ORDINANCE 2017-1

AN ORDINANCE AMENDING THE MUNICIPAL CODE OF THE CITY OF MIDFIELD, ALALBAMA ESTABLISHING REQUIREMENTS AND STANDARDS PERTAINING TO VEHICLE IMPACT PROTECTION MEASURES FOR BUIDINGS HAVING PARKING AREAS WITH IN 10 FEET OF THE FRONT ENTRY OF THE BUILDING

THE CITY COUNCIL OF MIDFIELD DOES ORDAIN AS FOLLOWS:

Section1.This ordinance hereby repeals Ordinance 2017-1.

Section 2. The City of Midfield amends Section54 of the City Municipal code by Adding new Sections 54-32 to the Municipal Code.

Section 3. The City Council makes the following findings in connection with the adoption of this ordinance.

A. According to the report of the City Attorney to the City Council of Artesia , California presented to that city council on July 14, 2014,experts in vehicle-into-building crashes have estimated that each day in the United States there are up to 60 vehicle-into-building crashes caused mostly by pedal error or other driver error. For example, approximately 20 times each day, a convenience store in the United States is damaged by vehicle-into-building crash, and up to up times each day a quick serve restaurant is damaged by vehicle-into-building crash,(Exhibit A to this ordinance).

B. Experts in vehicle-into-buildings crashes indicate that as many as 500 people die each year as victims of vehicle-into-building crashes.

C. Experts in vehicle-into-building crashes indicate that standard parking lot wheel stops and raised sidewalks are not sufficient, by themselves, to stop the force of vehicle in such pedal error accidents and that other design standards and devices are needed to protect pedestrians, shoppers and customers.

D. Building codes already have design standards to protect gas meters, fire hydrants, electrical switching equipment, trash enclosures and other equipment from vehicle crashes but have yet to establish and impose appropriate standards for protection of pedestrians, shoppers and customers of retail shops, restaurants and other establishments.

E. Many of these accidents and deaths are preventable if parking lots are designed and built with vehicle impact safety devices to prevent vehicles from driving into pedestrian walking and seating areas and into adjacent stores, restaurants and other building.

F. No one design, device or requirement is appropriate for all locations and al conditions, and therefore property owners, architects, engineers and business owners should be given the flexibility to utilize a variety of design elements and devices to protect pedestrians, shoppers and customers in areas near vehicle parking areas.

G. The goal of this ordinance is to establish standards for the design of vehicle impact protective devices that achieves an appropriate level of safety but not one set so high as to require unnecessarily expensive and aesthetically in appropriate structures within parking lot areas of the City.

H. The City Council also desires to establish development standards for private parking lots in a manner that balance (i) the public interest in protecting pedestrians, shoppers and customers from vehicle-into-building crashes,(ii) the financial burden on property

owners and businesses of providing appropriate protectives designs and devices; and (iii) the goal of encouraging innovation, variety and aesthetic variation so to give property owners and businesses flexibility depending on the conditions specific to each location.

Section 4. INTENT AND PURPOSE

The intent and purpose of this ordinance are to establish requirements and standards for safety barriers to lessen the potential for injury or death from vehicles that may through operator error or otherwise, drive into exposed areas at buildings whose parking areas are within 10 feet of the front entrance of the buildings

Section 5. ELEMENTS OF VEHICLE IMPACT PROTECTION DEVICES. Required vehicle impact protection devices shall take the form of bollards, as defined and provided below:

(i) Bollards, post and guard posts shall comply with all of the following requirements:

(aa) Constructed of steel or other material not less than six (6) inches in diameter.

(ab) Spaced so that one (1) post or bollards is provided for each parking space required to have the device, with the post or bollard located on the centerline of the parking space. The City's building inspector may approve minor deviations to these spacing requirements to accommodate site conditions and different size of parking spaces or loading areas.

(ac) Set with the top of the post not less than three (3) feet and not greater than four (4) feet above finished grade.

