

Design Handbook for Bus Rapid Transit and Rail Projects

Sponsored by FDOT Transit Office

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Background

- **Continued population growth**
- **Challenges transportation officials**
- **Institute measures to meet desired level of service**

Background (continued)

- There is an increased emphasis to embark on energy and environmentally friendly modes of transportation such as bicycling, walking, and public transportation.

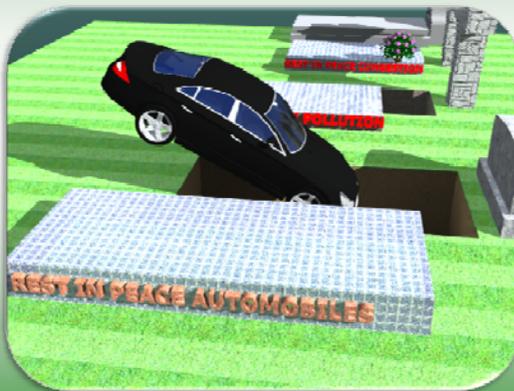


Intermodal connectivity is key to attracting people to use transit.



Background (continued)

- Promotion of Public transportation (high capacity transit in particular) to reduce dependency on private automobiles.



Problem Statement

- Although different transit agencies have some design guidelines, none of the **examined** guidelines were prepared with a focus on intermodal connectivity.
- A need was identified to establish statewide guidelines for design of transit stations in relationship to the other modes.

Objectives

- To develop a design handbook for transit stations with a focus on intermodal connectivity.
- Explore **green engineering** initiatives for station design.
- The handbook will include minimum design criteria for station design acceptance for federal, state, city and county funding.

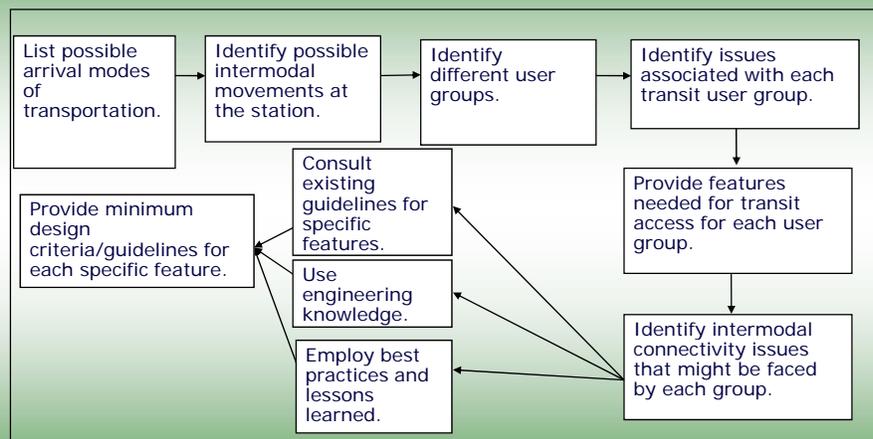
Objectives (continued)

- Intended project applications: Bus Rapid Transit (BRT) and rail (light, heavy, and commuter).

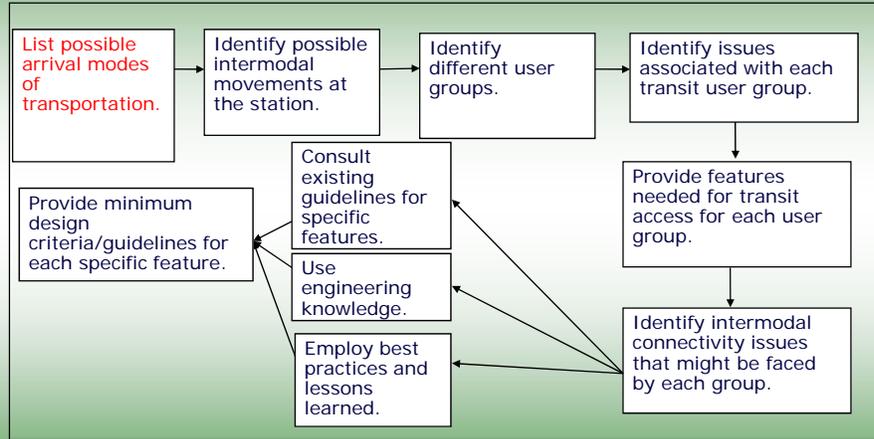


- Intended use: planning, designing, and evaluation of proposed station area plans for intermodal connectivity.

