Who's On Board 2016
What Today's Riders Teach Us About Transit That Works (summary)

Useful transit is essential for cities to thrive. It supports development and economic growth while mitigating congestion, reduces the public health and environmental harms of transportation, and provides an affordable choice so that residents can access jobs and services without the expense of a private vehicle.

For these reasons, cities across America have been expanding and improving transit. From a ridership perspective, however, the results of these efforts have been mixed. When do people choose transit, and in what conditions?

New research from TransitCenter, **Who's On Board 2016: What Today's Riders Teach Us About Transit That Works**, seeks to answer those questions. The report derives lessons about useful transit from three focus groups and a survey of 3,000 transit riders from 17 metropolitan regions across the U.S. This summary presents the main findings and recommendations from the research. (To download the full report, visit www.transitcenter.org.)

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Nearly everyone has "choices," and few riders are truly "captive."

For over 50 years, transportation professionals have used the terms "choice" and "captive" to describe two different populations of public transportation users. The generally accepted definition for a choice rider is someone who has a car, but nonetheless chooses transit for many trips. A captive rider is someone who has no car and is therefore presumed to have no alternative to transit. These terms were coined by transportation modelers, but today are commonly used in ways that oversimplify the transit market and can lead policymakers astray.
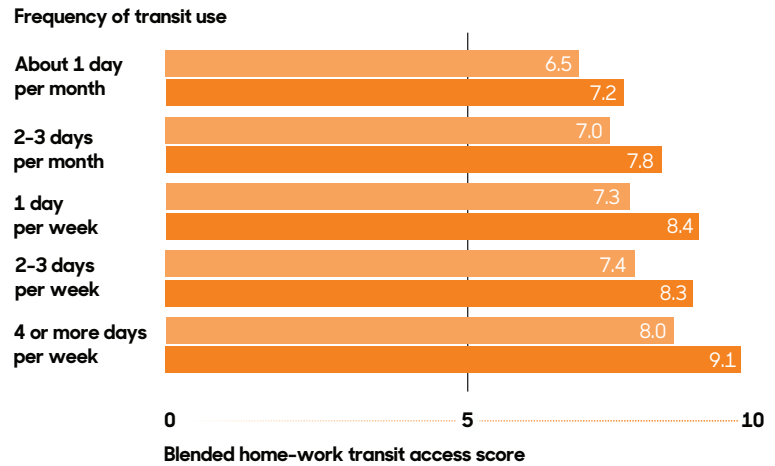
This binary categorization of transit riders is often used to imply that agencies should focus on winning over people with cars, because everyone else will ride transit regardless of service quality. The end result is often poor service in denser neighborhoods that would use transit the most, and over-commitment of resources to low-density suburbs in an effort to attract "choice riders."

In fact, we find that the "captivity" of carless transit riders is greatly overstated. We measure this using AllTransit's transit access score, a 0–10 score that accounts for frequency of service, access to jobs, and system coverage. Among both car owners and non-car-owners, frequent transit use correlates with the transit access score.

To put it simply, people who live and work near better transit ride transit more often – whether or not they own cars.

Average AllTransit Score by Car Ownership & Transit Trip Frequency for Full-time employed Respondents

Car owners   Non-owners

Frequency of transit use

	Car owners	Non-owners
About 1 day per month	7.2	6.5
2–3 days per month	7.8	7.0
1 day per week	8.4	7.3
2–3 days per week	8.3	7.4
4 or more days per week	9.1	8.0

0   5   10

Blended home-work transit access score

N = 2,303 respondents

This analysis includes full-time employed respondents in order to remove from the sample retirees and others who take few trips overall. We show the average of transit access scores for respondents' home and work locations.

