Mobility-on-Demand (MOD) Overview

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Presentation Overview

- Trends driving MOD
- What is Mobility on Demand?
- How does MOD differ from MaaS?
- FTA MOD Sandbox
- MOD resources

Trends: What's Driving MOD?

Societal Trends

- Over the next 30 years, the U.S. population is expected to grow by 70 million
- By 2045, the number of Americans over the age of 65 will increase by 77%
- 20% of population with disabilities
- Urbanization

Technological Trends

- Transportation is increasingly relying on data
- Prevalence of mobile devices
- Automated transportation offers new possibilities
- Integration of services

Mobility Trends

- On average, Americans spend over 40 hours stuck in traffic each year, costing $160 billion
- There is growing popularity of shared mobility services
- Focus on TDM
- Dynamic management

(Sheehan, 2018)

Shifting Transportation Landscape

Innovative partnerships and new technologies are changing how we travel

- State and local DOTs are looking at shared mobility and volunteer drivers to address service gaps
- Integrated multimodal traveler information apps
- Carpooling and ridesharing start-ups enabling high-occupancy commuting
- Auto manufacturers rebranding as mobility companies, acquiring start-ups, and pursuing self-driving vehicles
- Mobility as a Service (MaaS) piloting in Europe (e.g., Finland, Sweden, Netherlands)
- Recognizing importance of mobility management not just traffic management

(Sheehan, 2018)

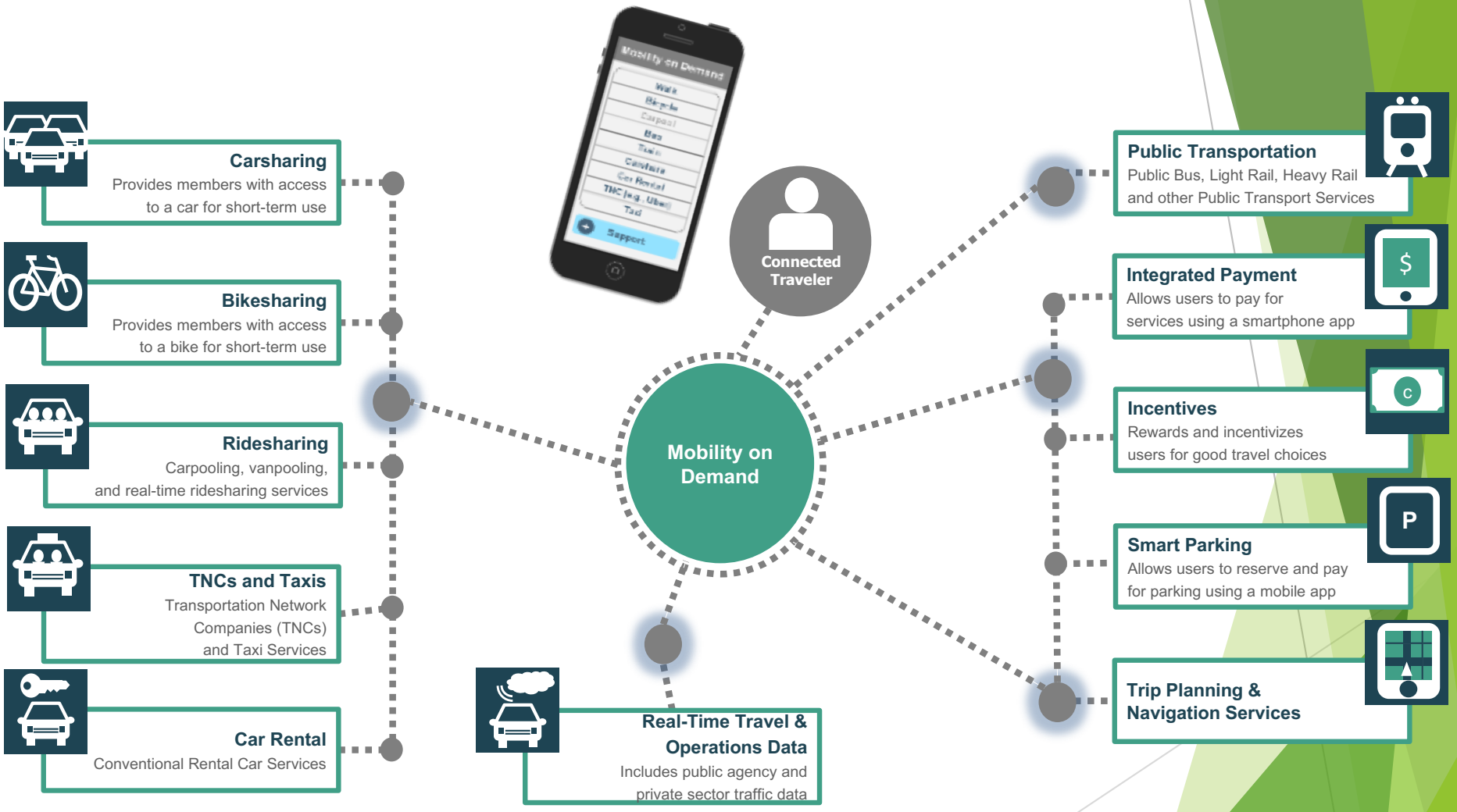
What is Mobility on Demand (MOD)?

