

Effective Tools for TOD Planning

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2018 Rail Conference

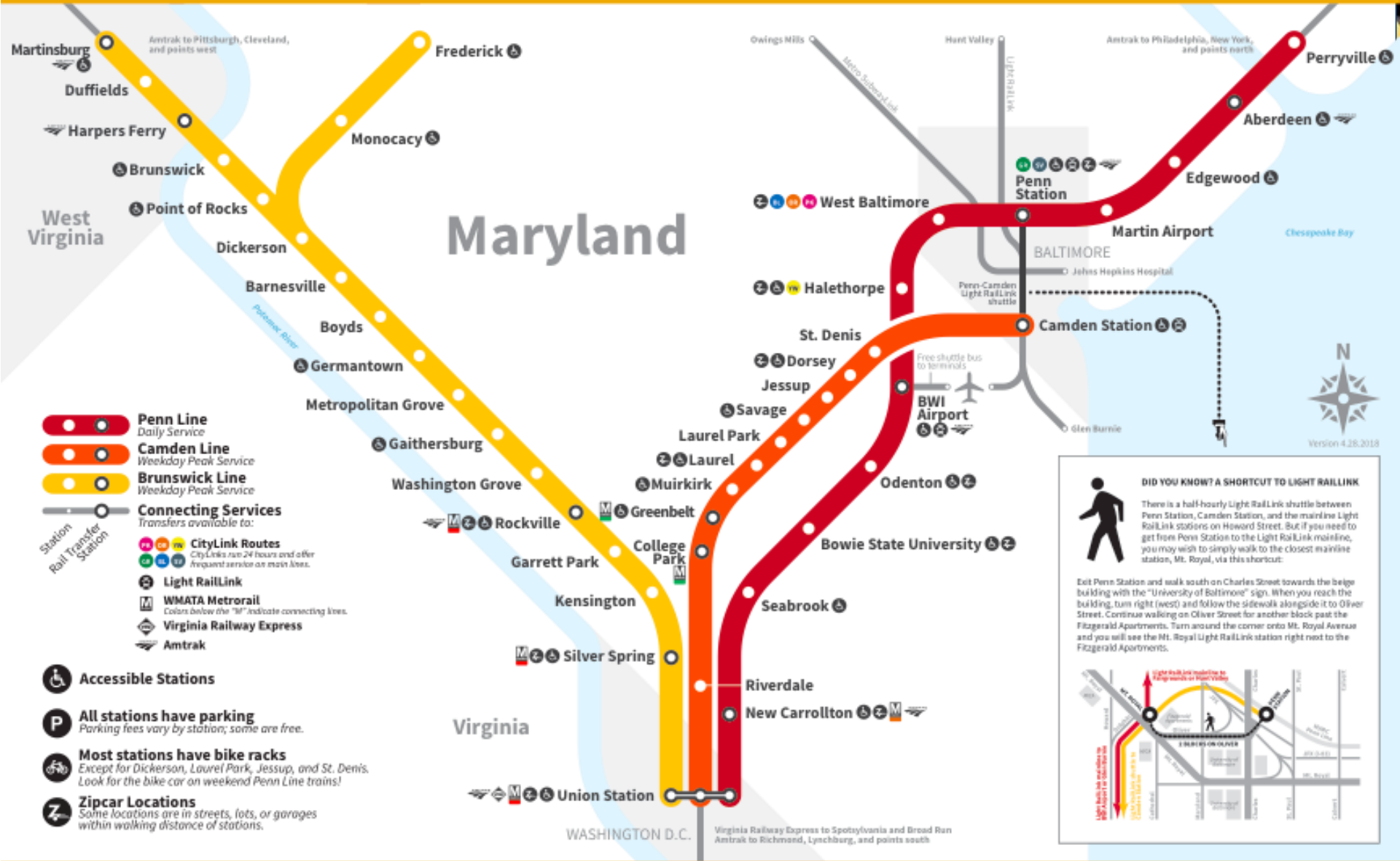
Key Presentation Take-Aways

- MDOT MTA's TOD Planning Strategy
- Highlight of MDOT MTA's new tools
 - Online TOD Dashboard
 - TOD Design Guidelines
- Opportunity to share best practices

Background on MDOT MTA

- Transportation Business Unit of the Maryland Department of Transportation
- Operator of rapid transit service in Baltimore metro area, and statewide commuter services
 - Rail Modes include: Metro Subway, Light Rail, Commuter Rail
 - Over 80 stations served by MDOT MTA transit

