



**BUS RAPID TRANSIT (BRT)
MARKET RESEARCH PROJECT**
Final Report
September 2010

Prepared by:

URS

100 S. Wacker Drive, Suite 500

Chicago, IL 60606



1.0 INTRODUCTION

This Report provides a summary of the work and research conducted for the Regional Transportation Authority (RTA) Bus Rapid Transit (BRT) Market Research study of the Cermak-Butterfield corridor. The goal of the study was to conduct consumer-based research into the transportation values and service preferences of key stakeholders and existing/potential transit customers in the corridor.

Additional detail on this project can be found in two Technical Memoranda:

- **Technical Memorandum #1 – Existing Conditions & BRT Elements**, which summarizes previous transit planning efforts related to the corridor; characteristics of the corridor communities and travel markets; and elements of BRT.
- **Technical Memorandum #2 – Stakeholder Workshop & Focus Group Findings**, which describes the approach and findings from a set of stakeholder meetings and focus groups that were used to gauge preferences for BRT concepts within the Cermak-Butterfield Corridor.

2.0 CERMAK-BUTTERFIELD CORRIDOR

The Cermak-Butterfield corridor is a 15-mile corridor in Cook and DuPage Counties from the end-of-line station on the Chicago Transit Authority (CTA) Pink Line at 54th Avenue and Cermak in Cicero to the I-355 interchange at Butterfield Road in Lombard (see Figure 1).

