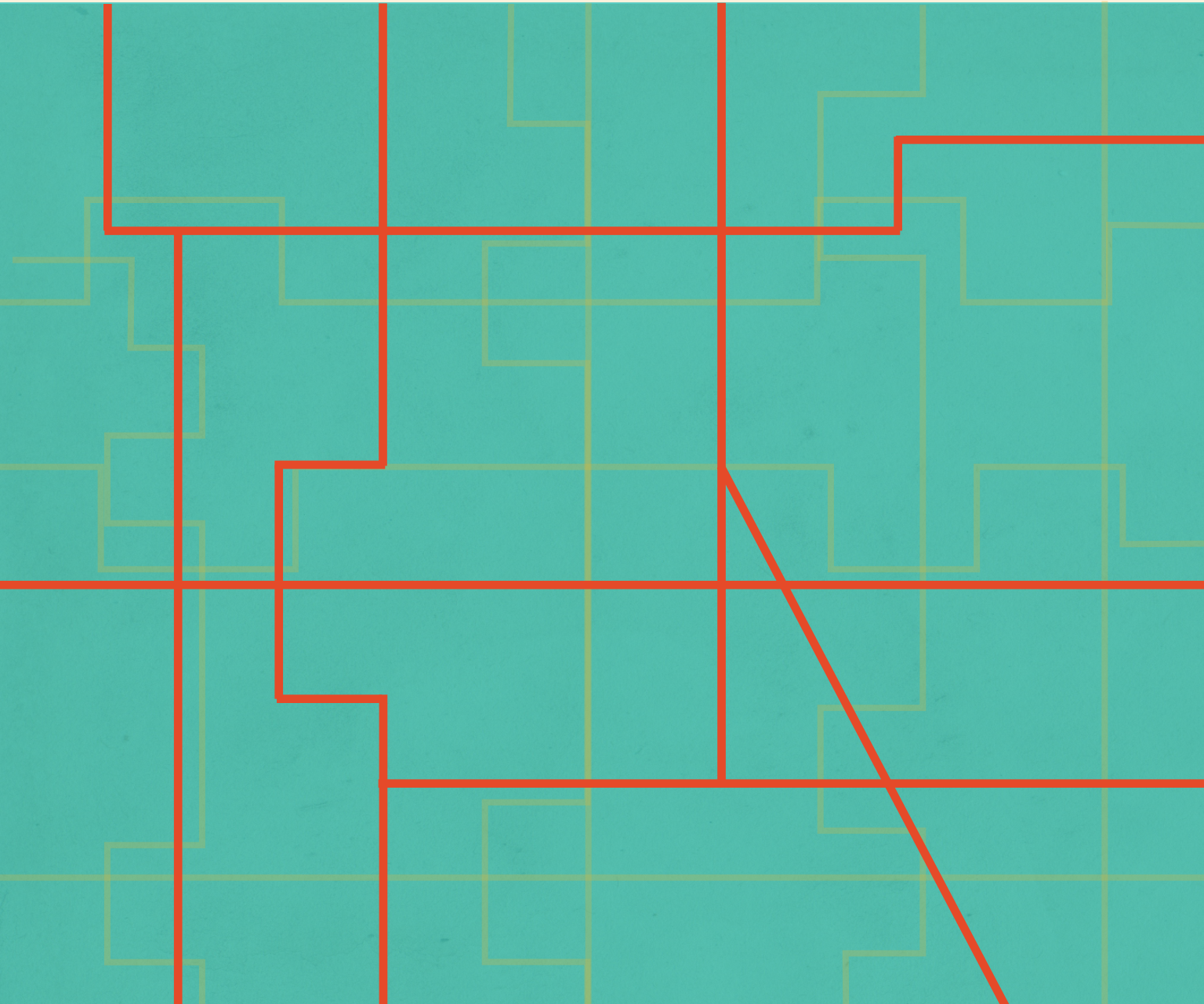


Untangling Transit

Bus Network Redesign Workshop Proceedings

July 13th, 2017 | New York City



TransitCenter is a foundation that works to improve urban mobility. We believe fresh thinking can change the transportation landscape and improve the overall livability of cities. We commission and conduct research, convene events, and produce publications that inform and improve public transit and urban transportation. For more information, please visit www.transitcenter.org.

1 Whitehall St. 17th Floor
New York, NY 10004
646-395-9555
www.transitcenter.org
@transitcenter

TransitCenter Board of Trustees

Rosemary Scanlon, Chair
Eric S. Lee
Darryl Young
Emily Youssouf
Jennifer Dill
Clare Newman
Christof Spieler

Publication date: January 3rd, 2018

Acknowledgments

Untangling Transit was written by Joelle Ballam-Schwan, Kirk Hovenkotter and Hayley Richardson with contributions from Jon Orcutt. The authors thank David Bragdon and Zak Accuardi for editorial contributions and guidance. This report would not be possible without the efforts and honesty of the over 30 transit agency staff who shared their successes and challenges in redesigning their city's bus networks at TransitCenter in July 2017. Transit in the U.S. is better for riders thanks to their dedication and ingenuity. Any errors in the report's final text belong to TransitCenter alone.

I. Introduction

In 2016, riders made five billion trips on city transit buses, comprising over half of U.S. urban transit usage. But bus ridership has been declining steeply for the past decade, and the trend is accelerating.

To stave off this decline - and in growing recognition that bus networks designed 30 or 40 years ago are no longer productive - many transit agencies around the country are redrawing their bus maps. While it's a trend, it's still an ad hoc one, with each agency having to learn as it goes along. To fill that gap, TransitCenter gathered North America's most experienced hands, ranging from junior planners to an agency CEO, for an off-the-record examination of the good, bad and ugly of network redesigns. It's the first time a multi-agency workshop has been devoted solely to this emerging topic. This document is the result of that workshop.

Network redesigns are just one of many things agencies should do to improve bus service. They are best done in tandem with improvements like transit priority streets, upgrading fare policy, providing additional service on weekends and evenings and headway management.



