

Arterial Management Survey

AGENCY CHARACTERISTICS

1. Centerline arterial miles operated by your agency: TotalMiles
2. Signalized intersections operated by your agency: TotalSignals
3. Indicate the number of staff performing traffic signal management, operations and maintenance in the following categories:
- In-house management and operations: staff_inhouse_mgtops
 - Outsourced management and operations: staff_outsourced_mgtops
 - In-house maintenance: staff_inhouse_maint
 - Outsourced maintenance: staff_outsourced_maint
4. What types of training do you provide and/or require for in-house staff? (Check all that apply) 1=Selected, 0=Not selected
- Provide funding and encouragement for personnel to attend training inhouse_funding
 - Provide training program inhouse_program
 - Require formal training leading to certification inhouse_certification
5. What types of training do you provide and/or require for out-sourced staff? (Check all that apply) 1=Selected, 0=Not selected
- Provide funding and encouragement for personnel to attend training outsourced_funding
 - Provide training program outsourced_program
 - Require formal training leading to certification outsourced_certification

SURVEILLANCE

6. Total number of arterial centerline miles with real-time traffic data collection technologies (does not include Closed Circuit TV or CCTV): miles_info_collected_notcctv
- 6a. Number of these miles where real-time traffic data are collected using roadside infrastructure such as loops, radar detectors, or video imaging detector systems: miles_info_collected_roadside
- 6b. Number of these miles where real-time traffic data are collected by vehicle probes, using technology such as toll tag readers, cell phones, etc.: miles_info_collected_probe
7. What type of vehicle probe readers are used to obtain traffic information? (Check all that apply) 1=Selected, 0=Not selected
- Toll tag readers vehicle_probe_toll
 - Blue tooth readers vehicle_probe_blue
 - Cellular phone readers vehicle_probe_cell
 - GPS readers vehicle_probe_gps
 - License plate recognition vehicle_probe_license
 - Do not collect vehicle probe data vehicle_probe_donotcollect
 - Other readers (please specify): vehicle_probe_othertext

HARDWARE CHARACTERISTICS OF SIGNALIZED INTERSECTIONS

8. For each signal controller type in your system, please provide the number deployed and the average age (to the nearest year): (Please indicate 0 if a specific type of controller is not deployed)

	Number Deployed	Average Age (years)
NEMA:	<code>controller_number_nema</code>	<code>controller_age_nema</code>
Model 170:	<code>controller_number_170</code>	<code>controller_age_170</code>
Model 2070:	<code>controller_number_2070</code>	<code>controller_age_2070</code>
ATC:	<code>controller_number_atc</code>	<code>controller_age_atc</code>
Other (please specify):	<code>controller_number_other</code>	<code>controller_age_other</code>
	<code>controller_other</code>	

9. How would you characterize the agency's primary motivation for upgrading traffic signal controllers? (Check all that apply)

Lack of vendor or manufacturer support	<code>controller_motivate_vendor</code>	1=Selected, 0=Not selected
New Operations/maintenance features are desired that are not available on current controller	<code>controller_motivate_newops</code>	
Current controller is not compatible with central traffic signal management system	<code>controller_motivate_not_compatible</code>	
Advanced strategies like adaptive control or transit signal priority are not supported by current controller	<code>controller_motivate_current_support</code>	
A single controller platform is desired for the entire agency	<code>controller_motivate_single_platform</code>	
Other (please specify):	<code>controller_motivate_othertext</code>	

10. Indicate: 1) the number signalized intersections where the following detection technologies are deployed and 2) the estimated % time detection technologies are operational (reliably operating as intended):

	Number Signalized Intersections	% Time Operational
Loop detectors:	<code>intersections_loop_number</code>	<code>intersections_loop_operational</code>
Video imaging detector systems:	<code>intersections_video_number</code>	<code>intersections_video_operational</code>
Radar:	<code>intersections_radar_number</code>	<code>intersections_radar_operational</code>
Other (please specify):	<code>intersections_other_number</code>	<code>intersections_other_operational</code>
	<code>intersections_numop_othertext</code>	

- | | |
|---|---|
| 11. Number of pre-timed signalized intersections: | <code>intersections_pretimed_number</code> |
| 12. Number of semi-actuated signalized intersections: | <code>intersections_semiactuated_number</code> |
| 13. Number of fully-actuated signalized intersections: | <code>intersections_fullyactuated_number</code> |
| 14. Number of signalized intersections equipped with Closed Circuit Television (CCTV) Cameras for the purpose of monitoring traffic flow: | <code>intersections_cctv_number</code> |

TRAFFIC SIGNAL CONTROL OPERATION STRATEGIES

15. Does your agency have a documented plan (e.g., agency memo, Concept of Operations, MOU, agreement) inclusive of objectives and performance measures, to guide the management, operation and maintenance of traffic signals?

[1] Yes `documented_plan`

Which of the following areas are included in the plan? (Check all that apply)

Management and operations `documented_plan_mgtops`

Maintenance `documented_plan_maint`

[2] No

[3=No response]

16. Does your agency use adaptive signal control technology (ASCT) as an operational strategy to improve coordinated signal timing?

[2] No `asct_use`

What does your agency consider the most significant barrier to implementing adaptive control? (Select one)

[1] Cost to deploy `asct_barrier`

[2] Cost to operate and maintain

[3] Complexity to operate and maintain

[4] Uncertainty about benefits

[5] Incompatibility with existing system

[6] Other (please specify): `asct_barrier_othertext`

[1] Yes (Provide number of intersections below)

[3=No response]

Number of signalized intersections under ASCT: `asct_number`

17. Does your agency participate in a regional program managed by the State DOT, MPO or other regional authority that actively coordinates traffic signals on arterials of regional significance across jurisdictional boundaries?

