Diverting Automobile Users to Transit: Early Lessons from the Chicago Transit Authority's Orange Line

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After only 12 months of operation, the Chicago Transit Authority’s new Orange Line, providing rapid rail service from Chicago’s Loop to Midway Airport, had reached a weekday ridership of 37,500 passengers. Preliminary analysis indicated that the line had increased transit ridership overall in the southwest corridor by 31.0 percent, raising transit’s mode share of work trips from 16.4 percent to 21.5 percent. Based on an on-board rider survey done after 4 months, nearly one-quarter of daily boardings were new to transit, representing former automobile commuters or new trips for which the automobile was a candidate. That share grew to over 25 percent by the end of the first year. Core, secondary, and tertiary markets were defined in March 1994 in the southwest corridor, together providing 84 percent of the line’s ridership. Demographic and travel characteristics of the transit riders surveyed are compared with comparable market-area data from the 1990 U.S. Census. Survey data regarding the intensive marketing campaign that accompanied the line’s opening are analyzed. A separate analysis comparing diverted and new transit riders with those who shifted from other transit services is given. A series of guidelines is drawn for successfully inaugurating major transit-service improvements designed to decrease reliance on automobiles. The origin-destination and access-mode data from the March survey were also used to measure the net decrease in automotive cold starts and vehicle kilometers traveled. These measures were developed to estimate the air-quality benefits of this new rapid-rail service.

The Chicago Transit Authority’s (CTA’s) new Orange Line is the first entirely new rapid transit line in Chicago and its suburbs since 1969, when the Dan Ryan Expressway median line opened, and it is the first rapid rail in the southwest corridor, which connects the Loop to Midway Airport. The Orange Line opened for service on October 31, 1993. Proponents, who fought long and hard for southwest side rail transit, said people would come out of their cars to use good, fast transit. The environmental impact statement, completed in 1982, counted on those automobile diversions for the anticipated environmental benefits (1). It was projected then that one-quarter of the riders would come from cars, generating less tailpipe emissions, thereby lessening Chicago’s ozone and carbon monoxide problems. The purpose of this study was to determine whether these expectations have been realized. It also presents a profile of the riders at this early stage in what will be long years of rapid-rail service in the southwest side.

The Orange Line runs around the Chicago Loop, connecting with the Brown, Red, Blue, and Purple line trains, and the soon-to-be reborn Green Line. It travels 18.8 km (11.75 mi) to Midway Airport following freight rail rights-of-way, close to the population centers of the southwest side. The line was built by the city of Chicago, as a new rail start funded in part by the U.S. Department of Transportation (DOT). It was completed within budget and on schedule.

The map in Figure 1 presents the market area of Orange Line riders, as determined from a March 1994 survey of home zip codes (2). The boundaries shown indicate the home location of 84 percent of weekday riders in an area extending from Dearborn Park on the northeast through the southwest-side neighborhoods as far as Hickory Hills. Other suburbs in the market area include Burbank, Bedford Park, Bridgeview, Hometown, Justice, Merrionette Park, Oak Lawn, and Summit. Two subareas are also shown, depicting the home location of 51 percent and 17 percent of Orange Line riders. Remaining trip origins are drawn from across the entire CTA service area, such as commuting-to-work trip (the “work trip”) destinations lying within the corridor or to the airport for air travel. Of all Orange Line riders, 84 percent resided in Chicago (north and south sides), 13 percent were suburban residents (12 percent south and 1 percent north), and 3 percent were from outside the region. CTA received a 2-year $1 million grant from the federal Congestion Mitigation and Air Quality (CMAQ) program to market the new Orange Line, which serves 16 stops from the Loop to Midway Airport. Adequate marketing was deemed essential to attract projected new riders to transit and to realize the promise of reduced air-pollutant emissions. The CTA budget did not allow significant marketing expenditures; hence the grant was sought.

CORRIDOR DEMOGRAPHIC AND WORK TRAVEL CHARACTERISTICS: 1990 U.S. CENSUS

To provide an understanding of the overall travel market in the southwest corridor, basic demographic and work travel characteristics from the 1990 U.S. Census were compiled. These data were sorted by the three markets shown in Figure 1, as revealed by the March 1994 transit rider survey. These commuter-travel markets were termed core, secondary, and tertiary markets, and are oriented primarily toward the work trip. The southwest corridor can be characterized as middle class, with median household income at $24,900; there is a fairly even distribution of incomes across lower and middle income ranges. Household size averages 3.0, higher than the average for either Cook County or the city of Chicago as a whole, for which the average is 2.7. Automobile ownership is relatively high. One-half of corridor residents are white, with a significant portion having Eastern European heritage; nearly one-quarter are Hispanic, and one-quarter are African-American.