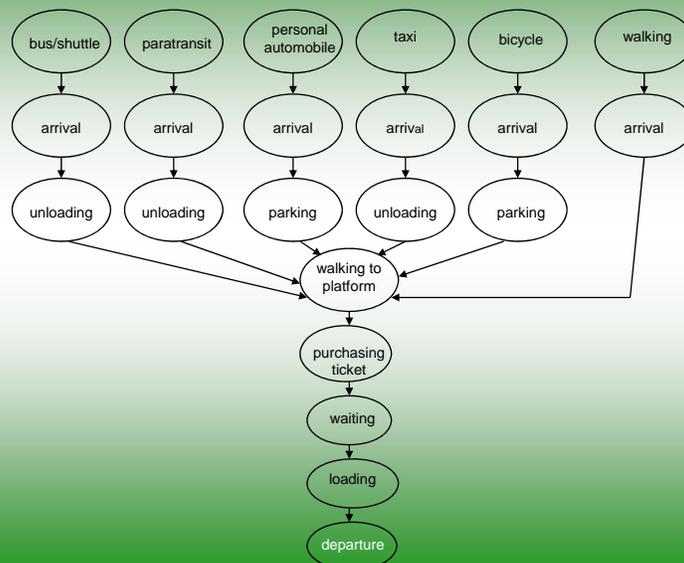
Design Criteria Development Process



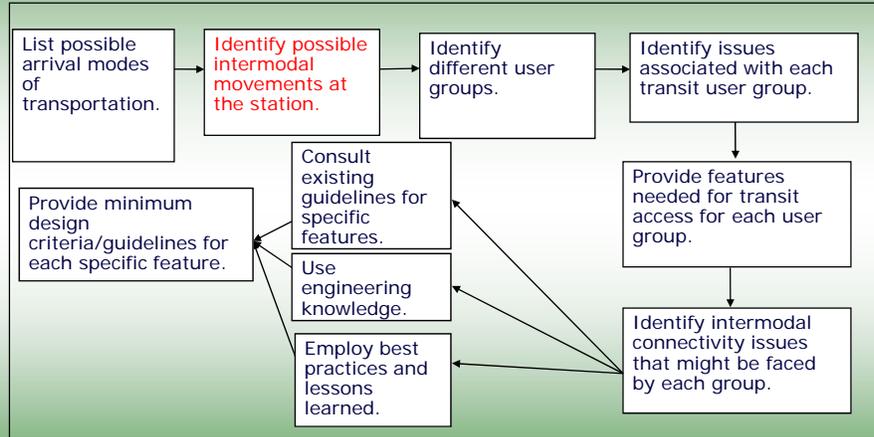
Design Criteria Development Process



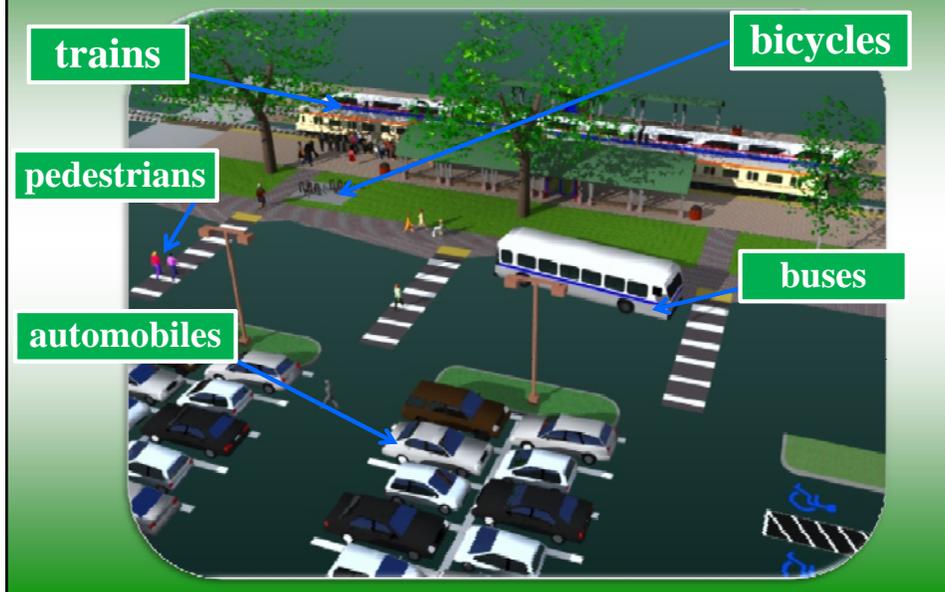
Possible Arrival Modes



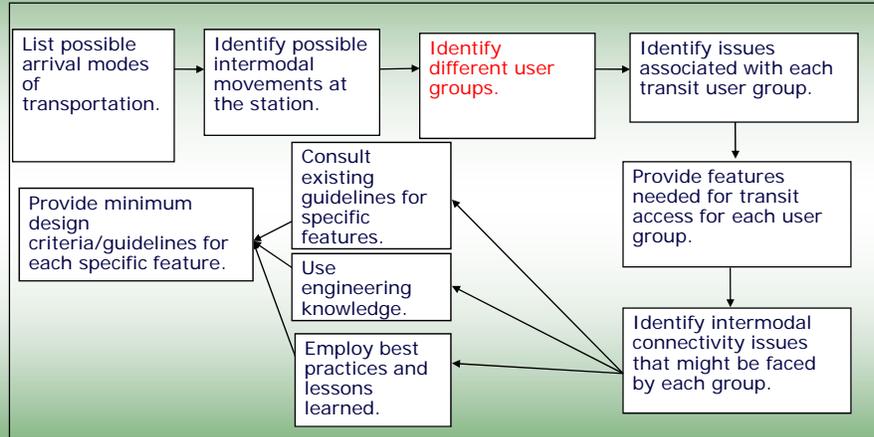
Design Criteria Development Process



Identify Possible Intermodal Movements



Design Criteria Development Process



Identify Different User Groups

Mobility impairments



Identify Different User groups (continued)

Visual impairments



Identify Different User groups (continued)