Vision for an **integrated and connected multi-modal** network of **safe**, **carefree, affordable**, and **reliable** transportation options that are **available to all**

- User-focused options to improve personal mobility and access to more destinations
- Promotes choice in personal mobility & optimizes transportation system through electronic and wireless communications
- Advances connected vehicles & automation applications
- Uses emerging technologies & data exchange to enable personal mobility
- Encourages multimodal connectivity & system interoperability

(Sheehan, 2018)

User-Centric Mobility



(Sheehan, 2018)

MOD Enablers

Business Models & Partnerships

Strategic Partnerships

Financing

Incentives

Shared Use

Infrastructure

Land Use

Built Environment

Transportation Infrastructure

Dynamic transit service

Policies & Regulations

Equity Considerations

Safety Considerations

Mobility Issues

Standardization

Emerging Technologies

Wireless Networks

GPS/Sensors

Big Data and Predictive Analytics

Mobile Devices

(Shaheen et al. 2017; Sheehan 2018)

Who Benefits from MOD?

Travelers

- Access to more transportation options
- Builds a more efficient, effective, and customer-centered transportation network

Public Transit Providers

- Connects ALL regional transportation services and assets into a seamless public transit network
- Extends service quality and coverage

Shared Transportation Providers

- Connects travelers to provider services
- Provides an easy to use, common technology platform for mobility options

