

TCRP Announces New FY 2023 Synthesis Study Topics

SEEKING PANEL MEMBER NOMINATIONS

TCRP Announces 8 new synthesis topics selected for the FY 2023 program. The new project numbers, titles, and preliminary scopes of work are available below.

TCRP invites you to nominate yourself or other candidates to serve on the expert panels that oversee the content of these studies. Nominees should be knowledgeable about the subject matter and willing to serve on a panel that will meet two times in a 10-month period and review materials developed by the principal investigator. Panels for the new projects will meet virtually for the first time in September or October. The second meetings will be held in person in Washington DC in the summer of 2024. As always, participants who chose not to or who are unable to travel will be able to participate remotely.

Nominations should be submitted online at the MyTRB portal at this link: [Online Panel Nominations](#). You will be asked to login to MyTRB. If you do not already have an account, you will be asked to quickly create one using your email and a password. Once logged in, scroll down to the TCRP synthesis projects (beginning with J-07/Topic SA-61) and select the topic you wish to nominate yourself for.

Before nominating yourself as a panel member, please review our [Conflict of Interest Resource Page](#). Nominations will be reviewed on a rolling basis and are open until each panel is completed in **August 2023**. If you have any questions, please contact Mariela Garcia-Colberg, mgarciacolberg@nas.edu

We are grateful for your support of the TCRP Synthesis Program! With the nominees continuing to outnumber the available positions, we have been able to establish panels outstanding in their ability to play a critical role in the accomplishment of successful research. Please know that if you or your nominee(s) is not selected, it is because there are several factors to be considered when forming well balanced and objective panels. Although expertise is the primary factor, we also attempt a proper balance in terms of organization or agency types (e.g., transit systems, private consulting firms, universities, associations, geographic areas, gender, and ethnic diversity).

TCRP SYNTHESIS TOPICS FY 2023
(Titles are [HOTLINKS](#))

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TCRP Project J-07
Synthesis Topic SA-61
Transit Recovery in the Aftermath of Severe Weather Events- Current Practice
FIRST VIRTUAL MEETING: September 26, 1:00- 4:30 p.m. EST
DRAFT SCOPE

BACKGROUND:

An increase in severe weather across the U.S. has led to increased impacts on transportation networks across the country. As a result, transit agencies need to have plans in place to appropriately react to and recovery from the impacts of natural disasters, such as: hurricanes, floods, winter storms, wildfires, and other severe weather events. This synthesis looks to examine how often transit agencies have recovery plans, and if the existence of a recovery plan impacts the “down period” of full service. While many agencies across the United States have both rail and bus operations, this synthesis is focused on bus operations only, as rail operations can be supplemented with buses in the interim.

While the expectation is that transit agencies are the most likely to have recovery plans to call upon in the event of severe weather impacting operations, as a result of their increased resources, smaller urban or rural transit agencies feel the impact of these disaster events more severely when compared to the larger agencies. This is a result of the greater resources available to transit agencies as they are more likely to be able to afford personnel such as emergency managers who write these dedicated recovery plans, where smaller agencies are often ran by only a handful of individuals where someone like a General Manager or Operations Manager may or may not have undergone emergency management training and doesn't have the availability to write a recovery plan.

OBJECTIVE:

This synthesis looks to examine the current state of practice around transit recovery plans, identify if the existence of these plans reduces operational downtime and look at key instances of successful recovery. The end goal of this synthesis is to examine the current practices around transit Response and Recovery plans, while highlighting successful recovery practices from around the nation.

INFORMATION TO BE GATHERED:

- A review of federal or state guidelines, regulations, or requirements for the existence of a recovery plan, if any exist.
- Current industry standards.
- The existence of plans throughout agencies of varying sizes.
- Common ideas or practices across plans.
- Average time frame from the beginning of recovery to a return to full-service.

- Areas of operation most impacted.
- Partnerships and coordinated recovery efforts.
- Defining metrics of what a “successful recovery” looks like.
- Plan information – ex: age, update frequency, contents.
- Any examples of practices for use as a reference for other transit agencies.

HOW THE INFORMATION WILL BE GATHERED:

A literature review that will be conducted by completing an industry scan to research and report on any standards for Recovery plans, while selecting transit agencies and disaster events to examine. Second, a desktop scan and outreach to selected agencies to gather relevant documentation and any additional information. Case examples of selected agencies.

