How Innovation, Consumer Preferences and Technology are Transforming Public Transit

James Corless, Director, T4America

www.T4america.org
@t4america
Transportation for America is an alliance of local elected, business and civic leaders from communities across the country, united to ensure that states and the federal government step up to invest in *smart, homegrown transportation solutions* — because these are the investments that hold the key to our future economic prosperity.
T4A Advisory Board

• Atlanta Chamber of Commerce
• Seattle Chamber of Commerce
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• Los Angeles Business Council
• Kaiser Permanente
• Indianapolis IN Mayor Greg Ballard
• Normal IL Mayor Chris Koos
• Salt Lake County Mayor Mayor Ben McAdams
• Boise ID City Councilwoman Elaine Clegg
• Durham NC Mayor William Bell
• National Assoc of Latino Elected Officials
• National Urban League
• Atlanta Regional Commission
• Sacramento Area Council of Govts
Our Members Include:

*T4A’s members are cities, counties, non-profit organizations and businesses of various shapes and sizes.*
OVERVIEW

1. A brief history of public transportation
2. Understanding the new demand for transit
3. Case studies: innovation from the ground up
4. Transportation takeaways for Idaho
PART ONE: A BRIEF HISTORY
1900s-1950s: private transit companies
The Birth of the Federal Interstates
The Death of Private Streetcars
Transit Timeline

- Omnibus/horse drawn carriages: late 1800s
- Golden era of streetcars: 1890s-1930s
- End of streetcars/start of city-owned buses: 1950s
- First dedicated federal funding for transit: 1982
- Heavy rail 2.0 regional subways: 1970s-1990s
- Light rail 2.0: 1980s-1990s
- Streetcar rebirth: 2000s-2010s
- New microtransit and on-demand services: 2010s+
PART TWO: THE NEW DEMAND
Changing demographics: Millennials on the rise


In millions

- Boomers
- Gen Xers
- Millennials
- Silents


Note: Annual averages plotted 1995-2014. For 2015 the first quarter average of 2015 is shown. Due to data limitations, Silent generation is overestimated from 2008-2015.


PEW RESEARCH CENTER
66% say that access to high quality public transportation is one of the top three criteria for deciding where to live next.

Apr 2014 survey Rockefeller Foundation and Transportation for America
• 18-34 year olds
• 10 U.S. cities (Chicago, NY, San Francisco, Charlotte, Denver, LA, Minneapolis, Nashville, Indianapolis, Tampa-St. Petersburg
• 95% confidence with a ±3.7% margin of error
Americans of all ages want mixed-use neighborhoods

58% of respondents say ideal neighborhood is mixed-use; just 39% live in one now
US Companies Moving Closer In

FIGURE 2
Relocations, expansions, and new office creation

- Relocation from suburbs in the metro area: 219
- Relocation from suburbs outside metro area: 41
- New downtown location: 74
- Downtown relocation within the metro area: 92
- Expansion of existing office: 28
- Consolidation of suburban and downtown locations: 20
- Relocation from downtown outside metro area: 9
- New company: 10

Transportation for America
Where US Companies Are Moving

**Walk Score**
- Before: 52
- After: 88

**Transit Score**
- Before: 52
- After: 79

**Bike Score**
- Before: 66
- After: 78
“I think it’s essential we be accessible to Metrorail (transit system), and that limits the options. I think as with many other things our younger folks are more inclined to be Metro-accessible and more urban.”

-- CEO Arne Sorenson, Marriott International
PART THREE: CASE STUDIES
Case Studies: Part I