[1] Yes `participate_regional`

How often are the plans updated? `participate_regional_howoften`

[2] No

[3=No response]

TRAFFIC SIGNAL PREEMPTION AND PRIORITY

18. Number of signalized intersections that allow for signal preemption for emergency vehicles: `intersections_emergency_pr`

19. Number of signalized intersections that allow for signal priority for transit vehicles: `intersections_transit_priority`

20. Number of signalized intersections near a highway-rail intersection that utilize traffic signal preemption to flush a vehicle queue spilled back across an active highway-rail grade crossing: `intersections_hri_queue`

PARKING MANAGEMENT CAPABILITIES

21. Does your agency deploy parking management systems that monitor the availability of parking? parking_mgt_system

[1] Yes

Indicate which parking modes are monitored: (Check all that apply) 1=Selected, 0=Not selected

On-street parking parking_mgt_system_street

Parking lots and/or garages parking_mgt_system_lots

Other (please specify): parking_mgt_system_othertext

[2] No

[3=No response]

22. Does your agency disseminate parking availability information to drivers? parking_info_disseminate

[1] Yes

[2] No

[3=No response]

23. Does your agency use a parking pricing strategy (e.g., peak period surcharges) to manage congestion?

[1] Yes

parking_pricing_strategy

[2] No

[3=No response]

TRANSPORTATION MANAGEMENT CENTER (TMC)

24. Does your agency operate an Arterial Management Transportation Management Center (TMC)?

[1] Yes operate_tmc

TMC Name: operate_tmc_name

TMC Coverage: operate_tmc_coverage

[2] No

[3=No response]

MANAGED LANES

Screening question: Operate managed lanes? operate_manage_lanes 1=Yes, 2=No, 3=No response

25a. Total number of arterial centerline miles featuring managed lanes: ManagedLanesTotal

25b. Please provide the estimated number of arterial centerline miles for each type of managed lane strategy:

Occupancy control (HOV): ManagedLanesHOV

Reversible flow: ManagedLanesReversible

Lane open/closed (traffic incidents, roadway maintenance, etc.): ManagedLanesLaneClosed

Truck only: ManagedLanesTruck

Variable speed limit: ManagedLanesVariableSpeed

Other congestion pricing strategies: ManagedLanesOtherCongestion

Other managed lane strategy (please specify): ManagedLanesOtherManaged

ManagedLanesOtherText

MODELING AND DECISION SUPPORT

26. Does your agency use any Analysis, Modeling and Simulation (AMS) tools to optimize/model the arterial system?

[1] Yes [AnalysisModelingSimulation](#)

Please specify: [AnalysisModelingSimulationText](#)

[2] No

[3=No response]

27. Has your agency deployed a decision support system to assist in operations of the following? (Check all that apply)

Road weather management	DecisionSupportWeather	1=Selected, 0=Not selected
Incident management	DecisionSupportIncident	
Emergency management	DecisionSupportEmergency	
Evacuation	DecisionSupportEvacuation	
Maintenance	DecisionSupportMaintenance	
No decision support system deployed	DecisionSupportNo	
Other (please specify):	DecisionSupportOtherText	

AUTOMATED ENFORCEMENT

28a. What types of automated enforcement does your agency use? (Check all that apply) 1=Selected, 0=Not selected

Speeding	AutoEnforcementSpeed
Red-light running (answer part b below)	AutoEnforcementRedLight
Do not use automated enforcement	AutoEnforcementNone
Other (please specify):	AutoEnforcementOtherText

28b. Number of signalized intersections with automated red-light running enforcement : [AutoEnforcementRedLight_intersections](#)

SAFETY AND ROAD WEATHER MANAGEMENT

29. Has your agency deployed any of the following safety systems? (Check all that apply) 1=Selected, 0=Not selected

Pedestrian warning system	SafetySystemPedestrian
Bicyclist warning system	SafetySystemBicyclist
Over-height warning system	SafetySystemOverHeight
Reference Location Signs	SafetySystemSigns
Dynamic Curve Warning System	SafetySystemDynamicCurve
None of the above	SafetySystemNone

30. What are your agency's sources of weather and road weather information? (Check all that apply) 1=Selected, 0=Not selected

National Weather Service products	WeatherSourceNationalWeather
FAA (ASOS, AWOS, etc.)	WeatherSourceFAA
USGS earthquake alerts	WeatherSourceUSGS
Agency field personnel	WeatherSourceFieldPersonnel
Agency field sensors (RWIS/ESS, probes, etc.)	WeatherSourceFieldSensors
National sensor data sources (Clarus/MADIS)	WeatherSourceClarus
Private providers	WeatherSourcePrivate
Other (please specify):	WeatherSourceOtherText

31. Does your agency employ safety warning systems related to road weather events?

[1] Yes [EmploySafetyWarningWeather](#)

What hazards are covered? (Check all that apply) [1=Selected, 0=Not selected](#)

High wind [SafetyWarningWeatherHighWind](#)

Icy roads [SafetyWarningWeatherIcyRoads](#)

Fog [SafetyWarningWeatherFog](#)

Dust [SafetyWarningWeatherDust](#)

Other [SafetyWarningWeatherOther](#)

[2] No

[\[3=No response\]](#)

32. Has your agency deployed any Environmental Sensor Stations (ESS)?

[1] Yes [DeployESS](#)

How many? [DeployESSHowMany](#)

What data are collected by ESS and in-pavement sensors? (Check all that apply) [1=Selected, 0=Not selected](#)

Pavement temperature [ESSCollectPavementTemp](#)

Pavement surface condition [ESSCollectPavementSurface](#)

Pavement precipitation [ESSCollectPavementPrecip](#)

Temperature [ESSCollectTemp](#)

Humidity [ESSCollectHumidity](#)

