ALTERNATIVES ANALYSIS
OF
MULTIMODAL TRANSPORTATION
IMPROVEMENTS FOR DOWNTOWN SAN ANTONIO
### Abstract:
This study developed, analyzed and evaluated a broad range of transportation alternatives for Downtown San Antonio. A Locally Preferred Alternative (LPA) for improving transportation in the Downtown is recommended. This LPA consists of multimodal improvements supportive of the Downtown transportation and development goals.

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### No. of Pages:
$938,000

### Cost of Report:
$938,000

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EXECUTIVE SUMMARY

The purpose of the Alternatives Analysis of Multimodal Transportation Improvements for Downtown San Antonio is to improve circulation in Downtown San Antonio by proposing an integrated system of transportation improvements. This was accomplished by examining Downtown circulation needs and potential solutions using a study process known as Alternatives Analysis. This Alternative Analysis process analyzes and evaluates a series of alternatives employing all modes – transit, auto, bicycles and walking – to select a “Locally Preferred Alternative” (LPA) to pursue using a mix of federal and local funding.

The study integrated a pro-active public involvement and consensus building process with a strong technical analysis to arrive at solutions for the Downtown. At each major decision point, the public was involved in the evaluation of the alternatives and provided input to the alternative concepts taken forward into the next stage of the study.

The study approach consisted of a two-level analysis and evaluation of alternatives. In the first level, a number of alternative scenarios were developed at a conceptual level to respond directly to identified opportunities and challenges. The resulting Level 1 alternatives were analyzed and then evaluated. The results of this Level 1 evaluation were translated into specific Level 2 transportation alternatives. These more detailed Level 2 alternatives were analyzed and evaluated to develop a recommended draft LPA. After an extensive public and agency review process, this draft LPA was finalized and approved as a consensus approach to improving circulation within the Downtown.

Although the study was originally perceived as exploring the Downtown segment of a potential regional light rail system, political and financial realities soon made it clear that the study needed to focus on a broad range of integrated but relatively low and moderate cost improvements to increase circulation within the Downtown area. Creative concepts to relieve both bus traffic congestion on the major transit axes and related sidewalk crowding at major bus stops were explored. Downtown shuttle systems using light rail or bus rapid transit systems to increase connectivity within Downtown and to connect with peripheral parking lots were examined. Aesthetic treatments (such as landscaping, pavers, and pocket parks) were also considered. Pedestrian and bicycle facilities were contemplated. Intersection improvements and changes to the intersection of IH 37 and a major arterial (Commerce Street) were also included.

In addition to exploring transportation improvements for the Downtown, another major product of the study was to be a traffic simulation model of the Downtown. The data gathering effort included traffic counts at all Downtown signalized intersections and modeling of the existing traffic conditions. Forecast data was developed for the projected 2025 traffic condition using a combination of the regional travel demand model and the traffic simulation models. These work
products have been reviewed extensively with the City of San Antonio. The data and the software will remain with the MPO and City for their use in analyzing proposed development or transportation system changes.

Several factors worked together to minimize both the need and the opportunity to pursue many of the concepts. Although these factors were generally anticipated at the beginning of the study, the combined weight of these factors ultimately resulted in a recommendation that included only modest proposals. These factors were as follows:

- The Downtown is an extremely complex environment within which to attempt to make changes to the transportation system. Effectively every square foot of public right-of-way has been allocated to a specific use and benefits one or more Downtown stakeholders. Any potential re-allocation of these scarce resources (for example, to remove metered parking and commercial loading zones from a block face in order to provide additional traffic capacity or create a bus priority lane) requires a consensus by potentially affected stakeholders – a nearly impossible task unless a sense of urgency forces such an action.

- The levels of congestion in the Downtown are currently low and, with the official population and employment forecasts calling for little growth through 2025, are projected to remain low for the foreseeable future. In addition, the VIA streetcar service is well regarded and is perceived as providing adequate circulation within the Downtown. The regular VIA bus service is also perceived as operating well. Thus, when faced with the potential need to re-allocate transportation resources, there was no sense of urgency and no “champions” materialized to actively pursue many of the alternatives.

- The Downtown public and the private groups are generally fiscally constrained and have numerous projects and interest groups competing for available funding. Without urgent problems in the Downtown, funding of proposed projects is and will likely remain challenging.

Despite these several factors dampening the enthusiasm for pursuing specific projects, the study developed a list of projects that have a broad base of support and have the potential for improving Downtown transportation. The projects included in the LPA are as follows:

- Pedestrian & Bicycle Improvements $6,716,000
- Interstate 37 & Commerce Street Area Improvements $10,816,000
- Broadway and Third Street Improvements $781,000
- Facilities for VIA’s Comprehensive Service Plan $6,690,000
- Improve Space & Amenities for Transit Riders at Bus Stops $653,000
- Hemisfair Park Streetcar Facilities and Route $1,841,000

**Total** $27,497,000

A mix of federal, state and local funding sources is recommended for pursuing these multimodal projects.
CHAPTER 1
INTRODUCTION

1.1 PURPOSE

The purpose of the Downtown Alternatives Analysis (AA) study is to improve circulation in Downtown San Antonio by proposing an integrated system of transportation improvements. This was accomplished by examining Downtown circulation needs and potential solutions using a study process known as Alternatives Analysis. This Alternative Analysis process analyzes and evaluates a series of alternatives employing all modes – transit, auto, bicycles and walking to select a “Locally Preferred Alternative” (LPA) to pursue using both federal and local transit funding.

1.2 BACKGROUND

During the late 1990’s, VIA Metropolitan Transit (VIA), with the active support of other local agencies, worked with members of the Bexar County Congressional delegation to obtain “earmarked” funds from the Federal Transportation Efficiency Act for the 21st Century (TEA 21) authorization for the study of means to improve circulation within Downtown San Antonio. Funding for this Downtown Circulation Alternatives Analysis came through the Federal Highway Administration (FHWA) portion of the authorization and the Texas Department Of Transportation (TxDOT) supplied the required local matching funds.

During the same timeframe, VIA Metropolitan Transit (VIA) was preparing for a public referendum to increase the sales tax from a half percent to one percent to support additional proposed transit investments and services. A light rail system was the centerpiece of this proposal. Many of those supporting the funding request to Congress for the Downtown Alternatives Analysis perceived that the primary purpose of the study was to develop a definitive plan for light rail in Downtown as the focal point of a regional light rail. This system could be developed in conjunction with potential commuter rail and expanded bus service.

A Study Oversight Committee (SOC) was established to oversee the study. The SOC was composed of technical staff from the several local agencies (TxDOT, VIA, City of San Antonio, Bexar County, San Antonio-Bexar County Metropolitan Planning Organization (MPO), and Alamo Area Council of Governments (AACOG)) that play a role in transportation planning in San Antonio. In addition, the President of the Downtown Alliance represented the membership of his organization. The MPO was designated as the contracting and managing agency. VIA Metropolitan Transit was designated co-project manager with the MPO.

A Scope of Work was defined and a Request For Proposals was issued to consultant firms. Consultant responses were received and evaluated. Interviews were conducted and a consultant team led by Carter Burgess, Inc. was selected to conduct the study. The

The study began in April 2000. On May 6, 2000 the VIA referendum was defeated at the polls and the potential for a regional light rail system became a moot issue for the near term. However, the potential for other systems – as well as light rail – remained as options for improving circulation within the Downtown.

1.3 GETTING ORGANIZED

The Consultant Project Manager prepared a Project Schedule and Project Budget. Individual tasks were defined and assignments made to consultant team members. However, the SOC and the agencies and groups that they represented were to be an integral part of the work effort. Thus, the SOC established a number of subcommittees, made up of members of the SOC as well as staff from member agencies, to deal with the following specialized portions of the study:

- Public Involvement
- Traffic Analysis
- Travel Demand Estimation
- Data Collection and Analysis

Each subcommittee and the supporting consultant team members prepared a work plan and, after reviewing the plans with the SOC, began to implement those plans. A summary of the plan is described in later sections of this report.

1.4 PREVIOUS STUDIES

Transportation in Downtown San Antonio has been studied a number of times in recent years. The following is a list of the relevant reports of previous studies that dealt with Downtown transportation issues:

1. Downtown Transportation Study – Tech Memo #1 (Wilbur Smith, 1995)
2. Intermodal Terminal Feasibility Study – Amendment I (Saldana/Schimpeler, 1995)
4. Downtown Transportation Plan – Transit Element (VIA, 1997)
5. Downtown Transportation Study – (Wilbur Smith, 1997)
6. Downtown Neighborhood Plan - (City of San Antonio, 1999)
7. Mobility 2025 – Metropolitan Transportation Plan Technical Compendium – (Schimpeler Associates, 1999)
8. Westside Multimodal Terminal Feasibility Study (Parsons Transportation Group, 1999)

Additional Reports:

1. Alamo Plaza Study Committee – Report and Recommendations (City of SA, 1994)
2. City of San Antonio Master Plan (1997)
4. San Antonio Visitor Information & Transportation Center – Final Recommendations (Bender Wells Clark, 1998)
5. Historic Trolley Feasibility Study – Final (Bender Wells Clark, 1998)
10. Assorted VIA Rider surveys (VIA, various dates)

The consultant team reviewed these past studies for applicability to the current study and developed summaries of this past work. These summaries are provided in the Appendix.

### 1.5 STUDY APPROACH

The SOC and the consultant team are strong believers in the value of integrating a proactive public involvement and consensus building process with a strong technical analysis to arrive at solutions for San Antonio and Bexar County transportation issues. This philosophy is particularly important in the Downtown where numerous interest groups have a substantial voice over any public and many private projects. Therefore, the study approach built a technical analysis and evaluation process around a very extensive and intensive public involvement process. At each major decision point, the public would be involved in the evaluation of the alternatives and help develop the concepts to be taken forward into the next stage of the study.

The study approach consisted of a two level analysis and evaluation of alternatives. In the first level, a comprehensive data gathering effort was undertaken. The analysis of this data, in combination with an intensive public discussion concerning Downtown opportunities and challenges, fed directly into a public Charrette. At this Charrette, the results of the data analysis were displayed and the input gained in the public meetings was summarized and discussed. The Charrette then developed a number of alternative scenarios for Downtown transportation systems. These concepts were translated into a broad range of alternative transportation improvements designed to respond directly to identified opportunities and challenges.
The resulting Level 1 alternatives were analyzed and then evaluated in a second charrette. The results of this charrette were translated into specific transportation alternatives for analysis and evaluation as the Level 2 alternatives. These Level 2 alternatives were analyzed and evaluated to develop a recommended draft LPA. After an extensive public and agency review process (including several other studies). This draft LPA was finalized and approved as a consensus approach to improving circulation within the Downtown.

The following chapters document the study process and results:

- **Chapter 2 – Project Initiation & Developing Level 1 Alternatives**
  Discusses the project purpose, initiation, and development of Level 1 Alternatives.

- **Chapter 3 – Analysis & Evaluation of Level 1 Alternatives**
  Discusses the analysis and evaluation of Level 1 Alternatives.

- **Chapter 4 – Analysis & Evaluation of Level 2 Alternatives**
  Describes the development, analysis, and evaluation of Level 2 Alternatives.

- **Chapter 5 – Developing the Draft Locally Preferred Alternative**
  Discusses developing the draft LPA.

- **Chapter 6 – The Recommended Locally Preferred Alternative**
  Describes the approved LPA.

- **Chapter 7 – Conclusions, Lessons Learned and Outstanding Issues**
  Outlines lessons learned during the course of the study.

- **Appendix – Supplementary Data**
2.1 PUBLIC INVOLVEMENT ACTIVITIES

2.1.1 The Public Involvement Plan

The SOC Subcommittee for Public Involvement developed an aggressive plan for involving the public throughout the study. The complete Public Involvement Plan (PIP) is included in the Appendix.

Preparation

Before the 1st round of public meetings began, a number of tasks were undertaken:

1. A project logo and letterhead was developed.
2. A project website was developed and a domain name obtained.
3. A mailing list was developed for the newsletter and meeting notifications.
4. The Public Involvement Subcommittee established a specific approach for involving the public.
5. Stakeholders and clusters of interest groups in the Downtown were identified.
6. Key individuals or groups were identified and met with on a one-on-one basis to explain the project goals and solicit their input on Downtown transportation issues.
7. Appropriate meeting locations and times were identified and arranged.
8. Briefing and working materials were prepared.

The domain name “movin’-round-downtown” was obtained and a web page (www.moving-round-downtown.org) was developed.

2.1.2 Public Meetings

A mailing list of approximately 1,000 names was compiled from various sources. In order to gather input from Downtown stakeholders about traffic, mobility, and circulation in the Downtown area, eight small group sessions and one large public meeting were held. Although all meetings were open to the public, the smaller cluster group meetings were targeted at particular geographic areas in Downtown San Antonio. These cluster group sessions were held in each of the eight sectors of Downtown (see the following diagram) to allow participants to indicate the potentially different needs, issues, and concerns of the geographic areas. A total of 87 members of the public who represented citizens and organizations participated in the geographic cluster meetings.
After a brief overview of the purpose of the study, each participant was given a worksheet at each geographic cluster group meeting and asked to write his/her answers and then share it with the group. Participants were asked to address four topics:

1. current issues / problems
2. potential improvements
3. evaluation criteria
4. personal significance
The following table documents the results of the cluster meetings:

<table>
<thead>
<tr>
<th>Current Issues &amp; Problems</th>
<th>Potential Improvements</th>
</tr>
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<tbody>
<tr>
<td><strong>Transit</strong></td>
<td></td>
</tr>
<tr>
<td>• Lack of alternative modes</td>
<td>• Implement new modes (fixed rail)</td>
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<tr>
<td>• Lack of shelter, seating, and safety at bus stops</td>
<td>• Expand Streetcar service area and service frequency</td>
</tr>
<tr>
<td>• Sidewalk congestion at major bus stops</td>
<td>• Improve Streetcar maps / signage</td>
</tr>
<tr>
<td>• Bus frequency</td>
<td>• Provide shade and seating at bus stops</td>
</tr>
<tr>
<td>• Congestion caused by high bus volumes</td>
<td>• Create transfer stations with amenities</td>
</tr>
<tr>
<td>• Streetcar system service area</td>
<td>• Relocate Greyhound buses to transfer station</td>
</tr>
<tr>
<td>• Streetcar maps / signage</td>
<td>• Remove large buses from Downtown (use shuttle system)</td>
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<tr>
<td></td>
<td>• Move bus stops to mid-block locations</td>
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<td></td>
<td>• Create a Streetcar-only zone on Houston Street</td>
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<td></td>
<td>• Create a Streetcar / pedestrian loop</td>
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<td></td>
<td>• Consolidate radial routes coming into Downtown</td>
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<td></td>
<td>• Create a 1-800 suggestion line</td>
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<td></td>
<td>• Use the media to inform the public of service changes</td>
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<td></td>
<td>• Implement automated fares</td>
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<tr>
<td><strong>Traffic</strong></td>
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<tr>
<td>• Special event management (Majestic Theater, Alamodome, etc.)</td>
<td>• Change more streets to one-way</td>
</tr>
<tr>
<td>• Traffic signal synchronization</td>
<td>• Improve signal timing</td>
</tr>
<tr>
<td>• Congestion (especially Alamo/Commerce/Market area)</td>
<td>• Prohibit right turns on some streets</td>
</tr>
<tr>
<td>• Excess capacity on some streets</td>
<td>• Better enforcement of traffic regulations</td>
</tr>
<tr>
<td>• Regulation enforcement</td>
<td>• Use police officers to direct traffic during peak times</td>
</tr>
<tr>
<td>• Conflicts with buses and pedestrians when making right turns</td>
<td>• Prohibit trash collection during peak times</td>
</tr>
<tr>
<td>• Confusing street network – difficult to navigate</td>
<td>• Re-open streets in Hemisfair Park area</td>
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<tr>
<td>• Passenger loading blocking through traffic lanes</td>
<td>• Require off-peak deliveries</td>
</tr>
<tr>
<td>• Commercial Vehicles</td>
<td>• Designate delivery and tour bus staging / parking areas</td>
</tr>
<tr>
<td>• Tour Bus staging and parking</td>
<td>• Require new hotels to provide tour bus staging areas</td>
</tr>
<tr>
<td>• Delivery Truck staging</td>
<td></td>
</tr>
<tr>
<td>Current Issues &amp; Problems</td>
<td>Potential Improvements</td>
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<td>--------------------------------------</td>
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</tbody>
</table>
| Pedestrian / Bicycle                  |  • Confusion over crossing locations  
  • Short walk light cycles  
  • Lack of shelter from weather  
  • Shaded routes (trees, awnings, shelters)  
  • Elevated or underground pedestrian crossings  
  • Pedestrian priority at crosswalks  
  • Designated bicycle routes  
  • Bicycle facilities (storage, water fountains, seating, etc.)  
  • Create a pedestrian-only zone on weekend nights  
  • Create a pedestrian mall |
| Disabled Access                        |  • Access ramps  
  • Lack of sensitivity from bus operators and general public  
  • Physical interface between buses and bus stops  
  • Verbal announcements of bus routes and stops  
  • Put rails on bus steps  
  • Provide sensitivity training |
| Infrastructure                         |  • Street and sidewalk conditions  
  • Curb cuts  
  • At-grade railroad crossings  
  • Improve street surfaces and curb cuts |
| Parking                                |  • Accessibility  
  • Short-term vs. long-term  
  • Pricing  
  • Special events  
  • Direct drivers to available parking (real-time signage)  
  • Provide parking on the periphery of Downtown (with shuttle system)  
  • Eliminate Downtown on-street parking  
  • Provide more parking convenient to major destinations  
  • Utilize areas under elevated freeways  
  • Build more garages on vacant lots |
| Land Use / Urban Design                |  • Lack of services for residents (groceries, dry cleaners, etc.)  
  • Limited availability of Downtown housing  
  • High-rise buildings block light, air  
  • Rapid expansion of UTSA Downtown campus  
  • Tax incentives for mixed-use development (including residential)  
  • Increase landscaping  
  • Increase lighting for safety |
<table>
<thead>
<tr>
<th>Current Issues &amp; Problems</th>
<th>Potential Improvements</th>
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<tbody>
<tr>
<td>Wayfinding</td>
<td>Improve directional signage</td>
</tr>
<tr>
<td>▪ Lack of readable, bilingual, pedestrian-level signage</td>
<td>▪ Install electronic information kiosks</td>
</tr>
<tr>
<td>▪ Building numbers and block numbers not posted</td>
<td></td>
</tr>
<tr>
<td>Linkages</td>
<td>Develop better connections to a number of locations</td>
</tr>
<tr>
<td>▪ Core area to fringe areas</td>
<td></td>
</tr>
<tr>
<td>▪ Downtown to surrounding residential neighborhoods</td>
<td></td>
</tr>
<tr>
<td>▪ Downtown to suburbs</td>
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**Evaluation Criteria**
Participants were asked to suggest criteria that could be used to “adequately judge the utility or feasibility of any proposed solution for addressing Downtown’s circulation, movement, and traffic needs, problems, or issues.” Suggestions were broad in nature ranging from providing a balanced multimodal approach to performing a cost benefit analysis.