MARC SYSTEM MAP



- Penn Line**
Daily Service
- Camden Line**
Weekday Peak Service
- Brunswick Line**
Weekday Peak Service
- Connecting Services**
Transfers available to:
- CityLink Routes**
CityLinks run 24 hours and offer frequent service on main lines.
- Light RailLink**
- WMATA Metrorail**
Colors below the "M" indicate connecting lines.
- Virginia Railway Express**
- Amtrak**

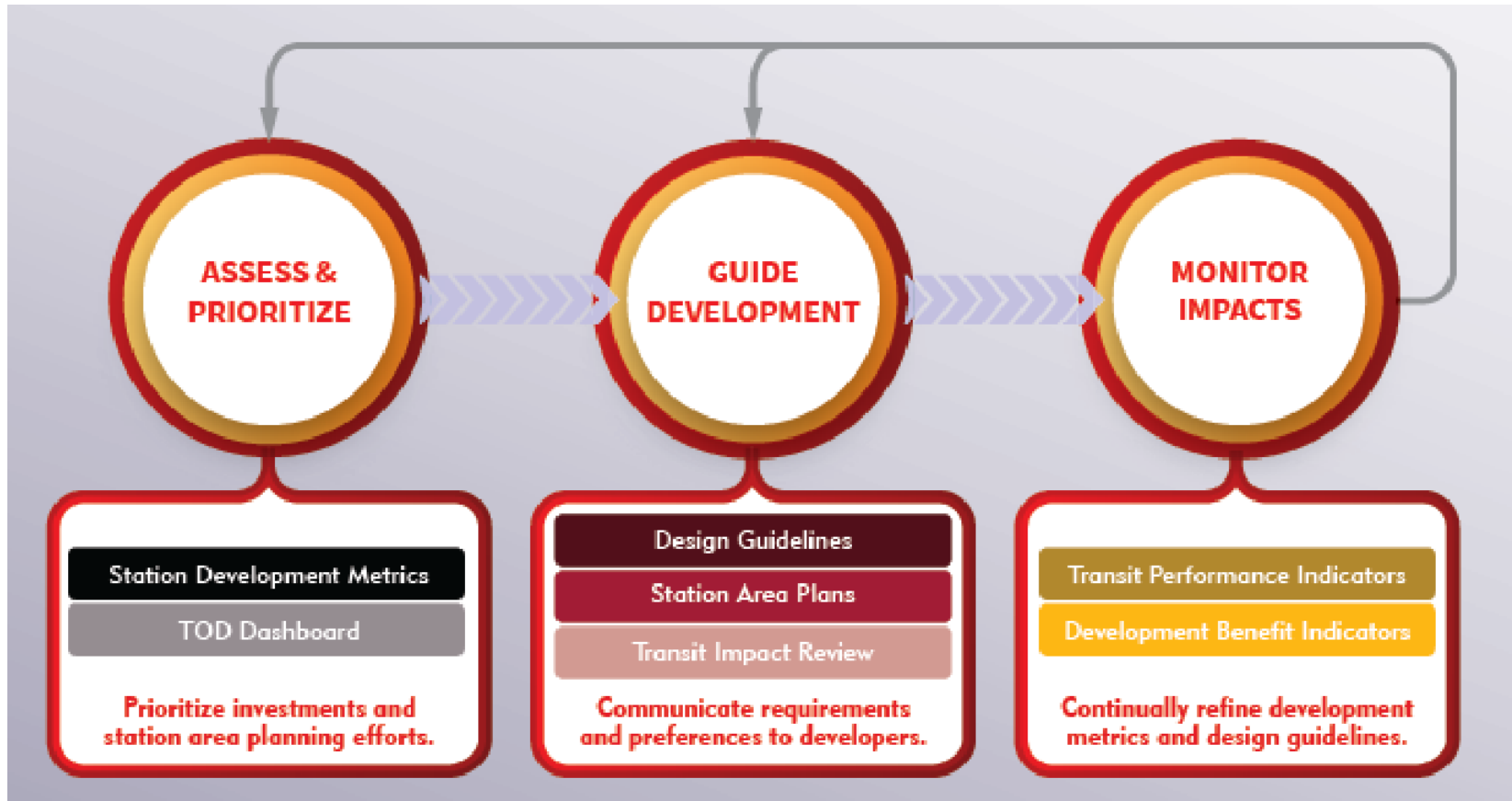
- Accessible Stations**
- All stations have parking**
Parking fees vary by station; some are free.
- Most stations have bike racks**
Except for Dickerson, Laurel Park, Jessup, and St. Denis. Look for the bike car on weekend Penn Line trains!
- Zipcar Locations**
Some locations are in streets, lots, or garages within walking distance of stations.