Wind speed [ESSCollectWindSpeed](#)

Precipitation (rain) [ESSCollectRain](#)

Precipitation (snow) [ESSCollectSnow](#)

Other (please specify): [ESSCollectOtherText](#)

[2] No

[\[3=No response\]](#)

33. Is your agency using or planning to use a Maintenance Decision Support System (MDSS) for winter maintenance? (MDSS includes software systems that provide strategic and tactical weather forecasts, support treatment decision making and provide summary.) [MDSS](#)

[1] Yes, agency uses an MDSS statewide

[2] Yes, considering (pilot project, used partially, used in one district)

[3] No, agency needs an MDSS, but does not have a system

[4] No, agency does not need an MDSS

[\[5=No response\]](#)

34. Does your agency adjust traffic signal timing in response to inclement weather or road weather conditions?

ChangeTrafficTiming

[1] Yes

[2] No

[3=No response]

35. Does your agency deploy variable speed limit systems?

DeployVariableSpeedLimit

[1] Yes

What event triggers the deployment? (Check all that apply)

1=Selected, 0=Not selected

Weather

EventTriggerWeather

Traffic volume

EventTriggerTraffic

Incidents

EventTriggerIncidents

Other (please specify):

EventTriggerOtherText

[2] No

[3=No response]

INCIDENT MANAGEMENT/WORK ZONE MANAGEMENT

36. Number of arterial centerline miles patrolled by service patrol:

MilesServicePatrol

37. Number of arterial centerline miles covered by the following incident detection/verification methods:

a. Computer algorithms:

IncidentDetectionComputerMiles

b. Closed Circuit Television (CCTV):

IncidentDetectionCCTVMiles

c. Other (please specify):

IncidentDetectionOtherMiles

IncidentDetectionOtherText

38. Does your agency deploy ITS technology at work zones?

ITS_Work_Zones

[1] Yes

What ITS technologies does your agency deploy at work zones? (Check all that apply)

1=Selected, 0=Not selected

Intrusion alarm

ITS_Work_Zones_Intrusion

Dynamic lane merge system

ITS_Work_Zones_Dynamic

Queue detection and alert system

ITS_Work_Zones_Queue

Variable speed limit

ITS_Work_Zones_Variable

Travel time system

ITS_Work_Zones_Travel_Time

Route guidance around work zones

ITS_Work_Zones_Route_Guidance

Portable CCTV

ITS_Work_Zones_Portable

Other (please specify):

ITS_Work_Zones_OtherText

[2] No

[3=No response]

TRAVELER INFORMATION

39. Number of arterial centerline miles covered by Highway Advisory Radio (HAR): MilesHAR

40. Total number of permanent Dynamic Message Signs (DMS) deployed on arterials: NumberOfDMS

41. Does your agency use the DMS in the absence of incidents or special events? UseDMS

[1] Yes

Please describe: UseDMSDescribe

[2] No

[3=No response]

42. Does your agency have an agreement with a private vendor to push mobile alerts regarding incidents, roadway conditions, etc. to mobile media?

[1] Yes AgreementMobileAlerts

[2] No

[3=No response]

43. What methods are used to disseminate traveler information on arterials? (Check all that apply)

- | | | |
|---|--|--|
| 511 | method_traveler_511 | 1=Selected, 0=Not selected |
| Other (non-511) telephone systems | method_traveler_other_phone | |
| Email or alert | method_traveler_email | |
| Twitter | method_traveler_twitter | |
| Facebook | method_traveler_facebook | |
| App for mobile device such as tablet or smart phone | fmethod_traveler_app | |
| Dynamic Message Signs | method_traveler_dms | |
| Website | method_traveler_Web | |
| Highway Advisory Radio | method_traveler_har | |
| Other (please specify): | method_traveler_OtherText | |

44. Please indicate whether your agency reports any of the following information to the public. (Check all that apply)

- | | | |
|--|---|--|
| Roadway or lane blocking incidents and events on arterials | report_lane_blocking | 1=Selected, 0=Not selected |
| Work zone location and duration on arterials | report_work_zone | |
| Roadway weather observations on arterials | report_roadway_weather | |
| Freeway blocked or with other travel restrictions | report_freeway_blocked | |
| None of the above | report_none_above | |

45. Do you report arterial travel time data?

[1] Yes report_travel_times_methods

What arterial travel time data are reported? (Check all that apply) 1=Selected, 0=Not selected

Travel time by segment report_travel_times_segment

Travel time over selected route report_travel_times_route

Other (please specify): report_travel_times_OtherText

[2] No

[3=No response]

SYSTEM PERFORMANCE MANAGEMENT

46. Does your agency collect operations data to track arterial network system performance?

[1] Yes `collect_data_track_performance`

[2] No

[3=No response]

47. Does your agency have clearly stated and documented operational objectives and performance measures for the arterial system?

[1] Yes `clearly_stated_objectives`

Has your agency established targets for the performance measures?

[1] Yes `establish_targets_measures`

[2] No

[3=No response]

[2] No

[3=No response]

48. Does your agency use archived operations data to track arterial system performance?

[1] Yes `use_archive_perf`

What are the archived operations data used for? (Check all that apply)

1=Selected, 0=Not selected

Real-time Operations (e.g., used in real-time to adjust system operations)

`use_archive_perf_realtime`

Capital planning/analysis

`use_archive_perf_capital`

Operations planning/analysis

`use_archive_perf_operations`

Dissemination to the public

`use_archive_perf_dissemination`

Planning/analysis of work zone design

`use_archive_perf_planning`

Other (please specify):

`use_archive_perf_other_text`

[2] No

[3=No response]

49. Which of the following measures are used to report on the performance of the arterial system? (Check all that apply)

Travel time

`performance_travel_time`

1=Selected, 0=Not selected

Travel time reliability

`performance_travel_reliability`

Vehicles per lane per mile

`fperformance_vehicle_lane`

Vehicles per hour

`performance_vehicle_hour`

Person throughput per lane per hour

`performance_person_lane`

Person throughput per hour

`performance_person_hour`

Average auto occupancy

`performance_average`

Average queue length

`performance_average_queue`

Performance measures are not used

`performance_not_used`

Other (please specify):

`fperformance_otherText`

MAINTENANCE OF ARTERIAL MANAGEMENT ITS TECHNOLOGY

50. Does your agency utilize an asset management system to track infrastructure inventory and related maintenance and operations activity?

