

TRANSPORTATION RESEARCH BOARD

# Improving Bus Stops through Transit Agency Relationships

**September 21, 2021**



**@NASEMTRB**  
**#TRBwebinar**

# APA Credits

- This webinar is worth 1.5 AICP credits through the American Planning Association

# Learning Objectives

1. Identify how collaboration and communication fosters transit infrastructure improvement
2. Identify how transit agencies can leverage funding opportunities
3. Determine how to prioritize infrastructure around bus stops

**#TRBwebinar**





# Improving Bus Stops through Transit Agency Relationships

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TCRP Synthesis Report 152: *Transit Agency Relationships and Initiatives to Improve Bus Stops and Pedestrian Access*

September 21, 2021

# Agenda

- Research overview on Synthesis Report 152
- Case study: VIA Metropolitan Transit
- Case study: Utah Transit Authority
- Moderated question and answer session



# Today's Speakers



**Todd Hansen, AICP**  
Associate Research  
Scientist  
**Transit Mobility  
Program –  
Texas A&M  
Transportation Institute**



**Abigail Kinnison**  
Director of Capital  
Programs  
**VIA Metropolitan  
Transit**



**Marci Warren**  
Customer  
Experience  
Researcher  
**Utah Transit  
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**Bonnie Epstein**  
Director of Mobility  
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**Pinellas Suncoast  
Transit Authority**



# TCRP Synthesis Report 152 – Research Overview

Todd Hansen, Texas A&M Transportation Institute



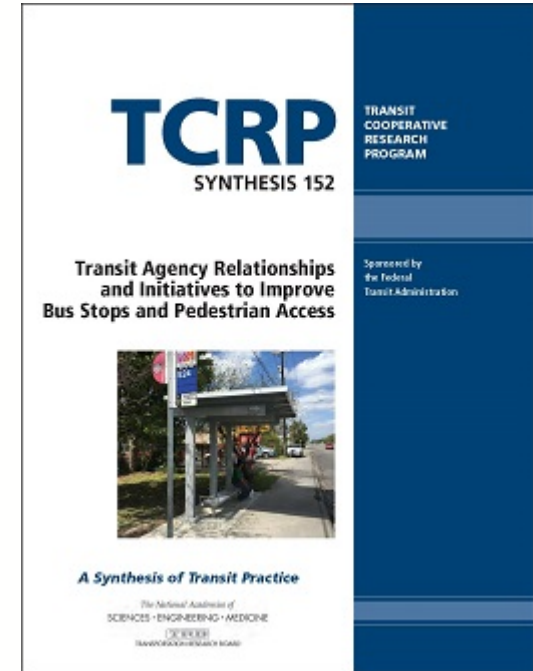
# Improving Bus Stops





# Outline of Research Overview

- Introduction of the research
- Definitions and scope
- Major topics in improvement programs
- Key findings from survey of transit agencies
- Introduction of case study examples
- Best practices, challenges, lessons learned



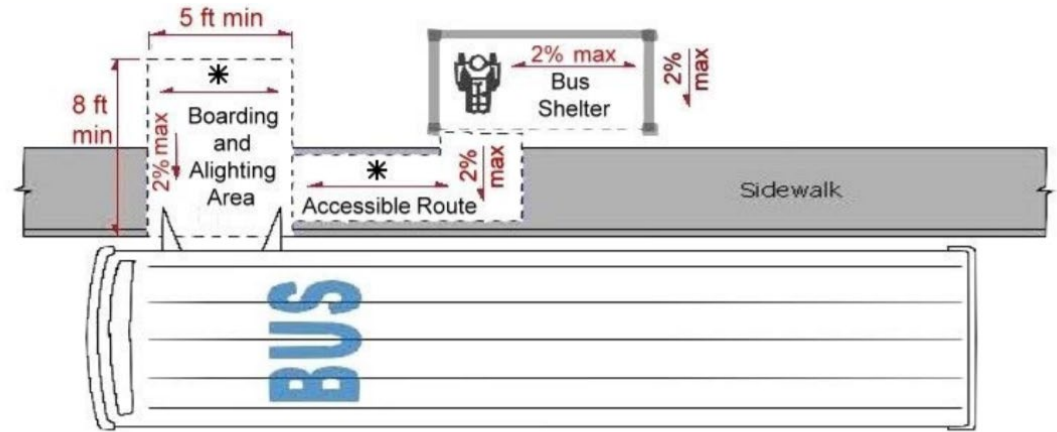
# Research Purpose

- Document innovative practices bus stop and pedestrian infrastructure improvements by transit agencies
  - Improvement prioritization
  - Program leadership
  - Funding mechanisms
  - Relationships with other entities
  - Agreements and contracting
  - Accessibility and equity
  - Scoring systems and technology tools
  - Unique practices
  - Maintenance and sustainability



