City of Austin

AUDIT REPORT

Transportation Effectiveness Audit

April 2016

A Report to the Austin City Council

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REPORT SUMMARY

We found recent improvements in working relationships among the regional transportation entities. However, the City has not effectively coordinated among City departments and external partners on transportation issues as entities report a "silo" approach to operations, unclear roles and responsibilities, and a disconnected and incomplete transportation system. Also, the City's transportation activities have largely been reactive and resource challenges were consistently cited as barriers to meeting industry guidelines and proactively addressing issues. Finally, the City has not fully utilized crash information to improve traffic safety, specifically related to traffic incident management and analyzing information to identify targeted engineering, enforcement, or educational solutions.

AUDIT NUMBER: AU15103
RELEASE DATE: _____

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GOVERNMENT AUDITING STANDARDS COMPLIANCE

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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April 2016

TRANSPORTATION EFFECTIVENESS AUDIT

Report Highlights

Why We Did This Audit

This audit was conducted as part of the Office of the City Auditor's (OCA) FY 2015 Strategic Audit Plan, based on safety and economic risks and City Council concern.

What We Recommend

City management should work with internal City departments and external partners to address issues related to coordination, gaps between needs and resources, and traffic safety.

For more information on this or any of our reports, email oca_auditor@austintexas.gov

BACKGROUND

Transportation is one of the major challenges facing the City of Austin and the region. As we continue to experience consistently rapid population growth, citizen satisfaction with traffic flow on major City streets has fallen. In the City of Austin, multiple departments have transportation-related responsibilities. The City must also work with external partners who play key roles in working to ensure the effectiveness of the regional transportation system.

OBJECTIVE AND SCOPE

The objective of this audit was to evaluate whether the City effectively manages transportation system planning and balances safety and flow concerns for all users. The scope was FY 2013 through FY 2015.

WHAT WE FOUND

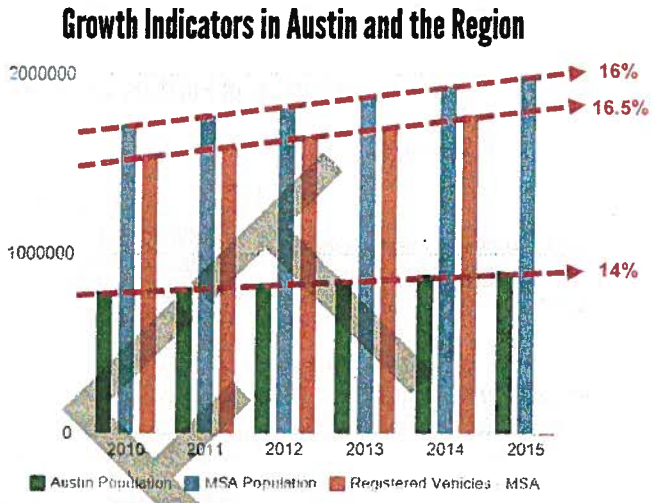
We found multiple transportation-related initiatives and noted recent improvements in working relationships among the City departments and regional entities responsible for transportation-related activities. We also found that more needs to be done to address key issues affecting transportation management and planning activities:

1. Despite recent improvements, the City has not effectively coordinated among City departments and external partners on transportation issues. Effective coordination has been hindered in three areas:
   - departments and entities largely utilize a "silo" approach to operations;
   - roles and responsibilities are not fully defined and understood; and
   - the transportation system is not fully connected across transportation modes and does not provide sufficient options for safe and efficient travel.
2. The City's transportation activities have largely been reactive. Resource challenges were consistently cited as barriers to meeting industry guidelines and proactively addressing issues:
   - limited funding relative to identified needs;
   - limited staffing versus industry guidelines for areas such as traffic signal maintenance;
   - technology systems and data not being integrated or fully utilized; and
   - planning and prioritization not fully aligned with current conditions.
3. The City has not fully captured or utilized crash information to improve traffic safety:
   - while the number of reported crashes has remained somewhat consistent, traffic-related fatalities have increased in the past four years;
   - the majority of fatalities have preventable contributing factors including impairment, distraction, speeding, invalid licenses, and pedestrian issues;
   - traffic incident management is not fully coordinated or sufficiently robust, especially in the areas of large vehicles and hazardous materials; and
   - not all crash information is being systematically analyzed which could identify targeted engineering, enforcement, or educational solutions to address safety and traffic flow challenges.

BACKGROUND

Consistent Population Growth

Transportation is one of the major challenges facing the City of Austin and the region. Austin has consistently been ranked as one of the fastest growing cities in the nation. Between 2010 and 2015, the city of Austin's population increased by approximately 14% and the Austin-Round-Rock Metropolitan Statistical Area[1] (MSA) population increased by approximately 16%. Also, growth in the number of vehicles registered in the MSA has increased by almost 16.5%.[2]



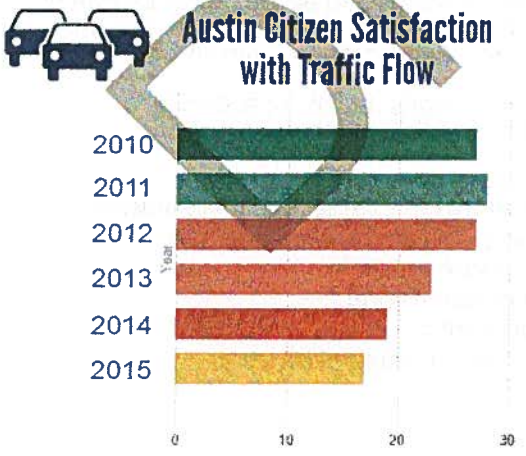
SOURCE: OCA analysis of City of Austin demographic information, February 2016

Several stakeholders noted that displacement due to lack of affordability has had a two-fold negative impact on transportation effectiveness in the Austin region. First, a number of the displaced population who had relied on transit now has limited transit options outside the city. Second, this population is generally using an automobile and commuting a greater distance than before because few alternatives exist. In addition, a high concentration of Austin commuters travels to the downtown area which focuses congestion where existing roadway infrastructure is limited.