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Driving alone was the primary work-trip mode in 1990, followed by carpooling (16.8 percent) and a relatively large (14.6 percent) usage of CTA buses. About 75 percent of this bus travel was via express routes along the Stevenson Expressway into the Chicago Loop. Among the three commuter markets, the level of bus and carpool use was highest in the secondary market and lowest in the tertiary market. This comparison indicates that there was higher availability of and reliance on the automobile in the tertiary market, and that transit access (before the existence of the Orange Line) was better for the secondary market (also indicated by the 3.6 percent use of other rapid transit lines).

Multiworker households form a significant component of the work force in the southwest corridor, with 53 percent of households containing two or more workers. This factor may influence both the pre-Orange Line level of transit use, as well as the level of additional transit ridership attracted by the Orange Line after its opening. Worktrip travel times in 1990 averaged 33.6 min in the corridor. There is relatively little difference among the three commuter markets.

**TRANSIT RIDER DEMOGRAPHICS AND TRAVEL CHARACTERISTICS: 1994 SURVEY**

The March 1994 survey of riders on CTA’s Orange Line, although undertaken only 4 months after the opening of the line, gives a useful profile of the travel and demographic characteristics of new southwest side CTA rail passengers (3). An important feature of the survey was to learn more about those riders who formerly traveled by automobile, to allow measurement of the line’s air-quality benefits. No standard methods are in place from either the U.S. DOT or the Environmental Protection Agency on how to assess fairly the air-quality benefits of a new rail line.

**Survey Design**

Although origin-destination (O-D) information was desired primarily for current and former automobile users and those making new trips, all riders were asked trip purpose, names of the street intersection and city of their trip’s origin and destination, and mode of access to the Orange Line. For the air-quality analysis, only the new rider O-D information was used in the analysis of trip length.

The survey also asked riders how they made the trip before the Orange Line opened, and where they had seen or heard about the line. Riders were also asked for standard demographic information, including sex, zip code at home, ethnicity, age, household size, household vehicle availability, and income. Suggestions for improvements to the line and respondent contact information were also requested.

On the basis of this survey of initial riders, the market area was larger than planners envisioned in 1982, and larger than was estimated from a more recent analysis of market potentials (4). There were patterns within the area: core riders (51 percent) came from three zip codes (60629, 60632, and 60638) that encompassed the Kedzie, Pulaski, and Midway stations and the area west and south of Midway Airport beyond the rail line (see Figure 1). To cover
two-thirds (67.8 percent) of the home locations, three additional zip code areas (60608, 60609, and 60652)—the “secondary” market—must be added, covering the Western, 35th, and Ashland stations and a neighborhood further south of those three core zip codes. The last one-third of the riders were spread out over a large area, and included out-of-town riders using Midway Airport.

Survey results are presented here in two ways. First, basic trip characteristics and demographic characteristics of all survey respondents are described. This includes trip purpose, mode of access, geographic distribution of riders, prior mode used, automobile ownership, household income, and related characteristics. Second, many of these characteristics for new riders—not previous CTA bus or rail passengers—are given, including trip length.

**Demographic Characteristics**

Fifty-four percent of survey respondents were female. The age distribution of riders was primarily among the working-age population, with 53 percent of all riders aged 18 to 34. Ethnicity and race generally reflected overall corridor characteristics: 61 percent of respondents were white, 22 percent Hispanic, and 13 percent African-American.

Just over one-third (36 percent) of respondents were from one- or two-person households, although another 40 percent were from three- or four-person households. The mean household size was 3.4 persons. Household incomes were fairly evenly distributed across a range of $10,000 increments, with 9 percent under $10,000 and 16 percent over $60,000. The income levels of survey respondents were generally higher than the 1989 incomes reported in the 1990 Census, which is partly explained by inflation. Only 15 percent of households reported having no automobiles available, with 37 percent having one car and 33 percent having two cars. Automobile ownership of CTA-rider households was significantly higher than that reported for the market area in the 1990 Census, in which households with no automobile were measured at 25 percent.