# Bus Stop Infrastructure Elements

- Shelter
- Bench
- Landing pad
- Rear-door area
- Pathway
- Crossing
- Curb ramp
- Lighting
- Detectable warnings

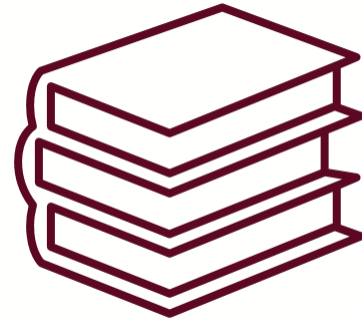


\* Slope may be the same as the roadway

Source: Washington State Department of Transportation

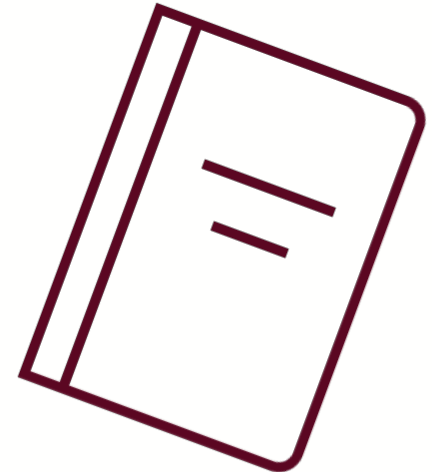
# Research Approach

- Review relevant literature
- Conduct surveys and case studies about innovative or unique approaches to addressing planning challenges of relevance
- Document costs and benefits and lessons learned by agencies that implemented innovative or unique approaches



# Organization of Synthesis Report

- Introduction
- Literature Review
- Survey
- Five Case Examples
- Conclusions
  - Key Findings, Barriers and Challenges, Best Practices and Lessons Learned, Future Research Needs
- Appendices
  - RTA Access to Transit Program – Application Form
  - Utah Transit Authority – Interlocal Agreement



# Survey

- Expanded upon information from agencies learned during the literature review
- Obtain high-level information about improvement programs
- Discover information on goals and priorities, agency roles, relationships with other entities, tools and data, ADA and equity considerations, and funding mechanisms
- Identify potential case studies for more-detailed research



