I-44 AND I-55 CORRIDORS

MAJOR TRANSPORTATION INVESTMENT ANALYSIS

OPTION SCOPING
AND
EVALUATION METHODOLOGY REPORT

prepared for

BI-STATE DEVELOPMENT AGENCY

prepared by

Booz, Allen & Hamilton, Inc.

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Table of Contents

List of Exhibits

List of Appendices

1.0 Introduction

The I-44/I-55 Major Transportation Investment Analysis (MTIA) has advanced to the analysis stage having completed the first round of scoping meetings with Advisory Committees and the public. This report summarizes:

- the results of scoping activities to date;
- a description of options being considered;
- an analysis of the financial implications of the Light Rail option and the comparative costs between the Burlington Northern and Union Pacific routes under the Commuter Rail option; and
- a definition of the timetable and activities for the balance of the MTIA.

Information is provided on a corridor specific basis. Options development, public meetings and analysis are being coordinated in the southern end of the I-55 corridor with the MTIA being conducted for the Missouri Highway and Transportation Department (MHTD) by their consultants (Horner & Shifrin).

1.1 Option Scoping Activities

As the first step in developing the scoping plan, Booz Allen established Public Participation Program objectives for BSDA's I--4 and I-55 MTIA efforts. The objectives include:

- informing and educating the community early-on about the MTIA process;
- facilitating community involvement throughout the decision-making process;
- monitoring community concerns on a regular basis and adjusting strategies accordingly; and
- seeking an end result of an informed and involved public that is satisfied with the transportation solution(s) that they helped create.

In an effort to meet these objectives, Booz, Allen and BSDA established a scoping plan that involved creating Advisory Committees, sending out public notices in wide distribution, hosting public forums, setting up information repositories, initiating a

telephone information line and development of a project newsletter. Activities under the plan are summarized in the following sections.

1.1.1 Establishment of Advisory Committees

Four separate Advisory Committees have been established, representative of geographic locations and interests. Each committee draws from varying commumity interests, including businesses, chambers of commerce, schools, local safety and health officials, and local, state, and federal elected officials. Each committee has met once thus far, and will subsequently be convened one week prior to each public meeting.

1.1.2 Wide Distribution of Public Notices

Public notices and press releases were prepared to announce the first set of public meetings held in August. The public notices appeared in the St. Louis Post Dispatch (July 31), St. Louis Business Journal and all germane County Journals. Public meeting notices were also posted around local stores, agencies and in the information centers. Based on comments from the first set of public meetings, Citizens for Modern Transit and BSDA volunteers will post public meeting notices on appropriate bus routes and other transportation-related locations. Public notices will be posted at least two weeks prior to all public meetings.

1.1.3 Public Meetings

The first set of public meetings have been held to scope out the transportation challenges and possible options along the I-44 and I-55 corridors. Five public meetings were held througout the St. Louis area including, downtown St. Louis, south St. Louis County, Kirkwood, Festus and Pacific. BSDA will host three other sets of meetings, each corresponding with a technical milestone in the MTIA process. The schedule for the next set of meetings and future meetings is discussed in section 5.0 of this report.

1.1.4 Information Centers

Booz·Allen established four information centers around the region. The information centers contain technical working documents, newsletters, surveys, public meeting notices, and final reports. The centers will be updated throughout the MTIA process. The information centers are located in:

- **South St. Louis County**, at Tesson-Ferry Branch Library
- **Downtown St. Louis City**, at the St. Louis Centre's MetroRide Store
- **Festus**, at the Festus Public Library in Jefferson County
- **Pacific**, at the Pacific Library in Franklin County.

The draft Preferred Option report will eventually be placed in the information centers to allow people who cannot attend the public meetings an opportunity to comment. Written comment forms will be collected from each information center at the conclusion of the Public Comment period, and incorporated into the final report.

1.1.5 Information Telephone Line

A I-44 / I-55 Corridor Study telephone information line has been established at (314) 982-1407. The public can hear general information about the corridor studies, locations, dates and times of public meetings, and locations of information centers. The public may also leave a voice message requesting more information. Bi-State has already received and responded to a number of calls to date.

1.1.6 Public Comment Period

Bi-State will conduct a final set of meetings, or public hearings, at which the public may comment on the draft report. The preferred option will be announced and the report will be available at the information centers throughout the region. Booz·Allen will collect all written and verbal comments during this 20-30 day period, and incorporate the comments in a final Response to Comments included in the final report.

1.2 Advisory and Public Meeting Activities To Date

A series of Advisory Committee and public meetings have been held to initiate a dialogue with the general public, and to encourage public participation throughout the entire MTIA process. Booz·Allen supported the Bi-State Development Agency in creating three Advisory Committees, which met during the week of August 7, 1995. The meetings were held at the Bi-State Development Agency building in the City of St. Louis and in Pacific. MHTD hosted an Advisory Committee in Festus. Representatives from Bi-State and Booz·Allen were in attendance at this meeting, and participated in the presentations. The Advisory Committee meetings will always be held one week prior to the public meetings.

A total of five public meetings have been held to date throughout the St. Louis metropolitan area. During the week of August 14, Bi-State hosted meetings in Kirkwood, downtown St. Louis, South St. Louis County, and Pacific. MHTD hosted a public meeting in Festus. Representatives from Bi-State and Booz·Allen were in attendance at this meeting, and participated in the presentations. The attendance at each meeting averaged 35-40 people.

The first set of public meetings was designed to introduce the public to the MTIA process, and to initiate a dialogue with the public. The materials produced for the meeting covered the following topics:

- purpose of the MTIA study
- timeframe for completion of MTIA
- involved agencies
- current situation in each region
- initial transportation challenges identified within the corridor
- initial transportation options identified
- possible evaluation measures
- public role in MTIA process
- public access to decision-making milestones.

The first series of meetings were successful based on verbal attendee feedback. The presentation was supported by visual board displays, newsletters, surveys, and a panel of experts available to answer individual concerns. Surveys were handed out and collected at the meetings. The surveys contained questions about home and work locations, transportation challenges on the corridors, and preferences of transportation solutions. The survey also included preliminary evaluation criteria choices.

1.3 Characteristics of Corridor Travelers

Surveys were distributed at Advisory Committee and public meetings to public officials, businessmen and residents along the I-44 and I-55 corridors to obtain information about their travel characteristics, transportation concerns and potential solutions for them. These surveys were distributed at public meetings at the following general locations.

- I-44 Corridor (West City/West County) in Kirkwood
- I-55 Corridor (South City/South County) at Tesson Ferry library
- Jefferson County in Festus
- Pacific / Franklin County in Pacific

In total, 155 completed questionnaires were received -- 72 from those who are affected by transportation decisions along the I-44 corridor and 83 from those along I-55. Total responses; however, for many individual questions were higher than the number of those surveyed due to the fact that many chose more than one option or answer for the questions provided.

Survey results for respondents in each corridor and the area as a whole are illustrated in the set of exhibits which follows.

Exhibit 1-1 : Place of Employment

The I-44 survey revealed that respondents living along I-44 are employed relatively evenly throughout the corridor with the exception that only 1% indicated employment sites in Jefferson County. Among the remaining job sites, there is only a 7% margin separating employment sites for this corridor as follows: St Louis County (32%); St. Louis City (22%); and Franklin County (25%).

The I-55 corridor respondents indicated that the majority of their employment occurs within Jefferson County (55%). Only 19% an 13% are employed in St. Louis County and St. Louis City respectively.

For the combined corridors, the survey revealed the highest employment centers are St. Louis County (25%), Franklin County (18%) and St. Louis City (17%). The overall survey results reveal that employment is distributed rather evenly throughout the St. Louis region covered by these corridors and that downtown St. Louis is a modest generator for jobs.

Exhibit 1-2 : Mode of Transportation for Work Trips

Survey results were virtually the same revealing that the overwhelming mode for the journey to work is to drive alone (81%). Only 6% utilize some form of public transportation and only 3% car pool, approximately 10% travel by some other means.

The high percentage of auto trips is likely a result of the lack of viable public transit options and the relatively dispersed destinations for those commuting throughout the region.

Exhibit 1-3 : Frequency of Use of the Interstates

The I-44 survey revealed that travel along the interstate is rather evenly divided among those who travel it every day, more than once a week (but less than once a day), and less than once per week (separated by a margin of only 3%).

Exhibit 1-1
Place of Employment of Questionnaire Respondents

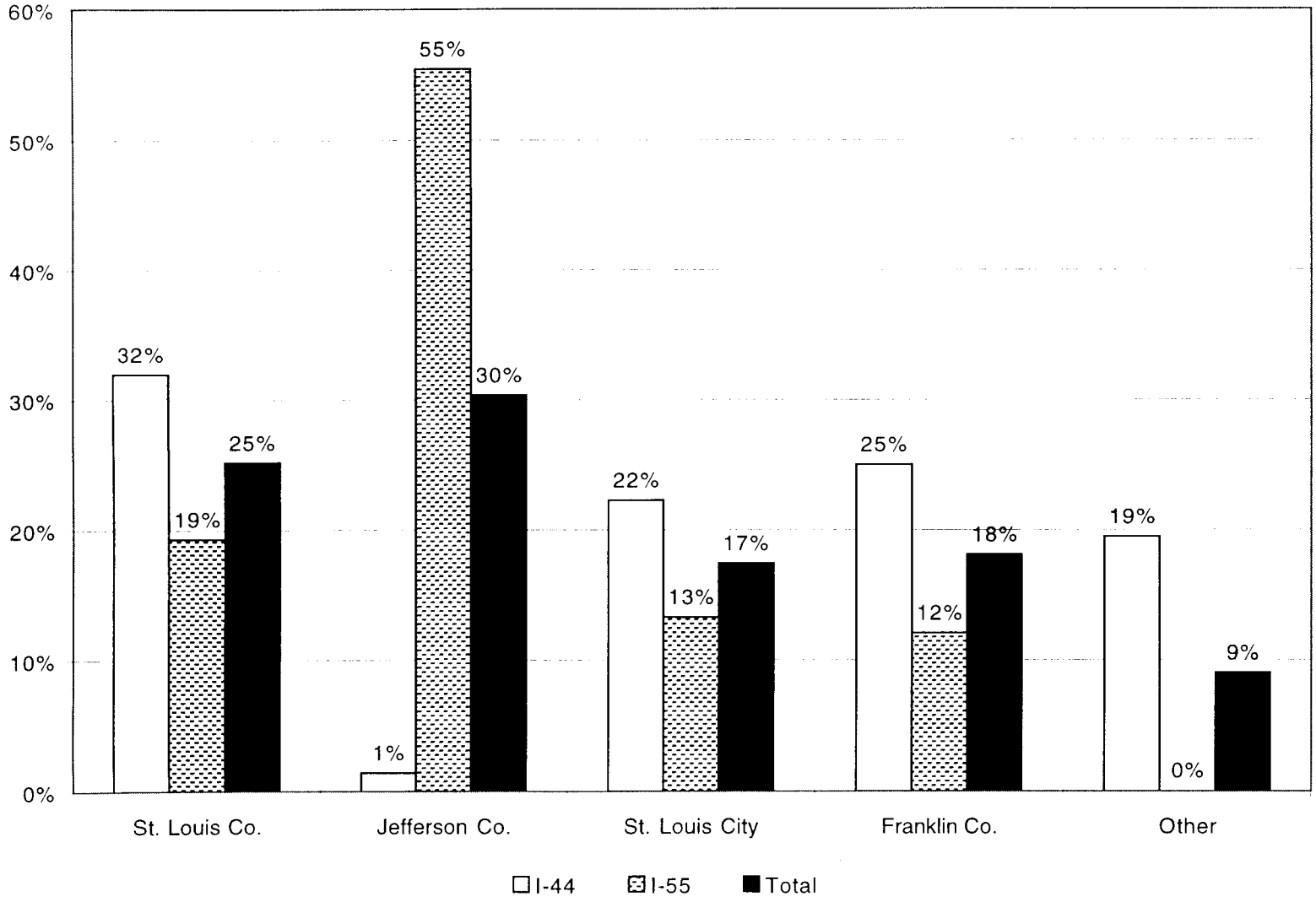


Exhibit 1-2
Work Trip by Mode of Transportation of Questionnaire Respondents

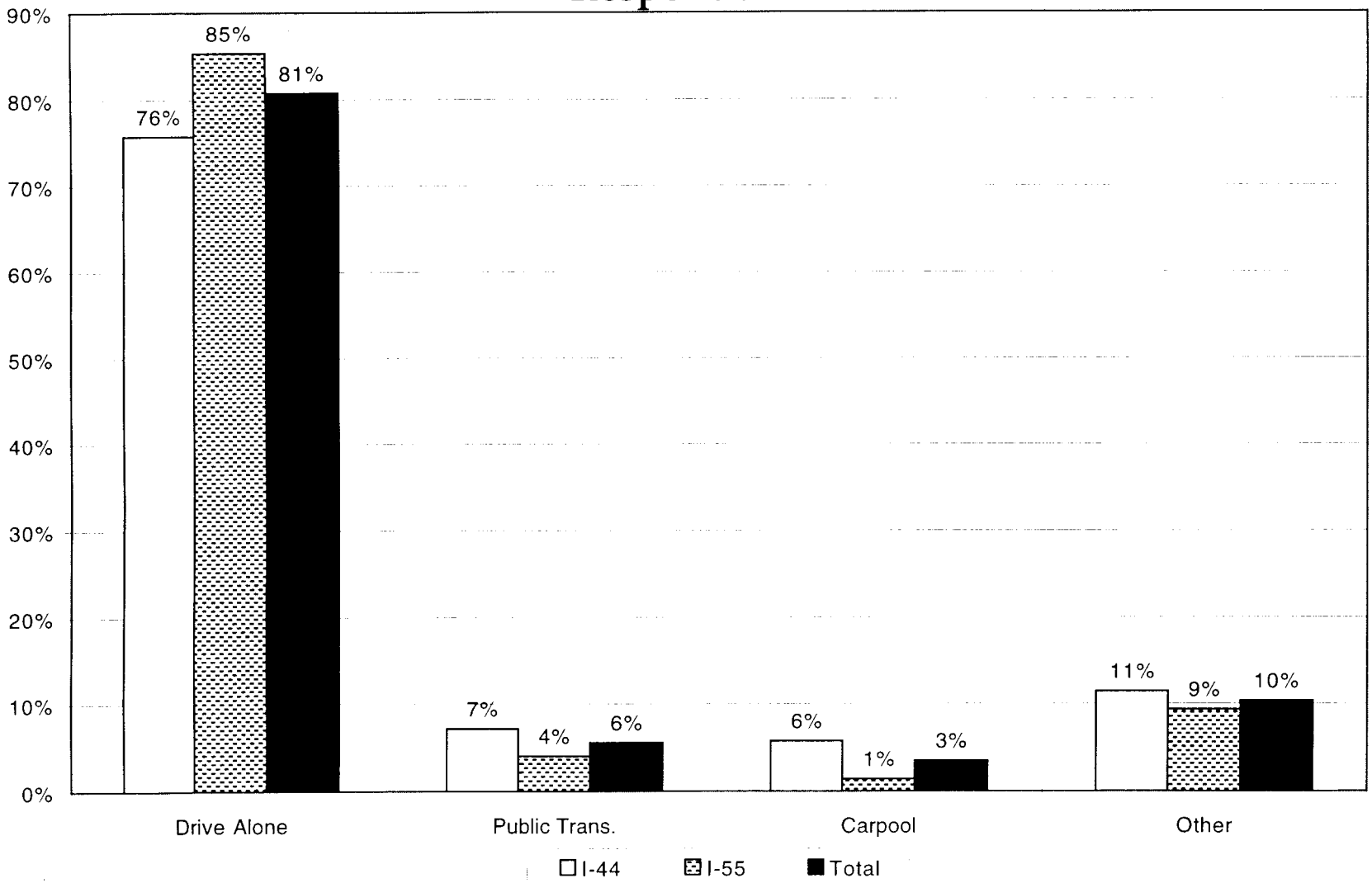
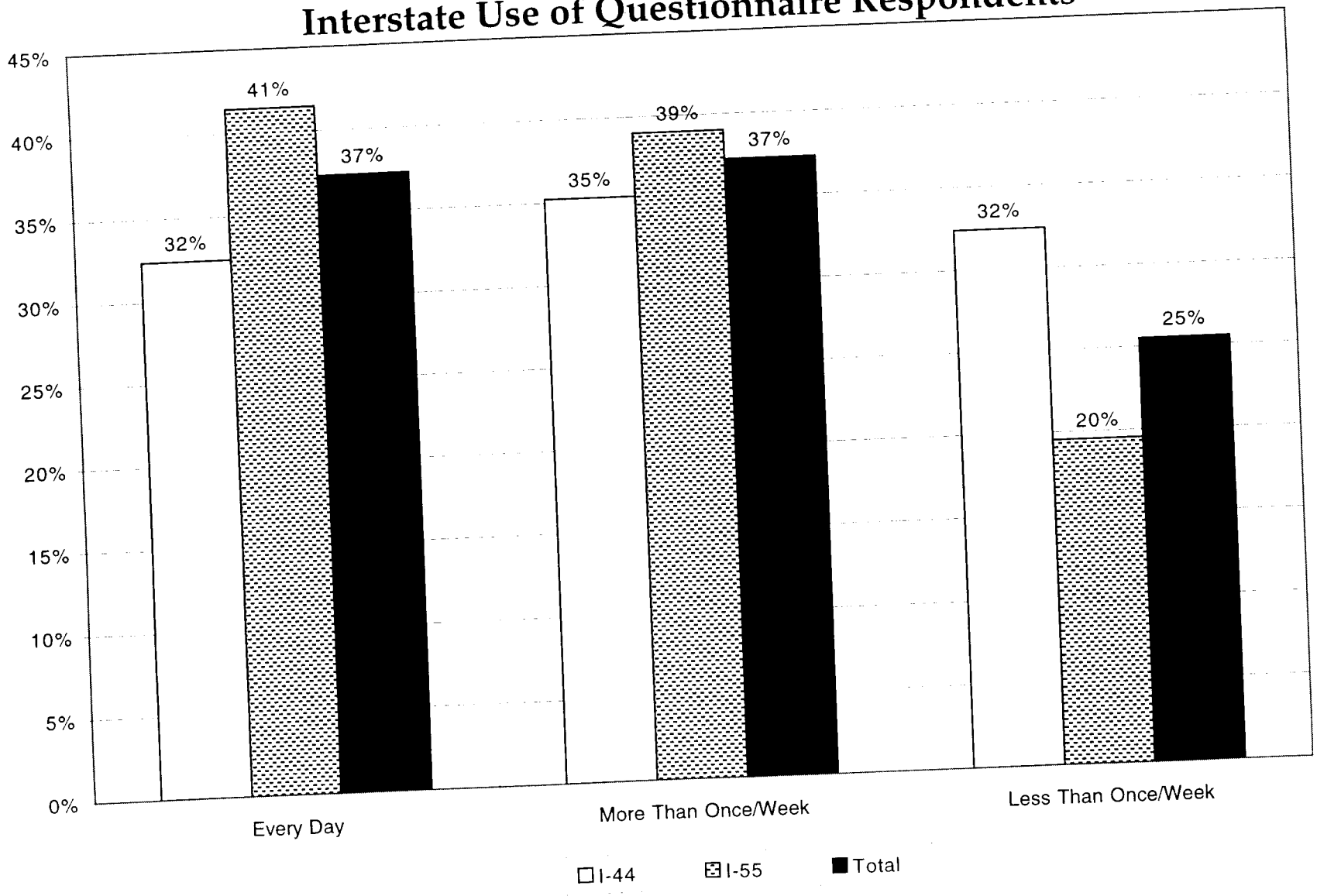


Exhibit 1-3
Interstate Use of Questionnaire Respondents



The I-55 survey results are similar; however, daily use of the interstate is approximately 10% higher than that of I-44 which may be one of the contributing factors to the higher degree of congestion along I-55.

Exhibit 1-4 : Trip Purpose

The results of the surveys for both corridors are essentially the same and affirm that trip purposes along the corridors are quite diverse. The survey shows that approximately 30% of trips made along the interstate are work related compared to 32% for shopping and 34% for "other".

Exhibit 1-5 : Transportation Problems

Again the results from both surveys are similar. The most serious concern of residents along the corridor is congestion followed by time delays (which is inherently related to congestion). Access to the Interstate is a much larger concern to I-55 corridor respondents (17% compared to only 10% on I-44). Safety was a concern in both corridors with 18% of those surveyed noting it as a serious issue.

Exhibit 1-6 : Preferred Transportation Solutions

Those surveyed on the I-44 corridor had a clear preference for commuter rail as a solution to transportation concerns along the corridor. 45% stated a preference for commuter rail followed by light rail at 27% and only 15% for improved highways. Together, some form of rail option commanded 72% of the preferences.

The I-55 corridor results were not as skewed as those of I-44. However, commuter rail was still the majority preference at 36%. The primary difference between the two corridors is the large percentage of respondents who indicated highway improvements as their preferred solution (30%). In total, the responses indicate that those along the I-55 corridor prefer a combination of options which include both highway improvements and commuter rail.