Citizen Satisfaction

The City of Austin Community Survey results note a worsening perception among citizens regarding traffic flow in Austin in the last several years. From 2010 to 2012, approximately 27% of Austin citizens reported satisfaction with "[t]raffic flow on major city streets." By 2015, citizen satisfaction with traffic flow had fallen to 17%. Further, Austin citizens were the least satisfied and well below the 40% average satisfaction level of citizens surveyed in 30 other large communities benchmarked in the survey.[3] Satisfaction in Austin was also lower than in the three other Texas cities included in the survey as well as the 28% national satisfaction benchmark reported for cities with 500,000 or more residents:

- Dallas – 28%;
- Fort Worth – 36%; and
- San Antonio – 43%.



SOURCE: ETC Institute City of Austin Community Surveys 2010 - 2015, February 2016

[1] This includes Bastrop, Caldwell, Hays, Travis, and Williamson counties.
[2] Registered vehicle data was available through 2014. Growth figure is for 2009 – 2014.
[3] Benchmarked communities include cities and counties with a population greater than 250,000. Also, the City of Austin does not own and maintain all the streets, roads, and highways that comprise "major city streets."

Multiple Entities Involved in Transportation

Providing for the mobility within the region involves multiple external partners and City departments as shown below.[4] The City maintains, improves, and operates critical transportation infrastructure of regional, state, and national significance in cooperation with these entities. There are approximately 3,200 miles of roadway within the city of Austin's full purpose jurisdiction and many more in the MSA and region. Also, transit options serve a subset of the region.

Transportation Entities and Their Role in the Austin Region

Partner	Key Responsibility
Capital Area Metropolitan Planning Organization (CAMPO)	Metropolitan Planning Organization (MPO) for Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson counties. Coordinates regional transportation planning with counties, cities, Capital Metropolitan Transportation Authority, Capital Area Rural Transportation System, Central Texas Regional Mobility Authority, and the Texas Department of Transportation.
Capital Metropolitan Transportation Authority (Capital Metro)	Austin's regional public transportation provider working to provide residents, commuters, and visitors the best possible transit options available.
Central Texas Regional Mobility Authority (CTRMA)	Independent government agency created in 2002 to improve the transportation system in Williamson and Travis counties by implementing innovative, multi-modal transportation solutions that reduce congestion and create transportation choices that enhance quality of life and economic vitality.
Community Organizations	Community or grassroots organizations that advocate and work to implement transportation-related improvements.
Local Jurisdictions	Regional city and county partners that manage transportation in their jurisdiction.
Lone Star Rail District	Independent public agency authorized by the Texas Legislature in 1997 to provide regional passenger rail service to Central and South Texas along the Austin/San Antonio corridor.
Texas Department of Transportation (TxDOT)	State agency that plans, designs, builds, operates, and maintains the state transportation system.
Austin City Departments:	
Austin Transportation	- Primary department related to transportation management
Austin Police	- Transportation-related patrol and law enforcement
Development Services	- Development review and inspection
Planning and Zoning	- Planning, preservation, and design
Public Works	- Construction and maintenance of City roadways
Watershed Protection	- Transportation-related environmental review

SOURCE: OCA analysis of City and regional entity information, August 2015

[4] The City of Austin is represented on the Transportation Policy Board for CAMPO and the Boards of Directors for Capital Metro and the Lone Star Rail District. Members of the Board of Directors governing CTRMA are appointed by the Governor of Texas and the Commissioners Courts for Travis and Williamson counties. Members of the Texas Transportation Commission governing TxDOT are appointed by the Governor of Texas.

City Departments Involved in Transportation

The Austin Transportation Department (ATD) is the primary department responsible for operating and managing transportation activities within the City of Austin. In addition, the Austin Police Department is responsible for transportation-related patrol and law enforcement activities and the Public Works Department (PWD) is responsible for the construction and maintenance of City roadways. ATD has a mission "to deliver a safe, reliable, and sustainable multi-modal transportation system that enhances the environment and economic strength of the region for our residents, businesses, and visitors while conducting business in a customer focused and transparent manner." The overarching goals of the department are to:

- establish Austin as having the safest transportation system in the state;
- optimize roadway throughput for all roadway users by coordinating system improvements; and
- institute a proactive approach to transportation planning, traffic engineering, and traffic control.

ATD resources, including funding and full time equivalents (FTEs), are noted in the table. For FY 2016, the approved budget is approximately $44 million with 220.5 FTEs.

Austin Transportation Department Approved Budget Figures for FY 2010 - 2015

Resources	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015
Budget	$10.2 M	$15.8 M	$19.3 M	$25.5 M	$24.5 M	$33.3 M
FTEs	118.5	146.5	165	170.5	181.5	198.5

SOURCE: City of Austin Budget Documents for FYs 2010 - 2016, February 2016

In addition, the City has voter-approved bond programs to fund transportation activities with money allocated to both PWD and ATD. Since 2010, voters have approved $233 million through two such bond programs, $90 million in 2010 and $143 million in 2012. As of 2015, approximately $145 million from those two programs has been obligated and approximately $88 million remains available to be spent. Approximately $11 million of the available funds is allocated to ATD.

OBJECTIVE, SCOPE, AND METHODOLOGY

This Transportation Effectiveness Audit was conducted as part of the Office of the City Auditor's Fiscal Year (FY) 2015 Strategic Audit Plan, as presented to the City Council Audit and Finance Committee. This audit was included on the Strategic Audit Plan due to risks related to safety and economic viability as among other concerns raised by the City Council.

Objective

The objective of this audit was to evaluate whether the City effectively manages transportation system planning and balances safety and flow concerns for all users.

Scope

The scope included transportation planning and operational activities for FY 2013 through FY 2015.

Methodology

To accomplish our audit objective, we performed the following steps:

- interviewed key personnel from the transportation entities listed in the Background section including staff responsible for transportation-related management, planning activities, and traffic enforcement, as well as members of the community and other stakeholders;
- evaluated applicable operations and planning documents;
- researched industry practices related to transportation management and planning;
- researched state and local transportation-related laws and other requirements;
- evaluated Austin Transportation Department contractual agreements related to signal maintenance;
- reviewed goals and performance metrics related to signal maintenance and re-timing;
- reviewed crash data and evaluated contributing factors; and
- evaluated internal controls over transportation management.