DID YOU KNOW? A SHORTCUT TO LIGHT RAILLINK

There is a half-hourly Light RailLink shuttle between Penn Station, Camden Station, and the mainline Light RailLink stations on Howard Street. But if you need to get from Penn Station to the Light RailLink mainline, you may wish to simply walk to the closest mainline station, Mt. Royal, via this shortcut:

Exit Penn Station and walk south on Charles Street towards the beige building with the "University of Baltimore" sign. When you reach the building, turn right (west) and follow the sidewalk alongside it to Oliver Street. Continue walking on Oliver Street for another block past the Fitzgerald Apartments. Turn around the corner onto Mt. Royal Avenue and you will see the Mt. Royal Light RailLink station right next to the Fitzgerald Apartments.

TOD Planning Strategy



Assess and Prioritize

Station Development Metrics

- Assess TOD potential at MTA stations
- Data-driven approach
- Continually updated and refined



Assess and Prioritize

Station Development Metrics

Transit Activity	Parking	Pedestrian Access
Rail Lines Served	Parking Provision	Intersection Density
Modes Served	Parking Utilization	Short Trip Opportunity Analysis
Connecting Bus Routes	Ridership-Parking Ratio	
Ridership	Parking Provision Ratio	
Frequency of Service	Parking Fee	
	EVC Stations	
	EVC Station Utilization	
Station Facility	Bicycle Access	TOD Zoning
Track Crossing	Bicycle Racks	TOD Designation
Schedule Information	Bicycle Lockers	Local Zoning
Route Information	Bicycle Locker Utilization	Area Master Plan
Ticket Booth/Machine		
Shelter		
Benches		
Public Restrooms		
Public Phones		
		Development
		Building Permits
		Permitted Housing Units
		Parcel Structures (year built, size)