# Primary Survey Categories

Scope of Bus  
Stop Programs

Tools and  
Processes

Agreements  
with Local  
Entities

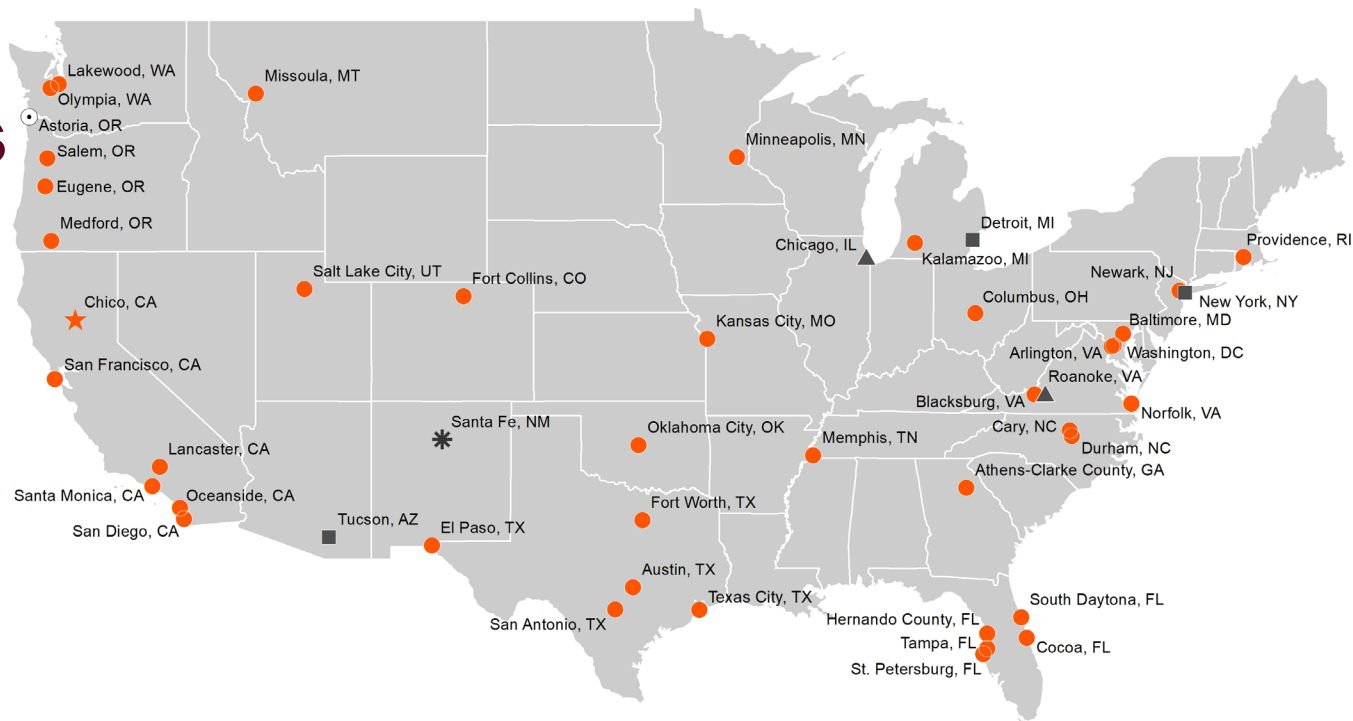
Communication  
and  
Coordination

Accessibility  
and Equity

Funding  
Considerations



# Survey Respondents



## Agency Type

- State DOT
- Regional Authority
- MPO
- City or Municipality
- COG or AOG
- Transit Agency

Targeted to agencies identified during literature review; 47 total responses included for the report

# Key Survey Findings

- Most desired outcomes: Improving bus stop accessibility, comfort, safety and security
- Programs lead by Planning (64%), Capital Improvement (~30%), or Project Management (~30%) departments
- Landing pad was the biggest element included in programs (speaking to agency jurisdictional issues)
- Fixed route ridership (83%) and customer complains (79%) used as chief input sources for prioritizing improvements
- Use of master agreements with other govts, performance resolutions, funding/interlocal agreements with cities or private businesses

# Key Survey Findings (continued)

- Agency vs. partner responsibility varies by the infrastructure element

	Transit Agency	Partner Entity	Both
Shelters	84%	8%	8%
Benches	76%	8%	4%
Landing pad	53%	16%	20%
Rear-door areas	51%	12%	12%
Lighting	45%	20%	24%
Sidewalk/pathways	14%	47%	27%
Crossings	14%	45%	20%
Curb ramps	27%	47%	12%
Detectable warnings	22%	35%	10%

# Case Studies in the Report



TRANSIT



Regional  
Transportation  
Authority

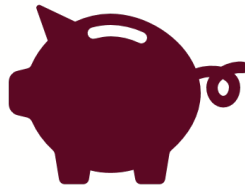
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# Key Takeaways – Dedicated Funding

- Funding for bus stop maintenance and improvements is sometimes an afterthought if not already planned
- Having a dedicated funding source for bus stop and pathway infrastructure is key for success
  - Examples: Local government or business contributions, rental revenues, advertising, sales or property taxes, private developer funds
- Agencies can communicate importance of improvements to generate support for regular or intermittent local funding

Athens-Clarke County Transit uses Special Purpose Local Option Sales Tax (SPLOST) funding from the state of Georgia and created a dedicated division for SPLOST programmed improvements to bus stops and sidewalks.



# Key Takeaways – Customer Input and Education

- Some agencies use customer feedback and complaints for prioritizing bus stop improvements, while others go beyond
- Engagement with the community on the improvement process can help better respond to rider needs and interest in service

SFMTA uses an extensive equity plan and outreach identify areas of high need and implement targeted improvements.

Athens' Art Shelter program engages the community while generating interest in the transit system and partner support.

UTA has a committee formed by UTA engages riders with accessibility needs to incorporate input into planning.



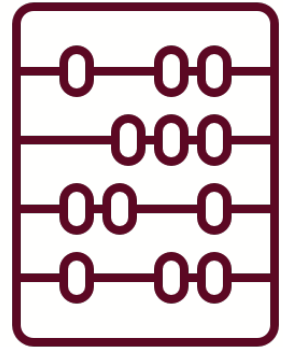
# Key Takeaways – Prioritization Scoring

- Indexes and scoring systems are useful for establishing a consistent and transparent process for improvement
- Agencies can justify improvement locations based on quantitative and qualitative data for community need

Athens uses priority levels based on bus stop boardings and existing amenities to guide decision making.

UTA uses scoring system with factors on ADA compliance, stop activity, bus ramp deployments, transfer points, and safety.