**Personal Significance / Agenda**
Finally, participants were asked what was most significant from their perspective or agenda for Downtown San Antonio. While many of the issues listed above were reiterated, additional issues were raised:

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<thead>
<tr>
<th>Category</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>▪ Focus on moving people, not cars</td>
</tr>
<tr>
<td>Finances</td>
<td>▪ Consider long term financial impact of improvements</td>
</tr>
<tr>
<td></td>
<td>▪ Build on previous investments; don’t undo previous improvements</td>
</tr>
<tr>
<td>Implementation</td>
<td>▪ Plans must be acted upon</td>
</tr>
<tr>
<td></td>
<td>▪ Consider impact of construction</td>
</tr>
<tr>
<td>Urban Design</td>
<td>▪ Maintain Downtown’s unique identity</td>
</tr>
<tr>
<td>Other</td>
<td>▪ Reduce commuter stress</td>
</tr>
</tbody>
</table>

**2.1.3 Special Group Meetings**

In addition to the geographic cluster and general public meetings, other meetings were held with two specific groups of stakeholders:

1. The disabled community, using VIA’s Accessible Transportation Public Forum
2. VIA Streetcar operators and administrative staff
Summary of Accessible Transportation Public Forum Group Meeting
Expressed their needs for better curb cuts, access ramps, physical interface between buses and stops to assist those with disabilities. Bus operators should be trained to be more sensitive to those with disabilities. They proposed more available bus schedules, involvement by public officials, and better shelters. They suggested that any solutions/changes should be discussed with those directly affected by them.

<table>
<thead>
<tr>
<th>Initial Round of Stakeholder Meetings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessible Transportation Public Forum [Audience: 28, VIA Staff and Others: 9]</td>
</tr>
<tr>
<td>Thursday, August 3, 2000 at 5:10 p.m., Board Room VIA Metro Center</td>
</tr>
</tbody>
</table>

### Biggest needs, problems or issues concerning circulation, movement and/or traffic within downtown:
- smoother streets
- better curb cuts
- more access ramps for those with disabilities
- bus stops with more/better shade
- cut down on cruising
- accessible “open air” trolleys
- better access to handicap parking lots
- buses should make verbal announcements to those at bus stops about bus route information
- improve communication among buses/operators for better coordination, especially for transfers
- buses should slow down after they leave a bus stop – not move out as quickly
- more sensitivity training for bus operators, especially regarding those with disabilities
- better physical interface between bus stops and buses to assist those with disabilities
- clocks on buses
- more sensitivity training/education of the public about disabled people using the regular buses

### What practical solutions would you propose to address the current needs, problems or issues concerning circulation, movement and/or traffic within downtown:
- employ designated, clear and easy to use bus stops on one-way streets
- have bus schedules available at more places
- involve local officials
- utilize the sales tax to help make some of these project or program improvements
- employ a rail on the steps for disabled to use
- ensure that bus stops have places where people can wait out of the weather

### What criteria would you suggest be used to adequately judge the utility or feasibility of any proposed solution for addressing downtown’s circulation, movement and traffic needs, problems or issues:
- discuss any solutions for disabled service, or any changes in regular service, with those most affected (i.e., members of the disabled community)
- employ a 1-800 number for people to call with suggestions
- use the media extensively to let people know what is happening
Summary of Trolley Operators’ Meeting
Their biggest problems were delivery vehicles, commercial vehicles, and tour buses blocking transit lanes. They also expressed concern for the cycle time for pedestrian walk lights. They suggested prohibiting all vehicles but streetcars on Houston Street, prohibiting right turns on a number of major streets, and substantially strengthening enforcement of traffic laws downtown. Any proposed changes should be easy to implement and have public support.

Initial Round of Stakeholder Meetings
VIA Downtown Trolley Operators and Administrative Staff (13 people)
Thursday, July 13, 2000 at 8:00 a.m., VIA Metro Center

<table>
<thead>
<tr>
<th>Biggest needs, problems or issues concerning circulation, movement and/or traffic within downtown:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• traffic tie-ups around the Majestic Theater during events</td>
</tr>
<tr>
<td>• traffic signals are not synchronized</td>
</tr>
<tr>
<td>• downtown delivery vehicles disrupt traffic by blocking lanes and at certain peak hours during the day</td>
</tr>
<tr>
<td>• lack of enforcement of existing traffic and circulation rules and regulations</td>
</tr>
<tr>
<td>• little room for buses in the Main and Soledad streets area</td>
</tr>
<tr>
<td>• congestion in the Alamo/Commerce/Market streets area, especially during peak hours</td>
</tr>
<tr>
<td>• commercial vehicles, especially out of town tour buses, don’t know where to go and don’t know where to park</td>
</tr>
<tr>
<td>• pedestrian traffic, especially at Alamo and Market Streets (pedestrians are not sure where and how to cross the streets)</td>
</tr>
<tr>
<td>• jaw walking</td>
</tr>
<tr>
<td>• the cycle time for the pedestrian walk light is too short</td>
</tr>
<tr>
<td>• many of the traffic and directional signs are faded, and are not bi-lingual</td>
</tr>
<tr>
<td>• some downtown streets are underutilized (they have excess capacity)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What practical solutions would you propose to address the current needs, problems or issues concerning circulation, movement and/or traffic within downtown:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• make Houston Street one-way (San Saba to Alamo)</td>
</tr>
<tr>
<td>• prohibit all vehicles, except for VIA Trolleys, on Houston Street</td>
</tr>
<tr>
<td>• synchronize traffic signals</td>
</tr>
<tr>
<td>• prohibit right turns, except for buses, on a number of major streets (e.g., Commerce Street, etc.)</td>
</tr>
<tr>
<td>• substantially strengthen enforce of all traffic and circulations within the downtown area</td>
</tr>
<tr>
<td>• bring back the major intersection traffic cops at peak hours</td>
</tr>
<tr>
<td>• strengthen the prohibition of parking at bus stops, e.g., paint curbs yellow and strictly enforce</td>
</tr>
<tr>
<td>• prohibit trash pick-up, especially by City of San Antonio crews, during peak traffic hours</td>
</tr>
</tbody>
</table>
What criteria would you suggest be used to adequately judge the utility or feasibility of any proposed solution for addressing downtown’s circulation, movement and traffic needs, problems or issues:

- ease of implementation
- effectiveness in improving traffic and pedestrian flow
- negative impacts
- public reaction, public understanding and public acceptance/support

2.1.4 Bus Patrons Survey

A survey of bus patrons was conducted on August 15 and 16, 2000 to learn their opinions of the current Downtown bus service. The surveys were conducted by a professional market research firm at the following five high-volume Downtown bus stops at various times of day:

1. Commerce and Navarro
2. Commerce and Soledad
3. Market and Presa
4. Market and Villita
5. Travis Park

Sixty bus patrons were surveyed. Interviewees could fill out their own form, or ask for assistance from the interviewer. Surveys were available in English and Spanish and the interviewers were bilingual as well.

Patrons surveyed varied in age and represented a wide range of occupations. Patrons had from 2 to 30 years experience riding the bus. Most used the streetcar service occasionally but used the mainline buses more frequently. The majority of riders were transferring through Downtown, but many either started or ended their trip Downtown.

The overwhelming majority of respondents were satisfied with the bus service. They did not like that the buses sometimes ran late, the distance between stops, feeling unsafe at bus stops, the infrequency of the buses at off-peak times (particularly the Sunday schedule), and the new buses.

Changes they would make often had to do with running the buses more frequently, more comfortable stops with shade, restrooms, better security, and making the stops less crowded. Keeping the buses on schedule was mentioned frequently.

The most frequent response concerning what needed to be considered when making a change to the bus system was that riders should be informed in advance of proposed changes to the system. Patrons should be consulted about the changes or at least taken into consideration before changes were made.
2.1.5 One-On-One Meetings With Key Individuals & Groups

The MPO Executive Director, assisted by the Consultant Project Manager, key VIA staff and Board members, met with a number of key individuals and groups on behalf of the project. The Appendix contains the material distributed at these meetings and brief summaries of each meeting. Common issues of these meetings included:

- Concern that all interests, regardless of economic status, should be part of the decision making process
- Desire to bring forward fundable, supportable projects (too many studies, not enough action)
- The perception of lack of Downtown parking
- Air quality concerns

2.1.6 Summary Schedule of First Round Public Involvement Activities

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIA Streetcar Operators and Administrative Staff</td>
<td>July 13, 2000</td>
</tr>
<tr>
<td>Accessible Transportation Public Forum</td>
<td>August 3, 2000</td>
</tr>
<tr>
<td>Cluster 1: UTSA/Government/Cattlemen’s Square/Vista Verde</td>
<td>July 19, 2000</td>
</tr>
<tr>
<td>Cluster 2: HEB/Flores St/Arsenal/Lower River</td>
<td>July 17, 2000</td>
</tr>
<tr>
<td>Cluster 3: Sunset Station/St. Paul Square</td>
<td>August 2, 2000</td>
</tr>
<tr>
<td>Cluster 4: Madison Square/Medical/Lower Broadway/Irish Flats</td>
<td>July 18, 2000</td>
</tr>
<tr>
<td>Cluster 5: Hemisfair Park/La Villita/Special Events</td>
<td>July 31, 2000</td>
</tr>
<tr>
<td>Cluster 6: Alamo Plaza/Rivercenter</td>
<td>July 25, 2000</td>
</tr>
<tr>
<td>Cluster 7: Market Square/Milam Park/Santa Rosa</td>
<td>July 31, 2000</td>
</tr>
<tr>
<td>Cluster 8: Riverbend</td>
<td>August 2, 2000</td>
</tr>
<tr>
<td>General Public Meeting</td>
<td>August 7, 2000</td>
</tr>
<tr>
<td>One-on-One Public Official Meetings</td>
<td>Summer/Fall 2000</td>
</tr>
<tr>
<td>Bus Patron Survey</td>
<td>August 15-16, 2000</td>
</tr>
<tr>
<td>Charrette</td>
<td>August 26, 2000</td>
</tr>
</tbody>
</table>

2.2 GENERAL DATA GATHERING AND ANALYSIS

The SOC ‘brainstormed” an initial list of data to be considered for gathering in order to gain a fuller understanding of the Downtown environment. Additionally, the Subcommittee agreed upon ArcView/ArcInfo as the appropriate Geographic Information System (GIS) software for manipulating and displaying population, employment and other information. The Downtown Alliance and Landata made a recent aerial photograph and digitized the Downtown street and building plan.
2.3 TRAFFIC DATA GATHERING AND ANALYSIS

2.3.1 Selecting a Traffic Analysis Model(s)

The Traffic Analysis Subcommittee met to discuss the necessary traffic data gathering and analysis.

The Traffic Subcommittee agreed that simulation software should be used to provide technical information (i.e. – intersection Level of Service) for alternative improvements being considered as well as provide animation to illustrate performance of a limited number of selected intersections for use in public meetings. The Subcommittee also concluded that the software must be able to address preferential treatment for transit in both the technical analysis and the animation.

The Subcommittee concluded that a hybrid approach should be followed. The traffic analysis would use SYNCHRO for the majority of the analysis to take advantage of the ease of data input and analysis. VISSIM was to be used to analyze and provide animation for a small number of critical intersections in the later phases of the project.

As per the contract between the MPO and the Consultant, the Consultant will deliver one set of the VISSIM software to the MPO to be provided to the City of San Antonio at the end of the study for use on future projects.

2.3.2 Traffic Data Collection and Analysis

There are 139 intersections in the Downtown area. The City had recent traffic count data for 32 of those intersections. The Consultant implemented a traffic counting program to obtain required data for the other signalized intersections. Although data was gathered for other time periods, only the PM peak period was to be modeled using the SYNCHRO and VISSIM software.

The traffic counts were input into a SYNCHRO analysis to determine intersection level of service for downtown signalized intersections. The Year 2000 Traffic Analysis was used to begin the analysis of future traffic conditions during later phases of the project. In addition, the SYNCHRO electronic data sets were transmitted to the City of San Antonio Public Works (Traffic) Department for their use in analyzing existing or near-term proposed traffic conditions.

2.4 TRANSIT DATA GATHERING AND ANALYSIS

VIA provided and the consultant team reviewed electronic versions of the following information:

- Daily Bus Route Schedules
- Summaries Comparing 1995 and 2000 Transit Origin Destination Surveys
- Counts of Passenger Boardings & Alightings by Bus Stops
- Detailed Descriptions of Downtown Bus Routes
• Boardings for Streetcar Routes

This data was analyzed and summary graphics developed to display the resulting information. The information would be used later in developing and evaluating alternatives.

2.5 TRAVEL DEMAND MODELING

The travel demand modeling effort was to be used to forecast highway/street and transit usage for various alternative transportation improvements for Downtown. However, potential alternatives likely to be considered require a level of detail in the downtown area that the current regional model does not possess. For this reason a post-modal choice traffic “submodel” was developed for the 1995 condition.

A 2025 traffic submodel was also developed. This involved creating a detailed highway network (as was done for 1995) with the MPO reviewing Downtown highway (and transit) coding assumptions at both the Downtown and regional levels. After the 2025 traffic submodel was successfully implemented and 2025 No Build volumes estimated, the travel demand modeling team was prepared to begin analysis on Level 1 alternatives to be suggested at the Charrette.

