EXECUTIVE SUMMARY

Since 2011, there have been over 300 pedestrian-involved crashes in the City of Salem, resulting in 15 people unnecessarily losing their lives. The average pedestrian fatality rate in Salem over the last six years is approximately 1.24 fatalities per 100,000 residents. While this is slightly lower than the national average fatality rate over the same time period (approximately 1.53), the City of Salem has remained focused on improving pedestrian safety and accessibility.

In 2015, there was a noticeable spike in pedestrian fatalities in Salem when six pedestrians were killed, which was triple the number of fatalities of the previous three years and also represented a fatality rate more than double the national rate (3.65 vs. 1.67). Interestingly, this unfortunate trend was also observed in other cities across the US, including Austin, Texas whose fatality rate jumped to 3.43 in 2015. Although crashes are random events and naturally fluctuate over time, every death on our roadways is tragic and the recent increase in pedestrian deaths has raised community concerns not just in Salem, but other similar cities as well.

In response to the spike in fatal pedestrian crashes in 2015, the City of Salem embarked on an effort to improve pedestrian safety throughout the city. As part of that effort, the City hired DKS & Associates (DKS) to study the intricacies of pedestrian crashes, identify trends and patterns, and develop a set of recommendations aimed at reducing the frequency and severity of pedestrian crashes. In addition to analyzing crash reports, DKS conducted over 100 hours of field observations at 19 locations with a high frequency or severity of pedestrian crashes. Key findings of DKS' investigation include the following.

- There is no single "silver bullet". Crash patterns, driver and pedestrian behaviors, and other contributing factors remain variable and unpredictable.
- At several of the field study locations, increased conflicts were observed where major traffic flows and popular pedestrian travel paths intersected. In addition, drivers were often seen speeding, driving aggressively, and failing to yield to pedestrians.
- Midblock conflicts between vehicles and pedestrians were often observed on roadways with wide cross sections (four or more lanes), long distances between signalized crossings (up to 3,000 feet), and unique midblock attractions such as transit stops, convenience stores, and restaurants.
- Many pedestrians were seen crossing mid-block at undesired locations or crossing against the pedestrian signal. This trend is supported by the crash data that indicates 65% of non-intersection pedestrian crashes involved pedestrians illegally[1] in the roadway.

After the 2015 spike in pedestrian fatalities, the City of Austin engaged in a comparable research investigation that yielded findings similar to those in Salem. Because Austin is a larger city with more pedestrian crashes, their larger dataset yielded concrete relationships DKS inferred, but could not verify, using the available data in Salem. Of particular note, City of Austin staff discovered a direct correlation with the distance between protected roadway crossings and the potential for a fatal pedestrian crash occurring: the greater the distance, the higher the potential. This affirms the

[1] The term "illegally" is based on statewide laws and does not reflect the lack of jaywalking laws in Salem which significantly narrows the definition of "illegal" behaviors.

importance of creating walkable communities by designing to pedestrian scale and providing more protected or higher visibility crossings at closer spaced intervals.

The transportation engineering profession can help create walkable communities by planning and implementing context-sensitive, people-centric solutions which consider the needs of all roadway users – pedestrians, cyclists, transit riders, and motorists – regardless of age or ability. There are many opportunities to accomplish this through the Five E's: Engineering, Education, Enforcement, Evaluation, and Encouragement. DKS developed approximately 50 recommendations to improve pedestrian safety citywide, including the following.

- Citywide strategies to provide more protected pedestrian crossings, to limit conflicts between pedestrians and turning vehicles, to improve lighting, to address concerning driver and pedestrian behaviors, and to consider the desired travel paths of pedestrians in the planning and design processes.
- Location-specific recommendations include enhanced crossings with median refuge islands and high visibility crosswalks, traffic signal modifications, improved signing and lighting, sidewalk infill, access management, traffic calming measures, and maintenance of trees and vegetation.

An aspect that is critical to success is policy level direction that clearly defines the intent and desired outcomes of a focused effort to improve pedestrian safety. Many cities have successfully implemented Vision Zero safety strategies that would be applicable in Salem, such as policies that emphasize a reduction in fatal and severe crashes, redefining roadway design and operations standards to be more safety oriented and people-centric, prioritizing funding of infrastructure improvements to support pedestrian travel both along and across roadways, encouraging land use and development to create safer pedestrian connections, and seeking collaborative partnerships with other entities to advocate, fund, design, and implement safety improvements. In Salem, this could involve strategies such as partnering with Cherriots to provide enhanced pedestrian crossings to access major transit stops while sharing the responsibility for funding and/or maintenance, and working with the police department to discourage unsafe driver and pedestrian behaviors.

In summary, there are several factors contributing to the 16 pedestrian deaths that have occurred on Salem's roadways since 2011, including unsafe driver and pedestrian behaviors, infrastructure design characteristics, and pedestrian facilities that do not align with appropriate land uses. These concerns are not unique to Salem, and are observed in cities across the US. Fortunately, there are numerous feasible improvements, including both short-term and long-term solutions, which can be implemented across the city to significantly improve the safety of pedestrian travel. The accompanying Pedestrian Safety Study describes many of these treatments as well as the locations that would likely see the greatest benefit from their implementation.