VIA awards point values to stops based on daily boardings, peak hour headways, number of routes, and local facilities.





# Key Takeaways – Maintenance & Standards

- Standards for amenity designs help enhance consistency
- Using databases and dedicated staff for consistent maintenance

Athens and SFMTA both employ shelter design standard specifications and materials as a mechanism for consistency.

CTA staff conducts annual check of all bus stops to update the inventory database and highlight specific needs.

VIA has staff focused exclusively on bus stop upkeep and repair to maintain the quality of amenities.

UTA integrates its bus stop inventory and work order management systems to track progress.



# Key Takeaways – Coordination

- Building relationships and coordinating with other local public entities and developers requires a proactive process
- Agencies include transit issues in the local conversation, anticipated growth, or changes in service with infrastructure
- Can embed transit improvements within new developments

In Chicago, transit agencies take a proactive approach in working with other entities to include transit issues in the local conversation.

UTA and VIA both use informal agreements in their coordination for improvement projects.



# Key Takeaways – Piggybacking & Packaging

- Involving bus stop and pathway improvements in larger projects ties transit needs into other area projects
- Agencies coordinate improvements together with other local entities, saving on funded needed for capital costs and implementation
- Create better funding opportunities for smaller and low-income communities

RTA's Access to Transit program groups smaller projects together to create larger, more competitive proposals.

SFMTA conducts bus stop improvements as part of larger corridor improvement projects.



# Key Takeaways – Local Partnerships & Agreements

- Agreements with partner cities, counties, and other stakeholder organizations can help with financial support, buy-in, and coordination
- Agencies can partner with developers and businesses to include bus service and infrastructure (more difficult)

UTA uses of agreements evolving formal and informal agreements with other entities work to ensure proper construction and bus stop maintenance.

**- *Synthesis Report includes Appendix with Master Agreement***

VIA has a local partnership with state DOT and regional public entities for funding and implementation of improvements.





# TCRP Synthesis Report 152 – Case Study: VIA Metropolitan Transit

Abigail Kinnison – VIA Metropolitan Transit

# Case Study Overview – VIA Metropolitan Transit



- VIA provides public transit service in the San Antonio region of Texas; service area covers 1,208 square miles and 1,958,578 people, chiefly in San Antonio and 13 surrounding member cities.
- With over 6,800 bus stops, VIA operates 96 local and express bus routes, paratransit service, VIA Link (mobility on demand) service, vanpool and special event service.
- Chosen as a case example for multiple partnership programs with the state DOT (TxDOT), the City of San Antonio, and Suburban Cities; as well as quantitative scoring system for improvements
- VIA's commitment to an enhanced transit infrastructure has resulted in improvements to more than 1,000 bus stops in less than 5 years

# VIA Metropolitan Transit – Program Design



- Primary bus stop program goal is having the highest positive impact on the most passengers
- Bus stop program includes transit infrastructure at the stop (e.g., shelters, seating, signs, and concrete pads) as well as sidewalk connections leading to and from the bus stop
- VIA developed a plan in 2013 to improve bus stops, beginning with a bus stop inventory that tracked stop-level ridership, customer inquiries and complaints about access, and amenities
- Strategic Planning and Project Development department leads the program; requests for improvements also often originate in other departments and from external sources



# VIA Metropolitan Transit – Coordination



- VIA provides input and coordinates on bus stop improvements (including shelter foundations) for City of San Antonio and TxDOT projects on roadways with VIA bus service
- Coordination between VIA, TxDOT, and cities is generally informal and achieved through regular communication or meetings (for more complex issues); making joint decisions on funding and resources
- For complex improvement projects, community meetings are held to obtain feedback on the project; TxDOT and San Antonio also have their own processes to obtain input

# VIA Metropolitan Transit – Prioritization



- Initial priority is high ridership bus stops without pedestrian connections
- Line Service Design Score (LSDS) based on boarding data and other factors such as number of routes, average wait time, and nearby land uses
- Available right of way, utility conflicts and other infrastructure or operational factors can also play significant role

Factor	Range	Point Value
Average Daily Boarding	not applicable	1
Average Peak Hour Headway	less than 10 minutes 11-20 minutes 21-30 minutes more than 31 minutes	0 1 3 5
Additional Number of Routes at Stop	1 2 more than 2	2 4 6
Presence of any of the following facilities within 800' of the stop, add 2 points  Medical Facility Educational Facility Elderly or Social Grocery Multi-Family (large)	not applicable	2