WHAT WE FOUND

We found multiple transportation-related initiatives and noted recent improvements in working relationships among the City departments and regional entities responsible for transportation-related activities. However, the City has not effectively coordinated among City departments and external partners on transportation issues which remains a key contributing factor in not fully meeting the City's transportation mission. Effective coordination has been hindered by a "silo" approach to operations, unclear roles and responsibilities, and a disconnected and incomplete transportation system. Also, the City's transportation activities have been largely reactive and resource challenges were consistently cited as barriers to meeting industry guidelines and proactively addressing issues. Finally, the City has not fully utilized crash information to improve traffic safety, specifically related to traffic incident management and analyzing information to identify targeted engineering, enforcement, or educational solutions.

Finding 1: Despite recent improvements, the City has not effectively coordinated among City departments and external partners on transportation issues.

Recommendation 1: To ensure effective stakeholder communication and coordination, the Transportation Director should work both internally across the departments that share responsibility for mobility – Austin Transportation, Austin Police, Public Works, Development Services, Planning and Zoning, and Watershed Protection – and with partner entities to implement and monitor mechanisms that support a culture of continuous communication and coordination and include all stakeholders in key decisions. Where barriers and resource constraints prevent or hinder effective coordination, the Director should engage with the City Manager's Office to facilitate a timely and effective resolution.

Imagine a puzzle with many different pieces – both large and small – and those pieces are divided among a group of people so that no one person can put the puzzle together by themselves. According to consistent input from transportation stakeholders in and around Austin, this is the state of the regional transportation system. A key challenge in putting the puzzle together is that the transportation "puzzle pieces" are owned and operated by many different entities with varying missions, responsibilities, objectives, and priorities. Also, stakeholders noted that the public cares little about who holds the pieces and just wants the puzzle to fit together so that they can move from here to there in a safe and timely manner.

Most stakeholders indicated that all the entities working on the puzzle have recently experienced a more cooperative approach than in the past. However, the issue most cited by stakeholders was coordination and communication challenges within and among the various transportation entities.[5] We did receive some positive feedback in this area, but most cited positive one-on-one relationships between specific entities while acknowledging that more could be done related to coordination with other entities.

[5] For key transportation entities, see the Background section of this report.

The National Governors Association Center for Best Practices[6] emphasizes the importance of effective coordination and communication in transportation activities and cites three key factors to achieve success. Most stakeholders referenced participation in the regional planning group, but noted that from an operational standpoint, each entity has its own structure and mission. They also share both common and divergent interests, goals, and challenges.

Three Key Factors for Effective Coordination and Communication

1. Leadership that advocates, generates support, and institutes mechanisms for coordination at the highest level
2. Bring all key stakeholders to the table and keep them participating
3. Ensure continuity of coordination and communication that remains focused on goals and responsive to changing needs

SOURCE: National Governors Association Center for Best Practices, June 2015

Effective coordination and communication enables collaborative planning, facilitates buy-in from stakeholders, and is a critical element in ensuring that the regional planning efforts translate to an effective, operational transportation system that meets the needs of its users. We found three related areas that continue to hinder efforts related to coordination and communication among the stakeholder entities in the Austin region.

Entities are Largely Utilizing a "Silo" Operational Approach

Stakeholders consistently cited the need to develop and foster a more collaborative approach among all involved entities, but specifically noted a "silo" approach related to their operations. For example, stakeholders noted that three entities will soon be managing three separate traffic management centers[7] in the Austin region. Even among those entities, stakeholders expressed a desire for an integrated traffic management center and noted the benefits of co-location. Several cited Houston as a city with an effective day-to-day integrated traffic management center. Others cited Austin's experience during special events which was noted as an efficient and effective process because key decision-makers from each involved entity are working together in the same room. However, in the Austin region, this approach is not currently in place day-to-day to optimize traffic management center operations. Austin Transportation Department management noted that the City hired a consultant to study the possibility of establishing an integrated traffic management center, but such a center is at least two years away.

Entity Roles & Responsibilities are Not Fully Defined and Understood

Related to transportation activities, both internal and external stakeholders expressed frustration about the lack of definition and understanding of roles and responsibilities of the respective entities. Also, unclear decision-making authority and inconsistent direction were noted as issues when dealing with the City. Specifically, multiple stakeholders noted instances where they have not known the appropriate contact within the City for their transportation-related issue due to retirements or other process changes that may not be fully communicated. Also, several stakeholders cited instances where a City official made and communicated a decision, but that

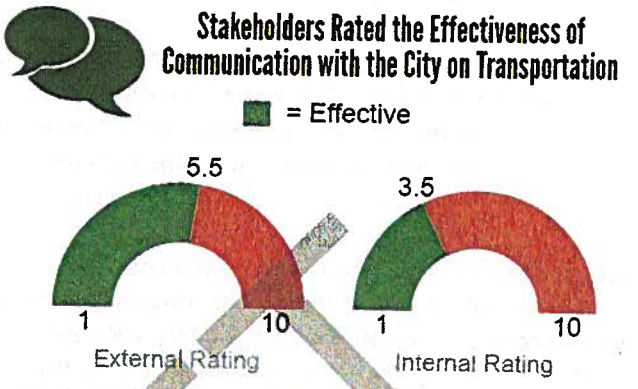
[6] The Association is comprised of the governors of the fifty United States and provides technical assistance and knowledge-sharing about innovative state activities.

[7] The Austin Transportation Department and TxDOT each operate a separate traffic management center and CTRMA will operate a third. A traffic management center is used to monitor and control traffic signals, intersections, and traffic flow on the street and highway network.

decision was reversed by another City official at a later date. These situations especially impact partner entities that have relied on the initial decision to take action or expend funds. We also noted multiple internal stakeholders that cited inconsistent coordination and communication among City departments.