Workshop Attendees

TRIMET
KING COUNTY METRO
OMAHA METRO
HALIFAX TRANSIT
CATS
INDYGO
MTA
CAPITAL METRO
DART
VTA
CITY OF RICHMOND
CITY OF ANCHORAGE
WMATA
GCRTA
SACRAMENTO RT
DDOT
MCTS
MBTA
VALLEY REGIONAL TRANSIT
MIAMI-DADE COUNTY
RIPTA
NASHVILLE MTA
VIA
SEPTA
CITY OF DETROIT
LA METRO
NYCDOT
MTA-NYCT
COTA
JTA
HOUSTON METRO

II. The Bus Network Redesign Workshop

On July 13th, 2017, TransitCenter convened at its Manhattan office a working symposium of executives, planners and board members from over 30 U.S. and Canadian cities that have carried out or are considering significant changes to their bus route networks. The participants presented, discussed and debated elements of bus network design, from technical principles to the political work of aligning disparate elements of transit and city bureaucracies, and how best to engage in public dialogue about changing cities' bus maps. This report distills discussion at that event into a guide of useful considerations and points for transit agencies, advocates and city governments to use as they consider whether and how to update bus route networks in their own cities.



Houston Before



“The goal for our redesign was to improve the experience for riders – not our ridership metrics”

Planning workshop for Baltimore's bus network redesign, Baltimore, Maryland





EXIT

FIRE EXTINGUISHER



III. Laying the Groundwork

1. Why Redesign Your Bus Network?

Undertaking a bus network redesign involves substantial political and community engagement challenges. It requires agency staff and board members to communicate effectively about potential trade-offs. The public and elected officials must make tough choices about whether bus service should be more frequent on fewer routes, or whether service should go more places. It also requires an agency to articulate a clear vision and purpose to riders of why these sudden changes will improve their lives.

Lessons Learned:

Know why you're doing a redesign before you start. To ensure that board members, staff and agency leadership is on the same page, agencies should establish a clear reasoning behind a redesign. Some questions to consider are: Would simply doing a Comprehensive Operations Analysis (COA) be enough? Are we trying to save money? Are we aiming for increased ridership, or focusing on improving conditions for existing riders? Are our current routes unproductive? What data are we using to support answers to these questions?

Establishing a clear rationale behind the redesign is necessary to navigate the challenges that follow.

2. Using Consultants Strategically

Nearly every agency used a consultant for some aspect of its bus network redesign. Whether planning the routes themselves, getting the agency board on the same page, doing a Title VI analysis, or studying the effect of the changes after the launch, consultants added value to agencies' internal capacity.

Lessons Learned:

Marry internal know-how with a consultant's outside expertise.

Agency staff may want to approach things the way they've already done them. Consultants have more leeway to take a fresh approach. However, consultants often don't have sensitivity to specific problems in a community – they aren't going to know the history behind past route changes and why specific changes were or weren't made.

Many agencies paired a national consultant who could frame the issues with a local consultant who knew the local transit context.

Have consultants say to the board what staff can't. Many internal advocates of a redesign have used consultants to go through a values exercise with the entire agency. This process sparked thinking about how to allocate limited resources. Staff have also used consultants to show how redesign scenarios would impact specific populations. When assisting with a redesign, Jarrett Walker + Associates holds multiple sessions – including an all-day workshop – with an agency's board and other stakeholders.

Use consultants to help frame trade-offs. Stop consolidation and route changes inherent in the redesign process will mean that some people must walk farther. Many riders may have to make transfers they didn't before. Hiring consultants who can frame tradeoffs in terms of systemwide improvements is important. It is also helpful to have consultants who can assuage internal concerns by explaining how bus network redesigns have gone in other cities.

3. Leadership Alignment

Strong agency leadership is necessary to push a bus network redesign through the many challenges it will inevitably face.

Lessons Learned:

In order to be successful, agency leadership must admit that the current bus network has problems. Houston Metro board member Christof Spieler found that it was challenging to convince his fellow members that the agency's bus service wasn't meeting its responsibility to the public. But once he was able to convince them to acknowledge shortcomings, agency leaders had the urgency to move ahead with ambitious changes.

Strong leadership is also necessary to keep the process moving forward through inevitable pushback from the public, operators, unions, staff, community groups and elected officials. Agency leaders have been most successful at building public support when they were able to communicate the need for the redesign. This clear articulation of a problem statement also helps to get the entire agency working toward the common goal of completing the redesign. Throughout the process, transit boards will hear from riders frustrated by the changes to the network. Strong agency leadership and information sharing important to maintain board support for the project throughout the process.

Provide the board with a menu, not markers. Houston Metro found that it was important for agency leaders to keep the board engaged at a high policy level, while keeping route planning for the redesign itself out of the board members' hands. Instead, staff provided the board with a menu of choices to make in setting key priorities.

"We got buy-in from our board by explaining that our product is bad, and no one wants to buy it. We need a better product, and this is why we are redesigning."



4. Involving Operators

When changing bus routes, agencies should make the most of drivers' expertise and daily contact with riders.

Lessons Learned:

Hold focus groups for bus drivers. A good way to include bus drivers from the outset of the planning process is by holding focus groups where they can share feedback on the current network. Resulting information can be used as a tool to educate the agency's board and staff.

Planners should go on a ride-along with a driver. Riding a bus for a driver's full route allows decision-makers to see things from the driver's point of view.

Instill a sense of ownership. Drivers should feel that they have been part of planning. During its redesign, MTA in Baltimore created a program that gifted drivers individualized plaques featuring their headshots with new buses. Milwaukee used a driver involvement approach called the "Reconnect Program," which creates ongoing dialogue about things drivers are experiencing.

Lean on drivers for outreach before, during and after launch day. Drivers can augment outreach by handing out brochures and information about the plans and scheduled community meetings.

IV. Developing a Plan & Working with the Public

"The public doesn't want to hear about improving efficiency or cutting budget—they like to hear 'improving transit experience for riders', especially if they believe you."

Undertaking a bus network redesign is the most high-profile initiative many agencies have done for some time. To design a network to best meet the needs of the public and to win support for the project from elected and community leaders, redesigns need a strategic public process. The public should know the redesign is underway, why it's being done and the direction and likely outcomes. Public officials in particular should never be caught off-guard.

Lessons Learned:

Frame the problem and case for redesign from the outset. Agencies will be in a stronger position if they frame the initiative as necessary to improve service. Conversations should be framed as "to benefit riders and the city, we must change the bus system, but how to do that is an open public discussion."