(ad) Located between the vehicle parking space or drive aisle and the seating area of the building to be protected.

(ae) Such bollards or posts shall be black, grey, safety yellow, bronze, stainless steel, concrete finish or similar color, as approved by the City's Building Inspector.

(af) Bollards or post shall be properly maintained, including no visible rust or corrosion, and be kept in uniform alignment. Use of protective or decorative sleeves is permitted.

Section 6. Physical Barriers such as reinforced walls, building perimeter walls, planters and street furniture, may be used to satisfy the requirements and standards of this section, provided they comply with the following requirements:

(A) The barriers shall be a minimum of thirty-six (36) inches in height. Plain concrete barriers, such as "K" Rails or "Jersey" barriers, shall be prohibited, except as temporarily allowed under subsection (e) of this section.

(B) When barriers are spaced apart, the spacing shall be not less than forty-eight (48) inches and not more than fifty-six (56) inches between the outer edge of the barrier and the nearest outer edge of the adjacent barrier.

(C)The color and design of the barriers shall be consistent building exterior.

(2) *Bollards, post, and guard posts.* Bollards, posts, may be used to satisfy the requirements of this section, provided they comply with the following requirements:

(A) The bollards or posts shall be constructed of steel pipe not less than six (6) inches in diameter. Pipes shall be cast into concrete foundations. Pipe sections shall be filled with concrete for the full height of the pipe section. Foundations for bollards/posts shall be 18 inch diameter (minimum) concrete piers extending not less than 36 inches into earth. Concrete shall have a minimum 28-day compressive strength of 3,000 psi. Bollard/post member shall be embedded a minimum of 30 inches into the concrete pier – thus allowing for a minimum of 6 inches of concrete below the bollard/post. Bollards/posts shall be approximately centered in concrete piers.

(B) The bollards or post shall be spaced not less than forty-eight (48) inches and not more than fifty-six (56) inches between the outer edge of the post or bollard and nearest outer edge of the adjacent post or bollard.

(C) The top of the bollards or post shall be set not less than three (3) feet and not more than four (4) feet above finished grade.

(D) The bollards or post shall be black, grey, bronze, stainless steel, concrete finish, or color that is similar to the color of the principal structure, with night reflector decals or paint where appropriate.

(E) The color and design of the bollards or posts shall be consistent throughout each care center.

(F) The bollards or posts shall be properly maintained, including no visible rust or corrosion, and be kept in uniform alignment. Use of protective and/or decorative sleeves shall be permitted.

(3) *Features.* Manmade features (for example, billboard support poles, culverts, ditches, or retention ponds) and natural features (for examples, large trees or water bodies), may be used to satisfy the requirements of this section, provided they are able to achieve an impact resistance equivalent to the steel bollards.

(d) *Attestations from licensed professional engineer.* Every permit application for vehicle impact protection devices at building required for install safety barriers shall be accompanied by construction documents, signed and sealed by a professional engineer or architect licensed with the State of Alabama, with a statement thereon attesting that the design and/or locations of the vehicle impact protection devices and/or features comply with the requirements and standards of this Article. Furthermore, prior to the issuance of a certificate or occupancy, the licensed professional engineer or architect shall attest that the vehicle impact protection devices and/or features have been installed or exist in compliance with the requirements and standards of this ordinance.

(e) *Replacement or repair.* Within ninety (90) days after a device or feature that serves to protect an exposed area of a building having an adjacent lot within 10 feet of the front of the building is destroyed, damaged, or removed, the device or feature shall be replaced with one that satisfies the requirements and standards of

this section. Before the device or feature is replaced, plain concrete barriers, such as "K Rails" or "Jersey" barriers, may be temporarily allowed.

Section 7. Time lines for Compliance with this Ordinance by Business with street level Parking.