2.6 TRANSPORTATION SYSTEM MANAGEMENT ALTERNATIVE

Members of the City of San Antonio Public Works (Traffic) Department, TxDOT, VIA, MPO, and the consultant team held a brainstorming session to develop a list of low cost transportation management techniques that would have potential for improving circulation within Downtown. The following is the resulting list of potential low cost tools to improve transportation in Downtown San Antonio:

Traffic Signal & Intersection Improvements
• Replace Pre-set Patterns with Traffic Response System
• Closed Circuit TV for major intersections in addition to detectors
• Integrate with TxDOT's Transguide Freeway Management System
• Countdown Clock
• Bus Pullouts at Nearside Bus Stops with Separate Signal Phase
• Separate Signal Phase for Buses Positioning for Left Turn (i.e. – Market at St. Mary’s)

Traffic Lane Management
• Reversible Middle Lanes by Time of Day (Travis as 3/1 Reversible from AM to PM Peaks)

Real-time Traffic Diversion Routes
• Use for Special Events & Incidents
• Dynamic Wayside Signage
• Dynamic Lane Assignment
• Integrate with TxDOT's Transguide Freeway Management System
Real-time Parking Availability Info
- Dynamic Wayside Signage
- Integrate with TxDOT's Transguide Freeway Management System

Institute Incident Management Plans
- Improve Communication between 1st Response (usually Police) & Traffic Control

Monitor Probes for Real-time Traffic Info
- Buses
- Private Vehicles
- Public vehicles

Transit Management
- Vehicle Location System & Management
- Real-time Transit Schedule Info
- Fare Media to Speed Boarding (& Shorten Dwell Time)
- On-Board Passenger Counters to Schedule More Effectively
- Relocate Bus Stops to Improve Bus Operations or Traffic Flow

Re-Allocation of Street Space
- Transit Malls
- Pedestrian Malls
- Wider Sidewalks

Improved Pedestrian Flow
- Remove Sidewalk Obstructions

Reinforce “Loop” Around Downtown
- Re-align Pecan/Bowie Intersection

These improvements would be discussed at the Charrette and considered as alternative improvements were being developed later in the study.

2.7 CHARRETTE #1

2.7.1 Preparation

The Charrette of the Downtown Multimodal Alternative Analysis was designed to bring project team members, public agency staff, and Downtown stakeholders together to discuss Downtown’s transportation needs and conceptual solutions to Downtown circulation issues. The individuals and groups invited to the cluster group meetings were also invited to the Charrette scheduled for August 26, 2000. In addition, special outreach efforts were made to bring in additional points of view.
In order to achieve a broad mix of perspectives and keep the group size small enough to permit in-depth discussion, the expected attendees were assigned to eight small groups. Members of the SOC and consultant team members were also assigned to groups to serve as technical support.

The data gathered and analyzed to date on existing and future conditions was compiled into a series of graphics designed to provide insight into Downtown transportation issues. The data analysis graphics were displayed on a “resource wall” available for viewing and discussion by the Charrette participants. The following graphics are included in the Appendix:

1. 1995 Population by Zone
2. 2025 Population by Zone
3. Change in Population by Zone – 1995 to 2025
4. 1995 Employment by Zone
5. 2025 Employment by Zone
6. Change in Employment by Zone – 1995 to 2025
7. 1995 Traffic Volume/Capacity Ratios (from the modeling process)
8. 2025 Traffic Volume/Capacity Ratios
9. Examples of Transit Technology
10. Pedestrian Count Data

### 2.7.2 Description Of Current and Future Conditions

**Population**

Downtown population density in 1995 was generally low, with most zones averaging 5 or less residents per acre. This reflects the limited availability of housing in the study area. Only the area south of Hemisfair Park (Victoria Courts) and an area west of I-35 show relatively high residential density. The projected population density in 2025 and a comparison of 1995 and 2025 population in absolute numbers is also included. Overall population in the study area is projected to decline slightly. The greatest declines are expected in the near west and near east neighborhoods, on the periphery of the Downtown core. These population projections do not assume significant future residential development within the core.
Employment
Downtown is a major employment center for the metropolitan area, with more than 70,000 employees in 1995. Employment tends to be clustered along the Commerce / Market corridor from east to west, extending north along the St. Mary’s / Navarro corridor and south to the Courthouse / City Hall area. Employment is much more limited in the Downtown fringe areas. A graphic of projected employment density in 2025 with comparisons of 1995 and 2025 employment in absolute numbers was also provided. Overall employment in the study area is projected to increase. The pattern of strong employment concentration in the central core is expected to continue.

Land Use
The Downtown core is dominated by Commercial (office, retail, hotel) and Public (government, religious, non-profit, hospital) uses. A significant amount of land is currently being used as surface parking lots. Residential and Industrial uses are much less common, and are found primarily on the periphery of the study area.

Traffic
Congestion was defined as a traffic volume to capacity (v/c) ratio of 0.76 or greater. Congestion is highest on the freeways and major arterials leading into the Downtown area. The streets within the central core area do not show high levels of congestion. 1995 and projected roadway congestion in 2025 (assuming a no-build scenario) is contained within the Appendix. Congestion is expected to increase, with the heaviest congestion remaining on the periphery of Downtown. More congestion is predicted along sections of east-west streets such as Commerce and Houston within the core area.

Public Transit
Downtown bus volumes, boardings, and alightings in 1995, as well as the five current Streetcar routes are shown in the Appendix. Bus volumes are heaviest along Commerce, Market, St. Mary’s, and Navarro streets. Bus stops with the highest number of boardings and alightings are found along these same streets.
2.7.3 The Charrette Process

On the day of the Charrette, the participants were split into eight working teams. Professional staff was distributed across the groups. Information concerning current conditions was posted for reference. Each participant was also given printed information.

After an initial briefing the teams progressed through a series of tasks according to a set time schedule. The five major tasks were:

1. Needs / Problems / Issues Validation
2. Downtown Physical Assessment
3. Developing Conceptual Solutions
4. Presentations and Critiques
5. Refining Conceptual Solutions

Charrette divided into separate groups.

2.7.4 The Charrette Results

Charrette participants were presented with a summary of the needs / problems / issues generated in the previous public meetings. Each team was asked to discuss the summary and offer additions and clarifications to the list. This exercise produced a similar range of issues identified in the earlier public and special group meetings, with some additional comments.

Physical Assessment
Charrette teams were asked to graphically depict current assets and problems regarding Downtown circulation. A designated design professional on each team was responsible for quickly illustrating the team’s response on a base map of the study area.

Conceptual Solutions, Presentations, and Revisions
The next tasks involved developing and refining solutions to Downtown circulation problems. Charrette participants were asked to consider the needs discussed in previous studies and the prior public meetings, as well as those developed by their individual Charrette team. Teams were asked to graphically depict conceptual solutions on a base map and to list policy solutions. Each team then presented their results to the entire Charrette group. Members of other teams were asked to critique the solutions and offer suggestions for improvement. The teams then regrouped to further refine their sketches and policy solutions lists.
2.7.5 Consultant Team Summary

The Consultant Team summarized the Charrette results into the following table. The majority of the groups favored eastside and westside multimodal centers, San Pedro Creek hike & bike improvements, and improving the connections from Downtown to the eastside. The teams were split on transit shuttle or fixed guideway routes, entry portal locations, and auto traffic improvements.

Sample drawing depicting conceptual solutions.
<table>
<thead>
<tr>
<th>Category</th>
<th>Issues</th>
<th>Policy Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit</td>
<td>• Bus stop locations (in relation to blocks)</td>
<td>▪ Create a free transit zone in the Downtown core</td>
</tr>
<tr>
<td></td>
<td>• Not enough evening service</td>
<td>▪ Use river for circulation (barges, taxi)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Use four transit nodes to collect and distribute riders to buses / streetcars</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Designate transit corridors (transit-only lanes and/or fixed guideway transit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Improve transit connections between Downtown and other attractions / residential areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Use Alamodome area as a transfer station and remote parking</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Establish three multimodal transit centers (East, West, and Central)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Expand streetcar service</td>
</tr>
<tr>
<td>Traffic</td>
<td>• Limited access to freeways</td>
<td>▪ Ban traffic from Alamo Plaza</td>
</tr>
<tr>
<td></td>
<td>• Lack of left-turn lanes</td>
<td>▪ Expand Convention Way</td>
</tr>
<tr>
<td></td>
<td>• Signals are already synchronized (according to CSA staff)</td>
<td>▪ Coordinate traffic signals (City, TxDOT)</td>
</tr>
<tr>
<td>Pedestrian / Bicycle</td>
<td>• Signal priority treatment</td>
<td>▪ Develop pedestrian and bicycle corridors or loops</td>
</tr>
<tr>
<td></td>
<td>• Dedicated bike routes</td>
<td>▪ Add a pedestrian-only signal phase at major intersections</td>
</tr>
<tr>
<td></td>
<td>• Bike storage</td>
<td>▪ Add bike racks to buses; bus stops at bike trails</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Include bicycle amenities at transit centers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Provide shade for pedestrians</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Provide a sub-level connection between Alamodome and Convention Center</td>
</tr>
<tr>
<td>Category</td>
<td>Issues</td>
<td>Policy Solutions</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Commercial Vehicles</td>
<td>▪ Utility poles located in middle of sidewalks</td>
<td>▪ Regulate delivery hours and locations ▪ Off-street loading at hotels</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>▪ Not convenient ▪ Impacts on residential neighborhoods, public housing ▪ Coordination of parking and transit</td>
<td>▪ Eliminate public subsidies for parking ▪ Increase surface parking prices in the core ▪ Provide peripheral parking lots with transit connections to core ▪ Create parking zones with special rates for Downtown residents ▪ Implement Intelligent Transportation System (ITS) concepts</td>
</tr>
<tr>
<td>Parking</td>
<td>▪ Incorporating transportation needs in new developments ▪ Growing role of educational institutions, residents, arts ▪ Streetscaping (outdoor furniture)</td>
<td>▪ Revise City development codes to encourage transit-oriented development (TOD); locate services (groceries, etc.) at transit nodes ▪ Proactive approach to development ▪ Tax incentives for businesses located Downtown ▪ Transform bad open space (surface parking lots, etc.) to good open space (landscaping, pedestrian paths, etc.) ▪ Improve streetscapes ▪ Require better access (loading zones, etc.) in new developments</td>
</tr>
<tr>
<td>Wayfinding</td>
<td>▪ Implement new signage and ITS applications</td>
<td></td>
</tr>
<tr>
<td>Land Use / Urban Design</td>
<td>▪ Across freeway barriers ▪ East-west connections already exist ▪ Entry portals to Downtown</td>
<td>▪ Improve connections across freeway barriers ▪ Create gateway portals</td>
</tr>
<tr>
<td>Institutional</td>
<td>▪ Cooperation between City departments</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 3
ANALYSIS & EVALUATION OF LEVEL 1 ALTERNATIVES

3.1 THE PURPOSE AND NEED FOR DOWNTOWN TRANSPORTATION IMPROVEMENTS

The purpose of this Level 1 analysis and evaluation of alternatives was to develop (based on input from Charrette #1) and then screen a “long list” of alternatives down to a smaller number of alternatives for detailed analysis and evaluation in Level 2 (based on input from Charrette #2).

3.1.1 Purpose Statement
Based upon the input gained from the previous public meetings, the consultant team developed the following “Purpose Statement” to help focus the study effort and begin the evaluation effort:

The purpose of the Alternatives Analysis (AA) study is to improve circulation in Downtown San Antonio by proposing an integrated system of transportation improvements.

3.1.2 Needs Statement
Different user groups have distinctive needs for Downtown transportation:

Transit Riders
With the current radial bus system, the majority of system-wide transfers take place Downtown. However, current conditions are sometimes unpleasant for transit riders and may create conflicts with other Downtown user groups. Many Downtown bus stops lack basic amenities such as seating and protection from the elements. Sidewalk capacity is inadequate in some locations to handle both the large number of transferring bus patrons waiting at stops and through pedestrian traffic.
Daily Commuters
Downtown is a major employment and educational center for San Antonio. This role has been growing in recent years, with the addition of the University of Texas at San Antonio (UTSA) Downtown campus. Daily commuters need a quick, reliable and convenient way to reach their destinations. Different groups place different time-of-day pressures on the transportation system. Downtown office workers typically follow traditional, weekday schedules. Service industry employees and university students follow less predictable schedules, often traveling in off-peak hours. UTSA Downtown students and staff have a unique need for direct transportation connections to the main UTSA campus, located in far northwest San Antonio. Traffic conditions and parking limitations suggest a need for reliable alternatives to the private automobile.

Local, Short-Term Users
Other San Antonio residents do not commute to Downtown on a daily basis but visit periodically for specific short-term needs. These may include doctor visits, shopping, or dining. These users seek a quick, easy way to get in and out of the Downtown area. If traveling by private auto, these users seek convenient and affordable short-term parking.

Visitors
Downtown San Antonio is a major, year-round national tourist destination. Visitors need easy-to-understand options for arriving in Downtown and moving between major attractions. Day-use visitors typically arrive by private auto or tour bus. Conventioneers and other overnight visitors may arrive by airport taxi or shuttle and rely more heavily on walking and public transportation. Visitors need convenient connections between major tourist attractions (the Alamo, the Riverwalk, Market Square, etc.), the Convention Center, hotels, shops, restaurants, bars, parking and public transportation facilities. Clear directional signage is needed to help visitors navigate between these locations, particularly at the pedestrian level. In addition, a significant number of highly attended special events are held Downtown each year – from sporting events to parades and festivals. These events create high levels of congestion in specific and concentrated areas.

Business Owners / Land Owners
Business owners share the concerns of their employees and customers. In order to compete with suburban locations, Downtown businesses must have easy and affordable transportation access. Business and landowners in less-developed parts of Downtown desire economic development and better connections to heavily visited areas. Businesses such as hotels are particularly aware of the competition for on-street space between tour buses, taxis, delivery vehicles and parking.

Neighborhood Residents
The Downtown core has become an increasingly desirable residential location, while a much larger residential population lives in well-established neighborhoods directly adjacent to Downtown. Downtown core residents may prefer an urban lifestyle, which allows them easy access to employers and services without the use of a private auto. The major freeway structures surrounding the Downtown area make the residents of
surrounding neighborhoods feel cut off from Downtown activity. Pedestrians and bicyclists find these barriers particularly difficult to cross.

3.2 DEFINITION OF LEVEL 1 ALTERNATIVES

The next step in the process was to take into consideration all of the information and discussion to-date and attempt to define, at a conceptual level, a number of alternatives for future study. To this end, the SOC met on October 6, 2000 and then again on October 11, 2000 to discuss and reach a consensus on the proposed Definition of Alternatives.

The various transportation elements discussed at the Charrette and the subsequent committee meetings and work sessions needed to be analyzed in a methodical manner. Individual concepts needed to be “packaged” into several alternatives so that a transportation system for Downtown could be analyzed. The following list indicates the concepts generated at the Charrette that were packaged into alternatives:

- To increase circulation within the Downtown:
  - East/West Shuttle: Candidate alignments include Houston Street, Commerce/Market Streets and Nueva Street
  - North/South Shuttle: Candidate alignments include Broadway/Alamo and Main Streets

- To provide amenities for bus patrons and relieve sidewalk congestion near bus stops:
  - Central Transfer Station in vicinity of St. Mary’s and Nueva intersection
  - Bus priority street or partial bus mall on Main/Soledad

- To increase connections across IH 37 and IH 10/IH 35
  - East/West Shuttle to include penetrations with associated pedestrian improvements at Houston, Crockett, Commerce and Durango streets

- To permit pedestrian access in an improved environment on San Pedro Creek
  - Hike/Bike path as a pedestrian access to the East/West shuttle using San Pedro Creek alignment

A number of concepts from the Charrette were not included in the alternatives. These were perceived as too expensive, currently under development, or the responsibility of specific agencies. These included:

- Depressing or total reconstruction of IH-37 along eastside of Downtown
  - large capital costs, no potential funding source
- Major changes to parking fee structure
  - potential negative impact on City parking revenue bond rating
- Removing bus routes from Downtown core
  - major negative impact to transit riders
- Riverwalk improvements
  - being pursued by City, County, and SARA
• Improved wayfinding
  – City has pedestrian wayfinding and dynamic traffic wayfinding program underway

The following section describes the packaging of the elements into proposed alternatives for further analysis:

### 3.2.1 Definitions of Technical Terms

**Light Rail or Equivalent Technology**
An at-grade transit system assumed to operate in exclusive right-of-way (or lane) whenever practical. Steel wheel/steel rail and rubber tired versions will be examined in each instance. Vehicles are assumed to be large with numerous double doors, low floor to speed up loading/unloading with a pre-paid fare system. Signal prioritization will be assumed to effectively achieve free flow condition. Stops/stations are assumed to be spaced at intervals of 1,000 to 1,500 feet. For initial analysis purposes, headways will be assumed to be five minutes throughout the day. Representative rolling stock would be standard low floor light rail vehicles for the steel wheel/steel rail technology and the Denver Sixteenth Street Mall Shuttle or the Bombardier Guided Light Transit for the rubber tired technology.

