

# 2013 Transit Management Survey

## AGENCY CHARACTERISTICS

1. a. County where agency headquarters is located:

1. b. Other counties in service area:

## TRANSIT VEHICLE CHARACTERISTICS

2. Total number of vehicles used in revenue service:

Fixed Route Bus:

Heavy or Rapid Rail:

Light Rail:

Paratransit:

Demand Responsive:

Commuter Rail:

Ferry Boat:

3. Total number of vehicles equipped with Automated Vehicle Location (AVL):

Fixed Route Bus:

Heavy or Rapid Rail:

Light Rail:

Paratransit:

Demand Responsive:

Commuter Rail:

Ferry Boat:

4. Total number of vehicles with real-time monitoring of vehicle components:

Fixed Route Bus:

Heavy or Rapid Rail:

Light Rail:

Paratransit:

Demand Responsive:

Commuter Rail:

Ferry Boat:

5. Total number of vehicles where automated dispatching or control software is available:

Fixed Route Bus:

Heavy or Rapid Rail:

Light Rail:

Paratransit:

Demand Responsive:

Commuter Rail:

Ferry Boat:

**6. Total number of vehicles equipped with mobile data terminals:**

- Fixed Route Bus:
- Heavy or Rapid Rail:
- Light Rail:
- Paratransit:
- Demand Responsive:
- Commuter Rail:
- Ferry Boat:

**7. Total number of vehicles that have Automatic Passenger Counters: (Do not include registering fareboxes)**

- Fixed Route Bus:
- Heavy or Rapid Rail:
- Light Rail:
- Paratransit:
- Demand Responsive:
- Commuter Rail:
- Ferry Boat:

## TRANSIT SIGNAL PRIORITY/PREEMPTION

**8. Number of Fixed Route Buses that have traffic signal priority capability:**

**9. Number of Fixed Route Buses that have traffic signal pre-emption capability:**

**10. Number of Light Rail vehicles that have traffic signal priority capability:**

**11. Number of Light Rail vehicles that have traffic signal pre-emption capability:**

**12. Number of Demand Responsive vehicles that have traffic signal priority capability:**

**13. Number of Paratransit vehicles that have traffic signal priority capability:**

## RAMP METER SIGNAL PRIORITY

**14. Number of Fixed Route Buses with ramp meter signal priority capability:**

**15. Number of Demand Responsive vehicles with ramp meter signal priority capability:**

**16. Number of Paratransit vehicles with ramp meter signal priority capability:**

## VEHICLES OPERATED AS PROBES

17. Does your agency operate any vehicles as probes to collect travel time, speed or road condition information?

Yes

No (go to Next Section)

18. Total number of Fixed Route Buses operated as vehicle probes to collect travel time, speed, and conditions on FREEWAYS:

19. Total number of Fixed Route Buses operated on vehicle probes to collect travel time, speed, and conditions on ARTERIALS:

20. Total number of Ferry Boats operated as vehicle probes to collect travel time, speed, and conditions on waterways:

21. Does your agency share vehicle probe data with any other agency?

Yes

Indicate which agencies: (Check all that apply)

Freeway Management

Arterial Management

Other Transit

Other (please specify):

No

## ORGANIZED REGIONAL INCIDENT MANAGEMENT PROGRAM

22. Do your agency's operators or dispatchers report traffic incidents (e.g., stalled vehicles, crashes) to other agencies involved?

Yes

What reporting tools and methods are used to report traffic incidents? (Check all that apply)

Telephone or radio call to traffic incident management agency

Direct entry in automated reporting system

Other (please specify):

No

## PLANNING FOR EMERGENCIES AND PLANNED SPECIAL EVENTS

23. Does your agency participate in multi-agency regional planning for planned special events?

Yes

No

24. Does your agency participate in multi-agency regional planning for emergency evacuations (e.g., due to hurricane, other natural or man-made disaster)?