1] Upon new construction of a parking lot or,

2] Upon a major renovation of a parking lot or,

3] At the times of any AMERICAN WITH DISABITIES ACT(ADA) compliance measures are installed in the parking lot or ,

4] Within 5 years of enactment of this ordinance or,

5] Upon the completion of repairs to a building that has been damaged or injury suffered as a result of a vehicle-into- building crash, whichever is the earliest.

Section 8. Penalties

Any person who violates the provisions of this ordinance shall be subject to any one or more of the following penalties or remedies:

(a) A violation of any provision of any provision of this ordinance may be enforced as set out in Section 1.8 of the Midfield Municipal Code.

(b)The City may bring a lawsuit in a court of competent, jurisdiction to pursue temporary or permanent injunctive relief or any other legal or equitable remedy authorized by law to cure remove, prevent, or end a violation of any provision of this ordinance.

Section 9. EFFECTIVE DATE

Approved this 27, day of February, 2017.

Attest:

Recarda Cobb, City Clerk

Gary R. Richardson, Mayor

Certificate of City Clerk

I, Recarda Cobb, City Clerk of the City of Midfield, Alabama, for the sole purpose of administering implementing the above and foregoing Ordinance, is a true and correct copy of Ordinance 2017-1, adopted and approved by the City Council of the City of Midfield, Alabama at its regular Meeting held on the 27th day of February, 2017 as same is represented in the Recorded Minutes.

Move, I hereby certify that the above and foregoing Ordinance was published by Posting same at the following three (3), or more, locations: Midfield City Hall, the Midfield Library, and the Midfield Post Office.

Certified and acknowledged on this 13th day of March 2017.

Recarda Cobb, City Clerk

EXHIBIT

A

CITY COUNCIL AGENDA REPORT

MEETING DATE: 7/14/14 **CONTROL NO:** **ITEM NO:**

TO: Mayor and Members of the City Council

SUBJECT: Information on Proposed Provisions of a Vehicle Impact Protection Ordinance

FROM: Kevin G. Ennis, City Attorney
William Rawlings, City Manager

REVIEWED AND APPROVED BY:
Justine Menzel, Deputy City Manager/Finance Officer
Kevin Ennis, City Attorney

PRESENTATION BY: Kevin G. Ennis, City Attorney

INTRODUCTION:

At the June 9, 2014 Regular City Council Meeting, Councilmember Manalo stated that he had been studying ways in which accidents like the vehicle-into-building crash that killed his mother-in-law and injured his children could be reduced. He stated that this type of tragedy is not that uncommon in the United States. He also indicated that some of these accidents may be prevented with better parking lot design standards that require barriers or posts that can stop vehicles from vehicle-into-building crashes and reduce the risk of injuries and death. He requested that the City work to develop solutions to protect the public against these accidents. He also indicated that he would be seeking support from the City of Buena Park (where the accident occurred) in developing new or improved parking lot design standards.

Councilmember Manalo has been meeting with experts in the field of vehicle impact protection standards and has begun to compile sample standards which he has forwarded to City staff and the City Attorney for review. One of those experts is Rob Reiter, of the Storefront Safety Council. This report is a summary of information gathered by Councilmember Manalo and by City staff, including information from Mr. Reiter, as we begin to study ways of addressing this issue. In addition, staff has begun to develop a proposed ordinance that would require vehicle impact protection devices in new or modified parking lots in the City.

BACKGROUND INFORMATION ON THE PROBLEM.

Mr. Reiter, of the Storefront Safety Council, has provided the City with background

information on the problem of vehicle-into building crashes. Set forth below is a summary of the information he has provided to the City.

Vehicle-into-building crashes happen as many as 60 times per day in the United States. Sometimes called storefront crashes, these accidents are very often caused by pedal error or other driver error, and most often occur when a driver is entering or leaving a parking space or proceeding down a parking lot drive aisle facing a building or pedestrian area. Because most of these accidents occur on private property, the full scope of the problem had not been studied or well reported by local jurisdictions.

