Understanding Recent Ridership Trends

APTA Policy Webinar

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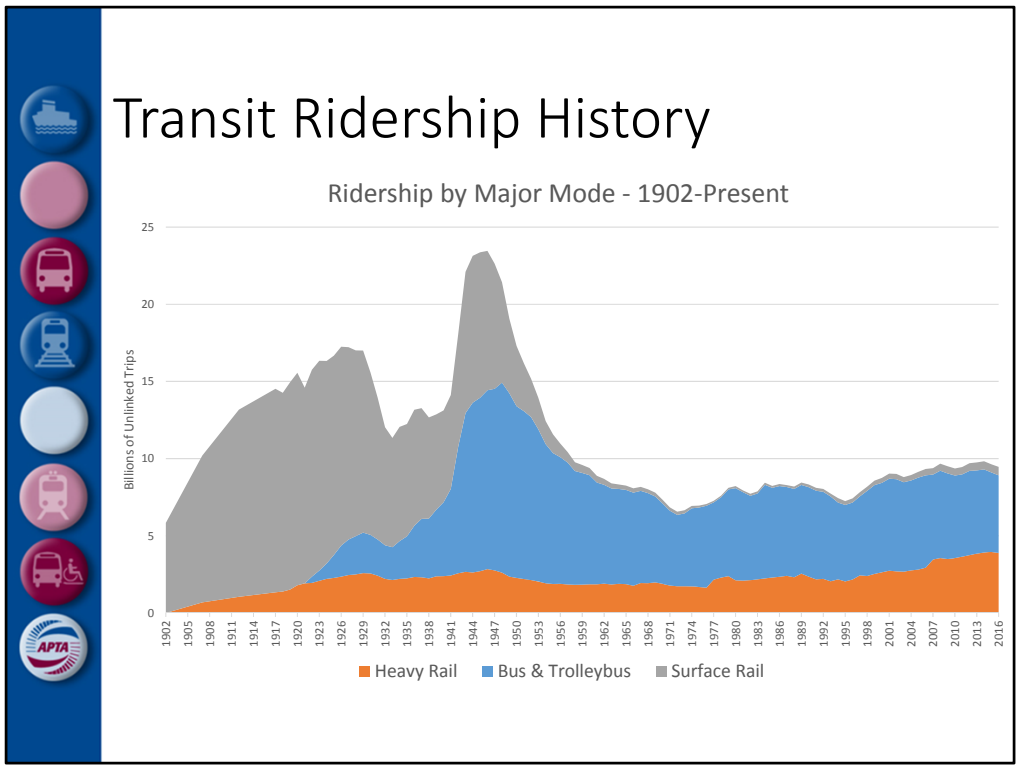


Darnell

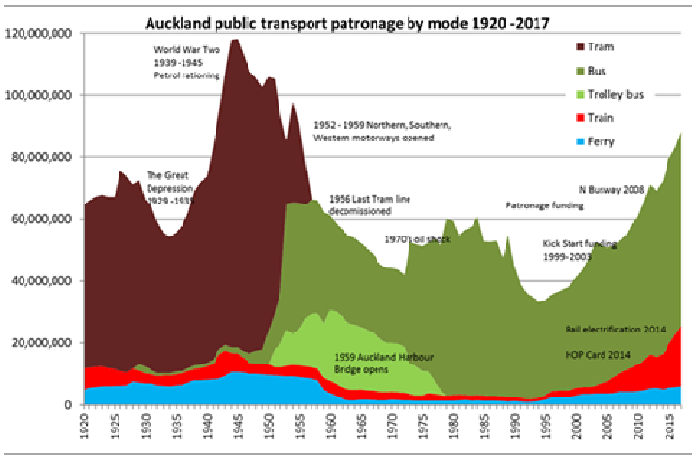
Transit use peaked after World War II with both the highest bus ridership and trolley use ever around 1948.

Suburbanization, increased car use, and dismantling trolley systems, which served as the backbone of the prior system impacted ridership.