- [1] Yes asset_mgt_system
[2] No
[3=No response]

51. Does your agency have a preventive maintenance program for ITS devices?

- [1] Yes preventive_maint_its

How often are your ITS devices inspected and re-calibrated?

a. Loop detectors preventive_maint_loop

- [1] Less than once annually
[2] Once annually
[3] More than once annually
[4] Not regularly inspected and recalibrated
[5] Not Applicable
[6=No response]

b. Other Types of Detectors (radar, microwave, toll tag readers) preventive_maint_radar

- [1] Less than once annually
[2] Once annually
[3] More than once annually
[4] Not regularly inspected and recalibrated
[5] Not Applicable
[6=No response]

c. CCTV Cameras preventive_maint_cctv

- [1] Less than once annually
[2] Once annually
[3] More than once annually
[4] Not regularly inspected and recalibrated
[5] Not Applicable
[6=No response]

d. Other (please specify): preventive_maint_otherText

- preventive_maint_other
[1] Less than once annually
[2] Once annually
[3] More than once annually

- [2] No

[3=No response]

52. How are decisions for maintenance, repairs, and replacement of ITS devices made? (Check all that apply)

1=Selected, 0=Not selected

Reaction to failure in component or device

decisions_its_reaction

Planned program of routine and preventive maintenance

decisions_its_planned

Results of inspection and monitoring of conditions

decisions_its_inspection

Cost/ benefit analysis

decisions_its_cost

Estimated service life

decisions_its_estimated

Obsolescence (e.g. device becomes obsolete/out-of-date)

decisions_its_obsolescence

Other (please specify): decisions_its_otherText

53. Does your agency collect data on the overall health and maintenance of ITS devices and equipment?

[1] Yes `collect_data_health_its`

What sources of data are used? `1=Selected, 0=Not selected`

Inspections `collected_inspection`

Complaint calls `collected_complaints`

Real-time monitoring `collected_realtime`

Other (please specify): `collected_otherText`

For which of the following purposes does your agency use the data on equipment health and maintenance?
(Check all that apply) `1=Selected, 0=Not selected`

To make investment decisions `purpose_health_invest`

To monitor specified performance metrics `purpose_health_monitor_metrics`

To monitor specified performance trends `purpose_health_monitor_trends`

To conduct benefit-cost analysis `purpose_health_conduct`

To communicate to decision makers `purpose_health_communicate_decision`

To communicate to public `purpose_health_communicate_public`

Other (please specify): `purpose_health_otherText`

[2] No

[3=No response]

54. Does your agency regularly measure the performance of traffic signals?

[1] Yes `measure_signal_performance`

Please indicate the methods used to gather data: (check all that apply) `1=Selected, 0=Not selected`

Manual methods are used primarily (citizen complaints) `measure_signal_performance_manual`

Automated methods are used (travel time, cycle failure, queue length, speed) `measure_signal_performance_auto`

Percentage of the total number of signalized intersections that are monitored for operational performance:

`percent_signal_performance_monitored`

[2] No

[3=No response]

DEDICATED SHORT RANGE COMMUNICATIONS (DSRC) STANDARD

55. Is your agency familiar with Dedicated Short Range Communications (DSRC) technology?

[1] Yes `familiar_DSRC`

[2] No (go to Next Section)

[3=No response]

56. Does your agency currently use or have plans to use dedicated short range communications (DSRC) in operating any of its ITS infrastructure? `currently_use_plan_DSRC`

[1] Currently use DSRC

[2] Plan to use DSRC

[3] No plans to use DSRC (go to Next Section)

[4=No response]

57. Is your agency using or does it plan to use any DSRC-enabled technologies to support the deployment of the following:

1=Selected, 0=Not selected

	Currently Using	Plan to Use	No Plans to Use
Safety applications (e.g. intersection collision avoidance)	DSRC_safety_currently	DSRC_safety_plan	DSRC_safety_noplans
Mobility applications	DSRC_mobility_currently	DSRC_mobility_plan	DSRC_mobility_noplans
Tolling operations	DSRC_tolling_currently	DSRC_tolling_plan	DSRC_tolling_noplans
Commercial Vehicle Operations and regulation	DSRC_commercial_currently	DSRC_commercial_plan	DSRC_commercial_noplans

INTEGRATED CORRIDOR MANAGEMENT

58. Have you identified corridor(s) for the purpose of integrating operations across multiple transportation facilities (including freeways, major arterials, and public transit networks) in order to actively manage travel demand and capacity in the corridor as a whole?

[1] Yes icm_identified_corridors

How many corridors have been identified for integrated transportation operations? icm_identified_number_corridors

- [1] 1 corridor identified
- [2] 2 corridors identified
- [3] 3 or more corridors identified
- [4=No response]

[2] No (go to Next Section)

[3=No response]

59. The next set of questions all pertain specifically to the corridor you identified above. If you identified more than one corridor, please tell us about the corridor where the greatest level of coordination is taking place. In your responses, please do NOT include coordination efforts that are occurring outside the specific corridor you have identified.

