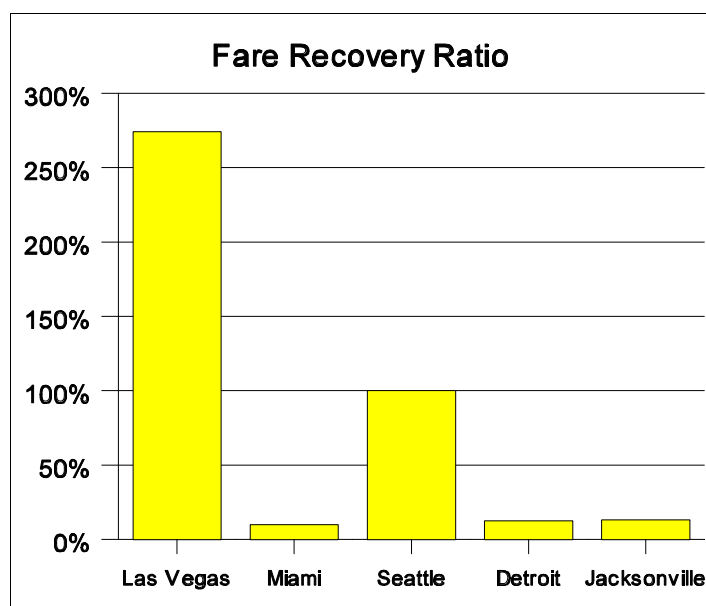
- Ridership would be more than 3.5 times that of the second ranking system, the Miami Metromover (which, unlike the LLC Monorail, has the ridership attraction advantage of being integrated with a regional rail system). It would be five times that of the Seattle Monorail, which has the highest ridership of systems not integrated with a regional system. The LLC Monorail would have ridership intensity 30 times that of the similar technology Jacksonville monorail.,
- The LLC Monorail would have by far the highest average fare per passenger, three times that of the Seattle Monorail.

Each of the other local circulation systems operates with average passenger fares that are less than one-third that projected for the LLC Monorail. Miami's Metromover, which has the highest ridership of any operating local circulation system, charges an average fare barely 1/15th that of the LLC Monorail. The LLC Monorail's fare and projected ridership are well outside the range of current experience (Table #2).

Table #2 Local Circulation Systems: Ridership and Fares		
Local Circulator	Daily Ridership	Average Fare
Las Vegas Monorail	54,000	\$2.00
Miami Metromover	13,400	\$0.14
Seattle Monorail	9,000	\$0.63
Detroit People Mover	7,000	\$0.46
Jacksonville Monorail	1,800	Less than \$0.35
Sources: Calculated or estimated from LLC Monorail, Metro Dade Transit, National Transit Database and Jacksonville Transportation Authority information.		

## 14. FARE RECOVERY RATIO

As a result of its high fare and projected high ridership, the LLC Monorail is would have a fare recovery ratio of 274 percent<sup>36</sup> (fare revenues divided by operating expenses, excluding debt service), 2.7 times that of the Seattle Monorail and more than 20 times that of the systems in Miami, Detroit and Jacksonville (Figure #3).



**Figure 3**

Calculated or estimated from LLC Monorail, Metro-Dade Transit, Jacksonville Transit Authority information and National Transit Database.

It is projected that the LLC Monorail will collect more than \$40 million in fare revenues in its first full year of operation (2004).<sup>37</sup> This is more fare revenue (inflation adjusted) than is collected by the entire RTC transit system and by metropolitan transit systems operating both bus and rail systems in Dallas and St. Louis. The projected 274 percent fare recovery ratio would be nearly nine times that of the

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<sup>36</sup> Actually, the fare recovery ratio is higher, since the projected operating cost includes some funds for capital renewal. Project officials indicated that more precise operating cost only data was not yet available.

<sup>37</sup> *Ridership and Revenue Study.*

average US transit system, at 32 percent.<sup>38</sup> The LLC Monorail fare recovery ratio is projected to be approximately four times that of the intensively patronized New York City Transit Authority, which accounts for more than one-quarter of all US transit ridership (Table A-3, Appendix). In addition to its unprecedentedly high fare recovery ratio, the LLC Monorail would have the highest average passenger fare of any metropolitan transit system in the nation.<sup>39</sup>

## 15. HOTEL GENERATION MODEL

The *Ridership and Revenue Study* notes that there is a correlation between hotel rooms and existing monorail ridership. The existing monorail has stations at two hotels, which have a combined total of 7,800 hotel rooms. The LLC Monorail will have seven stations and will directly serve major eight hotels and two smaller hotel properties, which will have a combined total of approximately 25,000 rooms in 2003.<sup>40</sup> Based upon present monorail ridership, the ratio of present hotel rooms to the future 25,000 hotel room figure yields daily ridership of approximately 41,200. This estimate, however, is based upon no fare being charged. The imposition of a \$2.00 fare is likely to reduce the potential ridership.

- At the LLC Monorail projected -0.20 fare elasticity assumption, with individual fare increases of 12.5 percent (as in Section 10),<sup>41</sup> ridership would be 36.0 percent lower.
- At the national -0.36 fare elasticity assumption, with individual fare increases of 12.5 percent (as in Section 10),<sup>42</sup> ridership would be 55.6 percent lower

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<sup>38</sup> Calculated from the 1997 Federal Transit Administration National Transit Database. Calculation includes all systems operating more than 200 transit vehicles and all fixed guideway systems.

<sup>39</sup> Some commuter rail systems have higher average fares. Commuter rail systems typically carry riders over much longer distances (in 1997, the average commuter rail trip length was more than 20 miles, which compares to under five miles for the average bus, light rail or heavy rail trip). Calculated from National Transit Database.

<sup>40</sup> Metropolitan Research Association, *1999 Las Vegas Perspective*.

<sup>41</sup> The final fare increase would be less than 12.5 percent, so that the \$2.00 fare is reached.

<sup>42</sup> The final fare increase would be less than 12.5 percent, so that the \$2.00 fare is reached.



## 16. ADVERTISING REVENUES

In its first full year of operation (2004), the LLC Monorail is projected to earn \$6.7 million in advertising revenues. This is a very high figure for a system operating 36 or fewer rail cars. By comparison:<sup>43</sup>

- The Washington, DC transit system, operating more than 600 rail cars and 1,100 buses earns less than \$4 million in advertising revenues.<sup>44</sup>
- Transit systems in metropolitan areas of similar size to Las Vegas (San Antonio, Austin and Indianapolis) earn less than \$600,000 in annual advertising revenues.<sup>45</sup>

The eventual advertising revenue could be significantly lower than projected, which would have a negative effect on the project's finances.

- If advertising revenue were to fall 50 percent short of forecast, net income would drop nearly 50 percent (a reduction of \$170 million from 2003 to 2034). The overall profit on operations would fall to 7.8 percent (from 15.2 percent).
- If advertising revenue were to fall 90 percent short of forecast, net income would drop more than 90 percent (a reduction of \$300 million from 2003 to 2034). The overall profit on operations would fall to 1.8 percent (from 15.2 percent).<sup>46</sup>

## 17. OPERATING AND CAPITAL COSTS

US fixed guideway projects have often cost more to build and operate than projected. During the 1980s, federally financed urban rail projects cost 46 percent more to build, and 78 percent more to

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<sup>43</sup> The National Transit Database does not collect advertising revenue data specifically, and as a result immediately available transit agency annual reports and budgets were consulted.

<sup>44</sup> Annual report of the Washington Area Metropolitan Transit Authority, 1994.

<sup>45</sup> Transit system annual reports for Indianapolis and San Antonio, 1997. Transit agency 1999 budget for Austin.

<sup>46</sup> LLC Monorail representatives indicate that a detailed advertising revenue projection study will soon be available. These conclusions are subject to revision based upon a review of that document.

operate than projected.<sup>47</sup> As in the over-projection of ridership, this is representative of the international experience. The National Academy of Sciences report found that both operating costs and capital costs are typically underestimated in large transportation projects.<sup>48</sup>

*... cost overruns of 50 to 100 percent are common and ... overruns of more than 100 percent are not uncommon.*

This problem has afflicted both projects developed by the public sector and the private sector. A classic example was the privately developed Eurotunnel:

- The English Channel Eurotunnel was to have been built for \$7.8 billion. Costs escalated to \$18.6 billion --- an increase of nearly 140 percent (not including the higher cost of interest due to larger borrowing requirements than projected).<sup>49</sup> After opening a year late, its first year of operation produced a loss of \$1.5 billion. The competitive response of cross-channel ferry operators reduced tunnel traffic to below expectations. After failing to pay interest on its debt for more than a year, a financial bail-out was negotiated with creditors.

In the United States, local circulator projects similar to the LLC Monorail have had similar cost projection difficulties.

- Miami's Metromover cost 106 percent more to build and 84 percent more to operate than projected.<sup>50</sup>
- Detroit's downtown people mover cost 81 percent more to build and 356 percent more to operate than projected.<sup>51</sup>

The LLC Monorail ridership projections, which seem exceedingly optimistic, lead to a concern that the

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<sup>47</sup> Don Pickrell, *Urban Rail l Transit Projects: Forecast Versus Actual Ridership and Costs* (Washington, DC: Urban Mass Transportation Administration, US Department of Transportation, October 1989).

<sup>48</sup> Mette K. Skamris and Bent Flyvbjerg, "Accuracy of Traffic Forecasts and Cost Estimates on Large Transportation Projects," *Transportation Research Record* (Washington, DC: Transportation Research Board, National Research Council), 1996.

<sup>49</sup> "Eurotunnel: Au Revoir Alastair," *The Sunday Times* (London), October 6, 1997.

<sup>50</sup> Pickrell.

<sup>51</sup> Pickrell.

operating and capital cost projections may be similarly optimistic. For example, a 25 percent operating cost overrun could reduce project net profits by nearly \$200 million over the period of 2003 to 2034.