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**TABLE 1 Transit Rider Trip Purpose: 1994**

<table>
<thead>
<tr>
<th>Trip Purpose</th>
<th>Commuter Travel Market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core</td>
</tr>
<tr>
<td>Work</td>
<td>66.6%</td>
</tr>
<tr>
<td>School</td>
<td>12.8%</td>
</tr>
<tr>
<td>Work-Related</td>
<td>5.7%</td>
</tr>
<tr>
<td>Work, Multiple Response</td>
<td>3.1%</td>
</tr>
<tr>
<td>Airline Travel</td>
<td>0.1%</td>
</tr>
<tr>
<td>Shopping</td>
<td>2.4%</td>
</tr>
<tr>
<td>Social</td>
<td>4.9%</td>
</tr>
<tr>
<td>Other</td>
<td>4.0%</td>
</tr>
<tr>
<td>Non-Work, Multiple Response</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

**Total** 100.0% | 100.0% | 100.0% | 100.0%
decade. Transit's market share has steadily decreased, competing against a base of increasing automobile ownership and trip-making rates (6,7). Nevertheless, the Orange Line's October 1994 ridership levels of 37,500 daily rides represents a 43 percent gain over its first month, and compares quite favorably with new starts of other rail lines across the country (8).

One of the primary variables influencing the Orange Line's success in attracting former automobile travelers is comparative travel time. As indicated in Table 3, the Orange Line provides significantly faster service, with more reasonable waiting times, than predecessor express and local bus routes. In the morning peak it is 33 to 39 percent faster than express bus service, and 41 percent faster

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### TABLE 2  Prior Mode Used by Transit Riders: 1994

<table>
<thead>
<tr>
<th>Prior Mode</th>
<th>Commuter Travel Market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Core</td>
</tr>
<tr>
<td>Transit</td>
<td></td>
</tr>
<tr>
<td>CTA Bus</td>
<td>75.2%</td>
</tr>
<tr>
<td>CTA Rapid Transit</td>
<td>4.8%</td>
</tr>
<tr>
<td>Metra</td>
<td>0.6%</td>
</tr>
<tr>
<td>Auto</td>
<td></td>
</tr>
<tr>
<td>Drove All the Way</td>
<td>9.2%</td>
</tr>
<tr>
<td>Got a Ride</td>
<td>3.6%</td>
</tr>
<tr>
<td>Auto, Multiple Response</td>
<td>2.2%</td>
</tr>
<tr>
<td>Taxi</td>
<td>0.0%</td>
</tr>
<tr>
<td>Just Started/New</td>
<td>2.4%</td>
</tr>
<tr>
<td>Other</td>
<td>2.0%</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### TABLE 3  Travel Time Comparison: Orange Line Versus Former Bus Services

<table>
<thead>
<tr>
<th>Sample Bus &amp; Rapid Transit Trip</th>
<th>AM Peak (6-9 AM)</th>
<th>Midday (Noon-3 PM)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sched. Wait Time (min.)</td>
<td>Sched. Travel Time (min.)</td>
</tr>
<tr>
<td>Midway Airport Station to Downtown (State/Lake Station)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange Line 99M Express Bus</td>
<td>3.3</td>
<td>31.0</td>
</tr>
<tr>
<td>Pulaski Station (Pulaski/Archer) to Downtown (State/Lake Station)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange Line 162 Express Bus</td>
<td>3.3</td>
<td>28.0</td>
</tr>
<tr>
<td>62 Express Bus</td>
<td>7.5</td>
<td>39.0</td>
</tr>
<tr>
<td>62 Local Bus</td>
<td>7.5</td>
<td>43.5</td>
</tr>
</tbody>
</table>

*Based on 1/2 of the average minutes between scheduled service frequencies.*
than local bus service. Because of the congested operating conditions on the Stevenson Expressway, the Orange Line travel time from Midway Airport is roughly equal to or slightly better than automobile freeway travel time to the Chicago Loop. These relative travel-time gains were critical to the modal-utility values employed in the ridership forecasts made in 1982 (1), and indicate that the service-quality gains that were initially planned are being realized.