RELEATED RESOURCES:

Scan of Federal and State Transit Regulations, using websites such as FTA, FHA, and State DOTs for example. Relevant organizations would be various transit districts and management, agencies around the nation, and any transit staff related to emergency operations, emergency managers, operations managers, general managers.

Other literature:

- TCRP Web Only Document 70: Improving the Resilience of Transit Systems Threatened by Natural Disasters, Volumes 1-3.
- TCRP Web Only Document 75: Command-Level Decision Making for Transportation Emergency Managers
- TCRP Report 225: A pandemic Playbook for Transportation Agencies
- NCHRP 20-116 – Emergency Management Playbook for Transportation Agencies
- TCRP Report 160 – Paratransit Emergency Preparedness and Operations Handbook
- Disaster Response and Recovery Resource for Transit Agencies (by FTA)
- NCHRP Web-Only Document 206: Managing Catastrophic Transportation Emergencies: A Guide for Transportation Executives
- NCHRP Report 753: A Pre-Event Recovery Planning Guide for Transportation
- NCHRP Report 931: A Guide to Emergency Management at State Transportation Agencies
- TCRP Research Results Digest 87: Emergency Preparedness, Response, and Recovery in the Transit Industry
- Emergency Management Planning for Texas Transit Agencies: A Guidebook (TTI)

TCRP Project J-07
Synthesis Topic SA-62
Initiatives to Support Nighttime Off- Peak Transit Ridership
FIRST VIRTUAL MEETING: September 27, 1:00- 4:30 p.m.
DRAFT SCOPE

BACKGROUND:

The Covid 19 Pandemic has caused a major disruption to transit ridership, with many transit systems, especially ones in large cities, only currently reaching 65 to 80 % of pre-pandemic ridership levels. Peak commuting-based ridership has been hardest hit because of the dramatic increase in work from home by previous in-office workers. All trends indicate that office work will become a hybrid structure of work from home and in-office work. This will result in all cases in significant decreases of commuting during workdays by public transit.

At the same time, the Pandemic highlighted the critical importance of the availability of public transit service to essential and industrial shift workers, who are often totally reliant on public transport.

As society emerges from the depths of the Pandemic, one observes that off-peak ridership is appearing to be more resilient than peak ridership, and many transit agencies have been increasingly focusing on off-peak service and its ridership in order to create 24/7 ubiquitous mobility and accessibility: this has been validated by some market research that has shown that linking transit to cultural and social opportunities and focusing on off-peak as opposed to peak travel, may be an important component in rebuilding transit ridership as we emerge from the Pandemic.

OBJECTIVE:

The objective of this synthesis is to document the initiatives of transit agencies to support night time off-peak transit ridership. There are two different initiatives that should be documented by this research:

- Assessment of the Nighttime Economy to identify current and emerging job markets;
- Initiatives to support the Nighttime Economy; and,
- Initiatives to support nighttime essential, service, and shift workers.

INFORMATION TO BE GATHERED:

The following are questions to be explored through the proposed TCRP Synthesis:

- What are the interaction mechanisms between transit, municipal/county/regional economic development and management staff, and employers/businesses associations?
- How much transit agency staff time is dedicated to the planning and operation of nighttime

services?

- How are nighttime services planned?
- Is any effort made to distinguish between the needs of the two above types of nighttime service markets; the nighttime economy transit demand tends to focus on downtown social and cultural districts, while essential / service employee demand often focuses on suburban locations of health or industrial campuses?
- Are any special services planned to serve nighttime markets? These might include:
 - A distinct network of owl-type services that can vary in structure⁴
 - On-demand transit / microtransit
 - Contracted service with TNCs or shared-ride taxis
 - Extended service hours on existing routes
- Does the transit agency monitor transit nighttime travel patterns (e.g., ridership origins, destinations, distances, traveler characteristics)
- Does the transit agency conduct any specific market research or focus groups to identify issues and needs of the nighttime transit markets?
- How are security concerns addressed, both from the operations and infrastructure perspectives?
- How do these considerations vary by city size (e.g., whereas major cities might have dedicated night management staff, smaller and midsized cities might be more likely to assign such duties to existing staff who have other responsibilities)?