Ask for input before coming to riders with a proposed plan.

Rather than approaching the public with a fully cooked plan, agencies will be better received if they approach the public to better understand perceived deficiencies in the current network, and introduce the idea of a network redesign conceptually. Every interaction with the public must be documented. When pushback on the new networks arises, staff and leaders can point to the record of numerous public events and instances of public comment to show the process was responsive. When Capital Metro in Austin ran into friction both internally and with the public to proposed route changes, it could point to the thousands of responses from public meetings and project website that supported the need for more frequent service.

Have conversations on riders' terms. To collect data from riders, agencies should meet them where they are. Bus stops, community events, parks, films, sporting events and concerts are recommended places for collecting feedback.

Use data to counter anecdotes. During the planning process, staff and leadership should respond to anecdotes with data. Being able to point to the “silent majority” of people who will benefit from network changes can provide confidence to counterbalance anecdotal opposition. Many agencies have successfully used statistics about the higher number of jobs that would be accessible by frequent transit after the redesign. During their redesign, San Jose VTA and the City of Richmond created powerful visuals for public presentations which displayed how the new network doubled transit access for people, and nearly doubled access to jobs. Both found this approach to be a persuasive counter argument against individual concerns.

Use advocates and local stakeholders to talk about transit. Most agencies who completed network overhauls actively courted outside voices to help with the design process and implementation. Those voices included local transit advocacy organizations, the business community, faith based groups, and other groups who can say things that agencies typically can't. IndyGo in Indianapolis took business leaders on a bus ride to show current inadequacies of the network in order to get them invested in the redesign.

Communicate continuously and consistently. Public officials need to be informed every step of the way during a redesign to ensure they stay on board with the changes, and are not caught by surprise. Community and civic groups should be approached again and again with information about the redesign along with updates about planning and implementation.

“The narrative that the redesign nearly doubled access to jobs was a great counter to that one guy who is upset and lives in the boonies.”

EASING THE PAIN OF TRANSFERS

Fixed Route Alternatives
for Low Performing Areas

Bus bunching on
new, high-frequency routes

How to fill in "gaps" w/
micro-transit, etc...

COMMUNICATING CHANGE CLEARLY

All door boarding
OFF vehicle fare payment
(going cashless)

"WHO'S YOUR
AUDIENCE?"



V. Countdown to Day One

1. Information Ramp-Up

There will never be enough outreach an agency can do for major changes to a bus network. There will always be riders who will have questions the day of the launch. Understanding an entirely new system will inevitably be a learning curve for drivers. However, agencies have found success when they have treated bus network redesign communications like a campaign.

Lessons Learned:

Organize a communications taskforce internally. Agencies who completed redesigns established internal task forces across the agency, and used regular meetings in the months leading up to the change to coordinate between the communications department, planners, schedulers and operators. In Baltimore, the MTA put together an internal guide to the change, outlining everything that would change, who would be responsible, and what the next steps would be.

Have a clear message about why it's happening. The reason behind the route changes needs to be simple, clear, and understood by staff at all levels of the agency. On the first day, riders will ask operators why their bus routes changed, and operators need simple explanations that make sense. In San Jose, the agency said that these changes would allow riders to go farther faster. In Columbus, the CEO hammered home that the system hadn't changed since the agency was created. Messages about the increased number of residents near frequent transit or jobs won support of the business community in Houston and Columbus.

Establish a website. Nearly all of the agencies who completed a redesign had a website specific to the initiative. The sites were launched during planning phases. As the launch of the new networks approached, they became sites where riders could use trip planners reflecting the new routes. Columbus found the new trip planner tool especially effective with new riders who were trying out the system for the first time.

Meet riders where they are. Agency staff who felt they were successful at getting the word out had extensive street-level outreach at bus stops, transit centers, and major public events in the weeks leading up to the change. Maryland Transit Administration opened a retail storefront in its office building a month before the change to share information about the new network. The agency also received positive feedback about BaltimoreLink 'Infobuses' – buses that ran along the old routes staffed with people who provided information about the new routes.



2. Pairing and Packaging Initiatives

Many agencies found that undertaking one large initiative could spark other policy changes, such as restructured fare payment, rebranding some of the service or contract negotiations with drivers. Some of these were valuable additions to the initiative. Others ended up complicating the process.

Lessons Learned:

Use new information design to highlight the improvements of the redesign. Pairing a redesign with newly-branded service information like bus stop signage and maps can help to facilitate buy-in from the public. Agencies have used new bus stop designs which communicate the new frequent service in the network and new maps that show how the new routes connect to each other.

Use change to push for street improvements to speed buses. Many redesigns concentrate more service on fewer streets, potentially creating bunching and crowding. In Baltimore, Maryland Transit Administration saw the redesign as an opportunity to install bus lanes and traffic signal priority on downtown streets. MTA provided millions of dollars to the city for the initiative. The push to meet the launch date for the new network created a sense of urgency, making it easier to implement new transit lanes.

Use on-demand transit service in areas where service is removed. King County Metro is currently partnering with cities in its lowest-service areas to develop on-demand solutions as part of its redesign process. In Austin, Capital Metro identified neighborhoods that could support an on-demand service.

Build driver support by granting them upgrades as well. Some agencies who launched a redesign paired it with a rebrand of their system. Any rebrand should celebrate the drivers who become the face for the new routes to the public. At the very least, drivers should be given new uniforms to match new branding.



“Make sure you engage drivers in the overall vision so it doesn't come across like you're trying to squeeze more out of them.”



Build more restrooms for drivers. Often bus drivers do not have adequate access to restrooms. This makes for lousy working conditions and forces them to find alternative restrooms, resulting in service delays and bus bunching. Planning new operator facilities as part of a redesign will result in a faster, more frequent and reliable bus system for riders and a better quality of life for drivers and riders alike.

Hire enough drivers. Start hiring and training drivers as soon as possible. Many agencies who underwent redesigns ran into the constraints of not having enough drivers to operate the service they had designed.