Access Mode

The most frequent mode of access to the Orange Line is bus (41 percent) followed by walking (26 percent) (Table 4). A surprisingly high 13 percent use the Park & Ride lot (and 11 percent use the Kiss & Ride dropoff point), indicating that many people park on neighborhood streets as well as in the Park & Ride lots that are at several stations. Park & Ride lots at three of the last four stations along the line receive considerable use, particularly the last two at the Midway and Pulaski stations (300 spaces each), which fill up early in the morning peak. Bus access includes both Pace and CTA bus routes, both of which have experienced ridership growth concomitant with the Orange Line’s growth (3).

RIDERSHIP TRENDS

Ridership started at 26,200 each weekday in November 1993 and climbed to 37,500 by the end of October 1994. As indicated previously, that represents a 43 percent gain over 11 months, which is a rousing start for this new line. The upper line on Figure 2 shows total line boardings at all 16 stations. The lower line shows boardings at the eight branch-line stations only, excluding the central business district stations. (Note: the survey data on which these figures are based were collected in early March 1994, when total ridership was 32,000 each weekday.)

Boardings by station, shown in Figure 3, come directly from the new fare-collection turnstiles, which send registrations by fare type to a central computer each day. The new registration equipment at the branch stations has eliminated manual data entry, an improvement that speeds receipt of the counts by 3 weeks. Midway and Pulaski are the busiest branch stations, accounting for 50 percent of all branch station boardings. They see about 5,000 to 6,000 riders entering each day, with Midway Station alone typically accounting for 28 percent or more of branch boardings since the July 3, 1994 bus-route restructuring.

Air Quality Impact

On the basis of the survey results reported earlier that studied mode of travel, comparisons were made between actual bus and rail ridership statistics for the corridor. The first 2 weeks of February 1993 and February 1994 were selected as a baseline. Bus ridership on the ten diagonal routes serving the corridor fell 21,400 over those 12 months (from 45,900 on an average weekday to 23,800, adjusted for an overall system ridership loss that was discounted). Figure 4 summarizes these prior mode percentages, applied to an Orange Line average weekday ridership of 30,300, for the first 2 weeks in February 1994.

Similar analyses were conducted for June 1994 and October 1994 (see Figure 4). The following assumptions were made: Metra or other ridership would hold at 1,600 daily weekday trips diverted; CTA rail ridership (other lines) diverted would increase slightly, from 2,600 to 2,800 weekday trips; and 1,700 lost bus trips, assumed to have reverted to some form of automobile travel, would decrease to 1,500. Five of the parallel diagonal bus routes were eliminated, leaving only five routes continuing to provide service by October 1994.

Based on these assumptions and bus service changes, Figure 4 indicates that automobile diversions to the new Orange Line increased from 21.1 percent in February 1994 to 28.3 percent in October 1994. In February these new transit riders represented a growth of 19.3 percent in corridor transit trips; by October this increase was 31.0 percent. This represents an increase from an estimated 3.2 percent growth in CTA corridor market share, for transit work trips in February (from 16.4 percent to 19.6 percent) to an estimated 5.1 percent growth in CTA corridor market share by October (from 16.4 percent to 21.5 percent).

**TABLE 4 Transit Rider Mode of Access Versus Trip Purpose**

<table>
<thead>
<tr>
<th>Mode of Access</th>
<th>Work</th>
<th>School</th>
<th>Work-Related</th>
<th>Airline Travel</th>
<th>Non-Work</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CTA or Pace Bus</td>
<td>40.9%</td>
<td>51.5%</td>
<td>21.1%</td>
<td>13.0%</td>
<td>42.3%</td>
<td>40.7%</td>
</tr>
<tr>
<td>CTA Rapid Transit</td>
<td>3.6%</td>
<td>7.4%</td>
<td>8.5%</td>
<td>16.5%</td>
<td>7.0%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Metra</td>
<td>0.1%</td>
<td>0.4%</td>
<td>1.3%</td>
<td>1.7%</td>
<td>0.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Auto</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park &amp; Ride</td>
<td>16.3%</td>
<td>6.4%</td>
<td>13.0%</td>
<td>0.0%</td>
<td>7.9%</td>
<td>13.0%</td>
</tr>
<tr>
<td>Dropped Off</td>
<td>12.2%</td>
<td>4.8%</td>
<td>10.8%</td>
<td>5.8%</td>
<td>10.4%</td>
<td>10.6%</td>
</tr>
<tr>
<td>Multiple Response</td>
<td>0.4%</td>
<td>1.7%</td>
<td>2.2%</td>
<td>1.6%</td>
<td>0.0%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Walked</td>
<td>24.5%</td>
<td>27.0%</td>
<td>24.1%</td>
<td>41.1%</td>
<td>30.4%</td>
<td>26.1%</td>
</tr>
<tr>
<td>Other</td>
<td>2.0%</td>
<td>0.8%</td>
<td>9.0%</td>
<td>20.3%</td>
<td>2.0%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

