



## AUSTIN TRANSPORTATION DEPARTMENT

### MEMORANDUM

**TO:** Mayor and Council Members

**CC:** Spencer Cronk, City Manager  
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**FROM:** Robert Spillar, P.E., Director, Austin Transportation Department  
Joel Baker, Chief, Austin Fire Department

**DATE:** March 4, 2019

**SUBJECT:** Final Update on 2015 International Fire Code Local Amendments and Street Design – Austin Transportation and Austin Fire Departments

This memorandum reports final findings and recommendations resulting from a year-long collaborative effort between the Austin Fire Department (AFD) and the Austin Transportation Department (ATD) on emergency response and street design. The short- and long-term recommendations include a spectrum of strategies that support a vision jointly developed by both departments to “find the optimal balance of protection for multimodal transportation and fire emergencies that results in the fewest total deaths from all causes.”

AFD and ATD staff recognize and agree that there is not a single solution to optimizing emergency response and multimodal street design that results in the fewest total deaths from all causes. We identified multiple items in the areas of fire truck design, regulations, street design options, business processes, street connectivity, and fire station number and density, that should be worked on simultaneously to achieve continuously improving conditions for public safety and mobility. These are outlined in the “recommendations” section below.

#### Recommendations

AFD and ATD are recommending that the Fire Code not be amended at this time, but are instead recommending the following short- and long-term actions. Many of these recommendations are included in the draft Austin Strategic Mobility Plan and planned for City Council consideration in March/April 2019.

#### **Recommendations:**

- **Fire Truck Design**

AFD recognizes the need to make fire apparatus more maneuverable for narrower street design and have recently purchased shorter trucks with better turning radii. Current options from apparatus vendors are limited when it comes to width. The narrowest vehicle offered is 96 inches. AFD has this width of vehicle currently. To aid in the evaluation of

these trucks and consult on future acquisitions and vehicle replacements, AFD should add ATD staff to their Apparatus Committee, which is a working group specific to fire truck design. AFD should provide fire apparatus operating training to this person for better awareness of the capabilities and limitations of the vehicle. Collaboration on the committee will allow for optimal decision making in apparatus purchasing as well as consideration of modern, multimodal street design standards that work for all users.

- **Regulations: New Street Design Standards and the Fire Code**

The Transportation Criteria Manual sets standards on the implementation of transportation-related infrastructure. Modifications to the Transportation Criteria Manual are currently underway by ATD staff and a review committee made up of subject matter experts from multiple City departments, including AFD. New street cross-sections should be designed for multimodal safety while also allowing for emergency response and fire ground operations. Maintaining an effective street width adequate to control speed for typical uses of the street as well as allowing for effective emergency response are important considerations for street safety. The updated Transportation Criteria Manual will allow for predictability in street design for the City, emergency response agencies and the private sector, allowing for improved development review and capital improvement project approval timelines.

In 2018, AFD, in coordination with ATD and the Economic Development Department, developed an iterative Alternative Method of Compliance (AMOC) process to permit streets less than 25 feet in width utilizing the exceptions for street width reduction provided in Section 503.2.1 of the Fire Code. The AMOC approach and documentation should continue to be used to record when Section 503.2.1 (Exception and Dimensions) is used to approve street designs that do not achieve the required 25-foot clear street width. Strategies used in these AMOCs will be used in the development of modernized street design standards in the forthcoming revision of the Transportation Criteria Manual (to include new typical street cross-sections, among other street design criteria).

The clear width of 25-feet minimum as currently regulated in the Fire Code local amendments should periodically be considered for amendment to less than 25 feet and/or in alignment with the internationally adopted standard of 20 feet. This amendment would be coupled with the improved connectivity of city streets. Where sections of the city lack connectivity, other options may be considered to include maintaining the current Fire Code requirements when applicable.