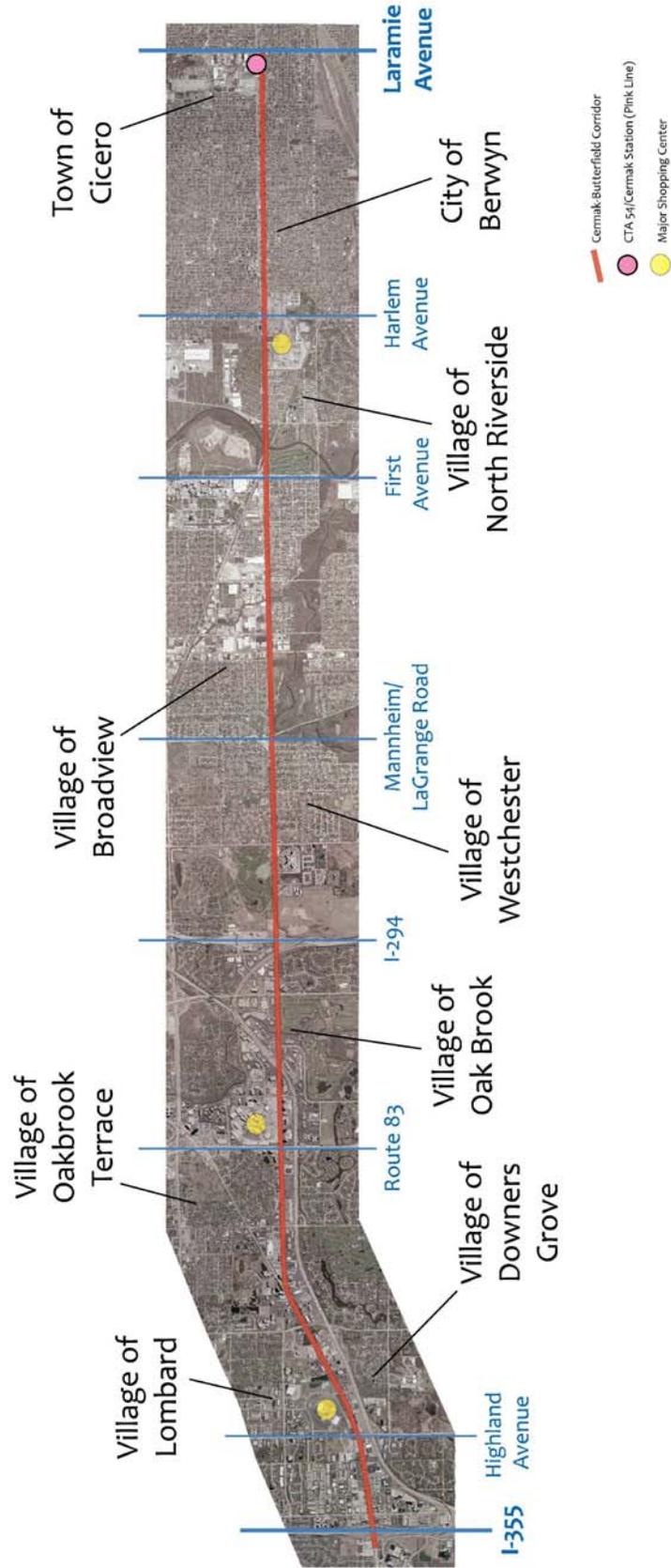
2.1 Corridor Features

Demographics and community features: The corridor communities have very diverse demographic and development patterns. The eastern third of the corridor (including Berwyn and Cicero) is marked by high residential densities and an urban, pedestrian-oriented streetscape. The central portion (Westchester to North Riverside) has large open spaces and a mix of residential, commercial and institutional properties. The western portion (Lombard to Oak Brook) has high employment densities in retail and office-based jobs and a very auto-oriented development pattern.

Major trip generators: There is a variety of employment, shopping and institutional trip generators in the corridor. These include three major shopping centers (North Riverside, Oakbrook, and Yorktown) as well as a number of smaller shopping plazas featuring major national retailers; major institutional locations such as the Loyola Medical Center and Morton West High School; and large office complexes in Oak Brook, Downers Grove and Lombard. It is notable that many of the major trip generators are set back from Cermak Road and configured for ease of auto access, making convenient transit service challenging.

Corridor travel patterns: Travel patterns in the corridor indicate a very diverse, bi-directional set of trips moving east-west through the near west suburbs. In addition to the traditional downtown-Chicago bound commute, this includes a high level of work and non-work trips westbound toward the Oak Brook/Lombard/Downers Grove portion of the corridor (note that many of these trips appear to originate outside the corridor on the west side of the City of Chicago). There are also a high number of internal trips in the eastern and western subareas.

Figure 1: Cermak-Butterfield Corridor



Existing transit service and usage: Pace and CTA provide daily bus service serving the entire corridor, including Pace Route 322 which travels between the Cermak/54 Station and Yorktown Shopping Center. Existing levels of transit usage for work trips are highest in the communities located in the eastern two-thirds of the corridor, and include a mixture of bus and rail transit use. There is currently very little bus use by residents in the westernmost areas of the corridor, primarily due to limited availability of service. Observations in the corridor and recent data on ridership suggest that the following are currently the highest transit usage areas directly along the Cermak-Butterfield corridor:

- Cermak/54th Station (Pink Line)
- Cicero/Berwyn Commercial District (especially between Ridgeland and Austin)
- North Riverside Park Mall and adjacent shopping areas
- Broadview Village Square/25th Avenue Manufacturing District
- Oakbrook Center
- Yorktown Shopping Center
- Major office complexes/hotels near I-355/Butterfield Road

The table below highlights the varying corridor characteristics that served as inputs when developing strategies for meeting with stakeholders and focus groups.