It is intended that the builders (Bombardier Transit Corporation<sup>52</sup> and Granite Construction Company) will guarantee completion of the LLC Monorail within the projected capital cost. Such guarantees, however, may not cover unforeseen circumstances that are not within the control of the builders. While noting the potential for capital cost overruns, this report assumes that the project would be delivered for the agreed upon cost.

## 18. ADDITIONAL ISSUES

There are additional issues with respect to the LLC Monorail project:

- **Potential Delay to Comply with Federal Environmental Regulations:** In a recent action, the Regional Transportation Commission approved the concept of developing its proposed 18 mile fixed guideway project in conjunction with the Las Vegas Monorail.<sup>53</sup> The result would be a “seamless “ route that would operate at least from Cashman Field to the MGM Hotel. Pursuant to federal law and regulation, any federally funded fixed guideway project must be subjected to a federal Environmental Impact Statement. Because the LLC Monorail could become integrated with a federally financed project, it may also be subject to the federal Environmental Impact Statement process. There are at least a few potential bases for litigation on this issue. Any serious legal challenge could delay the project not only for litigation, but also for the Environmental Impact Statement process, which could take two years or more.
- **Potential Competition from a Continuous West Strip Monorail:** The projections presume that the LLC Monorail would be attractive to guests staying at hotels on the west side of the Las Vegas Strip. There are already three monorails on the west side of the Las Vegas Strip, and if a continuous monorail were developed it could divert ridership from the LLC Monorail.

## 19. REVISED RIDERSHIP AND REVENUE PROJECTIONS

Based upon the analysis above, two revised ridership and revenue projections were developed and compared to the projections produced for the LLC Monorail (referred to as Projection #1, Table A-4, Appendix).

**Projection #2: High Ridership:** This case accepts all LLC assumptions (including what appears to be

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<sup>52</sup> It would be preferable to obtain the guarantee of the financially stronger parent Bombardier Corporation, rather than this subsidiary.

<sup>53</sup> Minutes of the Regional Transportation Commission meeting, October 14, 1999.

a very optimistic advertising revenue level),<sup>54</sup> but adjusts to account for the \$2.00 fare using the LLC Monorail elasticity factor of -0.36 (Table A-5, Appendix). The *High Ridership Projection* is based upon the following calculations:<sup>55</sup>

- Based upon the number of hotel rooms along the route, ridership at a \$0.00 fare would be 23.9 percent below the 54,000 projected by the project consultants.
- To account for the \$2.00 fare, there is a downward ridership adjustment of 55.6 percent, using the LLC Monorail elasticity factor of -0.20.
- The LLC Monorail elasticity factor of -0.20 would apply to fare increases between 2003 and 2034.

The *High Ridership Projection* yields the following results (Table #3 and Table #A-6 in the Appendix):

- Average daily ridership in the first year of operation would be 26,600 instead of the projected 54,000 (Figure #4).
- At 2.542 million annual rides per route mile in 2004, the LLC Monorail would carry more passengers per route mile than the most heavily patronized new subway systems in the nation (Los Angeles Metro and Washington Metro).
- Over the period of 2003 to 2034, a negative financial result of \$1.05 billion would be produced, with an \$712 million net cash flow loss instead of the \$346 positive net cash flow (Figure #5). The net negative cash flow would be 31.3 percent. The fare recovery ratio, however, would be the highest in the nation, at 135 percent.
- The LLC Monorail would produce revenues that are less than its annual obligations in 2004. Project revenues would be insufficient to pay project financial obligations 30 of 32 years.
- From 2008, debt service reserves and the general fund would be insufficient to pay ongoing

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<sup>54</sup> A detailed advertising report is due soon. This projection, however, indicates that even if the advertising projections turn out to be accurate, the project is not likely to earn enough revenue to meet its obligations.

<sup>55</sup> LLC Monorail officials expressed concern that this report's estimate of business license fees was high. A definition of the appropriate calculation method is yet to be provided. However, license fees are small relative to project revenues and expenses and could not therefore make a material difference in the projections.

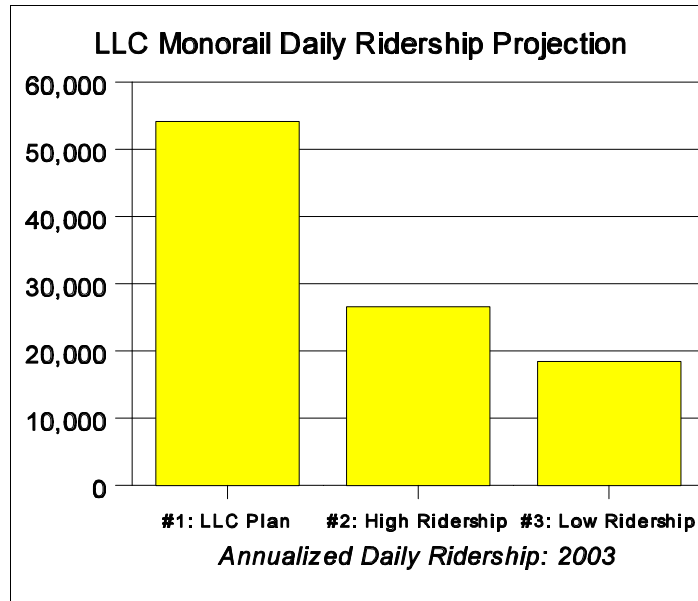
project obligations.

**Projection #3: Low Ridership:** This projection is considered to be the more likely scenario, and is based upon the following assumptions.

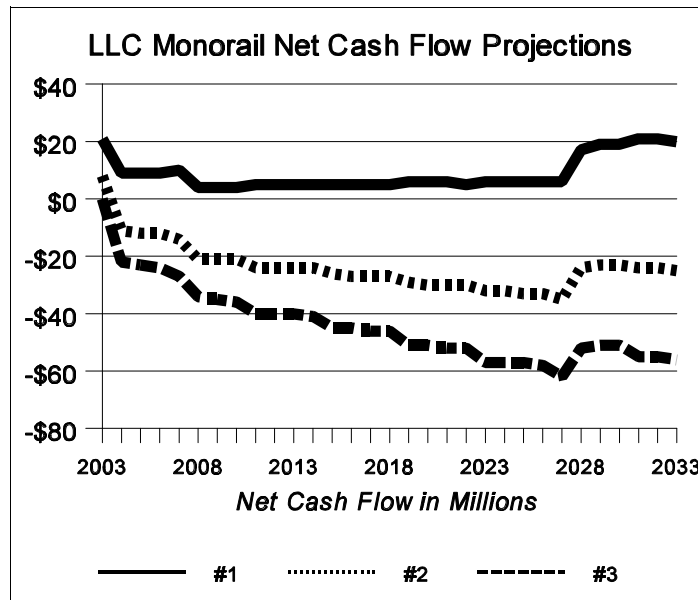
- Based upon the number of hotel rooms along the route, ridership at a \$0.00 fare would be 23.9 percent below the 54,000 projected by the project consultants.
- To account for the \$2.00 fare, there is a downward ridership adjustment of 55.6 percent, using the national fare elasticity factor of -0.36.
- The national elasticity factor of -0.36 would apply to fare increases between 2003 and 2034.
- Advertising revenues would be 50 percent below projection.
- Operating costs would be 10 percent higher than projection.

The *Low Ridership Projection* yields the following results (Table #3 and Table #A-6 in the Appendix):

- Average daily ridership in the first year of operation would be 18,500, instead of the projected 54,000 (Figure #4).
- At 1.764 million annual rides per route mile in 2004, the LLC Monorail would more than double the passengers per route mile of the most heavily used new light rail systems (San Diego, St. Louis and Los Angeles).
- A negative financial result of \$1.7 billion would result over the period of 2003 through 2034, with a net negative cash flow of more than \$1.35 billion (net negative cash flow of -60.2 percent), compared to the projected net income of \$346 million (Figure #5).
- The LLC Monorail would still achieve highest urban transit fare recovery ratio in the nation, at 81 percent, 20 percent higher than that of the nation's most intensively patronized public transit system, the New York City Transit Authority..
- Project revenues would be insufficient pay obligations beginning from 2004. Project revenues would be insufficient to pay project obligations 31 out of 32 years.
- From 2006, debt service reserves and the general fund would be insufficient to pay ongoing project obligations.



**Figure 4**  
Calculation method described in text.



**Figure 5**  
Calculation method described in text.

Table #3 Summary of Projections			
	Projection #1 LLC Monorail Projections	This Study	
		Projection #2 High Ridership	Projection #3 Low Ridership
Annualized Daily Ridership: 2003	54,181	26,612	18,462
Annual Ridership per Route Mile	5,176,000	2,542,000	1,764,000
Planned Net Cash Flow: 2003-2034 (Millions)	\$346	\$346	\$346
This Case Net Cash Flow: 2003-2034 (Millions)	\$346	(\$712)	(\$1,368)
Variation: 2003-2034 (Millions)	\$0	(\$1,058)	(\$1,714)
Fare Recovery Ratio: 2003-2034	274.1%	134.6%	81.2%
Revenues/Expenses: 2003-2034	15.2%	-31.3%	-60.2%
Years Financial Obligations Met by Cash Flow	32 of 32	2 of 32	1 of 32
First Year Financial Obligations Not Met by Cash Flow	NA	2004	2004
Year Negative Result Exceeds Reserves & Funds	NA	2008	2006
#1: Projections as presented by the LLC Monorail (Table A-4).			
#2: LLC Monorail projections adjusted to account for \$2.00 fare (Table A-5)			
#3: Projections adjusted for \$2.00 fare, advertising, fare elasticity and operating cost (Table A-6)			

Nonetheless, the *Low Ridership Projection* is considered optimistic, for the following reasons.