Please name the key facilities that comprise the corridor (please be as specific as possible):

- a. Freeway(s) (e.g., US-75): icm_name_freeway
- b. Key Arterial(s) (e.g., Greenville Avenue, US-75 Frontage Roads): icm_name_arterial
- c. Public Transit Services (e.g., DART Red/Orange Light Rail Line, MTS Express Bus): icm_name_transit
- d. Other (e.g., freight, rail, bicycle, pedestrian): icm_name_other

60. Approximately how long is the corridor? icm_length

- [1] Less than 10 miles
- [2] 11-20 miles
- [3] 21-30 miles
- [4] 31-50 miles
- [5] More than 50 miles
- [6=No response]

61. For each agency type listed below, please indicate whether you are currently coordinating or plan to coordinate integrated transportation operations in the corridor specified above. If yes, please provide the name of the agencies in the corridor with which your agency is coordinating (referred to as the "coordinating agencies" in this survey). Please do NOT include coordination efforts that are occurring outside the corridor. For each agency type, a-d, select only one response.

Currently Coordinate in Corridor	Plan to Coordinate in Corridor	No Plans to Coordinate in Corridor	Not Applicable	Agency Names
a. Freeway agencies: <i>icm_currently_coord_freeway</i>	<i>icm_plan_coord_freeway</i>	<i>icm_no_plans_coord_freeway</i>	<i>icm_coord_not_applicable_freeway</i>	<i>icm_coord_freeway_name</i>
b. Arterial agencies: <i>icm_currently_coord_arterial</i>	<i>icm_plan_coord_arterial</i>	<i>icm_no_plans_coord_arterial</i>	<i>icm_coord_not_applicable_arterial</i>	<i>icm_coord_arterial_name</i>
c. Transit agencies: <i>icm_currently_coord_transit</i>	<i>icm_plan_coord_transit</i>	<i>icm_no_plans_coord_transit</i>	<i>icm_coord_not_applicable_transit</i>	<i>icm_coord_transit_name</i>
d. Other agencies (e.g., MPOs, Toll Authorities, Port Operators): <i>icm_currently_coord_other</i>	<i>icm_plan_coord_other</i>	<i>icm_no_plans_coord_other</i>	<i>icm_coord_not_applicable_other</i>	<i>icm_coord_other_name</i>

1=Selected, 0=Not selected

62. a. Has your agency signed any formal multi-jurisdictional or multi-agency Agreements, Memorandums of Understanding (MOUs), or other instruments with these coordinating agencies regarding the integrated operations of the corridor?

- [1] Yes, already signed *icm_signed_agreements*
 - [1] One instrument signed *icm_yes_signed_agreements*
 - [2] Multiple instruments signed
- [3=No response]
- [2] Agreements, MOUs, or instruments are being developed (plan to sign)
- [3] No, there is no plan to develop or sign Agreements, MOUs, or other instruments
- [4] Do not know
- [5=No response]

icm_describe_coverage_agreement

IF SIGNED OR PLAN TO SIGN: Please describe what is covered by the Agreements, MOUs, or instruments:

63. How are data about conditions in the corridor shared among the coordinating agencies? (Check all that apply)

1=Selected, 0=Not selected

Manual data sharing: Corridor stakeholders call, radio, fax or email relevant corridor data to one another *icm_data_cond_manual*

Automated sharing of real-time video data (video servers/switcher communicate directly to one another in real time to share video images through video protocols) *icm_data_cond_auto_video*

Automated sharing of real-time data (computers, database servers communicate directly to one another to transmit data automatically (in real time) via center-to-center protocols) *icm_data_cond_auto*

In general is this sharing of real-time data active or passive? (select one) *icm_auto_active_passive*

- [1] Active (your agency receives alerts; data is pushed to your agency)
- [2] Passive (your agency must access the data; no alerts are received)
- [3=No response]

Information Clearing House/Information Exchange Network (IEN) between corridor networks/agencies (a software system that collects, aggregates, warehouses and distributes traffic flow/transit performance data and incident/construction data for the corridor. All corridor agencies can access the agency/network information) *icm_data_cond_ein*

In general is this sharing of data active or passive? (select one) *icm_ein_auto_passive*

- [1] Active (your agency receives alerts; data is pushed to your agency)
- [2] Passive (your agency must access the data; no alerts are received)
- [3=No response]

Other (please specify): *icm_data_cond_other_text*

64. a. We want to understand if data is sent and/or received among the coordination agencies in the corridor. For each type of data below, please indicate if your agency receives this data from the other coordinating agencies in the corridor, collects and sends this data to the other coordinating agencies, collects but does not send this data to the other coordinating agencies, or does not collect this data. For each item, a-i, check all that apply.

1=Selected, 0=Not selected

My agency Receives	My agency Collects and Sends	My agency Collects but does not send	My agency does not collect	Not Applicable
a. Freeway incident data				
icm_receives_freeway_incident	icm_sends_freeway_incident	icm_collects_not_share_freeway_incident	icm_not_collect_freeway_incident	icm_not_applicable_freeway_incident
b. Freeway traffic volumes, speeds, or travel times				
icm_receives_freeway_traffic	icm_sends_freeway_traffic	icm_collects_not_share_freeway_traffic	icm_not_collect_freeway_traffic	icm_not_applicable_freeway_traffic
c. Arterial incident data				
icm_receives_arterial_incident	icm_sends_arterial_incident	icm_collects_not_share_arterial_incident	icm_not_collect_arterial_incident	icm_not_applicable_arterial_incident
d. Arterial traffic volumes, speeds, or travel times				
icm_receives_arterial_traffic	icm_sends_arterial_traffic	icm_collects_not_share_arterial_traffic	icm_not_collect_arterial_traffic	icm_not_applicable_arterial_traffic
e. Transit incident data				
icm_receives_transit_incident	icm_sends_transit_incident	icm_collects_not_share_transit_incident	icm_not_collect_transit_incident	icm_not_applicable_transit_incident
f. Transit vehicle location data (AVL)				
icm_receives_transit_location	icm_sends_transit_location	icm_collects_not_share_transit_location	icm_not_collect_transit_location	icm_not_applicable_transit_location
g. Transit schedule adherence data				
icm_receives_transit_schedule	icm_sends_transit_schedule	icm_collects_not_share_transit_schedule	icm_not_collect_transit_schedule	icm_not_applicable_transit_schedule
h. Transit passenger count data				
icm_receives_transit_passenger	icm_sends_transit_passenger	icm_collects_not_share_transit_passenger	icm_not_collect_transit_passenger	icm_not_applicable_transit_passenger
i. Other data (please describe):				
icm_receives_other	icm_send_rec_other_text icm_sends_other	icm_collects_not_share_other	icm_not_collect_other	icm_not_applicable_other