HOW THE INFORMATION WILL BE GATHERED:

Information will be gathered by a literature review (e.g. agency reports, peer reviewed journal articles, web articles) and a survey on a broad range of North American transit agencies. The report should include case examples that will gather information on the state-of-the-practice, emphasizing lessons learned, current practices, challenges, and gaps

RELATED RESOURCES:

- Responsible Hospitality Institute, <https://www.sociablecity.org/>
- *Cities That Love the Nightlife: A thriving nighttime economy is critical for fostering a vibrant city*, APA, Planning, February 2020, <https://www.planning.org/planning/2020/feb/cities-that-love-the-nightlife/>
- Map: <https://www.sociablecity.org/services/night-manager-movement>
- <https://www.youtube.com/watch?v=mmPW--zMpEg>

TCRP Project J-07
Synthesis Topic SB-39
Improving Transit Customer Perception of Personal Security
FIRST VIRTUAL MEETING: September 14, 1:00- 4:30 p.m. EST
DRAFT SCOPE

BACKGROUND:

In August 2022, Mineta Transportation Institute (MTI) released the findings from a global study, *Changing Patterns of Violence Pose New Challenges for Public Transport*, that found growing violence against passengers and staff on passenger trains, at train stations, on buses, and at bus stations. Brian Michael Jenkins writes: “The behavior is contributing to a sense of insecurity. A public fearful of traveling adds to economic difficulties for transportation operators and reduced resources for facilities improvements, service, and security. The fact there are fewer riders may contribute even further to a sense of insecurity...”

Passengers may feel exacerbated by the increased number of homeless people using transit. People who are homeless often use public transit vehicles or facilities as shelters to stay out of the weather and to be safe. For various reasons, many transit passengers do not feel comfortable around people who are homeless, especially if these people have mental health or substance abuse issues. (TCRP Synthesis 121).

Los Angeles Metro (“Metro”) reports that in their customer survey, rail riders list homelessness as one of the top issues they want the agency to address. (See Metro’s blog. The Source). Metro has been working to solve the homelessness issue since 2017 when its Board of Directors approved Metro’s first Homeless Outreach Plan. However, since the problem is so complex, there is a public perception that Metro is not doing enough.

New York’s MTA Subway Safety Plan (2022) recognizes that crime and homelessness are major issues for the subway system in New York and outlines a three-part plan that will transition people living in subway stations into permanent housing. This plan, also dubbed “Cops, Camera and Care,” will add NYPD and MTA officers, the installation of additional security cameras and intervention teams that help the homeless and mentally ill in the stations while protecting the transit customers. The MTA believes this plan will reduce all types of crime, will make the system safer, and attract more riders.

Other agencies are also struggling with the perception of customers about how they handle issues of crime and homelessness, among others. Some try to improve their customer’s perception by creating customer experience programs that endeavor to improve customer satisfaction, attract ridership, and improve morale. Since safety is a significant concern of riders, the customer experience includes outreach to the homeless population.

OBJECTIVE:

This Synthesis will document the current practices transit systems use to improve customer perception of personal security. The report will highlight the following: the interventions that are being used to increase security on transit; whether the interventions are successful in increasing security; how these interventions are communicated to the public; and the associated change in customers' perceptions.

RELATED RESOURCES:

Bell, L., Beltran, G., Berry, E., Calhoun, D., Hankins, T., and Hester, L. (2018, September 19). Public Transit and Social Responsibility: Homelessness (Leadership APTA). APTA. Retrieved October 8, 2020, from https://www.apta.com/wp-content/uploads/Transit_Responses_Homeless/REPORT-2018-LeadershipAPTA-Team-4-Public-Transit-and-Social-Responsibility.pdf.

Herring, C. (2019, September 5). Complaint-oriented Policing: Regulating Homelessness in Public Space. *American Sociological Review*, 84(5), 769–800. <https://doi.org/10.1177/0003122419872671>.

Jenkins, Brian M. and Butterworth, Bruce (2022). Mineta Transportation Institute Changing Patterns of Violence Pose New Challenges to Public Surface Transportation in the United States, SJSU Research Foundation.