- The negative impact upon ridership of the high fare cannot be reliably estimated by the national fare elasticity formula. The “multiple fare increase” assumption, which was used to estimate the short term impact of an increase from \$0.25 to \$2.00 (Section 10), by definition, has to have produced a more favorable result than a single fare increase from \$0.00 to \$2.00.
- Advertising revenues could be considerably lower.
- Ridership projections for other local circulators have been particularly unreliable.
- Ridership projections for high volume systems such as the LLC Monorail have been exceedingly unreliable.

It is not inconceivable that ridership (and revenue) could fall 75 percent or more short of projection, as has occurred in the cases of the three local circulators (Miami, Detroit and Jacksonville) built since 1980.

The LLC Monorail could not survive even the smallest ridership projection error that has been typical of high volume fixed guideway projects. If ridership is as little as 17 percent short, the LLC Monorail would be incapable of meeting its financial obligations, even if all other project projections and assumptions proved accurate. ***Virtually no ridership projection for a high volume fixed guideway project has been accurate enough that if achieved in Las Vegas would enable the***

***LLC Monorail to meet its financial obligations.*** Ridership projections for high volume fixed guideways have had an average error of 72 percent, and the most accurate has been an error of 28 percent (Section 4).

From the information available, there is likely to be a considerable risk that the LLC Monorail will be unable to meet its ridership projections, revenue projections or financial obligations.

## **20. IMPACT ON RIDERS AND TAXPAYERS**

The LLC Monorail could pose risks for state taxpayers, local taxpayers and transit riders:

1. The Las Vegas Strip bus route is intensively patronized by both residents and tourists. Its fare is higher than that of other RTC bus routes and it appears likely that the revenues on this route are substantially higher than the operating cost. This means that Route #301 is providing financial support to the other RTC routes (“cross-subsidizing”), all of which are likely to be earning an operating loss. The financial impact of the LLC Monorail on this important subsidy source is, as a result, an important consideration.

The anticipated diversion of ridership from the Las Vegas Strip bus route would have little if any impact upon the financial viability of the RTC bus system (one percent of LLC Monorail ridership or less than two percent of bus ridership would be attracted away from the bus route).

There is the potential, however small, that the Monorail could divert more of its passengers from the bus than projected. These riders would undoubtedly be tourists who pay the full \$2.00 fare, as opposed to local residents who are able to take advantage of senior citizens discounts and discounted passes. While tourists represent only one-third of Route #301 ridership, their fares represent up to 80 percent of route revenues.<sup>56</sup> As a result, if a significant number of tourists were to choose the LLC Monorail instead of the bus, RTC could face a large, unplanned financial deficit. This could make it necessary to seek other subsidy sources to support the regional transit system, such as higher taxes.<sup>57</sup>

2. It is intended that the LLC Monorail will be operated cooperatively with a to be developed RTC fixed guideway from the north terminal to Cashman Field (Section 18). A financial failure on the part of the LLC Monorail could contribute to circumstances under which higher taxes

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<sup>56</sup> Estimated from RTC data. In 1998 it is estimated that tourist fare revenues on the route amounted to nearly \$7 million.

<sup>57</sup> A higher than projected diversion of bus riders Monorail would not guarantee the financial success of the LLC Monorail. The 10,000 daily Route 301 tourist riders is less than one-fifth the projected LLC Monorail ridership.



might be sought to continue operation of the LLC Monorail, as a part of the RTC system.

3. In the event of a financial failure, the state could face higher bond interest rates, which would raise the cost of debt to state taxpayers.

# Appendices

Table #A-1 US Rail Systems: Annual Boardings per Route Mile					
Rail System		Type	Annual Boardings per Route Mile (000,000)	If New	Las Vegas Rail Ridership Intensity in Comparison
1	Las Vegas-RTC: 2020 Projection	Heavy rail	6.164		0.0%
2	NY-MTA-NYCTA	Heavy rail	5.010		23.1%
3	Port Authority-PATH	Heavy rail	4.527		36.2%
4	Boston-MBTA	Heavy rail	2.994		105.9%
5	Boston-MBTA	Light rail	2.559		140.9%
6	Philadelphia-SEPTA	Heavy rail	2.276		170.8%
7	Washington-WMATA	Heavy rail	2.226	New	176.9%
8	LA-LACMTA-Metro	Heavy rail	1.963	New	214.1%
9	Atlanta-MARTA	Heavy rail	1.741	New	254.0%
10	San Francisco-Muni	Light rail	1.499		311.3%
11	Chicago-RTA-CTA	Heavy rail	1.304		372.6%
12	Buffalo-NFTA	Light rail	1.226	New	403.0%
13	Philadelphia-SEPTA	Light rail	1.099		461.1%
14	San Francisco-BART	Heavy rail	1.075		473.4%
15	New Jersey Transit	Light rail	0.948		550.5%
16	New Orleans-RTA	Light rail	0.884		597.6%
17	Denver-RTD	Light rail	0.765	New	705.8%
18	San Diego- The Trolley	Light rail	0.753	New	718.7%
19	St. Louis-Bi-State	Light rail	0.735	New	739.1%
20	Baltimore-Maryland-MTA	Heavy rail	0.718	New	758.4%
21	Philadelphia-PATCO	Heavy rail	0.691		792.3%
22	Miami-MDTA	Heavy rail	0.673	New	815.7%
23	LA-LACMTA-Metro (Note)	Light rail	0.557	New	1007.1%
24	Portland-Tri-Met	Light rail	0.515	New	1096.5%
25	Pittsburgh-PAT	Light rail	0.420		1368.6%
26	Sacramento-RT	Light rail	0.390	New	1479.6%
27	Cleveland-RTA	Heavy rail	0.364		1594.2%
28	NY-MTA-Staten Island	Heavy rail	0.355		1638.8%
29	Cleveland-RTA	Light rail	0.333		1751.4%
30	San Jose-SCCTD	Light rail	0.290	New	2024.0%
31	Baltimore-Maryland-MTA	Light rail	0.267	New	2212.3%
Source: Calculated from National Transit Database, 1995					

Table #A-2 Rail Systems in High Auto Use Nations: Rail Ridership: Annual Boardings per Route Mile				
Urban Area		Nation	Annual Boardings per Route Mile (000,000)	Las Vegas Rail Ridership Intensity in Comparison
1	Vienna	Austria	11.437	-46.1%
2	Paris	France	9.365	-34.2%
3	Rome	Italy	9.052	-31.9%
4	Milan	Italy	8.093	-23.8%
5	Las Vegas-RTC: 2020 Projection	US	6.164	0.0%
5	Munich	Germany	6.164	0.0%
7	Lyon	France	6.110	0.9%
8	Nuremberg	Germany	5.908	4.3%
9	Madrid	Spain	5.546	11.1%
10	Barcelona	Spain	5.398	14.2%
11	Berlin	Germany	5.111	20.6%
12	NY-MTA-NYCTA	US	5.010	23.1%
13	Marseille	France	4.640	32.8%
14	Port Authority-PATH	US	4.527	36.2%
14	Toulouse	France	3.613	70.6%
16	Stockholm	Sweden	3.578	72.3%
17	Helsinki	Finland	3.541	74.1%
18	Lille	France	3.038	102.9%
19	London	UK	3.020	104.1%
20	Boston-MBTA	US	2.994	105.9%
Source: Calculated from National Transit Database, 1995 and <i>Janes Urban Transport</i> , 1996-7.				

Table #A-3 Fare Recovery Ratios: Major US Transit Systems			
Rank	State	Transit System	Fare Recovery Ratio
1	NV	Las Vegas Monorail	274.1%
2	WA	Seattle-Monorail	100.0%
3	NY	NY-MTA-NYCTA	68.7%
4	NY	NY-Westchester-Liberty	67.6%
5	CA	San Diego- The Trolley	67.5%
6	NY	NY-MTA-Metro North RR	62.2%
7	CA	San Francisco-BART	55.8%
8	NJ	Philadelphia-PATCO	55.4%
9	NY	NY-MTA-Long Island RR	54.7%
10	DC	Washington-WMATA	51.2%
11	IL	Chicago-RTA-Metra	49.8%
12	NJ	New Jersey Transit	47.1%
13	CA	San Diego-SANDAG	46.5%
14	NY	Port Authority-PATH	46.4%
15	NV	Las Vegas - ATC\VanCom	44.8%
16	IL	Chicago-RTA-CTA	44.2%
17	NY	NY-MTA-Long Island Bus	42.6%
18	CA	San Diego Transit	41.8%
19	NY	Rochester-RTS	41.0%
20	PA	Philadelphia-SEPTA	40.4%
21	WI	Milwaukee-County	40.3%
22	MN	Minneapolis-St. Paul-MCTO	39.5%
23	LA	New Orleans-RTA	39.3%
24	FL	Orlando-LYNX	39.2%
25	CA	LA-Foothill Transit	38.6%
26	MD	Baltimore-Maryland-MTA	37.7%
27	MA	Boston-MBTA	37.4%
28	VA	Norfolk-TRT	35.4%
29	NY	Albany-CDTA	35.0%
30	GA	Atlanta-MARTA	34.9%
31	CA	San Francisco-Muni	34.7%
32	NY	Buffalo-NFTA	34.3%
33	CA	SF-Golden Gate	31.2%
34	OH	Cincinnati-SORTA	31.1%
35	AZ	Phoenix PTD	30.5%
36	FL	Miami-MDTA	29.8%
37	CA	LA-LACMTA-Metro	29.8%
38	IL	Chicago-RTA-Pace	28.7%