b. For each type of data that is sent or received among coordinating agencies (as indicated in part a above), please indicate with what level of frequency the data is shared. For each item, a-i, select only one response.

1=Selected, 0=Not selected

0-5 Minutes	6-15 Minutes	16-59 Minutes	60+ Minutes
a. Freeway incident data			
icm_freq_5_freeway_incident	icm_freq_15_freeway_incident	icm_freq_59_freeway_incident	icm_freq_60_freeway_incident
b. Freeway traffic volumes, speeds, or travel times			
icm_freq_5_freeway_traffic	icm_freq_15_freeway_traffic	icm_freq_59_freeway_traffic	icm_freq_60_freeway_traffic
c. Arterial incident data			
icm_freq_5_arterial_incident	icm_freq_15_arterial_incident	icm_freq_59_arterial_incident	icm_freq_60_arterial_incident
d. Arterial traffic volumes, speeds, or travel times			
icm_freq_5_arterial_traffic	icm_freq_15_arterial_traffic	icm_freq_59_arterial_traffic	icm_freq_60_arterial_traffic
e. Transit incident data			
icm_freq_5_transit_incident	icm_freq_15_transit_incident	icm_freq_59_transit_incident	icm_freq_60_transit_incident
f. Transit vehicle location data (AVL)			
icm_freq_5_transit_location	icm_freq_15_transit_location	icm_freq_59_transit_location	icm_freq_60_transit_location
g. Transit schedule adherence data			
icm_freq_5_transit_schedule	icm_freq_15_transit_schedule	icm_freq_59_transit_schedule	icm_freq_60_transit_schedule
h. Transit passenger count data			
icm_freq_5_transit_passenger	icm_freq_15_transit_passenger	icm_freq_59_transit_passenger	icm_freq_60_transit_passenger
i. Other data (described above):			
icm_freq_5_other	icm_freq_15_other	icm_freq_59_other	icm_freq_60_other

65. For each of the following types of operations strategies please indicate whether your agency is currently coordinating or plans to coordinate operations with other corridor agencies across transportation facilities (i.e., freeway, arterial and transit) in order to achieve shared operations objectives. For each item, a-n, select only one response.

For example, if traffic signal timing is coordinated across facilities, then signal timing on arterials is adjusted based on information about both freeway and arterial conditions.

1=Selected, 0=Not selected	Currently Coordinate Across Facilities	Plan to Coordinate Across Facilities	No Plans to Coordinate	Not Applicable
a. Traffic incident management	icm_coord_incident_currently	icm_coord_incident_plan	icm_coord_incident_no_plans	icm_coord_incident_na
b. Freeway ramp metering	icm_coord_ramp_currently	icm_coord_ramp_plan	icm_coord_ramp_no_plans	icm_coord_ramp_na
c. Emergency management (e.g., evacuations)	icm_coord_evac_currently	icm_coord_evac_plan	icm_coord_evac_no_plans	icm_coord_evac_na
d. Cross jurisdictional traffic signal coordination	icm_coord_cross_currently	icm_coord_cross_plan	icm_coord_cross_no_plans	icm_coord_cross_na
e. Traffic responsive signal timing/coordination	icm_coord_resp_currently	icm_coord_resp_plan	icm_coord_resp_no_plans	icm_coord_resp_na
f. Transit signal priority	icm_coord_priority_currently	icm_coord_priority_plan	icm_coord_priority_no_plans	icm_coord_priority_na
g. Physical bus priority (e.g. bus-on-shoulder)	icm_coord_bus_currently	icm_coord_bus_plan	icm_coord_bus_no_plans	icm_coord_bus_na
h. Demand-sensitive transit capacity increases (e.g., add cars/routes)	icm_coord_demand_currently	icm_coord_demand_plan	icm_coord_demand_no_plans	icm_coord_demand_na
i. Real-time parking availability information (e.g., at transit stations)	icm_coord_realtime_currently	icm_coord_realtime_plan	icm_coord_realtime_no_plans	icm_coord_realtime_na
j. Road weather management	icm_coord_weather_currently	icm_coord_weather_plan	icm_coord_weather_no_plans	icm_coord_weather_na
k. Planned special events	icm_coord_special_currently	icm_coord_special_plan	icm_coord_special_no_plans	icm_coord_special_na
l. Real-time traveler information delivered pre-trip	icm_coord_pretip_currently	icm_coord_pretip_plan	icm_coord_pretip_no_plans	icm_coord_pretip_na
m. Real-time information delivered en-route (e.g., Dynamic Message Signs)	icm_coord_enroute_currently	icm_coord_enroute_plan	icm_coord_enroute_no_plans	icm_coord_enroute_na
n. Electronic multimodal payment systems	icm_coord_multimodal_currently	icm_coord_multimodal_plan	icm_coord_multimodal_no_plan	icm_coord_multimodal_na
o. Other (please specify):	icm_coord_otherText	icm_coord_other_plan	icm_coord_other_no_plans	icm_coord_other_na

66. How would you describe the institutional coordination among the corridor stakeholders? Please select one response from the following scale, which ranges from less formal institutional coordination (1) to more formal institutional coordination (5).

