On-Demand Transit Study
Summary of Findings

Transit Planning Board
February 22, 2022

1. What have we explored and concluded about ODT?

2. How could ODT be applied to complement existing regional transit services?

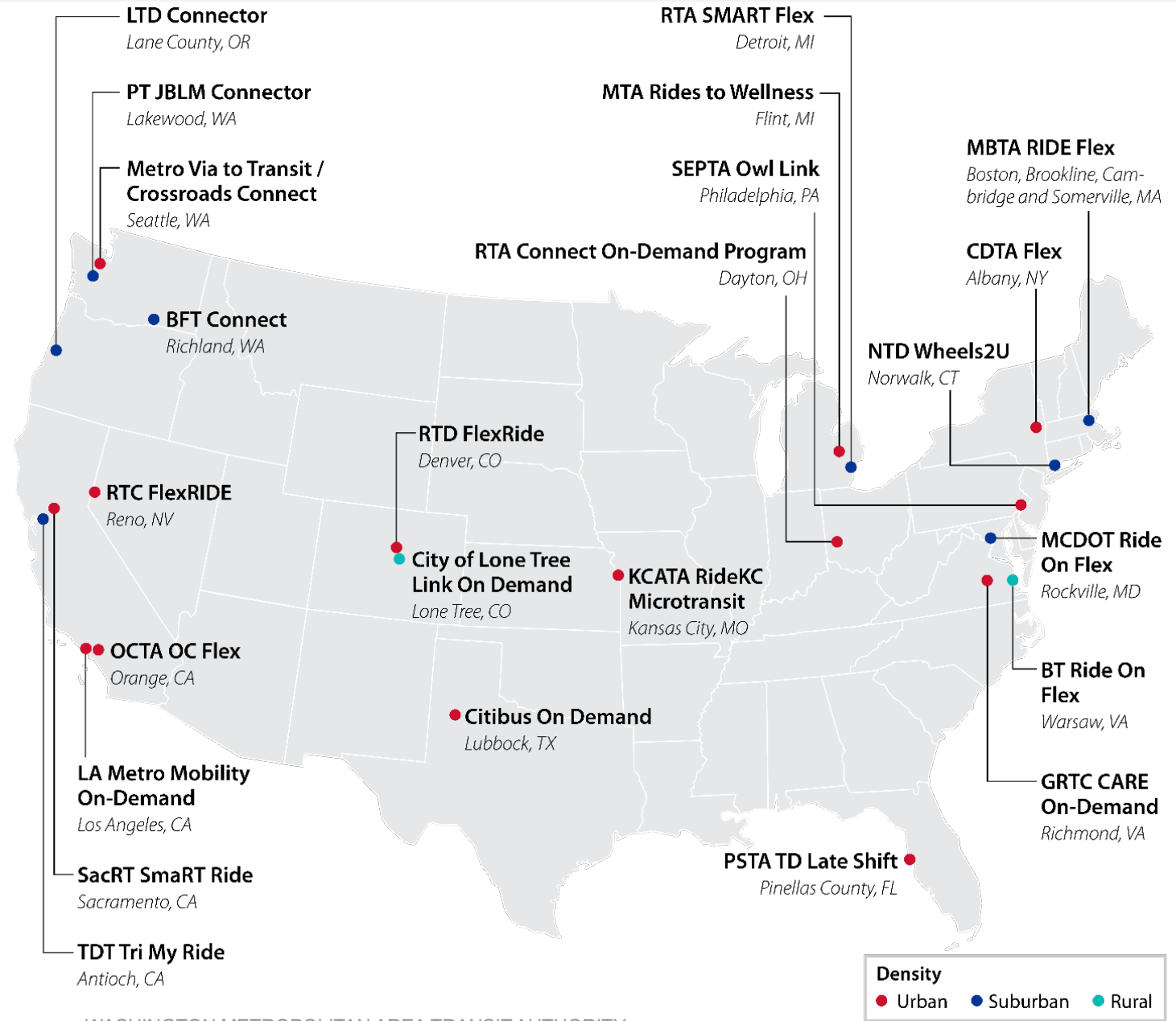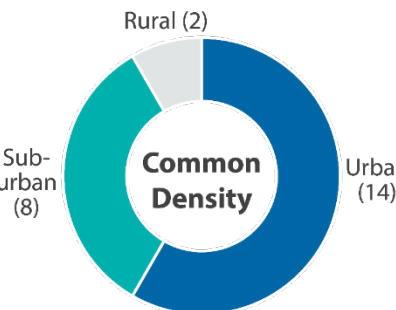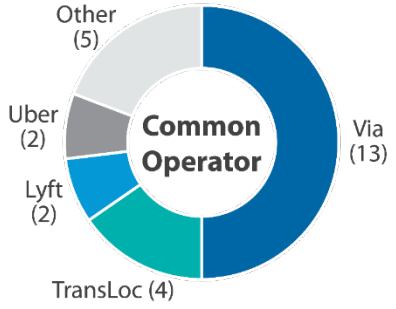3. How could WMATA leverage the learnings of this study going forward?