Instead, think about occasional riders, commuters, and (especially) all-purpose riders

Rather than segmenting transit riders by household characteristics (like whether they own a car), we take a user-centric approach, looking at how often and why people use transit. Three patterns of use emerge from the data:

Occasional riders use transit infrequently, for diverse reasons; some use transit to go "downtown" or another transit-accessible place, while others use transit as a backup mode.
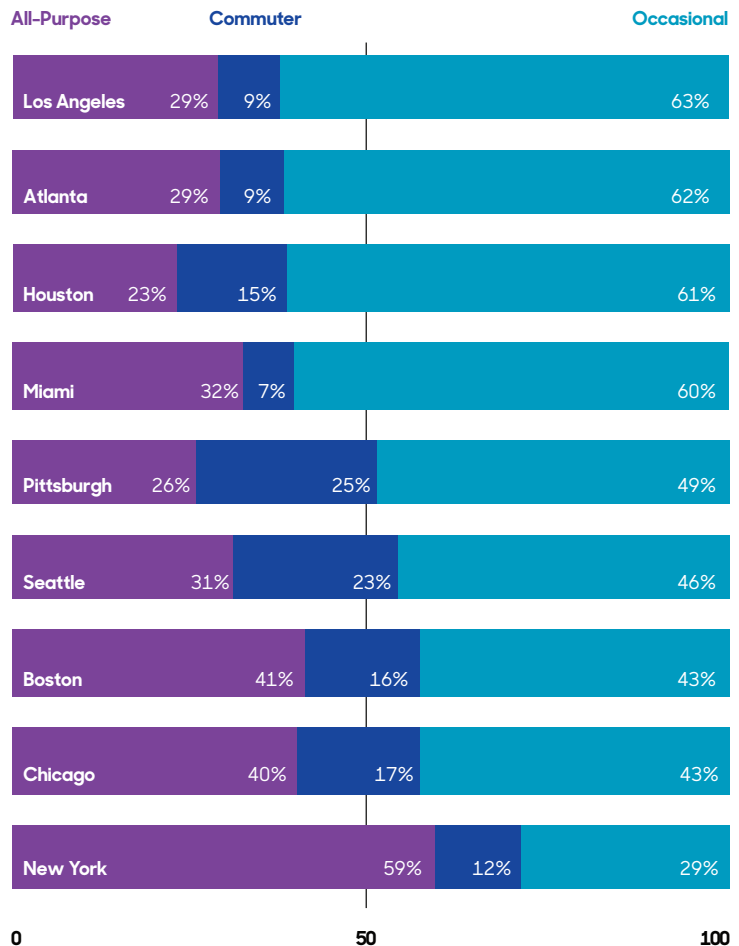
Commuters take transit regularly but almost exclusively for work trips.

All-purpose riders take transit regularly, for multiple reasons.

There is significant demographic diversity within each group, and the proportion of each group varies greatly by city. Occasional riders are the largest group of riders in cities with poor transit, **but greater transit access and quality leads to more all-purpose ridership:**

All-purpose transit ridership is an important goal for cities — a sign that transit is becoming useful for many purposes. They are also important customers for transit agencies because they are the most likely to use transit on the weekends and at off-peak times, providing the demand needed to justify more all-day service.

Segments by Metro Area

	All-Purpose	Commuter	Occasional
Los Angeles	29%	9%	63%
Atlanta	29%	9%	62%
Houston	23%	15%	61%
Miami	32%	7%	60%
Pittsburgh	26%	25%	49%
Seattle	31%	23%	46%
Boston	41%	16%	43%
Chicago	40%	17%	43%
New York	59%	12%	29%

0   50   100

All-purpose riders live where transit is useful

All-purpose transit riders tend to live in neighborhoods where transit is frequent and provides access to multiple jobs and destinations. We measure this with a new nationwide database of transit service, AllTransit. AllTransit's "transit access score" is a 0-10 score that accounts for frequency of service, access to jobs, and system coverage.

Occasional riders have mediocre transit near where they live and work; commuters work in neighborhoods with excellent transit but tend to live in neighborhoods with middling transit. Among employed survey respondents, work transit access is an even more important determinant of transit use than their home transit access.

Taken together with the data on walkability (see below), this helps illustrate the importance of developing housing, offices, and retail within walking distance of a frequent transit network. Concentrating development around transit is a powerful method for increasing transit ridership (and creating attractive places). America's most successful transit cities have followed this formula, as have prosperous transit-oriented suburbs like Evanston, Illinois and Arlington, Virginia.