Assess and Prioritize

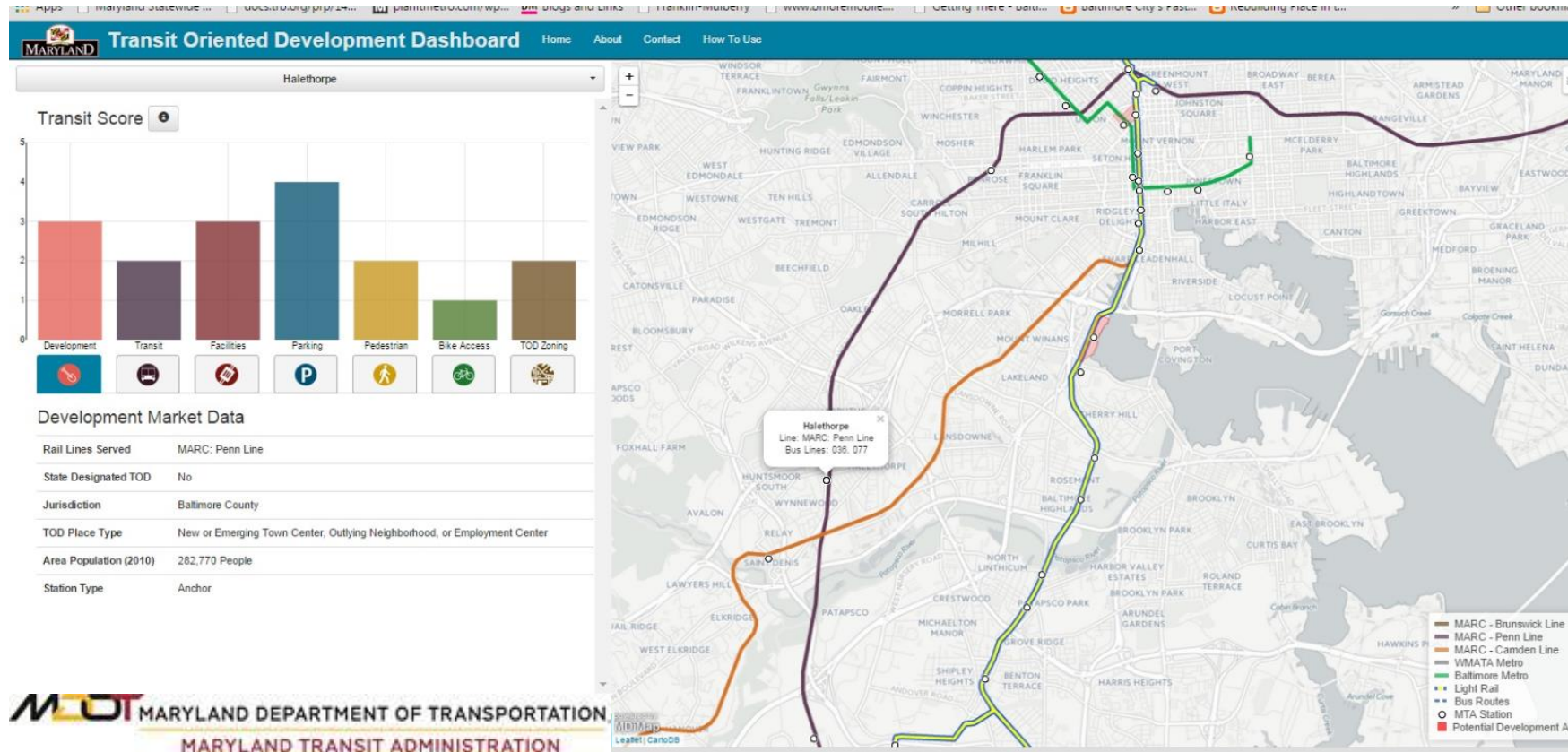
Online Dashboard

- A tool for engaging local jurisdictions, developers, and the general public
- Powered by a selection of the Station Development Metrics
- Transparent data analysis

<http://geodata.md.gov/tod/>

Assess and Prioritize

Online Dashboard



Guide Development

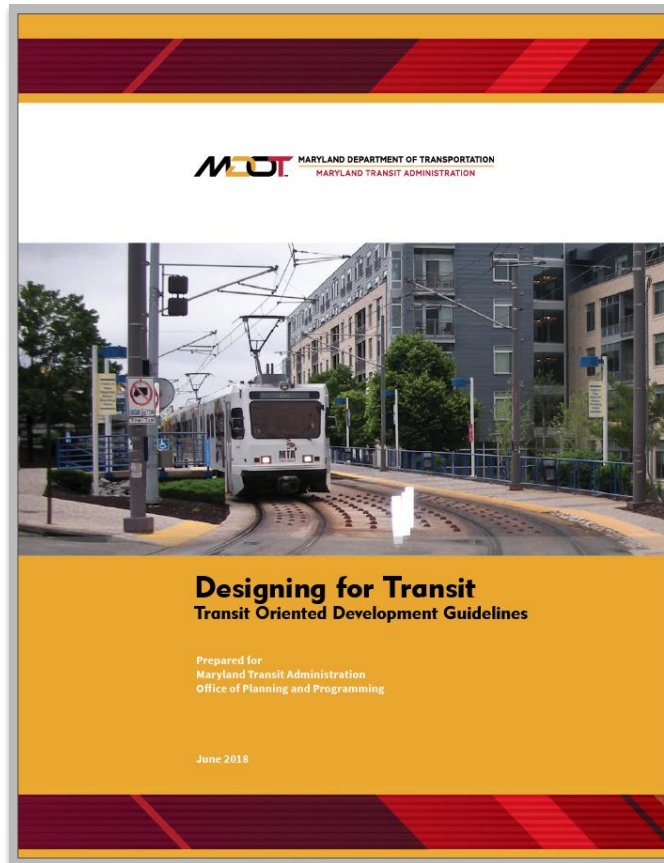
TOD Design Guidelines

- Clearly communicate preferences concerning design and system connectivity
- External and Internal audiences
- Tailor design based upon to TOD Placetypes



Guide Development

TOD Design Guidelines



Downtown



Urban
Neighborhood



Town,
Suburban, or
Employment
Center



Village Center
or Rural Town



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TOD Design Guidelines

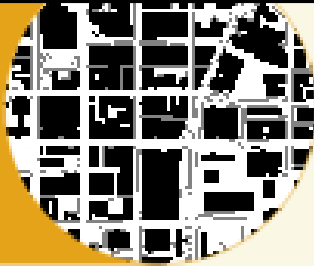
1. Station and Infrastructure
2. Open Space
3. Area Land Uses
4. Network Connectivity
5. Parking for All Modes
6. Wayfinding



NETWORK CONNECTIVITY BUILT TO SERVE TOD

The table on the facing page shows how street network and connectivity works in the different types of urban forms.

Downtown



- TOD should be built within the context of the existing street network, enhance pedestrian and bicycling connectivity, and best facilitate seamless connections among all other intermodal transit options.
- Access to the Station for pedestrians and bicyclists should be given highest priority.

Urban Neighborhood



- TOD should be built within the context of the existing street network - TODs should also look for opportunities to make new connections in the street network as feasible.
- Vehicular access for passengers being dropped off.
- Access to station should consider all modes.

Suburban, Employment Center



- Access to station should consider all modes, including passengers arriving by automobiles or connecting bus routes.
- TOD should be built to help enhance the existing street network - TODs should also consider new connections to the existing network to help create walkable block sizes. If additional vehicular connections cannot be made within the street network, pedestrian and bicycle trails (connections) are encouraged.
- Station and TOD site plans should allow for efficient transfer among various transit modes.