The ODT study comprised 4 major tasks

- **Task 1** convened a Steering Committee of key leaders and **established the objectives of the study.**

- **Task 2** identified common use cases and the **best practices/lessons learned** relative to the planning, design, procurement, and implementation of ODT programs.

- **Task 3** evaluated **vendors** focusing on their platform features and service delivery capabilities as they pertain to agency objectives.

- **Task 4** focused on the process used to identify, prioritize, and design **sample ODT service zones**

At a Glance

24 Jurisdictions

Urban 14
Suburban 8
Rural 2

8 Surveys

3 Interviews

Common Operator
- Via (13)
- Other (5)
- Uber (2)
- Lyft (2)
- TransLoc (4)

Common Density
- Urban (14)
- Sub-urban (8)
- Rural (2)

LTD Connector
Lane County, OR

PT JBLM Connector
Lakewood, WA

Metro Via to Transit / Crossroads Connect
Seattle, WA

BFT Connect
Richland, WA

RTA SMART Flex
Detroit, MI

MTA Rides to Wellness
Flint, MI

SEPTA Owl Link
Philadelphia, PA

MBTA RIDE Flex
Boston, Brookline, Cambridge and Somerville, MA

CDTA Flex
Albany, NY

RTA Connect On-Demand Program
Dayton, OH

NTD Wheels2U
Norwalk, CT

RTD FlexRide
Denver, CO

RTC FlexRIDE
Reno, NV

City of Lone Tree Link On Demand
Lone Tree, CO

KCATA RideKC Microtransit
Kansas City, MO

MCDOT Ride On Flex
Rockville, MD

OCTA OC Flex
Orange, CA

Citibus On Demand
Lubbock, TX

BT Ride On Flex
Warsaw, VA

LA Metro Mobility On-Demand
Los Angeles, CA

GRTC CARE On-Demand
Richmond, VA

SacRT SmaRT Ride
Sacramento, CA

PSTA TD Late Shift
Pinellas County, FL

TDT Tri My Ride
Antioch, CA

Density
- Urban
- Suburban
- Rural

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Each use case focuses on specific agency goals

Fixed Service Replacement

- Replace all or some segments of an unproductive or discontinued route

- Replace select service such as off-peak hours or late-night.

Cost Efficiency	Equity/Access

First / Last Mile Connections

- Provide connections to higher frequency transit or hubs like Metrorail stations.

- Supplement existing fixed routes that feed into the high frequency transit network.

Customer Service	Equity/Access

New Service

- Neighborhood circulating service to provide curb to curb access to neighborhood attractions.

- New service could act as extended hours for existing transit routes.

Equity/Access

ODT performance against primary policy objectives

✓ **Customer Service** – ODT consistently delivered strong ratings

- Proper fleet and zone design lead to short wait and trip time (typically > 4.0/5.0 ratings)
- Fare integration has been successfully demonstrated by numerous large agencies

! **Equity/Access** – Access can be achieved, conversion remains challenging

- Most ODT programs target areas with high share of low-income and minority population
- However, it has been challenging to convert "service availability" to "usage" by target groups

! **Cost Efficiency** – Possible to achieve, but under very specific conditions

- Productive fixed route bus service is more cost efficient than ODT services
- ODT can induce incremental demand vs. fixed route, driving increased overall operational costs

Operational models based on specific agency needs

- Contracting services may reduce operating expenses, but it's not always feasible

- Insourced services provide more control but may require new investments in staffing and equipment