100.0% 100.0% 100.0% 100.0% 100.0% 100.0%
Figure 5 summarizes the air-quality improvement implications of these former automobile travelers diverted to the Orange Line for each of the three observation points during 1994. An analysis method was developed that relies on the rider survey, transit boardings in the corridor, and Loop-bound transit-trip counts. No standardized method to estimate air-quality benefits of new rail lines was known, a topic worth consideration for uniform evaluations within a region and nationwide. The number of automobile vehicle kilometers that were avoided because the Orange Line captured former (and potentially new) automobile trips is indicated, based on a survey-derived 18.1 km (11.3 mi) average O-D trip length. Trip distances for former automobile trips were calculated using an algorithm relating O-D address locations to the grid street network in the survey analysis. Figure 5 also indicates the number of cold starts avoided, assuming one cold start for every automobile trip diverted to transit (ignoring possible automobile driver versus passenger differences).

Figure 5 also indicates an adjustment for net counterbalancing of air-quality impact, taking into consideration automobile access to transit by new or shifted Orange Line riders. In this calculation, any automobile access to past CTA service was ignored, assuming that all automobile access trips are new, making a new impact, and not just a continuation of past behavior by shifted riders. For example, those who may have driven to an Archer or Narragansett express bus are not considered. Had they been, they would have lessened somewhat the impact of new automobile access trips. For simplicity, the March 1994 survey result of 13.0 percent of weekday boardings representing travelers using the Park & Ride lots (or the Kiss & Ride dropoff points) was assumed to hold constant with ridership growth.

In fact, limited parking at the outermost two stations and the imposition of neighborhood parking restrictions near several stations may indicate an overestimate of this counterbalancing subtraction of automobile access to transit vehicle kilometers and cold starts avoided. The estimate of air-quality improvements achieved by October 1994 may be somewhat low. A survey-derived average length of automobile access trips of 6.4 km (4.0 mi) was used in the calculations.

**FIGURE 2** Orange Line—entering traffic (average weekday, 1993–1994).

**FIGURE 3** Orange Line—entering traffic (average weekday, October 1994).
LaBelle and Stuart

50,000----------------------~
40,000
20,000
10,000
0
February
June
October
Average
Weekday
Ridership
30,300
33,400
37,500
19,700
19,100
22,500
6,400
2,800
2,800
1,700
1,700
1,700

Mode formerly used: Auto Other CTA Rail Metra, Other Bus

FIGURE 4 1994 Orange Line ridership growth.

Figure 5 indicates that by October 1995, a total of 5,700 average weekday cold starts and 160,500 average weekday automobile vehicle kilometers were being avoided through use of the Orange Line. These significant impacts indicate a positive contribution to air quality in the service corridor.

IMPORTANCE OF CONSISTENT SERVICE QUALITY AND EFFECTIVE MARKETING

The significantly improved service quality offered by the Orange Line was the key factor in attracting both former bus riders (many of whom are required to make a transfer, as compared with their former one-seat bus ride) and former automobile travelers. As a part of establishing a positive overall image for the line and building significant ridership from opening day a major marketing campaign was deemed by CTA management an essential undertaking (9.10). Although it is not possible to indicate separately that portion of additional ridership that could be directly attributed to marketing efforts, the rider survey also established clearly that CTA's marketing efforts reached most Orange Line riders and helped contribute to their "conversion" to rail transit.

Even before a marketing program was formulated, CTA Service Delivery staff conducted a series of community forums over the summer and early fall of 1993. The purpose of the forums, held in cooperation with local community organizations in the market area, was to alert residents to the forthcoming line, outline its basic service features, and answer questions about changes in overall transit service. Of particular concern to many residents were proposed changes to the bus service to which they had become accustomed. In fact, for that portion of riders who still expressed preference for express bus service, explanations were necessary to indicate the advantages (and disadvantages) of the new rail line.