LA Metro's blog 2022. The Source <https://thesource.metro.net/2022/10/31/our-approach-to-the-issue-of-homeless-riders-on-the-metro-system/>

Loukaitou-Sideris, A., Wasserman, J. L., Caro, R., & Ding, H. (2021). Transit Agency Responses to Homelessness. UC Office of the President: University of California Institute of Transportation Studies. Retrieved from <https://escholarship.org/uc/item/5bv157b5>

Loukaitou-Sideris, A., Wasserman, J. L., Caro, R., & Ding, H. (2021). Homelessness in Transit Environments Volume II: Transit Agency Strategies and Responses. UCLA: Institute of Transportation Studies. Retrieved from <https://escholarship.org/uc/item/87b0v8cr>

Loukaitou-Sideris, A., Wasserman, J. L., Ding, H., & Caro, R. (2021). Homelessness in Transit Environments: Survey Findings. UC Office of the President: University of California Institute of Transportation Studies. <http://dx.doi.org/10.17610/T6PC83> Retrieved from <https://escholarship.org/uc/item/3wx1q2v4>

Loukaitou-Sideris, A., Wasserman, J. L., Caro, R., & Ding, H. (2020). Homelessness in Transit Environments Volume I: Findings from a Survey of Public Transit Operators. UC Office of the President: University of California Institute of Transportation Studies. Retrieved from <https://escholarship.org/uc/item/55d481p8>

National Academies of Sciences, Engineering, and Medicine 2016. TCRP Synthesis 121 Transit Agency Practices in Interacting with People Who Are Homeless. Washington, DC: The National Academies Press. <https://doi.org/10.17226/23450>

NY MTA Subway Safety Plan <https://www.nyc.gov/assets/home/downloads/pdf/press-releases/2022/the-subway-safety-plan.pdf>

Wasserman, J. L, Caro, R., Loukaitou-Sideris, A., & Ding, H. (2021). The Extent of Homelessness on Transit: What We Know. UC Office of the President: University of California Institute of Transportation Studies. Retrieved from <https://escholarship.org/uc/item/0694z502>

Weinstein, Aaron (2022). Diverse strategies in customer experience programs across North America help increase ridership, improve morale Mass Transit Magazine.

TCRP Project J-07
Synthesis Topic SB-40
Low-Income Transit Discount Provision at Transit Agencies
FIRST VIRTUAL MEETING: September 28, 1:00- 4:30 p.m. EST
DRAFT SCOPE

BACKGROUND:

Fare pricing structures have implications for both transit agencies operations and rider accessibility and equity outcomes. Certain fare structures present more inequitable outcomes based on evaluations of ability to pay versus amount paid by riders in different income brackets. Discounts for low-income riders is one mechanism that has been proposed to increase the equity of existing fare structures. Previously, some agencies sold bulk tickets at a discounted rate to local nonprofit organizations to distribute, however, provision of low-income discounts by agencies and/or metropolitan transportation commissions has been increasingly popular. In 2021, 17 of the 50 largest transit agencies in the United States had discounted ticket programs for low-income riders.

Agencies in Seattle - spearheaded by King County Metro, the Bay Area - run by the Metropolitan Transportation Commission, and Central Ohio Transit Authority all run programs providing discounted transit passes to low-income riders. The programs vary in terms of eligibility verification, discount percentage, organization running the program, existing fare structure, and regional collaboration in provision of discounts. Understanding these variations, the financial implications for participating agencies, and the equity and accessibility implications for riders is crucial as agencies continue to implement programs to improve fare equity. Evaluating the current landscape of means-based discount programs across the variety of transit agencies in the United States will provide crucial insights for current operators.

OBJECTIVE:

The objective of this synthesis is to document the current practice of providing discounts for low-income riders at transit agencies. In addition, the synthesis will document how discount programs work with different fare structures and mediums, and how programs can be coordinated regionally with neighboring operators. Finally, access and equity evaluations from a selection of agencies will provide insights into the rider outcomes of these program.

INFORMATION TO BE GATHERED:

- Discount structure and amount
 - E.g., 50% off single ride, weekly discounted pass, etc.
- Discount cutoff (i.e., 200% fpl, 150% fpl)
- Eligibility verification process, if any
- Funding sources and financial implications
- Regional collaboration with neighboring agencies

- Who operates the program, do all agencies participate, is an MPO overseeing?
- Access and equity outcomes from the program (from information gathering from program participants)
- Agency pricing structure (flat, distance-based, zone-based, etc.)
- Fare medium (smart cards, open loop, magstripe cards, etc.)
- Agency size measured by unlinked passenger trips
- Literature review of low-income discount practices in the United States;
- Information collection from transit agency websites to evaluate existence of low-income discount programs;
- Surveys of agencies with discounts;
- Case examples

RELATED RESOURCES:

Brown, A. E. (2018). Fair fares? How flat and variable fares affect transit equity in Los Angeles.