Record Ridership since in the modern era, which received substantial press, is near the far right of the chart, peaking in 2013, primarily led by rail, the last data point on the chart represents the declines since 2013.

This chart put recent ridership trends into a historical context, the scale of both recent ridership increases and declines actually represent.

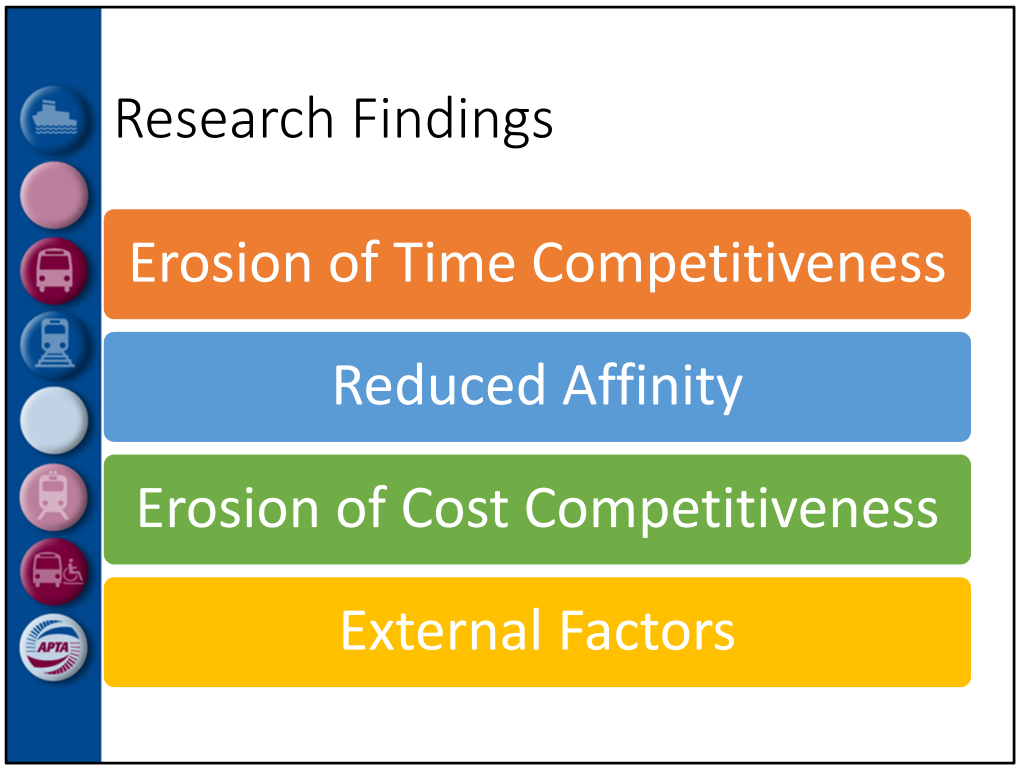
International Example



Darnell

This chart from New Zealand offers a perspective of what innovations and interventions can do to positively increase ridership.

They experienced a similar decline after World War II, decommissioned trolley lines that served as the backbone of their ridership, and were also impacted by substantial highway investment. Ridership increased because of funding enhancements, the improvement of fare payment technologies, electrification of rail systems and new busways.