- Denver, CO
- Salt Lake City, UT
- Cleveland, OH
- Houston, TX
- Havre, MT
- Pierre, SD
THE TRAIN TO THE PLANE
GRAND OPENING
University of Colorado A Line
4.22.16
<table>
<thead>
<tr>
<th>Route</th>
<th>Year</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>North South LRT</td>
<td>1999</td>
<td>15.8</td>
</tr>
<tr>
<td>University LRT</td>
<td>2001</td>
<td>2.8</td>
</tr>
<tr>
<td>Medical Center Extension</td>
<td>2003</td>
<td>1.0</td>
</tr>
<tr>
<td>Hub Extension</td>
<td>2008</td>
<td>1.0</td>
</tr>
<tr>
<td>Commuter Rail North</td>
<td>2008</td>
<td>45.0</td>
</tr>
<tr>
<td>West Valley LRT</td>
<td>2011</td>
<td>5.1</td>
</tr>
<tr>
<td>Mid-Jordan LRT</td>
<td>2011</td>
<td>10.6</td>
</tr>
<tr>
<td>Commuter Rail South</td>
<td>2012</td>
<td>45.0</td>
</tr>
<tr>
<td>Airport LRT</td>
<td>2013</td>
<td>6.0</td>
</tr>
<tr>
<td>Draper LRT</td>
<td>2013</td>
<td>3.5</td>
</tr>
<tr>
<td>Sugar House Streetcar</td>
<td>2013</td>
<td>1.5</td>
</tr>
</tbody>
</table>
Quito, Ecuador
Eugene OR
Built bus rapid transit system – “Health Line”
Opened in 2008 replacing local bus service
Ridership increased 54% - 14,300 people/day
Reduced transit travel time 29% along corridor
U.S. regions building or considering new bus rapid transit service - 2016

Data on BRT systems that are planned, funded or under construction comes from Yonah Freemark and Steven Vance’s Transit Explorer project. January 2016. http://www.thetransportpolitico.com/transitexplorer/
# BRT Gaining Office Share

<table>
<thead>
<tr>
<th>OFFICE Development Metric</th>
<th>BRT Metros</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2000-2007</strong></td>
<td></td>
</tr>
<tr>
<td>New Office Square Feet</td>
<td>39.0 million square feet</td>
</tr>
<tr>
<td>Within less than 1/2 mile of BRT</td>
<td>4.5 million square feet</td>
</tr>
<tr>
<td>Share</td>
<td>11%</td>
</tr>
<tr>
<td><strong>2007-2015</strong></td>
<td></td>
</tr>
<tr>
<td>New Office Square Feet</td>
<td>13.7 million square feet</td>
</tr>
<tr>
<td>Within less than 1/2 mile of BRT</td>
<td>2.1 million square feet</td>
</tr>
<tr>
<td>Share</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Change in Share of New Office Development</strong></td>
<td><strong>33%</strong></td>
</tr>
</tbody>
</table>
From Pre-Recession Job Hemorrhaging to Post-Recession Turn-Around

<table>
<thead>
<tr>
<th>BRT Summary</th>
<th>BRT Corridor 2002-2007</th>
<th>BRT Corridor 2007-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Job Change in BRT Corridors</strong></td>
<td>-455</td>
<td>22</td>
</tr>
</tbody>
</table>
A Year After a Radical Route Rethink, Houston's Transit Ridership Is Up

The city's bus network transformation seems to be working.

LAURA BLISS | @mslaurabliss | Aug 18, 2016 | 5 Comments

Total METRO Ridership

<table>
<thead>
<tr>
<th>Month</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>6,443,108</td>
<td>6,979,600</td>
</tr>
<tr>
<td>Feb.</td>
<td>6,294,073</td>
<td>7,198,330</td>
</tr>
<tr>
<td>March</td>
<td>7,036,766</td>
<td>7,597,239</td>
</tr>
<tr>
<td>April</td>
<td>6,738,389</td>
<td>6,673,960</td>
</tr>
<tr>
<td>May</td>
<td>6,276,175</td>
<td>6,984,959</td>
</tr>
<tr>
<td>June</td>
<td>6,706,947</td>
<td>7,024,452</td>
</tr>
<tr>
<td>First Half</td>
<td>39,495,458</td>
<td>42,458,540</td>
</tr>
</tbody>
</table>

Source: METRO Ridership Reports
North Central Montana Transit

North Central Montana Transit is a public transportation system designed to serve the Hi-Line communities of Hill and Blaine counties and surrounding communities as well as to provide coordinated services with Fort Belknap and Rocky Boy’s Transit systems.

NCM Transit is operated by Opportunity Link, Inc. and was established in partnership with North Central Montana area organizations including local and tribal government agencies, social service organizations and educational institutions.