Case Studies on Transport Policy, 6(4), 765–773. <https://doi.org/10.1016/j.cstp.2018.09.011>

Darling, W., Carpenter, E., Johnson-Praino, T., Brakewood, C., & Voulgaris, C. T. (2021).

Comparison of Reduced-Fare Programs for Low-Income Transit Riders. *Transportation Research Record*, 2675(7), 335–349. <https://doi.org/10.1177/03611981211017900>

Harmony, X. (2018). Fare Policy and Vertical Equity: The Trade-off between Affordability and Cost Recovery. *Journal of Public Transportation*, 21(2). <https://doi.org/10.5038/2375-0901.21.2.3>

<https://www.cota.com/riding-cota/discount-fares/>

<https://mtc.ca.gov/planning/transportation/access-equity-mobility/clipperr-startsm>

<https://kingcounty.gov/depts/transportation/metro/fares-orca/orca-cards/lift.aspx>

TCRP Project J-07
Synthesis Topic SB-41
Microtransit Solutions in Rural Communities: On-Demand Alternatives to
Dial-A-Ride Services and Unproductive Coverage Routes
FIRST VIRTUAL MEETING: September 29, 11:30- 3:00 p.m. EST
DRAFT SCOPE

BACKGROUND:

With the advent of on-demand technology, microtransit has provided a cost-effective immediate-fulfillment, shared-ride transportation service for the general public in areas where and/or when fixed-route service is not viable. Increasingly, transit agencies have implemented microtransit to:

- Expand public transit access to new areas or times and, by doing so, to test the demand in these areas or times.
- Replace underperforming routes or route segments and/or to replace “coverage” routes.
- Reduce demand at nearby station or bus facility parking lots.

Microtransit services are provided directly with dedicated vehicles operated by transit agencies or their contractors, including paratransit contractors or the new crop of on-demand technology vendors, as well as by non-dedicated service providers (NDSPs) such as taxis and/or TNCs, or a combination thereof. On-demand dispatching technology can be licensed separately by the transit agency for the service or provided by a provider (sometimes called software-as-a-service). And, with the ADA requirement for service equivalence in mind, transit agencies have either required vendors to provide wheelchair-accessible vehicle (WAV) service directly or through a subcontract, or directly operated WAVs.

Microtransit has been successfully implemented in portions of rural areas with a high demand density. In such a setting, the high demand density enables a transit agency to directly or through a contractor cost-effectively operated microtransit as a dedicated service, as an alternative to fixed route service. Moreover, such high-demand settings are more apt to attract TNCs and taxis which can provide microtransit trips either as the primary vendors or in support of a dedicated fleet.

The conundrum for microtransit occurs in less dense areas of a rural community. Here, rural transit agencies are more apt to provide a flex or fixed routes (often structured as one-way loops) that “cover” certain areas with an eye toward equity but that are often inconvenient and unproductive. Similarly, most rural dial-a-ride services that provide coverage are available only on an advance reservation basis. A better solution for riders in rural communities is an on-demand microtransit service, which enables more spontaneous travel options and is often more cost effective than the rural coverage routes. And there have been microtransit solutions implemented in rural counties such as Delaware County, NY and Summit County, UT as well as

in Bowen Island, BC (population 3,600), Marble Falls, TX (population 7,000) and in Dryden, NY (population 13,600). However, the design options for microtransit in rural areas are more limited.

Research on state of the practice for microtransit in rural areas is needed for agencies to plan and operate/administrate service in their communities that better meets rider needs. The successes can serve as a guide to those transit agencies in rural communities who are contemplating introducing microtransit to less dense areas. Despite all the attention and research of microtransit, this is the one aspect of microtransit that has lacked adequate research.

OBJECTIVE:

The objective of this synthesis is to document the current state of practice of transit agencies that have implemented microtransit in less-dense settings.