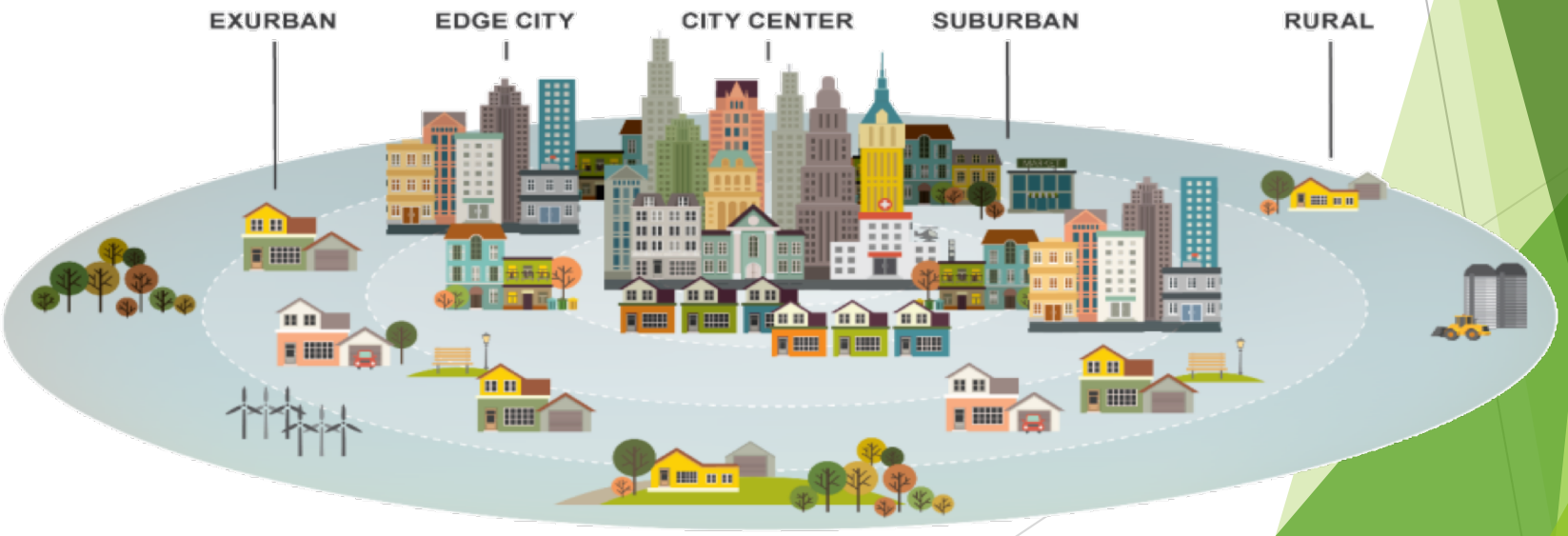
Traffic and Mobility Managers

- Streamlines information for transportation options
- Growing employment and transportation partnerships

(Sheehan, 2018)

MOD – Not Just A City Center

CITY CENTER	SUBURBAN	EDGE CITY	EXURBAN	RURAL
High-density downtown/CBD employment centers and surrounding neighborhoods	Predominantly lower-density residential users with some segregated mixed uses	Medium-density employment centers outside of the urban core	Very low-density residential uses on the urban fringe	Typically unincorporated



(Shaheen et al. 2017)

How Does MOD Differ From MaaS?

- **MAAS** emphasizes a digital platform integrating curb-to-curb trip planning, booking, electronic ticketing, and payment services across all modes of transportation (public and private)
- **MOD** focuses on commodification of transportation services.
  - A distinct concept based on principle that transportation is a commodity where modes have economic values that are distinguishable in terms of cost, journey time, wait time, number of connections, convenience, and other attributes
  - Includes passenger travel and goods delivery
  - A recognition that goods delivery and digital delivery could serve as a substitute for passenger travel

(Shaheen et al. 2017)

