

Arterial Traffic Management Strategies

ICM Functional Area / Tactic	ICM Category	ICM High-Level Benefits								
		Safety / Response	Mobility / Accessibility	Demand Reduction / Shift	Travel choice / Decision Making	Return on / Use of Existing Investment	Efficiency / Productivity	Institutional Cooperation	Environmental Impact	Customer Experience / DOT Perception
Arterial Management										
Traffic Signal Management	Fundamental		•			•	•	•	•	•
Dynamic Parking Wayfinding	Active and Advanced		•	•	•		•		•	•
Dynamic Parking Reservation	Active and Advanced		•	•	•		•		•	•
Dynamic Priced Parking	Active and Advanced		•	•			•			
Adaptive Traffic Signal Control	Active and Advanced		•			•	•	•	•	•

Traffic Signal Management

	Traffic Signal Management
Description	Traffic signal management involves organizing for the planning, maintenance, design, and operation of signalized intersections and traffic signal systems. Poor traffic signal timing contributes to traffic congestion and delay. Conventional signal systems use pre-programmed, daily signal timing schedules. Periodic manual traffic signal timing improvements or software that can allow operators to perform this activity remotely can improve arterial efficiency especially where there are known changes in traffic volumes or patterns. Improvements to traditional traffic signal timing may include optimizing traffic signal flow for a specific corridor or more broadly a network of corridors.
ICM Category	<ul style="list-style-type: none"> Fundamental strategy
Anticipated Benefits	<ul style="list-style-type: none"> Improved accessibility and mobility (e.g., arterial delay) Increased return on and use of existing investment Improved transportation efficiency and productivity Improved institutional cooperation Reduced environmental impact Improved customer experience and perception
Provided Functionality	<ul style="list-style-type: none"> Reduces traffic delay along an arterial corridor(s). Improves traffic flow along an arterial corridor(s).
Prerequisite Functionality Required	<ul style="list-style-type: none"> Network surveillance
Complementary and/or Supported Strategies	<ul style="list-style-type: none"> Adaptive traffic signal control Dynamic routing Transit signal priority Connected and automated vehicles Freight operations and freight management improvements Ramp metering Adaptive ramp metering Intersection improvements
Examples	<ul style="list-style-type: none"> Utah Traffic Signal Management Plan (Utah DOT) Operation Green Light (Kansas City, MO) Regional Traffic Signal Improvement Program (Denver CO) Fargo-Moorhead Traffic Operation Action Plan (North Dakota) Traffic Signal Synchronization Program (Los Angeles County, CA)

Dynamic Parking Wayfinding

	Dynamic Parking Wayfinding
Description	This strategy provides real-time parking-related information such as space availability and location to travelers to optimize the use of parking facilities and minimize time spent searching for available parking. Parking availability is continuously monitored and routing information to the parking space can be provided to drivers.
ICM Category	<ul style="list-style-type: none"> • Active and advanced strategy
Anticipated Benefits	<ul style="list-style-type: none"> • Improved accessibility and mobility (e.g., reduced congestion and delay from vehicles searching for available parking) • Reduced or shifted demand • Enhanced traveler choice and decision making • Improved transportation efficiency and productivity (e.g., reduces need and effort to search for available parking) • Reduced environmental impact • Improved customer experience and perception
Provided Functionality	<ul style="list-style-type: none"> • Reduces the need to search for available parking and in turn reduces demand near parking venues.
Prerequisite Functionality Required	<ul style="list-style-type: none"> • Network surveillance (vehicle detection) • Traffic information dissemination
Complementary and/or Supported Strategies	<ul style="list-style-type: none"> • Planned special event management • Dynamic priced parking • Park and ride lots
Examples	<ul style="list-style-type: none"> • SFPark (San Francisco, CA) • Express Park (Los Angeles, CA)