- **Business Process Improvements**

City of Austin departments involved with land development, such as Development Services, ATD, Economic Development and Watershed Protection, and the Austin Fire Department should work together to create and/or improve processes to address street design and emergency access early in project development review processes. Collaboration has been key in creating viable solutions to meet each group's directives. The AFD Policy and Procedures document for Safe Driving, applicable to all AFD Personnel, was last updated Feb. 7, 2017. The policy should continue to be reviewed for potential updates based on the findings of this report and the work of the AFD/ATD working group convened in 2018.

- **Increase Street Connectivity**

Improving Austin's street grid pattern is a key tool in managing traffic congestion, as well as improving emergency response times. Improving the street grid pattern by connecting gaps in the roadway system manages traffic congestion by spreading traffic over more roads and giving drivers more choices. Connecting streets can also make public transportation viable on a street that otherwise might not be by providing a direct route. The benefit for emergency response is multiple access points to fires or other emergencies. The Austin Strategic Mobility Plan draft includes an updated inventory of locations to improve Austin's street grid pattern. Upon approval of the ASMP, prioritization of the implementation of roadway connections should include emergency response needs.

Future developments should also be required to connect to the existing transportation network. Street and multimodal connectivity requirements and regulations should be examined for improvement. Opportunities for improvement of street connectivity requirements include, but are not limited to, the Transportation Criteria Manual and the Land Development Code.

- **Fire Station Number and Density**

The number and locations of fire stations affect response times. Areas of Austin with multiple fire stations, regardless of street width, experience faster response times than those with fewer fire stations.

New fire station projects should be identified and prioritized for areas of the city that are not meeting emergency response time standards. Fire station planning should include review of street connectivity, street design needs and the sizes of fire apparatus and other emergency response vehicles. In May 2018, City Council passed a resolution directing staff to focus on the construction of five new fire stations within the next five years.

## **Findings**

The following findings are the result of a year-long collaborative effort among multiple City departments which involved research, analysis and stakeholder input.

- The International Fire Code allows fire departments the ability to administer mobility projects.
- Currently, Austin requires a street clear width (void of obstructions) of 25 feet due to a local amendment to the International Fire Code. The International Fire Code requires 20 feet clear width. The 25-foot local requirement was established in the 1980s, when development patterns often resulted in one way in and one way out of neighborhoods, necessitating the need for large vehicles to pass each other. The 25-foot street clear width is meant to accommodate emergency vehicles passing a fire apparatus when only one access point to and from an emergency is available.
- Many existing Austin neighborhoods operate with less than a 25-foot clear width on streets, but retain acceptable emergency access due to proximity of fire stations and/or a gridded street layout that facilitates multiple access points for emergency vehicles and fire apparatus.
- In addition to street width, the application of other street design criteria such as corner radii and storm water related clear width requirements can create challenges for optimizing public safety.

- As development has sprawled beyond the city's core, neighborhood streets are more disconnected and fire stations are more spread out, resulting in longer response times. Multiple City policies (e.g., Imagine Austin, Complete Streets, Vision Zero) recommend multimodal streets, which typically correlate with narrower travel lanes and/or clear width.
- Managing speeding by persons driving motor vehicles is critical to traffic safety. Narrower streets widths and other speed management devices mitigate speeding by motor vehicle drivers.
- There are existing City Council approved development agreements, Planned Unit Development zoning ordinances with design standards, and committed Capital Improvement Project designs that include streets with less than a 25-foot clear operative street width. Further evaluation of these projects exemplified the need of enhanced coordination and documentation.
- Section 503.2.1 of the Fire Code speaks to *Dimensions and Exceptions*. Over the last 20 years, this section has been used to retrofit existing streets and build new streets to modern design standards that result in narrower travel lanes and/or street widths to address speeding, and that implement our transit, pedestrian, and bicycle systems. Further evaluation of these projects exemplified the need of enhanced coordination and documentation.
- Street designs for redevelopment projects sponsored by the Economic Development Department have focused on safely accommodating many modes of travel while providing access for emergency services. The Colony Park initiative exemplifies the importance of predictable outcomes in street design approval to meeting development milestones and commitments to both the community and development partners through a collaborative process.