1.4 Options Overview and Public Comments

The initial meeting of the Project Management Group (PMG) resulted in a decision to include four options for analysis during the MTIA. These options included:

- Expanded Highway Option which considers the need to add capacity to the Interstate highways in each corridor (i.e., 44 and 55);

Exhibit 1-4
Primary Use of Interstate Transportation of Questionnaire Respondents

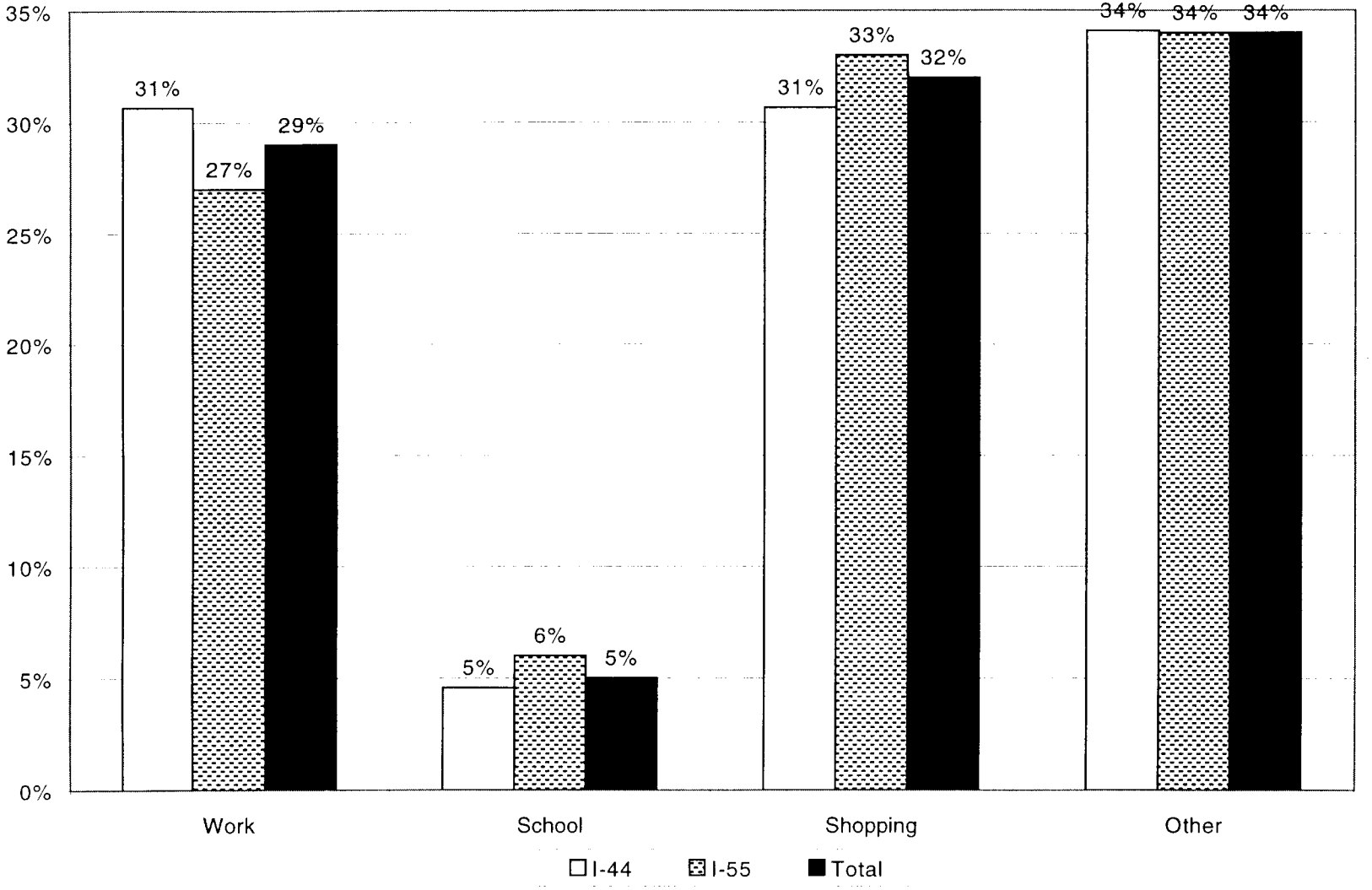


Exhibit 1-5
Transportation Problems Experienced of Questionnaire Respondents

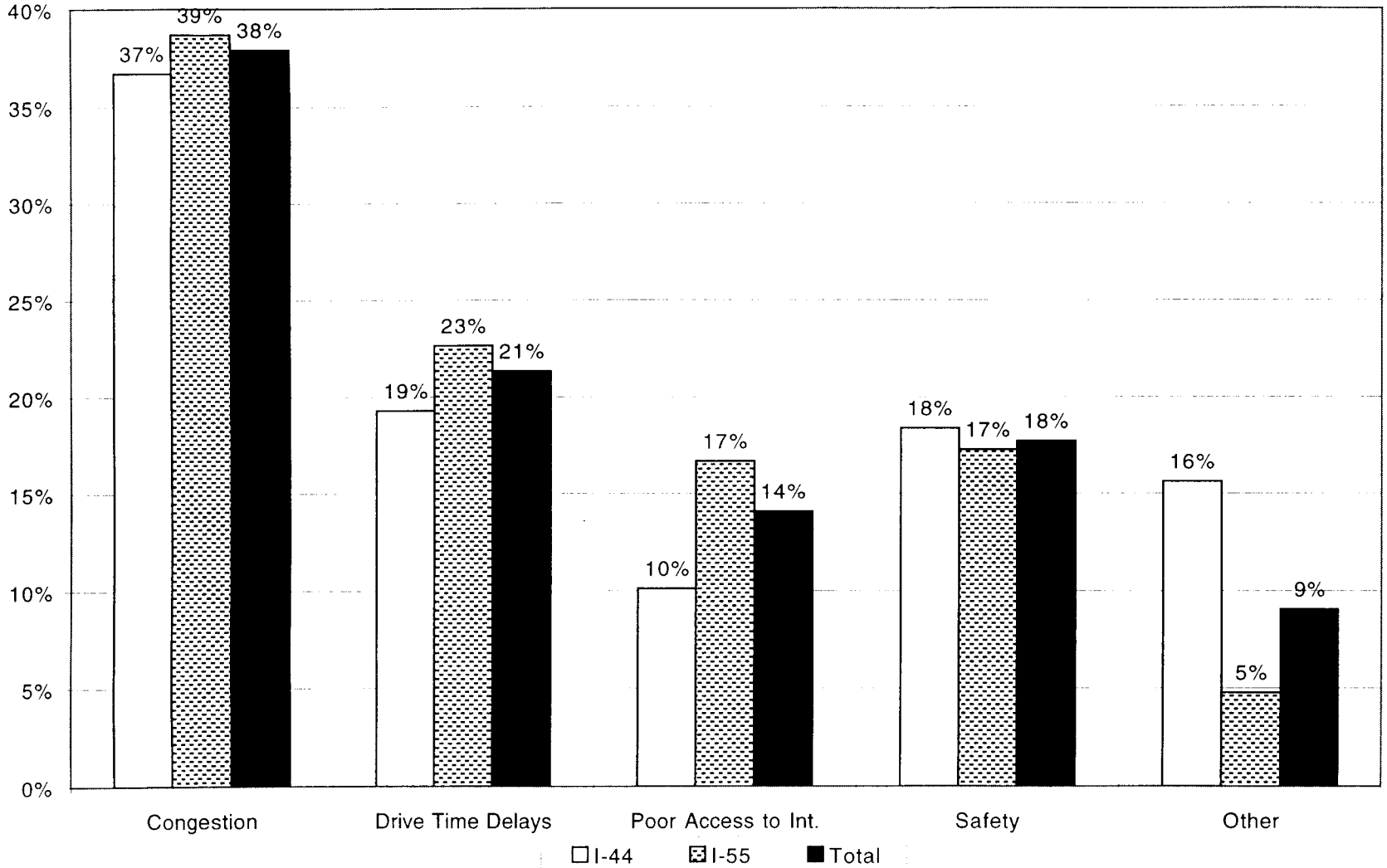
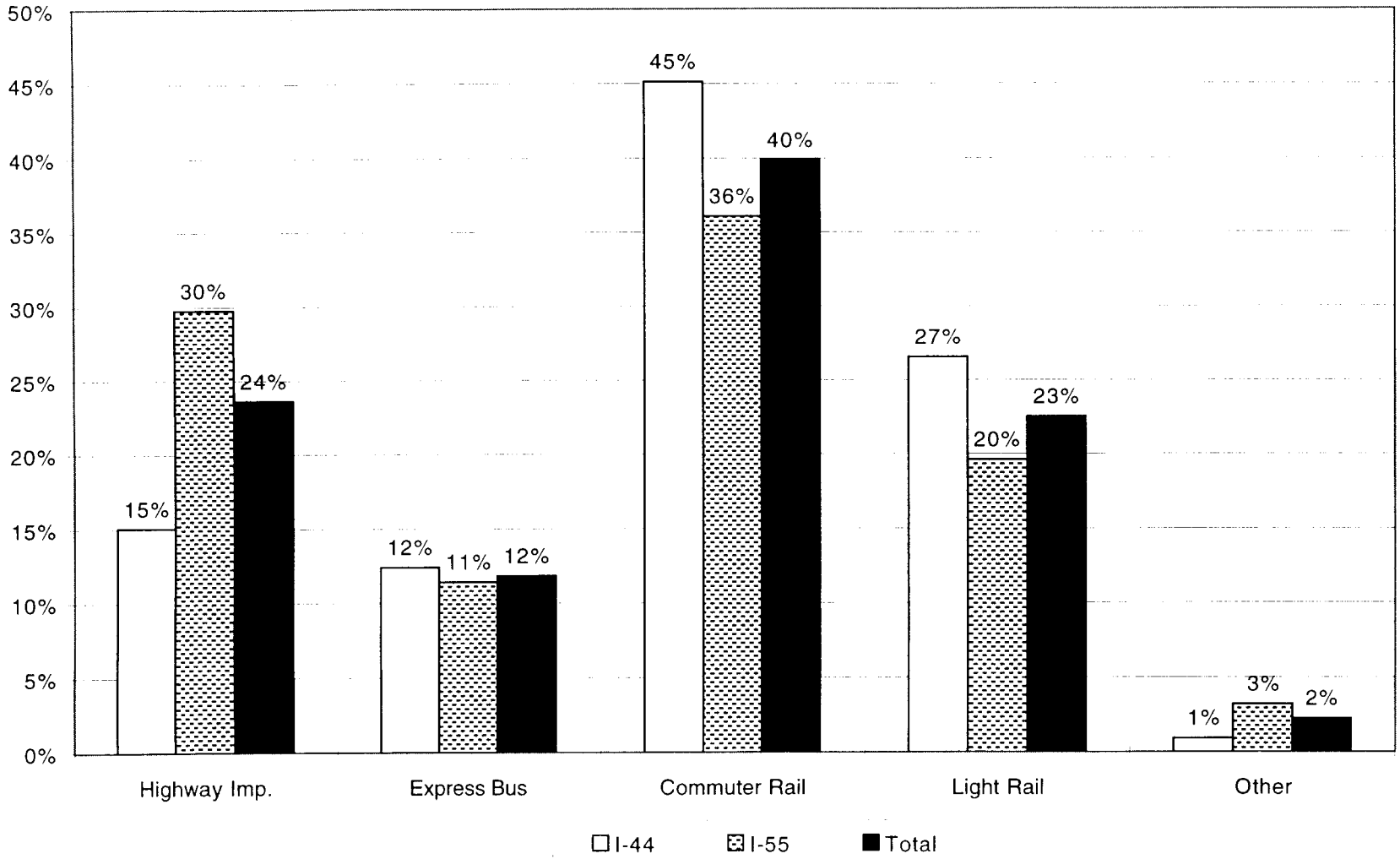


Exhibit 1-6
Preferred Transportation Solution of Questionnaire Respondents



- Light Rail Option which would examine constructing light rail lines in both corridors from downtown St. Louis to both Pacific (on the west) and Crystal City/Festus (on the south);

- Commuter Rail Option which considers use of existing railroad tracks of either the Burlington Northern (BNRR) or the Union Pacific (UPRR) covering the same lengths as the light rail option; and

- Traffic Systems Management Option which employs low capital means of increasing capacity/mobility through strategies such as ramp metering, HOV lanes, added express bus service and park/ride facilities.

These options were described at each of the public meetings and comments were solicited from attendees. The following section summarizes the public comments. The detailed individual comments are provided for corridor as Appendix II for those interested.

Examination of the individual comments revealed a pattern that enabled them to be conveniently sorted under the following categories:

- Safety;

- Flooding;

- Commuter Rail;

- Costs; and

- Miscellaneous.

Each of these is discussed in the sections which follow.

1.4.1 Safety

The I-44 survey results conveyed three concerns regarding unsafe interchanges, excessive speeding and highway infrastructure believed to be ill suited for current traffic demands. Twice as many comments were received on this issue from those along the I-55 corridor. Although their comments were similar in nature; there were also suggestions to provide TV public safety commercials and to provide adequate security at park-n-ride lots.

1.4.2 Flooding

Flooding came up as a major issue for those along the I-55 corridor. Five people responded that traffic "is awful" during flood seasons making it impossible to access the highways. Statements such as "there was no way in or out of Jefferson County" during flooding were common. Analysis of the options for the I-55 corridor during the MTIA will have to take these facts into account.

There were no comments regarding flooding on the I-44 corridor.

1.4.3 Commuter Rail

The I-44 corridor meetings produced 18 comments regarding commuter rail; none of which were negative. Over a third of the responses recommended a service which would accommodate off-peak and special events. Overall there was a high degree of support for commuter rail ranging from "this project is very important!" to "I would be glad to volunteer for any effort that would bring this project to reality".

Although there were certain preferences expressed for specific railroad alignments (i.e., BNRR vs. UPRR), the preferences were evenly split.

There were 7 comments received from I-55 corridor respondents. Three of the comments recommended specific commuter rail station sites. Other comments suggested that commuter rail is more feasible than light rail, and that added highway lanes were not a total solution to the region's transportation problems.

For both corridors, the expressed support and expectations for commuter rail appear to be very high.

1.4.4 Costs

The I-44 survey comments suggest rather strongly that cost is not an issue when compared to the need for transportation. The responses ranged from a desire to raise gas taxes to a short discussion on the need to move people from cars by providing and funding attractive and needed public transportation service.

There were no comments regarding costs from the I-55 surveys.

1.4.5 Miscellaneous

As the name implies, many of the comments covered a broad spectrum for both corridors including the following:

- Desire for bike racks on trains
- Added lanes on I-55 and "A"
- Land use impacts
- Station development opportunities

One of the comments received seemed to sum up most appropriately the theme of the respondents by stating that it is time to plan and act now.

2.0 Description of Options

As previously mentioned in the Introduction to this report, the initial option set includes four strategies: 1) Expanded Highway; 2) Light Rail; 3) Commuter Rail; and 4) Transportation Management Systems. There is a fifth "option" which is the No-Build or "do nothing" option. The No-Build option is an analysis tool for measuring the effects of the other options. It is clearly not a viable strategy given the growth projected for these corridors by EWGCC.

This growth and a few of its affects may be seen by examining Exhibit 2-1 which shows the current 1995 population by transportation analysis zone (TAZ). It is clear that the major concentrations of population for both corridors are within the I-270 beltway although the area along I-55 from the beltway to Arnold displays substantial population. Exhibit 2-2 puts a different perspective on the emerging transportation problems by showing the TAZ's that are projected to grow between now and 2015 and the rate of that growth. It is clear from this exhibit that, contrary to current patterns, the growth will occur outside the I-270 ring.

Along I-55 in areas around Pevely, some TAZ's show increases of 33%. Similar growths ranging from 34 to 38% are anticipated in the area surrounding Arnold.

In the I-44 corridor, areas around Eureka and Pacific show growth rates ranging from 13 to 33% with growth exceeding 100% for locations north of Eureka.

An implication of these patterns is that not only will travel volumes grow but trip lengths will increase since the majority of residents of these areas work in St. Louis City and County. Clearly the No-Build option will result in increased congestion, productivity losses from longer travel times, a degradation of air quality and more accidents. This seemingly "no cost" option in fact has considerable cost associated with it.

The balance of this section describes the four options to be analyzed during the MTIA.

2.1 Expanded Highway Option

Results of the scoping questionnaires clearly indicated the overwhelming desires of the public to reduce congestion levels. Therefore a primary goal of the Expanded Highway Option is to attain acceptable level-of-service ratings (preferably C or better). Sizing of the expanded highway option will be examined

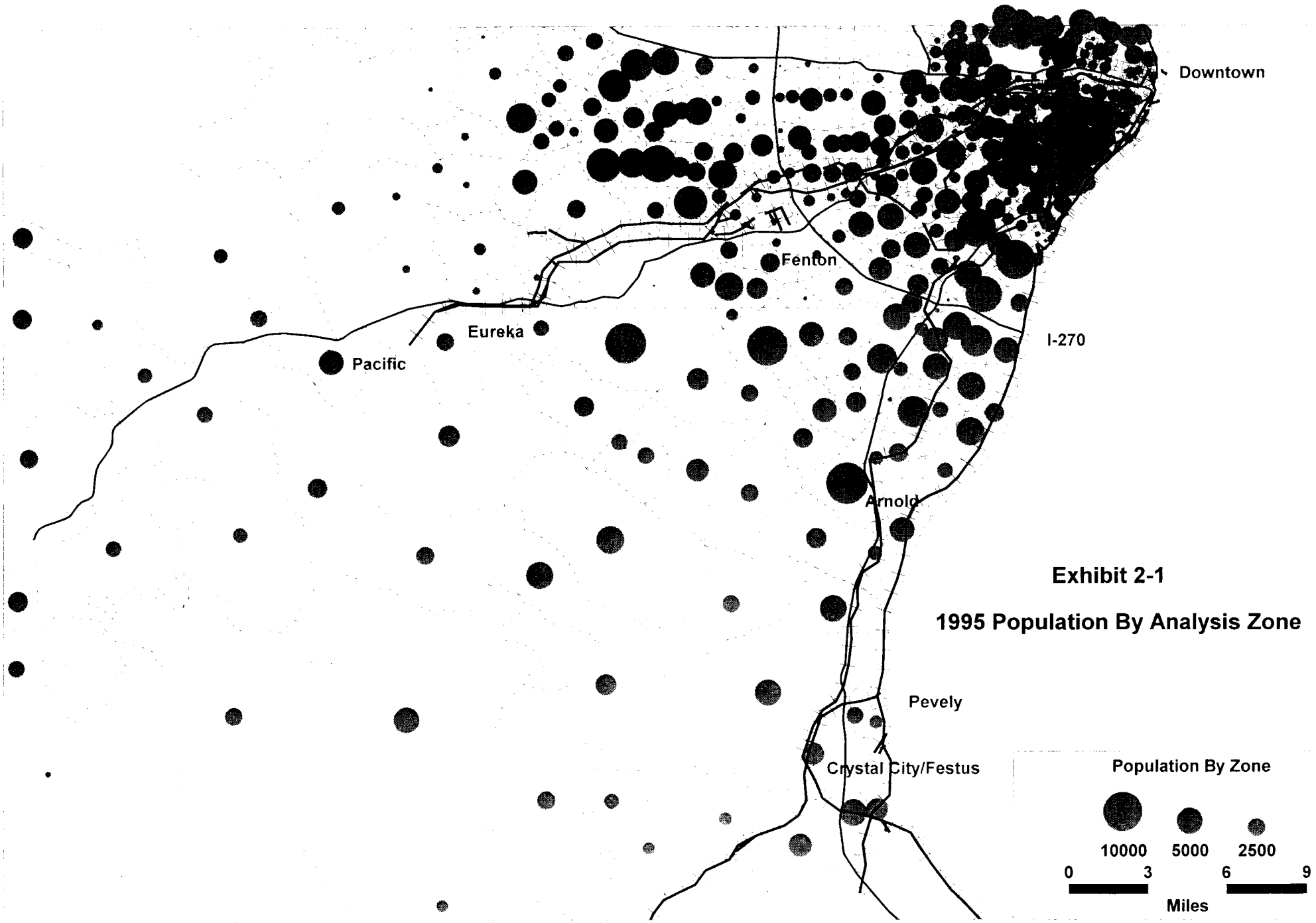
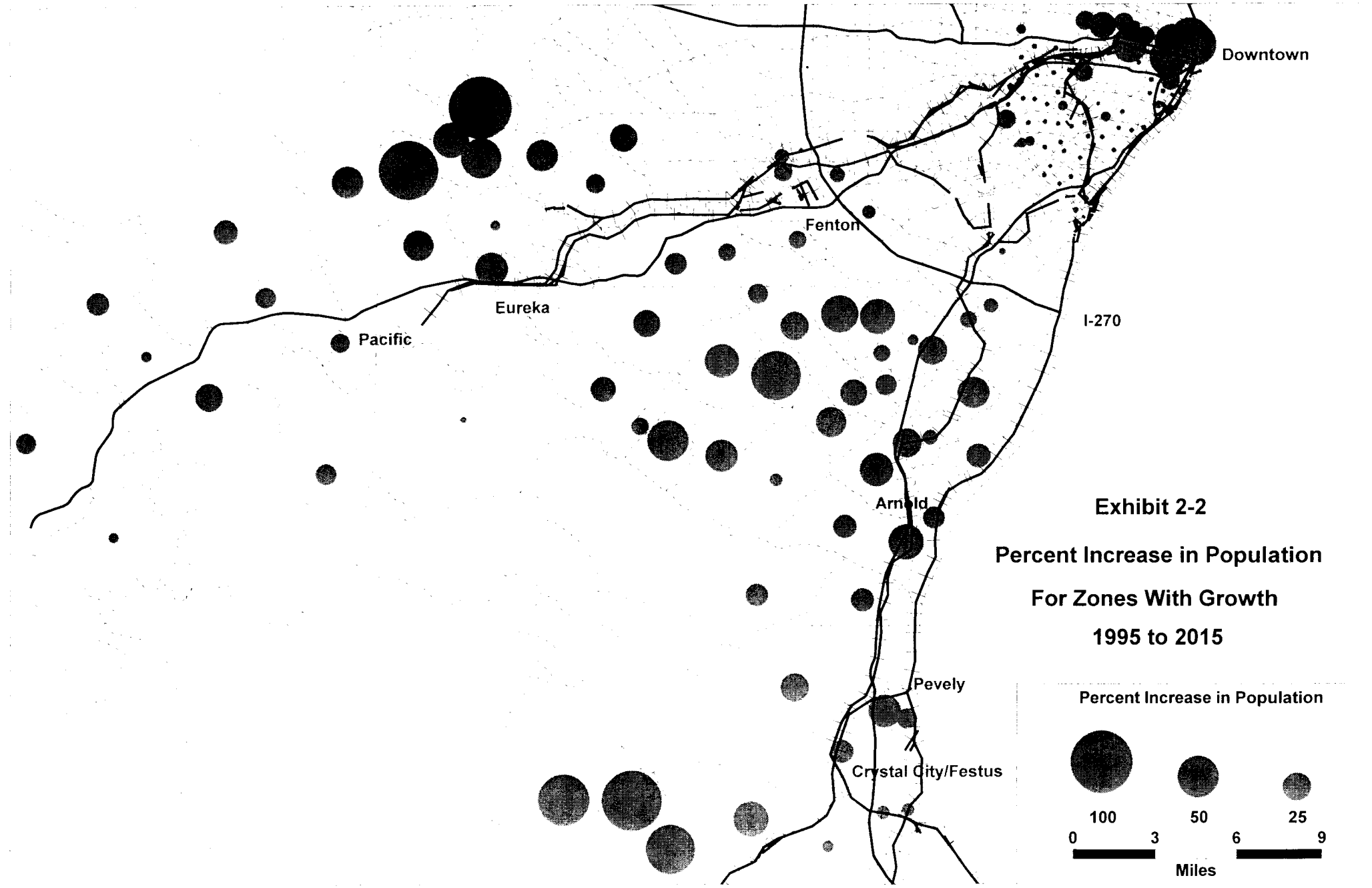


Exhibit 2-1

1995 Population By Analysis Zone


Downtown
Fenton
Eureka
Pacific
I-270
Arnold
Pevely
Crystal City/Festus
Exhibit 2-2
Percent Increase in Population
For Zones With Growth
1995 to 2015
Percent Increase in Population
100
50
25
0
3
6
9
Miles

after the mode share analysis has been performed as part of the evaluation criteria (see Section 4.0 of this report for a more detailed description of the mode share analysis process).