Table #A-3 Fare Recovery Ratios: Major US Transit Systems			
Rank	State	Transit System	Fare Recovery Ratio
39	CA	LA-OCTA	28.1%
40	HI	Honolulu-DTS	27.9%
41	PA	Pittsburgh-PAT	27.0%
42	CA	Sacramento-RT	26.2%
43	CA	SF-SamTrans	26.1%
44	RI	Providence-RIPTA	25.9%
45	CA	Oakland-AC Transit	24.8%
46	OH	Columbus-COTA	24.8%
47	FL	Ft. Lauderdale-Bct	24.6%
48	WI	Madison-MMT	24.5%
49	OR	Portland-Tri-Met	24.0%
50	FL	Tampa-Hartline	23.8%
51	OH	Cleveland-RTA	23.3%
52	MO	St. Louis-Bi-State	22.7%
53	WA	Seattle-Metro	22.3%
54	AZ	Tucson-Sun Tran	22.3%
55	MD	Maryland-Ride-On	21.9%
56	TX	Houston-Metro	21.7%
57	CO	Denver-RTD	21.6%
58	DE	Delaware-DTC	20.9%
59	MI	Detroit-D-DOT	20.9%
60	UT	Salt Lake City-UTA	19.0%
61	MO	Kansas City-KCATA	19.0%
62	KY	Louisville-TARC	18.4%
63	WA	Seattle-Snohomish-Commun.	17.7%
64	TX	Fort Worth-The T	17.5%
65	WA	Tacoma-Pierce Transit	17.2%
66	WI	Milwaukee-Paratransit	17.0%
67	OH	Dayton-RTA	16.5%
68	CA	City of Los Angeles	16.5%
69	MI	Detroit-SMART	15.9%
70	OH	Akron-Metro	15.1%
71	CA	San Jose-SCCTD	14.7%
72	WA	Spokane-STA	14.1%
73	TX	Dallas-DART	14.0%
74	TX	San Antonio-VIA	11.7%
75	WA	Bremerton-Kitsap Transit	10.8%
76	TX	Austin-Capital Metro	10.7%

Table #A-3 Fare Recovery Ratios: Major US Transit Systems			
Rank	State	Transit System	Fare Recovery Ratio
77	WA	Richland-Ben Franklin	10.4%
78	CA	LA-Access	5.8%
		Average (Excludes Las Vegas Monorail)	31.7%
Las Vegas data projected for 2003-2034			
Other data from 1997 National Transit Database			

Table # A-4

**LLC MONORAIL****CASH FLOW ANALYSIS****Project Projection as Submitted (#1)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2003	2004	2005	2006	2007
Annual Ridership	13,184,000	20,187,000	20,599,000	21,011,000	21,145,000
Fare	\$2.00	\$2.00	\$2.00	\$2.00	\$2.25
<b>Sources of Funds</b>					
Fare Revenue	\$26,368,000	\$40,374,000	\$41,198,000	\$42,022,000	\$47,576,250
Advertising	\$4,333,333	\$6,695,000	\$6,895,850	\$7,102,726	\$7,315,807
Interest & Reserve Fund Earnings	\$5,042,472	\$4,590,133	\$4,756,924	\$4,830,198	\$4,830,198
Total Sources of Funds	\$35,743,805	\$51,659,133	\$52,850,774	\$53,954,924	\$59,722,255
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$12,621,652	\$13,000,302	\$13,390,311	\$13,792,020	\$14,205,781
LLC Management & Oversight	\$1,500,000	\$1,545,000	\$1,591,350	\$1,639,091	\$1,688,263
Business License Fee	\$343,686	\$172,457	\$180,109	\$183,240	\$208,424
Total Uses Before Debt Service	\$14,465,338	\$14,717,759	\$15,161,770	\$15,614,351	\$16,102,468
<b>Net Cash Flow Before Debt Service</b>	\$21,278,467	\$36,941,374	\$37,689,004	\$38,340,573	\$43,619,787
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$0	\$21,447,756	\$22,403,675	\$22,768,675	\$25,903,675
2nd Lien-Post Capitalized Interest	\$0	\$6,012,425	\$6,279,900	\$6,409,900	\$7,294,900
3rd Lien-Post Capitalized Interest	\$0	\$0	\$0	\$0	\$0
Total Debt Service	\$0	\$27,460,181	\$28,683,575	\$29,178,575	\$33,198,575
<b>Net Cash Flow After Debt Service</b>	\$21,278,467	\$9,481,193	\$9,005,429	\$9,161,998	\$10,421,212
<b>Net Cash Flow Compared to Plan</b>	\$0	\$0	\$0	\$0	\$0
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$40,228,271	\$48,168,151	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$91,686,417	\$99,626,297	\$101,458,146	\$101,458,146	\$101,458,146



Table # A-4

**LLC MONORAIL****CASH FLOW ANALYSIS****Project Projection as Submitted (#1)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2008	2009	2010	2011	2012
Annual Ridership	21,551,000	21,958,000	22,364,000	22,251,000	22,362,000
Fare	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50
<b>Sources of Funds</b>					
Fare Revenue	\$48,489,750	\$49,405,500	\$50,319,000	\$55,627,500	\$55,905,000
Advertising	\$7,535,281	\$7,761,340	\$7,994,180	\$8,234,006	\$8,481,026
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$60,855,229	\$61,997,038	\$63,143,378	\$68,691,704	\$69,216,224
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$14,837,678	\$15,282,808	\$15,741,293	\$16,213,531	\$16,699,937
LLC Management & Oversight	\$1,738,911	\$1,791,078	\$1,844,811	\$1,900,155	\$1,957,160
Business License Fee	\$80,393	\$81,560	\$82,720	\$91,754	\$91,776
Total Uses Before Debt Service	\$16,656,982	\$17,155,447	\$17,668,823	\$18,205,440	\$18,748,873
<b>Net Cash Flow Before Debt Service</b>	\$44,198,247	\$44,841,591	\$45,474,555	\$50,486,263	\$50,467,351
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$26,243,675	\$26,628,675	\$26,223,675	\$29,113,675	\$29,103,675
2nd Lien-Post Capitalized Interest	\$7,394,900	\$7,494,900	\$8,384,900	\$8,589,900	\$8,584,900
3rd Lien-Post Capitalized Interest	\$6,540,000	\$6,640,000	\$6,730,000	\$8,195,000	\$8,190,000
Total Debt Service	\$40,178,575	\$40,763,575	\$41,338,575	\$45,898,575	\$45,878,575
<b>Net Cash Flow After Debt Service</b>	\$4,019,672	\$4,078,016	\$4,135,980	\$4,587,688	\$4,588,776
<b>Net Cash Flow Compared to Plan</b>	\$0	\$0	\$0	\$0	\$0
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146

Table # A-4

**LLC MONORAIL****CASH FLOW ANALYSIS****Project Projection as Submitted (#1)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2013	2014	2015	2016	2017
Annual Ridership	22,474,000	22,587,000	22,518,000	22,630,000	22,744,000
Fare	\$2.50	\$2.50	\$2.75	\$2.75	\$2.75
<b>Sources of Funds</b>					
Fare Revenue	\$56,185,000	\$56,467,500	\$61,924,500	\$62,232,500	\$62,546,000
Advertising	\$8,735,456	\$8,997,520	\$9,267,446	\$9,545,469	\$9,831,833
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$69,750,654	\$70,295,218	\$76,022,144	\$76,608,167	\$77,208,031
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$17,259,677	\$17,777,467	\$18,310,791	\$18,860,115	\$19,425,919
LLC Management & Oversight	\$2,015,875	\$2,076,351	\$2,138,641	\$2,202,801	\$2,268,885
Business License Fee	\$91,599	\$91,526	\$100,865	\$100,817	\$100,778
Total Uses Before Debt Service	\$19,367,151	\$19,945,344	\$20,550,298	\$21,163,733	\$21,795,581
<b>Net Cash Flow Before Debt Service</b>	\$50,383,504	\$50,349,874	\$55,471,846	\$55,444,434	\$55,412,450
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$29,053,675	\$29,038,675	\$31,988,675	\$31,078,675	\$31,058,675
2nd Lien-Post Capitalized Interest	\$8,574,900	\$8,564,900	\$9,439,900	\$10,329,900	\$10,324,900
3rd Lien-Post Capitalized Interest	\$8,175,000	\$8,170,000	\$9,000,000	\$8,995,000	\$8,990,000
Total Debt Service	\$45,803,575	\$45,773,575	\$50,428,575	\$50,403,575	\$50,373,575
<b>Net Cash Flow After Debt Service</b>	\$4,579,929	\$4,576,299	\$5,043,271	\$5,040,859	\$5,038,875
<b>Net Cash Flow Compared to Plan</b>	\$0	\$0	\$0	\$0	\$0
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146

Table # A-4

**LLC MONORAIL****CASH FLOW ANALYSIS****Project Projection as Submitted (#1)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2018	2019	2020	2021	2022
Annual Ridership	22,857,000	22,834,000	22,948,000	23,063,000	23,178,000
Fare	\$2.75	\$3.00	\$3.00	\$3.00	\$3.00
<b>Sources of Funds</b>					
Fare Revenue	\$62,856,750	\$68,502,000	\$68,844,000	\$69,189,000	\$69,534,000
Advertising	\$10,126,788	\$10,430,592	\$10,743,510	\$11,065,815	\$11,397,789
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$77,813,736	\$83,762,790	\$84,417,708	\$85,085,013	\$85,761,987
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$20,018,570	\$20,619,127	\$21,237,701	\$21,874,832	\$22,531,077
LLC Management & Oversight	\$2,336,951	\$2,407,060	\$2,479,271	\$2,553,650	\$2,630,259
Business License Fee	\$100,679	\$110,205	\$110,166	\$110,130	\$109,971
Total Uses Before Debt Service	\$22,456,200	\$23,136,392	\$23,827,138	\$24,538,612	\$25,271,307
<b>Net Cash Flow Before Debt Service</b>	\$55,357,536	\$60,626,398	\$60,590,569	\$60,546,401	\$60,490,680
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$31,033,675	\$33,986,225	\$33,967,375	\$33,945,025	\$33,912,250
2nd Lien-Post Capitalized Interest	\$10,309,900	\$11,289,900	\$11,284,900	\$10,444,900	\$10,434,900
3rd Lien-Post Capitalized Interest	\$8,980,000	\$9,840,000	\$9,830,000	\$10,650,000	\$10,645,000
Total Debt Service	\$50,323,575	\$55,116,125	\$55,082,275	\$55,039,925	\$54,992,150
<b>Net Cash Flow After Debt Service</b>	\$5,033,961	\$5,510,273	\$5,508,294	\$5,506,476	\$5,498,530
<b>Net Cash Flow Compared to Plan</b>	\$0	\$0	\$0	\$0	\$0
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146