- [1] 1 (Less Formal) - Ad hoc coordination; no regular meetings; corridor stakeholders address near-term issues only
- [2] 2 - Informal working groups; regular meetings among corridor stakeholders
- [3] 3 - Formally established working groups; assigned responsibilities for Integrated Corridor Management
- [4] 4 - Funded staff person(s) and well defined responsibilities for Integrated Corridor Management
- [5] 5 (More Formal) - Legal entity with dedicated resources and a governing board

[6=No response]

[icm_inst_coord](#)

67. Have the coordinating agencies in the corridor developed any of the following Integrated Corridor Management (ICM) documents for the corridor? For each item, a-d, select only one response.

1=Selected, 0=Not selected	Document Completed	Currently Developing	Plan to Develop Next 2-3 Years	No Immediate Plans to Develop	Do Not Know
a. ICM Concept of Operations (ConOps)	icm_ICM_doc_ConOps_Complete	icm_ICM_doc_ConOps_Developing	icm_ICM_doc_ConOps_Plans	icm_ICM_doc_ConOps_NoPlan	icm_ICM_doc_ConOps_DontKnow
b. ICM System Requirements Specifications (SyRS)	icm_ICM_doc_SyRS_Complete	icm_ICM_doc_SyRS_Developing	icm_ICM_doc_SyRS_Plans	icm_ICM_doc_SyRS_NoPlan	icm_ICM_doc_SyRS_DontKnow
c. ICM Analysis Modeling and Simulation (AMS) Plan	icm_ICM_doc_AMS_Complete	icm_ICM_doc_AMS_Developing	icm_ICM_doc_AMS_Plans	icm_ICM_doc_AMS_NoPlan	icm_ICM_doc_AMS_DontKnow
d. ICM Implementation Plan	icm_ICM_doc_Plan_Complete	icm_ICM_doc_Plan_Developing	icm_ICM_doc_Plan_Plans	icm_ICM_doc_Plan_NoPlan	icm_ICM_doc_Plan_DontKnow

68. Have the coordinating agencies in the corridor developed a documented set of response plans or strategies, in any level of detail, that are based on shared operational objectives and that are designed to optimize performance in the corridor as a whole (e.g., across transportation facilities/modes) during conditions of both recurring and non-recurring congestion? In your response, please do not include response plans developed for emergency situations, such as evacuations.

- [1] Response plans or strategies have been developed for day-to-day operations during conditions of both recurring and non-recurring congestion
- [2] Response plans or strategies are currently being developed
- [3] There are plans to develop response plans or strategies
- [4] There are no plans to develop response plans or strategies (skip to last question for additional comments)
- [5] Do not know

icm_response_plans

[6=No response]

69. Has your agency deployed or does it plan to deploy a Decision Support System (DSS) to assist in the integrated operations of the Corridor?

NOTE: A DSS is a subsystem that utilizes measurements of real-time corridor conditions to recommend coordinated response plans to all corridor agencies. The DSS continues to update its recommendation based on corridor measurements showing changing corridor conditions.

- [1] Yes, deployed
- [2] Plan to deploy
- [3] No (no plans to deploy)
- [4] Do not know

icm_decision_support_system

[5=No response]

70. Have the coordinating agencies identified corridor-level/multimodal performance measures (e.g., person throughput, average travel time, average travel speed, etc.) that will be used to measure the effectiveness of the strategies and response plans that are implemented in the corridor?

- [1] Yes, corridor-level/multimodal performance measures identified
- [2] Agency plans to identify corridor-level/multimodal performance measures
- [3] No plans to identify corridor-level/multimodal performance measures
- [4] Do not know

icm_identified_perf_measures

[5=No response]

71. Additional comments about the integration and coordination of operations in the corridor:

icm_additional_comments

ITS FUNDING

Screening question: Do you have a separate budget for ITS? its_budget 1=Yes, 2=No, 3=No response

72a. Please indicate whether you track the budget separately for each of the following categories:

	1=Selected, 0=Not selected
ITS Planning and Systems Engineering	its_budget_planning
Device Installation	its_budget_device
ITS Operations	its_budget_operations
ITS Maintenance and Inspection	its_budget_maintenance
Repair of ITS Technologies	its_budget_repair
Do not track categories separately (go to next section)	its_budget_do_not_track
Other (please specify):	its_budget_otherText

72b. Please indicate the percentage of budget allocated to each category that is separately tracked:

	% of Budget Allocated
ITS Planning and Systems Engineering	its_budget_planning_percent
Device Installation	its_budget_device_percent
ITS Operations	its_budget_operations_percent
ITS Maintenance and Inspection	its_budget_maintenance_percent
Repair of ITS Technologies	its_budget_repair_percent
Other (specified above)	its_budget_other_percent

ITS PURCHASE DECISION-MAKING

73. Please rate the importance of each of the following factors to your agency's decision to purchase ITS technologies: (1 = Not at All Important; 2 = Not Very Important; 3 = Neutral; 4 = Somewhat Important; 5 = Very Important) Please check only one rating box per row. 1=Selected, 0=Not selected