The process involves applying time and cost impedances for highway and transit options to trip tables for both corridors and calculated travel that may be diverted away from the Interstate. The remaining peak hour trips will then permit an evaluation of the costs and other factors related to properly sizing the highway (i.e., number of lanes required). Current projections are estimating that I-55 will reach 3,250 passenger cars per hour per lane if no other improvements are in place (e.g., improved transit service). To reach level of service C, this would have to be reduced to approximately 1,600 passenger cars per hour per lane. This obviously requires a strategy that either cuts demand in half (an unlikely outcome) or doubles the capacity (also an unlikely outcome).

Studies previously completed by MHTD on I-44 display similar future congestion levels with passenger cars per lane per hour rates ranging from 2,700 to 3,600. Strategies for this corridor mirror the I-55 situation of having to either halve demand or double capacity.

In both corridors, highway widening already being constructed or approved for construction will be incorporated in the base case for "first iteration" mode share analysis.

As a result of the process being employed (in cooperation with Horner & Shifrin as part of their MHTD sponsored MTIA for a section of I-55) the final definition of the specifics of the expanded highway option will evolve -- in terms of the actual widening required -- as options are tested in combinations with each other. A likely outcome is probably some combination of demand management (by improving transit and other means) and added roadway capacity.

2.2 Light Rail Option

Metrolink is an example of a successful Light Rail (LRT) system. It operates a "headway" service (between 7 and 15 minutes) over 17 miles throughout the day and is capable of operating up to 2 car train consists. LRT systems throughout the U.S. operate using electric power drawn from overhead wires. Light rail generally is used to service relatively short trips with numerous stations closely (approximately 1 mile apart) spaced to each other which contributes to what is considered a relatively low average mile per hour speed when compared to rapid rail and commuter rail services. LRT systems normally operate over 15 - 20 mile sections over heavily used corridors with high travel demands.

Frequent trains and the need for electric power creates a need to acquire new dedicated right-of-way for light rail transit which is a major issue. Preliminary findings indicate that there are only two options which could possibly accommodate such a service: they include using land along the existing railroads and/or highway rights-of-way.

2.2.1 Railroad Corridors

Ideally, for Light Rail, the railroad corridors under consideration must be inactive or slightly used to allow for a dedicated and continual light rail service if the current tracks were to be used. Furthermore, the railroad must be willing to sell or lease the right-of-way at an affordable price. Unfortunately, the two railroads operating freight service along both corridors are active and in the case of the UP's I-44 alignment, it is operating at almost full capacity with 43 trains using the track on an average weekday.

The possibility of providing a dedicated light rail service over any of the railroad corridors under investigation is not a viable option at this time unless land along the right-of-way could be acquired.

2.2.2 Highway Corridors

A possibility of adding a light rail line within an existing highway is another option which can be considered. However, such an option would require reducing existing lanes currently used for auto traffic or to add new lanes to accommodate light rail service. Such an approach has been taken in Los Angeles where the MTA's "Green Line" operates in the middle of the Norwalk El Segundo freeway. However, this freeway is new and was designed initially for a dedicated light rail service.

The need for a dedicated right-of-way and the costs associated with acquisition and construction are discussed in detail in section 3.1 of this report which concludes with the recommendation that this option be dropped from consideration in this MTIA.

2.3 Commuter Rail Option

Commuter rail service is an option which provides high speed train service dedicated primarily to commuters traveling along the I-44 and I-55 corridors. For commuter rail service to be feasible and cost effective, there is a need to partner with willing railroads which operate in the corridors over track that will require improvements to operate passenger service.

Commuter service would operate at scheduled times versus a headway service such as light rail employs and would operate jointly interspersed with freight or other rail passenger services such as Amtrak. Commuter rail advantages include low capital costs per mile (approximately $1.5 to $2 Million for these corridors) and rapid implementation (up and running in a short period of time of approximately 3 years).

For the corridors under investigation, both the Burlington Northern and the Union Pacific parallel the I-44 and I-55 interstates from downtown St. Louis outward to Pacific and Crystal City/Festus for 34 miles and 39 miles respectively.

Although both of these railroads themselves operate almost exclusively freight services; Amtrak does provide limited passenger service along the Union Pacific tracks on both corridors.

A description of each corridor and the railroads which service it is provided below followed by a map displaying potential station sites throughout St. Louis City, St. Louis County, Jefferson County and Franklin County (Exhibit 2-3).

2.3.1 I-44 Corridor

Burlington Northern Railroad - The BN operates from downtown St. Louis just North of I-44 throughout the city. Once it reaches southeast junction, located near Shrewsbury, the railroad diverges into a southwest and southern direction which parallel I-44 and I-55 respectively.

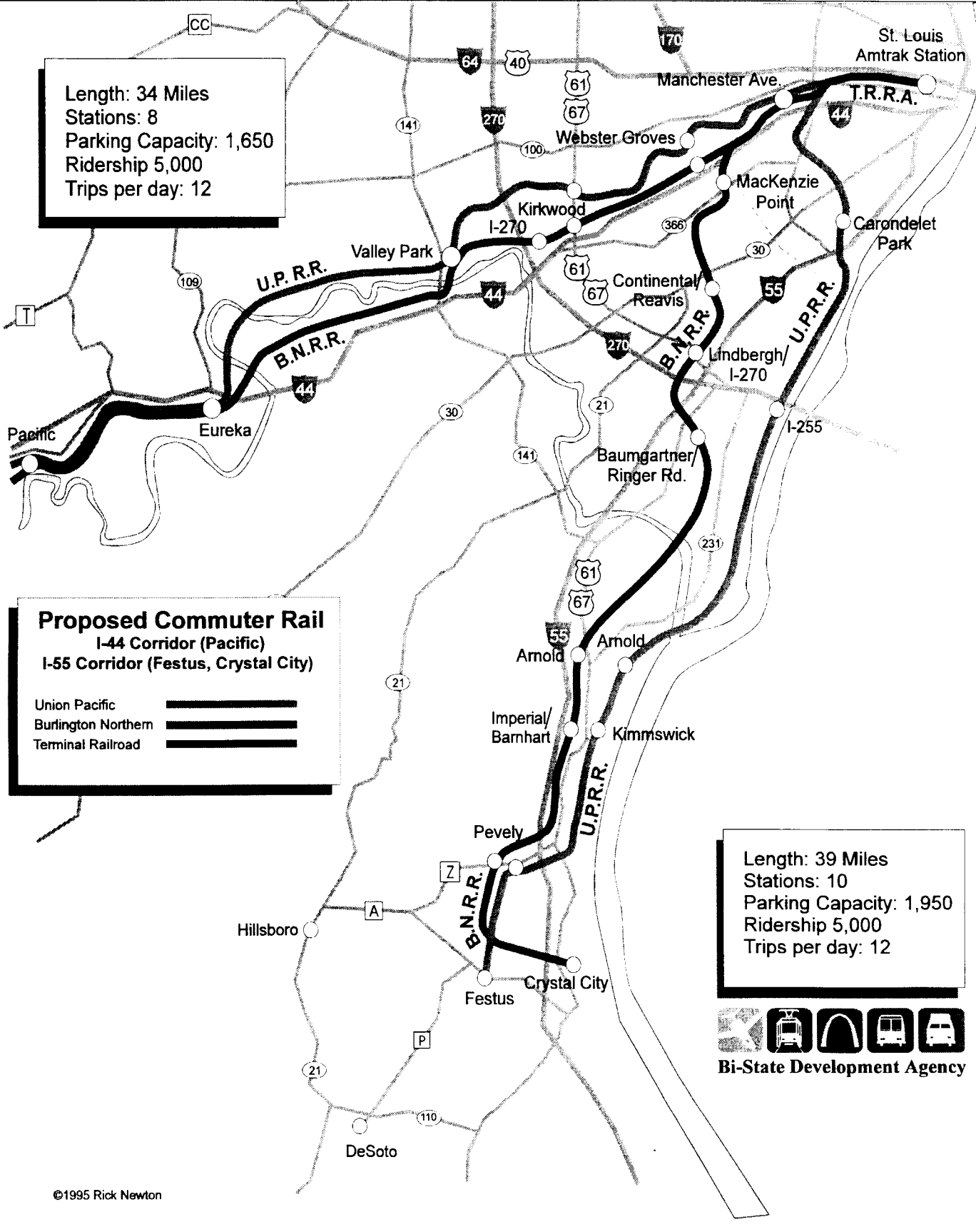
The southwest I-44 (Cuba Subdivision) line operates through Webster Groves, Kirkwood, Valley Park, and Eureka to Pacific and eventually reaches Springfield, MO. Initially, 8 potential stations have been identified along the corridor as can be viewed from Exhibit 2-3. Each of these stations would have parking lots constructed.

Union Pacific Railroad - The UP operates from downtown St. Louis and runs west along the south side of Highway 40 to Tower Grove where it diverges into a southwest and southern direction which parallel I-44 and I-55 respectively.

The I-44 UP line (Sedalia Subdivision) diverges from Tower Grove operating along its East-West Mainline. This line runs parallel to the BN main to near the west city limits and the north end of BN's Lindenwood yard, This line continues west through Maplewood, Webster Groves, Glendale, Kirkwood and Valley Park. From Valley Park this line again runs roughly parallel to the BN's southwest line through Eureka to Pacific. West of Pacific, the two mains separate. The UP line runs slightly north through Gray Summit to the Missouri River then west to Kansas City.

Attachment B

Preliminary Capital Costs for Station Construction


Length: 34 Miles
Stations: 8
Parking Capacity: 1,650
Ridership 5,000
Trips per day: 12
St. Louis Amtrak Station
Manchester Ave.
T.R.R.A.
Webster Groves
MacKenzie Point
Carondelet Park
Kirkwood
I-270
Valley Park
U.P. R.R.
B.N.R.R.
Continental/ Reavis
Lindbergh/ I-270
U.P.R.R.
I-255
Pacific
Eureka
Baumgartner/ Ringer Rd.
Proposed Commuter Rail
I-44 Corridor (Pacific)
I-55 Corridor (Festus, Crystal City)
Union Pacific
Burlington Northern
Terminal Railroad
Arnold
Arnold
Imperial/ Barnhart
Kimmswick
Pevely
Hillsboro
Festus
Crystal City
DeSoto
Length: 39 Miles
Stations: 10
Parking Capacity: 1,950
Ridership 5,000
Trips per day: 12
Bi-State Development Agency
©1995 Rick Newton

Similar to the Burlington Northern, seven potential railroad station sites including parking provisions have been identified for potential consideration (see Exhibit 2-3).

2.3.2 I-55 Corridor

Burlington Northern Railroad - At southeast junction, the BN diverges to the south along the I-55 corridor (River Subdivision) and operates through Afton and Mehlville where it crosses I-55 and US 61 and continues through Arnold, Barnhart, Pevely to Crystal City/Festus and heads south towards Memphis, TN. Initially, there are 10 potential station sites with parking as shown in Exhibit 2-3.

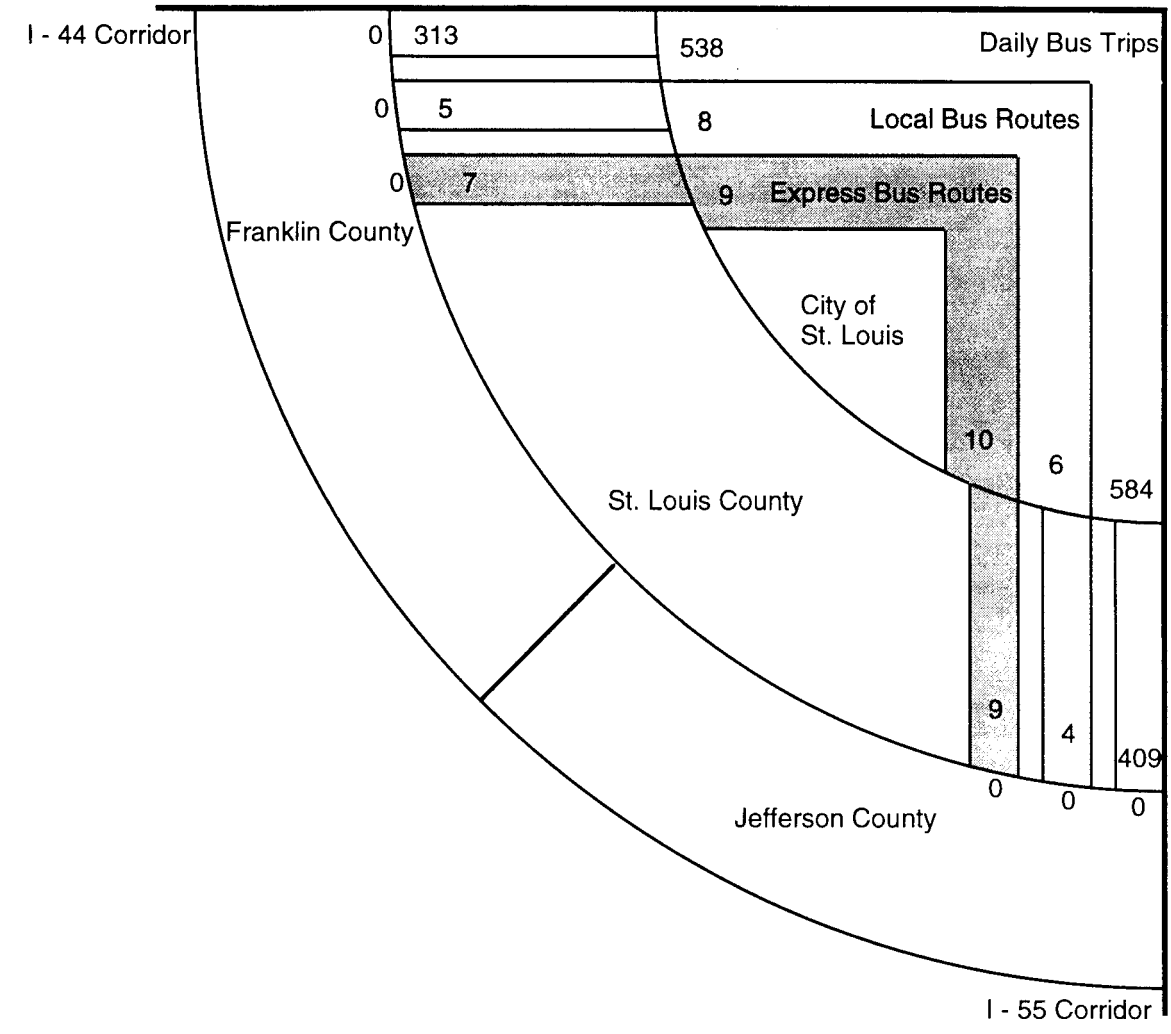
Union Pacific Railroad - At Tower Grove, the UP diverges to the south (DeSoto Subdivision) along the "Hill" neighborhood of St. Louis, then south and east to the Carondelet area of South St. Louis city, joining the Mississippi River Line near the old South Broadway passenger depot. The line continues to run south through Lemay, Jefferson Barracks, Oakville, Arnold, Barnhart, Kimswick, and Herculaneum then turning west and south through Pevely to DeSoto and south to Little Rock, Arkansas. A branch from this mainline continues along the river to Festus/Crystal City. Initially, 7 stations with parking facilities have been identified on the map in Exhibit 2-3 as potential sites along the alignment.

2.4 Traffic Management Systems Option

The traffic management systems option represents a wide range of relatively low cost actions which together may have an impact on demand reduction or capacity increases. A key objective of this type of strategy is to increase the passenger-miles of travel per vehicle-mile of travel. Implicit in this concept is actions that increase vehicle occupancy whether in autos, car pools van pools or buses.

Current bus service in the corridors provided by BSDA are represented schematically in Exhibit 2-4. BSDA provides over 1,100 bus trips every weekday in these two corridors with 538 local and express bus trips in the I-44 corridor and 584 local and express bus trips in the I-55 corridor. This service comprising a mixture of local and express routes is confined to St. Louis City and County. No fixed route transit services currently operate in either Franklin or Jefferson Counties. As the exhibit shows, there are 9 express routes operating on the I-44 corridor in the City with 7 continuing into the County. On the I-55 corridor, corresponding numbers are 10 City express routes and 9 which continue into the County. This background helps understand improvements in transit service coverage that would be required to impact use of the two Interstates.

Current Bus Services Provided By BSDA
Schematic Representation



Elements to be considered in the traffic management systems option include:

- High Occupancy Vehicle (HOV) lanes on both Interstates are one element although factors such as interchange spacing and the number of lanes exiting vehicles would have to cross (a safety issue) need to be addressed. Another factor to consider is the use of such lanes in as much as 76% of survey respondents in the I-44 corridor indicated that they drive alone to work and 85% of I-55 respondents do likewise.

- Expanded express bus service will be considered in both corridors coupled with added park and ride facilities which could be used both for bus transfers and car pool marshaling points. Expansion of express services into Franklin and Jefferson Counties will be considered even though BSDA can not currently operate in those Counties.

- "Intelligent Transportation Systems" technologies will be considered under this option with items such as improved incident management systems, real time driver advisory systems (both in-vehicle and roadside). These will be considered for both the Interstates and arterial facilities in both corridors.

- Parking management strategies are not very applicable to the conditions in these corridors and will not be considered except for downtown St. Louis where parking pricing is an input to the mode share estimation model described in Section 4 of this report

The final definition of the elements of this option will also evolve as the MTIA progresses through the analysis stage and results and conclusions are coordinated with the MHTD MTIA and other studies being conducted in the corridors.

3.0 Initial Financial Screening of Options

A first screen of options is useful for ensuring that study resources are not expended in detailed analysis of an option that ultimately proves in-feasible due to excessive cost or can be implemented by an alternative route that is far less costly. This section of the report examines two such cases -- the Light Rail Option and the comparative attributes of using the Burlington Northern or the Union Pacific routes under the Commuter Rail Option.

3.1 Financial Implications of the Light Rail Option

The capital cost estimates for LRT for the I-44 and I-55 corridors have been estimated at $1.63 billion dollars as estimated below. Considering it would take 10 years to construct LRT along these corridors and if the FTA provided 80% of the match for the project, resources would be expended as follows:

Time Period	Federal	Local	Total
Annually	$ 130,400,000	$ 32,600,000	$ 163,000,000
10 Year Period	$ 1,304,000,000	$ 326,000,000	$ 1,630,000,000

Considering the current federal budget, it is unlikely and unreasonable to believe that FTA will fund any LRT project with a 5 - 1 match. Furthermore, even if federal funds were available, it is unreasonable for BSDA to commit $326 million with local funds for a LRT project which would essentially eliminate the possibility of pursuing other capital rail projects as proposed in the long range study plan.

Based upon the limitation of federal and local funds, other rail projects under investigation within the St. Louis region, and the fact that eliminating LRT in this I-44/I-55 MTIA study does not preclude LRT as proposed in the long range study plan for the south side corridor, it is recommended that LRT be dropped as a reasonable option for this MTIA.

To estimate the cost for LRT along the I-44 and I55 corridor, the following analysis was performed to determine the approximate cost of implementing a Light Rail option in the I-44 and I-55 corridors. MetroLink is the prototype of a successful Light Rail system, operating frequent service (7 to 15 minute spacing between trains) throughout the day. It uses a dedicated right-of-way and requires overhead electrical wires. These operating characteristics would make it impossible to use the existing railroad trackage in these corridors and a separate right-of-way would have to be acquired to implement this option.

To calculate a preliminary approximation of the cost of implementing the Light Rail option in the two corridors, capital cost data were summarized for

MetroLink and five other recently constructed light rail systems from a study completed by the Federal Transit Administration (FTA). These data are shown in exhibit 3-1 which displays costs in 1990 dollars (the year the FTA study used for comparative analyses). The last column of the exhibit converts these costs to 1995 dollars using an annual escalation rate of 3% per year.

While there is variation in the capital costs per mile of route for the various systems, it would not be unreasonable to assume that new light rail construction in these corridors could approximate the average, or $22.3 (using 1995 dollar value) million per mile. Applying this unit cost to the miles of route that would be required in each corridor would result in the following total costs:

- the I-44 route of 34 miles would cost $758 million;
- the I-55 route of 39 miles would cost $870 million;
- the total for the Light Rail option would be $1.63 billion;
- this total would be split into BSDA's share of $1.16 billion and a required contribution from Jefferson county of $469 million (BSDA cannot fund the 21 miles of route in Jefferson County).

Furthermore, if one considers the costs of inflation (assume 3% per year), the cost of the project would approximate $25.85 million per mile for a total project costs of $1.89 billion. This assumes year 5 (the mid-point of the project) is considered the base year for projecting costs.

This analysis (even if costs were over-estimated by 10 or 15%) leads to a recommendation that the Light Rail Option be dropped from further consideration as an option in this MTIA.

3.2 Comparative Attributes of the BNRR Route Versus the UPRR Route for the Commuter Rail Option

The Burlington Northern and the Union Pacific operate freight services along routes serving both the I-44 corridor and the I-55 corridor. Both of these routes would require upgrading of existing track and signal systems to permit the implementation of passenger service. An over-riding consideration in the selection of the best alternative for the possible initiation of passenger service is the comparative cost of performing these upgrades and the possibility of being able to intersperse passenger trains with freight trains operating along the routes.

Both railroads have had numerous discussions with BSDA about the requirements for passenger services and both railroads have responded in

Exhibit 3-1

SUMMARY of CAPITAL COSTS - RECENT U.S. LIGHT RAIL SYSTEMS

(All Costs in Millions of 1990 Dollars Except "Escalated" Column)

Light Rail System	Total System Cost	Total Route Miles	Total Cost Per Mile	Escalated 1995 Cost Per Mile
St. Louis, Mo.	$319.53	17.0	$18.80	$21.78
Portland, Ore.	$282.49	15.2	$18.58	$21.54
Los Angeles, Cal.	$826.24	22.6	$36.56	$42.37
San Jose, Cal.	$334.82	19.9	$16.83	$19.50
Sacramento, Cal.	$188.08	18.3	$10.28	$11.91
Pittsburgh, Pa.	$624.09	41.1	$15.18	$17.60
Total / Average	**$2,575.25**	**134.1**	**$19.20**	**$22.26**

Note: Escalated Costs Calculated at 3% Per Year Growth

writing with their estimates of what it would cost to upgrade track and signals to permit passenger operations. The railroads have also provided data regarding current and prospective utilization of the tracks by freight trains.