- Agencies typically mix internal and contracted operations for service delivery and fleet maintenance

- ODT routing and scheduling software is typically purchased or licensed from technology companies

Outsourced Service Delivery, Customer Service, & Quality Assurance	Outsourced Technology; Insourced Service Delivery & Quality Assurance	Internal Reservations, Customer Service, Service Delivery & Quality Assurance

Turn-Key Solutions   **Current Trend**   **Full Program Ownership**

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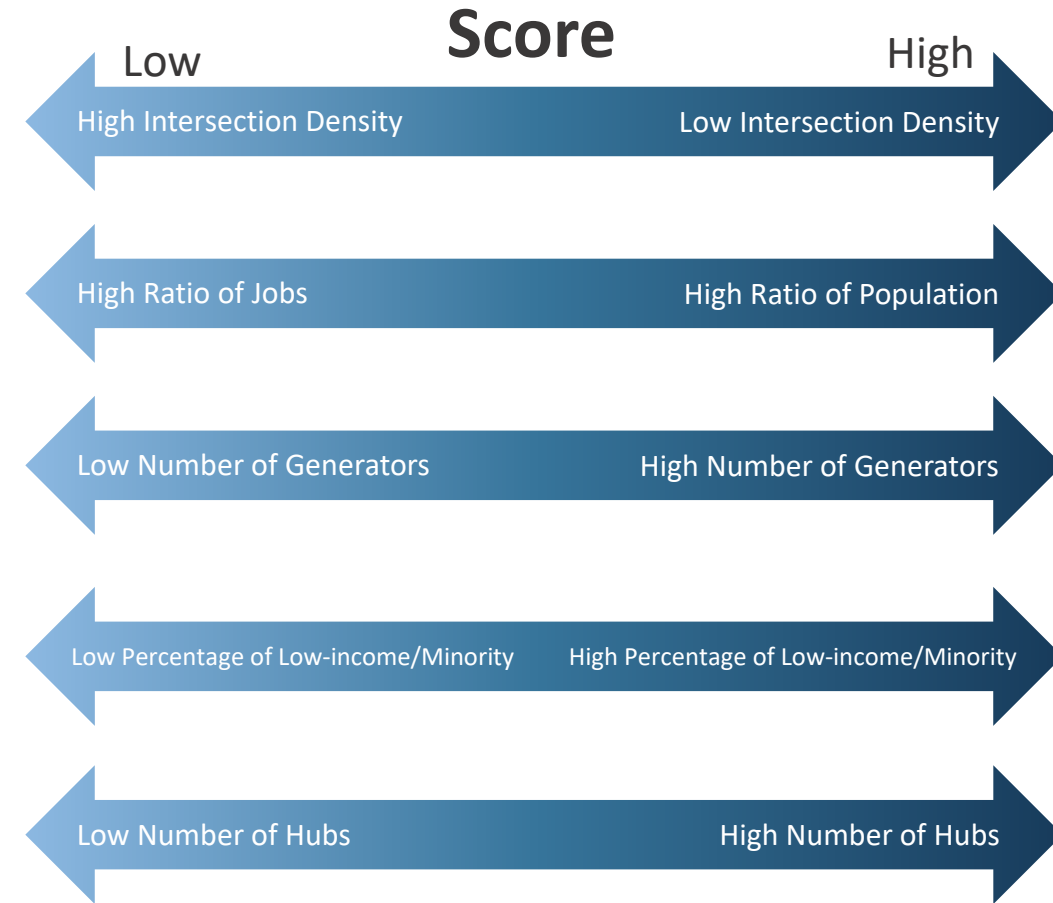
Zone Identification Methodology

- A three-step analysis identifies areas where ODT could be sustained by reviewing the following:

  1. **Origins –** Where are riders most likely to need and rely on ODT?

  2. **Destinations –** Where are people likely to take ODT?

  3. **Density –** Where is ODT service feasible?