Transit Quality at Home and Work

	Occasional	Commuter	All-purpose
Average AllTransit transit access score (home)	6.56	6.72	7.93
Average AllTransit transit access score (work)	7.23	9.15	8.47

The most important "first mile" / "last mile" solution: Walking

Transit planners often talk about the importance of the "first mile" and "last mile" connection, and there is much talk of the potential for smartphone-enabled taxis or other ridesharing services to connect people to transit. But by far, the most important "first mile" solution is walking.

The majority of transit riders walk to transit. In our survey, 80% of all-purpose riders typically access transit on foot, as well as 53% of commuters and 57% of occasional riders. In general, if someone walks to transit, he or she is more likely to be a frequent transit rider.
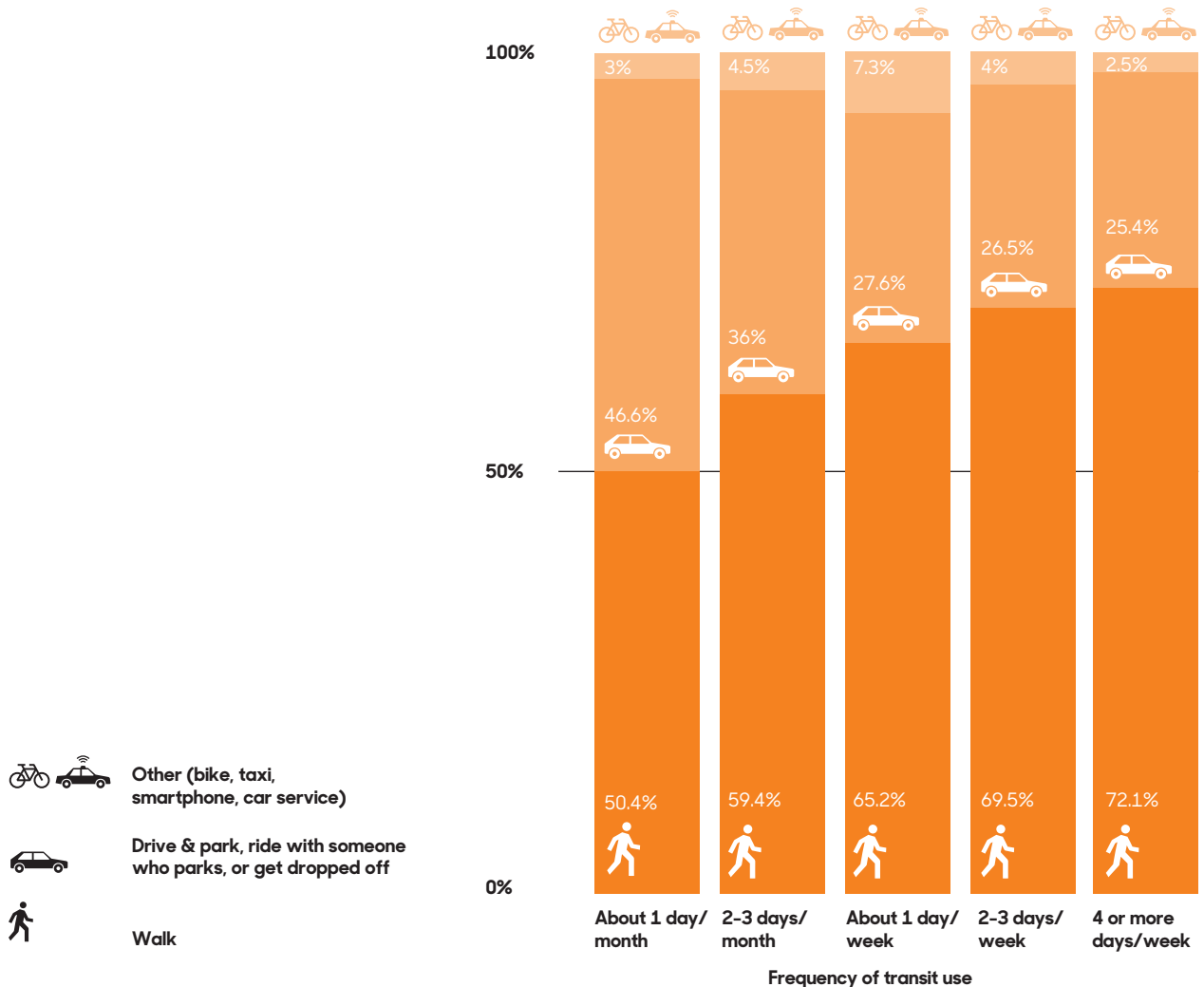
This has important implications for transit:

- Transit alignments: New transit routes should be an easy walk from destinations – question alignments that seem easier from an engineering standpoint but make it hard to reach destinations (like a rail line in the median of a highway).
- Station area planning: Stations surrounded by housing, retail, and offices will promote all-purpose ridership; Park-and-ride stations will serve mostly commuters and occasional riders. Make areas around stations better connected with new pedestrian infrastructure and finer-grained street grids.

- Station and street design: Stations and surrounding streets should facilitate walking, with highly visible crosswalks, wide sidewalks, and multiple pedestrian access points. Put bus stops in places where there are safe pedestrian crossings.

Tysons Corner, a major commercial district in Fairfax County, Virginia, is one example of how poor walkability impacts transit. In August 2014, the Washington Metropolitan Area Transit Authority (WMATA) opened the Silver Line, connecting Tysons Corner to DC with fast, frequent rail service. But a year after opening, Silver Line ridership was 30% below projections. WMATA's own analysis blamed a lack of sidewalks and other pedestrian infrastructure: Tysons Corner is dominated by forbiddingly wide streets and intersections, surface parking lots that create an uncomfortable walking environment, and a circuitous street grid that forces people to make unproductive detours. County officials are gradually improving walkability around stations by creating a finer-grained street grid and adding new sidewalks, trails, and crosswalks. As pedestrian access improves, ridership should rise as well.

Typical Access Mode to Transit

	About 1 day/month	2–3 days/month	About 1 day/week	2–3 days/week	4 or more days/week
Other (bike, taxi, smartphone, car service)	3%	4.5%	7.3%	4%	2.5%
Drive & park, ride with someone who parks, or get dropped off	46.6%	36%	27.6%	26.5%	25.4%
Walk	50.4%	59.4%	65.2%	69.5%	72.1%

Frequency of transit use

What keeps transit riders satisfied? High frequencies and quick travel time.
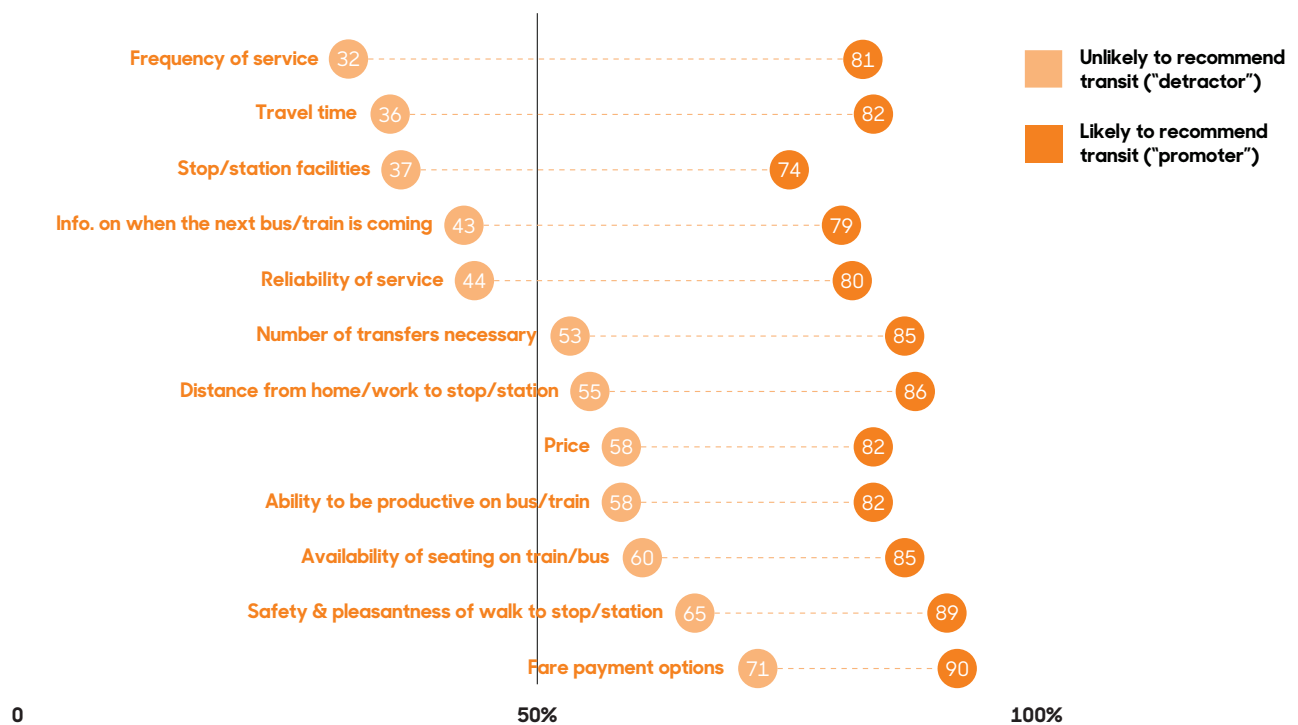
Shelters, information, and reliability are important too.