# VIA Metropolitan Transit – Partnerships



- Formal agreement with TxDOT dating back to 1982; addresses construction, maintenance, and placement of bus stops in TxDOT rights-of-way
- MyLink program with TxDOT identifies locations for bus stop improvements and assembles funding packages to build accessible bus stops and sidewalks along TxDOT roadways; also increases awareness of bus service in the community
- Formal grant-specific bus stop agreements with local municipalities (suburban cities in the region)
- VIA works jointly with the City of San Antonio on bus stop improvements; pedestrian environment and accessibility are a priority both entities are committed to improving



# TCRP Synthesis Report 152 – Case Study: Utah Transit Authority

Marci Warren – Utah Transit Authority

# Case Study Overview – Utah Transit Authority



- UTA provides public transit service across the Wasatch Front region of Utah; service area covers 1,400 square miles, 7 counties, 77 municipalities, and 1,883,504 people
- UTA operates 96 local bus routes, 4 Fast Bus express routes, 2 bus rapid transit lines, 4 Trax lines, and Frontrunner
- UTA maintains approximately 6,000 bus stops and allocates \$1 million annually to bus stop improvements.
- Chosen as a case example because of current bus stop master plan, use of quantitative tools, and goal of ADA compliance for all bus stops in the system

# Utah Transit Authority – Program Design



- Planning and Customer Experience departments function as leads in the bus stop program
- UTA employs different types of formal agreements in the process of upgrading bus stops
- Bus stop program primarily addresses the transit infrastructure at the stop (e.g., shelters, seating, signs, and concrete pads)
- Using its bus stop inventory, UTA tracks whether bus stops are connected via sidewalks to the sidewalk network or to the nearest intersection

# Utah Transit Authority – Bus Stop Master Plan



- First draft of its Bus Stop Master Plan for the full UTA service area was published in 2018 - biggest driver was UTA's partnership with Salt Lake City, which contributes financially to bus stop enhancements.
- Pending updates to the Plan:
  - Addition of specifications and cost-sharing provisions for shelters at jointly funded bus stops
  - Status of bus stop improvement completed since 2018
- As part Plan update, UTA staff plans to review bus stop locations, route by route and corridor by corridor, looking for opportunities to optimize the location of stops
- Additional funding for bus stop improvements is allocated from countywide local sales tax revenues



# Utah Transit Authority – Prioritization



- Primary goal - making all stops ADA compliant
- Other factors such as bus stop condition, route type, ridership, etc.
- CAT committee
- Trapeze Bus Stop Manager

Category	1 Point	2 Points	3 Points	4 Points	5 Points
Non-ADA Compliant*	-	-	-	-	Yes
Total Stop Activity (TSA) – Average Daily Weekday**	1 to 19	20 to 39	40 to 59	60 to 79	80 +
Total Annual Bus Ramp Deployments	1 to 49	50 to 99	100 – 149	150 – 199	200+
Transfer Point***					
Equal to or Greater than 30 min. freq.	1 Route	2 Routes	3 Routes	4 Routes	5+ Routes
Less than 29 the min. freq.	1 Route	2 Routes	3 Routes	4 Routes	5+ Routes
Serves Title VI Community	Title VI Route/Area				
Safety					
Intersection	1 of 5 Elements	2 of 5 Elements	3 of 5 Elements	4 of 5 Elements	5 of 5 Elements
Parking Allowed					
Obstacle(s) Present					
No lighting Present					
Sidewalk Not Level					
Social					
Education Adjacent	Yes				
Library Adjacent	Yes				

# Utah Transit Authority – Transit Master Plan



- UTA signed a formal interlocal agreement in 2019 with Salt Lake City about implementation of the Transit Master Plan
- Covers a 20-year period, calls for establishing responsibilities and processes for specific projects and initiatives
- Used as a road map for a working relationship between UTA and other governments (such as Park City Transit)
- Working on a formal MOU with Salt Lake City to establish capital funding and maintenance responsibilities for both parties
- UTA also uses informal working relationships to piggyback bus stop improvements on other city projects



# Poll Question



# Question and Answer Session

Bonnie Epstein - Pinellas Suncoast Transit Authority

# Key Takeaways

1. How can collaboration and communication (either formal or informal) help foster an environment for improving infrastructure to access transit?
2. How can transit agencies identify and leverage available opportunities for funding or concurrent infrastructure projects?
3. What are ways to prioritize and subsequently evaluate infrastructure around bus stop areas through quantitative and qualitative means?

# Download TCRP Synthesis 152:

<http://www.trb.org/Publications/Blurbs/182090.aspx>



## Transit Mobility Program

<https://groups.tti.tamu.edu/transit-mobility/>

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# Today's Panelists



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**Marci Warren,**  
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