Table 2: Summary of Existing Conditions

	West Portion <i>(I-355 to York Road)</i>	Central Portion <i>(York Road to Harlem)</i>	East Portion of the Corridor <i>(Harlem to 54/Cermak Station)</i>
Communities	<ul style="list-style-type: none"> ▪ Lombard ▪ Downers Grove ▪ Oakbrook Terrace ▪ Oak Brook 	<ul style="list-style-type: none"> ▪ Westchester ▪ Broadview ▪ North Riverside 	<ul style="list-style-type: none"> ▪ Berwyn ▪ Cicero
Population and Employment	<ul style="list-style-type: none"> ▪ Varied population densities ▪ Higher-income households with low levels of bus transit usage ▪ Employment density concentrated in retail, office and service sectors 	<ul style="list-style-type: none"> ▪ Medium population densities ▪ Mix of bus and rail transit usage for work trips ▪ Low employment densities 	<ul style="list-style-type: none"> ▪ High population densities ▪ Lower levels of income and auto ownership ▪ Higher levels of transit usage, including bus ▪ Low employment densities
Major Activity Centers	<ul style="list-style-type: none"> ▪ Yorktown Shopping Center ▪ Oakbrook Mall ▪ Office complexes 	<ul style="list-style-type: none"> ▪ Westbrook Corporate Center ▪ Broadview Village Square ▪ Loyola/VA Hospitals ▪ St. Joseph's High School 	<ul style="list-style-type: none"> ▪ Morton West High School ▪ North Riverside Park Mall ▪ Berwyn/Cicero Retail District ▪ 54/Cermak Station

2.2 Implications for Further Research

Based on existing data on transit usage in the Cermak-Butterfield corridor, it appears that the transit service is primarily used to serve reverse commute and intersuburban trips toward Oak Brook, Downers Grove and Lombard between I-294 and I-355. These existing user groups have experience using the existing service and thus a different frame of reference than those

who may be potential new riders. Identifying the different types of users and their potentially different preferences for bus service was an important input to the market research phase of this project. Table 3 highlights the key existing and potential user groups.

Table 3: Summary of Key Existing and Potential User Groups

	West Portion <i>(I-355 to York Road)</i>	Central Portion <i>(York Road to Harlem Ave)</i>	East Portion of the Corridor <i>(Harlem Ave to 54/Cermak)</i>
Key Transit User Groups (Existing)	<ul style="list-style-type: none"> ▪ Employees at malls/retail ▪ Shoppers at malls/retail 	<ul style="list-style-type: none"> ▪ Shoppers/employees at Broadview Village Square 	<ul style="list-style-type: none"> ▪ Residents commuting westbound ▪ Shoppers/employees at Berwyn/Cicero retail district ▪ Shoppers/employees at NRPM ▪ Transfer traffic at 54/Cermak Pink Line station
Key Transit User Groups (Potential)	<ul style="list-style-type: none"> ▪ Residents commuting eastbound ▪ Employees at office complexes ▪ Shoppers travelling between retail locations 	<ul style="list-style-type: none"> ▪ Residents commuting eastbound ▪ Employees at hospitals 	<ul style="list-style-type: none"> ▪ Residents commuting eastbound ▪ Seniors

3.0 BUS RAPID TRANSIT

Bus rapid transit is a comparatively new mode that is being planned and implemented with increasing frequency in metropolitan areas throughout the country, but has yet to be applied in any bus corridor in the Chicago region. As an initial step in the project process, the consultant team used examples from other areas to develop a set of materials that could be used to describe BRT concepts to stakeholders and focus group participants.

3.1 Elements of BRT

BRT is attractive due to the promise of high-quality service that can be substantially less costly to build than rail-based transit. Because it is a rubber tire-based system, BRT can be more flexible than rail in routing and capital cost. This scalability makes BRT uniquely adaptable to its operating environment, but also means that the character of BRT is heavily influenced by decisions made within the systems planning process.

The Federal Transit Administration (FTA) has defined BRT as “a flexible rubber-tired rapid-transit mode that combines stations, vehicles, services, running ways and intelligent transportation system elements into an integrated system with strong positive identity that evokes a unique image. BRT applications are designed to be appropriate to the market they serve and their physical surroundings, and can be incrementally implemented in a variety of environments.”