Redesign is a chance to simplify fares, not to raise them. Increasing fares during an overhaul of bus routes leads to frustration among riders who feel they are having to walk further to catch more expensive service. It can be especially off-putting if the new network encourages riders to connect between routes, but the accompanying fare policy doesn't allow for free transfers. Thus, making transfers free if they weren't already is the only recommended change to fare policy. With the launch of their new network, VTA in San Jose will implement a 2-hour free transfer with the purchase of a single ride using the regional fare card.

Recommit to maintenance of headways. For some agencies, a network redesign introduces their first high-frequency corridors, or concentrates portions of multiple routes on segments of a common trunk. Designing such a system and actually operating it are different challenges, and the latter requires increased attention to active monitoring of real-time vehicle locations and dispatcher interventions.

3. Ripping off the Bandaid: "Pulling a Houston"

The success of Houston Metro's bus network redesign has ignited plans for redesigns across the country. One of the aspects that garnered the most attention was the Houston's decision to implement the new network overnight. While some agencies like Columbus and Baltimore have followed suit, others are planning to implement new designs incrementally. However, implementing overnight is the preferred option among agencies.

Lessons Learned:

Public input is more meaningful when the process has urgency.

The public would prefer to hear "we're changing all routes in 12 months" instead of "we're thinking about what transit will look like in 2030." If the process does not move quickly, the public and the board may tire of conversation.

Short timelines create an internal sense of urgency. Maryland Governor Larry Hogan gave the MTA a timeline of 18 months for the entire process, including outreach, designing a new network, training operators and painting bus lanes. This urgency forced the agency to be flexible with procurement and to creatively use staff time. To install bus lanes in time for the launch, MTA contractors worked with the City of Baltimore to paint the bus lanes on city streets.

Short timelines allow for the change while supportive officials are in office. Redesigns that spanned multiple mayoral or council terms encountered officials who preferred to maintain the status quo. Houston Metro staff had a firm timeline of two years before Mayor Parker faced her term limit, which helped move the process along.

Geography matters. In some contexts, redesigns are only possible when changing everything at once. Changing a network in pieces can run the risk of breaking old connections before creating new ones.

"We should be more scared of going slowly than moving fast to get things done, because moving slowly is what got us into this mess in the first place."



CBUS
CIRCULATOR

stop # **1306**

1 KENNY/ LIVINGSTON	2 E MAIN/ N HIGH
5 W 5TH AVE/ REFUGEE	COTA Night Owl

COTA.com PRESTIGE STANDARD RIGHT PICTURE

Next Bus
TEXT Stop # to 95292 • CALL 614.228.1776

**WINE on
HIGH**
BAR + RETAIL

P
EXCEPT CITY
PERMITS THE
9:00-5:00
MON-SAT

WBNS 10TV Hitchcock

COTA

VI. Day One

The launch day of a network redesign will be the biggest test for a transit agency. Here's how to make it go as smoothly as possible.

Lessons Learned:

Ambassadors are key. Street and bus ambassadors can make the first day go as smoothly as possible. Agencies have typically deployed anywhere from 70 - 120 staff to serve as ambassadors. Additionally, they have recruited from transit advocacy and other community groups like Boy and Girl Scouts. Ambassadors should be stationed at bus stops and on buses themselves, which allows drivers to avoid lengthy questioning and focus on maintenance of headways.

Put together a launch guide. The entire agency and any partnering organizations can benefit from a launch guide that breaks down how every route is going to change, and establishes a process for launch day.

Make the transition as financially painless as possible for riders. Agencies that have undertaken redesigns have offered a period of free rides so users can get to know the new system. This creates less tension when riders they are being asked to make adjustments to their commutes, and also helps to speed the boarding process.

Rather than offering free rides across the board, some agencies deployed volunteers to distribute free ride tickets during the first week. This allowed the agency to know exactly how many people were taking the new system the first week and the estimated amount of revenue it would be foregoing.

Bus drivers must be on board with the changes. Bus drivers are going to be some of the network design's primary messengers. Riders typically trust operators and will expect them to know the system. The importance of extensive operator trainings prior to day one cannot be overstated.

"On launch day you need to be able to stick to your philosophies and explain to politicians what the reasoning was behind your changes."



VII. The First 90 Days of Running Your New Network

Congratulations. You made it through day 1. Days 2, 3 and 89 are also important.

Lessons Learned:

Tactical teams to the rescue. New networks in practice reveal bus routes that required difficult turns or lack of wayfinding signage at key transfer points. Agencies need to make these tweaks quickly. In Columbus and Baltimore, officials created tactical teams focused on issues including scheduling, bus stops, wayfinding and street design. Columbus' bus stop team had to adjust 110 bus stops in its next round of service changes due to public or operator feedback. The Maryland Transit Administration began installing additional wayfinding signage the day after the launch to respond to questions from riders at new major transfer points.

Make streets work for the new network. The new network may reveal places that need more investment in bus pads, bus bulbs, new bus lanes, queue jumps or additional bus stops. After the redesign, new crosstown routes running north of downtown Columbus brought four buses an hour to streets that weren't built for that level of volume, requiring quick action from the city. COTA worked with the city of Columbus to prioritize street and signal projects in the weeks after launch.

The next service change. The service change following the launch of a network is going to require significant effort. The new network in action can often reveal the need for scheduling tweaks. While Houston Metro's network reimagining was the agency's largest service change, the following adjustment was the second largest. In Baltimore, the Maryland Transit Administration found that schedules were planned too tightly for available resources.

VIII. Conclusion

By making changes to bus schedules and routes, cities undertaking bus network redesigns are dramatically increasing the number of people who can walk to frequent transit, as well as improving the experience of riding the bus itself. Agencies paying this type of policy attention to buses are the only ones in the US either stabilizing or increasing their bus ridership.

But a new network can't necessarily improve a city's transit on its own. New networks are most successful when they are paired with other strategically chosen improvements, such as service increases, prioritizing transit on city streets, bus stop balancing and technological upgrades like transit signal priority and open fare payment systems. Agencies must also commit to performance management that makes sure service runs on time.

Though a growing trend, bus system redesigns still only affect a sliver of transit riders across the country. As more networks restructure, TransitCenter is committed to working with the transit industry to make these improvements happen. For agencies interested in taking the plunge or adding their experience, please reach out to us.