Experts at the Texas A&M Transportation Institute (TTI) and the Storefront Safety Council have published research showing that crashes such as these are increasingly common due to the increasing number of aging drivers and the increasing number of distracted drivers of all ages. More importantly, it has been shown that the majority of such crashes are easily preventable.

Evidence suggest that more than 3,600 pedestrians, store patrons, and store employees are seriously injured in storefront crashed each year, and as many as 500 are killed.

Standard parking lot wheel stops and raised sidewalks are not sufficient, by themselves, to stop the force of a vehicle in unintended vehicle incursion accidents. ASTM International (formerly the American Society for Testing Materials) has recognized the scope of the problem and has started working on a test standard (WK13074) for designs and devices effective in protecting pedestrians, shoppers and customers. Distinct from existing standards for high-speed anti-terrorist barriers, this new standard will address passenger cars and SUVs at common street traffic speeds. While ASTM's standard will provide a uniform testing method and, as such, serve as the basis for future codes and ordinances, it will be the responsibility of local agencies to decide whether to require the installation of protective devices.

Two factors particularly influence the incidence of vehicle-into-building crashes: parking space configuration and driver demographics. Positioning spaces perpendicular (i.e., "nose-in") to a building in effect aims vehicles directly at the structure and at people. A certain amount of driver error is inevitable, as any insurance company knows. With this parking configuration, vehicles are poised to crash directly forward into the building in the event of any momentary lapse in driver judgment or attention. Nose-in parking maximizes the potential for tragedy, as it did in the case of the Ferrell's tragedy.

That risk is compounded by driver demographics. Drivers of all ages commit pedal error: their foot slips from one pedal to the other, or they mistakenly press the gas instead of the brake. But pedal error is especially common among drivers aged 16 to 20 and those 76 and over, according to the National Highway Traffic Safety Administration (NHTSA). The Texas A&M and Storefront Safety Council data show that as many as 40 percent of storefront crashes are a result of simple pedal error.

That combination of driver error and risky design (pointing traffic directly at storefronts, pointing parking places directly towards sidewalks, curb cuts, ramps or outdoor dining

areas) is resulting in expensive property damage and injuries and fatalities among building patrons — including employees, customers and pedestrians. Most of these crashes can be prevented with some simple and inexpensive steps that can be taken either in the design phase of a development or as part of a retrofit.

Building codes already exist that have design standards to protect gas meters, fire hydrants, trash enclosures, electrical switching equipment, above ground fuel tanks, chemical tanks, and gasoline pumps. There and other vulnerable objects are protected from vehicle crashes, but few localities have established and impose appropriate standards for protection of pedestrians, shoppers and customers of retail shops, restaurants and other establishments. While many major retailers in the United States already utilize various impact protection devices at their entrances and exits (such as Target and WalMart and other Big Box retailers) other commercial property and business owners have been slower to recognize the problem or have been waiting for codes and ordinances to determine what preventive measures to adopt.

WHAT CAN BE DONE TO REDUCE THESE ACCIDENTS?

Unintended loss of control or pedal error accidents that result in vehicle-into-building crashes can occur in pedestrian, shopping or customer seating areas adjacent to parking lots. As indicated earlier, wheel stops and sidewalk curbs have not generally been found, by themselves, to be sufficient to stop unintended vehicle incursions. This is because modern motor vehicles have the potential to accelerate quickly and with great force in a short distance. If the vehicle driver presses the accelerator instead of the brake, a motor vehicle can quickly overrun a wheel stop and a curb.

The goal is to find designs, improvements and devices that are designed to stop or reduce the forward (or backward) movement of a vehicle before the vehicle hits a pedestrian, shopper or customer near or in an adjacent store, restaurant or building. At the same time, the City needs to be mindful of the financial burden on property owners and businesses and the aesthetic challenges to property owners and businesses. Property owners and business want their premises to look pedestrian friendly and inviting and not to have parking lot perimeters look like a fortresses or terrorist blockades. Thus, it is important that whatever standards are developed that they be financially feasible and aesthetically acceptable to the businesses and the shopping public.