Darnell

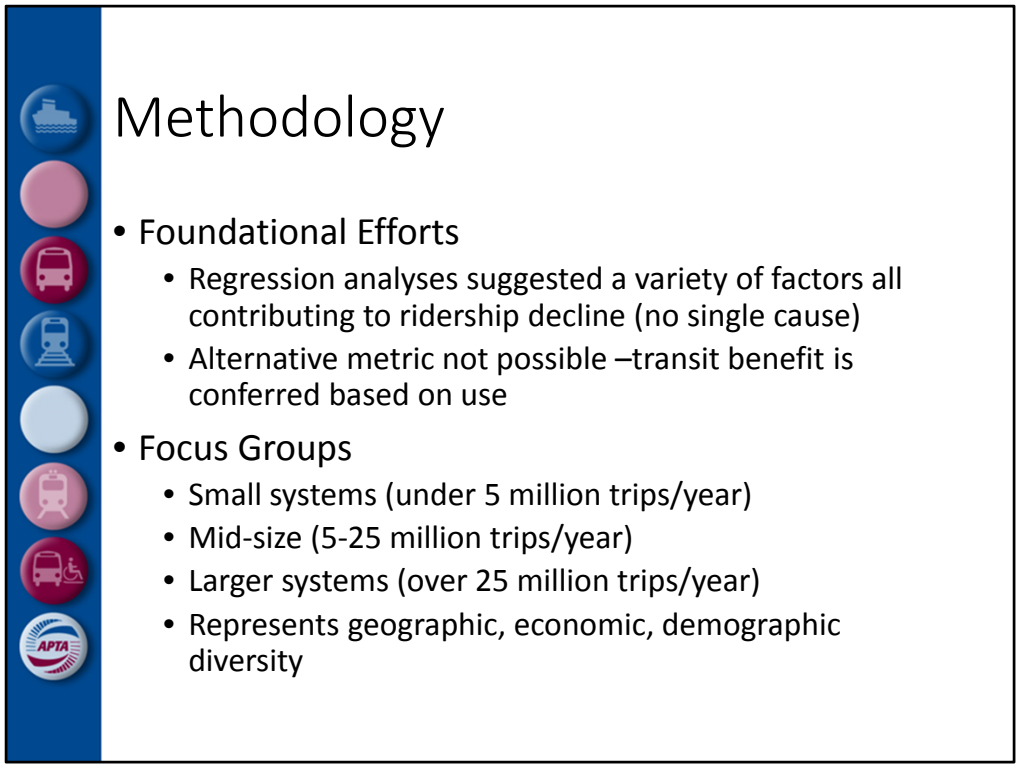
In the American context, we found that contributors to ridership decline can be placed into four major categories:

The erosion of time competitiveness versus alternatives

Reduced affinity that promote customer loyalty

An erosion of our pricing advantage versus alternatives

And external factors—often associated with the fraying of the social fabric and social compact of communities. A variety of public goods, such as parks, libraries, and yes, public transportation can be impacted



Darnell

We ran regressions—which are meant to isolate potential causes and show causation and correlation of them—such as, what do decreased gas prices mean for public transportation. We did not find causation from any one cause. There may be completely **NEW** causes which have not been studied or verified by peer review.

Furthermore, there is no replacement for ridership, or an even stronger metric, mode share—to comparatively communicate the impact of public transportation. All of the other positive impacts of public transportation are not capable of neatly comparing performance overtime, across agencies, etc.

We conducted three focus groups. Small systems, mid-size and large. Within each group, we ensured regional, economic and community demographic profile diversity. The focus groups were confidential. Both the participation of individual systems and staff within those systems have been kept confidential, in order to ensure a frank, honest dialogue.

Darnell

The strength of a transit system is often impacted by the health, political orientation, and regional cooperation across four major areas: local economic conditions, the trajectory of real estate development and population, transit-supportive policies, and anchor institutions.

Erosion of Time Competitiveness

- Bus Speeds
  - Mobile/online deliveries
  - VMT/Congestion
  - TNC
- Time Expectations
  - Immediate Gratification

Darnell

Consistent themes from the focus groups, existing literature, regression analysis, and a review of available data on the performance of individual bus routes led to four major areas of interest.

The first is erosion of our comparative time advantage. A number of factors can impact, and may vary by community, but still fit this category. Mobile and online delivery, increased congestion along core routes, and increased competition for curb space and lanes from pick-up and drop off from other transportation services.

Reduced Affinity

- Compete on each trip
  - Telecommuting
  - Easier transit fare payment (pay-as-you-go)
- Core market
  - Suburbanization
  - TNC drivers

Darnell

Reduced affinity with customers.

