

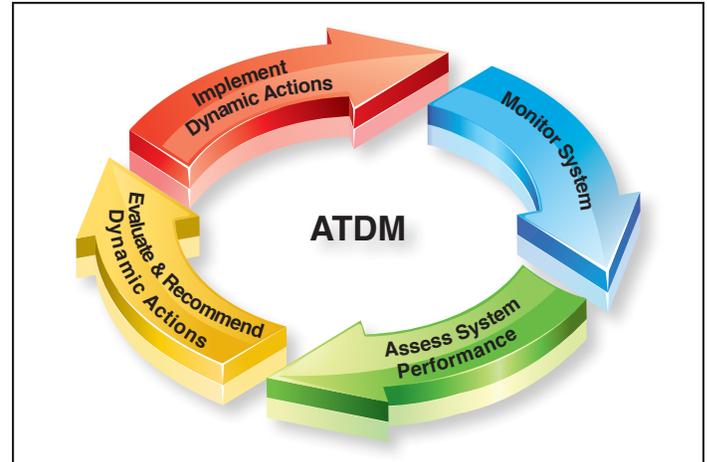
Active Transportation and Demand Management

ATDM Program Brief: Active Parking Management

What is Active Transportation and Demand Management (ATDM)?

ATDM is the dynamic management, control, and influence of travel demand, traffic demand, and traffic flow of transportation facilities. Through the use of available tools and assets, traffic flow is managed and traveler behavior is influenced in real-time to achieve operational objectives, such as preventing or delaying breakdown conditions, improving safety, promoting sustainable travel modes, reducing emissions, or maximizing system efficiency.

Under an ATDM approach the transportation system is continuously monitored. Using archived data and or/predictive methods, actions are performed in real-time to achieve or maintain system performance. *This brief focuses on the active parking management component of ATDM.*



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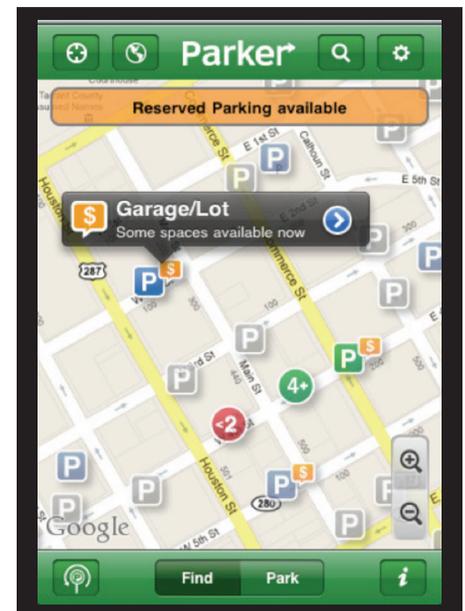
Active parking management is the dynamic management of parking facilities in a region to optimize performance and utilization of those facilities while influencing travel behavior at various stages along the trip making process: i.e., from origin to destination.

Dynamically managing parking can affect travel demand by influencing trip timing choices, mode choice, as well as parking facility choice at the end of the trip. This ATDM approach can also have a positive impact on localized traffic flow by providing real-time parking information to users and ensuring the availability of spaces to reduce circling around parking



SF Park Parking Information Sign – Source: SF.Streets Blog

facilities. The overall goal is to help maximize the nation's transportation infrastructure investments, reduce congestion, and improve safety.



Parker smartphone application – Source: ExpressPark™

What are some examples of ATDM Approaches?

Active management of transportation and demand can include multiple approaches spanning demand management, traffic management, parking management, and efficient utilization of other transportation modes and assets.

An agency can deploy a single ATDM approach in order to capitalize on a specific benefit or can deploy multiple active strategies to gain additional benefits across the entire transportation system. Some example approaches include:

Active Demand Management	Active Traffic Management	Active Parking Management
Dynamic Ridesharing	Dynamic Lane Use Control	Dynamically Priced Parking
On-Demand Transit	Dynamic Speed Limits	Dynamic Parking Reservation
Dynamic Pricing	Queue Warning	Dynamic Way-Finding
Predictive Traveler Information	Adaptive Ramp Metering	Dynamic Parking Capacity

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What are the key aspects of Active Parking Management?

A fundamental component of active parking management is information. With clear, detailed, relevant, and real-time parking information, travelers can make informed decisions regarding their trip. The information a user needs to make parking-related decisions can be conveyed in numerous ways and in various formats. These include, but are not limited to, traditional static road signs, dynamic message signs, the internet, cell phones, smart phones and similar mobile devices, and navigation systems. Agencies can harness the power of an enhanced technology infrastructure (wireless and wired communications, embedded sensors, etc.), combine it with the breadth of currently available technologies to convey information as well as to accept reservations and parking payments, monitor use, and conduct enforcement. These technologies can be applied to both on-street and off-street parking spaces and off-street parking spaces to optimize use of all facilities in a region.

Parking system operators also realize numerous benefits with active parking management. Agencies can reduce costs, improve efficiency, and increase parking utilization rates. By increasing the availability of limited parking spaces and optimizing the use of facilities at all times of the day, agencies can help reduce congestion in and around parking facilities, improve enforcement efficiency, foster public trust, and reduce the receipt of parking tickets by accommodating alternative payment methods. Active parking management also benefits a region as a whole by reducing pollution, encouraging the use of alternative modes, relieving congestion around commercial businesses, and helping improve access by emergency responders. In some cases, agencies can actually increase parking capacity in a limited footprint with innovative parking facility designs that stack vehicles and/or automate parking.

U.S. Examples of Active Parking Management

The table below illustrates some key active parking management programs either in operation or under development in the U.S. As shown, the various approaches to active parking management have been implemented to dynamically manage pricing, reservations, wayfinding, and capacity.

Location/ Project Name	Active Parking Element	Lead Agency	Active Technologies
SFPark San Francisco, CA http://sfpark.org	Pricing, Wayfinding	San Francisco Municipal Transportation Agency	parking sensors, wireless connectivity, smartphone applications, text messages, upgraded smart meters, 511, demand-responsive pricing
PARK Smart New York, NY http://www.nyc.gov/html/dot/html/motorist/parksmart.shtml	Pricing	New York City Department of Transportation	demand-responsive pricing, upgraded smart meters
ExpressPark™ Los Angeles, CA http://expresspark.lacity.org	Pricing, Wayfinding	City of Los Angeles	parking sensors, upgraded smart meters, real-time parking guidance system, integrated parking management
Capri Stanford, CA https://stanfordcapri.org	Pricing	Stanford University	RFID tags for system users, behavioral based pricing schemes
QuickPark San Diego, CA http://compass.511sd.com/QuickPark/Default.aspx	Pricing, Reservations	San Diego Association of Governments	parking space sensors, parking lots sensors, real-time parking availability information

ATDM Project Informational Briefs

This informational brief is one of the ATDM briefs in the **Program** category of the FHWA ATDM Brief Series. ATDM briefs are or will be available in the categories of:

- ATDM Program
- ATDM Planning
- ATDM Analysis
- ATDM Design
- ATDM Operations

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