Successful TODs support transit access and travel by walking, bicycling, and automobiles. Carefully designed complete streets that maximize safety, comfort, and convenience for all modes are needed along key access paths to a station.

Street Connectivity

Distance and character of the walk are two significant determining factors in a person's decision to access transit, especially via walking. The straight-line distance between an origin and destination is almost never accessible in a built urban environment; rather, the actual walk distance is determined by block spacing and connectivity. Long blocks and dead-end streets can increase walking distance, whereas closely spaced streets with good connections shorten the walk to transit.

A well-connected street network reduces travel distance, allows for multiple routing choices, and encourages walking and bicycling to the transit station. The street network for pedestrians, bicycles and motorists to the station should be direct and convenient.

Local Transit Circulation and Connectivity

Bus loading areas and stops have different design requirements depending on the location and function of the station. Urban stations are likely to feature on-street bus stops in sidewalk space, whereas suburban and commuter stations may be more likely to feature a large bus circulating and loading area.

Bus stops in urban areas typically share sidewalk space with other functions of the public right-of-way, especially curbside parking and loading, pedestrian movement and street crossing, and street furniture. Larger bus transfer areas in suburban locations serve multiple bus routes and convene at transfer centers or at rail stations - often the end of the transit line.

For the TOD surrounding a well-used transit station, the station will serve to attract bicyclists making transit connections and adjacent businesses can attract those bicyclists as customers. One important tool for doing so is to provide bicycle parking near those businesses.

Pedestrian Connectivity

TOD relies on pedestrian activity to create a vibrant environment in the station area. As every transit trip begins and ends with walking, a TOD's value is directly linked to the ability of passengers to access the housing, jobs, and retail amenities provided within walking distance of the station. Creating a safe, comfortable, and inviting pedestrian environment is integral to its success.

Development around the station should first consider the experience of the pedestrian. Short block spacing, directness of pathways, and dynamic street frontage all contribute to a sense of place and walkability.

Americans with Disabilities Act (ADA)

The Americans with Disabilities Act prohibits discrimination against people with disabilities in employment, transportation, public accommodation, communications, and government activities. Depending on where the infrastructure improvements are located within the TOD determines which standards apply. For WMATA and MTA controlled stations all spaces must meet at least Americans with Disabilities Access Guidelines (ADAAG) and Federal Transit Administration ADA Guidelines. Any improvements along SHA managed facilities must meet SHA's Accessibility Policy and Guidelines, which can be found in SHA's Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways.

Intermodal Connectivity

In general, different transit modes should be located as closely together as possible so that walking distances can be minimized

BEST PRACTICES

Balance the needs of all roadway users and prioritize pedestrian activity.

- Apply roadway design and performance standards that reflect the importance of pedestrian activity, and the station context and type.
- Encourage reduced auto speeds in TOD areas.

Create a framework for street hierarchy.

- Design a complete street network with local and collector streets supporting a balanced arterial network.
- Consider where service streets will be to handle deliveries and that they can accommodate large trucks.
- Create a hierarchy of streets within the station area's zone of the street network to avoid funneling traffic onto the same one or two streets. Plan locations of parking facilities and access points to the external network to ensure traffic is dispersed.

Design block pattern to create connected grid.

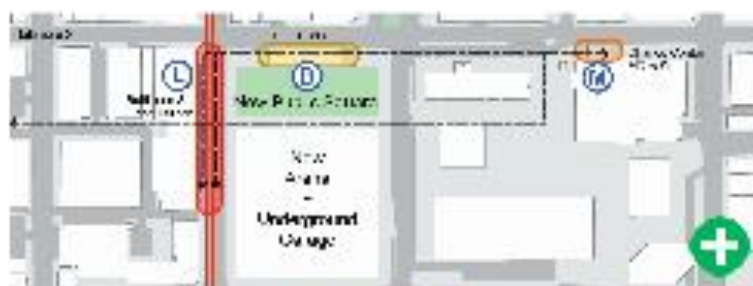
- Plan for spacing in TODs with block perimeters of no greater than 2,400 feet. This will ensure walkable blocks of 250 feet to 400 feet by 500 feet to 700 feet.
- Plan TOD streets to enhance the existing street network and provide internal, public connections where street linkages are missing.

Avoid dead-ends and cul-de-sacs

- Dead-end streets should not be included in planning for TOD.



When the University Center Light Rail Stop on Howard Street in Baltimore (above) was redeveloped, pedestrian connectivity was preserved through the buildings, as a non-motorized continuation of Redwood Street (below). Source: KAI



A new signalized crossing of US 40 is proposed to create a direct link between the Station and Downtown Aberdeen's Public Square to the south. Source: KAI



ADDITIONAL RESOURCES

NACTO Urban Street Design Guide

NACTO (National Association of City Transportation Officials) developed this Guidebook that focuses on best practice design approaches to city streets and public spaces in an urban context. The Guidebook emphasizes tenets that support walkability and multimodal mobility, and recognizes that city streets require a tailored approach that is different from non-urban facilities.