**Ellis Alley Transfer Center**
A facility recently developed by VIA immediately north of St. Paul Square that accommodates peripheral parking and bus transfers.

**Westside Transfer Center**
A facility to be developed at approximately Commerce and Buena Vista and the MoPac Railroad tracks; the facility would consist of the peripheral parking and bus transfer portions of the proposed Westside Multimodal terminal and developed in such a manner as to permit the future expansion of the facility to include commuter rail, Amtrak, etc.

### 3.2.2 East / West Alternatives for Level 1

**Alternative 1 - Houston Street East/West (E/W) Shuttle.**
This alternative would examine a light rail or equivalent technology utilizing Houston Street as the primary E/W alignment. The shuttle would be anchored on the west by the Westside Transfer Center and on the east by the Ellis Alley Transfer Center. Various subalignments will be investigated in the vicinity of the freeways and railroad tracks for the shuttle to transition between Houston Street and the anchor transfer centers.
Commerce, Market, St. Mary’s and Navarro would be retained as bus priority streets. The contraflow bus lanes on N. Navarro (St. Mary’s to Romana Plaza) and Alamo Plaza would also be retained. In addition, Main/Soledad would be developed as bus priority streets or as a transit mall. The bus volumes would be balanced between these six bus priority streets to minimize bus stop crowding and bus congestion, and to optimize coverage of Downtown.

**Alternative 2 - Commerce/Market East/West (E/W) Shuttle.**
This alternative would examine a light rail or equivalent technology utilizing Commerce and Market as the primary E/W alignment. The shuttle would be anchored on the west by the Westside Transfer Center and on the east by the Ellis Alley Transfer Center. Several subalignments will be considered.

Bus routes would be displaced from Commerce and Market to Travis and Nueva. Bus priority treatments and patron amenities would be developed on Travis and Nueva to accommodate the bus and patron traffic. St. Mary’s and Navarro would be retained as bus priority streets. The contraflow bus lanes on N. Navarro (St. Mary’s to Romana Plaza) and Alamo Plaza would also be retained.

**Alternative 3 - Nueva and Houston Two-Way Loop**
This alternative would examine a light rail or equivalent technology utilizing Houston and Nueva as the primary E/W alignment. The two-way loop would be anchored on the west by the Westside Transfer Center and on the east by the Ellis Alley Transfer Center. Various subalignments will be investigated in the vicinity of the freeways and railroad tracks for the loop to transition to the anchor transfer centers.

In addition to the Westside and Ellis Alley Transfer Centers, bus routes would be focused on a transfer center in the vicinity of St. Mary’s and Nueva. Commerce, Market, St. Mary’s and Navarro would be retained as bus priority streets.

**3.2.3 Selecting a “Dominant” East/West (E/W) Alternative**

Information would be developed on each of the three E/W Alternatives and an evaluation conducted. Utilizing an established set of evaluation criteria, the three alternatives would be compared and a “dominant” E/W alternative selected. This E/W alternative would then be used with several North/South (N/S) shuttles to test the viability of these additional shuttles. These various N/S alternatives will be analyzed as Alternatives 4 & 5, described below.

**3.2.4 North / South (N/S) Alternatives for Level 1**

**Alternative 4 - Alamo N/S Shuttle**
This alternative would examine a light rail or equivalent technology utilizing Broadway and Alamo as the N/S alignment. The shuttle would extend from Jones Ave on the north to St. Mary’s on the south and would interface with the dominant E/W shuttle.
Bus routes, transfer centers and bus priority treatments would be the same as for the
dominant E/W shuttle but with appropriate modifications (i.e. – the existing reserved lane
on Alamo Plaza may require modification).

**Alternative 5 - Main St. N/S Shuttle**
This alternative would examine a light rail or equivalent technology utilizing Main Street
as the N/S alignment. The shuttle would extend from Romana Plaza on the north to
Durango on the south and would interface with the dominant E/W shuttle.

Bus routes, transfer centers and bus priority treatments would be the same as for the
dominant E/W shuttle but with appropriate modifications (i.e. – if Alternative 1 were the
dominant E/W shuttle, then the proposed bus priority on Main/Soledad would need to be
modified to include the N/S shuttle).

### 3.2.5 Additional Characteristics Of The Level 1 Alternatives

In addition to the alternatives’ characteristics described above, the conceptual design of
each of the alternatives will include the following:

- Provision at the shuttle terminal points to eventually expand into regional system
  at some undefined future date (E/W shuttles or loops only)
- Provision for the light rail or equivalent to cross the freight railroad tracks on both
  the east and the west of Downtown (E/W shuttles or loops only)
- Potential for use of a river shuttle as an auxiliary distribution system
- Opportunities for incorporating bicycle access into all aspects of the system

### 3.2.6 Transportation System Management (TSM) Alternative for Level 1

The SOC had a lengthy discussion on the Transportation System Management (TSM)
Alternative discussed in Chapter 2. There was a consensus that improved passenger
information and communications (Intelligent Transportation System - ITS) would
definitely be a part of the TSM Alternative. The TSM Alternative would also include the
“bus portion” of the Westside Multimodal Center (similar to the Ellis Alley facility: a
transfer center with peripheral parking). Projects in the approved Transportation
Improvement Program would also be included.

Beyond these relatively obvious elements, the TSM Alternative would include the
relatively low cost elements from Alternatives 1 – 5 that appeared to perform well.

### 3.2.7 Technical Work Sessions to Further Define Level 1 Alternatives

As the analysis proceeded during the Spring of 2001, members of the SOC and consultant
team met in a number of work sessions to further define the alternatives. The following
topics were discussed:
3.2.8 Technical Work Session Results (Definition of Level 1 Alternatives)

The following are the results of the technical work sessions:

1. **Topic Session 1 - Definition of Light Rail**

Each of the five alternatives was conceived as having a “shuttle system” consisting of a “light rail or equivalent.” In actuality, “light rail” can take several different forms and the purpose of Topic Session 1 was to consider the range of light rail technology to select a definition of light rail for use in this project.

Initial expectations are that a moderate capacity light rail will suffice for Downtown shuttle service. The shuttle may, eventually, serve as the Downtown link in a high capacity regional system. This implies that the track must be capable of supporting high capacity light rail vehicles and the platforms must be able to accommodate trains of at least two vehicles (nominally 200’).

**Work Shop Decisions**

Vehicle
- Nominal 90’ length, 8’ width
- Low Floor (70%)
- Multiple double doors
- Air conditioned
- Historic look
- Bike Racks
- Moderate acceleration rates
- Top end speed of +/- 30 mph
- Double ended operator controls
- Ability to train (probably 2-car train maximum due to short block lengths)

Service
- 5 minute headway in each direction
- Extended Hours of Service
- Connect peripheral parking to Downtown core
Fares
- Assume pre-paid fare system

Power supply
- Overhead catenary

Guideway
- Exclusive lanes

2. **Topic Session 2 - Definition of Tram-on-Tire**

Several manufacturers are marketing or have in development rubber tired technologies that approximate the characteristics of moderate capacity light rail.

Powered by overhead trolley wires or hybrid diesel or natural gas/electric engines, these technologies generally avoid the engine revving noise associated with standard diesel buses. Articulated vehicles can be 60’ and double articulated vehicles approach 90’ in length. Guidance systems permit accurate alignment at platforms or in narrow rights-of-way. These vehicles are typically incapable of training.

**Work Shop Decisions**

**Vehicle**
- Nominal 60’ length (single articulation), 8’ width
- Low Floor (70%)
- Multiple double doors
- Air conditioned
- Historic look
- Bike Racks
- Moderate acceleration rates
- Top end speed of +/- 30 mph
- Single ended operator controls
- No ability to train

**Service**
- 5 minute headway in each direction
- Extended Hours of Service
- Connect peripheral parking to Downtown core

**Fares**
- Assume pre-paid fare system

**Power supply**
- Natural gas/electric hybrid engines

**Guideway**
- Exclusive lanes

3. **Topic Session 3 - Alternative #1 - Definition of Houston St. E/W Subalignments**

The shuttle in Alternative #1 is proposed to utilize Houston Street for the majority of the alignment. The curb-to-curb street width provides an adequate envelope for either light rail or tram-on-tire technology. However, several subalignments need to be considered to connect this portion of Houston Street to the Westside Transfer Center.
on the west and the Ellis Alley Transfer Center and Alamodome parking lots on the east, as follows.

**Work Shop Decisions**
The Work Session made the following decisions:

**Subalignments on the east end:**
- Penetrate IH 37 with an improved crossing at Houston St.
- Follow the “toe” of the embankment on the east side of IH 37
- Cross the re-aligned access road at approximately Center St.
- Center-running in Center St.
- Three options to be explored south of Hoefgen St.:
  - Follow Hoefgen to south of Sunset Station and then develop an elevated structure connecting to the west Alamodome Plaza, then south to the potential new parking structure in the southwest parking lot of the Alamodome
  - Follow Hoefgen to south of Sunset Station and then across the western portion of the bus station at-grade and then east on Montana to Cherry before curving south into the northeast parking lot of the Alamodome
  - Utilize the Amtrak sidings past Sunset Station, across the Montana Street railroad bridge and then utilize the Amtrak sidings and/or east plaza of the Alamodome to the potential new parking structure in the southwest parking lot of the Alamodome

**Subalignments on the west end:**
Against the south curb of Houston St. from Santa Rosa to IH 35, then South beneath the IH 35 structure to immediately north of Buena Vista St., then west behind the north curb of Buena Vista to the Westside Multimodal Center.
4. **Topic Session 4 - Site Visits**

Visits to all the sub-alignment areas were discussed and determined appropriate for accurate information collection. Members of the consultant team would explore and photograph various alignments.

5. **Topic Session 5 - Definition of Bus Priority Treatments on Main & Soledad Streets**

Three options were considered, as follows:
- Concurrent flow, semi-reserved (shared with right turning vehicles) bus lanes with widened and improved sidewalks (this option is similar in nature to existing St. Mary’s and Navarro Streets).
- Main Street as a bus and pedestrian mall with local auto access only; Flores and Soledad Streets would be a one-way pair for general traffic.
- Contraflow bus lanes on Main and Soledad with widened and improved sidewalks.

**Work Shop Decisions**
The concurrent flow, semi-reserved (shared with right turning vehicles) bus lanes with widened and improved sidewalks was selected as providing the majority of the benefits with few of the implementation or operational problems of the other options. The two-way, 10’ bike lane on Main St. will be included in this option. Some on-street parking will be retained (example: at Main Plaza).

6. **Topic Session 6 - Definition of Commerce & Market Shuttle**

Three options were considered, as follows:
- Shuttle in a concurrent flow lane in the right lane of both streets, displacing much of the current bus service to other streets.
- Shuttle in a concurrent flow in the left lane of both streets, requiring the shuttle vehicles to have doors on the left hand side of the vehicle.
- Shuttle in a contraflow lane in the left lane of both streets.

**Work Shop Decisions**
The shuttle in exclusive contraflow lanes on the left curb was selected. The existing semi-reserved concurrent flow bus lanes in the right lane would be preserved but with a relocation of bus service to reduce bus volumes to the 40 bus per hour level.
7. **Topic Session 7 - Definition of Bus Priority Treatments on Nueva & Travis Streets**

The only option considered was the semi-reserved bus lane in the right lane. Sidewalk and passenger amenities would be included but no significant sidewalk widenings have been proposed.

**Work Shop Decisions**
The semi-reserved bus lane in the right lane including occasional sidewalk improvements and passenger amenities was selected.

8. **Topic Session 8 - Definition of Nueva and Houston Streets 2-way Shuttle**

The options considered included center running and curb running shuttle options on Nueva.

The Houston St. portion of the 2-way loop would be generally the same as in Alternative 1. The Hemisfair portion of the alignment would follow the alignment selected in the Historic Streetcar Study (Old Goliad St. and on the north side of Durango).

**Work Shop Decisions**
The center running shuttle option was selected.

9. **Topic Session 9 - Definition of Alamo North/South Shuttle**

The options considered included center running and curb running shuttle options on Alamo and on Broadway.

**Work Shop Decisions**
The center running shuttle was selected for the majority of the alignment. A westside curb running section will be used in the vicinity of Alamo Plaza.

10. **Topic Session 10 - Definition of Main St. North/South Shuttle**

The same options considered for Commerce and Market were considered for Main and Soledad.

**Work Shop Decisions**
As with Commerce and Market, contraflow lanes were selected for the shuttle service.
11. Topic Session 11 - Shuttle stop locations & urban design treatments

Work Shop Decisions
The group agreed upon locations for the shuttle stops (see the Appendix) and a program of urban design treatments to be used throughout the alternatives.

3.3 RESULTS OF THE LEVEL 1 TECHNICAL ANALYSIS

The intermediate work products of the Level 1 analysis were presented to the SOC at the April 17 and May 4 meetings. The items presented and reviewed at these meetings were:

3.3.1 Initial Engineering Concepts and Capital Costs
The engineering concepts were developed at 1” equals 200’ and presented to the SOC. The size of these drawings prohibits their inclusion in this report. However, the electronic files are available in MicroStation format. These engineering concept drawings were used to develop initial capital cost estimates for each alternative.

3.3.2 Economic Impact Analysis
The Level 1 Economic Impact Analysis reviewed Downtown development patterns. In addition, the analysis relied upon experience from the local development and investment community to estimate the development impacts of the alternative transit investments. The results of the analysis are presented in the Appendix. A more refined economic impact report was produced in the Level 2 review. See Chapter 4.

3.3.3 Travel Demand Results
The travel demand estimates were developed for the three E/W alternatives and presented on maps. The maps are divided into local bus (radial routes, crosstown, feeder/circulator) and “premium” transit (express, limited, shuttle, and park and ride trips) categories. Thus, a loss in local bus trips and transit
trips can be measured against an assumed gain in premium trips. The results of this analysis are included in the Appendix.

Summary tables were also developed for the 1st round travel demand forecasts for the Downtown AA, and included: Regional trip summary, Regional boarding summary, Shuttle station boarding summary, Regional transfer summary, and Regional transit performance summary. These tables are contained in the Appendix.

3.3.4 Transit Operating Plans and Resource Requirements
Operating concepts were developed for transit service in response to each of the five shuttle alternatives. These concepts are shown in the Appendix.

The travel demand models also summarized the vehicle hours and vehicle miles of service for each alternative. These operating characteristics define the transit resources required to operate each alternative.

3.3.5 Traffic Analysis
Each of the three E/W shuttle alternatives potentially would require modifications to the Downtown street configuration. The traffic analysis used the SYNCHRO software to analyze the revised lane and intersection configurations.

3.3.6 Technology Assessment
The results of the earlier technology review and the study of Downtown circulation systems were used to develop a “menu” of technology traits. This menu displayed the key traits of a Downtown shuttle technology in a format conducive to a public discussion of the traits desired in a Downtown San Antonio shuttle.

Two examples were developed using the menu to illustrate the combination of traits that define two familiar transit technologies (the standard light rail vehicle and the vehicles used on the 16th Street Mall in Denver). The menu and the two examples are contained in the Appendix.
3.3.7 Visual Impact Analysis

In order to understand the potential visual impacts of various technologies on the Downtown, four photographs of typical street scenes in Downtown were electronically modified to illustrate potential applications of available technologies. The resulting photo montages illustrate the following locations with the installation of available technologies, as follows:

- Commerce Street with a contraflow light rail
- Nueva with a historic streetcar
- Dolorosa with a contraflow tram-on-tire system
- Houston Street with a historic streetcar

The original photos and the photo montages are included in the Appendix.

3.4 PUBLIC WORK SESSION - CHARRETTE #2

The public work session Charrette #2 was designed to obtain a broad base of representation of the stakeholder and interest groups of the Downtown area to participate in the screening of the Level 1 long list of alternatives down to a short list of alternatives. Key Downtown stakeholder groups targeted for recruiting were the following:

- Bus riders
- Business owners
- Property owners
- Public agencies (including the convention and visitors bureau)
- Neighborhood and resident associations
- Disabled persons
- Major employers
- Hospitality industry
- Community-based organizations

Emphasis was placed on recruiting “return” participants – individuals who had participated in the August 2000 Charrette. In addition, extra efforts went into recruiting a stronger representation from the business community.