Based on the experience of transit agencies around the country, a series of elements that are common to BRT systems has been identified. Based on this existing guidance for planning BRT systems, input was sought on each of these elements:

- running ways
- stations
- vehicles
- fare collection
- intelligent transportation systems (i.e., transit-signal priority, global positioning systems, real-time travel information)
- service and operations plans
- distinctive operating and physical identity (i.e., branding)

3.2 Peer System Case Studies

Technical Memorandum #1 contains a series of one-page peer system case studies that provide an overview of how other agencies have incorporated the seven identified elements of BRT. These systems have been organized by generalized level of infrastructure investment:

- **Highest level of infrastructure:** These systems include the use of exclusive transit rights-of-way for at least a portion of their alignments.
 - Boston, MA (MBTA): Silver Line
 - Cleveland, OH (GCRTA): HealthLine
 - Eugene, OR (LTD): EmX
 - Los Angeles, CA (Metro): Orange Line
 - Miami, FL (Miami-Dade Transit): South Miami-Dade Busway
 - Pittsburgh, PA (Port Authority of Allegheny County): Port Authority Busways
 - York, ON (YRT): Viva (at system build-out)
- **Mid-level:** This system will operate entirely in dedicated bus lanes.
 - Minneapolis, MN (Metro Transit): Cedar Avenue BRT
- **Minimal:** These systems may operate for some portion of their alignments in dedicated bus lanes, but operate for at least some portion in mixed-flow arterial lanes. None have exclusive transit rights-of-way.
 - Albuquerque, NM (ABQ RIDE): Rapid Ride
 - Everett, WA (Community Transit): Swift BRT
 - Kansas City, MO (KCATA): MAX BRT
 - New York, NY (NYCT): Select Bus Service (Bronx)
 - Salt Lake City, UT (UTA): MAX BRT

While there are other operational BRT systems within the U.S., the selected systems represent the spectrum of BRT elements in geographically diverse locations.

4.0 STAKEHOLDER WORKSHOPS

The first step of the market research phase was to gather input from corridor stakeholders about their impression of transit needs and potential BRT applications. Corridor stakeholders were divided into three distinct types:

- Technical stakeholders, including government and potential operating agency transportation and planning professionals;
- Municipal stakeholders, including mayors/managers/presidents and/or designated staff for the communities and counties in the study corridor;
- Private stakeholders, including representatives from major retail centers, hotel and hospitality facilities, large institutions, large office campuses, significant employers and corporate headquarters, and chambers of commerce and local development organizations.

Stakeholders workshops did not include general members of the public. Feedback from existing and potential customers, beyond those included as stakeholders above, was solicited through focus group sessions (see Section 5.0).

4.1 Format and Approach

Groups of stakeholders from the above list were invited to participate in a ninety-minute workshop or charrette type of session. Five workshops were conducted, with a total of 32 people participating. The content of the workshop included presentation and educational materials, and then interactive discussion of BRT elements and transportation values based on focused survey questions. Copies of the workshop presentation and survey questionnaire can be found in Technical Memorandum #2.

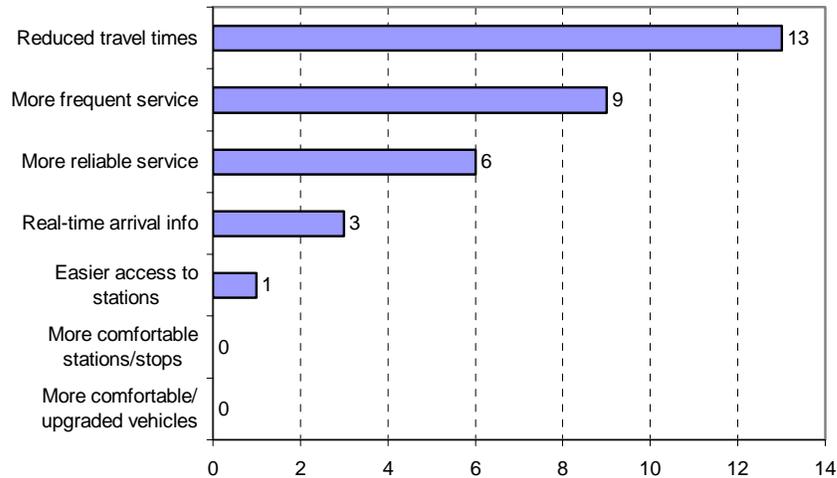
The stakeholder workshops were designed as a qualitative method of discovering consumer preferences that could shape design guidelines for potential BRT service in the corridor. It should be noted that this project and stakeholder workshop exercise are considered an initial step in obtaining market-based consumer preferences, and that additional analysis toward the design of BRT service would be conducted in subsequent studies.