- Overlay specific ODT Origin & Destination Propensities with Density to find areas that are the most suitable for ODT
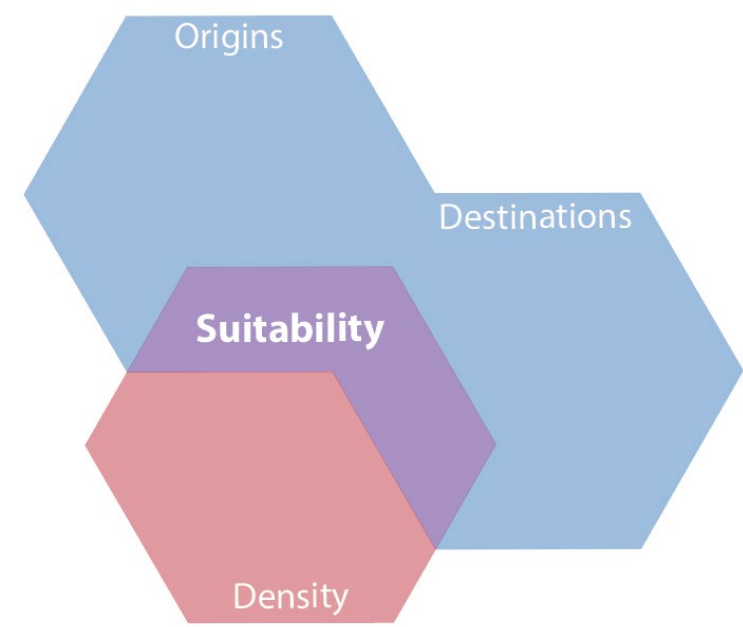
Zone Evaluation Scoring Matrix

Metric	Purpose
Intersection Density	Highlights areas that **might not be as accessible to a fixed-route vehicle** but could be served by smaller vehicles that are less reliant on a fixed schedule.
Land Use	Identifies more **prominent residential areas**, where trips happen more randomly throughout the day compared to work trips, which tend to happen around predictable shift times.
Activity Generators	Focuses in on areas that provide an **opportunity for more internal trips** within a zone versus having to connect to external services for transfers.
Equity	For **Title VI considerations**, evaluates the percentage of low-income and minority populations within each zone.
Transit Hub	Identifies areas with **transit hubs (Metro stations, VRE, and MARC stations)** that could support first/last mile trips and facilitate longer trips through transferring.

Score

Low ← → High

Low	High
High Intersection Density	Low Intersection Density
High Ratio of Jobs	High Ratio of Population
Low Number of Generators	High Number of Generators
Low Percentage of Low-income/Minority	High Percentage of Low-income/Minority
Low Number of Hubs	High Number of Hubs