Stakeholders consistently cited a perception that the City embarks on new transportation initiatives without fully consulting or informing all key stakeholders, including members of the public. A recent example is a City initiative to improve flow in intersections. Several key partner entities indicated that they were not involved in the planning or notified of their responsibility in a timely manner. These stakeholders also reported not having sufficient time to plan for the implementation while balancing other responsibilities. Others noted that they had information that could have been used to determine and prioritize targeted intersections, but those decisions had already been made.

Stakeholders Rated the Effectiveness of Communication with the City on Transportation



SOURCE: Key transportation entity staff and other stakeholder interviews, December 2015

Similarly, mostly external stakeholders expressed a perception that the City holds outreach events, but may not consider or incorporate the input received. However, City staff consistently reported that stakeholder input is an important consideration in their work. Other stakeholders indicated that most decisions involve input from many different groups that may have competing interests. Even with a robust outreach effort, consensus can be hard to achieve which results in compromises that few stakeholders embrace.

The Transportation System is Not Fully Connected

Stakeholders consistently cited a need to develop a more fully connected transportation system with sufficient modal options. A fully multi-modal system is one that includes all the ways people can get from here to there. Roads, walkways, bikeways, trails, rail, and other transit are all available options in Austin. However, stakeholders consistently noted that not enough effective options exist. They also noted transit issues such as a lack of service for those who need it and a lack of dedicated transit options. Other stakeholders noted that there should be a greater focus on land development issues as a way to guide and manage transportation decisions. Again, multiple entities are responsible for these separate pieces of the puzzle, but coordination in putting them together has not been optimal.

Stakeholders referred to connectivity in the narrow context of specific street or sidewalk segments that are missing as well as the broad context of building out the entire system and connecting it to each of the modal options. Multiple stakeholders referred to the current transportation system as being "incomplete," but noted that efforts are now focused on neighborhood connectivity. Others noted that a fully built-out, uninterrupted grid with a focus on arterial streets could provide the most cost-effective improvement to flow issues. Also, Austin Transportation Department management noted that there was no policy on connectivity in the City of Austin until the Imagine Austin Comprehensive Plan was adopted in 2012.

Finding 2: The City's transportation activities have been largely reactive and resource challenges were consistently cited as barriers to meeting industry guidelines and proactively addressing issues.

Recommendation 2: To ensure the City achieves its mission related to the transportation system, the City's Transportation Director should work with internal and external partners to identify and address gaps between needs and resources; explore opportunities to leverage resources, including technology and data, on a regional basis; and conduct a periodic analysis of planning and prioritization models.

In considering the City's approach to address transportation system issues, internal stakeholders consistently indicated that the Austin Transportation Department's (ATD) work is largely driven by requests received, mostly through the City's 311 system. Some stakeholders noted that issues identified as needs may not be addressed in a timely manner due to the focus on fulfilling requested actions. However, internal stakeholders stressed that issues affecting safety were prioritized above all others. City stakeholders were also consistent in citing limited resources as a key challenge in achieving respective departmental missions. We identified four resource areas as particular challenges: funding, staffing, technology and data, and planning.

Funding

Stakeholders noted funding as an issue from multiple perspectives. Some cited a general lack of funding while others cited concerns with funding mechanisms and allocation. Stakeholders consistently identified fees[8] and specific concerns include how to determine the appropriate amount, inconsistent collection and the impact of fee waivers, and allocation issues. Also, some stakeholders noted that the amount in traffic mitigation funds may not be enough to initiate projects. Stakeholders also noted the voter rejection of the November 2014 transportation bond as impacting the City's ability to address critical needs. While some stakeholders noted that the bond issue was a missed opportunity, others noted that the focus on rail delayed other priority areas.

Staffing

Stakeholders consistently cited a lack of staffing and noted that this led to City work being largely reactive in response to requests. City staff reported having little or no time to address issues in a proactive manner, but noted that they prioritize safety-related requests. Stakeholders also reported that maintenance schedules were on an "as needed" basis and noted that the City is not meeting associated industry or City-defined performance target goals.

Industry Guidance for Traffic Signal Maintenance Staffing

Austin Should Have	Job Description	Austin Has
11	Traffic Engineer	3
21	Technician	15
32	TOTAL	18

SOURCE: OCA analysis of industry guidance and ATD data, February 2016

We looked more closely at ATD measures related to traffic signal maintenance and re-timing. In 2015, the City was responsible for maintaining 1,016[9] traffic signals. We reviewed staffing levels in the ATD signal operations area and noted that Austin does not

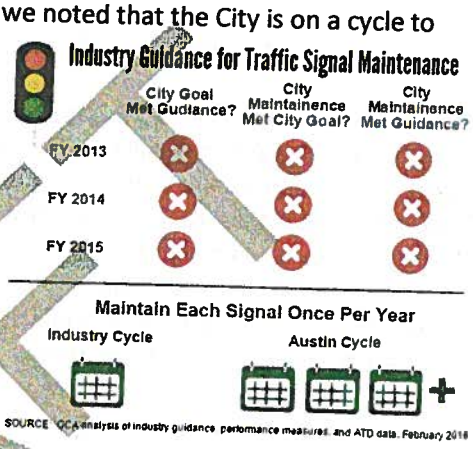
[8] Stakeholders reported concerns related to multiple fees including the Transportation User Fee.

[9] This includes 862 City-owned signals and 154 signals owned by other entities, but maintained by the City under contract agreements (TxDOT = 124, Travis County = 23, Sunset Valley = 4, and Williamson County = 3).

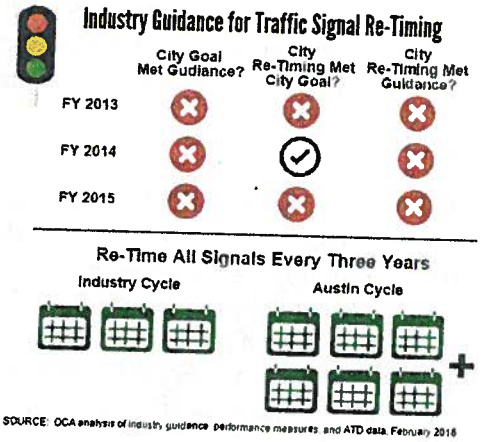
meet the minimum staffing levels recommended in industry guidance for the number of traffic engineers and technicians needed to maintain the traffic signal infrastructure.[10]

ATD staff noted that due to staffing constraints, they mainly focus their work on repairs rather than preventive maintenance. Other stakeholders noted that needed work may not be performed at all. We reviewed reported performance metrics for traffic signal maintenance and re-timing and noted that Austin did not meet the levels recommended in industry guidance. Also, we noted that Austin's performance goals were lower than recommended levels in each area.