CTA's CMAQ-funded marketing campaign was one of the largest CTA has ever undertaken, using almost all paid media. The line's opening was also well-reported on television news. Most riders (about four in five) saw the paid promotions. The "free" media—television, radio, or print news reports—were seen or heard by somewhat less than one-half of surveyed riders. And, most importantly, new riders saw the paid promotions; about three-quarters identified a billboard, print advertisement, or radio advertisement they had seen.

Sources of Riders' Information

Orange Line riders were asked in the survey to indicate how they had seen or heard about the Orange Line before riding it. Answers were divided into three groups: advertising, news accounts, and other sources (Table 5).
Potential Survey transit said they were more likely to gain access to the line by auto-
compared to 28 percent of new riders. Fourteen percent of new riders got a ride, compared with
28 percent walked, compared with 26 percent of shifted riders. To and from a work-related activity increased from 5 percent
versus 2 percent for shifted riders.

An important trip purpose for new riders, accounting for 9 percent,
for any one of them, since multiple mentions were given. 1,858

CTA’s advertising and promotional campaign clearly had a
major impact on Orange Line riders, because 79 percent of them
mentioned at least one of the various promotional efforts. Fewer
than half of all riders mentioned news accounts (44 percent) or other
sources, such as friends and family (49 percent).

The single most successful method for informing CTA riders about
the Orange Line was car cards on CTA buses, noticed by
63 percent of Orange Line riders. Other successful methods included:

- Similar advertisements at CTA train stations (seen by 43 per-
cent of Orange Line riders),
- Billboards along the Stevenson Expressway and elsewhere
(seen by 43 percent),
- Newspaper advertisements (seen by 43 percent),
- Radio advertisements (heard by 32 percent), and
- Magazine advertisements (read by 14 percent).

New Rider Profile

Further stratification of survey results for the one-quarter who were
new riders was undertaken as a guide to future marketing efforts for
the Orange Line, to be carried out in 1994 and 1995.

The 23.7 percent of survey respondents who represented new
riders differed from other survey respondents in several ways.

- Work and school were less significant as trip purposes,
accounting for 62 percent of new riders versus 77 percent of shifted
riders. To and from a work-related activity increased from 5 percent
for shifted riders to 10 percent for new riders. Airline travel was also
an important trip purpose for new riders, accounting for 9 percent,
versus 2 percent for shifted riders.
- Park & Ride was more important as a mode of access, account-
ing for 25 percent of new riders versus 10 percent of shifted riders,
whereas CTA or Pace bus access was 52 percent of shifted riders
compared to 28 percent of new riders. Fourteen percent of new
riders got a ride, compared with 10 percent of shifted riders, and
28 percent walked, compared with 26 percent of shifted riders.

These results match expectations from the Midway Line Market
Potential Survey of 1992 (4). In that survey people who did not use
transit said they were more likely to gain access to the line by auto-
mobile. Nevertheless, over one-half of new transit riders rode the
bus or walked to the Orange Line.

- Most new riders (52 percent) used to drive all the way, 22 per-
cent used to get a ride, and 25 percent started making this trip since
the Orange Line opened.
- Eighty percent of Orange Line riders who shifted from other
transit services formerly rode buses, 11 percent rode another CTA
rail line, 3 percent took Metra, and 6 percent took other modes.
- New riders were more likely to be male (56 percent versus
44 percent of shifted riders). The number of female riders declined
correspondingly.
- More whites (68 percent) and fewer Hispanics (14 percent)
were represented among new transit riders, as compared with
59 percent and 24 percent, respectively, among shifted riders.
- Automobile ownership was somewhat higher for new users,
with 42 percent classed as zero- or one-auto households and
54 percent classed as two- or three-automobile households, versus
55 percent and 41 percent, respectively, of shifted riders. This is an
interesting commentary on the increased success of rail over bus in
attracting transit users.
- Combined household income was higher for new users. Only
28 percent reported incomes under $30,000 (compared with
42 percent for shifted users), whereas 23 percent (compared with
13 percent) reported incomes over $60,000.