Ⓜ metro

Existing ODT Services

(1) MC Ride On Flex - Rockville

(2) MC Ride On Flex – Wheaton/Glenmont

(3) DFHV Neighborhood Connect – Ward 5

(4) DFHV Neighborhood Connect – Ward 7

(5) DFHV Neighborhood Connect – Ward 8

(6) PGC Link – Fort Washington/Oxon Hill

Legend:
- Suitable ODT Area
- Existing ODT Zones
- Sample Zone Design

0   2.5   5 Miles
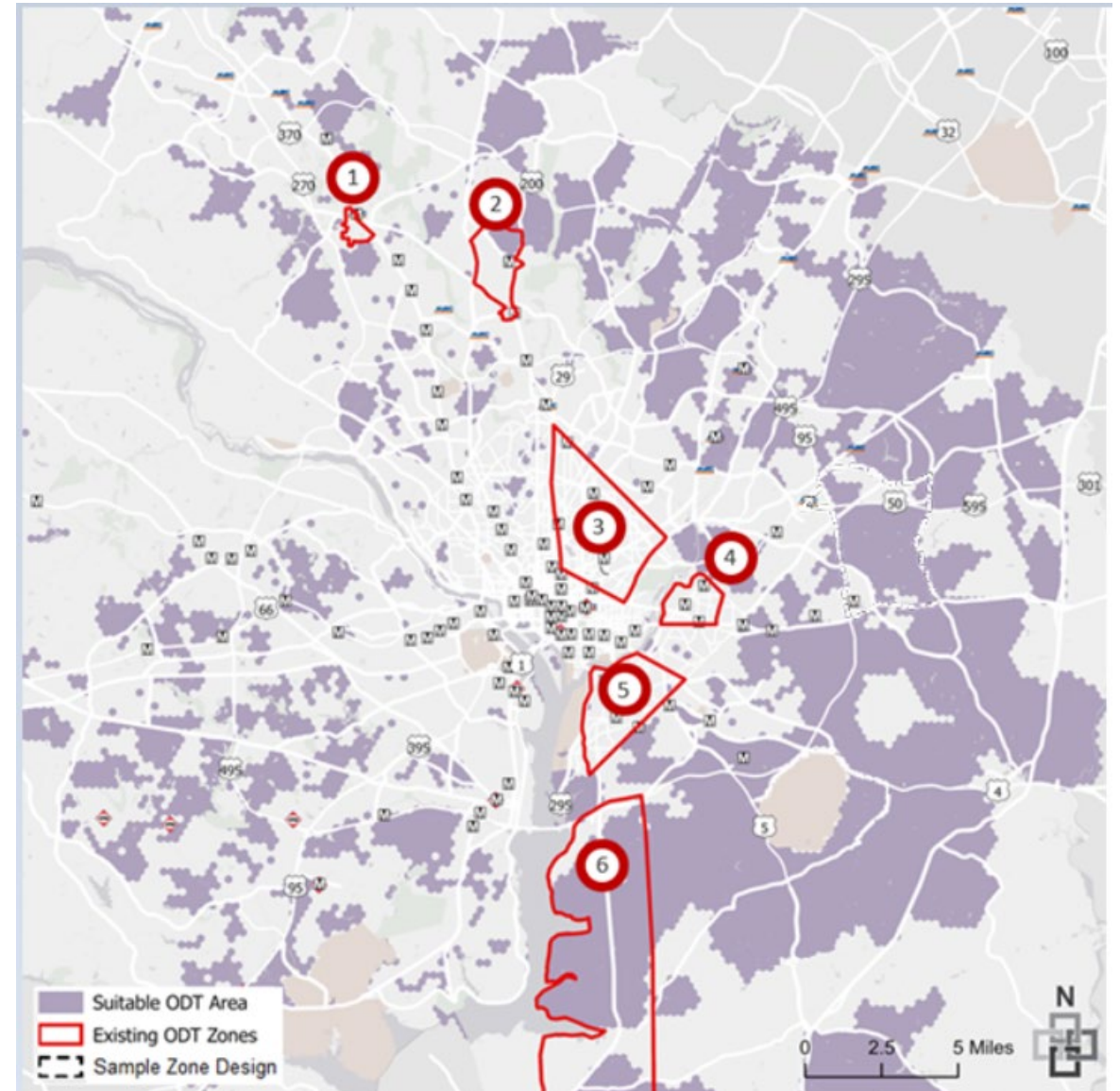
First/Last-Mile Sample Design

- First/Last-Mile connections provided to end of line rail stations

- Passengers would have either their origin or destination fixed at one of the rail stations

- Hours of service would be aligned with the rail service

- Costs per hour typically range from $50-$100 and **$20-$40 per passenger trip**

Span	**5:00 a.m. – 1:00 a.m.**
Target Wait Time	**20 minutes**
Estimated Vehicle Needs	**4**
Estimated Daily Revenue Hours	**80**
Estimated Potential Demand	**~4 pax/hour**
Area	**10 - 15 sq miles**
Activity Generators/sq mile	**4 - 5**
Population	**~40,000**
Jobs	**~20,000**
Households	**~13,000**
Minority Pop	**~90%**
Low Income Pop	**~10%**
Zero Car Households	**~5%**

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ODT can succeed for targeted uses based on agency needs

- Agencies must have **clear objectives and manage expectations** with ODT

  o Even with established policy objectives and focused use cases, trade-offs exist

  o Anticipated cost per passenger trip for ODT is typically between $20 - $40

- Vendors generally offer capable and effective technology platforms, but they differ in service delivery capabilities.

- ODT vendors are seeing increased interest nationally to modernizing scheduling and dispatch to support Paratransit.

Strategic implications for WMATA following the study

- WMATA continues to focus on providing a strong fixed-route backbone in DC, MD, and VA through avenues such as the Metrobus Transformation Program

- Given the extensive fixed network of WMATA and regional partners, areas more suitable to flexible modes are localized in surrounding jurisdictions.

- WMATA will continue supporting regional partners and providing guidance to those who are considering pilots/implementations

  - DFHV DC Neighborhood Connect

  - Prince George's County PGC Link

  - Montgomery County Ride On Flex

Questions?

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