INFORMATION TO BE GATHERED:

- Examples of different microtransit service models to include (1) services where the rural community and transit provider retain adequate levels of control and command; and (2) where rural transit agencies rely more on private on-demand vendors – the research will examine transit agency (and vendor) roles for booking and dispatching trips, operations, the provisions of vehicles, dispatching technology, customer support, and other functions.
- Service designs and scheduling/dispatching parameters (e.g., stop locations, trip lengths) given the uniqueness of travel characteristics in rural areas.
- Customer awareness and education of using on-demand microtransit service to further adoption of new service options.
- Supporting technologies in service design.
- The perspectives and expectations of both customer and agency perspectives as well as the establishment of relevant service quality and service/cost efficiency performance metrics geared to on-demand services in rural settings.
- Fleet mix in microtransit designs, including uniform fleets with all WAVs or fleets with combinations of WAVs and non-WAVs, while providing equivalent service for persons with disabilities.
- Realized benefits of microtransit services for transit agencies (e.g., cost reductions, service efficiencies, equity, customer satisfaction).

HOW THE INFORMATION WILL BE GATHERED:

Information will be gathered by a literature review (e.g. agency reports, peer reviewed journal articles, web articles) and a survey on a broad range of North American transit agencies. The report should include case examples that will gather information on the state-of-the-practice, emphasizing lessons learned, current practices, challenges, and gaps.

RELATED RESOURCES:

NCHRP 20-65 Task 76, *Opportunities for State DOTs (and Others) to Encourage Shared Use Mobility Practices in Rural Areas*, and current research projects, such as NCHRP 08-130, *Best Practices in Coordination of Public Transit and Ride Sharing*, focus on transit partnerships with TNCs to supply microtransit and alternative services, but not necessarily in a lower-density setting.

TCRP B-47, *Impact of Transformational Technologies on Underserved Populations*, is researching related technological barriers common to rural and tribal communities among other underserved populations. Part of this research is focusing on the impact of these barriers on service type design and viability (including on-demand services).

TCRP Project J-07
Synthesis Topic SB-42
Operational and Service Factors when
Integrating/Consolidating ADA Paratransit and Microtransit
FIRST VIRTUAL MEETING: October 3, 1:00- 4:30 p.m. EST
DRAFT SCOPE

BACKGROUND:

Can on-demand microtransit service successfully accommodate Americans with Disabilities Act (ADA) and human service paratransit rides while achieving productivity and service quality performance targets? Microtransit offers another premium option for ADA riders beyond the DOT requirements. Many ADA services divert rides that don't fit into vehicle itineraries to taxis and on-demand services and allow riders, at a higher fare, to book their rides same-day with participating on-demand providers.

On-demand microtransit services are becoming prominent across the U.S. Several transit agencies are exploring the potential of integrating/consolidating ADA paratransit rides and sometimes human service rides with microtransit service. They are motivated by potential cost and service efficiencies derived from that integration, as well as the potential for better performance outcomes for riders (e.g., on-time performance, on-demand reservation options, service to a wider swath of the population, etc.). Different passenger groups have been commingled in the same demand response vehicles prior to the arrival of transportation network companies (TNCs) and microtransit technologies. However, commingling on microtransit is still relatively new. The quantitative and qualitative results of using microtransit to accommodate ADA clients are as yet unknown.

Several factors from an operations perspective are relevant to commingling ADA paratransit and microtransit services. Typical microtransit service designs will group trips to calculate the most efficient routing in real time, as new trips are requested and paired with vehicles, whereas typically ADA paratransit rides are reserved and scheduled in advance. Some microtransit services also require customers to walk from their current location to meet the vehicle at a nearby point. Most ADA customers require curb-to-curb or door-to-door service, making microtransit difficult or impossible for some individuals to ride. Dwell times will differ for ADA versus general public/other trips as people with disabilities tend to take longer to board and alight and require assistance while doing so. Some ADA riders are clients of human service agencies and tend to ride with fellow clients to/from congregate sites such as senior centers in established groups, whereas microtransit services may not accommodate group bookings. The microtransit database would have to include data for ADA customers regarding emergency contacts, whether a personal care attendant or companion will ride with the person, and whether extra notification time is required of the vehicle arrival as compared to general public riders.