Experts studying this issue have concluded that the force of a typical vehicle in an unintended vehicular acceleration accident is equivalent to a 5,000 pound vehicle traveling at 30 miles per hour. Barriers and devices that can achieve this impact resistance level are thought to be sufficient to protect against most vehicle-into-building accidents. This forms the basis for the testing assumption under formulation by ASTM International, for its appropriateness in the testing and development of vehicle impact protection devices. Mr. Reiter anticipates that ASTM International will adopt this test standard in the next year.

WHAT TYPE OF DEVICES ARE AVAILABLE TO ADDRESS THE PROBLEM?

One type of protective device is a barrier. Barriers are horizontal devices which can be made of steel or concrete and be designed as a rectangular block or as a planter. Another type of protective device is a bollard. Bollards are vertical devices most commonly made from steel, and are installed in a footing in the ground and placed in a line (approximately four feet apart) to block a vehicle from crossing into a pedestrian, shopping or seating area or into a building.

In further studying this issue, no one design, device or requirement may be appropriate for all locations and all conditions. Concrete planters may work and look best in certain situations. In others, bollards or posts may be more appropriate. Therefore property owners, architects, engineers and business owners should be given the flexibility to utilize a variety of design elements and devices to protect pedestrians, shoppers and customers in areas near vehicle parking areas.

The goal of this ordinance is to establish a performance based standard for the design of vehicle impact protective devices that achieves an appropriate level of safety but not one set so high as require unnecessarily expensive and aesthetically inappropriate structures within parking lot areas of the City.

Separating pedestrians from perpendicular traffic and protecting storefronts from the impacts of cars that jump curbs as a result of operator error are compelling issues of public safety and building and public space design.

WHAT OTHER CITIES OR COUNTIES ARE DOING.

Several communities across the country are looking at developing vehicle impact protection standards. For example, Miami-Dade County Florida has adopted an ordinance to require concrete security planters with a minimum depth of forty (40) inches to be placed along the outer edge of a sidewalk to create a visual and physical separation between vehicular areas and pedestrian areas in certain neighborhood business districts. These planters are to achieve a U.S. Department of State protection rating of "K4." We are informed that this resistance level is designed to block a large vehicle that may be used in a terrorist incident at a federal facility. A copy of the Miami-Dade County ordinance is attached as **Exhibit A**.

The City of Amherst, New York, studied the issue a couple years ago and prepared a draft ordinance, a copy of which is attached as **Exhibit B**. That ordinance, which has not been adopted, proposed to require vehicle impact protection devices only adjacent to stores, buildings and facilities that are likely to have a high concentration of persons inside or outside of the adjacent store, building or facility. In addition, that draft ordinance allows for the use of barriers, posts or bollards that meet certain standards.

We are also informed that Orange County, Florida is currently studying the issue but has not yet drafted or adopted a vehicle impact protection ordinance.

Councilmember Manalo has met with the Mayor of Buena Park who indicated that his City had an interest in working with Artesia to develop vehicle impact protection standards.

PRELIMINARY DRAFT ORDINANCE

The City Attorney's Office has compiled information and sample ordinance language from some of the communities mentioned in the prior section of this report, and has developed a preliminary draft ordinance, a copy of which is attached hereto as **Exhibit C**. This draft ordinance is currently undergoing additional staff review from the City's Planning Department and the City's traffic engineer and is not ready for formal consideration by the Council. However, staff has noted the following general policy issues that will need to be addressed in the ordinance before it is finalized for further consideration.