Table # A-4

**LLC MONORAIL****CASH FLOW ANALYSIS****Project Projection as Submitted (#1)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2023	2024	2025	2026	2027
Annual Ridership	23,177,000	23,235,000	23,293,000	23,352,000	23,340,000
Fare	\$3.25	\$3.25	\$3.25	\$3.25	\$3.50
<b>Sources of Funds</b>					
Fare Revenue	\$75,325,250	\$75,513,750	\$75,702,250	\$75,894,000	\$81,690,000
Advertising	\$11,739,723	\$12,091,915	\$12,454,672	\$12,828,312	\$13,213,162
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$91,895,171	\$92,435,863	\$92,987,120	\$93,552,510	\$99,733,360
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$23,156,091	\$23,850,774	\$24,566,297	\$25,303,286	\$26,062,384
LLC Management & Oversight	\$2,709,167	\$2,790,442	\$2,874,155	\$2,960,380	\$3,049,191
Business License Fee	\$119,855	\$119,413	\$118,973	\$118,537	\$128,217
Total Uses Before Debt Service	\$25,985,113	\$26,760,629	\$27,559,425	\$28,382,203	\$29,239,793
<b>Net Cash Flow Before Debt Service</b>	\$65,910,058	\$65,675,234	\$65,427,695	\$65,170,308	\$70,493,567
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$35,942,400	\$35,814,700	\$35,679,150	\$35,538,550	\$38,440,425
2nd Lien-Post Capitalized Interest	\$12,379,900	\$12,334,900	\$12,289,900	\$12,239,900	\$13,242,300
3rd Lien-Post Capitalized Interest	\$11,595,000	\$11,555,000	\$11,510,000	\$11,465,000	\$12,400,000
Total Debt Service	\$59,917,300	\$59,704,600	\$59,479,050	\$59,243,450	\$64,082,725
<b>Net Cash Flow After Debt Service</b>	\$5,992,758	\$5,970,634	\$5,948,645	\$5,926,858	\$6,410,842
<b>Net Cash Flow Compared to Plan</b>	\$0	\$0	\$0	\$0	\$0
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146

Table # A-4

**LLC MONORAIL****CASH FLOW ANALYSIS****Project Projection as Submitted (#1)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2028	2029	2030	2031	2032
Annual Ridership	23,398,000	23,457,000	23,515,000	23,527,000	23,586,000
Fare	\$3.50	\$3.50	\$3.50	\$3.75	\$3.75
<b>Sources of Funds</b>					
Fare Revenue	\$81,893,000	\$82,099,500	\$82,302,500	\$88,226,250	\$88,447,500
Advertising	\$13,609,557	\$14,017,843	\$14,438,379	\$14,871,530	\$15,317,676
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$100,332,755	\$100,947,541	\$101,571,077	\$107,927,978	\$108,595,374
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$26,994,801	\$27,804,645	\$28,638,784	\$29,497,948	\$30,382,886
LLC Management & Oversight	\$3,140,667	\$3,234,887	\$3,331,934	\$3,431,892	\$3,534,848
Business License Fee	\$349,556	\$371,144	\$382,695	\$412,323	\$410,559
Total Uses Before Debt Service	\$30,485,024	\$31,410,676	\$32,353,413	\$33,342,162	\$34,328,294
<b>Net Cash Flow Before Debt Service</b>	\$69,847,731	\$69,536,865	\$69,217,664	\$74,585,815	\$74,267,080
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$38,129,550	\$37,920,375	\$36,749,100	\$39,599,950	\$39,430,725
2nd Lien-Post Capitalized Interest	\$13,075,400	\$13,059,300	\$13,333,800	\$14,369,700	\$14,308,400
3rd Lien-Post Capitalized Interest	\$1,165,000	\$0	\$0	\$0	\$0
Total Debt Service	\$52,369,950	\$50,979,675	\$50,082,900	\$53,969,650	\$53,739,125
<b>Net Cash Flow After Debt Service</b>	\$17,477,781	\$18,557,190	\$19,134,764	\$20,616,165	\$20,527,955
<b>Net Cash Flow Compared to Plan</b>	\$0	\$0	\$0	\$0	\$0
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146

Table # A-4

**LLC MONORAIL****CASH FLOW ANALYSIS****Project Projection as Submitted (#1)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2033	2034
Annual Ridership	23,645,000	23,645,000
Fare	\$3.75	\$3.75
<b>Sources of Funds</b>		
Fare Revenue	\$88,668,750	\$88,668,750
Advertising	\$15,777,206	\$16,250,522
Interest & Reserve Fund Earnings	\$4,830,198	\$56,288,344
Total Sources of Funds	\$109,276,154	\$161,207,616
<b>Uses of Funds</b>		
Operations/Maintenance/Replacement	\$31,170,774	\$32,269,812
LLC Management & Oversight	\$3,640,894	\$3,750,121
Business License Fee	\$409,417	\$1,340,961
Total Uses Before Debt Service	\$35,221,085	\$37,360,894
<b>Net Cash Flow Before Debt Service</b>	\$74,055,069	\$123,846,723
<b>Debt Service (Net)</b>		
1st Lien-Post Capitalized Interest	\$39,319,325	\$41,677,775
2nd Lien-Post Capitalized Interest	\$14,264,900	\$15,120,900
3rd Lien-Post Capitalized Interest	\$0	\$0
Total Debt Service	\$53,584,225	\$56,798,675
<b>Net Cash Flow After Debt Service</b>	\$20,470,844	\$67,048,048
<b>Net Cash Flow Compared to Plan</b>	\$0	\$0
<b>Reserves and Funds: Planned</b>		
Debt Service Reserves	\$51,458,146	\$0
General Fund	\$50,000,000	\$0
Total	\$101,458,146	\$0

Table # A-5

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: High Projection (#2)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2003	2004	2005	2006	2007
Annual Ridership	6,475,533	9,915,168	10,117,529	10,319,889	10,385,705
Fare	\$2.00	\$2.00	\$2.00	\$2.00	\$2.25
<b>Sources of Funds</b>					
Fare Revenue	\$12,951,065	\$19,830,336	\$20,235,057	\$20,639,778	\$23,367,837
Advertising	\$4,333,333	\$6,695,000	\$6,895,850	\$7,102,726	\$7,315,807
Interest & Reserve Fund Earnings	\$5,042,472	\$4,590,133	\$4,756,924	\$4,830,198	\$4,830,198
Total Sources of Funds	\$22,326,870	\$31,115,469	\$31,887,831	\$32,572,702	\$35,513,842
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$12,621,652	\$13,000,302	\$13,390,311	\$13,792,020	\$14,205,781
LLC Management & Oversight	\$1,500,000	\$1,545,000	\$1,591,350	\$1,639,091	\$1,688,263
Business License Fee	\$343,686	\$172,457	\$180,109	\$183,240	\$208,424
Total Uses Before Debt Service	\$14,465,338	\$14,717,759	\$15,161,770	\$15,614,351	\$16,102,468
<b>Net Cash Flow Before Debt Service</b>	\$7,861,532	\$16,397,710	\$16,726,061	\$16,958,351	\$19,411,374
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$0	\$21,447,756	\$22,403,675	\$22,768,675	\$25,903,675
2nd Lien-Post Capitalized Interest	\$0	\$6,012,425	\$6,279,900	\$6,409,900	\$7,294,900
3rd Lien-Post Capitalized Interest	\$0	\$0	\$0	\$0	\$0
Total Debt Service	\$0	\$27,460,181	\$28,683,575	\$29,178,575	\$33,198,575
<b>Net Cash Flow After Debt Service</b>	\$7,861,532	(\$11,062,471)	(\$11,957,514)	(\$12,220,224)	(\$13,787,201)
<b>Net Cash Flow Compared to Plan</b>	(\$13,416,935)	(\$20,543,664)	(\$20,962,943)	(\$21,382,222)	(\$24,208,413)
Accumulated Difference	(\$13,416,935)	(\$33,960,598)	(\$54,923,541)	(\$76,305,763)	(\$100,514,176)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$40,228,271	\$48,168,151	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$91,686,417	\$99,626,297	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	\$78,269,482	\$65,665,699	\$46,534,605	\$25,152,383	\$943,970