Microtransit can educate ADA clients with travel training and customer education efforts, but microtransit service designs must be nimble enough to help customers who need additional assistance to use the service. Some ADA riders can transfer at transit hubs, while others need a one-seat ride. For those who can't transfer, microtransit would suffice only if the destination is within the microtransit service zone. While some microtransit systems only serve one destination (usually a transit hub) and shorter distances, ADA customers also need to travel to/from grocery stores; pharmacies; medical centers; government offices; senior centers; adult day health centers; dialysis treatment sites; and other destinations. As over a fifth of ADA rides are taken by wheelchair/scooter users, the microtransit system may require a higher proportion of wheelchair accessible vehicles (WAVs) to avoid discriminatory wait times. Some microtransit operations are provided under contract without uniformly wheelchair-accessible fleets. Compliance with ADA complementary paratransit requirements may come into question for these service integrations; for example, microtransit service areas may differ from the minimum three-quarters of a mile around a fixed route that ADA paratransit serves. Finally, microtransit offers booking when the ride is needed (on demand) via smartphone, though services usually have a call-center backup for the rider, as some customers need that call-in option. However, some ADA riders rely on regularly scheduled standing order rides, which entail advanced reservations that microtransit normally doesn't accommodate.

Several microtransit operations and technology platforms efficiently integrate general public, ADA, and/or human service riders—especially Non-Emergency Medical Transportation (NEMT) riders. Shared resources including vehicles; cross-trained dispatchers; drivers; and schedulers are deployed to provide all these rides. This strategy has reduced the cost per ride. The Golden Empire Transit District in Bakersfield, CA; StarTrans in Lincoln, NE; and Citibus in Lubbock, TX are three examples of transit agencies that are commingling riders with microtransit technology platforms. Other microtransit sites share resources without having ADA, general public, and NEMT riders on the same vehicle simultaneously.

OBJECTIVE:

The objective of this synthesis is to document the types of integrations/consolidations of ADA paratransit with microtransit services and its associated outcomes in a variety of geographic settings (including ex-urban and rural communities).

INFORMATION TO BE GATHERED:

- Software and communications tools and capabilities for commingling ADA paratransit passengers with other trip types on microtransit service
- Service designs and parameters (e.g., stop locations, trip lengths) and agency/company roles in integration/consolidation of ADA paratransit with microtransit service
- Reservation methods and fare payment methods (by phone, app, etc.) for ADA paratransit and other customers
- Use of pre-booking, subscriptions, and fare payment in integrations between software platforms and mobile app features
- Scheduling and commingling considerations for customers with different types of disabilities (and assistance needs for certain disabilities)
- Allowance of personal care attendants and family/friend companions for ADA paratransit

customers using microtransit service

- Driver training on disability sensitivity and ADA paratransit customer assistance needs
- Education and travel training to ADA paratransit customers on impacts of service changes and use of new technology tools to request trips
- Fleet mix in microtransit designs, including uniform fleets with all WAVs or fleets with combinations of WAVs and non-WAVs
- Reporting and compliance requirements for ADA and NEMT paratransit services and consequent implications for service design and administration
- Realized benefits of integrations/consolidations for transit agencies (i.e., cost reductions, service efficiencies, etc.)
- Impacts of service integrations/consolidations to ADA paratransit customers
- Roles of private and public sector in commingled services

HOW THE INFORMATION WILL BE GATHERED:

The research will include a literature review (e.g., agency reports; peer reviewed journal articles; web articles) and a survey covering a broad range of North American transit agencies (size; geographic distribution; customer base; operating environment). The information will be supplemented with sample documents (e.g., contracts; policy and procedures; operating results; analyses, etc.) that will be included in the Appendix. The report will include at least five diverse case studies that will gather information on the state-of-the-practice, emphasizing lessons learned; decision making; opportunities; and challenges. A discussion of gaps of information and suggestions for future research shall also be included in the report.

RELATED RESOURCES:

- Hansen T, Walk M, Tan S, Mahmoudzadeh A. Performance Measurement and Evaluation Framework of Public Microtransit Service. *Transportation Research Record*. 2021;2675(12):201-213. doi:10.1177/03611981211028622
- Miah, M M, et al. (2020). Barriers and opportunities for paratransit users to adopt on-demand micro transit.
- APTA. Commingling 101: How to integrate microtransit with paratransit.
- Mass Transit (2022). UZURV and Spare: Full integration provides innovative paratransit programs with real-time data and reporting tools.