For signal maintenance, industry guidance is to maintain each signal once per year. Based on aggregate figures provided by ATD for FY 2013 to FY 2015, we noted that the City is on a cycle to maintain each signal[11] once every 3.3 years. Also, the Transportation Department has contracts to maintain signals owned by other entities and one contract required maintenance be done twice per year.[12] Based on this information, industry guidance recommends that Austin maintain approximately 1,100 signals per year. However, City goals were set lower than industry guidance for each fiscal year noted (900, 300, and 494,[13] respectively). Also, the actual number of signals maintained did not meet City goals or industry guidance recommendations in any of the fiscal years.



For signal re-timing, industry guidance is to re-time all signals every three years. Based on aggregate figures provided by ATD for FY 2013 to FY 2015, we noted that the City is on a cycle to re-time all signals every 6.2 years. Industry guidance recommends that Austin re-time approximately 420 signals per year. However, City goals were set lower than industry guidance for each fiscal year noted (300, 150, and 300, respectively). Also, the actual number of signals re-timed did not meet City goals or industry guidance recommendations in any of the fiscal years, except when the goal was lowered in FY 2014.



The City's inability to maintain and re-time traffic signals in line with industry recommended practices may lead to a higher level of equipment failure with associated safety, congestion, cost, and staffing impacts.

[10] Transportation Department management noted that the industry guidance for signal maintenance activities does not account for construction work or maintenance on peripheral equipment (such as cameras and travel sensors) that Austin signal maintenance staff also performs. Per management, factoring this work would require an additional 6 technicians for construction and 5 technicians for other maintenance tasks resulting in a recommended staffing level of 43 as compared to the 18 staff currently allocated in Austin.

[11] We were unable to determine whether the number of signals reported represents unique signals.

[12] Transportation Department staff asserted that they did not track contractual signal work separately for FY 2013 and FY 2014.

[13] This figure includes all the contracted signal maintenance work on non-City-owned signals and a quarter of the City-owned signals.

Technology and Data

Stakeholders consistently noted technology and data issues as a key challenge. Related to technology, stakeholders cited data reliability, system accessibility, and limited functionality as issues impacting multiple transportation-related information systems. For example, multiple stakeholders noted that an APD system for maintaining crash data had issues in each of these areas. They consistently noted that the system is inadequate and such limitations delay analysis since usable data needs to be requested from the TxDOT system. Other stakeholders noted limitations with multiple systems related to planning and coordination activities. Also, not all entities use the same tools or have compatible systems or data. City stakeholders cited the Advanced Traffic Management System as a robust system that is working, but noted that there is additional functionality that has not been fully optimized.

Stakeholders also cited infrastructure technology as an issue area. For example, multiple stakeholders noted that signal prioritization for transit is not being fully utilized. Also, not all traffic signal detection loops are currently functional. Staff estimated that approximately a third of these loops are broken, but also reported efforts to repair them. Staff indicated that fully functional detection loops would have a positive impact on traffic flow, albeit largely in off-peak times. Also, as noted above, staff reported concerns about the effects of deferred maintenance on traffic signal infrastructure. In addition, staff reported a desire to leverage the APD helicopter as a resource for traffic purposes, but noted that this option was cost-prohibitive.

Related to data issues, stakeholders and staff consistently reported a need to better utilize data for decision-making purposes. However, one stakeholder captured the consensus by noting that "we are not there, yet." Most stakeholders noted that data is collected, but it may not be analyzed or used effectively. The causes most often noted were the lack of allocated staff and system constraints as noted above. Stakeholders also noted that multiple entities collect similar data that could be collected once and shared in an effort to leverage and extend existing resources.

Planning

Stakeholders consistently noted that transportation planning and prioritization models and operation manuals are out of date and need to be updated. Others noted that planning tends to be insular and that plans, especially long term plans, are not fully aligned with one another. Again, several stakeholders noted that land use planning needs to be more closely aligned with transportation planning. They also noted that for proposed developments, the number of vehicle trips per day that requires a traffic impact analysis (currently 2,000) may need to be lowered so that traffic-related impacts can be better understood and mitigated.

Stakeholders and staff indicated that some City transportation operation manuals are out of date with current conditions and need to be updated. Specifically, aspects of the Transportation Criteria Manual[14] need comprehensive revisions. For example, staff noted that while the manual is fundamentally "suburban," Austin is currently more "urban." Staff noted that this causes issues related to specific street sections which require waivers and variances to remedy. Management and staff indicated that the City is currently in the process of updating this manual. Also, stakeholders

[14] This document guides staff in administering and implementing the City's Land Development Code and defines criteria to guide street engineering design decisions within the city of Austin and its extraterritorial jurisdiction.

noted that the City's "complete streets" criteria may work well in proximity to the central city, but does not work as well in other areas.

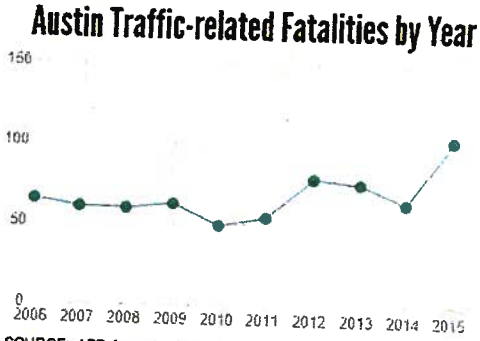
Related to prioritization, staff noted that the City utilizes a transportation project prioritization model that was developed in 2010 and approved by Council. While this model has not been comprehensively revised since, staff reported that it is a guiding philosophy and the goal is to incrementally update it to better align with current conditions. Staff also noted that funding issues may cause a shift in focus from projects identified through the prioritization process to projects identified as "projects of opportunity." Examples include projects where available funding exists or that address obvious needs, community requests, or Council direction. However, without periodically evaluating the criteria and updating prioritized projects, the City may be pursuing projects that do not effectively address identified issues.