Other comparative costs such as layover facilities, stations, fare collection equipment and land have been estimated by various members of the consulting team with expertise in those specific areas. Appendix I provides the details on each of these items which are presented in summary form in this section of the report.

Exhibit 3-2 displays the key statistics from this detailed analysis. The capital cost of right-of-way (ROW) improvements is one critical factor in determining which route to use since both have similar pluses and minuses relative to the ridership potential along the routes. As can be seen from Exhibit 3-2, costs provided by the railroads indicate that the BNRR could upgrade its route for a total $12 million while the UPRR estimates it would need $119.1 million to provide similar upgrades. These two estimates differ by a factor of ten and show the UPRR alternative to be $107.4 million higher.

As was the case with the Light Rail Option, implementing commuter rail service on the UP alignment to both Pacific (along the I-44 corridor) and Crystal City/Festus (along the I-55 corridor) would result in a project (considering all costs excluding rolling stock) that would cost approximately $162 million (see appendix I for details) and consume virtually all of BSDA's financial resources for several years. This compares to a total project cost for both corridors of $55 million if the BN route is used.

Another major consideration is the degree of freight interference along the routes. Freight services in the I-55 corridor are slightly higher on the UP alignment (10 vs 6), however on the I-44 corridor there is a considerable disparity with the UP operating 43 freight trains on a typical day versus the BN's 8. Implementing minimal passenger service on the UP route would be difficult and any future expansions of service would be extremely difficult.

Other comparative statistics show the two to be fairly comparable. Travel times are similar (Exhibit 3-2) and station costs are the same (given the assumption of the same number of stations on each route).

For all of the above reasons (but primarily the large difference in cost) it is recommended that the UPRR alignment be dropped from further consideration under the Commuter Rail Option.

Exhibit 3-2

COMPARATIVE EVALUATION OF COMMUTER RAIL ROUTE ALTERNATIVES

(All Dollars In Millions And Include Total Route - Pacific to Downtown to Crystal City/Festus)

Measure	BNRR	UPRR	COMMENTS
Capital Cost of ROW Improvements			ROW improvement cost as provided by the railroads are 10 times higher for the UP being $107.4 million more than the BN costs for similar improvements
I-44 Corridor	$5.9	$83.5	
I-55 Corridor	$2.9	$35.6	
Common Segment	$3.2	N.A.	
Total	$12.0	$119.1	
Station Costs			Station costs are similar for both routes assuming the same number of stations on either the BN or UP alignment
Construction	$15.1	$15.1	
Fare Collection	$2.2	$2.2	
Communications Equipment	$1.3	$1.3	
Land	$14.5	$14.5	
Total	$33.1	$33.1	
Number of Freight Trains			The large number of freight movements on the UP makes scheduling service difficult
I-44 Corridor	8	43	
I-55 Corridor	6	10	
Ability to Expand Passenger Service			Future expansions in passenger service would be virtually impossible in the I-44 corridor
I-44 Corridor	Good	Very Difficult	
I-55 Corridor	Good	Good	
Travel Time			Travel times would be roughly comparable - the UP would be 3 minutes faster to Pacific
Pacific to Downtown (I-44)	52 minutes	49 minutes	
Crystal City to Downtown (I-55)	67 minutes	67 minutes	

4.0 Proposed Evaluation Measures and Application

Standard MTIA evaluation measures are generally described in a US Department of Transportation document titled Revised Measures for Assessing Major Investments. Measures described in this document fall into four categories: 1) financial; 2) mobility changes; 3) environmental; and 4) economic development impacts. The remainder of this section of the report discusses the recommended set of measures to be used in this MTIA from two perspectives:

1. results of questionnaires filled out by members of the Advisory Committees and the public as to their perception of the importance of various measures to them; and

2. a discussion of the analysis models and methodology being used and the measures that will be calculated by that methodology.

The blending of the public desires and the analytical framework is then used to arrive at a final set of evaluation measures and method of application.

4.1 Public Opinions on Importance of Various Evaluation Measures

The questionnaires distributed at the Advisory Committee and public meetings asked respondents to rate various measures as "very important", "somewhat important" or "not important". The categories of measures included:

- **transportation impacts** such as reducing congestion, increasing transit use, improving safety and improving mobility for all residents;

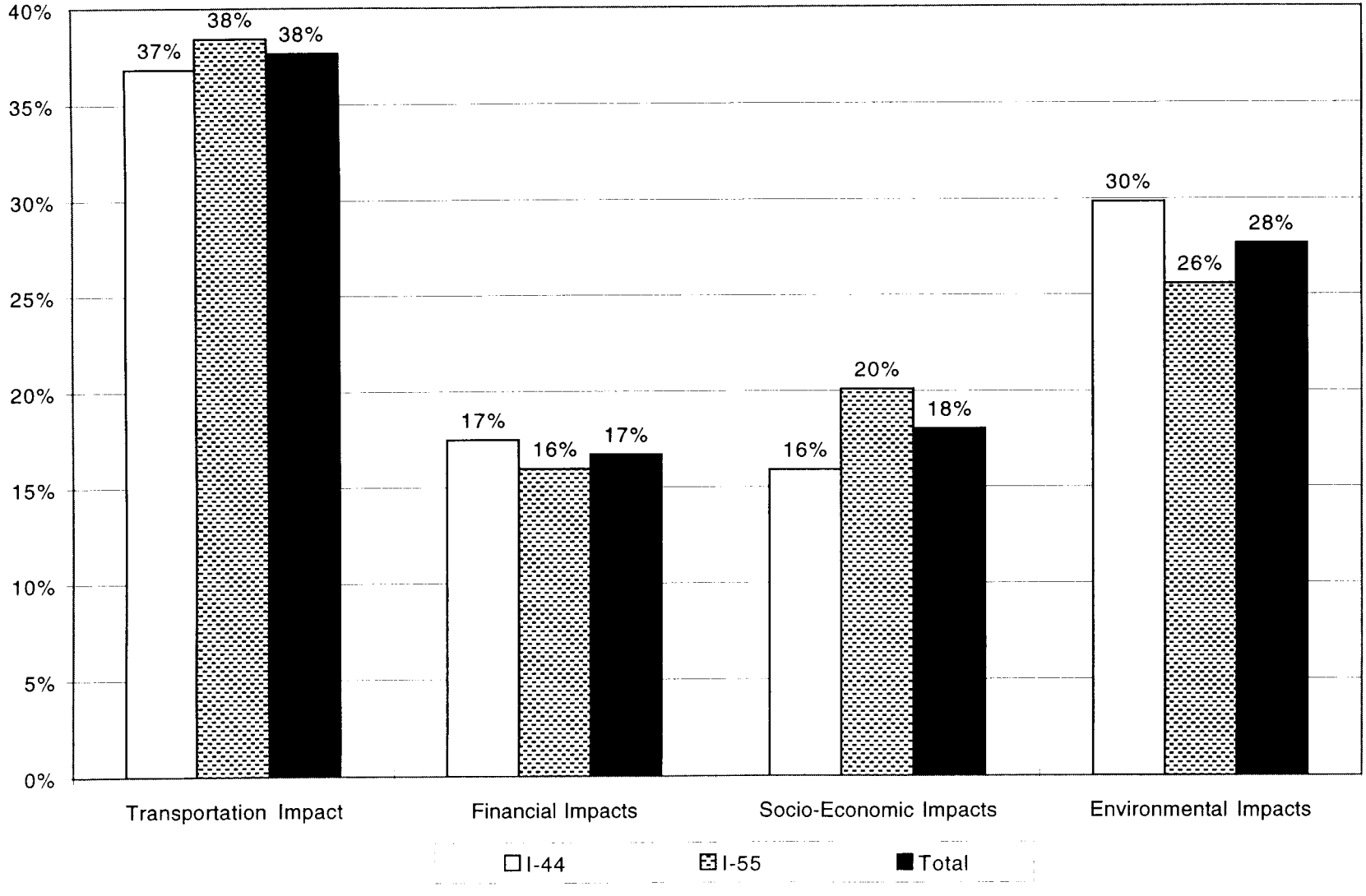
- **financial impacts** such as project cost, operations/maintenance cost and percent funded by local taxes;

- **socio-economic impacts** such as economic development opportunities, community support and family displacements/relocation; and

- **environmental impacts** such as air quality, water quality, noise, energy consumption and wetlands/parks/wildlife.

Exhibit 4-1 shows the breakdown of impact areas which respondents considered very important. Two important conclusions may be drawn from the exhibit: 1) there is remarkable similarity between public opinion in both

Exhibit 4-1
Percent of Respondents Who Considered Category Very Important



corridors; and 2) all ranked financial impacts lower than transportation impacts and environmental impacts.

In general, it may be concluded that the respondents (comprising a fairly broad cross-section of corridor residents and businesses) are more concerned with reducing congestion and providing better mobility for all residents than they are with financial considerations.

4.2 Methods for Calculating and Applying Evaluation Measures

A key determinant in assessing the viability of public transit options in the MTIA process is the estimation of travel mode shifts and the resulting market shares which produce ridership and revenue estimates for transit options. The person mode shift model being used in this MTIA does not forecast person travel demand. Rather, it uses the total person travel demand forecasts by mode produced by EWGCC which are incorporated into the model database, and allows person trips to shift among modes. Mode shifts occur in the model when access or travel price changes, and when access time or travel speed changes.

The mode shift model focuses on those modes addressed by local person travel demand models -- automotive travel (free flow and high occupancy vehicle lanes), bus travel (intercity and transit), and rail travel.

The mode shift model recognizes that different modes of transport which exist in the same corridor are not exclusive of each other, but neither are they perfect substitutes. The auto mode requires auto ownership, or a relationship with someone who owns an auto. While the auto is generally easy to access without delay, it frequently encounters a storage cost (parking) at one or more ends of the trip. Auto's generally provide high trip flexibility and can handle an almost unlimited number of origins and destinations, and are available for travel at any hour.

Bus transit often requires some planning to access the system, and the system can only be entered at specific locations. Access usually involves some wait time, and occasionally there is an access fee (e.g., parking at the system entry point). Travel usually has some restrictions on entry and exit points, but these are generally numerous. This mode offers the traveler a chance to relax, read and socialize; features often not found in the auto mode. This mode usually travels at speeds below auto speeds as it travels in mixed flow traffic, with stops. Sometimes it equals or slightly exceeds auto speeds when traveling on an independent right of way or high occupancy vehicle lane.

Rail also requires some planning to use, and the system can only be accessed at specific locations (stations). Rail generally has fewer access and

egress points than bus, but also frequently travels at greater speeds than either bus or auto in congested regions. Rail sometimes has an access fee (parking cost), and usually has some access delay time waiting for the train to arrive. This mode often has independent social appeal to many riders, and generally offers a comfortable, quiet ride free of traffic distractions.

If these modes were perfect substitutes, any price and/or speed difference would (theoretically) send all passenger travelers away from the highest cost/lowest speed mode of transport to the lowest cost/ highest speed mode. If the modes were completely exclusive, one could choose a price/time elasticity for each mode and change the level of demand within that mode based on cost and speed alone.

In the real world, trip makers are influenced by the service characteristics of each mode, the travel time, the price for travel and many other qualitative factors. The traveler can make choices to increase or decrease the frequency of travel, as well as change the mode by which travel is accomplished. The person mode shift model addresses these choices at a macro transportation planning level. Changes in travel time and cost can both change the modal shares of person trips and the total market size.

4.2.1 Methodology

The methodology centers around several key aspects of person travel demand by ground-based mode, including:

- access or terminal price, which includes the cost of accessing the mode at both trip ends (most common access price is parking cost)
- travel price per mile (the per mile cost of the transport mode)
- access or terminal time, which includes the time need to connect to the respective mode
- travel speed, which is converted to travel time by the model
- transport price elasticity (point elasticity or shrinkage ratio formula calculated as the percent change in person trips by percent change in travel price)
- modal bias (a measure of the propensity of trip makers to distribute themselves among travel modes available even at a common price).

The modal bias is calculated based on actual distribution of person trips among modes in a corridor, the price of travel and access using different modes, and the price elasticity of travel. The modal bias inherently accounts for modal differences in service quality, speed, frequency, market attractiveness, comfort, security and all other factors not directly accounted for by price. This bias factor represents the propensity of a traveler to substitute one mode of travel for another, even at the same unit price and speed (price per mile).

Outputs from the model will directly permit the calculation of many of the standard measures others, such as operating cost estimates use model outputs but require unit cost specific to BSDA operations or specific to the option characteristics (e.g., rail car-miles and staffing levels). Direct measures output from the model include:

- Financial Measures

    1. annual revenue generated by the option -- the model will supply AM peak period travel price (i.e., revenue) and passenger volumes for the transit modes -- the resulting products may then be expanded to daily and annual figures

    2. person-miles are derived from inputs of trip volumes and trip lengths so the calculation of resultant person-miles by mode can be calculated after mode shifts are estimated

    3. user costs per person-mile are calculated from person-miles as described in the previous discussion using average car usage cost per mile and transit fares

- Measures of Mobility Change

    1. lost time may be calculated using both congested and uncongested car travel times which are model inputs provided by EWGCC

    2. lost time converted to dollars can be calculated using the lost time statistics and applying a value of travel time for peak travelers

    3. a "mobility index" which examines the ratio of person-miles of travel to vehicle-miles of travel can be calculated using estimates of auto occupancy

- Environmental Measure

    1. this measure includes tons of pollutants per person-mile and fuel consumption per person -mile -- they can be calculated using appropriate pollutant emission and energy consumption rates

4.3 Recommended Measures for Evaluating Options

Based on a review of standard measures normally used in the MTIA process, the results of public input on importance and the capabilities of the analytical methods used, a set of measures for option evaluation should include:

- **financial measures** including user costs per person-mile and annual revenue compared to annual operating and capital cost;

- **mobility change measures** including lost time converted to dollars and volume/capacity ratio; and

- **environmental measures** including fuel consumption by type per person-mile and tons of pollutants per person-mile.

The above set of measures can be applied in two ways: 1) options can be compared to each other to determine those with more desirable attributes; 2) measures for options can be examined against criteria (e.g., an option should not increase congestion); and options can be compared to the no-build option to determine if key measures improve. The recommended measures will permit the selection of a preferred option from among the options under consideration.

5.0 NEXT STEPS

Booz·Allen will work with Bi-State throughout the entire MTIA process to engage the public. Booz·Allen will continue to produce technical MTIA reports, newsletters, and hold Advisory Group meetings and public meetings. A total of 36 Advisory Group and public meetings are scheduled over the next six months. The meetings are scheduled to coincide with project milestones:

· First Set of Meetings	August	Scoping Challenges and Options
· Second Set of Meetings	September	Results of Scoping; Definition of Options; Preliminary Scoping of Evaluation Criteria
· Third Set of Meetings	November	Results of Preliminary Evaluation of Options
· Fourth Set of Meetings	December	Agreement of Preferred Option (Public Hearing)

The final set of public meetings will allow the public to formally record their preferred option. A transcription of the meeting will be provided. The public will have access to the draft report at the information centers located throughout the St. Louis metropolitan area. After verbal and written comments are collected, a Response to Public Comments will be prepared and included in the final report.

5.1 Advisory Group and Public Meeting Schedule - Second Set

The second set of Advisory Committee and public meetings are scheduled to begin the second week in September. Bi-State will host the Advisory Group meetings in St. Louis City and St. Louis County, Jefferson County, and Franklin County during the week of September 11. Public meetings will be held in downtown St. Louis, South St. Louis County, Festus, and Pacific during the week of September 18. The Advisory Committees will meet one week prior to the public meetings. Public notices of the meetings will be sent out two weeks prior to the meeting. (Please refer to the Meeting Schedule on the following page).

INTEREST	MEETING PLACE	TIME	DATE
PUBLIC MEETINGS			
West St. Louis City, West St. Louis County	Vianney High School, Library 1311 South Kirkwood Road	7:30 - 9:00 PM	Monday, September 18
Downtown City of St. Louis	East-West Gateway Coordinating Council 911 Washington St.	11:00 AM -12:30 PM	Tuesday, September 19
Franklin County	Pacific High School 425 Indian War Path Road	7:30 - 9:00 PM	Tuesday, September 19
South St. Louis City, South St. Louis County	St. Louis County Library Cliff Cave Branch 5430 Telegraph Rd. Meeting Room 2	7:30 - 9:00 PM	Wednesday, September 20
Jefferson County	Festus Community Center (Old Armory Bldg.) 215 N. Mill	7:30 - 9:00 PM	Thursday, September 21
ADVISORY COMMITTEE MEETINGS			
Franklin County	Pacific City Hall	7:30 - 9:00 PM	Monday, September 11
I-44	Bi-State Development Agency	8:00 - 9:30 AM	Tuesday, September 12
I-55	Bi-State Development Agency	8:00 - 9:30 AM	Wednesday, September 13
Jefferson County	Drury Inn, Festus	7:30 - 9:00 AM	Thursday, September 14

5.2 Public Meeting Topics

The second set of public meetings will focus on the results of the scoping process, provide specific details about each option, and begin preliminary scoping of evaluation methodologies. The public will see results from the surveys conducted at the first set of meetings, detailing where people live and work, what options they are initially interested in, and what evaluation criteria might be used to measure the viability of each option. Bi-State will also provide details about each option: No-Build, Expanded Highway, Commuter Rail, Light Rail, and Traffic Systems Management. Initial evaluation criteria will be outlined during this set of meetings.

The third set of meetings will detail each option set against the determined evaluation criteria. Each option will be ranked by evaluation criteria such as congestion alleviation, air quality benefits, cost, impact on neighborhoods, impact on the environment, and positive economic impact. During the fourth set of meetings, the public will be encouraged to comment on the preferred alternative. At this time, a public comment period will be initiated for 20-30 days, allowing the public to comment on the preferred alternative. Booz·Allen will place the draft report in the information centers to allow people who cannot attend the meeting to view the report at the leisure. We will provide comment forms at these locations, and consider all written and verbal comments before submitting the final report.

APPENDIX I

Preliminary Capital Cost Estimates

This report provides preliminary capital cost estimates for implementing commuter rail service along the I-44 and I-55 corridors. Estimates are provided in the following exhibit and described in greater detail below.

- Layover Facilities
- Stations
  - Construction
  - Fare Collection Equipment
  - Communications
  - Land Acquisition
- Railroad Improvements

Capital Cost Summary Exhibit

	With Contingency	W/O Contingency
LAYOVER FACILITIES		
St. Louis	*$ 6,828,013*	*$ 5,462,410*
Crystal	*$ 1,634,766*	*$ 1,307,813*
Pacific	*$ 1,245,625*	*$ 996,500*
Total for Layover Facilities	$ 9,708,404	$ 7,766,723
STATIONS (Intermediate & Terminal)		
Construction	*$ 15,085,590*	*$ 13,117,904*
Fare Collection Equipment	*$ 2,175,218*	*$ 1,977,471*
Communications	*$ 1,293,760*	*$ 995,200*
Land Acquisition	*$ 14,500,000*	*$ 14,500,000*
Total For Stations	$ 33,054,568	$ 30,590,575
R.R. IMPROVEMENTS W/BN	$ 12,000,000	$ 12,000,000
R.R. IMPROVEMENTS W/UP	$ 119,000,000	$ 119,000,000
TOTAL W/O ROLLING STOCK BN	**$ 54,762,971**	**$ 50,357,298**
TOTAL W/O ROLLING STOCK UP	**$ 161,762,971**	**$ 157,357,298**

For the first two items; layover facilities and station sites, cost estimates must be considered preliminary at this time due to the fact that no land has been acquired, surveyed and no environmental assessment has been made. The costs provided are based upon site visits of potential locations, sketched drawings and unit costs based upon similar projects completed in the United States.

The cost estimates for layover facilities and station sites also assume the following where applicable.

- No environmental clean-up is required
- Minimum soil bearing capacity 2500 PSI
- No off-site grading or improvements
- Access to site from existing roadway
- All utilities are brought to the site and off-site utility work is required
- Passenger platform is a single track access
- There are no overhead or underground passage ways
- A typical prototype design will be reused from site to site
- Development costs do not include any costs for artwork or site prep work for art work
- Canopy design is limited in design to a simple center supported canopy element
- All platforms are asphalt (not concrete)

These costs will be updated once preliminary engineering begins and sites become selected.

1.0 Layover Facilities

There are three layover facilities initially identified for train storage as follows:

- Downtown St. Louis (just east of the Amtrak Station)
- Pacific
- Festus/Crystal City.

The St. Louis site will provide mid-day storage for up to nine train sets (including spares) and will be equipped with minimal maintenance facilities and equipment to allow for daily servicing, cleaning and minor maintenance. The Pacific and Festus/Crystal city site would provide night and weekend storage for four train sets.

Estimated Costs (including a 25% contingencies) for all these three facilities is $9,708,404. The estimate is provided in attachment A which provides by unit cost and was based upon a site visit and a conceptual layout drawing for each site. Estimates were provided by DeLeuw Cather Inc.

2.0 Stations

Station costs include construction, fare collection equipment, communications and land acquisition as described below and is estimated at this time at $33 Million.

2.1 Construction

Using the most current corridor map developed with station sites identified, we have estimated there will be 16 stations (including terminal stations) to be constructed. Two of the stations will be shared by both the I-44 and I-55 corridors. Costs (including a 15% contingency) for a typical station site is estimated at approximately $950,000. The estimate is provided in attachment B by unit cost and was based upon a conceptual station layout drawing sketch which is also provided in attachment B.

Costs for 16 stations are estimated at approximately $15.2 Million and were provided by David Mason & Associates.

2.2 Fare Collection Equipment

It is assumed that each of the 16 stations would be equipped with 2 TVMs and 1 validator. The cost estimate was developed using the initial Scheidt & Bachmann initial bid for MetroLink's TVMs and validators and applying those same bid prices for a smaller quantity for commuter rail with a 10% escalation. This estimate is broken out into 12 bid items in Attachment C and totals approximately $2 Million.

2.3 Communications

Communications for commuter rail include the following systems which are essentially identical to those used on MetroLink.

- Passenger Assistance Telephone (PAT)
- Public Announcement Capabilities for each station
- Visual Display of Information
- TVM Intrusion Alarm

The unit costs for communications is provided in Attachment D; total costs are estimated at approximately $1.3 Million.