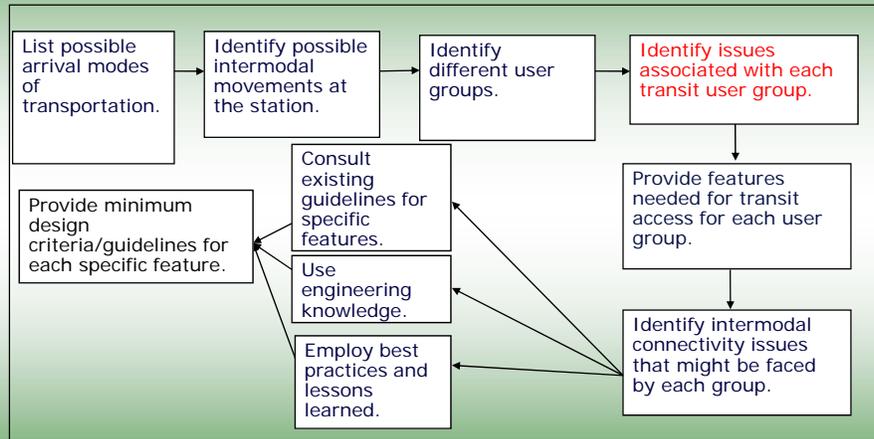
Other user groups

Hearing impairment

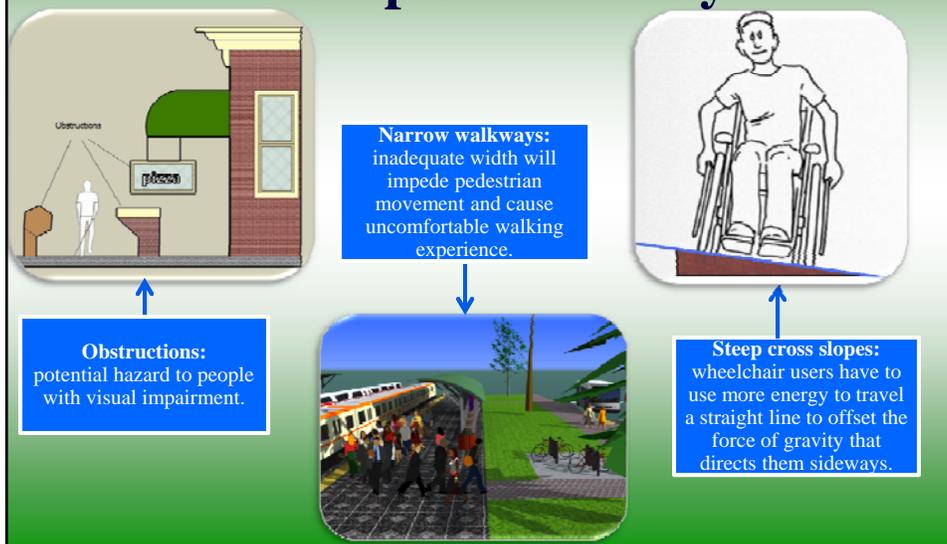
Cognitive impairment

Language impairment

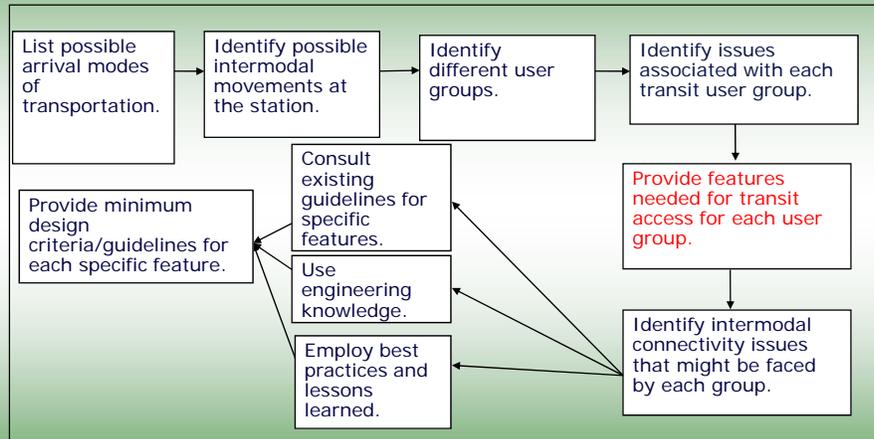
Design Criteria Development Process



Identify Issues Associated with Each User Group Example: Walkway



Design Criteria Development Process