Finding 3: The City has not fully utilized crash information to improve traffic safety.

Recommendation 3: To mitigate the impact of crashes and reduce the number of traffic-related fatalities, the Austin Transportation Director, working with the Austin Police Chief, should ensure the City captures and analyzes all relevant crash data, including data from external entities, to identify issues that could lead to targeted engineering, enforcement, or educational actions.

Internal stakeholders consistently communicated that safety is their first priority. In 2013, City management released a report in response to a 2013 Austin City Council Resolution.[15] The report identified a number of safety initiatives underway as well as areas where improvements could be made. We noted that some of those recommended improvements have not been fully implemented and are consistent with issues identified in our work. For example, there is not a coordinated, regional mobility safety plan in place and we did not see coordinated efforts to expand crash data analysis to identify and target solutions. Also, despite safety initiatives in place, the number of reported traffic-related crashes has remained relatively constant, averaging approximately 14,000 incidents per year over the last three years.

From 2006 to 2011, the average number of fatalities in Austin was 58. In the last four years, the average number of fatalities was just over 79. In 2015, Austin had 102 traffic-related fatalities. Austin Police Department staff indicated that a majority of these fatality crashes involved preventable contributing factors including impaired or distracted drivers and pedestrians, speed, drivers with an invalid license, and pedestrians crossing when or where prohibited. We also spoke with members of the City's Vision Zero Task Force and noted that the Task Force recently released its draft Vision Zero Action Plan that addresses these issues in more detail. They indicated a need to focus on targeted areas, create an awareness of the issues, collect and utilize data, and engage in a dedicated program to improve safety through engineering, enforcement, and educational solutions.



SOURCE: APD Annual Crime Report data, February 2016

[15] Resolution 20130117-057 directed City management to "perform an analysis of the causes of the increase in traffic fatalities in 2012 and develop countermeasures to prevent future traffic-related fatalities."

Stakeholders noted several issues related to the preventable factors noted above. According to APD, 64% of fatality crashes in 2015 involved impairment. Some stakeholders noted the difficulty in addressing impairment issues given Austin's cultural identification as an entertainment destination for live music, festivals, and other major events. Stakeholders also noted a relative lack of reliable transportation options for people who may be impaired, especially in the early morning hours. Another factor cited by staff is that incidents involving drivers with an invalid license generally result in a citation and release. Stakeholders noted that stronger measures, such as vehicle impoundment, may be needed to discourage or prevent these drivers from being on the roadways. For each factor, stakeholders consistently noted that all drivers and pedestrians must be responsible for their own actions and be aware of how those actions affect others.

Related to crash incidents, stakeholders cited inconsistent crash notifications among transportation entities as inhibiting a fully coordinated and effective crash response which affects both traffic safety and flow. Stakeholders noted that crash responses need to be more robust and specified large vehicle and hazardous material incidents as areas of particular concern.

Related to data analysis, stakeholders noted that the City may not be utilizing complete data to target and direct its activities. While data is tracked and analyzed for all fatality crashes, such information is not consistently collected and analyzed for the approximately 14,000 crashes per year noted above. While staff cited resource and system issues as a barrier, they indicated that information consistently collected and analyzed from the more minor crash incidents could help identify targeted areas to address specific engineering solutions, enforcement efforts, and where additional educational outreach might make positive impacts.

Finding 4: The City has multiple initiatives to improve transportation effectiveness for the City and the region.

The City has initiated multiple efforts to improve the management of transportation activities in the City and the region as shown on the next page. We did not determine the effectiveness of these initiatives as some have recently been implemented or are still in progress.

City Transportation Initiatives

Initiative	Example of Initiative
Additional resources for monitoring and oversight of transportation activities	▪ City Council Mobility Committee ▪ Vision Zero Task Force
Developing, updating, and adopting guiding documents	▪ Development of the Bicycle Master Plan and Pedestrian Safety Action Plan ▪ Updating criteria manuals including the Transportation Criteria Manual ▪ Adoption of the 2025 Austin Metropolitan Area Transportation Plan that provides guidance on future City transportation planning ▪ Establishing the Complete Streets policy
Identifying and implementing engineering enhancements to balance traffic safety and throughput	▪ Optimizing roadway capacity by re-sizing vehicle lanes and providing modal options where equivalent traffic flow can be achieved ▪ Converting one-way streets to two-way streets and improving system connectivity ▪ Constructing pedestrian crossing islands, hybrid beacons, and sidewalk improvements ▪ Creating transit priority lanes on key corridors
Encouraging behavioral changes to improve safety and reduce congestion	▪ Implementing initiatives to mitigate the effects of distracted driving, improve safety for bicyclists, and reduce intersection gridlock ▪ Encouraging the use of transit, off-peak travel, and telecommuting to reduce congestion
Fostering partnerships to identify and implement transportation solutions	▪ IH-35 Improvement Project with TxDOT ▪ MoPac Improvement Project with CTRMA ▪ Transit Priority Efforts with Capital Metro ▪ Mobility Innovation with the Rocky Mountain Institute ▪ Research and Analysis with the University of Texas Center for Transportation Research

SOURCE: OCA analysis of City documents and initiatives, February 2016

APPENDIX A

MANAGEMENT RESPONSE

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MANAGEMENT RESPONSE – Austin Transportation Department

MEMORANDUM

TO: Corrie Stokes, City Auditor

CC: Robert Goode, P.E., Assistant City Manager

FROM: Robert Spillar, P.E., Director, Austin Transportation Dept.

DATE: April 14, 2016

SUBJECT: Response to Audit Findings – Transportation Effectiveness Audit

On behalf of the Austin Transportation Department (ATD), I am grateful for the opportunity to work with the City Auditor in identifying solutions to determine the status of our Transportation Effectiveness, identify areas of needed growth and celebrate our accomplishments.

The 2015-2016 Transportation Effectiveness Audit had three findings. In general, the department concurs with all three findings and with recommendations on resolutions. Below is a response by individual finding and recommendation (findings and recommendations are paraphrased in each response).