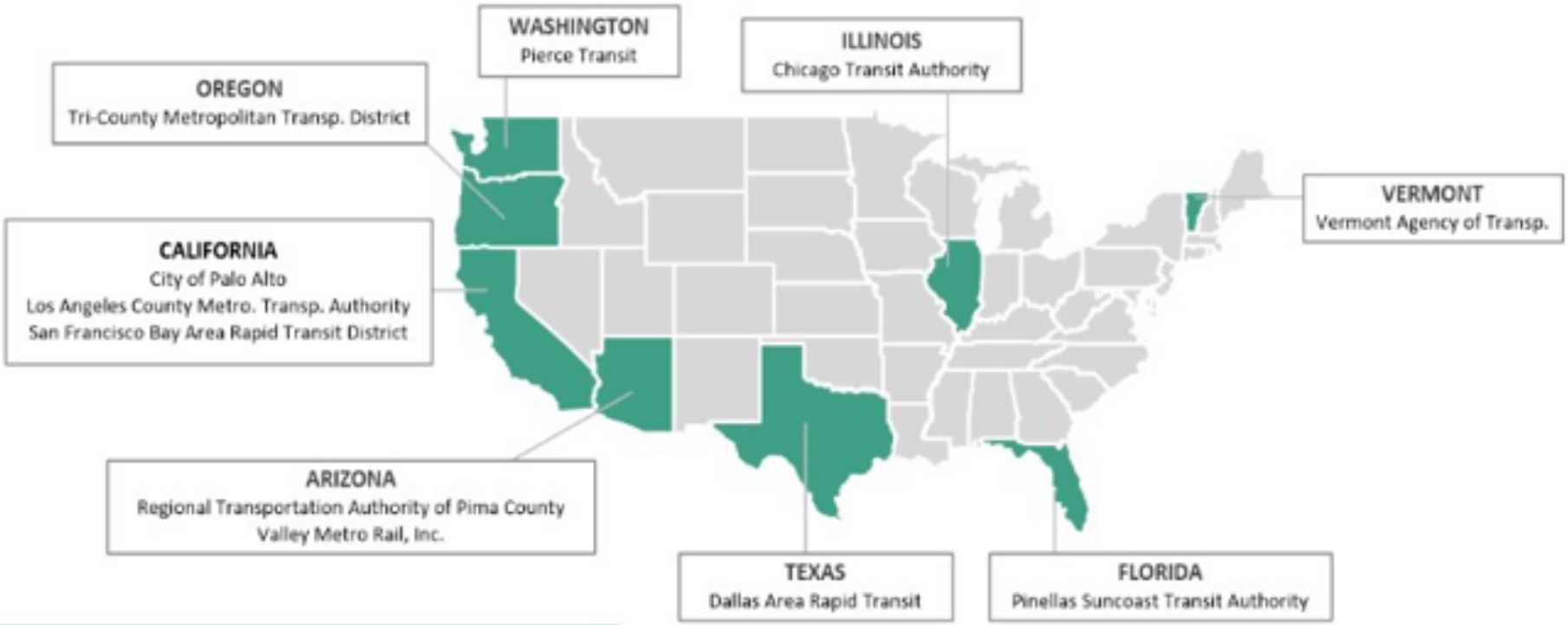
FTA MOD Sandbox Program Overview

Demonstration Program to Explore MOD Models

- **Explores** innovative approaches
- **Empowers** project teams to implement innovative business models
- **Informs** the MOD program on how to support future deployments

(Sheehan, 2018)

FTA MOD Sandbox Awardees



11 Selected Projects:
$7,931,080

(Sheehan, 2018)

FTA MOD Demonstrations Overview

PROJECT SPONSOR	DESCRIPTION
Chicago Transit Authority (CTA)	Incorporate the local bike sharing company, Divvy, a 580-station bike share service, into CTA's existing transit trip planning app ($400,000).
Dallas Area Rapid Transit (DART)	Integrate ride-sharing services into its GoPass ticketing app to solve FMLM issues ($1,200,000).
Los Angeles County Metropolitan Transportation Authority	Two-region mobility on demand partnership with the ridesourcing company, Via, in Los Angeles and Seattle to provide FMLM mile solutions ($1,350,000).
City of Palo Alto	Proposed solutions seek to reduce Bay Area single occupancy vehicle (SOV) commute share from 75% to 50% through a Fair Value Commuting (FVC) solution ($1,080,000).
Pierce County Public Transportation Benefit Area Corporation	Utilize Limited Access Connections project, an initiative connecting Pierce Transit local service and Sound Transit/Sounder regional service with local ride-share companies to increase regional transit use ($206,000).
Regional Transportation Authority (RTA) of Pima County	Adaptive Mobility with Reliability and Efficiency (AMORE) project, integrating fixed route, subscription based ride-sharing and social carpooling services into an existing data platform to provide affordable, convenient and flexible service ($670,000).
Pinellas Suncoast Transit Authority (PSTA)	A set of partnerships with Lyft, United Taxi, CareRide, the Center for Urban Transportation Research (CUTR), and Goin' Software to develop a model to provide more cost-effective on-demand door-to-door paratransit service ($500,000).
San Francisco Bay Area Rapid Transit	Partnership between Scoop Technologies, Inc. (Scoop), the San Francisco Bay Area Rapid Transit (BART) District, and the Metropolitan Transportation Commission (MTC) to better integrate carpool access to public transit by matching passengers according to their destination, and by providing a way to reserve and pay for parking spaces at BART stations ($358,000).
Tri-County Metropolitan Transportation District	In corporate shared use mobility (SUM) options into the Open Trip Planner (OTP) project, that will create a platform integrating transit and shared-use mobility options ($678,000).
Valley Metro Rail, Inc.	Smart phone mobility platform that integrates mobile ticketing and multimodal trip planning ($1,000,000).
Vermont Agency of Transportation	Statewide transit trip planner that will enable flex-route, hail-a-ride, and other non-fixed route services to be incorporated in mobility apps ($480,000).