To learn more about useful transit, please visit www.transitcenter.org or follow us on Twitter @TransitCenter

Appendix: Participating Agencies

Agencies that have completed a redesign

ANCHORAGE, AK

Agency: City of Anchorage;

Service Area Population: 301,010;

Redesign launch: October 23, 2017;

Consultant: Jarrett Walker & Associates for initial planning and public outreach.

NTD Bus Ridership trends: Down -11.96% in 2015 from 2010;

Link to Plan

Anchorage's bus network redesign was prompted by falling ridership, a shrinking budget, and a declining public opinion about transit in the city. The system's board also asked that the department take a look at a possible network redesign after hearing Houston Metro's example. Transit officials surveyed the public, finding that views on transit in Anchorage are very low. With the Mayor, Public Transit Advisory Board, and Public Transportation Department Director all on board, the bus network planning process was launched.

The overarching goal for Anchorage's redesign is to make transit more relevant and user-friendly in the city. Stated goals are increased frequency and weekend service, longer service hours, and more direct routes.

The initial round of public outreach consisted of a series of "Anchorage Transit Talks." Jarrett Walker & Associates presented two conceptual networks, which were vetted and discussed in a follow-up series of meetings.

BALTIMORE, MD

Agency: Maryland Transit Administration (MTA);

Service Area Population: 2.7 million;

Project announced: October, 2015;

Redesign Launch: June 18, 2017

Consultant: Foursquare Integrated Transportation Planning and
Jacobs Engineering;

NTD Bus Ridership trends: Down 9% since 2010;

In the five months since the launch of Baltimore Link, on time performance for routes has improved, but no effect on ridership in apparent yet. Reliability has increased by 9%, thanks in part to new downtown bus lanes and transit signal priority.

The \$136 million bus network redesign was launched by Maryland Governor Hogan after he canceled Baltimore's Red Line subway project. Staff were given 18 months to rebrand of Baltimore's bus system from MTA to BaltimoreLink, install new bus stops, bus lanes, and traffic signal priority, and develop new maps and web-site. The goals of the redesign were to improve reliability and efficiency of the bus system. The city has had decades-old problems with unreliable bus service. Staff conducted 170 events and 14 public hearings, receiving 3,300 comments. Bus operators and ATU officials viewed the redesign skeptically. The MTA administrator Paul Comfort was removed from his position a week before the launch, and the planning director appointed to his position.

MTA gave the Baltimore City DOT \$6 million to install five miles of bus lanes and traffic signal priority equipment on traffic signals. The City would have taken 12-16 months to procure consultants to install the lanes, so MTA offered its own contractors to do it within three months. On launch day, MTA had over 100 staff at bus stops, and made trips free for the first week.

COLUMBUS, OH

Agency: Central Ohio Transit Authority (COTA);
Service Area Population: 2 million;
Project Announced: October, 2013;
Redesign Launch: May 1, 2017;
Consultant: Jarrett Walker & Associates, IBI Group;
NTD Bus Ridership trends: Down 1% since 2010;
Status: Completed;
Link to Plan

COTA CEO Curtis Sitt launched the Transit System Redesign process in 2013. COTA's bus network hadn't changed since 1974.

COTA's goal was a more efficient bus system that went more places, more days of the week. The new bus network allocates 70% of bus service to high-ridership lines, and 30% of bus service to coverage lines. With the redesign, COTA says 100,000 additional Columbus residents are within a five minute walk of transit that comes every 15 minutes or better, and 110,000 more jobs are within a five-minute walk of transit. Saturday service increased by 50% and Sunday service increased by 120%.

COTA gathered public input with 10 public meetings, focus groups and online surveys. Follow up meetings allowed the public to comment on draft network plan. Implementation of the changes occurred all at once this past spring. In the weeks in advance and during the launch, the agency had a street team of 80 people distributing information and helping to direct riders. This continued throughout the first week, when the new system offered free entry.

HALIFAX, NS

Agency: Halifax Transit;
Service Area Population: 400,000;
Announcement: 2014;
Launch Date: August & November 2017 ;
Consultant: For public outreach and peer review;
NTD Bus Ridership trends: Down 3% since 2011;
Link to Plan

In Fall 2013, Halifax Transit undertook development of a five year service plan to identify incremental changes to its bus network. The public wanted substantial network changes. With the endorsement of the Regional Council, the network redesign process began in 2014.

The process was driven by Halifax Transit guided by findings of public engagement. While a consultant was hired for peer review of the draft and final plan due to public pressure, the majority of the work was carried out by Halifax Transit staff. Goals were to increase resources allocated towards high ridership services and build a simplified, transfer-based network. A consultant was hired for the two rounds of public engagement and outreach program.

Staff reported that the public received the plan positively. The transit union was more skeptical, with the ATU leader calling for a vote on the changes. Advocates wanted outside experts to consult on plan. Advocates complained that the plan lacked connectivity and had inefficient and redundant route design. They also objected to the long five-year implementation schedule. Operators appreciated being solicited on the design of the new routes, but felt anxiety about learning them and being prepared to answer questions from the public.

HOUSTON, TX

Agency: Metropolitan Transit Authority of Harris County (Houston Metro);

Service Area Population: 6.4 Million;

Announced: Fall, 2013;

Launch Date: August 16, 2015

Consultant: Traffic Engineers Inc. with Jarrett Walker & Associates;

NTD Bus Ridership trends: Stable since 2010, up 7% first year after change;

Link to Plan

Houston Metro faced long term declines in bus ridership and system-wide productivity. The bus system had not had a comprehensive review since Metro's formation in 1970. Rider complaints in 2013 also helped spur the process.

Houston Metro Reimagining was set in motion by Mayor Annise Parker. She was term-limited and would leave office at the end of 2015, which helped establish a deadline for implementation. The Metro board chair and the transit agency planning director were major advocates of the initiative.

Houston Metro's goal for the redesign was to make the transit system simpler, increase frequent service, improve mid-day and weekend service, better fit service to population, better serve non-downtown employment centers, and increase ridership. The plan was designed to be cost neutral. The redesign increased the percentage of residents who can walk to frequent service, seven days a week, from 25% to 72%. It increased the number of Metro's frequent routes from 11 to 22 and brought a million Houstonians within walking distance of frequent transit.