4.2 Key Findings

Through the various types of survey questions, exercises, and group discussion, “Service” values emerged as a more important value set than “Infrastructure” values. That is, participants valued bus service that was quick, reliable, and conveniently scheduled over making a trip in a highly comfortable vehicle from a nicer station with sophisticated branding.

For example, participants were asked during the beginning of the meeting (before any detailed discussion about BRT Elements) to document the most valued potential improvements to existing service in the corridor, and almost unanimously chose the need for faster, more frequent and more reliable service from the list provided (see Figure 1).

Figure 1: Stakeholder Preferences for Improvements to Current Transit Service
Votes for Improvements Ranked #1



Note: 32 total responses

Upon learning about elements of BRT that could potentially be applied in the Cermak-Butterfield corridor, corridor stakeholders continued to focus on improvements to service and schedule rather than large infrastructure investments in the corridor. Results of their ranking of the most important BRT elements can be found in Table 4.

While the findings from the Stakeholder Interviews do not scientifically represent a sampling of all potential BRT riders in the Cermak-Butterfield corridor, it is interesting to draw the following conclusions from this study to inform design guidelines for potential BRT service in the corridor:

- System investments in technology infrastructure and operations that enhance service performance were perceived as very important and more highly valued.
- Participants indicated that investment in “hardscape” infrastructure elements, such as Running Ways, Stations and Vehicles, should be made at a moderate level. The Exclusive Transitway variant of the Running Way was viewed by many as too out-of-context for the environment to justify the cost or impact of implementation. Significant expenditures on Stations or Vehicles were not seen as an important ingredient for improving transit service.
- For the most part, stakeholders had relatively consistent responses to the questions, except regarding the topic of Branding and Marketing, which tended to evoke fairly evenly divided responses. Some participants felt that an intense Branding and Marketing campaign would be required to differentiate new service, present a more up-scale image, and generate increased ridership; others felt that such an expenditure would be a waste of money, and that improved service would “speak for itself.”

Table 4: Stakeholder Ranking and Commentary on BRT Elements

Overall Ranking	BRT Element	% Rating Element as Important or Very Important	Comments
1	Service and Operations Plan	100%	<ul style="list-style-type: none"> Reliability and reduced travel time were discussed as critical to differentiated and successful service. Many participants commented that station locations should allow for maximum connection opportunities to other transit.
2	Technology Enhancements	100%	<ul style="list-style-type: none"> Technology-based solutions for increasing service speed (e.g., TSP) or providing real-time information (e.g., dynamic “next bus” signage) were seen as an expectation of premium service.
3	Vehicles	91%	<ul style="list-style-type: none"> Participants noted in discussion the importance of obtaining vehicles that are easy to board and navigate for all users.
4	Stations	88%	<ul style="list-style-type: none"> Participants noted that with service and information improvements the station environment would be less important.
5	Running Ways	72%	<ul style="list-style-type: none"> Many questioned applicability of dedicated lanes or running ways in corridor. Supporters argued that this element is fundamental to providing faster service.
6	Fare Collection	97%	<ul style="list-style-type: none"> Several participants expressed concern about station security if off-board fare collection mechanisms were implemented. Participants noted that fares should not be higher, and that payment mechanisms should be the same for all operators.
7	Branding/Marketing	56%	<ul style="list-style-type: none"> Proponents of this element commented this as important to getting current non-transit-riders to consider using bus service. Other participants countered that good service would be a more effective advertisement than advertising and new colors / logos.