There are many ways to improve transit: Wi-Fi, improved shelters, real-time information, and contactless farecards. But what do transit riders care about? To find out, we compared satisfaction with 12 transit service attributes among "transit promoters" (survey respondents who said they would recommend their regional transit service), and "transit detractors" (those who are unwilling to recommend transit).

Frequency of service and travel time display the largest gaps in satisfaction between transit promoters and detractors, and transit detractors give them the lowest rating out of all service attributes. They are closely followed in importance by stop/station conditions, "next bus" information, and reliability.

To put it simply: **What makes an unhappy transit rider? Transit service that is infrequent, slow, and unreliable, and transit stops that lack shelter and information.** Addressing these deficiencies should be at the top of agencies' to-do lists.

Satisfaction With Transit Service Attributes

Attribute	Detractor	Promoter
Frequency of service	32	81
Travel time	36	82
Stop/station facilities	37	74
Info. on when the next bus/train is coming	43	79
Reliability of service	44	80
Number of transfers necessary	53	85
Distance from home/work to stop/station	55	86
Price	58	82
Ability to be productive on bus/train	58	82
Availability of seating on train/bus	60	85
Safety & pleasantness of walk to stop/station	65	89
Fare payment options	71	90

Unlikely to recommend transit ("detractor")

Likely to recommend transit ("promoter")

0   50%   100%

How to grow all-purpose ridership: Enable <u>more people</u> to walk to <u>useful transit</u>

Transit draws riders when it is located in walkable neighborhoods and designed to be frequent and fast. Service that doesn't meet this bar will fall short of its potential, regardless of whether the people it serves have personal cars and regardless of how attractively vehicles are designed.

To grow ridership, transit agencies should:

1. **Focus on improving transit service in walkable neighborhoods.** Walkable neighborhoods that have not been connected to frequent service are major opportunity areas where transit improvements can unlock substantial numbers of new riders.

2. Work with municipal and regional governments to **concentrate development around transit corridors** and **make the walk to transit safe, understandable, and pleasant.**

3. **Reduce transit travel times by:**
   - Creating dedicated rights-of-way for transit.
   - Adopting prepaid fare collection, "tap-and-go" farecards, and other methods to speed up boarding.
   - Designing (and redesigning) routes to be straight and direct.
   - Consolidating stops on transit routes that currently have stops too close together.

4. **Improve frequency of service** on routes with high potential for ridership. Consider redesigning bus networks to provide more high-frequency service in walkable neighborhoods and fewer infrequent routes in car-dependent areas.

5. **Ensure transit stops provide shelter and comfort** (this often requires coordination with municipal government).

6. **Make real-time information available to customers.**

Local governments should:

1. **Use zoning to concentrate development around transit corridors** and encourage dense, walkable, mixed-use neighborhoods.

2. **Improve street and sidewalk connectivity** in poorly connected neighborhoods and use subdivision regulations to require well-connected street grids in new development.

3. **Reduce transit travel times** through transit signal priority, dedicated bus lanes, boardinb bulbs, and other street treatments.

4. Coordinate with transit agencies to **install and improve transit shelters and create safe and pleasant walking conditions** around transit.