	Not at All Important	Not Very Important	Neutral	Somewhat Important	Very Important
Cost of initial deployment	Cost_Initial_NotAtAll	Cost_Initial_NotVery	Cost_Initial_Neutral	Cost_Initial_Somewhat	Cost_Initial_Very
Cost to maintain and repair	Cost_Maint_NotAtAll	Cost_Maint_NotVery	Cost_Maint_Neutral	Cost_Maint_Somewhat	Cost_Maint_Very
Public/constituent involvement	Public_NotAtAll	Public_NotVery	Public_Neutral	Public_Somewhat	Public_Very
Funding/grant availability	Funding_NotAtAll	Funding_NotVery	Funding_Neutral	Funding_Somewhat	Funding_Very
Mobility benefits (e.g., to address congestion)	Mobility_NotAtAll	Mobility_NotVery	Mobility_Neutral	Mobility_Somewhat	Mobility_Very
Safety benefits	Safety_NotAtAll	Safety_NotVery	Safety_Neutral	Safety_Somewhat	Safety_Very
Environmental benefits	Environmental_NotAtAll	Environmental_NotVery	Environmental_Neutral	Environmental_Somewhat	Environmental_Very
Integration with other agencies	Int_agencies_NotAtAll	Int_agencies_NotVery	Int_agencies_Neutral	Int_agencies_Somewhat	Int_agencies_Very
Integration with your current technologies	Int_tech_NotAtAll	Int_tech_NotVery	Int_tech_Neutral	Int_tech_Somewhat	Int_tech_Very
Already used by other agencies	Already_NotAtAll	Already_NotVery	Already_Neutral	Already_Somewhat	Already_Very
Other (please specify):	Other_Factor_Text	Other_NotVery	Other_Neutral	Other_Somewhat	Other_Very

74. Does your agency have any plans to invest in new ITS technology or to expand current ITS coverage in 2014 through 2016?

[1] Yes [invest_its](#)

Check all that apply: [1=Selected, 0=Not selected](#)

Invest in new ITS [invest_its_new](#)

Expand current ITS coverage [invest_its_expand](#)

[2] No

[3=No response]

74b. Please describe new ITS (if applicable): [invest_its_describe](#)

BENEFITS OF ARTERIAL MANAGEMENT TECHNOLOGIES

75. Based on your agency experience, please rate the benefits of the following ITS technologies. Select a rating from 1 (No Benefit) to 5 (Significant Benefit) or No Experience in each row. Please check only one rating box per row.

[1=Selected, 0=Not selected](#)

No Benefit (1)	(2)	Moderate Benefit (3)	(4)	Major Benefit (5)	No Experience
Traffic Sensors Traffic_Sensors_1	Traffic_Sensors_2	Traffic_Sensors_3	Traffic_Sensors_4	Traffic_Sensors_5	Traffic_Sensors_NO
Vehicle Probes Vehicle_Probes_1	Vehicle_Probes_2	Vehicle_Probes_3	Vehicle_Probes_4	Vehicle_Probes_5	Vehicle_Probes_NO
Adaptive Traffic Signal Control Adaptive_1	Adaptive_2	Adaptive_3	Adaptive_4	Adaptive_5	Adaptive_NO
Cameras Cameras_1	Cameras_2	Cameras_3	Cameras_4	Cameras_5	Cameras_NO
Lane Management Lane_Management_1	Lane_Management_2	Lane_Management_3	Lane_Management_4	Lane_Management_5	Lane_Management_NO
Traveler Information Traveler_Information_1	Traveler_Information_2	Traveler_Information_3	Traveler_Information_4	Traveler_Information_5	Traveler_Information_NO
Automated Enforcement Automated_Enforcement_1	Automated_Enforcement_2	Automated_Enforcement_3	Automated_Enforcement_4	Automated_Enforcement_5	Automated_Enforcement_NO
Archived Data Archived_Data_1	Archived_Data_2	Archived_Data_3	Archived_Data_4	Archived_Data_5	Archived_Data_NO
Environmental Sensor Stations Environmental_Sensor_1	Environmental_Sensor_2	Environmental_Sensor_3	Environmental_Sensor_4	Environmental_Sensor_5	Environmental_Sensor_NO

PLANNING FOR OPERATIONS

76. Is there a long range ITS plan to guide project/program selection?

[1] Yes [long_range_its_plan](#)

[2] No

[3=No response]

77. Does your agency routinely utilize systems engineering to identify agency needs and requirements when implementing/procuring ITS?

[1] Yes [routinely_utilize_system_eng](#)

[2] No

[3=No response]

78. Does your agency rely on sample or model procurement documents provided by FHWA (e.g., for ASCT)?

[1] Yes [rely_sample_model_procurement](#)

[2] No

[3=No response]

79. Is your agency part of the Regional ITS Architecture used to support regional transportation planning?

[1] Yes [regional_its_architecture](#)

[2] No

[3=No response]

80. Is your agency included in a Regional Concept for Transportation Operations?

[1] Yes [regional_concept](#)

[2] No

[3=No response]

81. Does your agency provide arterial travel time, speed and condition information in real-time (as these events occur) to the following types of agencies? (Check all that apply)

1=Yes, 2=No, 3=No response

Agencies involved in incident management [provide_arterial_incident](#)

Freeway Management agencies [provide_arterial_freeway](#)

Arterial Management agencies [provide_arterial_arterial](#)

Public Transit agencies [provide_arterial_transit](#)

82. Select all that apply concerning your agency's participation in regional coordination activities:

1=Selected, 0=Not selected

No regular interagency meetings [participate_regional_no](#)

Regular meetings with other agencies to coordinate planning [participate_regional_meet_plan](#)

Regular meetings to coordinate operations [participate_regional_meet_operate](#)

Formal agreement on coordination and data sharing with other agencies [participate_regional_agree_data](#)

Formal agreement to integrate operations with other agencies [participate_regional_agree_operate](#)

ADDITIONAL COMMENTS

83. Please use the space below to provide any additional comments regarding your agency's deployment, operations or maintenance of ITS. (Please be as specific as possible when commenting on particular ITS technologies.)

[additional_comments](#)