As with the August 2000 Charrette #1, members of the SOC and consultant team members were assigned to groups to serve as technical resources and to provide their agency’s viewpoints (in the case of SOC members) and their experience gained in other urban areas (in the case of consultant team members).

3.4.1 Results Of The Level 1 Analysis and Evaluation Presentation (Charrette #2)

The results of the Level 1 analysis were presented to the May 12th 2001 (Charrette #2) public work session. The Appendix summarizes the performance of each of the three E/W shuttles in comparison to the TSM Alternative. This performance was described in terms of shuttle ridership (average weekday boardings), regional transit ridership (average weekday linked trips), traffic impact (intersections at level of service), capital costs (defined by a high & low initial estimate), transit resources (regionwide vehicle hours and vehicle miles) and other issues relevant to the evaluation.

The public work session was used to evaluate the alternatives. Although efforts were made to reach a consensus within and among the seven small work groups, consensus was not reached on many issues. The Appendix summarizes the work session results by small work group.
3.4.2 Evaluation of Alternative Alignments

Of the three alternative E/W shuttle systems (Alternatives 1 - 3) considered by the work session, four of the groups preferred Alternative 3; two groups preferred Alternative 2; and one group recommended a combination alternative utilizing Houston and Market. Recollections from participants in the May 12th work groups indicated that the attendees that preferred Alternative 3 were generally trying to utilize the shuttle as a development tool to encourage growth in under-utilized sections of the Downtown. In contrast, those who preferred Alternative 2 were envisioning a shuttle that served the existing Downtown core and reinforced movements between existing activity centers.

The work groups were concerned with the potential for increased traffic congestion in Alternative 2 due to the dedication of the left-hand lane of both Commerce and Market to the shuttle. Beyond the traffic concerns, the work groups expressed concerns about the safety of contraflow lanes on Commerce and Market.

Alternative 3 proposed to substantially reduce traffic on Houston in order to provide priority for the shuttle. The groups were concerned that discouraging auto traffic would negatively impact development prospects on Houston. The higher capital and operating costs in combination with the lower ridership for Alternative 3 relative to Alternative 2 were also concerns.

Several groups that selected Alternative 3 proposed variations to the alignment. “Cutting through” Hemisfair Park to reach Montana from the vicinity of the Federal Building was suggested, as was skirting Hemisfair Park to the south utilizing Durango. A Chestnut alignment was proposed in lieu of the east right-of-way of IH 37. Another group proposed using Houston and Travis as a one-way pair for the shuttle.

Thus, the work session had not reached a consensus on the preferred alignment. However, positive and negative attributes of each alternative were identified that were to prove useful in developing the next generation of alternatives (the Level 2 alternatives).

3.4.3 Evaluation of Technology Traits

The work session had definite preferences on many of the technology traits. Six groups out of seven preferred rubber tire over steel wheel/steel rail technology and on-board, low emission power systems to overhead cable power supply. Five groups preferred single units to trains consisting of multiple units, with another group recommending limiting shuttles to two-unit trains, and the seventh group not making a recommendation. All seven groups thought that the shuttle did not need to be designed to reach speeds above a local service speed (30 mph).

Other preferences for the shuttle technology traits were not as clear.
3.5 SYNTHESES OF THE LEVEL 1 EVALUATION & THE PROPOSED LEVEL 2 ALTERNATIVES

Over the following several months, the SOC synthesized the results of the public work session Charrette #2 and developed a series of alternatives for analysis and evaluation in Level 2. The SOC synthesis process began with a review of the project objectives. The group eventually concluded that the project seeks to meet a number of objectives, some of which are competing for the same resources. These objectives are as follows:

1. Increasing east/west circulation
2. Relieve sidewalk congestion at major bus stops
3. Relieve vehicle congestion on streets with numerous transit routes
4. Encourage economic development in under-developed portions of the Downtown,
5. Improve service for mainline bus riders and traffic conditions for auto drivers (or at least do not cause degradation for either while accomplishing objectives 1–3 above).

There was also discussion of the importance of freight loading zones in the Downtown. However, it was concluded that efforts to increase the availability of freight loading areas was not the focus of this study.

The topic of modifying the mainline bus routes was judged to be extremely complex and detailed in nature, and thus this topic was dealt with only in a summary fashion at the public work session. Therefore, there was little feedback on this topic from the work session.

However, the study needed to deal with modifying the mainline bus routes in the Downtown in order to achieve objectives 2 and 3 described above. Several alternative bus routing schemes were investigated in the previous analysis. Both of the schemes previously discussed appear to have potential for relieving sidewalk and street congestion.
The preliminary analysis indicated that neither scheme would likely have major negative impacts on systemwide ridership or VIA operating costs. Study team members were to continue to review the travel demand results to-date and analyze available Origin-Destination Survey data to determine the performance of the several schemes. In addition, the consultant was discussing with VIA and VIA’s Comprehensive Service Assessment (CSA) Consultant possible bus route alternatives for further analysis. In addition, the consultant was discussing possible additional bus priority treatments in the Downtown with the City Traffic Department. The MPO was also involved in these discussions.

3.6 PRELIMINARY LEVEL 2 ALTERNATIVES

3.6.1 Bus Routing Scheme

This baseline (TSM) bus routing scheme and facilities would be common to all alternatives to be considered. The mainline bus routes could potentially utilize Downtown peripheral streets (Frio, Durango, Martin, Pecan, Bowie and Nueva) to align bus service on Commerce and Market for E/W service and Main/Soledad for N/S service. Additional bus priority treatments on these four streets would be considered to offset increases in bus travel time to align on these four streets. This routing scheme would eliminate (or at least minimize) bus-turning movements in the core of the Downtown. A skip-stop operation for the buses with bus passing lanes would permit locating bus stops at locations with sufficient room (including dedicated property behind the sidewalk) to accommodate the anticipated number of waiting passengers. This bus routing scheme would become the baseline alternative for comparison with the other alternatives, a requirement by the Federal Transit Administration for major capital transit improvements.

- This baseline (TSM) alternative will include bus priority lanes as appropriate, improved passenger waiting areas (shelters, seating, information, etc.), strengthened pavement at bus stops, and upgraded crosswalks at intersections.
- As in all of the alternatives considered to-date, the baseline (TSM) alternative would include a transfer facility in the vicinity of Frio, Commerce, Medina and Buena Vista

3.6.2 Shuttle Alternatives

The SOC concluded that a single set of technology traits, four shuttle alternatives and one bus scheme should be analyzed in Level 2. The SOC proposed the following for further study in Level 2:

Technology Traits
- Moderate sized vehicles (less intrusive)
- On-board no/low emission power (no overhead wire)
- Rubber tired system (avoid construction disruption and high capital costs)
- Cruising Speed of 30 mph
- No training of vehicles (respond to demand for increased capacity through shorter headways)
- Historic versus Modern “Look” still to be determined

### 3.6.3 Alternative Shuttle Alignments

1. **Alternative 2a** (see the Appendix)
   - With the shuttle utilizing rubber tired, self-propelled vehicles, the shuttle can be integrated into the existing bus priority lanes on Commerce and Market (separate stops, skip-stop operation) and thus would not require a separate reserved lane (neither contraflow nor concurrent flow) and should respond well to concerns about traffic impacts of Level 1’s Alternative 2.

2. **Alternative 2b** (see the Appendix)
   - Combine Level 1’s Alternative 4 with Level 2’s Alternative 2a to create Alternative 2b.
   - Alternative 2b will include shuttle service to areas with potential for development activity, thus overcoming one of the shortcomings noted for Level 1’s Alternative 2.
   - If the bus scheme calls for bus priority lanes on Main and Soledad, then the shuttle would operate in the bus priority lanes and would not require separate reserved lanes.

3. **Alternative 2c** (see the Appendix)
   - Combine Level 1’s Alternative 5 with Level 2’s Alternative 2a to create Alternative 2c.
   - Alternative 2c will include shuttle service to areas with potential for development activity, thus overcoming one of the shortcomings noted for Alternative 2.
   - As none of the bus schemes being considered call for bus priority lanes on Alamo or Broadway (other than the
existing contraflow streetcar lane on Alamo Plaza), then the shuttle would require
new bus priority lanes on these two streets. However, these lanes would be
shared by buses, the shuttle and right-turning vehicles (rather than being reserved
exclusively for the shuttle).

4. Alternative 3 (see the Appendix)
   - Consider cutting through Hemisfair from the Federal Building to
   Montana to north end of Alamodome rather than using Durango to the
   south end of the Alamodome
   - With the shuttle utilizing rubber tired, self-propelled vehicles, traffic
   restrictions on Houston can be less severe
   - Without track and overhead wire, capital costs would be greatly reduced
   - Phase in service (i.e. – implement Houston portion first with Nueva portion to
     follow at appropriate time) to reduce operating costs
   - With the shuttle utilizing rubber tired, self-propelled vehicles, buses can operate
   in the shuttle lanes on Nueva, thus offering increased options to the planning for
   mainline buses

5. Other Facilities
   - The analysis will continue to assume that a bicycle facility will be developed on
   Main Street.
   - All alternatives will continue to include a hike and bike facility in San Pedro
   Creek.
   - All alternatives will continue to include improvements to IH 37 ramps at
   Commerce.

3.7 BRIEFINGS WITH PUBLIC AGENCIES AND PRIVATE GROUPS

During the Level 1 analysis and evaluation, the public involvement effort consisted
almost entirely of the May 12th 2001 Charrette #2 public work session. However, the
SOC members and consultant team members briefed public agencies as the results of the
evaluation became available. The following table documents these briefings:

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<thead>
<tr>
<th>AGENCY</th>
<th>DATE</th>
<th>TOPIC</th>
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<tr>
<td>Downtown Advisory Board</td>
<td>May 8, 2001</td>
<td>Level 1 Alternatives &amp; Evaluation Process</td>
</tr>
<tr>
<td>MPO Steering Committee</td>
<td>May 21, 2001</td>
<td>Results of Level 1 Evaluation &amp; Definition of Level 2 Alternatives</td>
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<tr>
<td>VIA Board of Directors</td>
<td>May 22, 2001</td>
<td>Results of Level 1 Evaluation &amp; Definition of Level 2 Alternatives</td>
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The Appendix contains the slide shows presented at these briefings.
CHAPTER 4
ANALYSIS & EVALUATION OF
LEVEL 2 ALTERNATIVES

4.1 THE PROCESS TO DEFINE LEVEL 2 ALTERNATIVES

During June 2001, the SOC and consultant team continued to further define the bus operating plan and alternative shuttle systems to be analyzed and evaluated during Level 2. The input gained from the May 12th Charrette #2 public work session was combined with technical input to develop the technical information required for a formal evaluation. In the process, the four alternatives described in Chapter 3 evolved into a different, although similar, set of alternatives.

4.2 BUS SERVICE CONCEPT (included in all Level 2 Alternatives)

The consultant team, VIA, the MPO, VIA’s Comprehensive Service Plan (CSP) consultant worked to synthesize the best thinking from both of the on-going studies into a Baseline Bus Service Concept. Although the CSP was not completed at that time, an “interim” bus network was conceived. This “interim” bus alternative for the Downtown included the following elements:

- A north/south bus axis on Main/Soledad
- An east/west bus axis on Market/Commerce
- Limited bus turns within the core of the Downtown

In keeping with the latest FTA regulations, this bus operating plan and related improvements was developed to be the Baseline alternative (previously known as the TSM alternative) and as the “background” bus system for use in evaluating all shuttle alternatives. The formal submittal of this Baseline Alternative is included in the Appendix. The SOC generally accepted this synthesis and then refined/amplified/modified the concept, as follows:

- **Maintain Market/Commerce (including Dolorosa and Buena Vista) as dominant east/west bus streets.** The discontinuous nature of many Downtown streets leaves the Commerce/Market as the only viable east/west transit axis through the Downtown core. Although auto and bus congestion are at undesirable levels and sidewalk crowding at key bus stops also exceeds desirable levels, the SOC saw no alternative but to improve transit service within this existing alignment. Therefore, an operating plan was developed that would minimize bus turning movements between Santa Rosa and Alamo/Bowie to improve both bus and auto traffic flow. This operating plan would minimize bus volumes on this east/west axis by diverting buses to a north/south axis whenever practical (described in later paragraphs). Even so, a bus operating plan requiring 60 busses
per peak hour per direction is a distinct probability and Commerce/Market needs to be able to accommodate bus volumes in this range so as to not “box in” the Comprehensive Service Planning (CSP) and limit VIA’s future operating scenarios.

- **Relocate the primary north/south bus street pair from St. Mary’s/Navarro to Main/Soledad.** St. Mary’s and Navarro are unable to carry the high volumes of buses without an undesirable level of congestion for buses and autos. Likewise, the sidewalks are congested with waiting passengers. Improvements needed to make these streets functional for transit operations would exceed available right-of-way. Fortunately, a viable alternative alignment exists in the Main/Soledad pair of streets. The Main/Soledad alignment would maintain a primary north/south bus access at the western edge of the Downtown core and in close proximity to the government center, a major transit destination. This location would also provide some separation of transit passengers from the major tourist destinations to relieve some sidewalk congestion. Capital investments could be made to enhance these streets as pedestrian- and transit-oriented streets, including addition of contraflow bus lanes (concurrent flow bus lanes are not precluded as a viable solution). Overall, this shifting of the north/south transit axis to Main/Soledad offers the opportunity to upgrade transit service in the Downtown and improve the Downtown pedestrian environment.

Buses using the north/south bus streets would operate on the Main/Soledad alignment between the Martin/Pecan east/west pair and Nueva with many routes providing continuous service between Romano Plaza and Durango. With peak hour bus volumes as high as 60 buses per hour probable, the Main/Soledad street pair would become the dominant bus street in Downtown San Antonio.
4.2.1 Transit Operational Concepts

The CSP will identify restructured bus services throughout the VIA system. The concepts included in the CSP include realignment and consolidation of routes. If these concepts are adopted by the VIA Board of Trustees (after extensive public review), fewer bus routes could operate more frequent services through Downtown, reducing passenger wait times and, consequently, passenger congestion on Downtown sidewalks. Improvements on Main/Soledad and Market/Commerce would be made to enhance this type of operation.

Bus stops would be combined into consolidated bus stops to allow buses to make fewer stops within Downtown, reducing bus congestion on the streets and passenger congestion on sidewalks. Buses would operate in an “A” and “B” skip-stop pattern. Buses would be allocated between the two berths based on destination.

In many instances, passing lanes or pullouts can be placed where existing turn lanes or on-street parking is provided in wider street rights-of-way.

Subsequent work sessions with the traffic engineering and transit operations members of the team both refined and modified the traffic/transit interfaces to be analyzed and evaluated, as follows:

**Commerce/Market Traffic/Transit Interfaces**
- Concurrent flow lane exclusively reserved for transit (compared to the existing sharing with right turning vehicles)
- Right turns prohibited for general traffic at intersections between (but not including) the following:
  - Market between Santa Rosa and Alamo
  - Commerce between Santa Rosa and Bowie
- In lieu of bus passing lanes or pullouts at bus stops, provide a leading green signal phase at the upstream intersection to provide buses with a five to ten second “head start” compared to adjacent traffic and therefore permit passing a loading bus at the next station/stop.
- Distinguish the exclusive lane with distinctive markings (different color paver)

**Main/Soledad Traffic/Transit Interfaces**
- Investigate modifying Romana Plaza and continuing the one-way street operation to the IH 35 access roads; establish Romana Plaza as a gateway into Downtown and make Romana Plaza more pedestrian friendly
- Contraflow bus operations from Romana Plaza (or possibly IH 35) on the north to Old Guilbeau on the south
- To permit bus passing:
  - Develop passing lanes where practical
  - Other locations, develop pullouts in to-be-obtained property
  - Develop “knuckles” at intersections to maintain sidewalk alignment with neighboring blocks and reinforce desirable view corridors
- Distinguish the contraflow lane with distinctive colors
Houston Traffic/Transit Interfaces
- Utilize existing facilities
- Develop distinctive markings to be extended throughout Houston/Nueva Loop

Nueva Traffic/Transit Interfaces
- Re-align as practical to straighten street
- Develop distinctive markings to be extended throughout Houston/Nueva Loop

St. Mary’s/Navarro Traffic/Transit Interfaces
- Utilize the existing semi-exclusive lanes for streetcars and shuttle services

To the extent practical, bus stops would be located where existing building setbacks or under-utilized parcels (to be acquired) so that sufficient space would be available to accommodate larger, enhanced bus stations/stops. In some instances, the passenger waiting area and facilities may be incorporated into existing or proposed buildings.