NACTO Urban Bikeway Design Guide

This Guidebook provides guidance on state-of-the-practice for accommodating bicyclists on urban streets.

ITE/CNU Designing Walkable Urban Thoroughfares: A Context Sensitive Approach

Endorsed by FHWA and developed jointly by the Congress for New Urbanism (CNU) and the Institute for Transportation Engineers (ITE), this guidebook focuses on context-based street design, as opposed to the conventional functional classification-driven street design.

Guide for Geometric Design for Transit Facilities

This guide provides summary of current practice in the design of transit facilities on streets and highways, based on a review of relevant AASHTO, TRB, and ITE documents, as well as design reports provided by various transit agencies.

SHA Accessibility Policy & Guidelines for Pedestrian Facilities along State Highways

This policy and guidance provides direction to accommodate persons with disabilities, a routine and integral element of planning, design, construction, operations and maintenance activities for all projects.

Complete Streets Complete Networks - A Manual for the Design of Active Transportation

A design process for Chicago's Active Transportation Policy, this manual includes comprehensive guidance for all elements of street network design.

TCRP Report 153: Guidelines for Providing Access to Public Transportation Stations

Chapter 7 focuses on pedestrian access to transit stations, including factors affecting walking access and design principles. Chapter 8 focuses on bicycle access to transit stations, including factors affecting bicycle access and design principles.

Federal Transit Administration Transit Agency Security and Emergency Management Protective Measures

Under the MAP-21 federal transportation authorization legislation, FTA is able to establish basic safety standards for service and station facilities.

SHA Bicycle Policy and Design Guidelines

This policy and guidance provides direction to transportation planners and engineers for accommodations that improve bicycling in Maryland.

FTA ADA Regulations

FTA guidance on ADA regulations that are applicable at the local level.

SUMMARY OF NETWORK & CONNECTIVITY GUIDANCE

	At the Transit Station	Station Site Context
Must-Haves	<ul style="list-style-type: none"> • Safe and comfortable access points for automobiles, pedestrians, and bicyclists to the station that are intuitive to find and line up with the street network • Sufficiently wide sidewalks to accommodate anticipated pedestrian flows 	<ul style="list-style-type: none"> • Complete grid network in all new development; non-auto connections where needed • Safe and convenient pedestrian and bicycle facilities • Shelters at bus stops at or near major transit stations
Desirable	<ul style="list-style-type: none"> • Internal parking lanes and drive aisles that line up with neighborhood streets • Dedicated bicycle facilities leading to platforms and/or bicycle parking • Covered walkways, high-quality walkway treatments to increase visibility and aesthetics • Keep connecting distances between modes to no more than 500 feet 	<ul style="list-style-type: none"> • High-quality bicycle facilities, such as buffered bike lanes and cycle tracks, where traffic conditions warrant • Curb extensions at bus stops to provide passenger waiting areas • High-activity land uses as close to the station as possible
Avoid	<ul style="list-style-type: none"> • Long blocks or infrequent network intersections immediately around the station • Pedestrian paths through parking lots • High-speed auto movements such as channelized right turns at intersections 	<ul style="list-style-type: none"> • Cul-de-sacs or dead-ends - especially with streets backing the station • High-speed roads and long traffic signal cycles. • Intermodal connections that require crossing streets or the bus circulating roadway. • Directing bicycles through complex auto or bus circulation areas