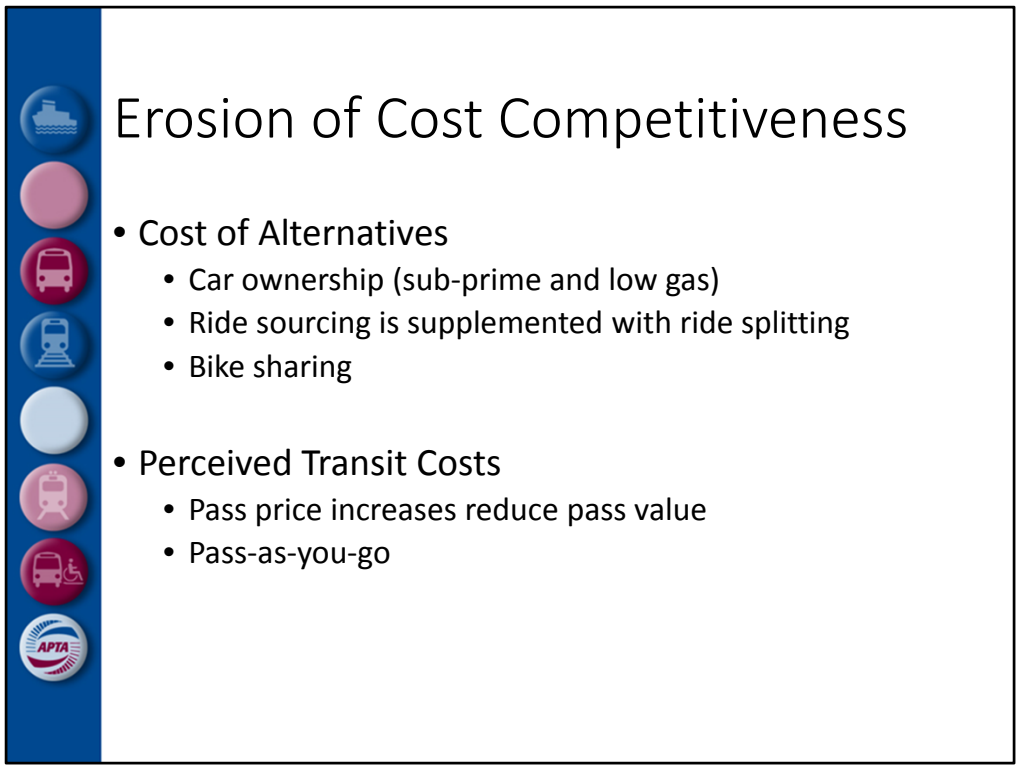
Telecommuting impacts transit in multiple ways

Assuming two days/month= 4 transit trips
66% of firms allow
Up 20 points since 2006
Reducing monthly pass incentive
*furthermore, just as the monthly pass became less incentivized, systems actually raised the price of monthly passes

Easier transit fare payment (pay-as-you-go)

As a result—we must compete on each and every trip—ON the full suite of issues that affect consumer choice—price, time, cost—vs bikeshare, walking, and TNC use. This increases the negative impact from other factors.

Furthermore, core transit users, such as the poor, are being displaced by rising prices—partially caused by the success of transit as a community amenity—just as parks and good schools would increase values. Local governments have not kept up with the need for affordable housing.



Mac

One of the primary reasons transit use is believed to be declining is due to the availability of other alternatives. Looking at the automotive industry, one of our main competitors, helps us understand the impact on transit.

Coming out of the recession, there was great pent up demand for new cars. As credit really expanded post 2010, we saw a substantial increase in auto loans. To be exact, in the first quarter of 2010, $70 billion in auto loans were issued, with around $10 billion of those being subprime, meaning issued to people with less than a 620-credit score. In comparison, by the first quarter of 2017, we saw around $150 billion in auto loans, with over $30 billion of those subprime. We're at auto loan levels today that haven't been seen really since before 2006.

Having said that, there are indications that the auto industry is slowing down. Vehicle sales peaked last year at just over 18 million at a seasonally adjusted annual rate. Now because of the recent hurricanes, that number briefly shot back up again as replacement demand is met, but it's looking like we may see that number fall below 15 million next year, giving one indicator that we are in a late cycle.