Finding 1: To ensure effective stakeholder communication and coordination, the Transportation Director should work both internally across the departments that share responsibility for mobility – Austin Transportation, Austin Police, Public Works, Planning, and Watershed Protection – and with partner entities to implement and monitor mechanisms that support a culture of continuous communication and coordination and include all stakeholders in key decisions. Where barriers and resource constraints prevent or hinder effective coordination, the Director should engage with the City Manager's Office to facilitate a timely and effective resolution.

Management Response: As Director, I concur with this finding and appreciate the nudge to redouble our efforts to coordinate across all departments and partner agencies. For many decades, the transportation portfolio in this region was purposefully divided into silos because of funding restrictions, differences in mission scope and differing jurisdictional authority. The Texas Department of Transportation is responsible for the freeway system; the Capital Metropolitan Transportation Authority is responsible for the transit system; the

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Central Texas Regional Mobility Authority is responsible for local tolled facilities; the Texas Turnpike Authority is responsible for interregional tolled facilities; and various City and Travis County departments are responsible for traffic operation, project development, development impact review, traffic enforcement, roadway maintenance, etc. Clearly, our customers do not perceive the differences in ownership, they only care about making their travel easier and their modal choices more robust while assuring that their tax dollars are used efficiently.

Finding 2: To ensure the City achieves its mission related to the transportation system, the City's Transportation Director should work with internal and external partners to identify and address gaps between needs and resources; explore opportunities to leverage resources, including technology and data, on a regional basis; and conduct a periodic analysis of planning and prioritization models.

Management Response: As Director, I concur with this finding and the recommendations to efficiently expand funding for operational needs. ATD was formed as an independent department in 2008. Prior to that formation, its divisions resided in several other departmental programs: Public Works, Watershed Protection, and Planning and Zoning. In 2015, ATD established full financial independence and has since worked to prioritize and expand transportation funding and staffing. Because of the decades of inadequate investments in transportation operations (ATD's portion of the transportation portfolio) there is ground to be made up in terms of achieving an adequate investment level in operations, adequate staffing and sufficient investment into the transportation system. Similarly, traffic enforcement activities, largely the responsibility of the Austin Police Department (APD), have been understaffed and underfunded. Effective transportation engineering and traffic operation requires adequate enforcement support. ATD is working directly with APD to support the addition of traffic enforcement capabilities to the police force and reestablish maintaining mobility as a primary element of their mission.

Finding 3: To mitigate the impact of crashes and reduce the number of traffic-related fatalities, the Austin Transportation Director, working with the Austin Police Chief, should ensure the City captures and analyzes all relevant crash data, including data from external entities, to identify issues that could lead to targeted engineering, enforcement, or educational actions.

Management Response: As Director, I concur with this finding. The tools available to the City for analyzing traffic accidents have not allowed for robust analysis. Data collected by APD is stored in the Brazos Program, a City-owned data management system, as opposed to the State-wide CRISS System. The City-owned data tool is not programmed for easy engineering analysis. In the past, APD had a trained analyst to provide data in formats that can be imported into other traffic analysis tools. However, this resource left the City, creating a gap in capabilities. ATD recently hired and established its own staff resources responsible for mobility safety. Specifically, this past year we added a Transportation Safety Engineering employee. This employee is responsible for looking across the transportation portfolio and

addressing safety concerns. This includes accessing both the APD and State safety database systems to conduct more robust analysis of traffic incidents and data. Additionally, ATD is pursuing an investment strategy in new technologies that will provide greater data collection and analysis capabilities. These new investments allow us to collect real-time travel speeds and travel times, and better analyze incidents that cause recurring congestion. This enables us to better manage arterials using adaptive signal control and other techniques.

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MANAGEMENT RESPONSE – Austin Police Department

Austin Police Department

City of Austin: Founded by Congress, Republic of Texas, 1839
P.O. Box 689001, Austin, Texas 78768-9001 Telephone (512) 974-5000
www.cityofaustin.org/police

MEMORANDUM

TO: City Auditor's Office
FROM: Art Acevedo, *Chief of Police*
DATE: April 11, 2016
SUBJECT: Transportation Effectiveness Audit Report

The Austin Police Department takes very seriously the recommendations contained within the City Auditor's Report. As the City of Austin continues to be the second safest large city within the United States as it relates to violent crime, we are constantly striving to reduce the number of traffic crash fatalities. In the City Auditor's report, Finding #3 found that the City has not fully utilized crash information to improve traffic safety, to which we concur.

Recommendation #3 within the City Auditor's report states:
To mitigate the impact of crashes and reduce the number of traffic related fatalities, the Austin Transportation Director, working with the Austin Police Chief, should ensure the City captures and analyzes all relevant crash data, including data from external entities, to identify issues that could lead to targeted engineering, enforcement, or educational actions.

In early 2015, prior to this report completion, the Austin Police Department Highway Enforcement Command (HEC) and City of Austin Transportation Division (ATD) began to work together on a number of projects in order to foster a more cooperative and systematic approach to overall traffic safety within the City of Austin. These projects include:

- Vision Zero Task Force- This program, which is led by ATD and APD HEC, is one of four main City of Austin entities comprised of principle stakeholders who study ways to reduce traffic fatalities and serious injury crashes. Members of the task force are working cooperatively to approach this goal by the use of the 3 E's: Enforcement, Engineering and Education. Currently, the working group meets monthly but also utilizes other methods in this project, to include daily conference calls/emails.
  Project Status: Underway

- Traffic Fatality Review Board- APD HEC, ATD and other stakeholders meet monthly to review each traffic fatality that occurred the preceding month, and critique it in depth, looking for opportunities for 3 E's (Enforcement, Engineering and Education).
  Project Status: Underway

- Don't Block the Box and Traffic Safety meetings- Currently APD HEC meets bi-monthly to go over trends with the ATD "Don't Block the Box" project and other traffic safety concerns such as enforcement at ATD placed Pedestrian Hybrid beacons. APD and ATD share data to gauge their effectiveness, or to determine if different deployment areas need to be explored for future 3 E's.
  Project Status: Underway

- Austin Incident Management (AIM High) meetings- These meetings are held monthly (or as needed) with multiple stakeholders to discuss traffic safety concerns and any critical traffic management issues that APD HEC or ATD have identified. In addition, other stakeholders who may have responded regarding major road closures or incidents that impact the safety and mobility of the community are included in this meeting.
  Project Status: Underway

- Traffic Incident Management Center- APD HEC has been asked to partner with ATD on the proposed development of a new traffic incident management center. APD HEC and Communications have both been working with the architect hired for the assessment of this project.
  Project Status: Underway/Planned

- New Data Driven Approach- ATD does not currently employ an analyst to perform functions that APD has traditionally performed in capturing analytical data. ATD is considering requesting personnel to work directly with APD HEC and other stakeholders to provide for the best data collection and sharing of real-time information for both agencies and other stakeholders.
  Project Status: Planned

Sincerely,

Art Acevedo,
Chief of Police

Keeping you, your family and our community safe.