Provide Features Needed for Transit Access for Each User Group

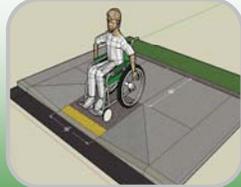
Example: Access



Wheelchair pad at the bus stop.



Tactile surface along the platform.

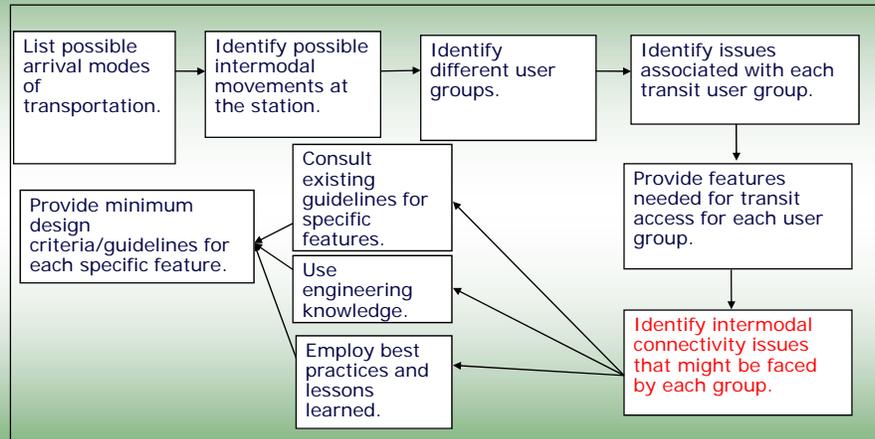


This ramp type is used where there is no vegetation strip between the curb and sidewalk.