A Downtown fare structure would be established so that transit trips beginning and ending within the Downtown would have fares comparable to the shuttles and streetcars. This will permit the two transit axes to serve as effective east/west and north/south circulation systems through the Downtown.

Bus staging areas may be provided to eliminate bunching of buses. A specialized signal system would allow buses to travel in pairs or platoons to each stop, holding surplus buses until the next signal sequence. This would create a more even flow of buses through the Downtown alignments.
The concept of “no bus turning movements” in the Downtown core relies heavily on buses utilizing Downtown peripheral streets to efficiently “line up” on the major north/south and east/west axes for their trips through the Downtown core. The following street improvements are critical to these peripheral bus movements and will be considered as integral portions of the Baseline Alternative:

- The Inner Loop in the vicinity of Martin/Pecan/Third/Bowie
- Dwyer in the vicinity of Old Guilbeau and Durango
- Romana Plaza

Main/Soledad, Commerce/Market and streets carrying the several shuttle options would include design treatments, such as bus pads in the street at bus stops, and sidewalk pavers at bus stops and in crosswalks. Downtown employees, visitors, and regular transit passengers should be able to identify both bus axes as the major transit streets and understand that every bus will serve the entire length of the respective Downtown alignment. Thus, these alignments could effectively serve Downtown mobility in both east/west and north/south directions with very frequent and consistent services.

A transfer center of some type will be assumed at approximately Commerce/Market and Frio, and at Ellis Alley. Peripheral parking lots will also be assumed at these locations.
4.2.2 Baseline Improvements on Market/Commerce

Improvements would be required on Market/Commerce to implement the bus service concept. The high volume of traffic on the east/west bus axis, along with the limited right-of-way, has led to a concept that would minimize major physical capital improvements, emphasizing instead operational enhancements.

The existing semi-reserved bus lanes would become dedicated bus lanes. Right turns into driveways would be permitted across the dedicated bus lane. Revised pavement markings would indicate where auto entry would be permitted and clearly delineate where auto traffic is prohibited. At intersections, right-turning autos would turn from the general purpose lane (the second lane from the right hand curb), while buses in the curbside bus lane would receive a separate signal phase (although this exclusive lane concept was not agreed to by all members of the SOC. The SOC agreed with studying this proposal).

4.3 BICYCLE AND RELATED FACILITIES

Pedestrian and bicycle improvements, landscaping, and other amenities on San Pedro Creek are included in the Baseline Alternative. The San Pedro Creek bicycle/pedestrian path was assumed to replace a previously discussed bicycle facility on Main Street. In addition, relocating the bus routes from St. Mary’s/Navarro to Main/Soledad substantially reduced the number of buses operating on St. Mary’s/Navarro and would therefore permit bicycles to utilize the diamond lanes on these two streets.

4.4 FURTHER DEFINITION OF THE SHUTTLE CONCEPTS FOR LEVEL 2

4.4.1 Implications for Shuttle Technology Traits on Future Regional Transit System

- A key issue considered by the SOC was the implications for the shuttle technology selection on potential future regional transit systems. At the May 16th meeting, the SOC summarized the input on preferred traits of the shuttle from the May 12th public work session and reached a consensus on the technology traits for the shuttle.

However, the SOC was concerned that although the combination of these traits would result in a system capable of meeting the passenger volume demands of a Downtown shuttle (travel demand estimates made during April 2000 indicated a maximum of 11,000 passengers per day for the alternatives tested), such a system would potentially be incapable of serving as the Downtown portion of a regional system.

The SOC concluded that the shuttle should generally be viewed as a Downtown shuttle and not necessarily as a “starter line” for a regional system. One of the criteria to be used in the evaluation of the several shuttle options was the compatibility of a shuttle alternative with potential future regional systems. Therefore, “blocking” a future
regional system alignment is not helpful; interfacing effectively with a potential regional high capacity transit (HCT) alignment is helpful. Based on that conclusion, the Commerce/Market shuttle alternative was dropped from further consideration as possibly blocking the development of a Commerce/Market HCT spine. Conversely, neither Houston nor Nueva is likely to be a HCT corridor through the Downtown and thus will rate higher for this evaluation criteria.

4.4.2 Alternative Shuttle Alignments for Level 2

The SOC discussed alternative shuttle alignments in light of the decisions on the bus operating plan in the Baseline Alternative and the shuttle technologies. All shuttle alignments assumed the Baseline bus system and related improvements are to be in place as a “background” bus system.

1. Commerce/Market Shuttle Alignment

With the strengthening of the Commerce/Market bus service axis and the proposed introduction of “Downtown only” fare comparable to the shuttle and streetcars, the SOC no longer saw a need to consider a shuttle on the Commerce/Market alignment. Therefore, the Commerce/Market alignment was dropped from further consideration as a shuttle alignment.

2. Alternative A -- Houston/Nueva Shuttle (see the Appendix)

The 2-way loop (referred to in Level 1 of the study as Alternative 3) was to be analyzed and evaluated. The entire loop was assumed to be developed as a single phase with the headways to be established by route segment based on ridership estimates from the earlier analysis (i.e. – frequent service on the Houston portion, less frequent service on the Nueva portion). The technology traits to be tested will be as described earlier. Stations will be similar to the stops on the major bus service axes. This shuttle loop would provide circulation around the Downtown core and encourage development in the periphery of the core. As in the earlier analysis, peripheral parking would be available at several locations.
3. **Alternative B – Houston/Nueva Shuttle with “Shortcut” through Hemisfair Park (see the Appendix).** The same Houston and Nueva Street alignment as Alternative A would be considered with the exception of a “short cut” from the vicinity of the clock tower in Hemisfair Park north and east to Market Street in the vicinity of the SAWS building. The exact alignment will be developed after consulting the Hemisfair Park & Convention Center Expansion Plans. The shuttle would then follow Market Street beneath IH 37 before transitioning to Hoefgen Street immediately north of VIA’s Transit Plaza at the Alamodome.

4. **Alternative C – Houston/ Nueva Shuttle plus St. Mary’s/Navarro Shuttle (see the Appendix).** This alternative adds a north/south shuttle to Alternative A. The existing diamond lanes, shelters, etc. on St. Mary’s and Navarro would be converted from bus use to shuttle use (the buses would move to Main/Soledad). Streetcar service may also operate on St. Mary’s/Navarro. This would add north/south circulation in the Downtown core to the east/west circulation provided by the Houston/Nueva portion of the alignment and would supplement the circulation provided by the bus axes.

5. **Previously Proposed North/South shuttles.**

Previously proposed north/south shuttles were dropped from consideration by the SOC based on further discussions.
The SOC results were presented to the MPO Steering Committee on Monday, June 18th and to the VIA Board on June 26th, 2001. Work continued on the details of the proposed bus priority treatments (exclusive lanes, passing lanes, separate signal phases) and on the locations for the bus and shuttle stops, including the Alternative B alignment through Hemisfair Park and on to Sunset Station.

4.5 TRAVEL DEMAND & TRAFFIC ANALYSIS

4.5.1 Travel Demand Analysis

The regional travel demand models were run for the Baseline and three shuttle alternatives. The results are shown in table form in the Appendix. In addition, the regional travel demand models were used to generate the traffic assignments used as input to the traffic analysis.

4.5.2 Traffic Analysis

Many of the proposed bus priority improvements were controversial and a full understanding of the potential impacts on traffic and local access was required. A review of information available on the Internet was undertaken to assess the current state-of-the-practice in providing priority treatments for transit. The results of this review are contained in the Appendix. More importantly, a traffic analysis was undertaken that consisted of a series of SYNCHRO runs to analyze four conditions, as follows:

- Existing 2000 Traffic Model – the May 2000 traffic counts and street network
- 2025 No Build Traffic Model - projected traffic volumes for 2025 were assigned to the May 2000 street network
- 2025 Baseline Traffic Model – projected traffic volumes for 2025 were assigned to the street network as defined by the Baseline Alternative
- 2025 Traffic Shuttle Alternative - projected traffic volumes for 2025 were assigned to the street network as defined by the Baseline Alternative plus changes required by the shuttle alternatives

All four SYNCHRO files model the PM peak period only.
Existing 2000 Traffic Model

- **Traffic Volumes.** The traffic volumes in this model came from traffic data that was collected as part of this study in May 2000, as well as 1999 data provided by the City for several intersections. Truck percentages and pedestrian counts were estimated for the intersections for which the City provided traffic data.

- **Signal Timing.** The model includes existing signal timing provided by the City. Cycle lengths, offsets, phasing and splits were provided. These timings were not optimized in order to model existing conditions.

- **Intersection Geometry.** A field visit was made to each of the intersections in the model to verify the number of lanes and lane use.

2025 No Build Traffic Model

- **Traffic Volumes.** The 2025 No Build model factored projected traffic volume data taken from the Tranplan model for no build conditions.

- **Signal Timing.** The signal timing was optimized throughout the Downtown.

2025 Baseline Traffic Model

- **Alternative.** The 2025 Baseline model includes the contraflow bus lanes on Main and Soledad as well as the queue jumps for the exclusive bus lanes on Commerce and Market. This model does not permit passenger vehicles to make right turns from the exclusive bus lane, and therefore right turns are prohibited on Commerce and Market where there are exclusive bus lanes.

- **Traffic Volumes.** The traffic volumes in this model differ from the traffic volumes in the no build model because a different Tranplan model was used to develop the volumes. The Tranplan model included the right-turn prohibitions on Commerce and Market, and therefore redistributed traffic through the Downtown. The traffic volumes were developed in the same manner as the 2025 no build volumes.

- **Signal Timing.** The cycle length, splits, and offsets were optimized.

2025 Traffic Model with Shuttle Alternatives

- **Alternative.** This alternative includes the same contraflow on Main / Soledad and the queue jumps on Commerce / Market as the 2025 Baseline model. It also includes a shuttle route on the west side, just east of Pecos, under the freeway.

- **Traffic Volumes.** The traffic volumes in the 2025 Shuttle model are the same volumes used in the 2025 Baseline model.

- **Signal Timing.** The cycle length, splits, and offsets were optimized.

4.6 COMPARISON OF TRAFFIC VOLUMES / LEVEL OF SERVICE (LOS)

4.6.1 Existing vs. 2025 No Build

The 2025 No Build traffic network has seven intersections with improved conditions and three with deteriorated conditions relative to the ‘existing’ traffic network. Many of these changes in intersection level of service appear to be due to “lumpy” traffic assignments.
from the regional Tranplan model and should not be cause for great concern or celebration.

The following intersections had 2 levels of service jumps or were at a poor LOS.

**Elmira & San Pedro**
The intersection is at Level of Service (LOS) C in the Existing model and goes to LOS A under 2025 No Build. The reason the LOS improves is because there are fewer southbound through movements opposing the permitted northbound left turn of over 300 vph. The reason the southbound through dropped was because the Tranplan model showed lower than existing volumes on Main, then in balancing, the southbound through at Elmira ended up smaller than the existing. This could be because the Tranplan model is based on a 1995 model and the 1995 counts could have been low when compared with actual 2000 counts.

**Commerce & Frio**
The existing traffic is at LOS D and the 2025 No Build is at LOS B. The traffic volumes in the 2025 No Build – from Tranplan – seem to have shifted from a heavier northbound to a heavier southbound. With that, there are fewer northbound left turns opposed by through traffic. The existing timing is not optimized for the intersection. The level of service for the Existing model can be improved to LOS C by adjusting the splits.

**Houston & Pecos**
The intersection is at LOS E in the Existing model and at LOS B in the 2025 No Build. The existing traffic volumes are somewhat higher in the 2025 No Build. The existing intersection could improve to LOS B if the signal timing splits were optimized.

**Durango & Santa Rosa**
The intersection is at LOS E for the Existing model and at LOS D in the 2025 No Build. Durango volumes generally increase but Santa Rosa decreases some. The existing LOS would be at LOS D if the splits were optimized.

**Navarro & Durango**
The intersection is at LOS E in the Existing model and goes to LOS D in the 2025 No Build. Traffic volumes increase some northbound and eastbound and were about the same southbound and westbound. Optimizing the existing timing would bring the intersection to LOS D.

**Losoya & Commerce**
The intersection is at LOS E in the Existing model and goes to LOS D in the 2025 No Build. The existing LOS could improve to LOS C if the splits were optimized.
**Houston & Bowie**
The intersection is at LOS F in the Existing model and goes to LOS C in the 2025 No Build. The intersection could go to LOS E in existing if the splits were optimized. The traffic volumes don’t change drastically between Existing and 2025 No Build. The eastbound and westbound are somewhat higher in 2025 No Build and the northbound is somewhat lower. The existing timing shows northbound and southbound left turns as split, but the turn volume is fairly low. The northbound lefts are 67 and the southbound lefts are 21. Split phasing takes time away from the cycle and drops the LOS. If those turn phases were permitted, then the existing intersection could operate at LOS B. The phasing was not changed in the 2025 No Build because the information was provided by the City, and there may be a reason for the split phase.

**Broadway & Jones**
The intersection is at LOS A in the Existing model and goes to LOS D in the 2025 No Build. Broadway volumes drop but the northbound Jones traffic increases significantly in the 2025 No Build. This is due to the Tranplan model.

**McCullough & Alamo**
The intersection is at LOS C in the Existing model and at LOS F in the 2025 No Build. The volumes increase especially on the south-eastbound approach, and these changes are due to the projections using the Tranplan model. Also, there is one lane shown on each approach, which doesn’t allow much room in level of service analyses.

**Durango & Pecos**
This intersection was at LOS B in the Existing model and goes to LOS D in the 2025 No Build. The southbound through movement increased dramatically due to the Tranplan model.

### 4.6.2 2025 No Build vs. Baseline
The Baseline model used a different Tranplan assignment to develop future volumes. This second Tranplan assignment was created because of the right turn prohibitions on Commerce and Market. This caused a redistribution of traffic throughout the Downtown and thus changes in individual intersections.

Generally, there are two areas of the Downtown that are projected to have capacity problems in 2025 under the Baseline Alternative. One area is the Durango corridor, which will have 5 intersections at LOS D or worse. Another area is Broadway, north of Martin. This corridor will have 3 intersections at LOS D or worse.

The Main / Soledad corridors and the Market / Commerce corridors are expected to operate well with the contraflow on Main / Soledad and the queue jumps on Market / Commerce. There are a few intersections along Market / Commerce where level of service will decrease due to queue jumps. The worst intersections are Commerce &
Flores, due to a high northbound left-turn volume, and Market & Flores due to a high southbound left-turn volume.

4.6.3 Baseline vs. Shuttle
The traffic volumes and street signal configurations were the same for the traffic alternative with the shuttle alternatives as were used in the Baseline traffic alternative. Therefore, the results of the traffic analysis were the same.

4.6.4 Traffic Analysis – Animation
The input to the SYNCHRO analysis were converted to inputs for the VISSIM model in order to develop animations illustrating key aspects of the proposed bus priority treatments and resulting impacts on traffic flow.

The animations made very obvious the fact that Downtown traffic is relatively light. This lack of congestion makes both the benefits and negative impacts of bus priority improvements marginal.

These animations are available on Compact Disc in the Appendix.

4.7 ECONOMIC DEVELOPMENT ANALYSIS OF LEVEL 2 ALTERNATIVES

The economic development analysis assessed the potential impact of the bus and shuttle projects on Downtown San Antonio development potential and economic vitality.

The following projects were assessed:

- Proposed baseline Downtown bus service reconfiguration and related improvements; and
- Proposed Downtown shuttle service: Alternatives A, B and C.

Within the limits of available time and resources, the analysis conducted additional supporting research in the following subject areas:

- Peer City Comparisons – compare the current San Antonio analysis with evidence of bus transit-induced development in other cities; and
- Prepare prototypical San Antonio development impact estimates based on hedonic prices calculated for other cities and San Antonio market conditions.

4.7.1 Downtown San Antonio

A land use and economic summary of Downtown San Antonio was prepared, based upon from existing documents and studies from Bexar County, the City of San Antonio, local transit and planning agencies, the Downtown Alliance, and other organizations.
4.7.2 Bus and Shuttle Stop Analysis Zones

Brief descriptions of thirteen (13) bus and shuttle stop analysis zones (areas forming a 3-block radius on average around bus and shuttle stops) were prepared.