Guide Development

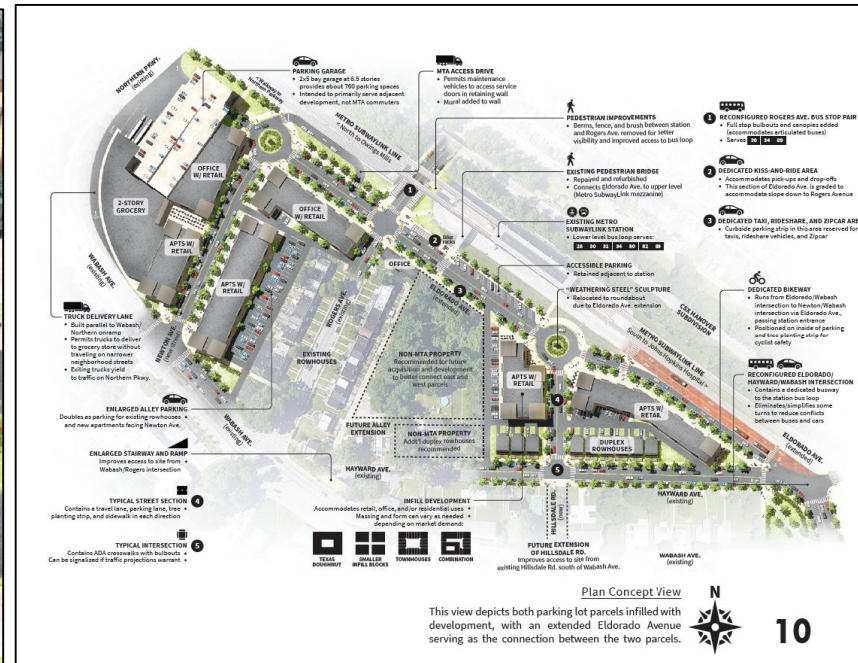
Station Area Concept Plans

- What if the TOD Design Guidelines were applied?
- Focus on station access, intermodal connectivity
- Reference capital improvements needed in station area



Guide Development

Station Area Concept Plans



Guide Development

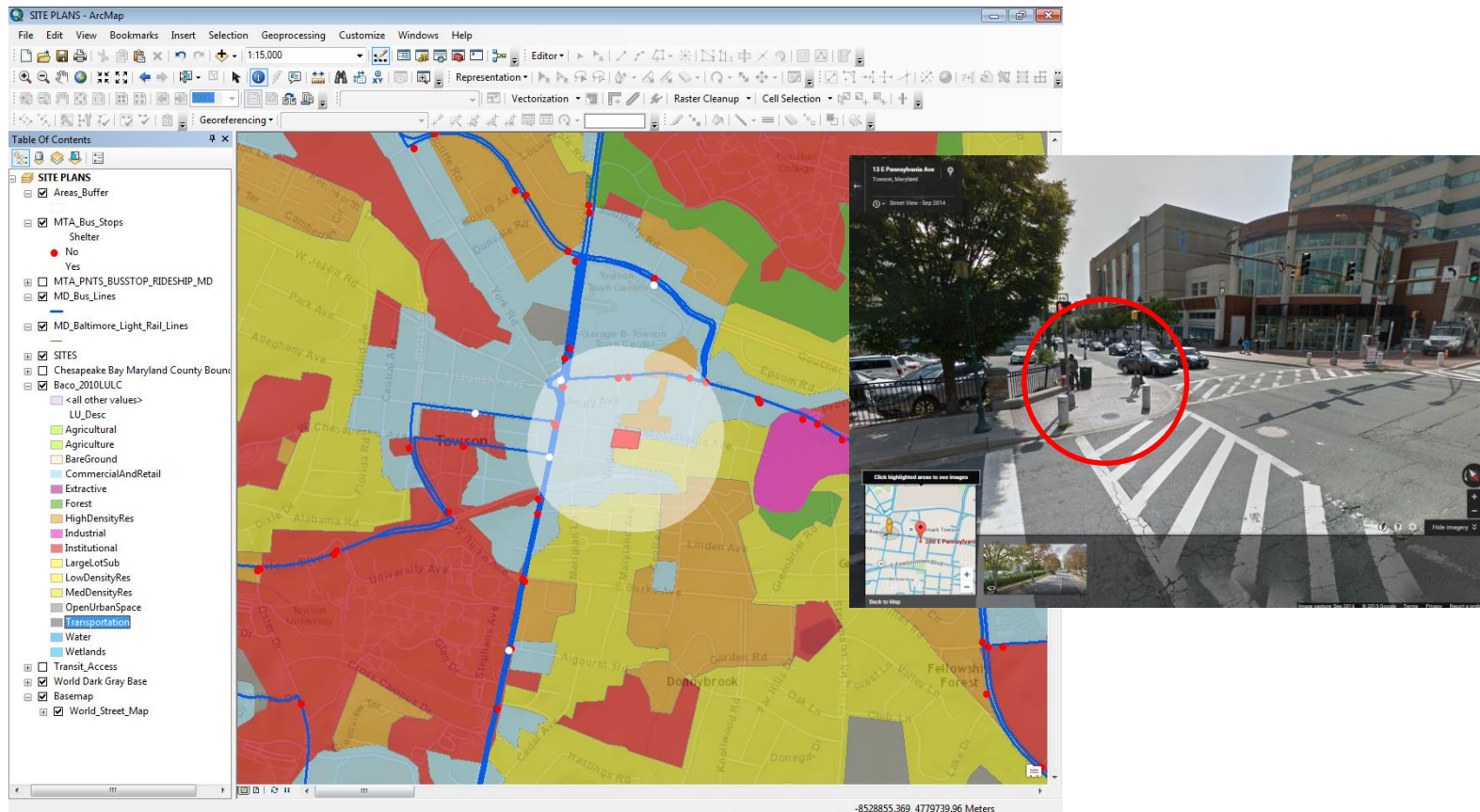
Transit Impact Review

- Participate in local jurisdiction site plan review
- Assess accommodation for transit in development early on in the process
- Develop site plan review guidelines for projects outside of station areas