2.4 Land Acquisition

Currently there have been no land sites firmly identified for commuter rail. However, BSDA has provided an initial estimate of approximately $14.5 Million based upon real estate acquisition costs for MetroLink. Once the corridors and sites are selected, firm numbers will be provided following real estate appraisals.

3.0 Railroad Improvements

The BN and UP have provided the following preliminary estimates for infrastructure and system improvements to accommodate commuter rail service. It is worthy to note that the UP's estimate assumes a maximum of 4 commuter rail trips in each direction on the I-44 route whereas the BN provides for at least 12 trips (6 trips in each direction). The UP has advised Bi-State that additional train service will result in significantly higher capital costs for infrastructure improvements which may include a third track.

	BN	**UP**	**Difference**
Pacific to St. Louis	$9.7 M	$83.5 M	$ 74.1 M
Crystal City to St. Louis	$5.7 M	$35.6 M	$29.9 M
Combined Lines*	$12 M	$119 M	$107.4 M

These estimates are provided for in Attachment E and include letters and support documentation from both the BN and the UP railroads.

*Both the BN I-55 & I-44 Corridors share a common section from S/E Junction to Grand reducing the value by approximately $3.4 Million

Attachment A

Preliminary Capital Costs for Layover Facilities

DE LEUW, CATHER
Engineers and Planners

CONCEPTUAL ESTIMATE SUMMARY

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Fencing	2,690	LF	20	$53,800
2	Site Grading	5,022	CY	5	$25,110
3	Railroad Track	6,840	TF	100	$684,000
4	No. 8 Turnouts	6	EA	30,000	$180,000
5	12" R.C.P. Underdrains	2,700	LF	25	$67,500
6	3" Dia. Catch Basins With Frame & Gate	14	EA	3,500	$49,000
7	Cleaning Platform 1800' X 6'	12,600	SF	10	$126,000
8	Power Distribution System	1	LS	500,000	$500,000
9	Lighting - 30' High Poles	1	EA	30,000	$30,000
10	Parking for 24 Cars	9,600	EA	5	$48,000
11	4" Water Line & Frost Free Hydrants	4,000	LF	25	$100,000
12	Prefabricated Metal Drainage Pans	3,000	SF	25	$75,000
13	Washer Facility	1	LS	225,000	$225,000
14	Welfare Building (Complete)	2,000	SF	150	$300,000
15	Sanitary Dump Stations	8	EA	500	$4,000
16	Sanitary Sewer - 6" V.C.P.	3,000	LF	20	$60,000
17	Sanitary Sewer Hookup - 6" V.C.P.	300	LF	20	$6,000
18	Water Line Hookup - 6% D.I.P.	300	LF	30	$9,000
19	Electrical Hookup - Duct Line	300	SF	150	$45,000
20	Maintenance Building (Including Plumbing, Mechanical and Electrical	15,500	SF	150	$2,325,000
21	Inspection Pit	1	LS	350,000	$350,000
22	Equipment & Tools (Allowance)	1	LS	200,000	$200,000
23	Access Road (6000' X 12')	0	SY	35	$0
	Subtotal				$5,462,410
	Contingency	25%	%		$1,365,603
	Total Estimated Construction Cost				$6,828,013

DE LEUW, CATHER
Engineers and Planners

CONCEPTUAL ESTIMATE SUMMARY

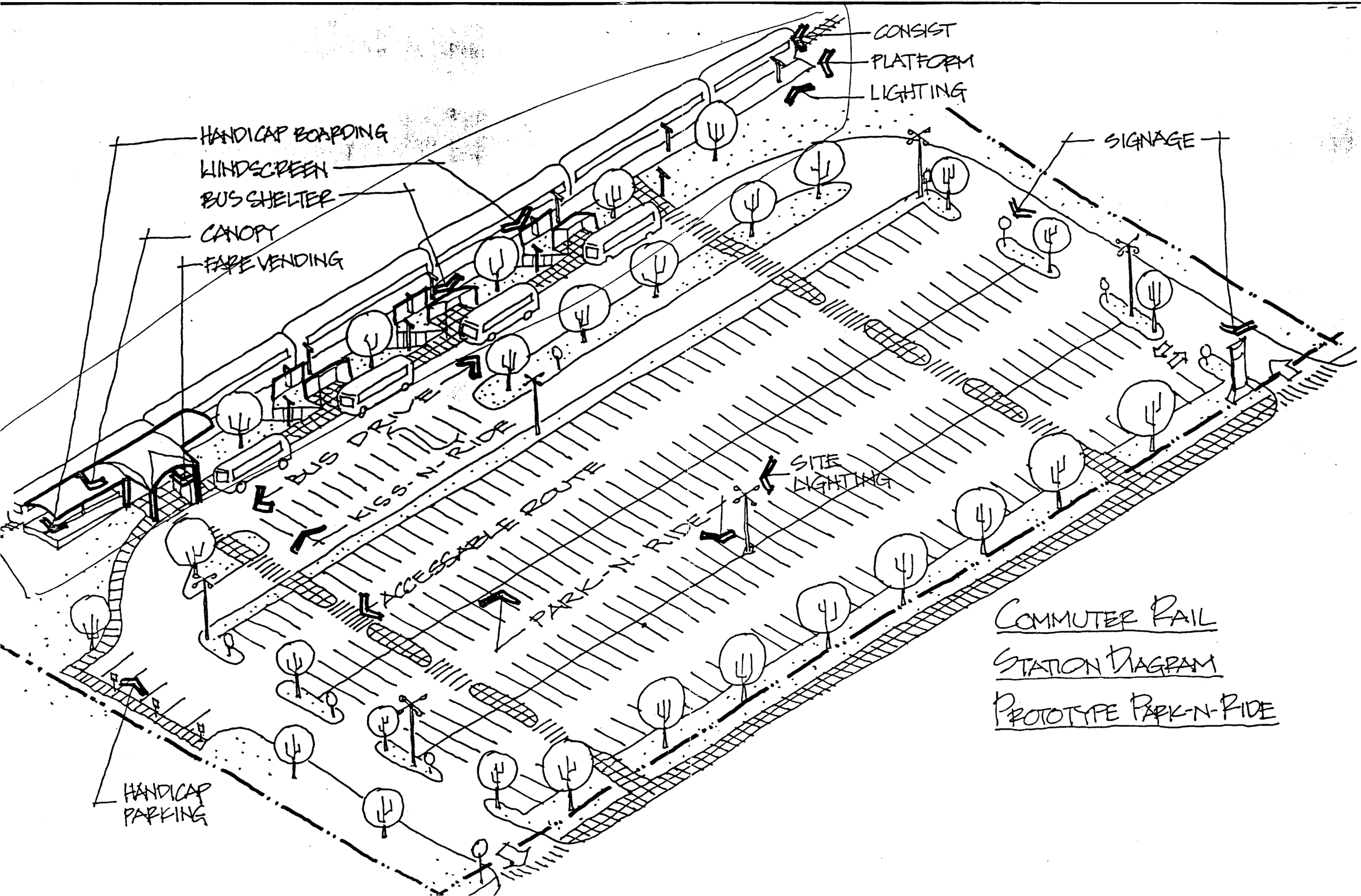
CLIENT / PROJECT	St. Louis Regional Commuter Rail System Commuter Rail Layover Yard & Shop at Festus/Crystal City	JOB NO. 660554-02200 ESTIMATED GML CHECKED EDM			DATE 6/21/1995 REV.
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Fencing	2,700	LF	20	$54,000
2	Site Grading	1,650	CY	5	$8,250
3	Railroad Track	2,500	TF	100	$250,000
4	No. 8 Turnouts	2	EA	30,000	$60,000
5	Cleaning Platform 900' x 6'	12,000	SF	10	$120,000
6	Power Distribution System	1	LS	250,000	$250,000
7	Lighting - 30' High Poles	15	EA	3,000	$45,000
8	Parking for 12 Cars	4,800	SF	5	$24,000
9	4" Water Line & Frost Free Hydrants	1,200	LF	25	$30,000
10	Prefabricated Metal Drainage Pans	1,800	SF	25	$45,000
11	Welfare Building (Rehabilitate Existing Building)	1,000	SF	100	$100,000
12	Sanitary Sewer Hookup - 6" V.C.P.	300	LF	20	$6,000
13	Water Line Hookup - 6" D.I.P.	300	LF	30	$9,000
14	Electrical Hookup - Duct Line	300	LF	150	$45,000
	Subtotal				$1,046,250
	Contingency	25	%		$261,563
	Total Estimated Construction Cost				$1,307,813

DE LEUW, CATHER
Engineers and Planners

CONCEPTUAL ESTIMATE SUMMARY

CLIENT	St. Louis Regional Commuter Rail System	JOB NO. 660554-02200	DATE
PROJECT	Commuter Rail Layover Yard & Shop at Pacific	ESTIMATED GML CHECKED EDM	6/21/1995 REV.

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	Fencing	3,710	LF	20	$74,200
2	Cleaning Platform 1800' x 6'	10,800	SF	10	$108,000
3	Power Distribution System	1	LS	250,000	$250,000
4	Lighting - 30' High Poles	20	EA	3,000	$60,000
5	4" Water Line & Frost Free Hydrants	2,000	LF	25	$50,000
6	Prefabricated Metal Drainage Pans	1,800	SF	25	$45,000
7	Welfare Building (Complete)	1,000	SF	150	$150,000
8	Sanitary Sewer Hookup	300	LF	20	$6,000
9	Water Line Hookup - 6' D.I.P.	300	LF	30	$9,000
10	Electrical Hookup - Duct Line	300	LF	150	$45,000
	Subtotal				$797,200
	Contingency	25	%		$199,300
	Total Estimated Construction Cost				$996,500



COMMUTER RAIL
STATION DIAGRAM
PROTOTYPE PARK-N-RIDE

DAVID MASON AND ASSOCIATES

CLIENT: St. Louis Regional Commuter Rail System PROJECT: Commuter Rail Typical Station		PROJECT #: 95041 ESTIMATED BY: WEE CHECKED BY: CEJ			DATE: 7/19/95
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTAL COST
1	FENCING (6' HIGH CHAIN LINK)	1400	LF	$15	$21,000
2	SITE GRADING (CLASS "C" EXCAVATION)	4500	CY	$5	$22,500
3	CATCH BASINS	8	EA	$1,500	$12,000
4	12" STORM WATER (RCP)	1000	LF	$20	$20,000
5	POWER DISTRIBUTION	1	LS	$100,000	$100,000
6	LIGHTING (25–30' FIXTURES)	10	EA	$2,000	$20,000
7	PARKING FOR 250 CARS	250	SP	$600	$150,000
8	4" WATER LINE & FROST FREE HYDRANTS	1300	LF	$35	$45,500
9	ACCESS DRIVES	4267	SY	$35	$149,333
10	PASSENGER PLATFORM	5000	SF	$4	$20,000
11	PASSENGER CANOPY	1200	SF	$50	$60,000
12	PLATFORM LIGHTING	15	EA	$500	$7,500
13	HANDRAILS	70	LF	$25	$1,750
14	MISCELLANEOUS SIGNAGE	15	EA	$200	$3,000
15	REFUSE RECEPTACLES	4	EA	$500	$2,000
16	RETAINING WALLS (CIP CONC 10" THICK, 4' HIGH)	150	LF	$150	$22,500
17	SIDEWALKS	1700	LF	$15	$25,500
18	LANDSCAPING	2800	SF	$2	$5,600
19	BUS SHELTER	3	EA	$3,000	$9,000
20	HEADWALLS @ CULVERT	2	EA	$1,000	$2,000
21	WIND SCREENS	3	EA	$5,500	$16,500
22	30" CULVERT PIPE	100	LF	$35	$3,500
23	GC OH&P, INSURANCE, BONDING	1	LS	14%	$10[illegible].686
	SUBTOTAL	1	LS		$819,869
	CONTINGENCY	15	%		$122,980

DAVID MASON & ASSOCIATES

Engineering
Architecture
Plumbing Services

July 21, 1995

Mr. Mike Cannell
Bozz-Allen & Hamilton, Inc.
727 North First Street, Suite 270
St. Louis, MO 63102

RE: COMMUTER RAIL
BUDGETARY COST ESTIMATE
DMA PROJECT #: 95041

Dear Mike:

Please find attached a preliminary conceptual cost estimate for the above project. Please note the following assumptions were made in developing this cost estimate:

1. No environmental clean-up required.
2. Minimum soil bearing capacity 2500 PSI.
3. No off-site grading or improvements.
4. Access to site from existing roadway.
5. All utilities are brought to the site and no off-site utility work is required.
6. Passenger platform is a single track access. No costs are figured for track crossings and overhead bridges.
7. Costs are based upon a typical prototype which is reused from site to site.
8. All paving work will be asphalt not concrete.
9. Development costs do not include any costs for artwork or site prep work for artwork.
10. Canopy design is limited in design to simple center supported canopy element.

Should you have any questions, please fill free to contact our office.

Sincerely,
DAVID MASON & ASSOCIATES, INC.

William E. Elliott, AIA
Manager-Architectural Services

WEE/sal

Enclosure(s)

cc: Jim Hacking - DMA w/Enc.

Attachment C

Preliminary Capital Costs for Fare Collection Equipment

	FARE COLLECTION EQUIPMENT FOR METROLINK			
	ORIGINAL S&B BID			
	Quantity	Unit	Total	
Project Management			$ 250,524	
TVMs	60	$ 40,881	$ 2,452,860	
Installation / TVMs	57	$ 1,452	$ 82,764	
SAVs	37	$ 4,320	$ 159,840	
Installation	35	$ 629	$ 22,015	
Extra Coinboxes	70	$ 427	$ 29,890	
Extra Bill Vaults	70	$ 730	$ 51,100	
Supplementary CU	100	$ 835	$ 83,500	
Spares			$ 116,616	
Training			$ 22,581	
Manuals			$ 40,645	
TVM Ticket Stock			$ 38,710	
SAV Ticket Stock			$ 11,290	
Special Tools			$ 87,000	
		Total	$ 3,449,335	
	FARE COLLECTION EQUIPMENT			
	INITIAL ESTIMATE FOR COMMUTER RAIL			
Project Management			$ 250,524	
TVMs	34	$ 40,881	$ 1,389,954	Assumes 2 per station and 2 spares
Installation / TVMs	32	$ 1,452	$ 46,464	
SAVs	17	$ 4,320	$ 73,440	Assumes 1 per station and 1 spare
Installation	16	$ 629	$ 10,064	
Extra Coinboxes	40	$ 427	$ 17,080	
Extra Bill Vaults	40	$ 730	$ 29,200	
Supplementary CU	60	$ 835	$ 50,100	
Spares			$ 50,000	
Training			$ 10,000	
Manuals			$ 40,645	
TVM Ticket Stock			$ 5,000	
SAV Ticket Stock			$ 5,000	
Special Tools			$ -	
		Total	$ 1,977,471	

Attachment D

Preliminary Capital Costs for Communications

COMMUNICATIONS COST ESTIMATE

BSDA COMMUTER RAIL

Material	Loc. Quantity	# Locations	Unit Cost	Total
AC Power	1	16	$2,000	$32,000
Building	1	16	$12,000	$192,000
Foundation	1	16	$2,000	$32,000
DC Charger	1	16	$2,000	$32,000
Battery String	1	16	$400	$6,400
Cabinet	1	16	$1,200	$19,200
PA Amp.	1	16	$450	$7,200
Speakers	20	16	$100	$32,000
Sta. Wiring	1	16	$500	$8,000
Misc. Term.	1	16	$1,000	$16,000
Visual Display	1	16	$18,000	$288,000
VD Sta. Contr.	0	16	$3,000	$0
PAT	2	16	$1,500	$48,000
Train Radios	2	10	$4,000	$80,000
Modems	2	16	$800	$1,600
Penta Chasis	1	1	$3,000	$3,000
Penta Cards	1	16	$1,500	$1,500
VD Controller	1	1	$30,000	$30,000
OCC Cabinet	1	1	$1,200	$1,200
Telco Costs	2	16	$150	$300
Mat. Totals				**$830,400**

Labor	Hours	# Locations	Hourly Rate	Total
Termination	80	16	$50	$64,000
Conduit/Cable	48	16	$50	$38,400
Station	64	16	$50	$51,200
Central Contro	96	1	$50	$4,800
Train	16	8	$50	$6,400
Labor Totals				**$164,800**

Leased Ckt.	Loc. Quantity	# Locations	Monthly Cost	Monthly Totals
PAT	1	16	$150	$2,400
PA	1	16	$150	$150
Display	0	16	$150	$0
TVM	1	16	$150	$150
Monthly Total (recurring)				**$2,700**
Subtotal				$995,200
Contingency (30%)				$298,560
INSTALLATION TOTAL				**$1,293,760**

ASSUMPTIONS/CLARIFICATIONS
COMMUNICATIONS COST ESTIMATE
BSDA COMMUTER RAIL IMPLEMENTATION

Core Station Communications

- No CCTV, emergency telephones, fire and intrusion detection, or SCADA is to be provided.
- Communications shelter (approx. 8'x10') is required to house equipment
- 1 PAT per station
- Passenger information system with audible and visual (per ADA) announcements

Costing Clarifications/Assumptions

- Leased data circuits are required for the following
  - TVMs (1 per station)
  - Passenger information
  - PATs (1 per station)
- Existing Penta consoles are to be used for control of passenger information system.
- Capacity is available in the Penta cabinets to accommodate the required PA circuits.
- Two radios (Bi-State and host railroad) will be installed on each of eight locos. Costs for extending radio coverage are borne by other projects.
- The cost for provision of AC power to each equipment shelter does not exceed $2k.

Attachment E

Preliminary Capital Costs for Railroad Improvements

Burlington Northern

The Burlington Northern provided preliminary cost estimates for system improvements over 3 segments comprising the I-44 & I-55 rail corridors. These estimates were provided by D.J. Mitchell of the BN on April 11, 1995 and included a system map illustrating where the improvements would take place along the lines.

Those segments include:

- Grand Avenue to S.E.. Junction (Not including S.E. Junction)
- S.E. Junction to Pacific
- S.E. Junction to Crystal City

Copies of the BN correspondence and cost estimates follow.

Union Pacific

The Union Pacific provided preliminary system enhancement cost estimates for the I-44 & I-55 rail corridors. The information is provided in three parts:

- Improvements for the I-44 corridor (UP Estimate Nov. 2, 94 & letter of Feb. 2, 95)
- Improvements for the I-55 corridor (UP Estimate submitted Feb. 23, 1995)
- Further Improvements for the I-55 corridor between Broadway Junction and Tower Grove (UP Letter dated June 6, 1995)

Copies of the UP correspondence and cost estimates follow.

Burlington Northern

Burlington Northern

The Burlington Northern provided preliminary cost estimates for system improvements over 3 segments comprising the I-44 & I-55 rail corridors. These estimates were provided by D.J. Mitchell of the BN on April 11, 1995 and included a system map illustrating where the improvements would take place along the lines.

Those segments include:

- Grand Avenue to S.E. Junction (Not including S.E. Junction)
- S.E. Junction to Pacific
- S.E. Junction to Crystal City

Copies of the letters and estimates follow.

Union Pacific

The Union Pacific provided preliminary system enhancement cost estimates for the I-44 & I-55 rail corridors. The information is provided in three parts:

- Improvements for the I-44 corridor (UP Estimate Nov. 2, 94 & letter of Feb. 2, 95)
- Improvements for the I-55 corridor (UP Estimate Nov. 2 94 & letter of Feb. 2, 95)
- Further Improvements for the I-55 corridor between Broadway Junction and Tower Grove (UP Letter dated June 6, 1995)

Copies of the letters and estimates follow.

MEMO

To: D.J. Mitchell

From: Larry A. Parker

Date: Tuesday, April 11, 1995

Subject: Bi-State Commuter Proposal

Please find attached to this memo, copies of 4 detailed estimates. These estimates cover all of the proposed track and signal improvements proposed to facilitate a commuter operation between Pacific and Grand Ave (St. Louis). They also include a detailed estimate of the signal improvements required between S.E. Junction and Crystal City. As part of this memo, I am including a unit cost estimate of the proposed track work required between Crystal City and S.E. Junction thus all necessary cost estimates are for all practical purposes complete. The work proposed and associated estimates have been separated in 3 distinct segments so the two proposed routes (St. Louis to Pacific & St. Louis to Crystal City) can be evaluated individually. Each of the two proposed routes must traverse the segment from S.E. Junction to Grand Ave. thus the cost of the improvements related to that segment must be considered in both alternatives.