Metro spent about \$7.5 million on public outreach, updating information, and bus stops. The outreach efforts included public stakeholder committees, a website for the redesign, public meetings in neighborhoods across the service area, and tabling at transit centers, civic club and community organization meetings.

Houston rolled out the changes overnight. After a year and a half Metro saw a 7% bus ridership increase concentrated on weekends. To improve bus infrastructure following the network overhaul, Metro is adding 100 bus stop shelters every year and the agency's capital improvement program will invest in sidewalks, bus pads and bus stop improvements along the new frequent bus routes.



OMAHA, NE

Agency: Omaha Metro;

Service Area Population: 900,000;

Announcement: May 2013;

Launch Date: May 31, 2015

Consultant: TMD;

Bus Ridership trends: Down 9% since 2010;

Link to plan

Omaha Metro ridership peaked in 2012. From public surveys, the agency heard criticism from new and prospective riders that felt the system was too complex and indirect. In response, the agency embarked on a redesign with the goal of increasing ridership, providing better job access for night shift workers and making routes more direct and easier to navigate for first-time riders. The plan was intended to be cost neutral, but increased revenues led to a 4% increase in service hours on the new routes. The restructuring was a result of two years of research, 4,000 rider surveys, and more than 500 public comments. The public process included 12 community meetings throughout 2014 along with a citywide public hearing on the changes.

Bus drivers supported adding hours to the system (especially due to the increase in full shifts), and removal of complex route deviations and interlines. They resisted the increase in night and weekend hours, and some expressed loyalty to individual customers that would see service changes.

The overhaul was implemented overnight, with two-dozen volunteer ambassadors assisting customers with wayfinding during the first few days of the changes. Ridership was projected to increase by 10 percent but overall ridership has declined. There are a few routes that were redesigned that have seen increases, especially on weekends.

Agencies that are considering a redesign

Austin, TX

Agency: Capital Metro;

Population: 912,791

Announced: 2016

Launch date: 2018

Consultant: Yes;

NTD Bus Ridership trends: Down 11% since 2011;

Link to Plan;

The Capital Metro board approved bus network changes in November 2017, with implementation slated to begin June 3rd, 2018.

Austin is one of the fastest growing cities in the country, and as a result, CapMetro Capital Metro revisits the design of its bus network every five years. In 2015, Capital Metro contracted an outside consultant, Transportation, Management and Design Inc, to conduct an analysis of the transit system. The effort collected 5,000 surveys to inform a market analysis and service framework. Draft plans were presented for public and city council comment in August 2016. With board approval and inspiration from Houston's Reimagining, Capital Metro launched the redesign to increase ridership and farebox revenue. The agency is implementing the redesign in phases.

Goals for the redesign are to make service more valuable and useful for the public; reduce subsidy per passenger trip; increase ridership; enhance frequent service; and partner with "new mobility" providers to serve low-density areas. Public outreach included over 125 public meetings, extensive social media, a custom website, outreach at bus stops and on buses, and multiple presentations to the board and city council. The Capital Metro board of directors was briefed six times during the 15-month planning process. The implementation and rollout plan spans ten years. The bulk of the plan will go into effect in June of 2018, followed by mobility innovation projects in 2019, and infrastructure improvements to some bus routes in 2020.

Boise, ID

Agency: Valley Regional Transit;

Population: 216,282;

NTD Bus Ridership trends: Down 27% since 2011.

Valley Regional Metro's Valley Connect 2.0 six year service plan will be submitted for board approval in early 2018. It proposes multiple new network alternatives, some revenue-neutral and one that would require \$30 million annually in new revenues. The design principles underpinning the work are to serve areas of strong demand with frequent service, have strong anchors on both ends of routes, be as direct and simple as possible, and even distribution of ridership throughout the day.

Valley Transit hopes the planning effort will stimulate public discussion of transit's role in the region and reverse declining ridership and public support. Municipalities that wish to see improved transit have played a key role in pushing VRT to be more responsive to changing ridership/development patterns and municipal planning efforts.

Charlotte, NC

Agency: Charlotte Area Transit System (CATS);
Population: 809,958;
Announced: Mid-2016;
Launch date: undetermined
Consultant: N/A;
NTD Bus Ridership trends: Down 17% since 2011;

CATS' planners are looking to expand frequent service from 8 to 20 routes. Initial plans are to implement it in three phases beginning with the lines that will serve the LYNX Blue Line Extension light rail opening in March 2018.

The bus network redesign was initiated by CATS CEO John Lewis in response to declining bus ridership, regional growth, a desire to improve service, and to better integrate the bus network and light rail. Goals for the redesign are improving cross-town and neighborhood-to-neighborhood bus travel.

From December 2016 through January 2017, CATS collected rider feedback through an online survey. CATS has conducted public outreach to passengers, advocates, officials, residents, businesses and its own staff.

Dallas, TX

Agency: DART;

Population: 1.28 Million;

Launch date: Full implementation not until 2028;

Consultant: TBD;

NTD Bus Ridership trends: Down 11% since 2011 ;

Link to Plan

A recent DART review of its bus operation was prompted by the Dallas City Council's dismay over Dallas' rapidly declining ridership and media scrutiny of low quality of service and worsening delay. It found significant duplications in service, inefficiencies, and misguided focus on peak times, particularly in areas of southern sector that have highest ridership mid-day.

Goals for redesign are interconnected high frequency lines serving the areas of greatest transit demand and/or opportunity without necessarily expanding operating expenditures. The system currently only has one all-day high frequency route. The plan also calls for new routes and more frequent service, especially on weekends.

DART held a series of public meetings about its long-term system plans, and the final meetings were held in April, 2016. DART says resource constraints and the vast geography its system covers has led it to a much slower process than that used by Houston or Columbus, and thus intends piecemeal implementation over a decade. Currently, DART's board of directors is reviewing staff's initial assumptions and ideas for a 'dream system', then scaling back to what the agency can afford.