When we look at gas prices we're seeing an average conventional price of $2.43 in November of 2017. By comparison, in 2014, transit's record year for ridership, gas prices topped out at $3.70 a gallon. This trend line is starting to move up as oil prices get close to the highest they've been in 2 years. Still, with all of the increases in supply, it does look unlikely that gas prices will surpass $3 a gallon before the year 2019.

The next two bullet points address some of the external disruptive trends going on, outside

of gas prices. I think many people are starting to have a conversation about the impact of ridesharing on transit. A highly publicized study from UC Davis estimated that TNCs are resulting in a 6 percent reduction in transit use for major cities, though there are differences based on mode. We had a lot of participants in our focus groups tell us that their surveys were showing that riders were taking less transit trips because of TNCs, particularly in off peak times but some people said possibly peak times as well.

This coordinates with a trend that has been reported in some cities, which is solid peak-hour ridership, but damaging losses on weekends and off-peak hours. This suggests that when riders know that frequency is not reliable, they're going to be susceptible to traveling on alternative modes. Then there is also ride-splitting, or shared ride hailing, (for example uber pool, lyft line), by carrying more passengers they are able to provide a service that is even cheaper and can come close to being cost competitive with transit while still coming close to point to point service.

According to NACTO, there are over 55 bike share systems in the country, with an estimated 28 million trips taken in 2016. We're also beginning to see new "dockless" systems that make biking even more convenient for traveling. Cities are investing significantly in bike infrastructure. NYC put in 18.5 miles in 2016, and are looking to do 33.8 miles this year. They now have over 425 miles of protected lanes.

Finally, we heard a lot from the focus groups about price increases on monthly passes and the resulting decline in purchases. The transition from a monthly pass to "pay-as-you-go" is particularly damaging to ridership because it changes the incentive dynamic from trying to get as much value from your pass by utilizing transit to now examining the economics of each trip and seeing what other modes are out there. When you don't have that monthly pass you're making a determination of whether transit is really the best option for each individual trip.

External Factors

- Parking in core transit areas
  - Cheaper
  - Significantly more
- Breakdown of social contract
  - Perception of Crime
  - Mentally ill
  - Homeless policy

Mac

The availability of excess parking that favors an automobile-centric lifestyle is still very prevalent in many areas. Parking minimums for developers still exist in a lot of places, though some cities like Buffalo and Santa Monica have recently gotten rid of these policies. Basically it comes down to empty parking spaces not being an inefficient use of land and parking minimums only increase costs for developers, which can discourage new transportation oriented housing.
Finally, unfortunately there is still a stigma surrounding transit systems around the country. Certainly following the recession there's been an increase in urban homelessness and many cities just haven't had the necessary resources to address this. As a result, some transit systems begin acting as shelters which can discourage other riders who feel unsafe. We're impressed with systems like Valley Metro in Phoenix and DART in Dallas who both have acknowledged these problems and are working to address them by stepping up security at light rail stations and vehicles, installing cameras, better station lighting, and doing outreach to people experiencing homelessness. If transit is to remain a viable alternative for choice riders, it needs to make sure customers feel

Adaptations: Time

- Enforcement
  - Dedicate and protect curb space
- Signal Reliability
  - Dedicated lanes, queue jumps
  - Signal priority
- Ease of Use
  - Seamless Payment
  - Trip Planning/Routing
  - Service Redesign

Matt

Bus lanes:
MBTA tested a bus lane earlier this month in suburban Boston. Cones and MBTA workers cleared the lane for transit vehicles only. The bus lane along Washington Street decreased travel times considerably – some people reported that a trip that took 30 minutes the week before was reduced to 6 minutes with the bus lane!
https://twitter.com/PeterFurth/status/940997501288701957
http://www.universalhub.com/2017/imagine-roslindale-square-forest-hills-just-six?nocache=1

SFMTA has had success in adapting high-ridership bus corridors for faster and more frequent service using a variety of street treatments. On some corridors, overall traffic benefitted from transit-specific changes
https://www.sfmta.com/projects/tep-transit-effectiveness-project-muni-forward