Table # A-5

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: High Projection (#2)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2008	2009	2010	2011	2012
Annual Ridership	10,585,119	10,785,023	10,984,437	10,928,935	10,983,454
Fare	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50
<b>Sources of Funds</b>					
Fare Revenue	\$23,816,517	\$24,266,302	\$24,714,982	\$27,322,337	\$27,458,636
Advertising	\$7,535,281	\$7,761,340	\$7,994,180	\$8,234,006	\$8,481,026
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$36,181,997	\$36,857,840	\$37,539,361	\$40,386,541	\$40,769,859
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$14,837,678	\$15,282,808	\$15,741,293	\$16,213,531	\$16,699,937
LLC Management & Oversight	\$1,738,911	\$1,791,078	\$1,844,811	\$1,900,155	\$1,957,160
Business License Fee	\$80,393	\$81,560	\$82,720	\$91,754	\$91,776
Total Uses Before Debt Service	\$16,656,982	\$17,155,447	\$17,668,823	\$18,205,440	\$18,748,873
<b>Net Cash Flow Before Debt Service</b>	\$19,525,014	\$19,702,393	\$19,870,537	\$22,181,100	\$22,020,986
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$26,243,675	\$26,628,675	\$26,223,675	\$29,113,675	\$29,103,675
2nd Lien-Post Capitalized Interest	\$7,394,900	\$7,494,900	\$8,384,900	\$8,589,900	\$8,584,900
3rd Lien-Post Capitalized Interest	\$6,540,000	\$6,640,000	\$6,730,000	\$8,195,000	\$8,190,000
Total Debt Service	\$40,178,575	\$40,763,575	\$41,338,575	\$45,898,575	\$45,878,575
<b>Net Cash Flow After Debt Service</b>	(\$20,653,561)	(\$21,061,182)	(\$21,468,038)	(\$23,717,475)	(\$23,857,589)
<b>Net Cash Flow Compared to Plan</b>	(\$24,673,233)	(\$25,139,198)	(\$25,604,018)	(\$28,305,163)	(\$28,446,364)
Accumulated Difference	(\$125,187,409)	(\$150,326,607)	(\$175,930,624)	(\$204,235,787)	(\$232,682,151)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$23,729,263)	(\$48,868,461)	(\$74,472,478)	(\$102,777,641)	(\$131,224,005)



Table # A-5

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: High Projection (#2)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2013	2014	2015	2016	2017
Annual Ridership	11,038,465	11,093,967	11,060,076	11,115,087	11,171,080
Fare	\$2.50	\$2.50	\$2.75	\$2.75	\$2.75
<b>Sources of Funds</b>					
Fare Revenue	\$27,596,162	\$27,734,917	\$30,415,210	\$30,566,489	\$30,720,469
Advertising	\$8,735,456	\$8,997,520	\$9,267,446	\$9,545,469	\$9,831,833
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$41,161,817	\$41,562,635	\$44,512,853	\$44,942,156	\$45,382,500
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$17,259,677	\$17,777,467	\$18,310,791	\$18,860,115	\$19,425,919
LLC Management & Oversight	\$2,015,875	\$2,076,351	\$2,138,641	\$2,202,801	\$2,268,885
Business License Fee	\$91,599	\$91,526	\$100,865	\$100,817	\$100,778
Total Uses Before Debt Service	\$19,367,151	\$19,945,344	\$20,550,298	\$21,163,733	\$21,795,581
<b>Net Cash Flow Before Debt Service</b>	\$21,794,666	\$21,617,291	\$23,962,556	\$23,778,423	\$23,586,919
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$29,053,675	\$29,038,675	\$31,988,675	\$31,078,675	\$31,058,675
2nd Lien-Post Capitalized Interest	\$8,574,900	\$8,564,900	\$9,439,900	\$10,329,900	\$10,324,900
3rd Lien-Post Capitalized Interest	\$8,175,000	\$8,170,000	\$9,000,000	\$8,995,000	\$8,990,000
Total Debt Service	\$45,803,575	\$45,773,575	\$50,428,575	\$50,403,575	\$50,373,575
<b>Net Cash Flow After Debt Service</b>	(\$24,008,909)	(\$24,156,284)	(\$26,466,019)	(\$26,625,152)	(\$26,786,656)
<b>Net Cash Flow Compared to Plan</b>	(\$28,588,838)	(\$28,732,583)	(\$31,509,290)	(\$31,666,011)	(\$31,825,531)
Accumulated Difference	(\$261,270,989)	(\$290,003,572)	(\$321,512,862)	(\$353,178,874)	(\$385,004,404)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$159,812,843)	(\$188,545,426)	(\$220,054,716)	(\$251,720,728)	(\$283,546,258)

Table # A-5

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: High Projection (#2)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2018	2019	2020	2021	2022
Annual Ridership	11,226,581	11,215,285	11,271,278	11,327,762	11,384,246
Fare	\$2.75	\$3.00	\$3.00	\$3.00	\$3.00
<b>Sources of Funds</b>					
Fare Revenue	\$30,873,099	\$33,645,854	\$33,813,833	\$33,983,285	\$34,152,737
Advertising	\$10,126,788	\$10,430,592	\$10,743,510	\$11,065,815	\$11,397,789
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$45,830,085	\$48,906,644	\$49,387,540	\$49,879,298	\$50,380,725
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$20,018,570	\$20,619,127	\$21,237,701	\$21,874,832	\$22,531,077
LLC Management & Oversight	\$2,336,951	\$2,407,060	\$2,479,271	\$2,553,650	\$2,630,259
Business License Fee	\$100,679	\$110,205	\$110,166	\$110,130	\$109,971
Total Uses Before Debt Service	\$22,456,200	\$23,136,392	\$23,827,138	\$24,538,612	\$25,271,307
<b>Net Cash Flow Before Debt Service</b>	\$23,373,885	\$25,770,252	\$25,560,402	\$25,340,686	\$25,109,418
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$31,033,675	\$33,986,225	\$33,967,375	\$33,945,025	\$33,912,250
2nd Lien-Post Capitalized Interest	\$10,309,900	\$11,289,900	\$11,284,900	\$10,444,900	\$10,434,900
3rd Lien-Post Capitalized Interest	\$8,980,000	\$9,840,000	\$9,830,000	\$10,650,000	\$10,645,000
Total Debt Service	\$50,323,575	\$55,116,125	\$55,082,275	\$55,039,925	\$54,992,150
<b>Net Cash Flow After Debt Service</b>	(\$26,949,690)	(\$29,345,873)	(\$29,521,873)	(\$29,699,239)	(\$29,882,732)
<b>Net Cash Flow Compared to Plan</b>	(\$31,983,651)	(\$34,856,146)	(\$35,030,167)	(\$35,205,715)	(\$35,381,263)
Accumulated Difference	(\$416,988,055)	(\$451,844,201)	(\$486,874,368)	(\$522,080,083)	(\$557,461,346)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$315,529,909)	(\$350,386,055)	(\$385,416,222)	(\$420,621,937)	(\$456,003,200)

Table # A-5

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: High Projection (#2)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2023	2024	2025	2026	2027
Annual Ridership	11,383,755	11,412,242	11,440,730	11,469,709	11,463,815
Fare	\$3.25	\$3.25	\$3.25	\$3.25	\$3.50
<b>Sources of Funds</b>					
Fare Revenue	\$36,997,203	\$37,089,787	\$37,182,372	\$37,276,553	\$40,123,351
Advertising	\$11,739,723	\$12,091,915	\$12,454,672	\$12,828,312	\$13,213,162
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$53,567,124	\$54,011,900	\$54,467,242	\$54,935,064	\$58,166,711
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$23,156,091	\$23,850,774	\$24,566,297	\$25,303,286	\$26,062,384
LLC Management & Oversight	\$2,709,167	\$2,790,442	\$2,874,155	\$2,960,380	\$3,049,191
Business License Fee	\$119,855	\$119,413	\$118,973	\$118,537	\$128,217
Total Uses Before Debt Service	\$25,985,113	\$26,760,629	\$27,559,425	\$28,382,203	\$29,239,793
<b>Net Cash Flow Before Debt Service</b>	\$27,582,011	\$27,251,271	\$26,907,817	\$26,552,861	\$28,926,918
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$35,942,400	\$35,814,700	\$35,679,150	\$35,538,550	\$38,440,425
2nd Lien-Post Capitalized Interest	\$12,379,900	\$12,334,900	\$12,289,900	\$12,239,900	\$13,242,300
3rd Lien-Post Capitalized Interest	\$11,595,000	\$11,555,000	\$11,510,000	\$11,465,000	\$12,400,000
Total Debt Service	\$59,917,300	\$59,704,600	\$59,479,050	\$59,243,450	\$64,082,725
<b>Net Cash Flow After Debt Service</b>	(\$32,335,289)	(\$32,453,329)	(\$32,571,233)	(\$32,690,589)	(\$35,155,807)
<b>Net Cash Flow Compared to Plan</b>	(\$38,328,047)	(\$38,423,963)	(\$38,519,878)	(\$38,617,447)	(\$41,566,649)
Accumulated Difference	(\$595,789,394)	(\$634,213,356)	(\$672,733,234)	(\$711,350,681)	(\$752,917,330)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$494,331,248)	(\$532,755,210)	(\$571,275,088)	(\$609,892,535)	(\$651,459,184)

Table # A-5

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: High Projection (#2)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2028	2029	2030	2031	2032
Annual Ridership	11,492,302	11,521,281	11,549,769	11,555,663	11,584,642
Fare	\$3.50	\$3.50	\$3.50	\$3.75	\$3.75
<b>Sources of Funds</b>					
Fare Revenue	\$40,223,058	\$40,324,484	\$40,424,191	\$43,333,735	\$43,442,406
Advertising	\$13,609,557	\$14,017,843	\$14,438,379	\$14,871,530	\$15,317,676
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$58,662,813	\$59,172,525	\$59,692,767	\$63,035,463	\$63,590,279
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$26,994,801	\$27,804,645	\$28,638,784	\$29,497,948	\$30,382,886
LLC Management & Oversight	\$3,140,667	\$3,234,887	\$3,331,934	\$3,431,892	\$3,534,848
Business License Fee	\$349,556	\$371,144	\$382,695	\$412,323	\$410,559
Total Uses Before Debt Service	\$30,485,024	\$31,410,676	\$32,353,413	\$33,342,162	\$34,328,294
<b>Net Cash Flow Before Debt Service</b>	\$28,177,789	\$27,761,849	\$27,339,354	\$29,693,301	\$29,261,986
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$38,129,550	\$37,920,375	\$36,749,100	\$39,599,950	\$39,430,725
2nd Lien-Post Capitalized Interest	\$13,075,400	\$13,059,300	\$13,333,800	\$14,369,700	\$14,308,400
3rd Lien-Post Capitalized Interest	\$1,165,000	\$0	\$0	\$0	\$0
Total Debt Service	\$52,369,950	\$50,979,675	\$50,082,900	\$53,969,650	\$53,739,125
<b>Net Cash Flow After Debt Service</b>	(\$24,192,161)	(\$23,217,826)	(\$22,743,546)	(\$24,276,349)	(\$24,477,139)
<b>Net Cash Flow Compared to Plan</b>	(\$41,669,942)	(\$41,775,016)	(\$41,878,309)	(\$44,892,515)	(\$45,005,094)
Accumulated Difference	(\$794,587,272)	(\$836,362,288)	(\$878,240,597)	(\$923,133,112)	(\$968,138,206)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$693,129,126)	(\$734,904,142)	(\$776,782,451)	(\$821,674,966)	(\$866,680,060)