Contact North Central Montana Transit directly at:
3152 US-2, Havre, MT 59501
(406) 265-4762

Like NCMT on Facebook
River Cities Public Transit SD
River Cities Public Transit (SD)

- 11 county demand response service started in 1998
- Consolidation of hospitals and human service agencies
- Includes youth service to get kids around
- 12,000 rides in 2001, to 300,000 rides in 2011
- Started 24 hour service in 2006
- Significant revenue thru FTA 5311 transit funds
Case Studies: Part II

- Centennial, CO
- Pinellas County, FL
- Gainesville, FL
- DC & Kansas City, MO
### Some Important Definitions

<table>
<thead>
<tr>
<th>Mode</th>
<th>Working Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car-sharing</td>
<td>One car – multiple drivers</td>
</tr>
<tr>
<td>Ride-sharing</td>
<td>Existing trip being taken – add at least 1 passenger (no new vehicle trips added)</td>
</tr>
<tr>
<td>Ride-hailing</td>
<td>One driver – 1+ passengers (taxis/Uber/Lyft)</td>
</tr>
<tr>
<td>Vanpools</td>
<td>Existing trip – volunteer driver (ridesharing with 1+ passengers – typically work)</td>
</tr>
<tr>
<td>Microtransit</td>
<td>One vehicle – demand driven – fixed OR deviated route – many passengers – professional driver</td>
</tr>
<tr>
<td>Transit</td>
<td>One vehicle – fixed route – many passengers – professional driver</td>
</tr>
<tr>
<td>BRT (Bus Rapid Transit)</td>
<td>Same as transit – but with dedicated lanes, fare prepayment, signal priority etc.</td>
</tr>
</tbody>
</table>
Major Technological Innovations

- Geolocation
- Ridematching
- Dynamic Routing & Scheduling
- In-App Fare Payments (across multiple modes)
- Driverless vehicles
Metro Denver city experiments with free Lyft rides to light rail

Aug 11, 2016, 6:00am MDT  Updated Aug 16, 2016, 8:32am MDT


Get Denver Newsletters and Alerts

Enter your email address
Sign Up

Cathy Proctor
Reporter
Denver Business Journal

Denver’s mass transit system is expanding – particularly its rail network – but sometimes just getting to the train station is the biggest hurdle.
Participate in an innovative project that could serve as a model for transit systems throughout the country.

When you skip driving, you save on gas, reduce wear and tear on your car and don’t have to worry about parking.

The Go Centennial Pilot is free for riders in the service area around Dry Creek Light Rail Station.

Spending less time in traffic means you can do more with your time - like read, catch up with a friend or relax.

Fewer cars on the road means increased benefits for the environment, including reduced carbon emissions and less air pollution.

Invest in your health and leave the stress of driving in traffic behind.

Getting around easily allows you to take advantage of a better quality of life.
Centennial
Central Business District
Leave at 08:15 in GMT-6

Sooner
Cheaper
Greener

8:22 - 8:58 (36m)
Board tram line F and Cycle
$4.50 0.1kg CO₂ 22 calories

8:15 - 9:00 (46m)
Take Lyft, Board tram line E and Take Lyft
$10.63 1.2kg CO₂ 5 calories
With Special Recognition to:
Pinellas County, FL
NO TAX FOR TRACKS

STOP

PINELLAS LIGHT RAIL

Vote No Nov. 4th
TAKING YOU PLACES

TRANSPORTATION ALTERNATIVE

PSTA is partnering with Uber and United Taxi to provide access to the public transit network in underserved areas. PSTA will pay half the fare, up to $3 per ride to and from designated stops within the zone. Wheelchair van service is available for those unable to ride in a sedan by calling 727-536-7433 x1 and asking for same-day PSTA service.

For more information
PSTA.net/DirectConnect
PSTA InfoLine 727-540-1900
HOW IT WORKS

- Trips must begin or end at the designated stop.
- Must be in the zone.
- 7 a.m. to 7 p.m.
  Monday through Saturday

SERVICE ZONE

HOW TO RIDE

1. Choose a provider
2. Request a ride
   - Download the app
   - Apply promo code 'PSTA' in the Uber app, then slide over to the 'PSTA' option to request a ride
   - United Taxi via phone or app
3. Pay your fare
   - PSTA pays half the fare up to $3
   - United Taxi accepts both cash and credit card
   - Uber accepts credit card via the app
4. Travel to or from a designated stop in the same trip

SERVICE PROVIDERS

1. Uber
   - Submit a trip request using the Uber app and get a reliable ride in minutes. PSTA will pay half the fare up to $3 per ride to or from designated stop.