Detroit, MI

Agency: Detroit Dept. of Transportation

Population: 680,250;

NTD Bus Ridership trends: Down 23% since 2011 ;

Dramatic changes to Detroit's population, economic activity and land use have prompted DDOT to update the city-owned/operated bus system. DDOT has implemented initial changes which create a framework for a larger redesign, covering major changes to seven routes and start of service on six new routes. The main drivers of the initiative were bus riders, Mayor Duggan's office (including mobility and economic development teams), City Council and DDOT staff. DDOT may seek a consultant for some fieldwork and/or data collection for future steps. In-house staff will perform data analysis, route design, graphic design, outreach and final recommendations. Goals for bus system redesign are to meet customer needs, improve access for underserved populations, rethink outdated service and encourage economic growth.

DDOT thus far has conducted four rounds of outreach: Casual open houses forums, community workshops that provide maps of different route options, formal public hearings and announcement meetings with presentations on final route changes. No formal resolution is required in order to enact service changes. Public input is received and considered in each of the outreach approaches noted above. As a practical matter, the Mayor gives the final say on major service change packages. Updating the bus network will continue in tandem with a four-tier public outreach program, including a round of route changes slated for January 2018. DDOT is considering re-branding the entire system in later stages. It also plans to overhaul customer information and develop a special identity scheme for frequent and core routes. Immediate next-steps include collecting more detailed ridership data and updating internal operating practices to embrace change.

Indianapolis, IN

Agency: IndyGo;

Population: 858,325;

Launch date: April 2019;

Consultant: Jarrett Walker in 2013;

NTD Bus Ridership trends: No change since 2011

Link to Plan

IndyGo and the Indianapolis MPO hired Jarrett Walker and Associates to create a transit network plan whose required funding was submitted to voters in a 2016 referendum. The successful ballot measure allowed IndyGo to proceed with a major overhaul and expansion of Indianapolis' bus system.

Goals are increased ridership and better connections -- especially job access -- seven days a week.

Public outreach thus far has included public meetings, ambassadors to talk to bus riders and briefings for elected officials and neighborhood groups. In 2016, IndyGo documented 654 educational engagements and 22,423 people engaged, with reception being mostly positive. Moving forward, IndyGo plans one more round of extensive public comment and feedback to identify final tweaks to the service plan.

Plans for rollout include a robust PR campaign, with electronic and print notices as well as transit ambassadors on buses and at stops. The first 'minor' changes will begin in June 2018 with the rest to follow in April 2019.

Los Angeles, CA

Agency: Los Angeles County Metropolitan Transit Authority (LA Metro);

Service Area Population: 12 Million;

Announcement: May 2017;

Target Date: December 2019,

Consultant: TBD. Hired by end of 2017;

NTD Bus Ridership trends Down 15% since 2010.

Link to Plan

LA Metro, the country's second largest bus operator with 2,200 buses on 170 routes, saw system wide average weekday boardings decline by 15% from 2014 to 2017.

Over the last 15 years, bus route changes have been mostly centered around the launch of new rail lines to improve how bus and rail services interact. Minor tweaks have been made throughout the service area, but Metro has not embarked on such a system-wide effort since the 1990s. In November 2016, 71% of LA County voters approved Measure M, a \$120 billion measure primarily focused on expanding rail in LA County.

The redesign effort was presented in May, 2017 to the Metro board of directors and announced on LA Metro's blog. Titled "Bus System Review," it is planned to be complete by April 2019 and followed by public hearings and finalized by the board later that year. Any changes that are approved would go into effect starting in Dec. 2019.

Metro is also partnering with the 16 other agencies in L.A. County on a concurrent study to develop a plan to increase ridership. Priorities for the redesign are to eliminate non-productive services and re-invest hours into core lines, feed the rail network, reduce route duplication with other transit providers and improve system connectivity.

Milwaukee, WI

Agency: Milwaukee County Transit System (MCTS);

Population: 599,642;

NTD Bus Ridership trends: Down 10% since 2011;

MCTS is currently in the initial steps of bus system redesign; the agency has developed concepts for a revised system. The redesign was prompted by recommendations from a 2010 system-wide study on the need to increase service frequency. MCTS is also motivated by a desire to stabilize ridership declines. The driving forces behind the redesign include the CEO and MCTS' Planning Department.

Goals for redesign are to reallocate service from low to high frequency routes and update routes to reflect changes in local economy.

Nashville, TN

Agency: Nashville MTA;
Population: 684,410;
Consultant: Transportation Management & Design;
NTD Bus Ridership trends: Up 5% since 2011;

Nashville MTA is in early stages of planning. The agency is currently undertaking data analysis, market research, observations and interviews. The idea of redesigning the bus network was prompted by Nashville's 25-year transit plan completed last year (nMotion), which has resulted in a pending ballot initiative with potential to significantly expand bus service in the city.

If the transit ballot measure is approved in May 2018, the top 10 busiest routes would see frequency increased to at least 15 minutes and span increased from 5am to 1am by 2019.

Goals for redesign are to increase ridership, improve efficiency and productivity of the system, establish a frequent transit network, improve connections outside of downtown and integrate mobility-on-demand services.

Public outreach will include workshops with key stakeholder groups and pop-up sessions at the downtown transit facility.

Immediate next steps include continued market analysis work, finalizing the public outreach plan and development of a website for the effort.

Philadelphia, PA

Agency: SEPTA;

Population: 1.56 million;

NTD Bus Ridership trends: Up 2% since 2011;

New analysis of Philadelphia bus service was prompted by recent ridership losses, particularly in the evenings and on weekends. Goals for redesign are improved efficiency, ridership and service coverage. SEPTA and the City of Philadelphia are working together on the effort.

Richmond, VA

Agency: City of Richmond & Greater Richmond Transit Company (GRTC);

Population: 217,853;

Consultant: Yes;

NTD Bus Ridership trends: Down 6% since 2011; Link to Plan;

GRTC is awaiting completion of its Pulse BRT project before launching its new bus network. It is scheduled for completion in April 2018.

The bus network planning process began in January 2016 and was driven by the City of Richmond and Commonwealth of Virginia. The GRTC transit system had not been fully evaluated and truly restructured since the 1960s. Authorization of the new bus rapid transit system led to public calls for city-wide transit improvements. The City of Richmond hired Jarrett Walker in 2015, three network concepts were released for public input in 2016 and a draft plan was published in January 2017. People within a half-mile of 15-minute or more frequent service would increase from 36,000 to 114,000. Three rounds of public and stakeholder meetings served to keep residents fully involved and informed throughout the process. The planning

phase of the redesign is complete and GRTC is preparing for its implementation.