TCRP Project J-07
Synthesis Topic SD-07
Red Tinted Bus Lanes Experience
FIRST VIRTUAL MEETING: October 4, 1:00- 4:30 p.m. EST
DRAFT SCOPE

BACKGROUND:

Bus lanes have been around for decades and were initially identified with white pavement markings. Tinted pavement bus lanes first surface in international cities. In the US, city bus lanes conformed to signage and markings described in the Manual for Uniform Traffic Control Devices (MUTCD). This began to change in 2017 with pilot tinting allowed by the FHWA and was formally approved by the FHWA in 2020. Since then, many cities have implemented red tinted bus lanes as part of both BRT projects and non-BRT bus lane projects. The expansion of the concept suggests wide success, but little is known about their successes/failures and policy, technical and operational issues. How do tinted bus lanes compare to physically separated exclusive BRT lanes? What have been key factors to the success of the painted bus lanes and what are the key challenges? Observations in San Francisco indicate that right turning motorists better understand the red tinting and that enforcement is critical to their success. Other regions are exploring this approach as a means to help motorists better navigate an increasingly multimodal arterial cross-section. Foundational questions remain - are the tinted lanes safer, do they improve operations and how important is enforcement?

OBJECTIVE:

The objective of this synthesis is to document the current state of practice in the performance and implementation of red tinted bus lanes.

INFORMATION TO BE GATHERED:

- Definitions of tinted bus lane concept;
- History and context of red tinted bus lane as well as the authority to implement the tinted lanes;
- Locations and the features of their tinted bus lanes including links to BRT and other high-frequency transit services;
- Available performance information;
- Implementation and ongoing maintenance costs and needs;
- Enforcement experience and effectiveness;
- Fiscal impacts including operational and enforcement cost savings (if available);
- Integration with bikes, taxis, delivery vehicles and other modes;
- Available information on public, rider and operator acceptance.

HOW THE INFORMATION WILL BE GATHERED:

Information will be gathered by a literature review (e.g. agency reports, peer reviewed journal articles, web articles) and a survey on a broad range of North American transit agencies. The report should include case examples that will gather information on the state-of-the-practice, emphasizing lessons learned, current practices, challenges, and gaps. Suggestions for case examples include San Francisco and Washington DC.

RELATED RESOURCES:

- Transit agencies
- TRB and other research
- MUCTD

TCRP Project J-07
Synthesis Topic SH-24
Impacts of Substance Abuse and Fentanyl Use on Transit
FIRST VIRTUAL MEETING: October 5, 1:00- 4:30 p.m. EST
DRAFT SCOPE

BACKGROUND:

Fentanyl and Opioid use have increased inside transit after the Covid-19 pandemic. Drug use seems rampant in Metro systems all around the country. According to Uranga writing for the Los Angeles Times, “Since January, 22 people have died on Metro buses and trains, mostly from suspected overdoses — more people than all of 2022.” The Seattle Times (Horney 2023) also reported about the drug use crisis on Sound Transit when a train operator had to seek medical attention because a man was inhaling a deadly drug.

OBJECTIVE:

The objective of this synthesis is to document the current practices of transit systems dealing with Fentanyl and Opioid use in their transit vehicles and stations.

INFORMATION TO BE GATHERED:

The Synthesis shall include at the minimum:

- Determine if a transit system has seen and documented an increase in drug use/ fentanyl use in their transit systems;
- Document the way transit systems handle fentanyl and opioid use on transit;
- Document how transit is dealing with the effects of second hand smoke;
- Document how transit is dealing with clients who overdose in transit vehicles and stations.

HOW THE INFORMATION WILL BE GATHERED:

Information will be gathered by a literature review (e.g. agency reports, peer reviewed journal articles, web articles) and a survey on a broad range of North American transit agencies. The report should include case examples that will gather information on the state-of-the-practice, emphasizing lessons learned, current practices, challenges, and gaps.

RELATED RESEARCH:

Horney, D. (2023) *Drug use on Sound Transit trains is intolerable*. Seattle Times

Uranga, R. (2023) *L.A. riders bail on Metro trains amid 'horror' of deadly drug overdoses, crime*. Los Angeles Times

Los Angeles Times

<https://news.trimet.org/2023/03/trimet-participates-in-first-of-its-kind-multi-agency-study-addressing-drug-use-on-transit-systems/>