Segment: Grand Ave (St. Louis) to S.E. Junction (Not Incl S.E. Jct.)
Track Estimate (Part 1) = $1,962,712
Signal Estimate = $ 920,602
Total $2,883,314

Segment: S.E. Junction to Pacific
Track Estimate (Part 2) = $3,880,667
Signal Estimate = $3,200,422 ($500,000 for S.E. Jct)
Total $7,081,089

Segment: S.E. Junction to Crystal City (Not Incl S.E. Jct.)
Track Estimate (Unit Cost) = $ 920,000 (Incl Power Sw)
Signal Estimate = $1,447,990
Total $2,367,990

Cost for each Route:
Pacific to Grand Ave (St. Louis) = $2,883,314 + $7,081,089 = $9,964,403

Crystal City to Grand Ave (St. Louis) = $2,883,314 + $500,000 +$2,367,990
= $5,751,304

Track Unit Cost Estimate Crystal City to S.E. Junction:

Undercut/Clean 5.0 Trk Miles @ $80,000	= $ 400,000
Rehab 2000 T.F. (5 Platforms) @ $70	= $ 140,000
Surface 10 Trk Miles Curves @ $8,000	= $ 80,000
Place #20 T/O at Crystal City @ $100,000	= $ 100,000
Power up Switch at Crystal City @ $200,000	= $ 200,000
Total	$ 920,000

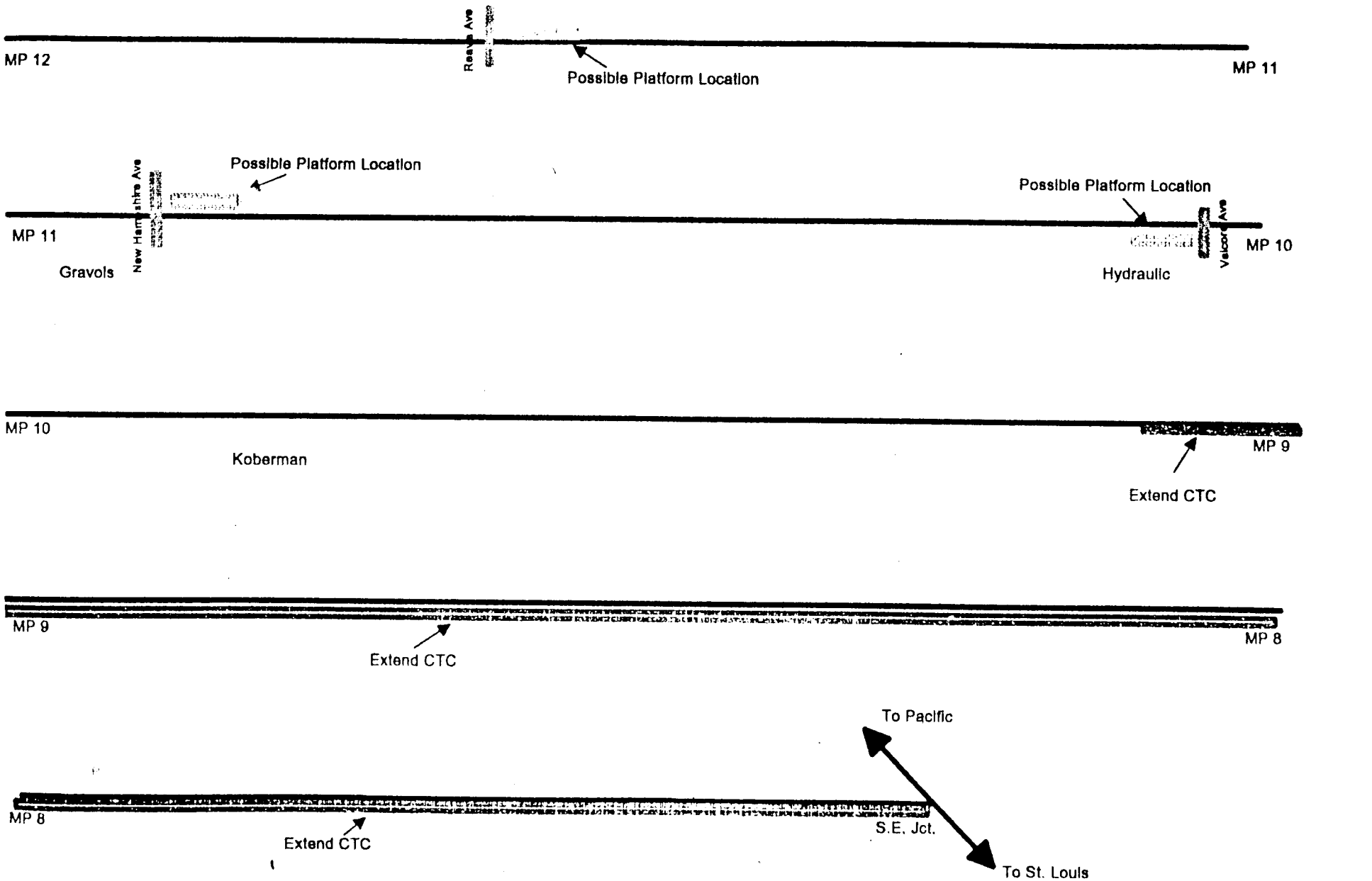
Probable platform locations between Crystal City & S.E. Junction:

MP 38.9 - MP 39	Festus
MP 34.7 - MP 34.7	Horne (Near two public crossings)
MP 31.7 - MP 31.8	Near two public crossings
MP 31.2 - MP 31.3	Flat location
MP 28.5 - MP 25.6	Barnhart (Near two public crossings & town)
MP 26.4 - MP 26.5	Imperial (Next to public crossing, flat)
MP 23.8 - MP 23.9	Not good access
MP 20.8 - MP 20.9	Ten Brook (Near public crossing, lots of homes)
MP 17.9 - MP 18	Near Old Baumgartner Rd, Homes close
MP 16.3 - MP 16.4	Near Ringer Rd.
MP 14.7 - MP 14.8	Near private crossing
MP 11.5 - MP 11.6	Near Reavis Ave
MP 10.6 - MP 10.7	Gravois (Near New Hampshire Ave)
MP 10.1 - MP 10.2	Hydraulic (Near Valcore Ave)

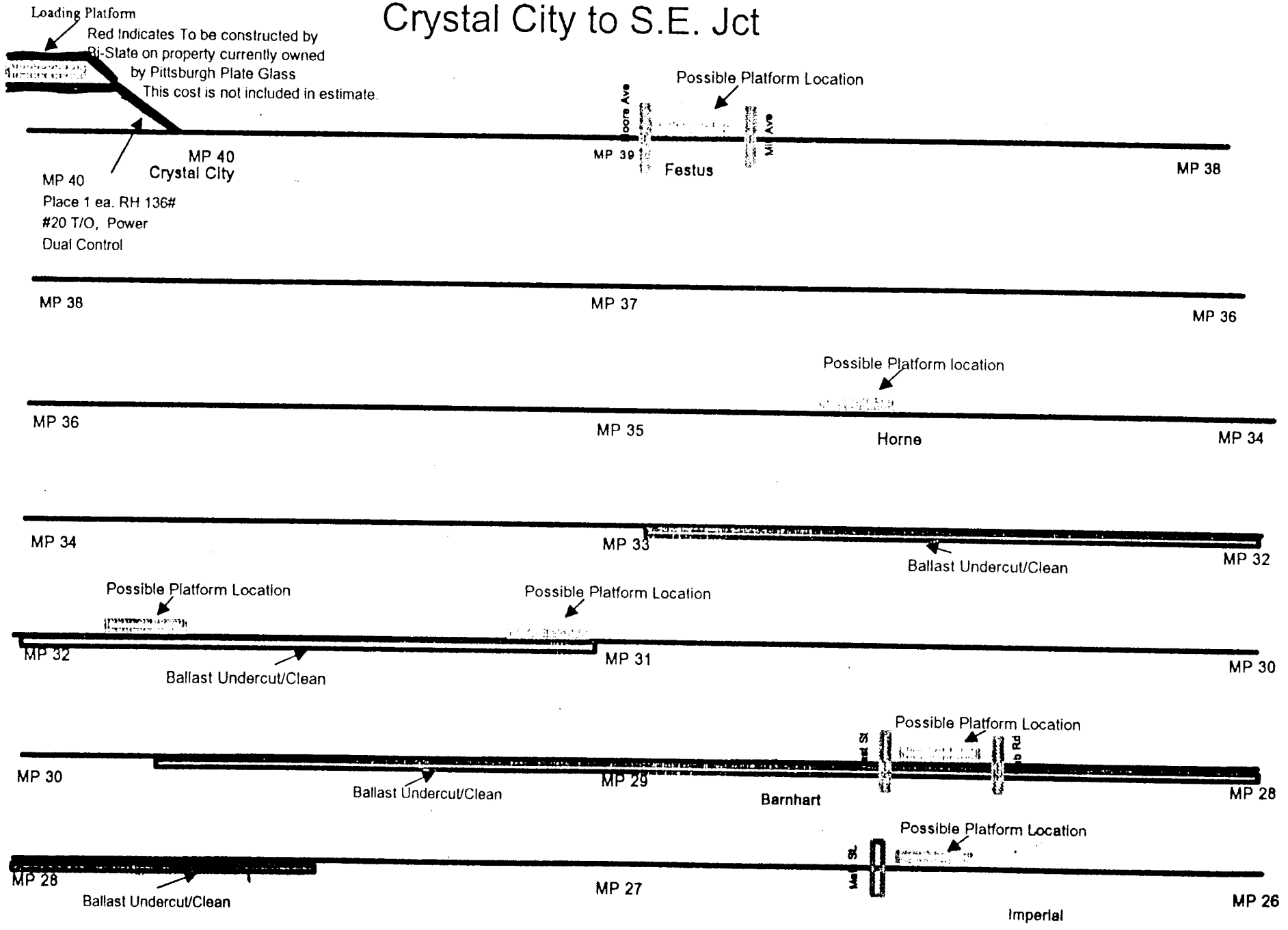
Naturally, Bi- State will have to make the ultimate choice of where platforms will be located and number of, however the list above is for the most part representative of the locations where construction of platforms is feasible at a reasonable cost.

Larry A. Parker
Director Asset Management

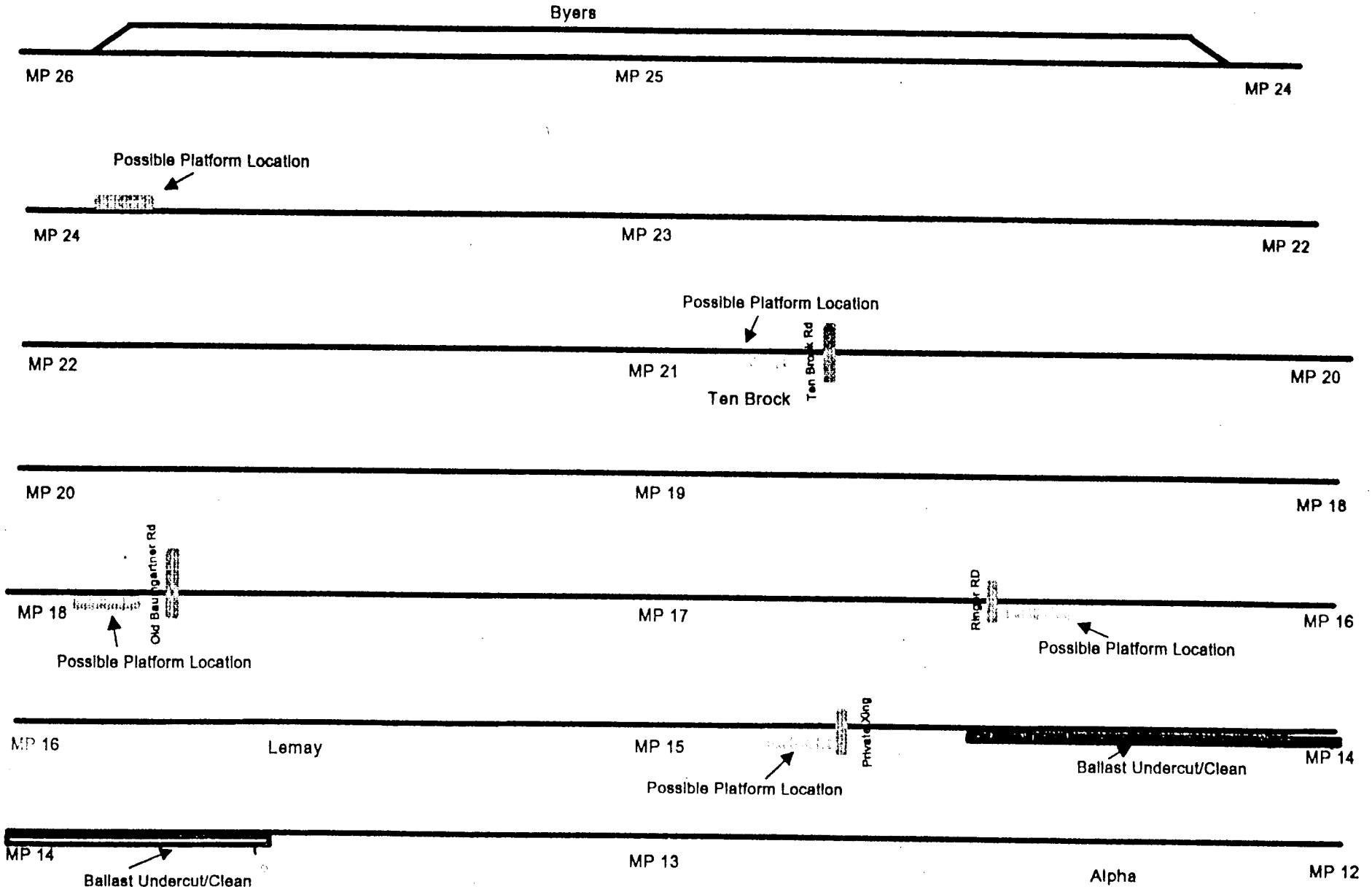
Crystal City to S.E. Jct



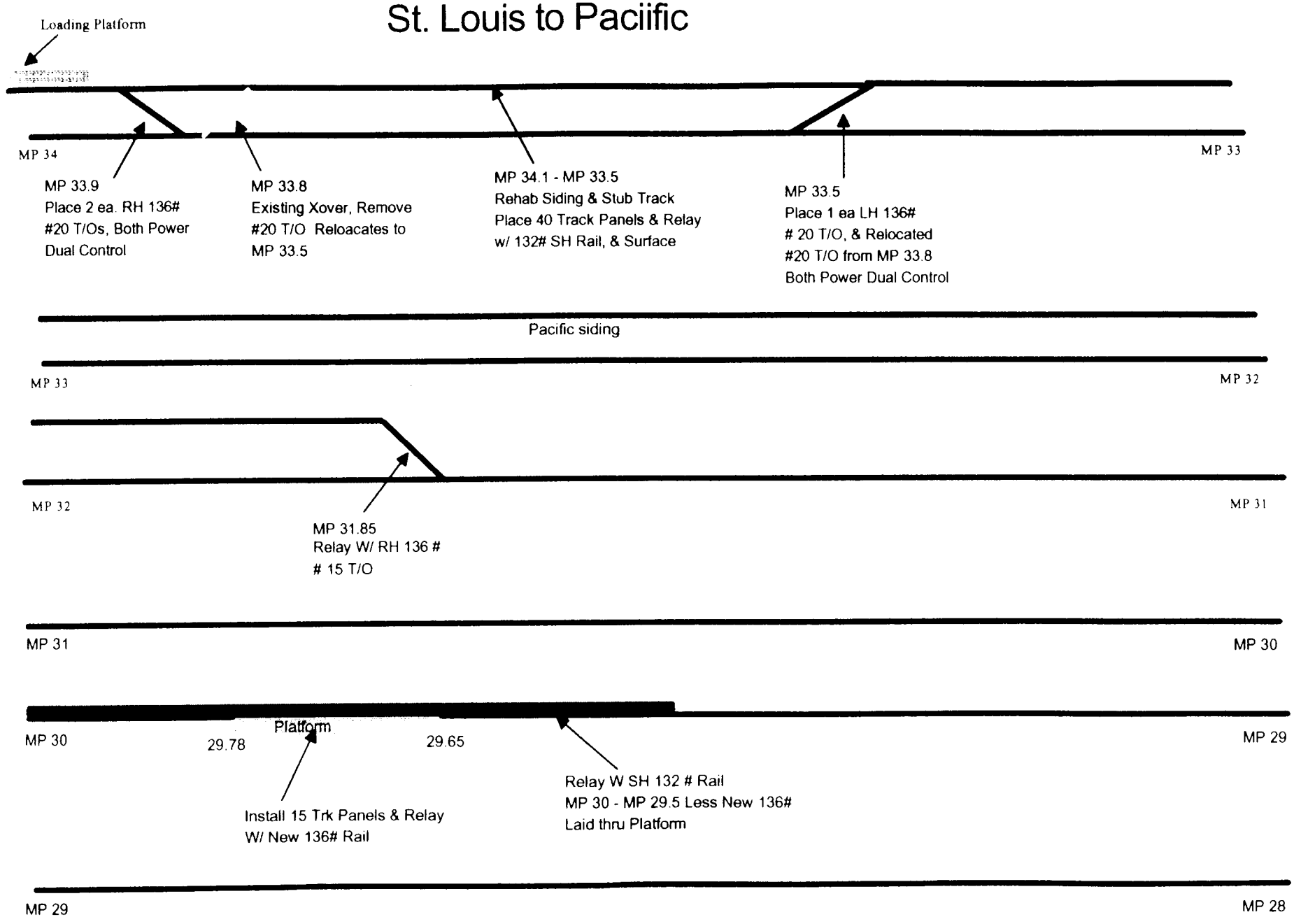
Crystal City to S.E. Jct



Crystal City to S.E. Jct



St. Louis to Paciific



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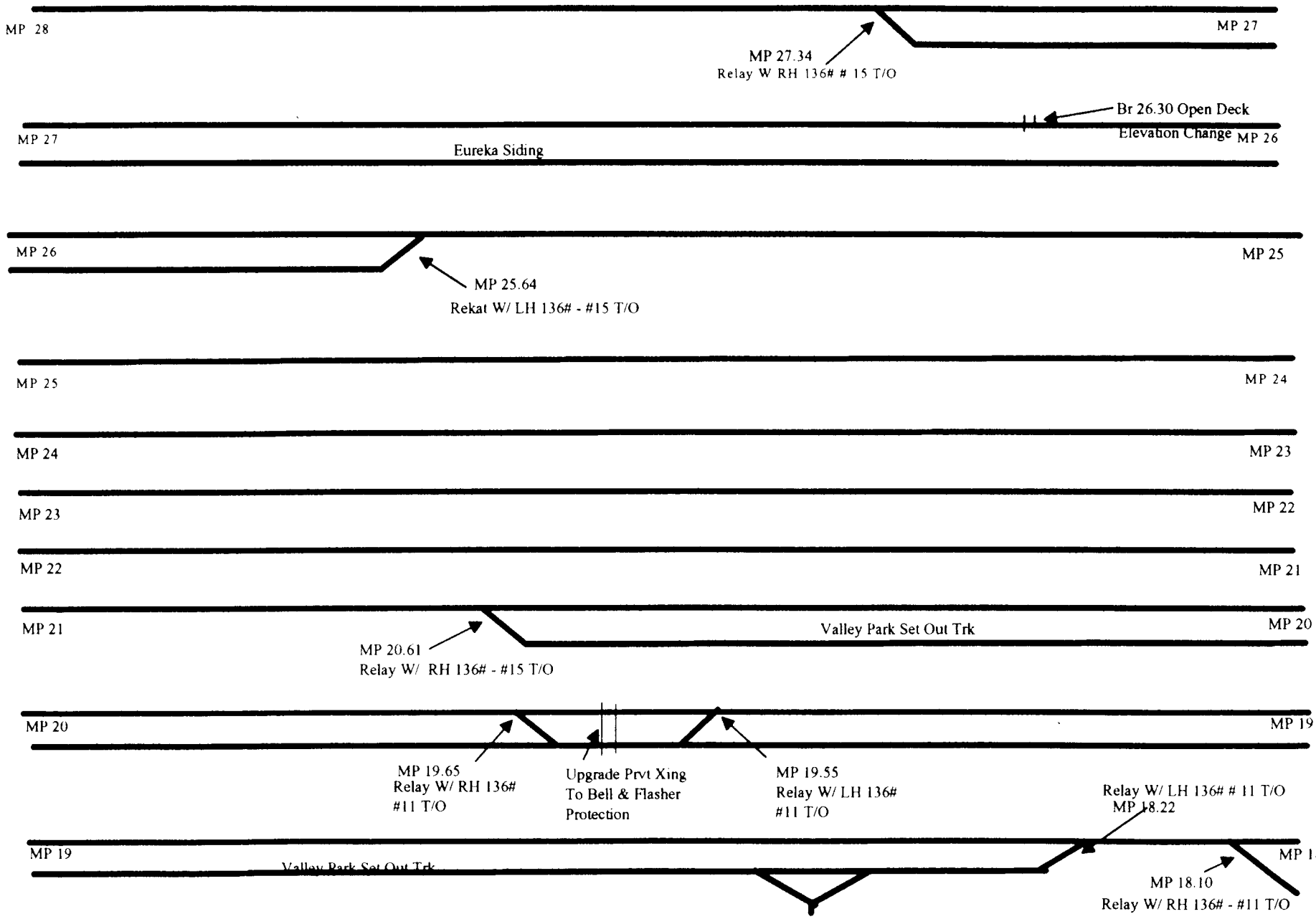

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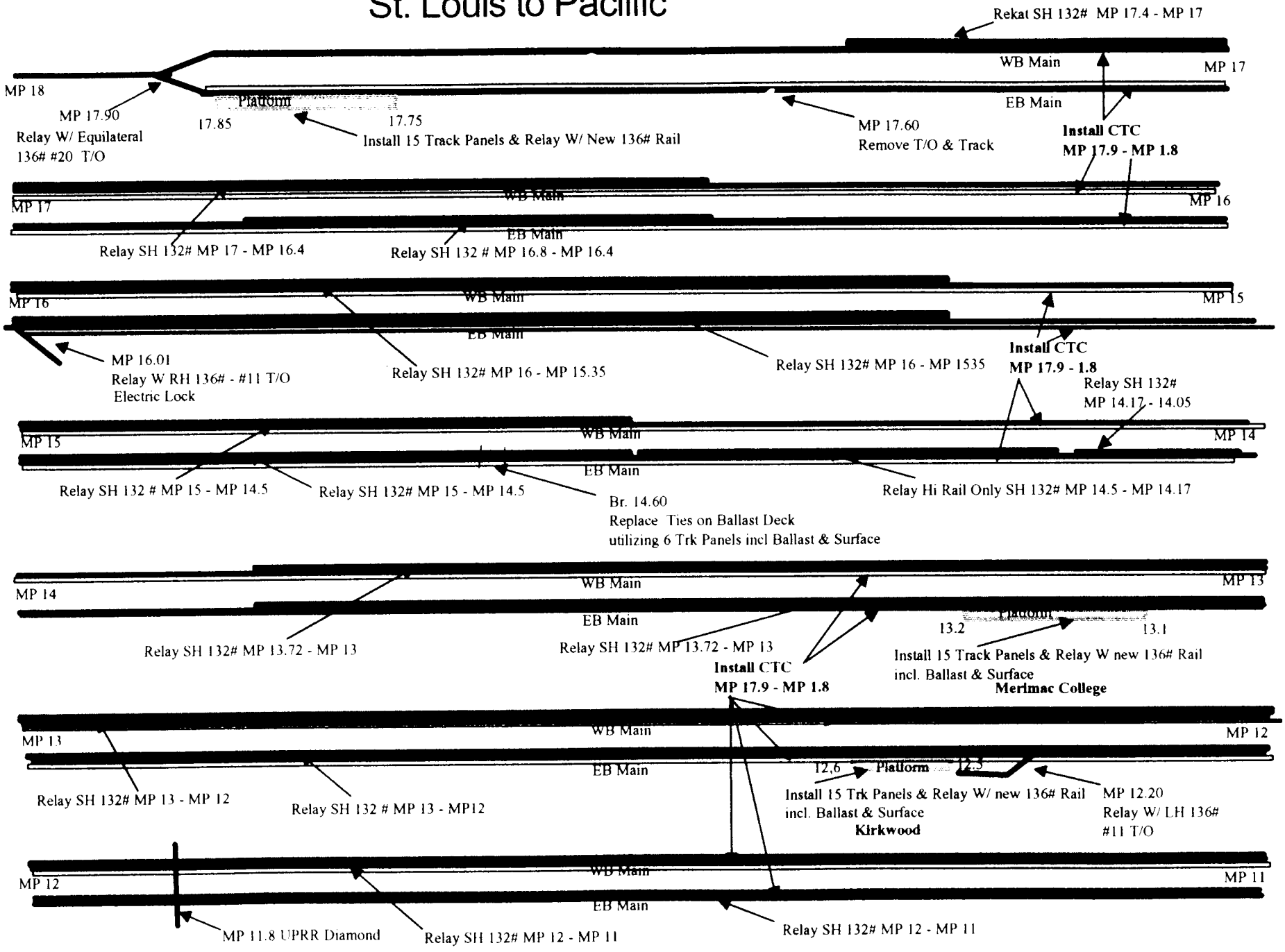