Advocates engaged with elected officials and community members throughout the process to secure support. The City of Richmond has led the redesign process and played a prominent role in implementation of the BRT and redesigning the bus network.

Sacramento, CA

Agency: Sacramento Regional Transit District (RT);

Service Area Population: 2 Million;

Start date: Summer 2017;

Target Date: 2019

Consultant: TBD;

NTD Bus Ridership trends Down 20% since 2010;

[Link to Plan](#)

Sacramento bus routes are little changed over the past 30 years. The agency's network redesign is titled "A New Sac RT," and has already identified potential routes and corridors for increased bus service frequency. The impetus for the redesign was for the bus system to better meet land use changes and projected growth. Ridership, on-time performance, and reliability are all declining.

Sacramento saw major service cuts in June 2010 and reinstated service in 2012. In 2016, Sacramento narrowly voted down a funding initiative that included resources for transit. The redesign is part of a series of initiatives to demonstrate RT is improving within its means and to build trust with voters. It is intended to lay the groundwork for a potential 2018 vote to fund light rail and additional bus service. Staff began the two year process in summer 2017. They are taking a 'blank slate' approach to the redesign. The plan is initially designed as cost neutral.

San Antonio, TX

City: San Antonio, TX

Agency: VIA;

Population: 1.437 million;

NTD Bus Ridership trends: Down 17% since 2011

The redesign was prompted by San Antonio's long-range plan, Vision 2040. VIA completed an existing condition analysis and, based on goals and plan principles developed a new network plan for internal evaluation during 2017.

Redesign goals are to establish a five-year blueprint for transit in San Antonio. More immediate goals are to maximize ridership via optimal use of available resources. Outreach encompassed phases introducing the project, providing information about existing conditions and seeking input on potential changes and presentation of a draft network design.

San Jose, CA

Agency: Santa Clara Valley Transportation Authority (VTA);

Population: 1.016 million;

Launch date: Network changes went into effect July 1, 2017

NTD Bus Ridership trends Down 4% since 2011;

Consultant: Jarrett Walker and Associates;

[Link to Plan](#);

The redesign was prompted by declining ridership, desire for better connectivity to BART and CalTrain, and VTA's Transit Ridership Improvement Program, which was initiated by VTA's General Manager in 2015. Goals are increased ridership, better farebox recovery rate and better integration with BART and CalTrain.

VTA held two rounds of public outreach. The first lasted five months and occurred in the summer of 2016, prior to any proposed changes to the transit network. It consisted of public meetings, workshops for community leaders, and a series of online and in-person surveys. The survey asked the public how to improve transit and whether VTA should spend more on high ridership routes. Three network concepts employing different ridership/coverage balances were produced to illustrate how a change in goals would impact the design of the network.

The VTA board of directors consulted with Jarrett Walker during the planning process. In April 2016, Walker presented his assessment of VTA's transit system and identified a series of recommendations. Walker and his team also conducted one-on-one calls with Board members at multiple stages through the process to learn about their jurisdictions' needs. VTA's Board chair was a leader of the process. The network redesign coincides with the rollout of other improvements such as improved real-time information and the opening of Santa Clara County's first dedicated bus lane.

Seattle, WA

Agency: King County Metro;

Population: 2.08 million

NTD Bus Ridership trends: Up 8% since 2011.

Changes in the Seattle area bus network were prompted by King County Council's adoption of METRO CONNECTS. The 25-year plan was intended for engaging communities and policy makers in a long term conversation about the evolution of the transit network, inspired in turn by Seattle's rapid growth. King County Metro has completed some elements of a bus network redesign, but not yet at a system-wide level.

Changes will come throughout the implementation of the 25 year plan. New service adjustments or additions will begin every two to three years and will include a separate public engagement process and rollout.



70 U DISTRICT



4184

4184

Kearney County
METRO

WAG. DISTRICT
4657350

MEET THE REAL LOCALS
CITY OF KEARNEY
— COMMUNITY
— HISTORY
— VIBRANCE

Other participating agencies

Boston, MA

Agency: Massachusetts Bay Transportation Authority (MBTA);

Service Area Population: 4.7 Million;

Start date: January, 2017;

Target Date: Debating 18 - 39 month roll out

Consultant: TBD & In House

NTD Bus Ridership trends: Up 2% since 2010.;

[Link to Plan](#)

Status: Not yet Started

MBTA has not made major bus network changes since 2010. Boston Mayor Marty Walsh's long range plan commits the city to implement a bus network redesign with the MBTA in five years. Boston's population is growing and ridership is trending up. The MBTA board approved a new rider-focused service delivery policy in January 2017. An emerging plan based on the service policy will focus on improving reliability, frequency, new buses, and street improvements that municipalities can execute.

Cleveland, OH

Agency: Greater Cleveland Regional Transit Authority (RTA);

Service Area Population: 2 Million;

Consultant: N/A;

NTD Bus Ridership trends: Down 7% since 2010.

RTA has no plans for a bus network redesign. RTA's last major network changes were in 2010. RTA has considered a redesign but staff see the current network as designed to meet the current and near-future needs of Cuyahoga County. Cleveland has the highest transit ridership of any city in Ohio, but the region's population has been stagnant. Increasing service hours within that network is an opportunity. Funding cuts have led to increased headways on bus and train routes and fares are scheduled to rise in 2018. A network redesign would need buy in from the mayor of Cleveland, the leaders of the suburban communities and Cuyahoga County.

Washington, DC

Agency: Washington Metropolitan Area Transit Authority (WMATA);

Service Area Population: 6 Million;

NTD Bus Ridership trends: Down 8% since 2010.

Status: Not yet Started

WMATA has no current plans for a bus network redesign. The last major set of changes was implemented in July 2014 around the opening of the MetroRail Silver Line in Northern Virginia. Limited-stop "MetroExtra" service has been implemented on 14th street and other corridors. A bus network redesign in Washington DC would require buy-in and support from Metro management, the mayor of Washington DC, the governor of Maryland, and the Governor of Virginia, and bus customers.



f
v

Bus bunching
on new, high
frequency routes