Yes

No

## ELECTRONIC FARE PAYMENT

**25. Number of vehicles / stations equipped with Magnetic Stripe Readers:**

- Fixed Route Buses:
- Heavy or Rapid Rail Stations:
- Light-Rail Stations:
- Demand Responsive Vehicles:
- Paratransit Vehicles:
- Commuter Rail Stations:
- Ferry Boat Landings:

**26. Number of vehicle / stations equipped with Smart Card Readers (with embedded computer chip):**

- Fixed Route Buses:
- Heavy or Rapid Rail Stations:
- Light-Rail Stations:
- Demand Responsive Vehicles:
- Paratransit Vehicles:
- Commuter Rail Stations:
- Ferry Boat Landings:

**27. Does your agency electronically store collected fare payment data for use in route and service planning?**

- Yes
- No

**28. Please indicate with which modes your agency's electronic fare payment system is integrated: (Check all that apply)**

- Bus (within my agency)
- Commuter Rail (within my agency)
- Ferry (within my agency)
- Vans (within my agency)
- Other transit agencies
- Parking payment systems
- Other toll collection systems in this metropolitan area (e.g., road or bridge tolls)
- Electronic fare payment is not integrated.
- We do not have fare payment.

**29. Please indicate the types of electronic fare payment system operated by your agency: (Check all that apply)**

- Closed loop, proprietary system
- Open loop, bank card system
- Other (please specify):

## TRAVELER INFORMATION OR TRIP PLANNING

**30. Has your agency deployed a web-based trip planner to assist travelers in making trip related decisions?**

Yes

No

**30-a. If you answered Yes to question 30, please answer the following questions about your agency's web-based trip planner:**

Does this tool incorporate multiple transit systems?

Yes

No

Does this tool incorporate modes other than transit (e.g., walking, biking, auto)?

Yes

No

Does this tool incorporate real-time traffic condition information??

Yes

No

**31. Does your agency have an agreement with a private vendor to distribute real-time transit information to travelers?**

Yes

No

**Please indicate the methods used to disseminate (#32) \*Transit Routes, Schedules, and Fare Information\* and / or (#33) \*Real-time Transit Schedule Adherence or Arrival and Departure Times\* to the public: (Check all that apply)**

**32. Transit Routes, Schedules, and Fare Information**

Website

Email

Twitter

Facebook

App for mobile device such as smart phone or tablet

511

Other (non-511) telephone systems  
(including customer service centers)

Dynamic Message Signs In-station

Dynamic Message Signs In-vehicle

Dynamic Message Signs At stop

Kiosks

Other (please specify):

**33. Real-time Transit Schedule Adherence or Arrival and Departure Times**

- Website
- Email
- Twitter
- Facebook
- App for mobile device such as smart phone or tablet
- 511
- Other (non-511) telephone systems (including customer service centers)
- Dynamic Message Signs In-station
- Dynamic Message Signs In-vehicle
- Dynamic Message Signs At stop
- Kiosks
- Other (please specify):

**34. Please indicate the total number of the following facilities:**

- Bus Stops
- Rail Stations
- Bus Stations
- Multi-modal Stations or Transfer Stations

**35. Please indicate the total number of your agency’s facilities where dynamic traveler information (e.g., schedule and system information) is electronically displayed to the public or delivered by SMS or text:**

	Publicly Displayed	Delivered by SMS or Text
Bus Stops		
Rail Stations		
Bus Stations		
Multi-modal Stations or Transfer Centers		

**36. Total number of fixed route buses that electronically display automated or dynamic traveler information (e.g., schedule and system information) to the public:**

**SAFETY AND SECURITY**

**37. Total number of fixed route buses with audio or video surveillance to enhance security:**

**38. Total number of facilities with audio or video surveillance to enhance security:**

- Bus Stops
- Rail Stations
- Bus Depots
- Multi-modal Stations or Transfer Centers

**39. Total number of vehicles that can be remotely shut down via wireless communication:**

Fixed Route Bus

Heavy or Rapid Rail

**40. Does your agency use advanced video technologies to re-create crashes for accident review?**

Yes

No

## TRANSPORTATION DEMAND MANAGEMENT

**41. Does your agency use data from technologies such as AVL/CAD systems and automatic passenger counter systems, to assist in planning?**

Yes

No

**42. Does your agency employ automated vehicle location, combined with dispatching and reservation technologies to provide flexible routing and scheduling?**

Yes

No

**43. Does your agency employ vehicle monitoring and communication technologies to facilitate the coordination of passenger transfers between vehicles or between transit systems (e.g., connection protection)?**

Yes

No

**44. Does your agency provide ride sharing and carpool matching services?**

Yes

No

**45. Does your agency operate a transportation management travel coordination center and/or participate in a brokerage service that coordinates travel requests or performs vehicle dispatching, or billing for multiple agencies (e.g., social service agencies, Health and Human Services, other transit agencies)?**

Yes, operates a transportation management travel coordination center

Which of the following functions does this center perform? (Check all that apply)

Coordinates travel information

Performs vehicle dispatching

Performs billing

Other (please specify):

Yes, participates in a brokerage service

No

## INTEGRATED CORRIDOR MANAGEMENT

**46. 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?**

Yes

How many corridors have been identified for integrated transportation operations?