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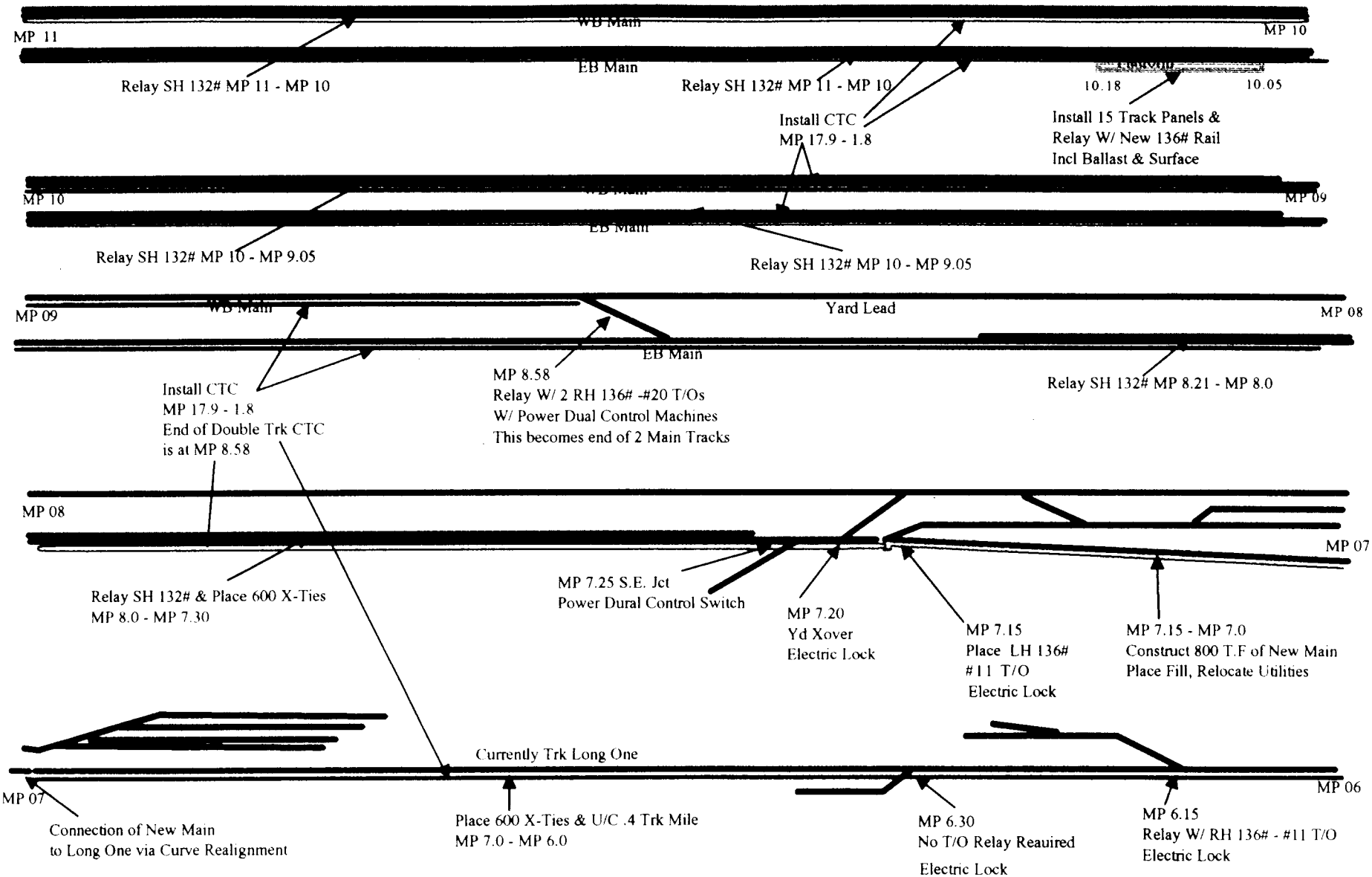

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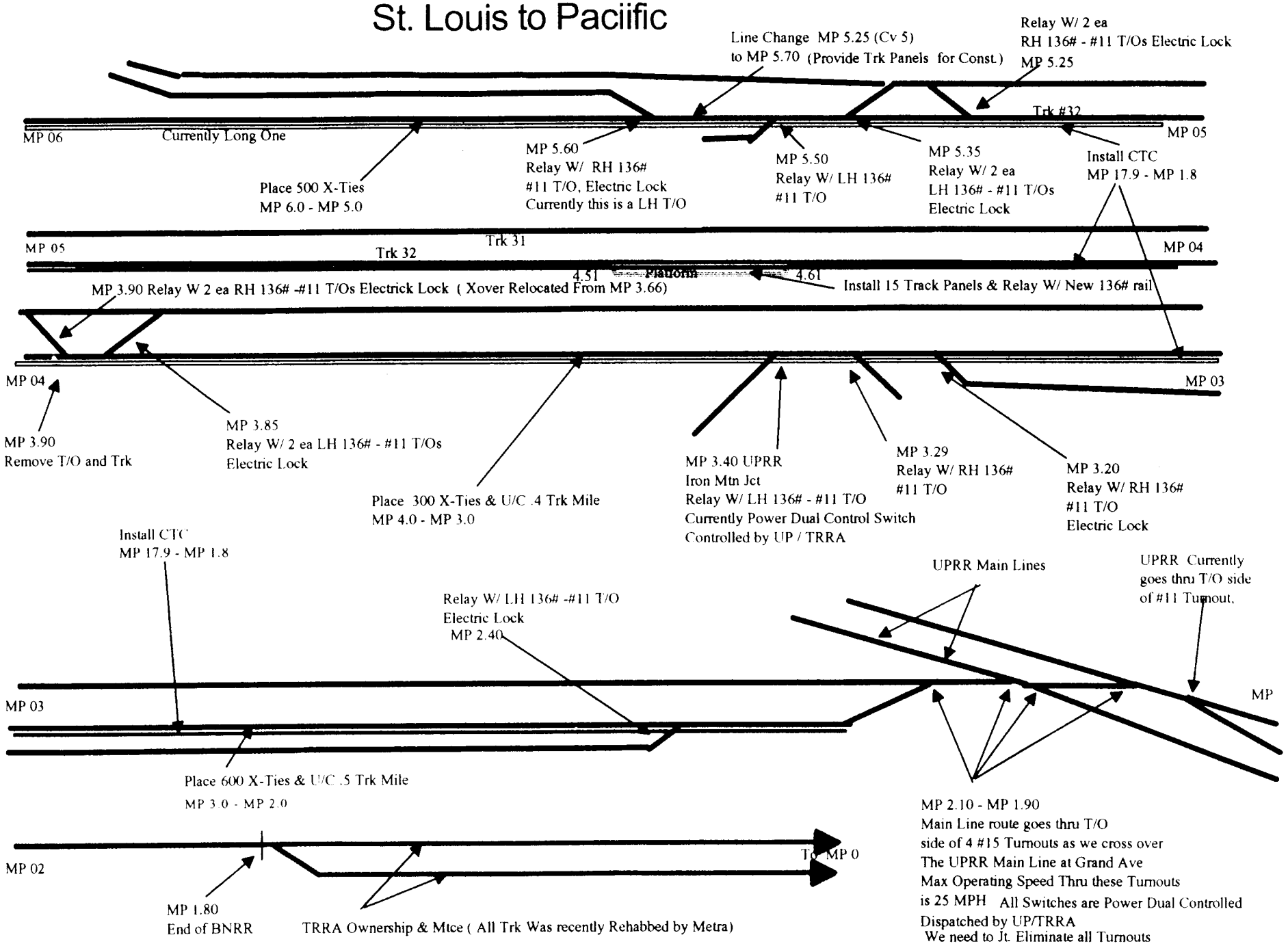
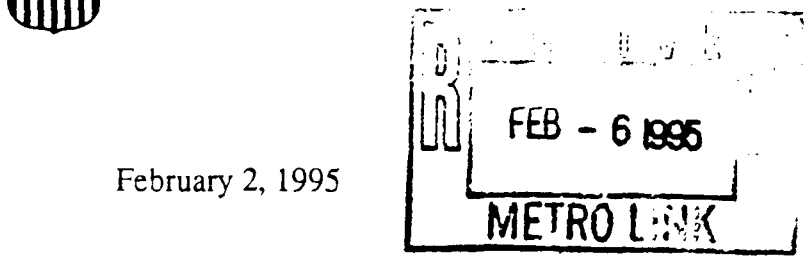


Union Pacific

UNION PACIFIC RAILROAD COMPANY

MARKETING SERVICES

1416 DODGE STREET
OMAHA, NEBRASKA 68179



February 2, 1995

Mr. Ralph Duvall
Director
Bi-State Development Agency
707 North First Street
St. Louis, MO 63102-2595

Dear Ralph:

I wanted to formally follow up with our meeting regarding the commuter rail design and preliminary engineering estimates presented in November.

As was stated in our discussion, the preliminary engineering estimates were based on four hourly trains each way (Scenario #2) and five stations as proposed in a letter to us by Mark Huffer dated February 8, 1994. This being the base analysis, any additions to that service plan would require more engineering design work.

Also, we are in receipt of your request to analyze the two operating scenarios' commuter rail feasibility between Festus-Crystal City and St. Louis AMTRAK station. We expect to have this information within the next 4-8 weeks at which time we will propose our assessment and organize a physical inspection of the property.

In the meantime, please don't hesitate calling should you have any questions or desire additional information.

Sincerely,

Julie K. Brown

Julie K. Brown
Manager Commuter Rail Development

jkb0202a.

Project Design - Preliminary Estimate

RECEIVED
NOV 2 1994

Location:
Sadalia Sub. - M.P. 0.0 to M.P. 44.6

Description:
Summary Sheet

Item	PI	OE	Other
TF ACK & GRADING			
M.P. 0.0 to M.P. 1.5	5,125,730	27,340	39,000
M.P. 1.5 to M.P. 2.6	7,486,625	36,420	97,540
M.P. 2.6 to M.P. 5.4	4,730,500	19,280	187,810
M.P. 10.9 Universal No. 20's	922,823	15,024	34,170
M.P. 11 to M.P. 12	5,392,417	57,000	3,700
M.P. 12 to M.P. 13	3,294,428	67,914	11,925
M.P. 13 to M.P. 14	12,976,118	13,782	79,909
M.P. 14 to M.P. 15	6,709,145	19,700	700
M.P. 15 to M.P. 16	7,333,441	47,600	8,935
M.P. 16 to M.P. 17	12,919,331	98,200	5,686
M.P. 18.35 No.20 X-over	170,000	0	0
M.P. 37 Universal No.20's	492,074	0	15,072
Labadie M.P. 44.6	3,156,847	0	3,700
Drainage Improvement			
M.P.21 to M.P.35		60,900	
"GNAL			
.P.2.31 to M.P.13.65	4,293,282		13,243
M.P.14.02 to M.P.44.6	1,830,093		13,243
IMPROVEMENTS			
Signal	1,085,000		
Ties	3,018,000		
Curve Rail	494,000		
TS&L	111,000		
Decks	520,000		
Bridges	546,000		
Subtotal	$82,606,854	$463,160	$514,634

Estimated by: jjh/gkf

11/02/94 Total $83,584,647

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Project Design - Preliminary Estimate

Location: Sedalia Sub. - St. Louis M.P. 0.0 to M.P. 1.5

Description: Re-arrange Tracks & Connections

Item	Quantity	Unit	Unit Cost	P.I.	O.E.	Other
Engineering	1	L.S.	340,000	340,000		
Permits	1	L.S.	10,000	10,000		
Stormwater Control	1	L.S.	20,000	20,000		
Flagging	200	Days	400	80,000		
Grading	1	L.S.	20,000	20,000		
Subballast	4,700	C.Y.	30	141,000		
Relocate Elec. Tower	1	Each	250,000	250,000		
Const No. 20 T.O.	0	Each	85,000	0		
Const No. 14 T.O.	12	Each	60,000	720,000		
Const No. 10 T.O.	0	Each	45,000	0		
Const No. 9 T.O.	0	Each	42,000	0		
Relocate No. 14 T.O.	0	Each	6,000			0
Relocate No. 10 T.O.	0	Each	4,000			0
Construct Track (new CWR	10,958	T.F.	135	1,479,330		
Rehab to ML Stnd.	0	T.F.	60	0		0
Ties for Rehab (33%)	0	Each	80	0		0
Long Ties for X-over	60	Each	100			6,000
Remove Track Elem. #20	0	Each	3,000			0
Remove Track Elem. #14	3	Each	2000			6,000
Compromise Joints	4	Pair	500	2,000		
Retire Turnouts	3	Each	5,000			15,000
Retire Track	0	T.F.	20			0
Install Track Elements	3	Each	5,800	17,400		
Signal	1	Lot	1,300,000	1,300,000		
Signal Mounds	10	Each	1000	10,000		
Equipment Rental	1	L.S.	40,000	40,000		
Shift Track	2,734	T.F.	10		27,340	
Ties for Shifted Track (33%	600	Each	90	42,000		12,000
Ballast for Shifted Trk. (50	1,200	C.Y.	20	24,000		
Contingency	4,200,000	%	15%	630,000		
	Subtotal			$5,125,730	$27,340	$39,000

Estimated by: gkf

11/01/94

Total $5,192,070

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Project Design - Preliminary Estimate

Location:
Sedalia Sub. - St. Louis M.P. 1.5 to M.P. 2.6

Description:
Re-arrange Tracks & Connections

Item	Quantity	Unit	Unit Cost	P.I.	O.E.	Other
Engineering	1	L.S.	500,000	500,000		
Permits	1	L.S.	10,000	10,000		
Stormwater Control	1	L.S.	20,000	20,000		
Flagging	200	Days	400	80,000		
Grading	1	L.S.	20,000	20,000		
Subballast	8,200	C.Y.	30	246,000		
Pipes	120	L.F.	100	12,000		
Const No. 20 T.O.	11	Each	85,000	935,000		
Const No. 14 T.O.	0	Each	60,000	0		
Const No. 10 T.O.	0	Each	45,000	0		
Const No. 9 T.O.	6	Each	42,000	252,000		
Relocate No. 14 T.O.	0	Each	6,000			0
Relocate No. 10 T.O.	1	Each	4,000			4,000
Construct Track (new CWR	19,155	T.F.	135	2,585,925		
Rehab to ML Stnd.	954	T.F.	60	47,700		9,540
Ties for Rehab (33%)	200	Each	80	12,000		4,000
Long Ties for X-over	60	Each	100			6,000
Remove Track Elem. #20	0	Each	3,000			0
Remove Track Elem. #14	0	Each	2000			0
Compromise Joints	12	Pair	500	6,000		
Retire Turnouts	12	Each	5,000			60,000
Retire Track	0	T.F.	20			0
Install Track Elements	0	Each	5,800	0		
Signal	1	Lot	1,700,000	1,700,000		
Signal Mounds	11	Each	1000	11,000		
Equipment Rental	1	L.S.	40,000	40,000		
Shift Track	3,642	T.F.	10		36,420	
Ties for Shifted Track (33%	700	Each	90	49,000		14,000
Ballast for Shifted Trk. (50	1,500	C.Y.	20	30,000		
Contingency	6,200,000	%	15%	930,000		
Subtotal				$7,486,625	$36,420	$97,540

Estimated by: gkf
11/01/94

Total $7,620,585

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Project Design - Preliminary Estimate

Location:
Sedalia Sub. - St. Louis M.P. 2.6 to M.P. 5.4

Description:
Re-arrange Tracks & Connections

Item	Quantity	Unit	Unit Cost	P.I.	O.E.	Other
Engineering	1	L.S.	320,000	320,000		
Permits	1	L.S.	10,000	10,000		
Stormwater Control	1	L.S.	20,000	20,000		
Flagging	200	Days	400	80,000		
Grading	1	L.S.	20,000	20,000		
Subballast	13,000	C.Y.	30	390,000		
Road X-ing	3	Each	16,000	48,000		
Const No. 20 T.O.	3	Each	85,000	255,000		
Const No. 14 T.O.	0	Each	60,000	0		
Const No. 10 T.O.	0	Each	45,000	0		
Const No. 9 T.O.	0	Each	42,000	0		
Relocate No. 14 T.O.	0	Each	6,000			0
Relocate No. 10 T.O.	2	Each	4,000			8,000
Construct Track (new CWR	5,610	T.F.	135	757,350		
Rehab to ML Stnd.	10,481	T.F.	60	524,050		104,810
Ties for Rehab (33%)	2,100	Each	80	126,000		42,000
Long Ties for X-over	60	Each	100			6,000
Remove Track Elem. #20	3	Each	3,000			9,000
Remove Track Elem. #14	0	Each	2000			0
Compromise Joints	3	Pair	500	1,500		
Retire Turnouts	2	Each	5,000			10,000
Retire Track	0	T.F.	20			0
Install Track Elements	2	Each	5,800	11,600		
Signal	1	Lot	1,500,000	1,500,000		
Signal Mounds	3	Each	1000	3,000		
Equipment Rental	1	L.S.	20,000	20,000		
Shift Track	1,928	T.F.	10		19,280	
Ties for Shifted Track (33%	400	Each	90	28,000		8,000
Ballast for Shifted Trk. (50	800	C.Y.	20	16,000		
Contingency	4,000,000	%	15%	600,000		
	Subtotal			$4,730,500	$19,280	$187,810

Estimated by: gkf

11/01/94 Total $4,937,590

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Project Design - Preliminary Estimate

Location:
Sedalia Sub. - M.P. 11 to M.P. 12

Description:
Construct 3 rd. Main Line

Item	Quantity	Unit	Unit Cost	P.I.	O.E.	Other
Engineering	4,433,428	%	8%	354,674		
Property	6	AC.	140,000	848,485		
Permits	1	L.S.	50,000	50,000		
Soil Testing	1	L.S.	30,000	30,000		
Stormwater Control	1	L.S.	10,000	10,000		
Flagging	130	Days	350	45,500		
Grading (exc. - 18,060 fill)	30,888	C.Y.	15	463,320		
Subballast	6,502	C.Y.	30	195,067		
Seeding	4.85	AC.	2,000	9,697		
Bridge (RR - M.P. 11.20)	1	L.S.	880,000	880,000		
Const. Retaining Wall	1	L.S.	850,000	850,000		
Pipe - M.P. 11.04	1	L.S.	3,600	3,600		
Pipe - M.P. 11.13	1	L.S.	3,600	3,600		
Pipe - M.P. 11.22	1	L.S.	12,000	12,000		
Pipe - M.P. 11.76	1	L.S.	4,500	4,500		
Pipe - M.P. 11.95	1	L.S.	152,000	152,000		
Const No. 20 T.O.	1	Each	85,000	85,000		
Construct Track (new CW	5,016	T.F.	135	677,160		
Remove Track Elem. #20	1	Each	3,000			3,000
Compromise Joints	3	Pair	400	1,200		
Road Crossings	1	Each	1,600	1,600		700
Relocate Signal Line	1	L.S.	57,000		57,000	
Signal (On Cover Sheet)						
Equipment Rental	1	L.S.	50,000	50,000		
Contingency	4,433,428	%	15.00%	665,014		
	Subtotal			$5,392,417	$57,000	$3,700

Estimated by: jjh/gkf
11/01/94

Total $5,453,117

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Project Design - Preliminary Estimate

Location:
Sedalia Sub. - M.P. 12 to M.P. 13

Description:
Construct 3 rd. Main Line

Item	Quantity	Unit	Unit Cost	P.I.	O.E.	Other
Engineering	2,743,306	%	8%	219,465		
Property	6	AC.	140,000	848,485		
Permits	1	L.S.	50,000	50,000		
Soil Testing	1	L.S.	30,000	30,000		
Stormwater Control	1	L.S.	10,000	10,000		
Flagging	88	Days	350	30,800		
Grading (exc. - 3,480 fill)	17,784	C.Y.	15	266,760		
Subballast	6,844	C.Y.	30	205,333		
Seeding	4.85	AC.	2,000	9,697		
Const. Retaining Wall	1	L.S.	260000	260000		
Pipe - M.P. 12.17	1	L.S.	12,000	12,000		
Pipe - M.P. 12.38	1	L.S.	12,000	12,000		
Pipe - M.P. 12.58	1	L.S.	8,000	8,000		
Pipe - M.P. 12.69	1	L.S.	8,000	8,000		
Construct Track (new CW	5,280	T.F.	135	712,800		
Compromise Joints	2	Pair	400	800		
Install Detector (hbd,ded)	1	L.S.	91,500	91,500		
Road Crossings	3	Each	1,600	4,800		2,100
Relocate Signal Line	1	L.S.	53,400		53,400	
Signal (On Cover Sheet)						
Equipment Rental	1	L.S.	50,000	50,000		
Shift Track	2,419	T.F.	6		14,514	
Ties for Shifted Track (33	491	Each	85	31,931		9,825
Ballast for Shifted Trk. (50	1,028	C.Y.	20	20,562		
Contingency	2,743,306	%	15.00%	411,496		
	Subtotal			$3,294,428	$67,914	$11,925

Estimated by: jjh/gkf
11/01/94

Total $3,374,267

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Project Design - Preliminary Estimate