2. United Taxi
   - Submit a trip request by calling 727-777-7777 or by using the app. PSTA will pay half the fare up to $3 per ride to or from designated stop.

STOPS

Pinellas Park Transit Center
3801 70th Ave N
(South end of Shoppes at Park Place)

US 19 in front of Walmart
8001 US Hwy 19 N
Pinellas Park

How to Ride

1. Choose a provider
2. Request a ride
   - Download the Uber app: Google Play | App Store
   - Apply promo code 'PSTA' in the Uber app, then slide to the 'PSTA' option to request a ride
   - Download the United Taxi app: Google Play | App Store
   - United Taxi via phone 727-777-7777 or app
3. Pay your fare
   - PSTA pays half the fare up to $3
   - Uber accepts credit card via the app
   - United Taxi accepts both cash and credit card
4. Travel to or from a designated stop in the same trip
MARKETING

• Branding
• Outreach
• Ribbon Cutting
• Board Member Support
• Direct Marketing Efforts
• Press Release
TAkING ACTION FOR YOU

PARTNERSHIP WITH UBER AND PSTA EXPANDING
PILOT PROGRAM GIVES LOW OR NO COST UBER RIDES
Pinellas County, FL

- Two services cut: one fixed route, one shuttle
- 6 month pilot $40,000 – half of prior service cost
- Provided paratransit service plus dial-up service
- Expanded pilot to 20 more cities August 2016
- New service “TD late shift” for low income workers
  - 9pm-6am free rides on Uber
Bridj pop-up bus service arrives in D.C.

By Lori Aratani  April 28  Follow @loriar

Bridj is offering service between these D.C. neighborhoods. (Image courtesy of Bridj)
Kansas City, MO

One of the pilot program's new Bridj vans. (Kansas City Area Transit Authority)
City hopes to use Uber to give rides to seniors

The Gainesville City Commission Thursday decided to move forward with a six-month pilot program that will pair popular ride-sharing company Uber with an unlikely customer base: senior citizens.
Gainesville, Fla.

Freedom In Motion: More Options For Senior Mobility

Last year, we announced an exciting program for senior citizens called Freedom In Motion. In collaboration with the City of Gainesville, ElderCare of Alachua County, and the Gainesville Area Chamber of Commerce, Uber was able to provide on-demand transportation to seniors in need of mobility assistance.
Gainesville, Fla.

Mayor Ed Braddy opens Uber door for the first Freedom in Motion passenger, Shirley.
Stationless Bikesharing: Sobi
Capital Community Bikeshare - Lansing

- Pilot in 2013, First phase launched 2014
- $31,000 up front capital to launch pilot
- Partnered with “A2B Bicycles” startup in MI – grad student
- “Smart Bikes” with touch screens - $2K per bike vs $4K
PART FOUR: TAKEAWAYS
Transportation Takeaways

• Growing new consumer demand for more transit options
• Mass transit not just for big cities anymore
• Innovation happening all across US in places big & small
• Technology alone won’t solve it all
• We need to be clear about the best roles for each option
• **Key ingredients for success:**
  • Smart planning and supportive land use
  • Partnerships w/ private sector/startups
  • More real time data
  • Local political leadership
  • Flexible local funding sources
What makes transit work?

Four Geographic Indicators of High Ridership Potential:

**Density**
How many people, jobs, and activities are near each potential transit stop?
- Many people and jobs are within walking distance of transit.
- Fewer people and jobs are within walking distance of transit.

**Walkability**
Is it possible to walk between the stop and the activities around it?
- The dot at the center of these circles is a transit stop, while the circle is a 1/4 mile radius. The whole area is within 1/4 mile, but only the black-shaded streets are within a 1/4 mile walk.
- It must also be safe to cross the street at a stop. You usually need the stops on both sides for two-way travel.

**Linearity**
Can transit run in reasonably straight lines?
- A logical transit line is a direct path between any two destinations on it.
- Destinations located off the straight path force transit to deviate, discouraging those who want to ride through.

**Continuity**
Does transit have to traverse long gaps?
- Short distance between many destinations is faster and cheaper to serve.
- Long distance between destinations means a higher cost per passenger. (Distance-based fares can compensate in part.)

Source: Wake County NC Transit Plan 2016; credit: Jarrett Walker & Associates
What makes transit work?