4.7.3 Review Potential Contributing Success Factors

In general, any impact on Downtown development resulting from proposed bus and shuttle projects will occur by virtue of:

- Increased pedestrian activity at stop locations; and
- Shuttle/bus stop design characteristics and amenity values.

4.7.4 Evaluate Project Alternatives

Each of the proposed projects was assessed on the basis of induced development potential in each of the 13 analysis zones and for each project as a whole. The evaluations were based on professional estimates of new and/or altered development potential in each zone, considering existing and future baseline conditions, project characteristics, and City goals, plans, and policies.

4.7.5 Conclusion

The economic development report is included in its entirety in the Appendix. The conclusions of this report are as follows:

Investment in transit facilities in urban areas can, and often does, stimulate commercial and higher-density residential development due to increased access to employment and entertainment centers, resource savings (time and cost), and creation of pedestrian-friendly environments. The assessment analysis indeed reveals that some areas of Downtown San Antonio would be very supportive of transit-influenced economic development. In fact, for areas such as those east of Flores and north of Travis, increased transit services, together with the available land and the River Walk expansion project, grant this area a high potential for commercial and residential development. Similarly, an increase in transit service to the areas south of Nueva and between Soledad and Presa would make that park-like setting an attractive area for a Downtown residential market.

Alternatively, the impact assessment shows that while increasing transit service to other areas such as the Santa Rosa Hospital and the Government offices west of Main might increase ridership and access to those employment centers, it would be unlikely to have a significant impact on economic development there.

In conclusion, the analysis reveals that Alternative C is the preferred shuttle alternative from the perspective of economic development impact, followed by Alternative A and then by Alternative B. Alternative C would provide transit service to areas not served at
this time; Alternative A, while providing incremental service to some areas on Nueva and
to the east side of the Alamodome, would have limited impact in the rest of the region.

Also based on the analysis, the Baseline Bus Alternative receives a “Medium Low” rating
for economic development impact potential for its east-west axis, and a “Medium High”
rating for its north-south axis. Implementation of this alternative would be highly likely
to stimulate growth along Main Avenue, in particular along the northern section and the
southern section of the avenue. However, the relocation of service away from St. Mary's
and Navarro, without offsetting increases from elsewhere, could dampen future
residential and commercial development in that area and eventually isolate the
northeastern sector of the Downtown.

4.8 URBAN DESIGN ASSESSMENT FOR LEVEL 2 ALTERNATIVES

A number of architectural/urban design studies were undertaken to gain an understanding
of the potential impact of the proposed projects on the built environment. The studies
developed plan views and perspective drawings (see the Appendix) of sensitive
stations/stop locations and the contraflow termini for the Main and Soledad contraflow
operations. The study team also explored potential concepts for developing San Pedro
Creek as a hike and bike trail.

In general, the studies concluded that properly planned and designed transit facilities
could be integrated into the urban fabric of Downtown. In addition, the potential for
developing plazas and “pocket parks” was considered a benefit. Developing the
contraflow facilities also offered the opportunity to upgrade sections of deteriorated
sidewalks and streets, as well as providing opportunities for landscape and hardscape
improvements.

The San Pedro Creek hike and bike concepts were also judged to be supportive of the
Downtown goals of increasing pedestrian/bicycle access and greenspace.

4.9 POTENTIAL FUNDING SOURCES FOR LEVEL 2 ALTERNATIVES

4.9.1 Local

The City of San Antonio, Bexar County and VIA are all potential sources of funding for
transportation improvements in the Downtown. The City and County are the most likely
sources for street, landscaping, pedestrian and bicycle improvements. The sale of bonds
(to be retired through general revenue) has traditionally been the major source of funding
for City and County improvements. However, there was some discussion during the
study of potentially using the hotel/motel and car rental tax as a potential source of
revenue in the future. At present, this tax is dedicated to funding the newly constructed
SBC Arena but could, upon completing that project, be used to fund Downtown projects.
Voter approval of extending and modifying the use of this tax source would be required.
VIA is the most likely candidate and funding source for transit improvements. VIA has traditionally paid for capital improvement projects using reserve funds in combination with FTA funds. Besides paying for “pure” transit improvements, transit-related improvements in the immediate vicinity of transit facilities (i.e. – landscaping near major bus stops) could also be developed using transit funds, particularly if done in conjunction with City or County sponsored comprehensive improvements. However, VIA’s recent budget constraints will make using transit funds a challenge.

The private sector has also played a role in funding public improvements in the Downtown. In the 1980’s, the Downtown property owners created an assessment district for the specific purpose of creating a funding source for capital improvements. The creation of this district and the resulting funding commitment of approximately $7M was key to securing City, VIA and FTA funds for the $40M TriParty project that upgraded nearly five miles of Downtown streets and transit lanes. Once the bonds were retired and the original district had expired, a new and expanded assessment district was created as the source of funding for Downtown operations. However, the assessment district is available as a funding mechanism for capital projects by either amending the current district or creating a new district if sufficient support for a program of projects develops.

4.9.2 State

The Texas Department of Parks and Wildlife awards grants-in-aid for improvements such as ‘pocket parks,’ hike and bike trails and additional features in Hemisfair Park. These grants are awarded competitively on a statewide basis. Projects in urban settings (such as Downtown), may, in some years, receive priority treatment. These grants are capped at $500,000.

TxDOT generally supplies the required matching funds for FHWA projects.

4.9.3 Federal

Transit

The consultant team explored the potential for funding of the proposed improvements through Federal transit sources. The full analysis is contained in the Appendix. However, the concluding paragraphs are as follows:

After researching and talking with FTA about Federal funding sources for bus capital projects under $25 million, it is clear that the best opportunity for Federal funds for the
Downtown San Antonio Shuttle Bus Project is the Section 5309 Bus Discretionary Grants. Congress ‘earmarks’ the Bus Discretionary funds, which means that money goes to the projects that have strong local representation and support. It also means that Congress will be inclined to “share the wealth” over time in order to maintain constituent support. A strong argument can be made for the San Antonio Shuttle Bus Project because San Antonio has not received or obligated any Bus Discretionary funds during the past 10 years; while, the other major cities in Texas (Austin, Dallas, and Houston) have all received Bus Discretionary Grants during the TEA-21 years.

The other Federal funding source opportunities for the Downtown Shuttle Bus Project discussed in this memo would provide minimal grants and/or are not easily attainable.

**Highway**

Portions of the alternatives being considered should be eligible for funding through the Federal Highway Administration (FHWA). The primary candidate for this funding source is the modification proposed for the IH 37 and Commerce Street Intersection. However, these same FHWA funds are in demand for projects throughout the region and to-date this project has been assigned a low priority. Bicycle and pedestrian facilities may also be good candidate projects, particularly if strong community support can be demonstrated.

### 4.10 PUBLIC INPUT OF LEVEL 2 ALTERNATIVES

#### 4.10.1 Public and Stakeholder Meetings – Summer 2001

A round of public meetings was initially scheduled for late in the summer of 2001 to review the results of the technical analysis of the alternatives and provide input into the alternative evaluation process. However, the SOC remained concerned that the traffic impacts of the bus priority treatments were not fully understood. The additional analysis carried into late 2001 and the public meetings were delayed until the SOC was able to reach a consensus on the results of the technical evaluation (see Chapter 5).

The study team did, however, meet with a number of the key property owners along the proposed Main and Soledad contraflow lanes. The meeting was coordinated by the Downtown Alliance. The group was concerned about the potential negative impacts. Additionally, several potentially impacted property owners expressed concerns with the Main and Soledad contraflow lanes in letters (see the Appendix). Study team members received similar input during a briefing of the Downtown Alliance Board of Directors.
4.10.2 Briefings with Public Agencies and Private Groups

In addition to the public involvement efforts, the SOC members and consultant team members briefed public agencies and private groups throughout the study. Copies of the slideshows are available in the Appendix. The following table documents these briefings:

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<td>MPO Steering Committee</td>
<td>June 18, 2001</td>
<td>Results of Level 1 Evaluation &amp; Further Definition of Level 2 Alternatives</td>
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<tr>
<td>VIA Board of Directors</td>
<td>June 26, 2001</td>
<td>Further Definition of Level 2 Alternatives – Bus and Shuttle Operating Concepts</td>
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<tr>
<td>MPO Steering Committee</td>
<td>August 27, 2001</td>
<td>Results of Level 2 Analysis (traffic analysis still pending)</td>
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<td>Downtown Advisory Board</td>
<td>September 11, 2001</td>
<td>Description of Level 2 Alternatives and Preview of Ridership and Costs Estimates</td>
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<td>September 20, 2001</td>
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<td>Downtown Alliance Breakfast Program</td>
<td>October 3, 2001</td>
<td>Description of Level 2 Alternatives and Preview of Ridership and Costs Estimates</td>
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4.11 EVALUATION OF LEVEL 2 ALTERNATIVES

The consultant team members prepared a number of summaries and working draft recommendations as an aid to the SOC in the evaluation of the alternatives. These are contained in Appendices. Finally, the Appendix also contains a draft LPA developed to stimulate discussion among SOC members.

The SOC discussed the prepared materials on several occasions yet were unable to reach a consensus on a draft LPA to recommend to the MPO Steering Committee. The lack of consensus centered on the following several aspects of the proposed alternatives:

4.11.1 Traffic Concerns

Although the traffic analysis indicated that the impacts on traffic congestion were not significant, the bus priority improvements remained controversial. Prohibiting right turns along portions of Commerce and Market would disrupt long standing access patterns and, in combination with the one-way street pattern, would make portions of Downtown nearly inaccessible by auto or delivery vehicle. Extensive use of contraflow lanes (unlike the existing limited contraflow lanes on Alamo Plaza and Navarro) would be confusing and was perceived to be a safety concern. The queue jumpers seemed to be unnecessary given the light traffic volumes shown in the animation.
4.11.2 Parking Concerns
The contraflow lanes on Main and Soledad would require the removal of on-street parking and the associated loss of parking revenue to the City of San Antonio. In addition, the shuttle street beneath the IH 35 elevated freeway also reduced available parking and further reduced City parking revenue potential. The loss of any on-street parking was seen as not acceptable by City Public Works.

4.11.3 Relocating Sidewalk and Pedestrian Problems
Although the Main/Soledad sidewalk crowding was generally expected to be less severe than the current sidewalk problems associated with bus stops on St. Mary’s/Navarro, the general consensus was that, to a fair degree, the problem was only being relocated rather than being solved.

4.11.4 Funding
Neither the participating government entities nor the private sector seemed willing to sponsor the capital investment required for any of the alternatives. Although the possibility of funding various improvements using a combination of local, state and federal funding sources was discussed, none of the study participants was sufficiently motivated to commit their local funds or pursue state or federal funding.
CHAPTER 5
DEVELOPING THE DRAFT
LOCALLY PREFERRED ALTERNATIVE

5.1 ELEMENTS OF THE DRAFT
LOCALLY PREFERRED ALTERNATIVE (LPA)

5.1.1 Seeking a Consensus

Building on the analysis, evaluation and discussions of Level 2, the consultant team facilitated several work sessions with the SOC to search for “common ground” or key elements of a Downtown transportation improvement program that would seem to have broad support. The work sessions resulted in the following list of key elements:

- Improve Space & Amenities for Transit Riders
- Pedestrian & Bicycle Improvements
- Interstate 37 & Commerce Street Area Improvements
- Enhanced Movement within the Downtown Core
- Spread Bus Routes
- Romana Plaza
- Support VIA’s Comprehensive Service Plan (CSP)
- Address Crowding of People & Buses at Key Points Downtown
- Encourage Active Partnerships
- Commerce & Market Street Intersection Conflicts
- Broadway & Third Street Improvements

The following are several underlying assumptions described as critical to these key elements:

- Consider Operating & Capital Costs for projects
- Seek Policy Guidance to Resolve Technical or Institutional conflicts
The study effort next focused on refining these key elements and developing them into a series of implementable projects.

### 5.1.2 Improve Space & Amenities for Transit Riders

Consultant team and SOC members conducted a walking tour and review of identified problem bus stops. The review resulted in proposals to improve the bus patron and pedestrian crowding for each location. The Appendix contains a description of each stop location and the proposed improvements and/or issues associated with each location. All proposals assumed that real-time information would eventually be provided to the patrons at each stop, thus reducing the need to wait in the immediate vicinity of the stop.

The proposed transit operating plan called for the shifting of some bus service to Main and Soledad from Commerce, Market, St. Mary’s and Navarro in order to reduce the impacts on those streets and sidewalks. This shifting of service, however, requires developing adequate bus stops on Main and Soledad. A number of stop locations were proposed. This proposal is also included in the Appendix.

### 5.1.3 Pedestrian & Bicycle Improvements

Cross sectional and plan views (see the Appendix) of a potential San Pedro Creek hike & bike trail were developed under the Level 2 analysis and had been displayed in previous work sessions. These drawings remained unchanged and unchallenged for approximately 12 months.

A graphic was developed indicating likely areas of Downtown for a street tree planting program. The tree count was approximately 250. A Crosswalk Upgrade Program was developed that targeted specific areas for the installation of pavers in crosswalks. The areas targeted for the street tree planting program and crosswalk improvement are shown in the Appendix.
5.1.4 Interstate 37 & Commerce Street Area Improvements

The consultant team verified with TxDOT staff that the plan views developed during the Level 2 analysis did indeed reflect TxDOT’s early conceptual thinking on this freeway and street improvement.

5.1.5 Enhanced Movement within the Downtown Core

The study team considered means to enhance movement within the Downtown through improvements to the existing streetcar system. The potential for using a different type of vehicle was discarded due to the popularity of the existing vehicle. Modifications to the hours of operation and the routes were considered and then dismissed due to associated costs. The conclusion of the study team was that the current operation was based on approximately 20 years of streetcar operation in Downtown San Antonio and, through a process of on-going refinement, had reached a point that key areas were served within a reasonable level of expenditure.

5.1.6 Hemisfair Park Streetcar Route

One opportunity was identified, however, to potentially improve a streetcar route. Picking up on the input of the May 12, 2001 public work session (Charrette #2), the study team considered modifying the VIA “purple” streetcar route from a one-way loop around Hemisfair to two-way service down Old Goliad Street with a future extension into a re-developed Victoria Courts site. The intent of this modification would be to “bring more life” to the area of historic homes/shops, the Institute of Texan Cultures, the Tower of the Americas, etc.

Additional study revealed that the Federal Building had security concerns with vehicular access from the northwest. A site visit by study team members, the City Parks Department and the responsible federal agency resulted in the proposed conceptual alignment.
5.1.7 Spread Bus Routes

At the present time, VIA operates bus routes primarily on four Downtown streets – Commerce, Market, St. Mary’s & Navarro. With approximately 200 bus trips into the Downtown during peak hours, these four streets experience bus congestion and crowding at bus stops. The concept of “spreading bus routes” sought to modify this operating concept to include two additional streets as primary bus streets. This modified approach would reduce the impacts on any given street or sidewalk area. These two additional streets (Main & Soledad) would be developed with transit shelters, concrete bus pads, signage and diamond lanes to provide comparable patron amenities and operating characteristics as the existing primary bus streets. The goal of this new operating concept would be to balance the in-flow of the projected 200+ buses per peak hour across the six streets to create a relatively uniform 30–40 buses per hour on each street. This level of service provides frequent headways (particularly where a number of routes on the same street are destined for the same destination outside of the Downtown) without being congested.

The April 2002 version of the CSP generally paired west side routes with eastside routes; northeast side routes with southwest side routes; and north/northwest side routes with south side routes. Combining the policy of minimizing turns in the Downtown core, the six designated primary bus streets and the irregularities of the Downtown fringe street network results in changes from the existing bus route structure to the Bus Operating Plan illustrated in the Appendix.

5.1.8 Romana Plaza

A drawing (see the Appendix) of Romana Plaza was developed based on the assumption that the one-way street operation would be extended north to Quincy/Elmira but without the previously proposed contraflow bus lanes on Soledad and Main. Although the proposal reduced many of the traffic conflicts within the Plaza, the SOC was concerned with possible traffic impacts at the Elmira intersections with Main and San Pedro due to the one-way traffic system transitioning to a two-way system at those locations.