## **Background**

The recently adopted Austin Strategic Direction 2023 Safety Outcome and developing Mobility Outcome both include strategies that will move forward continued understanding and collaboration related to street design and emergency response.

While City staff have worked on the issue of emergency response and street design in the past, the impetus for the most recent collaborative work began in late 2017 with the proposed adoption of the International Fire Code and local amendments. Municipalities typically adopt the International Fire Code every three years and make local amendments based on their individual needs. On Dec. 7, 2017, City Council adopted the proposed local amendments to the International Fire Code without changes to Sections 503.2.1 ("Dimensions and Exceptions") and 503.2.2 ("Authority") due to requests from stakeholder groups to postpone action on any amendments to those sections until after a stakeholder public input process. Stakeholder groups included the Robert Mueller Municipal Airport Plan Implementation Advisory Commission, the Pedestrian Advisory Council, and Colony Park Community Core Group members.

In January 2018, prior to holding a stakeholder input process, AFD and ATD staff convened an internal working group of key personnel from each department to further examine current City processes and practices related to emergency response and street design. By June 2018, the working group determined that changes to sections 503.2.1 and 503.2.2 of the Fire Code were not recommended. Staff recommended continuing to use the authority and

exceptions currently provided in Fire Code Sections 503.2.1 and 502.2.2 along with a collaborative approach to identify solutions for street design while improving City business processes and moving forward with making decisions together on matters related to street widths and emergency response access. The working group met regularly from January through October 2018, with a public stakeholder meeting held on Sept. 17, 2018. [Responses to feedback from the public stakeholder meeting](#) were documented and placed on [AustinTexas.gov/StreetDesign](http://AustinTexas.gov/StreetDesign). Over the course of 2018, the working group provided updates to City Council on its progress. Progress memorandums were provided in [June](#) and [November](#) of 2018.

While not part of the internal working group, the Economic Development Department has also been involved in discussions over the last year related to street design and emergency response, due to the department's role in managing City redevelopment projects. Moving forward, a continued, consistent, and collaborative process for establishing design criteria and approvals for streets is imperative for the build-out of existing and future City redevelopment projects.

In addition to supporting the City's Vision Zero initiative and redevelopment processes, multimodal street design is a key tool for improving mobility and safety throughout the City. However, some existing street conditions and new street designs present challenges for AFD operations. In an effort to address the challenges, AFD's 2017 annual report recognized and embraced these challenges by reporting that the department has purchased shorter apparatus that are "less expensive, better-handling apparatus with fewer blind spots and reduced maintenance costs."

In early 2017, AFD began to see the need to downsize its fire pumpers while staying consistent with national standards. This was prompted by requests from firefighters and their desire to see smaller, more maneuverable and user-friendly apparatus. In addition, AFD realized that future city development was moving toward a more narrow and dense layout of streets and neighborhoods. In late 2017, AFD began making plans to order shorter, lower and more user-friendly apparatuses. For the new units, AFD dramatically lowered the hose bed, and hose beds that were 8 feet tall went down to 5 feet, which included decreasing the standard water tank to 500 gallons. Currently, AFD has numerous fire trucks with 750 to 1000 gallons tanks in the city. Due to the density of neighborhoods that have adequate water supply, units with smaller water tanks would be acceptable in a number of areas.

In addition, AFD is shortening its pumping apparatus by moving back to the side-mounted type of pumps. This move alone reduced the overall length by two to three feet. Several years ago, AFD went to compartment doors that roll up instead of open on a hinge. This reduced the operating space needed to get equipment out during an emergency. Other small changes were made to maximize storage, but at the same to reduce height and length. This has resulted in all of the 2018 apparatus designs having a tighter turning radius and better maneuverability for roadways. AFD is expecting five more pumpers to arrive in 2019 and these are anticipated to be 32 feet in length. The feedback thus far has been extremely positive from AFD firefighters. AFD believes it is making significant process toward developing the best fire pumper to meet the changing Austin landscape as well as provide the most practical unit for the Austin firefighter.