Raised midblock crossing.

Design Criteria Development Process



Identify Intermodal Connectivity Issues that Might be Faced by Each Group

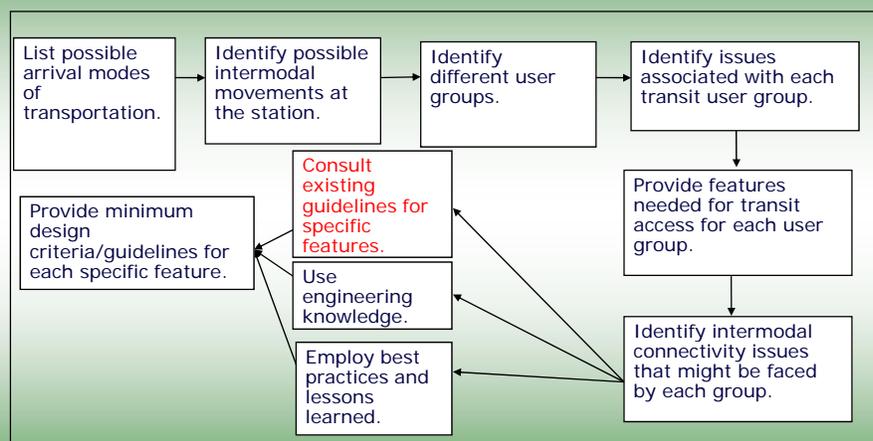
Examples of station design which pose adverse interconnectivity issues include:

- A design for which bus stops, park-and-ride, and other facilities are located across a busy street.
- Inefficient park-and-ride configuration.

Examples of station design which pose adverse interconnectivity issues (continued)

- Improper wayfinding sign placement and design.
- Designs which do not serve all types of impairments.
- Inefficient circulation of traffic at the station.

Design Criteria Development Process

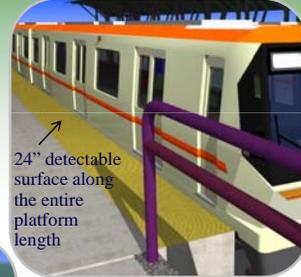


Consulted Existing Guidelines

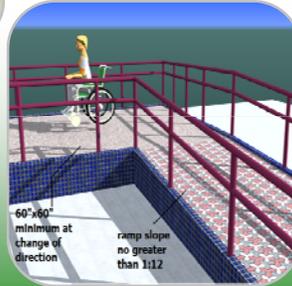
Example: ADAAG



ADA minimum criteria for obstacles and protruding objects.

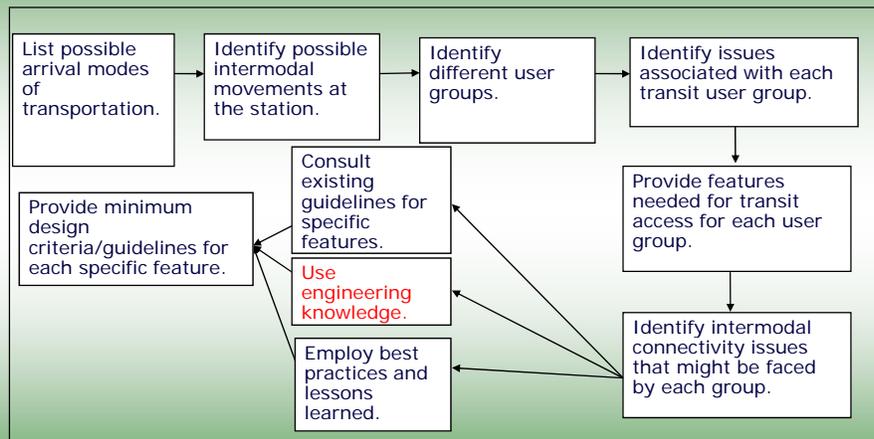


ADA minimum criteria for tactile Surface Along the Platform.



