Bus Stop Facility Design

Improving Efficiency and Safety for All Users

John Metzinger, Manager of Administration/Controller
• Unit of local government, separate from cities/county
• $12 million budget from fares, contracts, local, state, and federal tax sources
• 2016 annual ridership was 4,765,538 passenger trips
 Transit in Indiana

- 8 Large Fixed Route Systems
- 9 Small Fixed Route Systems
- 5 Urban Demand Response
- 41 Rural Demand Response
- 1 Commuter Rail Line

Who Rides Transit?

- Age, Ethnicity, Gender

Who Rides Transit?

- Income and Trip Purpose

Source: A Profile of Public Transportation Passenger Demographics and Travel Characteristics, American Public Transportation Association, 2007.
Who Rides Transit?

- Car Ownership and Alternative Modes

Source: A Profile of Public Transportation Passenger Demographics and Travel Characteristics, American Public Transportation Association, 2007.
Transit riders are also pedestrians and bicyclists.

Many have mobility impairments.
All too familiar?

Rider Needs
All too familiar?
• All too familiar?
Rider Needs

- Walkability
- Bikeability
- Accessibility
- “Dwell”ability
How Does This Happen?

• Transit’s Responsibility
• Large Number of Stops
• Resource Scarcity
• Thick Regulation
CityBus Routes & Stops
City Bus Stops

Stops Not Located Adjacent to a Sidewalk, Side Path, Bike Lane or Trail

Not Included in Future Improvement Projects

Map Legend
- Green: Bus Routes
- Purple: Bus Stops
Transit Unconsciousness

- Transit isn’t at the table
- Coordination is the cure
Guidelines for the Location and Design of Bus Stops
Universal Concerns

...of transit riders and operators:

- Travel Time
- Traffic Flow
- Safety
- Security

Key Players

...in bus stop location and design:

- Transit Agency
- City Government
- Developers
- Employers
- Neighborhood Groups
- Key Destinations

Hypothetical Hospital Example 1

Bus Stop is Far from Land Use and Patrons Must Access Building Through Parking Lot

Hypothetical Hospital Example 2

Allow Bus Route to Access Land Use and Provide Bus Shelter On Site for Patrons

Hypothetical Hospital Example 2

INEFFICIENT CIRCUITOUS ROUTE:

EFFICIENT LINEAR ROUTE:
Hypothetical Hospital Example 3

Hypothetical Hospital Example 4

Bus Stop Assessment Tool

- Location
- Pedestrian Access
- Intersection Access
- Signage
- Features

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Bus Stop Assessment Tool

Appendix A. Bus Stop Accessibility Assessment.

**Bus Stop Accessibility Assessment**

Name(s): ____________________________________________________________

**Location**

- Bus stop: ____________________________________________________________

- Street name and nearest cross street/intersection: __________________________

- Adjacent to which lane of travel? (circle one)
  - Northbound
  - Southbound
  - Eastbound
  - Westbound

- Adjacent property address and/or name of business: __________________________

- List any important destinations near the bus stop (e.g., hospital, grocery store, etc.)

Bus Stop Assessment Tool

**Pedestrian Access**

- Is the bus stop located along a connecting sidewalk? (circle one)
  - Yes
  - No
  - N/A

- How wide is the sidewalk? (check one)
  - N/A
  - < 3’
  - 3-5’
  - > 5’

  - Are there physical barriers that reduce the sidewalk width? (circle & describe)
    - Yes
    - No
    - N/A
    (e.g., utility poles, signs, fire hydrants, etc.)

  - Are there any objects sticking out into or blocking the sidewalk? (circle & describe)
    - Yes
    - No
    - N/A
    (e.g., overgrown vegetation/shrubs, newspaper boxes, etc.)

- Rank the condition of the sidewalk near the bus stop (check one):
  - 1 = Hazardous – someone could get hurt or using a wheelchair would be difficult
  - 2 = Poor – poor shape but not hazardous, e.g., tree root uplifting, cracks, or breaks
  - 3 = Fair – minor tree root uplifting, minor cracks or breaks
  - 4 = Good – not perfect but no need for immediate repair
  - 5 = Very Good – cosmetically excellent; new; no repair necessary
Bus Stop Assessment Tool

- List any recommendations for better pedestrian connectivity or safety, and/or any potential traffic hazards in/ and around the bus stop (e.g., high speed traffic, no crosswalk, etc.).

- Is there a stable boarding pad that connects the sidewalk and curb? (circle one)
  - Yes
  - No
  - N/A

- Is the boarding pad at least 5 ft. wide and 8 ft. deep next to the curb/street? (circle one)
  - Yes
  - No
  - N/A

- Are cars parked between the boarding pad and the bus stopping area? (circle one)
  - Yes
  - No
  - N/A

- List any problems with the boarding pad surface.

Bus Stop Assessment Tool

Signage

- Check all features that are on each bus stop sign (circle one):
  - Route number in plain view: Yes  No
  - Non-glare finish: Yes  No
  - Characters/symbols on stop signs are in contrast from their background: Yes  No
  - Information at eye level of a person who uses a wheelchair: Yes  No

- List any problems with the signage (e.g. graffiti, tree branches blocking signage, etc.)

## Bus Stop Assessment Tool

### Features

- Check all that are at each stop (circle one):
  - Seating
  - Shelter with clear floor space for mobility aids, connected to sidewalk
  - Trash can
  - Bike parking, connected to sidewalk

- Could a person using a wheelchair maneuver into and within the shelter?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
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<tbody>
<tr>
<td>Seating</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Shelter</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Trash</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Bike</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>-Maneuver</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Bus Stop Assessment Tool

Intersection Access Reference Map

*NOTE: The numbers in the diagram above correspond with intersections on the following pages.
Bus Stop Assessment Findings

Findings

• 85 critical simple deficiencies
• 95 critical complex deficiencies

Recommendations

• Collaboration in review and prioritization needed
• Incorporate bus stops into ADA transition plans
• Align investments to share cost
• Capitalize on private investments
• Conduct ongoing assessments

Design Concepts that Work
Design Concepts that Work

FIGURE 8: FAR-SIDE STOPS

FIGURE 9: NEAR-SIDE STOPS

Design Concepts that Work

Design Concepts that Work

NEAR-SIDE STOP (1 Bus)

- 40’ Min
- 60’ Des.
- STOP
- APPROACH
- AREA

50’

25’ straight
50’ before right turns

Bus stop sign

Design Concepts that Work

Design Concepts that Work

BUS BULB

12'
8'

BUS BULB w/ BIKE LANE

12'
5'
8'

Design Concepts that Work

Design Parameters for Large Bus Turnout

Design Concepts that Work

Design Parameters for Large Bus Turnout Adjacent to a Bike Lane

Design Concepts that Work

A typical shelter pad specification

- Minimum 5'
- Sidewalk: 20'
- Curb
- Street

Wheelchair Boarding Area 5’x8’

Design Concepts that Work

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