Location:
Sedalia Sub. - M.P. 13 to M.P. 14

Description:
Construct 3 rd. Main Line

Item	Quantity	Unit	Unit Cost	P.I.	O.E.	Other
Engineering	*********	%	8%	850,069		
Property	6	AC.	140,000	848,485		
Permits	1	L.S.	50,000	50,000		
Soil Testing	1	L.S.	30,000	30,000		
Stormwater Control	1	L.S.	10,000	10,000		
Flagging	130	Days	350	45,500		
Grading (exc. - 1,610 fill)	31,284	C.Y.	15	469,260		
Subballast	6,844	C.Y.	30	205,333		
Seeding	4.85	AC.	2,000	9,697		
Bridge (RR - M.P. 13.20)	1	L.S.	412,000	412,000		
Overpass - Clay Ave	1	Each	2,920,000	2,920,000		
Overpass - Harrison Ave.	1	Each	2,920,000	2,920,000		
Const. Retaining Wall	1	L.S.	1200000	1200000		
Pipe - M.P. 13.15	1	L.S.	8,000	8,000		
Pipe - M.P. 13.81	1	L.S.	3,600	3,600		
Pipe - M.P. 13.96	1	L.S.	3,600	3,600		
Pipe - M.P. 13.98	1	L.S.	2,500	2,500		
Const No. 20 T.O.	4	Each	85,000	340,000		
Const No. 10 T.O.	3	Each	60,000	180,000		
Construct Track (new CW	5,280	T.F.	135	712,800		
Long Ties for X-over	210	Each	108			22,680
Remove Track Elem. #20	4	Each	3,000			12,000
move Track Elem. #10	3	Each	1,500			4,500
ompromise Joints	9	Pair	400	3,600		
Retire Turnouts	3	Each	10,000			30,000
Install Track Elements	3	Each	17,000	51,000		
Road Crossings	2	Each	1,600	3,200		1,400
Signal (On Cover Sheet)						
Signal Mounds	5	Each	750	3,750		
Equipment Rental	1	L.S.	50,000	50,000		
Shift Track	2,297	T.F.	6		13,782	
Ties for Shifted Track (33	466	Each	85	30,320		9,329
Ballast for Shifted Trk. (50	976	C.Y.	20	19,525		
Contingency	*********	%	15.00%	1,593,879		
	Subtotal			$12,976,118	$13,782	$79,909

Estimated by: jjh/gkf
11/01/94

Total **********

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Project Design - Preliminary Estimate

Location:
Sedalia Sub. - M.P. 14 to M.P. 15

Description:
Construct 3 rd. Main Line

Item	Quantity	Unit	Unit Cost	P.I.	O.E.	Other
Engineering	5,471,175	%	8%	437,694		
Property	6	AC.	140,000	848,485		
Permits	1	L.S.	50,000	50,000		
Soil Testing	1	L.S.	30,000	30,000		
Stormwater Control	1	L.S.	10,000	10,000		
Flagging	110	Days	350	38,500		
Grading (fill - 11,820 exc.)	25,944	C.Y.	15	389,160		
Subballast	6,844	C.Y.	30	205,333		
Seeding	4.85	AC.	2,000	9,697		
Const, Retaining Wall	1	L.S.	420000	420000		
Overpass - Couch Ave.	1	Each	2,400,000	2,400,000		
Pipe - M.P. 14.16	1	L.S.	20,000	20,000		
Pipe - M.P. 14.32	1	L.S.	118,000	118,000		
Pipe - M.P. 14.43	1	L.S.	10,000	10,000		
Pipe - M.P. 14.51	1	L.S.	3,600	3,600		
Pipe - M.P. 14.68	1	L.S.	4,000	4,000		
Pipe - M.P. 14.96	1	L.S.	129,600	129,600		
Drainage Improvement	1	L.S.	19,700		19,700	
Construct Track (new CW	5,280	T.F.	135	712,800		
Road Crossings	1	Each	1,600	1,600		700
Signal (On Cover Sheet)						
Equipment Rental	1	L.S.	50,000	50,000		
Contingency	5,471,175	%	15.00%	820,676		
	Subtotal			$6,709,145	$19,700	$700

Estimated by: jjh/gkf
11/01/94

Total $6,729,545

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Project Design - Preliminary Estimate

Location:
Sedalia Sub. - M.P. 15 to M.P. 16

Description:
Construct 3 rd. Main Line

Item	Quantity	Unit	Unit Cost	P.J.	O.E.	Other
Engineering	6,008,111	%	8%	480,649		
Property	6	AC.	140,000	848,485		
Permits	1	L.S.	50,000	50,000		
Soil Testing	1	L.S.	30,000	30,000		
Stormwater Control	1	L.S.	10,000	10,000		
Flagging	130	Days	350	45,500		
Grading (exc. - 23,010 fill)	27,888	C.Y.	15	418,320		
Subballast	6,844	C.Y.	30	205,333		
Seeding	4.85	AC.	2,000	9,697		
Bridge - M.P. 15.60 I-270	1	L.S.	487,200	487,200		
Overpass - Ballas Rd.	1	Each	2,400,000	2,400,000		
Const. Retaining Wall	1	L.S.	180000	180000		
Pipe - M.P. 15.05	1	L.S.	151,200	151,200		
Pipe - M.P. 15.33	1	L.S.	125,000	125,000		
Pipe - M.P. 15.41	1	L.S.	20,000	20,000		
Pipe - M.P. 15.59	1	L.S.	3,500	3,500		
Pipe - M.P. 15.87	1	L.S.	152,000	152,000		
Pipe - M.P. 15.99	1	L.S.	4,000	4,000		
Drainage Improvement	1	L.S.	5,900		5,900	
Construct Track (new CWR	5,280	T.F.	135	712,800		
Compromise Joints	2	Pair	400	800		
Relocate Signal Line	1	L.S.	28,500		28,500	
Signal (On Cover Sheet)						
Equipment Rental	1	L.S.	50,000	50,000		
Shift Track	2,200	T.F.	6		13,200	
Ties for Shifted Track (33	447	Each	85	29,040		8,935
Ballast for Shifted Trk. (50	935	C.Y.	20	18,700		
Contingency	6,008,111	%	15.00%	901,217		
	Subtotal			$7,333,441	$47,600	$8,935

Estimated by: jjh/gkf
11/01/94

Total $7,389,976

Project Design - Preliminary Estimate

Location: Sedalia Sub. - M.P. 16 to M.P. 17

Description: Construct 3 rd. Main Line

Item	Quantity	Unit	Unit Cost	P.I.	O.E.	Other
Engineering	*********	%	8%	847,039		
Property	6	AC.	140,000	848,485		
Permits	1	L.S.	50,000	50,000		
Soil Testing	1	L.S.	30,000	30,000		
Stormwater Control	1	L.S.	10,000	10,000		
Flagging	260	Days	350	91,000		
Grading (exc. - 25,760 fill)	88,000	C.Y.	15	1,320,000		
Subballast	6,844	C.Y.	30	205,333		
Seeding	4.85	AC.	2,000	9,697		
Overpass - Glenwood Lane	1	Each	2,400,000	2,400,000		
Overpass - Pedestrian over	1	Each	1,400,000	1,400,000		
Overpass - Barretts Sta. Rd	1	Each	2,920,000	2,920,000		
Pipe - M.P. 16.02	1	L.S.	4,000	4,000		
Pipe - M.P. 16.23	1	L.S.	189,000	189,000		
Pipe - M.P. 16.30	1	L.S.	3,600	3,600		
Pipe - M.P. 16.61	1	L.S.	4,000	4,000		
Pipe - M.P. 16.68	1	L.S.	120,000	120,000		
Pipe - M.P. 16.75	1	L.S.	120,000	120,000		
Drainage Improvement	1	L.S.	29,800		29,800	
Construct Track (new CWR	4,380	T.F.	135	591,300		
Const. No. 20 T.O.	1	Each	85000	85000		
Compromise Joints	2	Pair	400	800		
Relocate Signal Line	1	L.S.	60,000		60,000	
Signal (On Cover Sheet)						
Signal Mounds	2	Each	750	1,500		
Equipment Rental	1	L.S.	50,000	50,000		
Shift Track	1,400	T.F.	6		8,400	
Ties for Shifted Track (33%	284	Each	85	18,480		5,686
Ballast for Shifted Trk. (50	595	C.Y.	20	11,900		
Contingency	*********	%	15.00%	1,588,197		
	Subtotal			$12,919,331	$98,200	$5,686

Estimated by: jjh/gkf

11/01/94

Total **********

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Project Design - Preliminary Estimate

Location:
De Soto Sub.

Description:
Commuter Summary Sheet

Item	P.I.	O.E.	Other
REGIONAL CENTER			
M.P. 0.0 to M.P. 1.5	5,125,730	27,340	39,000
M.P. 1.5 to M.P. 2.6	7,486,625	36,420	97,540
Subtotal	12,612,355	63,760	136,540
Total		12,812,655	

Broadway Jct. Siding	1,950,000	0	4,600
White House (Arnold) Siding	2,195,400	0	4,600
Kimmswick Siding	2,295,400	0	4,600
Pevely (I-55)	1,923,870	0	76,130
Hermatite Siding	2,120,000	0	4,600
De Soto Siding *	1,950,000	0	4,600
* doesnot include night tie-up track			
SIGNAL			
CTC Iron Mtn. Branch	6,700,000		13,243
IMPROVEMENTS			
Ties	806,000		
Relay SH Rail MP 33-43	1,139,000		
Bridges - 30.30, 23.10	125,000		
Subtotal	$21,204,670	$0	$112,373
Total		$21,317,043	

Estimated by: jjh/gkf
02/22/95

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UNION PACIFIC RAILROAD COMPANY

ENGINEERING SERVICES DEPARTMENT

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General Director-Capital Projects
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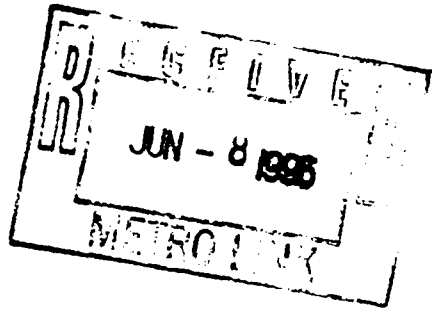
June 6, 1995



Ralph L. Duvall
Bi - State Development Agency
707 N. First Street
St. Louis, Missouri 63102-2595

Dear Ralph:

Enclosed is a copy of a signal and track estimate for Union Pacific Railroad upgrade of the DeSoto Sub to 60 MPH from the B.N. Jct. to Broadway Jct. on the U.P.'s DeSoto Subdivision.

If you need any further information please feel free to contact me in Omaha at (402) 271-4491.

George K. Fisher
Manager Facility Planning

cc: Larry Smith - U.P.

ESTIMATE OF MATERIAL AND FORCE ACCOUNT WORK

FOR BI-STATE DEVELOPMENT
DESOTO SUBDIVISION - MP 0.00 TO MP 6.8
PROJECT NO. UNASSIGNED

Estimate includes 129.62 % Labor Additives

Project Year: 1995
Location : DeSoto Sub - BN Jct. Turnout to Broadway Jct.
Description : Renew Rail, Ties, Switches, Signal & Road Crossings for 60 MPH Commuter Rail Operations

DATE : 04/26/95

Backup	Description	Qty.	Unit	Unit Cost	Labor	Material	Total
	Engineering-Office	16	MD	445	7,151		7,151
	Engineering-Field	161	MD	534	85,799		85,799
	Equipment Rental	30	DAYS	1000		30,000	30,000
6	Relay Rail 115# SH CWR	4.00	T.M.	160,286	363,808	277,336	641,144
10	Renew Cross Ties 9' N	3400	EACH	73.03	133,103	115,216	248,318
13	Renew Switch Ties	400	EACH	127.10	26,900	23,940	50,840
14	Ballast (Surface Track)	5168	TONS	12.66	39,070	26,376	65,446
	115# LOOSE TO'S W/BALLAST						
91	Relay Loose TO #10 w/Ballast	10	EACH	35,964	160,550	199,090	359,640
	RELAY CONCRETE XING-REUSE RL&OTM						
107	Relay 133# RdXing 10' Sections	500	TF	294	51,325	95,588	146,913
	FREIGHT & UPRR EQUIPMENT CHARGES						
	Freight Costs/Track Construction-Gads Hill/$0.035	8000	TF	6.91		55,267	55,267
	Track Miles from Gads Hill Pit to Construction Site	111	TM'S	0.0491			
	UPRR Equipment Charges	161	MD	104		16,710	16,710
	TOTALS				867,705	839,522	1,707,227

Estimated By : JSG/280-7234

Total Estimated Cost : 1,707,227

Date : 04/26/95

CREDITS:

EXISTING REUSABLE MATERIAL : 0

SALVAGE NONUSABLE MATERIAL :

Scrap 115# Rail 810 NT @ $130	105,300
Scrap Turnout Material 46 NT @ $130	5,980
Scrap 115# OTM 245 NT @ $130	31,850

TOTAL CREDITS = 143,130

TOTAL ESTIMATED COST OF PROJECTS LESS CREDITS = *$1,564,097*

PLEASE NOTE:
THE ABOVE FIGURES ARE ESTIMATES ONLY AND SUBJECT TO FLUCTUATION. IN THE EVENT OF AN INCREASE OR DECREASE IN THE COST OR AMOUNT OF MATERIAL OR LABOR REQUIRED, BI-STATE DEVELOPMENT WILL PAY ACTUAL CONSTRUCTION COSTS AT THE CURRENT RATES EFFECTIVE THEREOF.

WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

EST START: 01-01-95 PROJ NO: 19236
EST COMP: 12-31-95 A.W.O. NO:
W.O. NO:
RAILROAD: MPRR CO. B.I. NO: 95EN999
LOCATION: MP.03-6.11 - DESOTO SUBDIVISION STATE: MO
DEPARTMENT: ENGINEERING SERVICES SERVICE UNIT: 01 VAL SEC: 2301S

SPEED INCREASE ON THE DESOTO SUBDIVISION BETWEEN M.P. 0.3 & M.P. 6.4
SIGNAL PROJECT MANAGER : W. R. MCKEE 8245-2281

WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

EST START: 01-01-95
EST COMP: 12-31-95

PROJ NO: 19236
A.W.O. NO:
W.O. NO:
B.I. NO: 95EM999
STATE: MO
VAL SEC: 2301S

RAILROAD: MPRR CO.
LOCATION: MP.03-6.11 - DESOTO SUBDIVISION
DEPARTMENT: ENGINEERING SERVICES

JOB NO.	ACCT NO.	DESCRIPTION	QTY	UM	UNIT COST	LABOR	MATERIAL	TOTAL P.I.	CHRGABLE O.E.	TO OTHER
		VAL SEC: 2301S								
		** NON JOINT FACILITY **								
		** MAIN LINE **								
1	027	ENGINEERING				790				
		LABOR ADDITIVE 165%				1304				
		JOB TOTAL				2094		2094		
8	027	FIELD ENGINEERING				1017				
		LABOR ADDITIVE 165%				1678				
		JOB TOTAL				2695		2695		
6	027	SIGNAL					83763			
		SIG-HWY XNG W/C 34004	73	MD		10171				
		SIG.-HWY.CRO W/C 34014	6	MD		831				
		EQUIPMENT RENTAL					734			
		PERSONAL EXPENSES					4404			
		MATL STORE EXPENSE					661			
		SALES TAX					3350			
		LABOR ADDITIVE 165%				17041				
		JOB TOTAL				28043	92912	120955		
7	735	SIGNAL								
		SIG-HWY XNG W/C 34007		MD		45				
		SIG-HWY XNG W/C 34007	3	MD		453				
		LABOR ADDITIVE 165%				772				
										735-0118-00027
		JOB TOTAL				1270				1270
		PROJECT TOTALS 19236				34102	92912	125744		1270

WORK ORDER AUTHORIZATION-DETAIL OF ESTIMATED EXPENDITURES

EST START: 01-01-95
EST COMP: 12-31-95

PROJ NO: 19236
A.W.O. NO:
W.O. NO:
B.I. NO: 95EN999
STATE: MO
VAL SEC: 2301S

RAILROAD: MPRR CO.
LOCATION: MP.03-6.11 - DESOTO SUBDIVISION
DEPARTMENT: ENGINEERING SERVICES

JOB NO.	ACCT NO.	DESCRIPTION	QTY	UM	UNIT COST	LABOR	MATERIAL	TOTAL P.I.	CHRGABLE O.E.	TO OTHER
		ESTIMATE TOTALS				34102	92912	125744		1270

ESTIMATED BY: ESGN005

TOTAL ESTIMATED EXPENDITURES: $127,014

DATE: 05-08-1995 APPROVED BY:

APPROVED BY:

APPENDIX II

I-44 & I-55 QUESTIONNAIRE COMMENTS

COMMENTS FROM I-44 QUESTIONNAIRE

Safety

Excessive speed a problem. Need improvement of local roads because they were not built for modern traffic.

I-55/I-44 interchange unsafe.

Speeders on I-44 during rush-hour weaving through traffic.

Commuter Rail

Prefers as #1 option. Wants convenient times of departure, $5 per day or less and weekly pass.

Suggest BN RR for Cr. Whatever RR will benefit region.

If CR is established, sports and special events in downtown area must be considered.

CR is expensive (cost effectiveness as opposed to expanding MetroLink) and limited to peak hours. MetroLink usage is constant.

It is a much needed service.

CR/LR - this project is very important!!!

We need CR or LR extended into Franklin County.

Needs to be convenient for all people, not limited service. Short term solution would be to add more buses to current schedule before investing in rail. Long term solution would be trains with terrific schedules for both local and express service.

Why can't we have CR that runs more often (beginning at 5:00) and in both directions, similar to a LR schedule?

Good example for CR for St. Louis to follow is Chicago.

CR would best serve Kirkwood on the UP tracks.

Interested in station site locations, town/city requirements, impact on town traffic/congestion.

CR should also be used to go to St. Charles from airport.

Use San Francisco to San Jose as example for CR. If additional tracks needed, keep them on street level vs. underground.

CR at rush hour and weekends and evenings for ballgames, zoo, opera, etc.

If you include HOV, it will have to include lane additions.

Need adequate and convenient parking, competitive fares, convenient transfer to core downtown. I would be glad to volunteer for any effort that would bring this project to reality asap.

CR preferred for less expense and faster start-up.

Costs

Financial costs marked as "not important" because we pay no matter - more gas tax, more car expenses, less commercial development.

Need high gas tax to reduce driving.

More public transportation is needed to cut down costs of transportation for individuals, plus pollution would be reduced.

Autos and highways increasingly expensive.

Miscellaneous

I-44 least congested, but corridor needed to keep less congested.

Interested in transportation options for all residents. We should plan carefully now to increased problems in traffic congestion and air quality.

Hurry on highway improvements, LR, express bus services.

Keep me informed at what I can do to be involved in this project - day or night.

Concerned about property value with I-44 behind my property.

Develop a simpler method of disbursing tickets than MetroLink. Believe LR should be pursued rather than reliance of UP/BN RR.

Promote bicycle riding including riding lanes, racks on commuter cars to carry bikes, plus a PR campaign to encourage the bike industry. Would ride train (if near) or bike (if safe street).

Current bus equipment is poorly maintained and appears drivers are new and inexperienced.

Commute time, schedule times, availability to get from depots to job sites.

I-44 best highway, but getting to it is a problem. Would like LR for frequency of trains and highway accidents will not slow you down.

COMMENTS FROM I-55 QUESTIONNAIRE

Safety

Should have spot TV commercials from State teaching people safety methods of driving on Interstates.

District thinks it very important that public safety and congestion is addressed in this study.

Safety and congestion is a primary concern. See numerous fatalities that are primarily caused by driver error, but access and additional lanes would help significantly.

Traffic congestion as relating to emergency response access/right of way.

Security at park-ride lots.

Drives cutting across lanes on I-55.

Flooding

Street/road network in Festus-Crystal City very vulnerable to disruption due to flooding. During 1993 and 1995, most major streets were blocked in all directions and almost all north/south traffic was thrown onto I-55.

There was no way in or out of Jefferson County other than I-55 during the flood of 1993 and 1995. Traffic was awful. Highway is also deteriorating because of heavy volume.

During 1993 and 1995 flooding, it was almost impossible to travel I-55 due to the congestion.

A BN site in Barnhart is impractical due to flooding. Tracks are elevated in Barnhart and not accessible to I-55. All MP sites north of Pevely also occasionally inaccessible during flooding and too far from I-55.

Added burden put on I-55 by flooding situations. More growth will add to the problem. CR would ease much of this congestion.

Commuter Rail

Would like to take train to work if that were possible (Iron & Bates station).

Interested in MetroLink either 21 Corridor or 55 Corridor. I personally would prefer CR with stops in Festus, Pevely, Kimmswick, Arnold and specifically Gravois, Tesson-Ferry, and Mackenzie Point.

Adding highway lanes is not a solution. Other large metro areas are examples. Rail is vital. It moves many people quickly and efficiently. CR needs to work with employers to move employees from rail stop to places of business. Make this a whole community project.

As a time saver, consider CR for LR. Tracks are available now. Additional highway lanes not the answer. Houston added many lanes and still has tremendous traffic problems.

CR/LR - whatever would work in Jefferson County.

CR probably more feasible than LR. No-build is not an option.

CR station could go where the closed Schnucks store is at Grand & Iron which is close to the tracks.

Miscellaneous

Consider doing highway improvements at night to be less disruptive to traffic.

Need sound barriers installed.

Lack of transportation option along I-55.

Would prefer to further development of I-55/West Main Festus exchange because of negative impact on adjacent residential and business district.

Need four lanes on bridge on Veterans Boulevard at I-55.

Both highway expansion and LR are very important issue in Jefferson County with current growth rate. Support both of these projects 100%.

Support highway improvements, express bus service and LR if economically viable. Would be a plus for Jefferson County.

Would like to see improvements to I-55 and all interchanges.

Need expansion of "A" Highway bridge over I-55 to four lanes.

Will the added lane to I-55 require additional property buy-outs through the Festus city limits?

Interested in land use impact.

Transit, local service and express should be examined as a mode choice separate from rail (light or heavy). TSM should be expanded to include signal timing and interconnects, turn lanes, car pooling (organized, as opposed to simple park-ride).

Need help on Highway A bridge over I-55 asap. Also, not practical to funnel traffic, i.e., southbound I-55 going from 4 to 5 lanes each directing to 2 lanes south of Highway M.

Take a close look at traffic from southeastern MO that does not need to go as far as I-270 to go to mid-state area.

Very interested in community and organizational involvement as population base changes - probable usage will change.

Light rail - stop at county line.

Station development opportunities are very important.

Bicycle transportation supplement is important. Interested in multi-modal as well as bus, commuter rail and light rail.

There is a great need for education about modern public transportation to the general public and to get business to support it.

Ambiance of public transit must be appealing - clean and appropriate climate control. Bike parking and security at park-ride lots helpful. Promote public transit over Page Avenue extension.

Suggest Metro Line I-55 station at Grand/Iron.

Economic impact on downtown important part of total system. Needed for entire community. For the area to survive and grow, downtown must prosper. Must get people to and from the area.

No more highways or additional lanes for highways in the city.