Dynamic Parking Reservation

	Dynamic Parking Reservation
Description	This strategy provides travelers the ability to reserve a parking space at a destination facility on demand to ensure availability. Parking availability can be continuously monitored and system users can reserve the parking space ahead of arriving at the parking location.
ICM Category	<ul style="list-style-type: none"> • Active and advanced strategy
Anticipated Benefits	<ul style="list-style-type: none"> • Improved accessibility and mobility (e.g., reduced congestion and delay from vehicles searching for available parking) • Reduced or shifted demand • Enhanced traveler choice and decision making • Improved transportation efficiency and productivity (e.g., balances parking supply with parking demand) • Reduced environmental impact • Improved customer experience and perception
Provided Functionality	<ul style="list-style-type: none"> • Reduces the need to search for available parking and in turn reduces demand near parking venues.
Prerequisite Functionality Required	<ul style="list-style-type: none"> • Network surveillance (vehicle detection) • Personal information devices
Complementary and/or Supported Strategies	<ul style="list-style-type: none"> • Dynamically priced parking
Examples	<ul style="list-style-type: none"> • QuickPark (San Diego, CA)

Dynamically Priced Parking

	Dynamically Priced Parking
Description	Dynamically priced parking allows parking rates to be dynamically set as demand for parking increases/decreases. This strategy may be used to reduce parking problems in a specific location or to reduce vehicle traffic in an area. It can also be used to recover parking facility costs, to generate revenue for other purposes (such as a local transportation program or downtown improvement district), or for a combination of these objectives.
ICM Category	<ul style="list-style-type: none"> • Active and advanced strategy
Anticipated Benefits	<ul style="list-style-type: none"> • Improved accessibility and mobility (e.g., encourages use of transit) • Reduced or shifted demand • Improved transportation efficiency and productivity (e.g., balances parking supply with parking demand)
Provided Functionality	<ul style="list-style-type: none"> • Shifts parking demand to parking lots/garages with excess capacity.
Prerequisite Functionality Required	<ul style="list-style-type: none"> • Network surveillance (vehicle detection) • Personal information devices
Complementary and/or Supported Strategies	<ul style="list-style-type: none"> • Ridesharing • Telecommuting • Dynamic parking reservation
Examples	<ul style="list-style-type: none"> • QuickPark (San Diego, CA) • Carpi (Stanford, CA) • ExpressPark (Los Angeles, CA) • Park Smart (New York, NY) • SFpark (San Francisco, CA)

Adaptive Traffic Signal Control

	Adaptive Traffic Signal Control
Description	Adaptive Traffic Signal Control (ATSC) is the continuous monitoring of arterial traffic conditions and queuing at intersections and the dynamic adjustment of signal timing to smooth traffic flow along coordinated routes and to optimize one or more operational objectives (such as minimize overall stops and delays or maximize green bands). Applicable on arterials, this strategy is also known as responsive and/or multimodal preferential signal control.
ICM Category	<ul style="list-style-type: none"> • Active and advanced strategy
Anticipated Benefits	<ul style="list-style-type: none"> • Improved accessibility and mobility (e.g., reduced delay and improved arterial traffic flow) • Increased return on and use of existing investment • Improved transportation efficiency and productivity • Improved institutional cooperation • Reduced environmental impact • Improved customer experience and perception
Provided Functionality	<ul style="list-style-type: none"> • Reduces traffic delay along an arterial corridor(s). • Improves traffic flow along an arterial corridor(s).
Prerequisite Functionality Required	<ul style="list-style-type: none"> • Network surveillance (cameras and detection)
Complementary and/or Supported Strategies	<ul style="list-style-type: none"> • Ramp terminal treatments • Adaptive ramp metering • Connected and automated vehicles
Examples	<ul style="list-style-type: none"> • McKnight Road Corridor, Allegheny County, PA • Rhode Island Airport Corporation • Midtown in Motion, New York City, NY • Burleigh Road Corridor, Milwaukee, WI • Multiple arterial corridors adjacent to the Zoo Interchange, Milwaukee, WI