Street connectivity:
- The grid street network of downtown Raleigh makes it easy to reach many different bus stops (dots).
- The lack of street connectivity along Creedmoor Road in North Hills, Raleigh limits available walk paths to reach bus stops (dots).

Sidewalks:
- Sidewalks, represented by the blue-green lines, are available on many streets for riders to use to reach their bus stops (dots). Areas around Old Wake Forest Road in North Hills, Raleigh, provide plenty of sidewalks for riders.
- Stretches of Capital Boulevard in Raleigh lack sidewalks (blue-green lines), forcing riders traveling to and from bus stops (dots) to walk along the shoulder of a busy arterial.

Crossings:
- This intersection in Southwest Raleigh includes marked crossings, allowing riders to easily reach their bus stops and destinations.
- A lack of marked crossings along US-70 in South Raleigh makes it difficult for riders to reach their bus stops and destinations.

Source: Wake County NC Transit Plan 2016; credit: Jarrett Walker & Associates
Will Ride-sourcing Replace Transit?

Figure 4: Lifestyle changes since starting to use shared modes (net change) —supershare v. all respondents

Source: Shared Use Mobility Center and APTA; March 2016
Public Transportation/Uber vs. Car Ownership Cost

Uber Can Be Cheaper Than Car Ownership — If You Mostly Use Public Transit

Estimated annual cost of transportation by household, given share of trips that are taken on public transit.

Source: 538/ Nate Silver
Bus  
Private Car  

Credit: Cycling Promotion Fund; cyclingpromotion.com.au
Bus  Private Car  Uber/Lyft Car

Credit: Cycling Promotion Fund; cyclingpromotion.com.au
Public-Private Partnerships: 1.0

The Proposed New Union Railway Depot.

Chicago Union Station Company
Transportation Measures Win at the Polls

70% Approval Rate for Transportation Measures

Twice the Approval Rate of All Ballot Measures

Success Across Region, Population, Party Affiliation
309 finance measures on ballots between 2000-2010
84% of all transportation measures are finance-related
Sales tax increases or renewals are most common type
Bonds are most successful with 84% approval—but are far more common on statewide ballots than local and regional
Property tax measures are more successful than sales tax measures, with 81% approved vs. 59%
Transportation ballot measures pass at twice the rate of all other ballot measures.

This success holds across different regions, populations and party affiliations.

70% The average approval rate for public transportation ballot measures over the last 10 years:

- 2006: 65% approved
- 2007: 66% approved
- 2008: 77% approved
- 2009: 73% approved
- 2010: 77% approved
How Much Do States Spend of Their Own Dollars on Transit?

State spending on transit as a percentage of total transit spending, FY 2010-2012

Source: National Transit Database

IndyGo deciding which routes should get focus and resources

Kathleen McLaughlin  October 17, 2014

Highs and lows
IndyGo’s 6.8 million rides through August this year were concentrated in a few busy routes and declined on others.

Forty percent of ridership focused on three routes:

<table>
<thead>
<tr>
<th>Route</th>
<th>Ridership through August</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>1,002,500</td>
</tr>
<tr>
<td>39</td>
<td>931,185</td>
</tr>
<tr>
<td>10</td>
<td>806,154</td>
</tr>
</tbody>
</table>

Ridership fell by double digits on four routes:

<table>
<thead>
<tr>
<th>Route</th>
<th>Ridership through August</th>
<th>Decline from a year ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 East 16th Street</td>
<td>35,721</td>
<td>21.6%</td>
</tr>
<tr>
<td>28 St. Vincent</td>
<td>130,040</td>
<td>11.8%</td>
</tr>
<tr>
<td>16 Beech Grove</td>
<td>93,762</td>
<td>11.4%</td>
</tr>
<tr>
<td>2 East 34th Street</td>
<td>153,622</td>
<td>10.8%</td>
</tr>
</tbody>
</table>

Source: IndyGo
UP TO
200 locations

The city is all yours. With up to 200 locations planned in Indy, you can find an electric car wherever you need one. From downtown to the city limits, north to south and east to west, BlueIndy lets you follow your whims, whatever road they may take. The adventure starts now; only you can decide where it will take you.
New Study: property values within one block of Indy cultural trail have increased 148%
Indy Mayor Greg Ballard