ADA minimum criteria for ramp design - minimum slope and landing criteria.

Design Criteria Development Process



Used Engineering Knowledge

Example: Conflicts

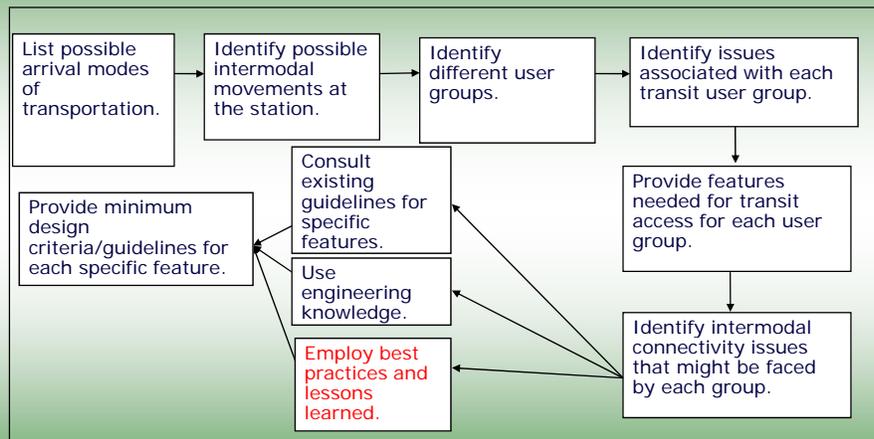


Stalls perpendicular to the station platform – minimizes conflicts between pedestrians and vehicular traffic.



Stalls parallel to the station platform – increases potential conflicts between pedestrians and vehicles.

Design Criteria Development Process



Employed Best Practices and Lessons Learned

Example: Circulation

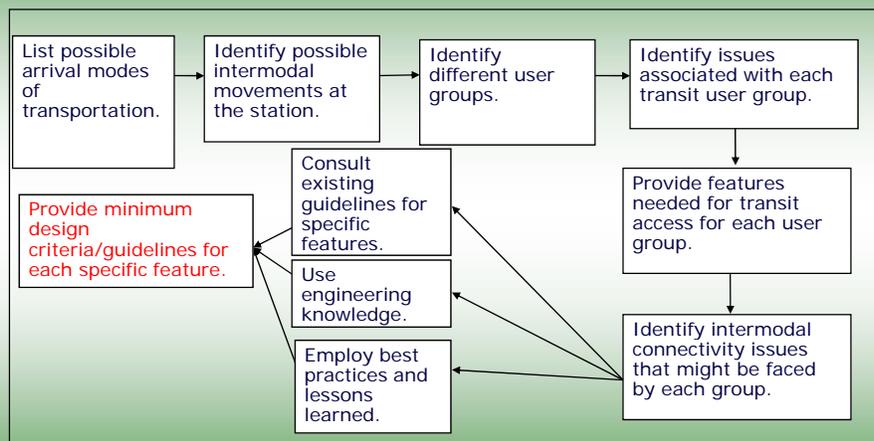


Aisles parallel to the long dimension – **excellent** parking space search pattern.



Aisles running short dimension of parking lot – **poor** parking search pattern.

Design Criteria Development Process



Provide Minimum Design Criteria/Guidelines

Examples of guidelines formats

- *Accessing Transit* – presents design guidelines by describing three design elements: (1) purpose (2) location factors, and (3) design factors.
- *FHWA Pedestrian Road Safety Audit Guidelines* – uses prompt list providing: (1) problem description, (2) special consideration, and (3) photograph illustrating the problem.
- *Easter Seals Project Action* – uses compliance checklist to ensure adherence to the minimum design criteria.
- *British Columbia* – presents minimum criteria in bolded font and other guidelines in normal font.

Closing Remarks

- Three key elements considered in developing criteria: **Safety, efficiency, and comfortable use.**
- Employ universal design principles to ensure equitable use of transit facilities by people with diverse abilities.
- Provide guidance on green engineering initiatives.



QUESTIONS?



Thank You

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