



# Mobility on Demand

## What is MOD?

Mobility on Demand (MOD), as defined by [USDOT](#), is a vision for an integrated multimodal network of safe, carefree, and reliable transportation options that are available to all, both personalized mobility and goods delivery. MOD is built on four guiding principles: user-centric, technology-enabled, partnership-driven, and mode-agnostic. A traveler-centric system promotes choice in personal mobility and increases access to modes and destinations.

By being technology-enabled, the system can leverage emerging technologies and innovations to enable integration of mobility options. The partnership-driven nature of MOD emphasizes collaboration and transformation between traditional and non-traditional partners. Lastly, MOD's mode-agnostic foundation encourages an integrated, multimodal approach based on local needs and goals.

As technology has advanced and smartphones have become more ubiquitous there have been increased opportunities for demand-responsive transportation services to emerge and flourish. New, disruptive, and transformative MOD trends are changing the landscape of transportation options available for travelers – with shared mobility service, such as that provided by Lyft, Uber, Zipcar, Lime, Spin, Via, etc., offered across the country.

Key shared mobility services, as [defined](#) by the Society of Automotive Engineers (SAE International) include, but are not limited to, the following:

- **Ridesourcing** (sometimes referred to as ride-hailing) services are prearranged and on-demand transportation services for compensation in which drivers and passengers connect via digital applications. (Lyft and Uber are two well-known examples of this service.)
- **Ridesharing** (also sometimes known as carpooling and vanpooling) is defined as the formal or informal sharing of rides between drivers and passengers with similar origin-destination pairings. Ridesharing includes vanpooling, which consists of 7 to 15 passengers who share the cost of a van and operating expenses and may share driving responsibility. (Examples include Moovit and Waze Carpool.)
- **Microtransit** is a privately or publicly operated, technology-enabled transit service that typically uses multi-passenger/pooled shuttles or vans to provide on-demand or fixed-schedule services with either dynamic or fixed routing. (Example providers include Via and TransLoc.)
- **Carsharing** offers members access to vehicles by joining an organization that provides and maintains a fleet of cars and/or light trucks. (Getaround and Zipcar are examples.)
- **Micromobility** is an emerging mode using [micromobility](#) vehicles. For example:
  - **Bikesharing** provides users with on-demand access to bicycles – docked, dockless, electric, adaptive, etc. (Examples: JUMP Bikes and Citi Bike.)
  - **Scooter sharing** allows individuals access to scooters operated by an organization that maintains the fleet. (Examples include Lime and Spin.)



*A wide range of on-demand, app-based mobility services have emerged in recent years. Source: [USDOT](#)*



*Many cities across the country and world now have bikeshare programs. Travelers can dynamically rent, use, and return these bikes. Source: [Getty](#)*



*Dockless scooters can be rented on-demand via various apps in many cities; Source: [Getty](#)*

## Leveraging MOD

Together with transit, emerging modes and services and evolving transportation operations can potentially provide – and in some areas are already being leveraged to provide – a range of mobility benefits to travelers. Some of these benefits include:

- **Improved connectivity to transit:** on-demand mobility options can help broaden the reach of transit, providing additional ways for travelers to reach the nearest bus stop or train station, for instance, or get from a mobility hub to a nearby destination (first/last mile mobility and beyond).
- **Providing dynamic mobility alternatives to driving alone:** many new modes, such as micromobility options (electric bikes, scooters, etc.), offer ways for people to explore a city, get around campus, or otherwise travel about an area in a flexible manner, without needing to drive and park a single-occupancy vehicle.
- **Opportunities to tailor and improve services for specific types of riders or use-cases:** MOD pilot programs are being leveraged to, for instance: help reduce the cost and improve the timeliness of paratransit services, serve as a tool for providing non-emergency medical rides, help to meet mobility demands during special events (holidays, sports games, concerts, elections, etc.) or emergencies, and more.



Partnerships between transit agencies and MOD providers are working to pilot projects for improved mobility; Source: [USDOT](#)

## Future-facing Considerations

Key topics associated with the advancement of MOD looking forward include, among others:

- **Policy:** developing associated standards, funding streams, insurance models, and associated guidance for emerging mobility options
- **Accessibility:** ensuring that new modes and services are accessible – from the booking and payment applications to the ride itself
- **Equity:** expanding efforts to make MOD services affordable and deployed such that there is equitable access across their service area
- **Rethinking road and curb use:** examining where new services should operate and where shared vehicles may be parked between trips so that right-of-ways remain clear and accessible to other road and sidewalk users
- **Increasing integration:** exploring expanding opportunities for multimodal trip planning, booking, and payment
- **Data sharing and security:** navigating partnership agreements and protocols surrounding how information is shared and ensuring that sensitive personal and payment details are protected
- **Education and outreach:** improving public awareness of new services and providing insights into how to use them
- **Sustainability:** exploring opportunities to incentivize greener mobility decision making when travelers trip plan



Advances in integrated trip planning and payment present opportunities to potentially make multimodal travel more seamless; Source: [USDOT](#)

**About the UTC Speaker Program:** The mission of the speaker program is to connect transportation industry leaders and innovators with university and college students in the classroom. In this way students will hear directly from transportation professionals their personal experiences, challenges, and successes, and learn about how to better prepare for entering the Intelligent Transportation Systems (ITS) workforce.

To learn more about the UTC Program please visit the [University Transportation Centers](#) website. For more information related to MOD, please visit the ITS JPO's [Mobility on Demand News and Events](#) webpage.