Albuquerque just opened the US's first gold-standard BRT: http://www.brtabq.com/

Several systems are implementing service redesigns. Some examples:
Houston: https://www.ridemetro.org/Pages/Reimagining.aspx
Columbus: https://www.cota.com/initiatives/tsr/
Indianapolis: https://usa.streetsblog.org/2017/07/11/the-bus-network-redesign-in-indianapolis-will-be-like-launching-a-brand-new-transit-system/

Anchorage:
https://www.muni.org/Departments/Mayor/PressReleases/Pages/PeopleMoverIntroducesImprovedTransitSystem.aspx

Adaptations: Affinity & Loyalty

- Gamification
  - Reduces perceived costs
  - Builds repetitive use

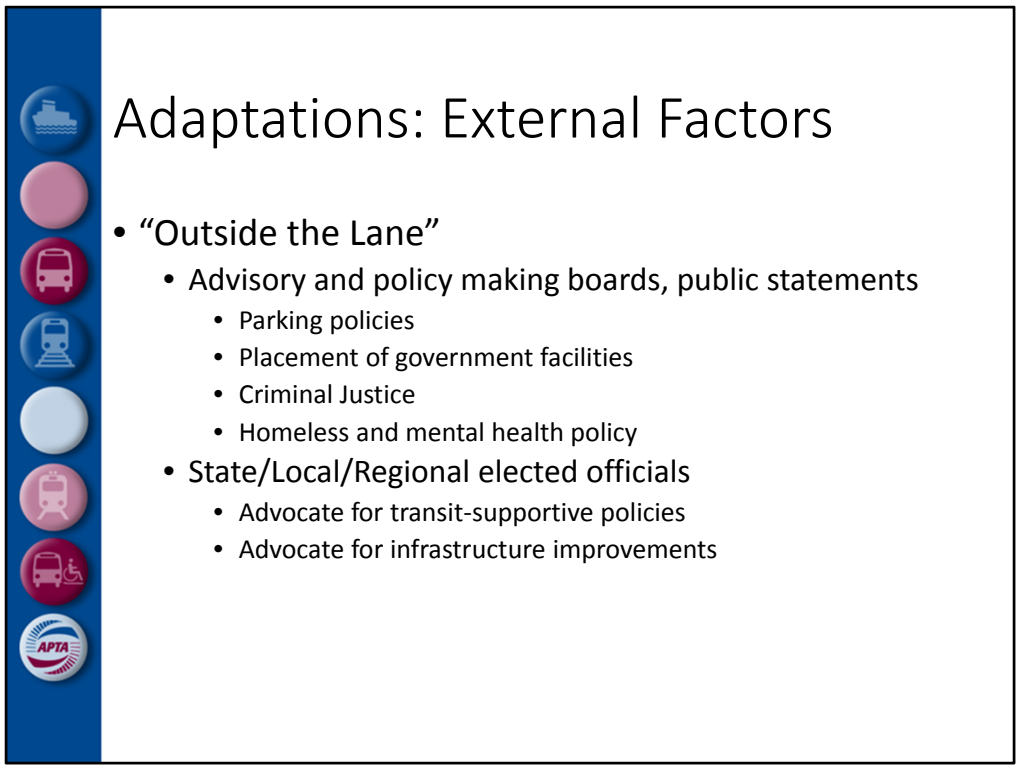
Matt

Apps like foursquare, untapped and others have users earn points, badges and other rewards for checking in at various locations.

There are some transportation examples in Europe: https://www.smartrailworld.com/how-gamification-of-travel-is-aiming-to-boost-ridership-in-Italy

Existing agency reward programs could be extended into app experiences:
SEPTA Perks rewards: http://iseptaphilly.com/perks
Connecticut DOT CT Fastrak rewards: http://ctfastrak.com/how-to-ride/rewards-program

These programs could create a fun incentive to take transit instead of another mode. And increase general interest in transit.