Guide Development

Transit Impact Review



Monitor Impacts

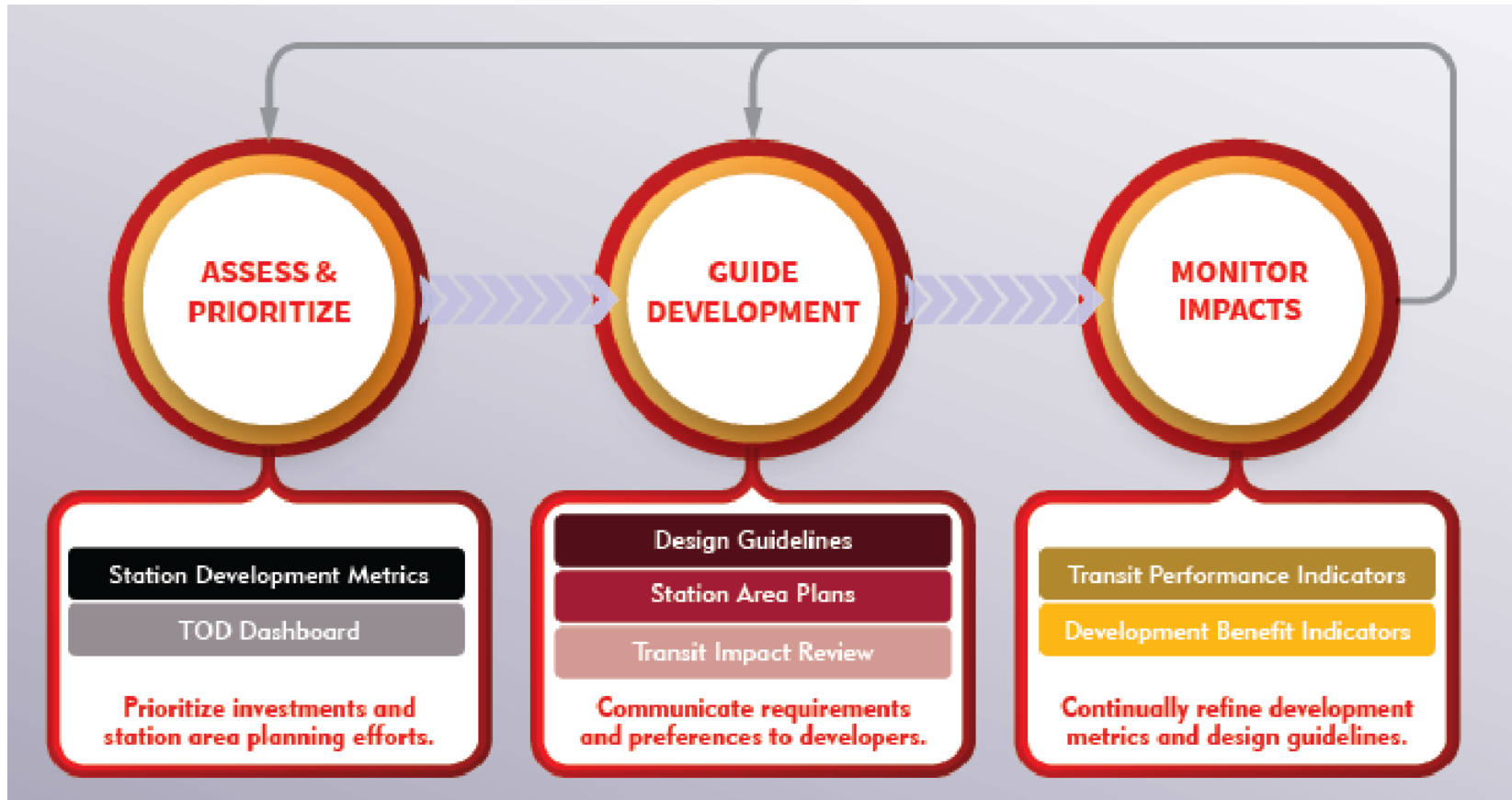
Transit Performance Indicators

- Track how transit service (ridership, service quality) is effected by adjacent development

Development Benefit Indicators

- Measure the economic and development impact of transit service
- Refine prioritization & development guidance.

TOD Planning Strategy



Thank You!

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