- 1 corridor identified
- 2 corridors identified
- 3 or more corridors identified

No (go to Next Section)

**47. 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):
- b. Key Arterial(s) (e.g., Greenville Avenue, US-75 Frontage Roads):
- c. Public Transit Services (e.g., DART Red/Orange Light Rail Line, MTS Express Bus):
- d. Other (e.g., freight, rail, bicycle, pedestrian):

**48. Approximately how long is the corridor?**

- Less than 10 miles
- 11-20 miles
- 21-30 miles
- 31-50 miles
- More than 50 miles

**49. 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
Freeway agencies:					
Arterial agencies:					
Transit agencies:					
Other agencies (e.g., MPOs, Toll Authorities, Port Operators):					



**50. 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?**

Yes, already signed

One instrument signed

Multiple instruments signed

No, but agreements, MOUs, or instruments are being developed (plan to sign)

No, there is no plan to develop or sign Agreements, MOUs, or other instruments

Do not know

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

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

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

**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)

**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)

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

Active (your agency receives alerts; data is pushed to your agency)

Passive (your agency must access the data; no alerts are received)

**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)

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

Active (your agency receives alerts; data is pushed to your agency)

Passive (your agency must access the data; no alerts are received)

**Other (please specify):**

52. 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.

	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					
b-Freeway traffic volumes, speeds, or travel times					
c-Arterial incident data					
d-Arterial traffic volumes, speeds, or travel times					
e-Transit incident data					
f-Transit vehicle location data (AVL)					
g-Transit schedule adherence data					
h-Transit passenger count data					
i-Other data (please describe below):					

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.

	0-5 Minutes	6-15 Minutes	16-59 Minutes	60+ Minutes
a-Freeway incident data				
b-Freeway traffic volumes, speeds, or travel times				
c-Arterial incident data				
d-Arterial traffic volumes, speeds, or travel times				
e-Transit incident data				
f-Transit vehicle location data (AVL)				
g-Transit schedule adherence data				
h-Transit passenger count data				
i-Other data (described above):				

**53. 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.

	Currently Coordinate Across Facilities	Plan to Coordinate Across Facilities	No Plans to Coordinate	Not Applicable
a-Traffic incident management				
b-Freeway ramp metering				
c-Emergency management (e.g., evacuations)				
d-Cross jurisdictional traffic signal coordination				
e-Traffic responsive signal timing/coordination				
f-Transit signal priority				
g-Physical bus priority (e.g. bus-on-shoulder)				
h-Demand-sensitive transit capacity increases (e.g., add cars/routes)				
i-Real-time parking availability information (e.g., at transit stations)				
j-Road weather management				
k-Planned special events				
l-Real-time traveler information delivered pre-trip				
m-Real-time information delivered en-route (e.g., Dynamic Message Signs)				
n-Other data (please describe below):				

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

55. 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.

	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)					
b- ICM System Requirements Specifications (SyRS)					
c- ICM Analysis Modeling and Simulation (AMS) Plan					
d- ICM Implementation Plan					

56. 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.

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

57. 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.*

- Yes, deployed
- Plan to deploy
- No (no plans to deploy)
- Do not know

58. 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?