(Matt will Discuss)

Focus group members talked about how hospitals and other facilities have been located far from transit, or in places hard to serve with transit. It's important that transit leaders engage in these discussions to influence placement decisions and emphasize the role of transit in serving these facilities.

Transit agencies should also engage with local elected officials to advocate for transit-supportive policies and infrastructure improvements. Several cities have implemented ordinances requiring employers to provide the pre-tax transit benefit to employees, which can boost ridership. Streets are often under the control of cities and counties, so engaging those leaders and decision-makers on improving streets for transit service is crucial.

Data-driven decision making is especially important. Transit agencies can use data and estimated on cost savings and improved service to make the case for policy and infrastructure changes to local leaders.

Darnell

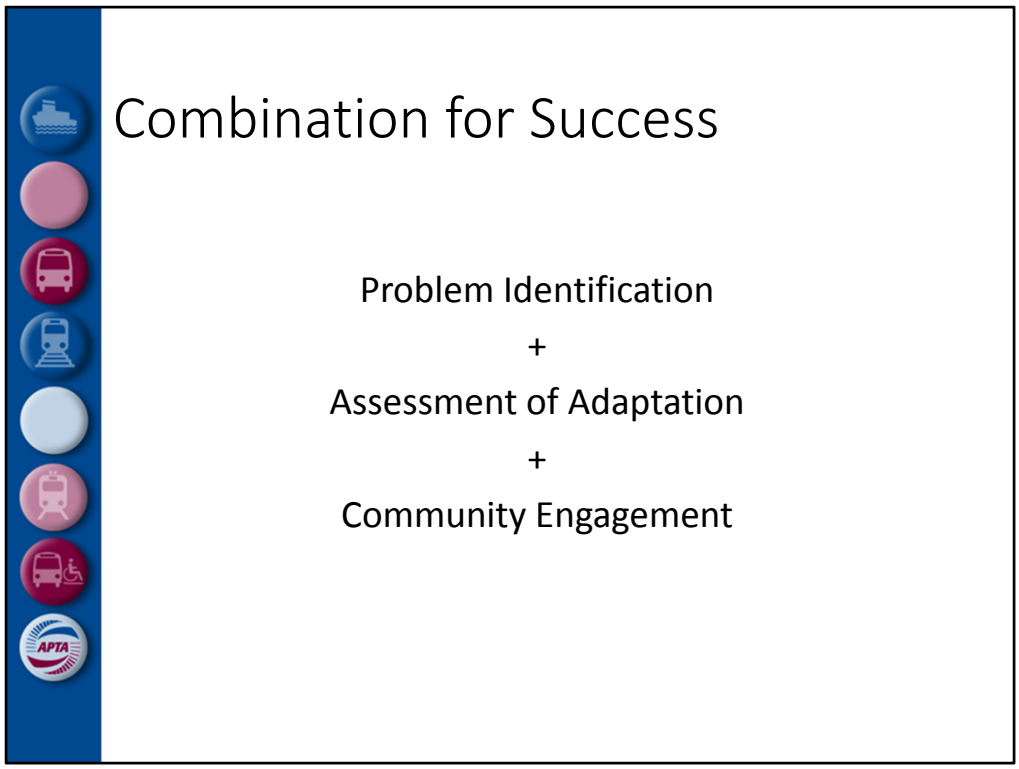
We looked at a wide variety of surrogate measures that a community could use to dramatize the positive impact of transit outside of ridership and mode-share-shift. While these are excellent talking points for building community support, and lobbying—they do not stand up as a metric that can be comparative over time and between systems.

Additional Research Necessary

- Parking Study
- Congestion Avoidance
- CO2
- Operational Costs
- TNC Data

Darnell

In order to provide a more comparative, sustainable metric, a number of additional multi-year studies will be needed. Work has started on these projects. One that is particularly important is a better congestion measure—we are developing a new index that measures congestion avoidance. This is far better than measuring congestion, which penalizes the most dynamic economies with the most developed transit systems.


Combination for Success
Problem Identification
+
Assessment of Adaptation
+
Community Engagement

Darnell

Questions/Discussion

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