Note: Stakeholders were asked to rate the importance of each element (important, not important, etc.) individually, as well as to rank all elements against one another. Results from each exercise are shown in the table.

5.0 FOCUS GROUPS

The goal of the focus group sessions was to gather consumer-based preferences on potential elements of premium bus (BRT) service as well as to better understand the transportation values of people who live, work, and travel the Cermak-Butterfield Corridor. In contrast to the invitation-only participation for the stakeholder meetings, focus groups were open to any member of the public.

5.1 Format and Approach

To ensure that the bulk of the focus group participants had a strong relationship to the corridor, the consultant team directly recruited participants that met two or more of the following criteria:

- Resided in one of the corridor communities
- Worked in one of the corridor communities
- Rode public transportation along the corridor
- Drove a vehicle along the corridor

Seven focus groups were conducted (three sessions in Oak Park and four sessions in Oak Brook) during July 2010. While some participants were placed in whichever session matched their availability, sessions were designed to group like-consumers. For example, the Oak Brook #1 session was designed to capture preferences of potential customers that are currently not using transit in the corridor. Table 5 below illustrates the composition of the sessions.

Table 5: Attributes of Focus Group Participants

Session	Total	Transit User Types			Relationship to Corridor		
		Current Rider	Non-Rider	Choice Riders	Shopper	Resident	Employee
Oak Park #1	9	8	1	5	9	3	1
Oak Park #2	11	10	1	3	9	3	4
Oak Park #3	8	8	0	4	6	3	2
Oak Brook #1	9	0	9	0	9	2	3
Oak Brook #2	8	8	0	4	8	1	2
Oak Brook #3	11	11	0	3	11	4	0
Oak Brook #4	6	6	0	5	6	6	1
Totals	62	51	11	24	58	22	13

Note: Most participants fell into more than one of these categories.

5.2 Key Findings

Each session consisted of six to eleven participants, and in each group, the discussion proceeded in the following order:

- Initial discussion encouraged participants to introduce themselves and to describe their current travel patterns and usage of public transportation in the corridor (if applicable), as well as satisfaction with existing transit service and options.
- Participants were then asked to provide their input on specific elements of current service, as well as their preferences on potential service and infrastructure elements of potential premium bus service: fare collection; stations and shelters; vehicles; branding; schedules and service; technology enhancements (i.e., real-time travel information); running ways.
- The final part of the discussion focused on the ranking of importance of the previously listed seven premium bus elements.

A consistent theme throughout all of the focus groups was that enhancing service performance was the most highly valued potential element of BRT service. Particularly important for existing transit users along Cermak-Butterfield was improving the frequency and span of service.

Additional findings from the focus group participants that could impact the design of future service in the corridor include:

- Participants were varied in responses on potential infrastructure investments:
 - Stations and shelters are more important to existing users
 - Vehicle amenities are viewed as more important to non-users
 - Participants were skeptical that an exclusive running way would work or was necessary
- Participants liked elements that would speed up their trip, including removing some stops or adding TSP.
- Branding/marketing was consistently the least valued BRT element.
- Participants were generally not open to paying an additional fare for upgraded service.

At the end of each session participants were asked to rank the importance of the seven premium bus service elements. The results of this exercise among all participants are shown in Table 6. A significant finding among the participants is that in addition to service and schedule, stations/shelters and technology enhancements are seen as desired elements.