Sources of Information for New Riders

New transit riders, like riders shifted from other transit, learned of
the new line from various promotional materials, rather than by
observing the line’s construction. Because transit ridership typically
turns over 15 to 20 percent every 12 to 18 months or so, it is of value
to know whether new trip-makers (who responded on the survey,
"just started making this trip") learned about Orange Line service
from a different source than did those traveling by automobile who
made the change to rail transit. About 5 percent of all respondents
were making a new trip in the corridor; these riders represented
about one-fifth of the overall market of new transit riders.

The single most successful method of informing CTA riders
about the Orange Line was car cards placed on CTA buses, noticed
by over half of new Orange Line riders. Presumably these signs
were noticed during earlier (perhaps infrequent) CTA bus rides,

<table>
<thead>
<tr>
<th>Ads (79%)</th>
<th>News Accounts (44%)</th>
<th>Other Places (49%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14% Magazines</td>
<td>29% Television</td>
<td>37% Friends</td>
</tr>
<tr>
<td>32 Radio</td>
<td>20 Radio</td>
<td>21 Family Members</td>
</tr>
<tr>
<td>43 Newspapers</td>
<td>25 Newspapers</td>
<td>22 Co-Workers</td>
</tr>
<tr>
<td>43 Billboards</td>
<td>6 Magazines</td>
<td>10 CTA Employees</td>
</tr>
<tr>
<td>63 CTA Buses</td>
<td>4 Other</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Respondents could mention more than one information source. The total
percentage for each of the three categories is consequently higher than
for any one of them, since multiple mentions were given. 1,858
respondents.
other than the ride surveyed in March. This was similar for both trips formerly made by automobile and new trips.

- Riders making new trips were less likely to have seen advertisements at CTA train stations (20 percent) than were former auto travelers (31 percent).
- Billboards along the Stevenson Expressway and elsewhere were seen by both former automobile users (40 percent) and those making new trips (36 percent).
- Newspaper advertisements were seen by 38 percent of former automobile travelers and 32 percent of those making new trips.
- Radio advertisements were heard by 35 percent of former automobile users and 27 percent of those making new trips.
- Magazine advertisements were read by 16 percent of former automobile travelers and a similar 15 percent of those making new trips.

CONCLUSIONS: EARLY LESSONS LEARNED

Improved Service Levels

- To divert a significant number of automobile users to transit, competitive travel times are essential, both in relation to conventional mixed-traffic bus service (even express) and automobile travel.
- Even more important, potential riders must perceive travel times favorably, particularly in terms of schedule reliability and wait time, smooth, uninterrupted interstation vehicle flow, and efficient passenger movement through stations.
- New grade-separated and express transit service must get off to a good start, both in terms of press coverage and in having all the operational bugs worked out before opening day.
- Transit must not only initially establish a positive image, but maintain good service as a reliable, dependable feature, especially for new riders.
- “Extra effort” should be a major training theme for employees who inaugurate new service, as a part of building transit-ridership habits on the part of the market served.

Marketing and Community Outreach

- Good paid promotion campaigns, using print media, billboards, radio, and in-vehicle advertising, can be very effective in reaching potential riders and should be employed as a part of a creative marketing campaign.
- Good press coverage up to, on, and after opening day can also play a major, although not determining, role in building a favorable image in the community for major transit improvement projects. Every effort should be made to establish a good relationship with the press as a part of inaugurating new service.
- Preopening community forums, in which transit agency representatives explain the features of major new service improvements—particularly addressing the specific changes in present service—can help increase rider awareness and acceptance on opening day.

Attracting New Riders

- Park & Ride facilities, particularly at outlying stations, must be large enough and convenient enough for a potentially sizable portion of new riders, in spite of air-quality-related cold-start issues.
- Park & Ride can be controversial as an access mode, not only because it compromises air-quality gains achieved by the shift to transit, but because it can create neighborhood frictions when overflow demand spills out onto local residential streets near rail stations whose Park & Ride facilities may be too small or nonexistent.
- The most important promotional medium for reaching potential new riders, as well as achieving the shift from express bus to rail, was bus card advertising. Because of the extensive bus coverage in the southwest corridor and the central area before the opening of the Orange Line, even occasional bus riders saw the advertisements.
- Billboards, newspaper advertisements, and radio spots were also effective marketing tools, and should be coordinated in a common-theme, multimedia marketing program, targeted particularly at new riders.
- For opening day, the basic Orange Line message was “Rail Service is Here.” Later marketing campaigns can target specific submarkets, with varied themes, based on research on the rail line’s appeal.

REFERENCES