(1) Types of businesses and facilities to have protected devices. One of the main questions is whether protective barriers, posts or bollards should be required between parking lots and every type of business or facility or just certain types of businesses or facilities. The Miami-Dade County Ordinance imposed the requirement along sidewalks in only certain zones of the County such as the County's Neighborhood Commercial Zone. In contrast, the draft ordinance in Amherst, New York, proposed the requirement only adjacent to certain types of businesses and facilities that are likely to have a high concentration of pedestrians, shoppers or customers but not adjacent to other businesses or facilities. Each approach has its own advantages and disadvantages and either one can result in potential over-inclusion or under-inclusion of locations where pedestrians, shoppers and customers are at risk from vehicle-into-building crashes. On balance, staff believes, pending further input, that the use of a specific list for facilities that are required to have these devices has a risk of inadvertent exclusion of businesses or facilities that may have a similar likelihood of pedestrian, shopper or customer congregation as those on the list. Accordingly, staff believes every new or modified parking lot in commercial districts of the City should have the new standards.

(2) Level of Resistance Standard to be Achieved. Miami-Dade County chose to require concrete planters in certain zones that meet a vehicle resistance level of "K4." We are informed that this standard is designed to block a truck from running into a federal embassy or other facility. In contrast, Amherst, New York's proposed ordinance would have established a resistance level of 12,000 pounds 36 feet above the ground surface. Mr. Rob Reiter, a vehicle impact expert has proposed to ASTM International that it adopt a resistance standard that is designed to stop a 5,000 pound vehicle traveling at 30 miles per hour. According to Mr. Reiter, this latter resistance level would address the force of a typical passenger vehicle that is engaged in accidental vehicular acceleration accident. At this point, staff is proposing to require the resistance standard recommended by Mr. Reiter.

(3) Types of Devices. As indicated above, Miami-Dade County utilizes concrete planters between pedestrian and vehicular areas in certain zones of the County. In contrast, Amherst, New York, proposed to allow either barriers (planters or others),

posts or bollards at the discretion of the property owner and business. In general, staff prefers a standard that allows the property owner or business to have the flexibility of use one of several options achieve utilize devices that achieve a reasonable vehicular resistance level rather than imposing only one type of device. In this way, architects, engineers, property owners and businesses can have the needed flexibility to use a design, device or devices that best suits the location and the needs of the business.

(4) Cost of Devices. Mr. Reiter has estimated that the cost of installing a tested safety barrier or bollards to be approximately $800 to $1,200 per parking space that is adjacent to a store front.

(5) Phasing In Requirements for New, Modified and Existing Parking Lots. One of the issues that staff will be addressing is how soon can the City compel property owners to comply with any new standards imposed by the City. With respect to new parking lots and substantial modifications to existing parking lots as proposed by the property owner or developer, the City may require its new standards to be met as part of the construction of the new parking lot or the substantial modification of an existing parking lot. For existing parking lots, the City has to recognize a property owner's rights to continue a non-conformity for a period of time sufficient to amortize the investment already provided in the existing parking lot improvements and to have time to prepare for and save or finance the new improvements. Mr. Reiter advices that most parking lots are upgraded about every five years. These upgrades usually involve bringing a parking lot up to ADA compliance by designating disabled parking spaces, adding signs, ramps and safe path or travel markings. Accordingly, he suggests that the City require the safety measures at any of the following times: (1) upon new construction of parking lot; (2) upon a major renovation of a parking lot; (3) at the time of any ADA compliance measures are installed in the parking lot; or (4) within five years of enactment, whichever is earlier. In this way, it is likely that over a five year period, most parking lots in the City would be brought into compliance with the City's new standards.

RECOMMENDATION: Staff recommends that the City Council provide any policy direction it deems appropriate and direct staff to continue to develop and refine the draft ordinance, taking into account input from a variety of sources and then bring a revised draft ordinance back to the Council for further policy direction at an upcoming meeting.

ATTACHMENTS

Exhibit A - Miami-Dade County Ordinance
Exhibit B - Amherst New York, Draft Ordinance
Exhibit C - Draft Artesia Vehicle Impact Protection Ordinance