Table # A-5

**LLC MONORAIL****CASH FLOW ANALYSIS****Revised: High Projection (#2)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2033	2034
Annual Ridership	11,613,620	11,613,620
Fare	\$3.75	\$3.75
<b>Sources of Funds</b>		
Fare Revenue	\$43,551,076	\$43,551,076
Advertising	\$15,777,206	\$16,250,522
Interest & Reserve Fund Earnings	\$4,830,198	\$56,288,344
Total Sources of Funds	\$64,158,480	\$116,089,942
<b>Uses of Funds</b>		
Operations/Maintenance/Replacement	\$31,170,774	\$32,269,812
LLC Management & Oversight	\$3,640,894	\$3,750,121
Business License Fee	\$409,417	\$1,340,961
Total Uses Before Debt Service	\$35,221,085	\$37,360,894
<b>Net Cash Flow Before Debt Service</b>	\$28,937,396	\$78,729,049
<b>Debt Service (Net)</b>		
1st Lien-Post Capitalized Interest	\$39,319,325	\$41,677,775
2nd Lien-Post Capitalized Interest	\$14,264,900	\$15,120,900
3rd Lien-Post Capitalized Interest	\$0	\$0
Total Debt Service	\$53,584,225	\$56,798,675
<b>Net Cash Flow After Debt Service</b>	(\$24,646,829)	\$21,930,374
<b>Net Cash Flow Compared to Plan</b>	(\$45,117,674)	(\$45,117,674)
Accumulated Difference	(\$1,013,255,880)	(\$1,058,373,554)
<b>Reserves and Funds: Planned</b>		
Debt Service Reserves	\$51,458,146	\$0
General Fund	\$50,000,000	\$0
Total	\$101,458,146	\$0
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$911,797,734)	(\$1,058,373,554)

Table # A-6

**LLC MONORAIL****CASH FLOW ANALYSIS****Revised: Low Projection (#3)****Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2003	2004	2005	2006	2007
Ridership	4,492,401	6,878,648	7,019,035	7,159,423	6,880,854
Fare	\$2.00	\$2.00	\$2.00	\$2.00	\$2.25
<b>Sources of Funds</b>					
Fare Revenue	\$8,984,802	\$13,757,296	\$14,038,071	\$14,318,846	\$15,481,922
Advertising	\$2,166,667	\$3,347,500	\$3,447,925	\$3,551,363	\$3,657,904
Interest & Reserve Fund Earnings	\$5,042,472	\$4,590,133	\$4,756,924	\$4,830,198	\$4,830,198
Total Sources of Funds	\$16,193,940	\$21,694,929	\$22,242,920	\$22,700,407	\$23,970,024
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$13,883,817	\$14,300,332	\$14,729,342	\$15,171,222	\$15,626,359
LLC Management & Oversight	\$1,650,000	\$1,699,500	\$1,750,485	\$1,803,000	\$1,857,090
Business License Fee	\$343,686	\$172,457	\$180,109	\$183,240	\$208,424
Total Uses Before Debt Service	\$15,877,503	\$16,172,289	\$16,659,936	\$17,157,462	\$17,691,873
<b>Net Cash Flow Before Debt Service</b>	\$316,437	\$5,522,640	\$5,582,984	\$5,542,945	\$6,278,151
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$0	\$21,447,756	\$22,403,675	\$22,768,675	\$25,903,675
2nd Lien-Post Capitalized Interest	\$0	\$6,012,425	\$6,279,900	\$6,409,900	\$7,294,900
3rd Lien-Post Capitalized Interest	\$0	\$0	\$0	\$0	\$0
Total Debt Service	\$0	\$27,460,181	\$28,683,575	\$29,178,575	\$33,198,575
<b>Net Cash Flow After Debt Service</b>	\$316,437	(\$21,937,541)	(\$23,100,591)	(\$23,635,630)	(\$26,920,424)
<b>Net Cash Flow Compared to Plan</b>	(\$20,962,030)	(\$31,418,734)	(\$32,106,020)	(\$32,797,628)	(\$37,341,636)
Accumulated Difference	(\$20,962,030)	(\$52,380,764)	(\$84,486,784)	(\$117,284,412)	(\$154,626,048)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$40,228,271	\$48,168,151	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$91,686,417	\$99,626,297	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	\$70,724,387	\$47,245,533	\$16,971,362	(\$15,826,266)	(\$53,167,902)

Table # A-6

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: Low Projection (#3)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2008	2009	2010	2011	2012
Ridership	7,012,972	7,145,415	7,277,533	6,951,130	6,985,806
Fare	\$2.25	\$2.25	\$2.25	\$2.50	\$2.50
<b>Sources of Funds</b>					
Fare Revenue	\$15,779,187	\$16,077,184	\$16,374,448	\$17,377,826	\$17,464,516
Advertising	\$3,767,641	\$3,880,670	\$3,997,090	\$4,117,003	\$4,240,513
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$24,377,026	\$24,788,052	\$25,201,736	\$26,325,027	\$26,535,227
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$16,321,446	\$16,811,089	\$17,315,422	\$17,834,885	\$18,369,931
LLC Management & Oversight	\$1,912,802	\$1,970,186	\$2,029,292	\$2,090,171	\$2,152,876
Business License Fee	\$80,393	\$81,560	\$82,720	\$91,754	\$91,776
Total Uses Before Debt Service	\$18,314,641	\$18,862,835	\$19,427,434	\$20,016,809	\$20,614,583
<b>Net Cash Flow Before Debt Service</b>	\$6,062,385	\$5,925,216	\$5,774,303	\$6,308,218	\$5,920,644
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$26,243,675	\$26,628,675	\$26,223,675	\$29,113,675	\$29,103,675
2nd Lien-Post Capitalized Interest	\$7,394,900	\$7,494,900	\$8,384,900	\$8,589,900	\$8,584,900
3rd Lien-Post Capitalized Interest	\$6,540,000	\$6,640,000	\$6,730,000	\$8,195,000	\$8,190,000
Total Debt Service	\$40,178,575	\$40,763,575	\$41,338,575	\$45,898,575	\$45,878,575
<b>Net Cash Flow After Debt Service</b>	(\$34,116,190)	(\$34,838,359)	(\$35,564,272)	(\$39,590,357)	(\$39,957,931)
<b>Net Cash Flow Compared to Plan</b>	(\$38,135,863)	(\$38,916,375)	(\$39,700,252)	(\$44,178,045)	(\$44,546,706)
Accumulated Difference	(\$192,761,911)	(\$231,678,286)	(\$271,378,538)	(\$315,556,583)	(\$360,103,290)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$91,303,765)	(\$130,220,140)	(\$169,920,392)	(\$214,098,437)	(\$258,645,144)

Table # A-6

**LLC MONORAIL****CASH FLOW ANALYSIS****Revised: Low Projection (#3)****Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2013	2014	2015	2016	2017
Ridership	7,020,795	7,056,096	6,781,297	6,815,026	6,849,357
Fare	\$2.50	\$2.50	\$2.75	\$2.75	\$2.75
<b>Sources of Funds</b>					
Fare Revenue	\$17,551,987	\$17,640,239	\$18,648,566	\$18,741,320	\$18,835,731
Advertising	\$4,367,728	\$4,498,760	\$4,633,723	\$4,772,735	\$4,915,917
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$26,749,913	\$26,969,197	\$28,112,487	\$28,344,253	\$28,581,846
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$18,985,645	\$19,555,214	\$20,141,870	\$20,746,127	\$21,368,510
LLC Management & Oversight	\$2,217,462	\$2,283,986	\$2,352,505	\$2,423,081	\$2,495,773
Business License Fee	\$91,599	\$91,526	\$100,865	\$100,817	\$100,778
Total Uses Before Debt Service	\$21,294,706	\$21,930,726	\$22,595,241	\$23,270,024	\$23,965,061
<b>Net Cash Flow Before Debt Service</b>	\$5,455,208	\$5,038,471	\$5,517,246	\$5,074,229	\$4,616,784
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$29,053,675	\$29,038,675	\$31,988,675	\$31,078,675	\$31,058,675
2nd Lien-Post Capitalized Interest	\$8,574,900	\$8,564,900	\$9,439,900	\$10,329,900	\$10,324,900
3rd Lien-Post Capitalized Interest	\$8,175,000	\$8,170,000	\$9,000,000	\$8,995,000	\$8,990,000
Total Debt Service	\$45,803,575	\$45,773,575	\$50,428,575	\$50,403,575	\$50,373,575
<b>Net Cash Flow After Debt Service</b>	(\$40,348,367)	(\$40,735,104)	(\$44,911,329)	(\$45,329,346)	(\$45,756,791)
<b>Net Cash Flow Compared to Plan</b>	(\$44,928,296)	(\$45,311,403)	(\$49,954,600)	(\$50,370,206)	(\$50,795,666)
Accumulated Difference	(\$405,031,586)	(\$450,342,989)	(\$500,297,589)	(\$550,667,795)	(\$601,463,460)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$303,573,440)	(\$348,884,843)	(\$398,839,443)	(\$449,209,649)	(\$500,005,314)