Table 6: Focus Group Rating of BRT Elements

BRT Element	Overall Ranking	Average Ranking	Ranked #1
Service and Operations	1	1.5	67%
Stations	2	3.0	13%
Technology Enhancements	2	3.0	13%
Fare Collection	4	4.3	5%
Vehicles	5	4.4	0%
Running Ways	6	5.3	2%
Branding/Marketing	7	6.5	0%

Note: Results based on 62 individual ratings

6.0 CONCLUSIONS

The stakeholder workshops and focus groups undertaken for this project represent an initial step in developing potential bus service upgrades for the Cermak-Butterfield corridor. While the results do not provide a full understanding of the travel needs in the corridor, or full justification for capital improvements or a detailed service plan, they do provide direction from the municipalities, employers, existing riders, and potential riders about the transit improvements that would most improve their perception and usage of the system. In all, the five stakeholder workshops solicited and received input from 32 municipal, technical and employer stakeholders in the corridor; while the seven focus group sessions allowed for in-depth discussions about bus rapid transit concepts with 62 existing and potential transit customers in the corridor.

The results from these sessions, as well as the experience from other North American cities, suggest that an upgrade to BRT could improve service in the corridor and potentially drive ridership growth. In addition, the flexibility and scalability of BRT allows for a design that matches the unique demands of existing and potential users in each individual corridor.

As additional planning is done along Cermak-Butterfield, the following key conclusions could help guide the development of potential BRT service:

- **A majority of all participants (stakeholder and focus groups) valued service improvements over infrastructure improvements.** More reliable and convenient service was consistently noted as the most important determining factor for ridership of this system. However, while non-users focused on bus speed and travel time savings, existing system users were even more interested in extending the hours and frequency of service.
- **Upgraded service and schedule was the most valued element of BRT.** Based on the value placed on improved service, this was a logical result of the BRT preference exercises. Discussion from existing users suggested customers valued features that would speed up their trip including a reduced-stop service or TSP.
- **Technology enhancements were highly rated and seen as an essential ingredient of BRT.** Making better use of modern communications technology to help speed up service (i.e., transit-signal priority) and provide real-time information on schedule and service were generally a high priority among stakeholder and focus group participants, and even discussed as expected facet of any future service upgrade.
- **Branding and marketing was the least valued element of BRT.** However, there were generally positive reactions to the branding concepts for stations/shelters and vehicles from other BRT systems. Some of the stakeholder attendees argued that it would be important to use branding as a way to encourage non-users to take interest in the service.
- **Among infrastructure improvements, existing users placed importance on stations and shelters, while non-users identified improved vehicles as more important.** Focus group participants placed a high priority on the need for shelters and canopies to provide weather protection while waiting for buses, and many indicated that in inclement weather they would walk farther or use alternate routing to access a stop that had such infrastructure. Meanwhile, non-users (including many of the stakeholders) argued that improvements to service would eliminate the need for waiting in stations, and that the appearance and utility of the transit vehicles was relatively more important.

- **Participants were skeptical about the feasibility and efficacy of exclusive bus right-of-way.** There was little support for investment in an exclusive right-of-way among participants, with most suggesting that mixed-traffic with some bus lane treatments would be a more viable option to explore. Both existing users and non-users generally thought it would be unrealistic to remove a traffic or parking lane for use by transit vehicles.
- **Any major capital investment in corridor bus service needs to be accompanied by improvements in service and schedule.** The frequency, span and reliability of service will continue to be the primary determining factor in why people choose to use the service, and any corridor-wide strategy to increase ridership will need to address this directly.

The above conclusions indicate that the Cermak-Butterfield corridor could be a viable candidate as an early pilot application of BRT in the Chicago region, but that an initial strategy for increasing ridership in the corridor would focus on increased service levels accompanied by modest amounts of capital investment.

Given these results, and the strong existing transit ridership in the corridor, a logical next step would be to explore whether Cermak-Butterfield would be a candidate for the streamlined “Very Small Starts” (VSS) federal project development process, which is a streamlined version of the larger “New Starts” program for projects that involve less than \$50 million total investment.