APPENDIX A

ACTION PLAN
Transportation Effectiveness Audit

Recommendation	Concurrence and Proposed Strategies for Implementation	Status of Strategies	Proposed Implementation Date
1. To ensure effective stakeholder communication and coordination, the Transportation Director should work both internally across the departments that share responsibility for mobility – Austin Transportation, Austin Police, Public Works, Development Services, Planning and Zoning, and Watershed Protection – and with partner entities to implement and monitor mechanisms that support a culture of continuous communication and coordination and include all stakeholders in key decisions. Where barriers and resource constraints prevent or hinder effective coordination, the Director should engage with the City Manager's Office to facilitate a timely and effective resolution.	Concur • The Director will continue regular coordination meetings between ATD and APD and include other departments such as PWD, Watershed, and Planning on a subject specific basis. • ATD will continue to work with the City Manager's office in ongoing coordination efforts that affect other City Departments for mobility- related efforts by regularly sharing information with partner departments, the Mayor's Office and Council offices. This information will be shared through communication channels including project updates, newsletter briefings and social media postings. • ATD continues to represent the City's interest by strengthening our ongoing partnerships with transportation providers such as TxDOT; Capital Metro; Lone Star Rail District, Central Texas Regional Mobility Authority (CTRMA); and Travis, Williamson, and Hays Counties. ATD also works with the regional planning organizations: Capitol Area Metropolitan Planning Organization, Capitol Area Council of Governments, and Movability Austin. • Through these partnerships, ATD will continue to work on accomplishing significant contributions to the City's mobility issues by meeting with these external entities on a periodical basis through collaboration meetings which occur monthly and or quarterly.	Status is currently underway (action is currently taking place, and will be ongoing).	Status has been in progress and represents an on-going effect. ATD will continue to seek annual improvements.

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Recommendation	Concurrence and Proposed Strategies for Implementation	Status of Strategies	Proposed Implementation Date
2. To ensure the City achieves its mission related to the transportation system, the City's Transportation Director should work with internal and external partners to identify and address gaps between needs and resources; explore opportunities to leverage resources, including technology and data, on a regional basis; and conduct a periodic analysis of planning and prioritization models.	Concur • Through the annual budget processes, the Director will advocated for increased funding to meet mobility management needs. • As part of ATD's commitment to continuously improve the signal system, ATD is investing in technologies and staffing to create a regional automated transportation system that will make our signal control networks more responsiveness to travel needs. ATD is partnering with TxDOT and other regional partners to develop an Integrated Corridors Management strategy for the I-35 corridor. ATD is actively pursuing integration of the management for regional roadway and transit assets to better coordinate across technical platforms in a "One System" approach. • ATD is near completion of our deployment of the Advanced Transportation Management System (ATMS), our city's new central traffic signal and intelligent transportation control software. The ATMS includes strategies that assist with reducing the impact that travelers encounter during peak commute times, incidents, roadway construction and special events that result in roadway closures. The ATMS provides monitoring and management of numerous devices, including traffic signals, dynamic message signs, cameras, traffic detection systems, travel time monitoring equipment and GPS-enabled signal preemption for emergency vehicles. 884 traffic signals have been converted to the ATMS system. • The Director will explore innovative staffing concepts such as privatization or contracting for discrete services such as operation of the Transportation Management Center. ATD is also coordinating with the University of Texas; Center for Transportation Research to coordinate the Transportation Management Center for performance metrics and will gather, share and analyze data.	Status is currently underway (action is currently taking place, and will be ongoing).	Status has been in progress and represents an on-going effect. ATD will continue to seek annual improvements

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Recommendation	Concurrence and Proposed Strategies for Implementation	Status of Strategies	Proposed Implementation Date
3. To mitigate the impact of crashes and reduce the number of traffic-related fatalities, the Austin Transportation Director, working with the Austin Police Chief, should ensure the City captures and analyzes all relevant crash data, including data from external entities, to identify issues that could lead to targeted engineering, enforcement, or educational actions.	Austin Transportation Department Response: Concur • In the FY17 budget process, the Director will support APD's request for additional staffing for purpose of traffic enforcement. • The Director shall also contemplate a supplementary contract with APD to expand directed enforcement and coordination with traffic operations. • The Director, in partnership with the Chief of Police, shall continue to explore innovative ways for providing traffic enforcement. • Through the Vision Zero Action Plan and other coordinated efforts, ATD, APD, Planning and Zoning, and other regional agencies will coordinate on engineering and enforcement efforts. ATD will also examine how the two disconnected crash data systems between APD and TXDPS can be coordinated, integrated or migrated to one system. Addition Vision Zero action items include a coordinated effort to seek reforms by the court system, service industry, land use regulation and mental health services. Austin Police Department Response: Concur • In early 2015, prior to this report completion, the Austin Police Department Highway Enforcement Command and the City of Austin Transportation Division began to work together on a number of projects in order to foster a more cooperative and systematic approach to overall traffic safety [see APD Response Memo on page 19 for a list of these projects].	Status is currently underway (action is currently taking place, and will be ongoing). Status is planned/ underway [see APD Response Memo on page 19 for status of each involved project]	Status has been in progress and represents an on-going effect. ATD continues to seek a more robust look for measureable improvements each year.