Table # A-6

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: Low Projection (#3)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2018	2019	2020	2021	2022
Ridership	6,883,387	6,651,412	6,684,620	6,718,119	6,751,618
Fare	\$2.75	\$3.00	\$3.00	\$3.00	\$3.00
<b>Sources of Funds</b>					
Fare Revenue	\$18,929,313	\$19,954,237	\$20,053,860	\$20,154,356	\$20,254,853
Advertising	\$5,063,394	\$5,215,296	\$5,371,755	\$5,532,907	\$5,698,895
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$28,822,906	\$29,999,731	\$30,255,813	\$30,517,462	\$30,783,946
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$22,020,427	\$22,681,040	\$23,361,471	\$24,062,315	\$24,784,185
LLC Management & Oversight	\$2,570,646	\$2,647,766	\$2,727,199	\$2,809,015	\$2,893,285
Business License Fee	\$100,679	\$110,205	\$110,166	\$110,130	\$109,971
Total Uses Before Debt Service	\$24,691,752	\$25,439,010	\$26,198,836	\$26,981,460	\$27,787,441
<b>Net Cash Flow Before Debt Service</b>	\$4,131,153	\$4,560,721	\$4,056,977	\$3,536,002	\$2,996,505
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$31,033,675	\$33,986,225	\$33,967,375	\$33,945,025	\$33,912,250
2nd Lien-Post Capitalized Interest	\$10,309,900	\$11,289,900	\$11,284,900	\$10,444,900	\$10,434,900
3rd Lien-Post Capitalized Interest	\$8,980,000	\$9,840,000	\$9,830,000	\$10,650,000	\$10,645,000
Total Debt Service	\$50,323,575	\$55,116,125	\$55,082,275	\$55,039,925	\$54,992,150
<b>Net Cash Flow After Debt Service</b>	(\$46,192,422)	(\$50,555,404)	(\$51,025,298)	(\$51,503,923)	(\$51,995,645)
<b>Net Cash Flow Compared to Plan</b>	(\$51,226,383)	(\$56,065,677)	(\$56,533,592)	(\$57,010,399)	(\$57,494,175)
Accumulated Difference	(\$652,689,843)	(\$708,755,520)	(\$765,289,113)	(\$822,299,512)	(\$879,793,687)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$551,231,697)	(\$607,297,374)	(\$663,830,967)	(\$720,841,366)	(\$778,335,541)

Table # A-6

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: Low Projection (#3)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2023	2024	2025	2026	2027
Ridership	6,548,787	6,565,175	6,581,563	6,598,234	6,412,217
Fare	\$3.25	\$3.25	\$3.25	\$3.25	\$3.50
<b>Sources of Funds</b>					
Fare Revenue	\$21,283,556	\$21,336,818	\$21,390,080	\$21,444,260	\$22,442,758
Advertising	\$5,869,862	\$6,045,957	\$6,227,336	\$6,414,156	\$6,606,581
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$31,983,616	\$32,212,973	\$32,447,614	\$32,688,614	\$33,879,537
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$25,471,700	\$26,235,851	\$27,022,927	\$27,833,614	\$28,668,623
LLC Management & Oversight	\$2,980,084	\$3,069,486	\$3,161,571	\$3,256,418	\$3,354,110
Business License Fee	\$119,855	\$119,413	\$118,973	\$118,537	\$128,217
Total Uses Before Debt Service	\$28,571,639	\$29,424,750	\$30,303,470	\$31,208,569	\$32,150,950
<b>Net Cash Flow Before Debt Service</b>	\$3,411,977	\$2,788,223	\$2,144,144	\$1,480,045	\$1,728,587
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$35,942,400	\$35,814,700	\$35,679,150	\$35,538,550	\$38,440,425
2nd Lien-Post Capitalized Interest	\$12,379,900	\$12,334,900	\$12,289,900	\$12,239,900	\$13,242,300
3rd Lien-Post Capitalized Interest	\$11,595,000	\$11,555,000	\$11,510,000	\$11,465,000	\$12,400,000
Total Debt Service	\$59,917,300	\$59,704,600	\$59,479,050	\$59,243,450	\$64,082,725
<b>Net Cash Flow After Debt Service</b>	(\$56,505,323)	(\$56,916,377)	(\$57,334,906)	(\$57,763,405)	(\$62,354,138)
<b>Net Cash Flow Compared to Plan</b>	(\$62,498,081)	(\$62,887,011)	(\$63,283,552)	(\$63,690,263)	(\$68,764,980)
Accumulated Difference	(\$942,291,768)	(\$1,005,178,779)	(\$1,068,462,330)	(\$1,132,152,593)	(\$1,200,917,573)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$840,833,622)	(\$903,720,633)	(\$967,004,184)	(\$1,030,694,447)	(\$1,099,459,427)

Table # A-6

**LLC MONORAIL**  
**CASH FLOW ANALYSIS**  
**Revised: Low Projection (#3)**  
**Fiscal Year Ended 12/31**

<b>SOURCES &amp; USES OF FUNDS</b>	2028	2029	2030	2031	2032
Ridership	6,428,151	6,444,360	6,460,295	6,297,385	6,313,177
Fare	\$3.50	\$3.50	\$3.50	\$3.75	\$3.75
<b>Sources of Funds</b>					
Fare Revenue	\$22,498,529	\$22,555,261	\$22,611,031	\$23,615,193	\$23,674,414
Advertising	\$6,804,778	\$7,008,922	\$7,219,189	\$7,435,765	\$7,658,838
Interest & Reserve Fund Earnings	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198	\$4,830,198
Total Sources of Funds	\$34,133,505	\$34,394,380	\$34,660,418	\$35,881,156	\$36,163,450
<b>Uses of Funds</b>					
Operations/Maintenance/Replacement	\$29,694,281	\$30,585,110	\$31,502,663	\$32,447,743	\$33,421,175
LLC Management & Oversight	\$3,454,734	\$3,558,376	\$3,665,127	\$3,775,081	\$3,888,333
Business License Fee	\$349,556	\$371,144	\$382,695	\$412,323	\$410,559
Total Uses Before Debt Service	\$33,498,571	\$34,514,629	\$35,550,485	\$36,635,146	\$37,720,067
<b>Net Cash Flow Before Debt Service</b>	\$634,934	(\$120,249)	(\$890,066)	(\$753,991)	(\$1,556,617)
<b>Debt Service (Net)</b>					
1st Lien-Post Capitalized Interest	\$38,129,550	\$37,920,375	\$36,749,100	\$39,599,950	\$39,430,725
2nd Lien-Post Capitalized Interest	\$13,075,400	\$13,059,300	\$13,333,800	\$14,369,700	\$14,308,400
3rd Lien-Post Capitalized Interest	\$1,165,000	\$0	\$0	\$0	\$0
Total Debt Service	\$52,369,950	\$50,979,675	\$50,082,900	\$53,969,650	\$53,739,125
<b>Net Cash Flow After Debt Service</b>	(\$51,735,016)	(\$51,099,924)	(\$50,972,966)	(\$54,723,641)	(\$55,295,742)
<b>Net Cash Flow Compared to Plan</b>	(\$69,212,796)	(\$69,657,114)	(\$70,107,730)	(\$75,339,806)	(\$75,823,698)
Accumulated Difference	(\$1,270,130,369)	(\$1,339,787,483)	(\$1,409,895,214)	(\$1,485,235,020)	(\$1,561,058,717)
<b>Reserves and Funds: Planned</b>					
Debt Service Reserves	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146	\$51,458,146
General Fund	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000	\$50,000,000
Total	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146	\$101,458,146
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$1,168,672,223)	(\$1,238,329,337)	(\$1,308,437,068)	(\$1,383,776,874)	(\$1,459,600,571)

Table # A-6

**LLC MONORAIL****CASH FLOW ANALYSIS****Revised: Low Projection (#3)***Fiscal Year Ended 12/31*

<b>SOURCES &amp; USES OF FUNDS</b>	2033	2034
Ridership	6,328,969	6,328,969
Fare	\$3.75	\$3.75
<b>Sources of Funds</b>		
Fare Revenue	\$23,733,635	\$23,733,635
Advertising	\$7,888,603	\$8,125,261
Interest & Reserve Fund Earnings	\$4,830,198	\$56,288,344
Total Sources of Funds	\$36,452,436	\$88,147,240
<b>Uses of Funds</b>		
Operations/Maintenance/Replacement	\$34,287,851	\$35,496,793
LLC Management & Oversight	\$4,004,983	\$4,125,133
Business License Fee	\$409,417	\$1,340,961
Total Uses Before Debt Service	\$38,702,251	\$40,962,887
<b>Net Cash Flow Before Debt Service</b>	(\$2,249,815)	\$47,184,353
<b>Debt Service (Net)</b>		
1st Lien-Post Capitalized Interest	\$39,319,325	\$41,677,775
2nd Lien-Post Capitalized Interest	\$14,264,900	\$15,120,900
3rd Lien-Post Capitalized Interest	\$0	\$0
Total Debt Service	\$53,584,225	\$56,798,675
<b>Net Cash Flow After Debt Service</b>	(\$55,834,040)	(\$9,614,322)
<b>Net Cash Flow Compared to Plan</b>	(\$76,304,885)	(\$76,662,369)
Accumulated Difference	(\$1,637,363,602)	(\$1,714,025,971)
<b>Reserves and Funds: Planned</b>		
Debt Service Reserves	\$51,458,146	\$0
General Fund	\$50,000,000	\$0
Total	\$101,458,146	\$0
<b>Reserves &amp; Funds + Accumulated Difference</b>	(\$1,535,905,456)	(\$1,714,025,971)