MOD Program Contacts

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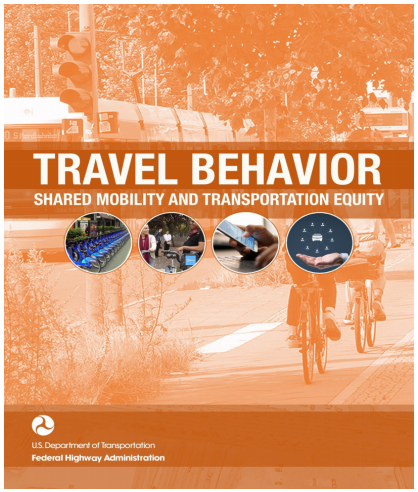
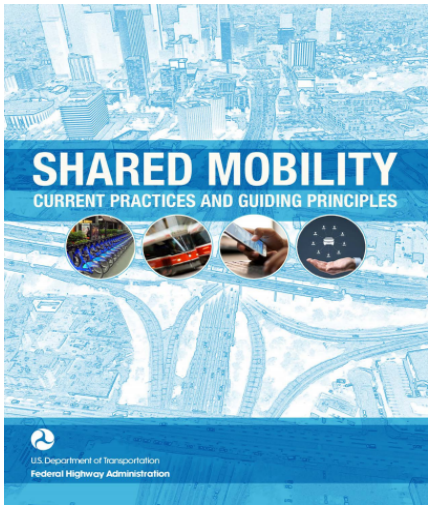
USDOT MOD Resources



https://www.fhwa.dot.gov/policy/otps/shared_use_mobility_equity_final.pdf



https://ops.fhwa.dot.gov/publications/fhwahop16022/fhwahop16022.pdf

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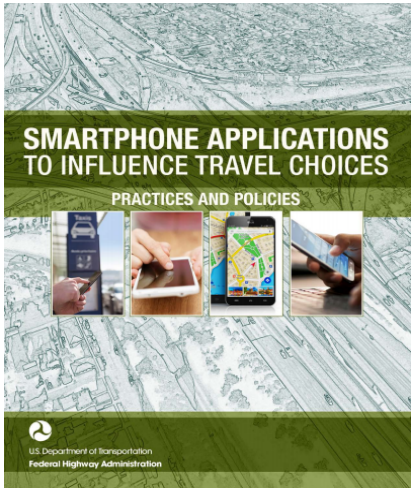

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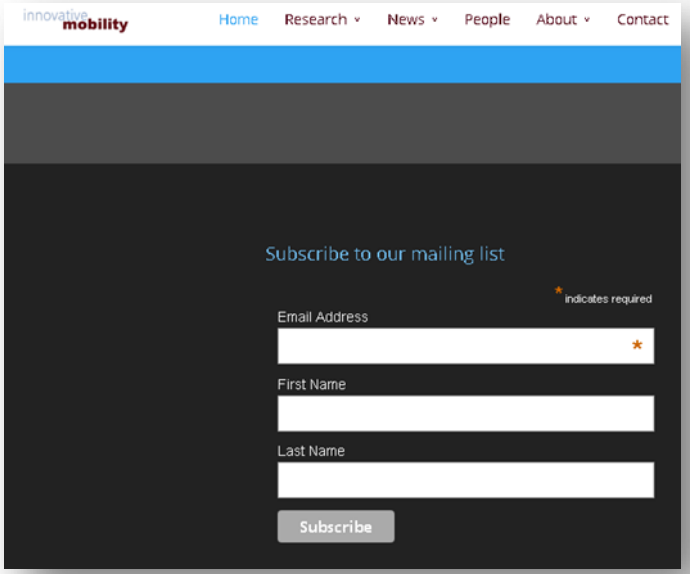
Innovative Mobility Highlights, Latest Research, Carsharing Outlook & Shared Mobility Resources



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Shared Mobility Resources: http://innovativemobility.org/?page_id=2762

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