- Yes, corridor-level/multimodal performance measures identified
- Agency plans to identify corridor-level/multimodal performance measures
- No plans to identify corridor-level/multimodal performance measures
- Do not know

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

## DATA COLLECTION AND ARCHIVING

**60. Does your agency have an archived data management system?**

Yes

No

**61. What information does your agency collect/archive in real time? (Check all that apply)**

- Vehicle time and location
- Vehicle diagnostics and health
- Passenger count
- Trip itinerary planning records
- Passenger information
- Vehicle monitoring status
- Road surface conditions
- Emergency vehicle signal preemption events
- Transit vehicle signal priority events
- Weather conditions (e.g., snow, fog, rain)
- Incidents
- Impact of work zones on transit operations
- Do not collect/archive data in real time
- Other (please specify):

**62. What are the data used for? (Check all that apply)**

- Operation planning/analysis
- Construction impact determination
- Capital planning/analysis
- Work zone planning/analysis
- Incident detection algorithm development
- Roadway impact analysis
- Accident prediction models
- Dissemination to the public
- Traffic management
- Measurement of performance
- Safety analysis
- Other (please specify):

**63. Are any data provided to third parties so they can create transit traveler information applications?**

Yes

Check all that apply:

- My agency has developed data sharing boilerplate agreements
- My agency places restrictions on the data provided outside the agency (please describe below in 63a)
- Applications have been developed by third party application developers (please describe below in 63b)

No (go to Next Section)

**63a. Please describe any restrictions (if applicable) indicated in question 63:**

**63b. Please describe any applications (if applicable) indicated in question 63:**

## ITS STANDARDS

64. Please check any of the following transit-related ITS standards implemented by your agency: (Check all that apply)

- Contactless Fare Media System Standard (CFMS)
- Traffic Management Data Dictionary (TMDD)
- Message Sets for External Traffic Management Center Communications
- Standards for Transit Communications Interface Profiles APTA TCIP-S-001 3.0.0
- Standard for Traffic Incident Management Message Sets for Use by Emergency Management Centers IEEE 1512.1-2006
- Standard for the Interface Between the Rail Subsystem and the Highway Subsystem at a Highway Rail Intersection IEEE 1570-2002
- Serial Data Communications Between Microcomputer Systems in Heavy-Duty Vehicle Applications SAE J1708
- Standard for ATIS Message Set Delivered Over Reduced Bandwidth Media SAE J2369
- ITS In-Vehicle Message Priority SAE J2395
- My agency has not implemented any of these standards

## DEDICATED SHORT RANGE COMMUNICATIONS (DSRC) STANDARD

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

- Yes
- No (go to Next Section)

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

- Currently use DSRC
- Plan to use DSRC
- No plans to use DSRC (go to Next Section)

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

	Currently Using	Plan to Use	No Plans to Use
Safety applications (e.g. intersection collision avoidance)			
Mobility applications			
Tolling operations			
Commercial Vehicle Operations and regulation			

I

## ITS FUNDING

**68. Screening question: Do you have a separate budget for ITS?**

- Yes
- No

**68a. Please indicate whether you track the budget separately for each of the following categories:**

- ITS Planning and Systems Engineering
- Device Installation
- ITS Operations
- ITS Maintenance and Inspection
- Repair of ITS Technologies
- Do not track categories separately (go to next section)

**68b. Please indicate the percentage of budget allocated to each category that is separately tracked:**

- ITS Planning and Systems Engineering
- Device Installation
- ITS Operations
- ITS Maintenance and Inspection
- Repair of ITS Technologies
- Do not track categories separately (go to next section)

## ITS PURCHASE DECISION-MAKING

**69. 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.**

	Not at All Important	Not Very Important	Neutral	Somewhat Important	Very Important
Cost of initial deployment					
Cost to maintain and repair					
Public/constituent involvement					
Funding/grant availability					
Mobility benefits (e.g., to address congestion)					
Safety benefits					
Environmental benefits					
Integration with other agencies					
Integration with your current technologies					
TCIP compliant					
Already used by other agencies					
Other (please specify):					

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

Yes

Check all that apply:

Invest in new ITS

Expand current ITS coverage

No

**70b. Please describe new ITS (if applicable):**

## BENEFITS OF TRANSIT MANAGEMENT TECHNOLOGIES

**71. Based on your agency experience, please rate the benefits of the following technologies using a scale of 1 (No Benefit) to 5 (Significant Benefit) or No Experience. Please check only one box per row.**

	No Benefit (1)	(2)	Moderate Benefit (3)	(4)	Major Benefit (5)	No Experience
Automatic Vehicle Location						
Communications						
Traveler Information						
Data Management - GIS						
Computer Aided Dispatch and Scheduling						
Maintenance Tracking						
Electronic Fare Payment						
Security Cameras						
Weather Information System						
Automatic Passenger Counters						
Transit Signal Priority						

## ADDITIONAL COMMENTS

**72. 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.)**