Romana Plaza is, rather than a typical plaza, the confluence of a number of streets on the northwest fringe of the Downtown. San Pedro (to and from the north), Main (to and from the north, and to the south), Camden (to and from the east), Navarro (from the southeast and a contraflow bus lane to the southeast), Soledad (from the south), and Romana (to and from the west) intersect within this public space. This mixture of one-way and two-
way streets makes for a very complex traffic situation within a constrained right-of-way. The City’s main Library, several office buildings, a hospital, a church and a high school are all within close proximity and contribute to the auto and pedestrian traffic. The large area of pavement required to accommodate these various traffic movements and the necessary signage make for a visually unappealing environment. The study explored a number of schemes to improve traffic flow and provide a more appealing environment.

Pedestrians crossing the Plaza were perceived as a potential safety problem in both the current and proposed configurations. Various configurations were examined by the consultant team in an attempt to find a satisfactory solution to the pedestrian crossing safety issue and vehicle conflicts but without success. However, opportunities do exist for providing landscaping improvements and possibly public art, particularly if additional right-of-way is obtained on the northwest “triangle” area.

Romana Plaza

5.1.9 Support VIA’s Comprehensive Service Plan

Throughout the study, efforts were made to coordinate the Downtown transit operations planning with VIA’s CSP effort. Perhaps the best example of the fruits of this coordination was the joint recommendation to reduce the bus turning movements in the core of Downtown. Reducing these bus turning movements would have the following benefits:

- minimizes conflicts between buses and pedestrians crossing the streets
- reduces the number of right turning buses and the necessary “swinging wide” required at right angle intersections
- improves vehicle throughput at intersections
- eliminates buses weaving from right to left in blocks preceding a left turn (example: Market St. between St. Mary’s & Navarro)

A layover facility site needs to be located at the south edge of the Downtown core to permit good penetration of the Downtown by the north/northwest side routes yet minimize unproductive miles and hours of service. This will allow approximately 30 buses an hour a place to wait before turning back on north/northwest side routes. A review of the initial thinking on the proposed route structure indicates that the best location for such a facility is in the vicinity of the St. Mary’s/Navarro/Nueva intersection.
Several of the parking lots in the vicinity of this intersection would seem to be able to be developed to meet these requirements.

Both the CSP and the Downtown Alternatives Analysis are also recommending that VIA pursue a real-time passenger information system at key bus stops, particularly in the Downtown.

5.1.10 Address Crowding of People & Buses at Key Points Downtown

The combination of “spreading the bus routes” and improving bus stops described in the previous paragraphs was perceived as adequately addressing the crowding at key points Downtown.

5.1.11 Encourage Active Partnerships

The study team pursued active partnerships between public and private entities through the broad based consensus building process used throughout the study. None of the proposed projects are perceived as being of sufficient priority to pursue at this time. However, the MPO Steering Committee recommended appointing a committee to investigate future activities at the policy level.

5.1.12 Commerce & Market Street Intersection Conflicts

The study team felt that modifying the bus route structure described in the previous sections adequately addressed this concern.

5.1.13 Broadway and Third Street Improvements

The consultant team developed a drawing indicating both the street geometric changes and landscaping improvements proposed for this intersection.

5.2 COORDINATION WITH THE HISTORIC CIVIC CENTER STUDY

In the final months of the study, a new study was undertaken by the City of San Antonio to define a program of projects to improve the area generally defined as Plaza de las Islas (Main Plaza area). The early alternatives being considered included the closures of segments of Commerce, Dolorosa/Market, Main and Soledad. Should a plan containing such street closures be selected for implementation, the transit routing schemes being recommended for the draft LPA could potentially be
impossible to implement. The Downtown study joined in work sessions with the Plaza de las Islas study team (urban design and traffic consultant staff, as well as staff from several City and County departments) to explore options for accomplishing the goals of both studies.

The Appendix includes a discussion developed for presentation at the work sessions that describes the potential revised preliminary findings of the CSP to potentially accomplish many of the objectives being pursued through “spreading the bus routes” to Main and Soledad by systemwide revisions to the route structure. The Appendix summarizes the transit and traffic response to alternative scenarios being proposed for the Plaza de las Islas modifications. The study team was also successful in working with the urban design consultant to develop a design concept that integrated bus stop locations into the comprehensive re-design of the Plaza de Las Islas (see the Appendix).

The ultimate decisions made for traffic patterns for the Plaza de las Islas area will undoubtedly affect the results of the Downtown study. However, at this time, the future traffic patterns in this vicinity as well as the final plan of the area remain undetermined.

5.3 ESTIMATED CAPITAL COSTS

The capital costs were estimated to be in the $25M to $30M range. This draft LPA was discussed with the public and agency policy bodies using this general budget figure without a breakdown by potential project. The planning level cost estimates for projects selected for the LPA are presented in Chapter 6.

5.4 PUBLIC INVOLVEMENT IN FINALIZING THE LPA

5.4.1 Public and Stakeholder Meetings – Summer 2002

The MPO Steering Committee approved the proposed draft LPA for review by the public and directed the study team to solicit public comments. The study team published a newsletter that was distributed to the database of almost 900 names and held a final round of public meetings during the summer of 2002.
Four meetings were held at the Central Branch Library on two separate days with one meeting in the morning, one in the afternoon and two in the evening. A total of 74 people participated in the meetings.

Participants were given a short presentation explaining the options that comprised the LPA and then were asked to work in groups of six. Each group was asked to come to an agreement about changes, if any, they thought needed to be made to the LPA for them to support it. Some of the changes to the LPA that were identified by the participants for them to more fully support the LPA were:

1. Vegetation around the enhanced bus shelters should not allow transients or others to be hidden from view.
2. Public restrooms Downtown should be included as part of any facilities that are constructed.
3. Amenities for transit users like shade, trees, water fountains and restrooms need to be included in bus shelter enhancements.
4. Concern about possible damage to the County Courthouse from additional vibration caused by increased bus traffic on Main and Soledad.
5. Improve the wayfinding mechanisms for pedestrians.
6. Pedestrian walkways were sought at two different locations.
7. Improvements at I-37 and Houston Street and at Commerce Street and from Market onto I-37.

Participants were also asked to select the three projects they supported that should be implemented first. Most of the groups selected transit projects as their first priority, most often citing the trolley through HemisFair, improvements to amenities, and improving the flow of bus routes in the Downtown area. Other first priority items were improvements to the area at IH 37 and Commerce, and one group mentioned the hike and bike trail along San Pedro Creek as its first priority.

Overall, transit improvements were mentioned most often in all three priority groups.

For a complete transcription of all the comments, see the Appendix.

An unexpected outcome of these public meetings was the discovery of conflicts with a study being done for the Plaza de las Islas as part of the Historic Civic Center Master Plan (see the resulting discussion in section 5.2).
5.4.2 Presentations

Presentations were made to the following groups during this phase of the study:

<table>
<thead>
<tr>
<th>AGENCY</th>
<th>DATE</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPO Steering Committee</td>
<td>January 28, 2002</td>
<td>Review Key Elements</td>
</tr>
<tr>
<td>Downtown Advisory Board</td>
<td>February 12, 2002</td>
<td>Review Key Elements</td>
</tr>
<tr>
<td>VIA Board of Directors</td>
<td>February 26, 2002</td>
<td>Review Key Elements</td>
</tr>
<tr>
<td>MPO Steering Committee</td>
<td>May 20, 2002</td>
<td>Revised Program of Projects</td>
</tr>
<tr>
<td>VIA Board of Directors</td>
<td>June, 2002</td>
<td>Revised Program of Projects with focus on transit operations</td>
</tr>
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</table>

Copies of the presentations are included in the Appendix.
CHAPTER 6
THE RECOMMENDED LOCALLY PREFERRED ALTERNATIVE

6.1 THE LOCALLY PREFERRED ALTERNATIVE

The following set of multimodal projects represents the Recommended LPA selected after extensive analysis and review to increase circulation within Downtown San Antonio:

6.1.1 Pedestrian & Bicycle Improvements
- San Pedro Creek Hike and Bike Improvements
- Crosswalk Improvements
  - Main and Saving
  - Main and Martin
  - Main and Pecan
  - Main and Travis
  - Main and Nueva
  - Main and Durango
  - Dwyer and Nueva
  - Dwyer/Soledad and Villita
  - Soledad and Martin
  - Soledad and Pecan
  - Soledad and Travis
  - Dolorosa and Santa Rosa
  - Durango and St. Mary’s
  - Commerce pedestrian crossing at River Center
  - Market pedestrian crossing at Convention Center
- Landscaping at numerous locations throughout the Downtown (approximately 250 trees)
- Pocket park on Old Dolorosa east of Soledad (note: maintain vehicle access to International Center) to be integrated with the Historic Civic Center improvements.
- Provide aesthetic improvements for Romana Plaza without modifying traffic or pedestrian patterns/movements

6.1.2  Interstate 37 & Commerce Street Area Improvements
- Add U-turn for southbound-to-northbound traffic exiting IH 37 southbound at Commerce Street
- Relocate northbound on ramp to permit easy access from Center Street
- Connect Commerce to Live Oak with a new northbound access road
- Modify local intersections accordingly
- Provide landscaping, hardscape and pedestrian amenities

6.1.3  Hemisfair Park Streetcar Facilities and Route
- Upgrade Goliad Street within Hemisfair Park and develop additional facilities to connect to the Institute of Texan Cultures using VIA’s existing streetcar fleet

Re-route the “purple” streetcar route to use this newly modified/developed facility to connect the Institute, the Tower of the Americas, the federal complex and potentially a re-developed Victoria Courts to Convention Plaza and other Downtown locations.
6.1.4 Implement Downtown Portion of VIA’s Comprehensive Service Plan
- Reduce the bus turning movements in the core of Downtown.
- Reduce the number of buses in Downtown by consolidating routes as described in the CSP
- Develop a layover facility for buses “turning back” on north/northwest side routes.
- Develop real-time passenger information system at most bus stops in the Downtown.

6.1.5 Broadway and Third Street Improvements
- Make geometric changes to facilitate eastbound traffic flow
- Develop landscape and hardscape improvements

6.1.6 Improve Space & Amenities for Transit Riders at Bus Stops
Provide additional shelters, seating, landscaping, bus pads (as needed) and waiting area at the new and proposed bus stops at the following or similar locations:
- SAWS Park on Market St.
- Commerce St. at Navarro St.
- St. Mary’s St. at Crockett
- Commerce St. at Soledad St.
- Soledad near Convent
- Soledad at Pecan
- Soledad at Houston
- Soledad south of Market
- Dwyer/Soledad near Villita
- Dwyer at Nueva
- Dwyer at Durango
- Main at Durango
- Main at Nueva
- Main at Stumberg
- Main at Market (to be integrated with Historic Civic Center improvements)
- Main at Houston
- Main at Pecan
- Main at Martin
- Main at Giraud

Bus Stop Model
### 6.2 CAPITAL COST OF THE LOCALLY PREFERRED ALTERNATIVE

The following table shows the planning level cost estimate for each element of the LPA:

<table>
<thead>
<tr>
<th>LPA Element</th>
<th>Planning Level Cost Estimate (2003 $’s)</th>
<th>Potential Funding Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian &amp; Bicycle Improvements</td>
<td>$6,716,000</td>
<td>City of San Antonio, Private Sector, Federal Highway, State Parks</td>
</tr>
<tr>
<td>Interstate 37 &amp; Commerce Street Area Improvements</td>
<td>$10,816,000</td>
<td>TxDOT, Federal Highway, Private Sector</td>
</tr>
<tr>
<td>Broadway and Third Street Improvements</td>
<td>$781,000</td>
<td>City of San Antonio, Private Sector</td>
</tr>
<tr>
<td>Implement Downtown Portion of VIA’s Comprehensive Service Plan</td>
<td>$6,690,000</td>
<td>VIA, Federal Transit, Private Sector</td>
</tr>
<tr>
<td>Improve Space &amp; Amenities for Transit Riders at Bus Stops</td>
<td>$653,000</td>
<td>VIA, Federal Transit, Private Sector</td>
</tr>
<tr>
<td>Hemisfair Park Streetcar Facilities and Route</td>
<td>$1,841,000</td>
<td>City of San Antonio, State Parks, VIA, Federal Transit, Private Sector</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$27,497,000</strong></td>
<td></td>
</tr>
</tbody>
</table>

The planning level cost estimate detail is shown in the Appendix. The reader should recognize that this cost estimation work is based on very conceptual design only and will require more detailed design and estimating as a given project is pursued.
CHAPTER 7
CONCLUSIONS, LESSONS LEARNED & OUTSTANDING ISSUES

This study has taken nearly three years to complete for a variety of reasons that have already been explained in the previous chapters of this report. This chapter is intended to draw some conclusions, indicate what lessons were learned and list issues that remain unresolved.

The conclusions and lessons learned from the extended process of this study are grouped into several categories so that they may be more easily understood. It is the hope of the study team that this discussion will be helpful to others who conduct similar studies, particularly in Downtown San Antonio.

7.1 PROCEDURAL LESSONS

During this process there were several procedural issues that affected the process and outcomes of the study. The procedural lessons the study team learned were:

- Develop a plan of options and then seek the funding for them. Limiting the thinking too early in the process to what can be afforded stifles the creativity and automatically eliminates some options before their feasibility and adaptability are fully considered.
- Determination of the need should be the primary focus and then how to address the need. In the case of this study, there was no over-riding need that was forcing a solution. In many cases, the public just did not see a pressing need for significant changes in the Downtown area, saying that they thought transportation Downtown worked well overall.
- Identification of a champion for the project(s) is critical to the success of the project. A highly visible elected official or policy maker as the champion of a project can greatly improve its chances of being funded, thus moving from planning to implementation.
- Ongoing communication is essential between agencies and organizations as well as within the agency departments and across departments.
- The longer the study continues, the more likely changes in priorities and conditions will occur, relegating some of the early findings to irrelevancy or adding complicating factors that did not exist early on. When feasible, wrap up the study as soon as possible.
- If the study does continue over a long period of time, keep your eyes open for new stakeholders and issues.
7.2 THE COMPLEXITY OF DOWNTOWN

San Antonio’s Downtown is the result of a carefully negotiated balance of many elements that work together to create the attractive environment that those of us who work, live, and recreate Downtown enjoy. Lessons learned from experiencing the interplay of these various elements were:

- The Downtown has more competing stakeholders than anywhere else in the City, and all their interests need to be addressed.
- The lack of any significant transportation problems Downtown made it difficult to rally support for change from the public.
- The Downtown stakeholders are leery of any construction in the streets “like TriParty.”
- Feasible options can be identified, but may not be desired by the various stakeholder groups, thus lacking consensus and support for their implementation. Considerable effort needs to be expended to create a consensus on options that take into consideration the needs and desires of the range of stakeholders in the Downtown area.
- Enhanced communication with and among interested groups is the key to buy-in on the projects. All of the different stakeholder groups need to carry the message back to other groups—this includes public agencies, non-profit organizations, civic organizations, business groups and other stakeholders. These communication efforts need to be coordinated as much as possible.
- Sometimes changes occur in other parts of town that impact Downtown since it is part of a larger region.
- The long-range forecast showed little employment and population change in the future. The City of San Antonio is in the process of implementing pro-active policies to spur growth in the Downtown area, so it may be necessary to address this issue again if significant growth begins to occur.
- There needs to be a study of what the ultimate build-out of the Downtown area might look like and how that would impact transportation needs to truly understand what could happen in the future.

7.3 PUBLIC UNDERSTANDING OF THE LINK BETWEEN TRANSPORTATION AND OTHER ELEMENTS OF THE COMMUNITY

Most people do not see that there is a link between transportation and other factors that influence the growth and development of an area unless there are significant transportation problems. Conclusions the study team made related to the need to link transportation to the other elements of growth and change in the community were:

- People do not “see” the transportation issue. The public needs to understand that almost everything developed Downtown is impacted in some form by transportation.
- Transportation must be linked to land use. Intensive development would lead to different options, requiring policy-level decisions to be made.
7.4 OUTSTANDING ISSUES

On several occasions, stakeholders asked about the results of previous studies, expecting updates on other transportation-related studies in the Downtown area. They asked specifically about whether the Downtown Transfer Center and the Westside Multimodal Center were moving forward or had been discarded. This points to the necessity of keeping the public informed of the status and outcome of projects, and not just asking for their participation during the study phase of the project. “Full circle communication” is necessary if the public is expected to stay engaged and continue to provide the necessary input and feedback on transportation projects.

This project has provided some significant insights and lessons learned that have already been applied to subsequent studies. The study team hopes that others will benefit as well from these insights.