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**Special Crash Investigations:
Remote Hyperthermia Fatality
Investigation;
Vehicle: 2017 Ford Fiesta;
Location: Arizona;
Incident Date: August 2020**

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16. Abstract This report documents the remote investigation of the hyperthermia-related fatality of a 3-year-old female. She exited her residence and entered her mother's 2017 Ford Fiesta while unaccompanied and without assistance and then sustained fatal injuries while remaining inside the vehicle for several hours. The caregiver was the child's 23-year-old mother. The Ford Fiesta was parked near the family's residence in an area exposed to direct sunlight. Police found the child in the vehicle after responding to the mother's 911 call reporting the child missing from the residence. The child was transported by ambulance to a local hospital where she was pronounced deceased upon arrival.			
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**Special Crash Investigations
Remote Hyperthermia Fatality Investigation
Case Number: DS20014
Vehicle: 2017 Ford Fiesta
Location: Arizona
Incident Date: August 2020**

Background

This report documents the remote investigation of the hyperthermia-related fatality of a 3-year-old female. After exiting her residence and entering her mother's 2017 Ford Fiesta without assistance, she sustained fatal injuries while remaining inside the vehicle for several hours. The caregiver was the child's 23-year-old mother. The Fiesta was parked near the family's residence (Figure 1). Police found the child in the vehicle after responding to the mother's 911 call reporting the child missing from the residence. The child was transported by ambulance to a local hospital where she was pronounced deceased upon arrival. The investigation was intended to determine the events leading to the incident, activities of the mother and child, vehicle characteristics and equipment, and environmental conditions. The incident was identified as part of a hyperthermia study by the National Highway Traffic Safety Administration and assigned to the Special Crash Investigations (SCI) team in September 2020. The SCI team obtained the police incident report and photos, emergency transport services report, medical examiner's report, and autopsy report.



*Figure 1. 2017 Ford Fiesta, looking southwest
(police photo)*

The incident occurred during the day in August 2020 in an urban residential area of Arizona. The high temperature in the area on the day of the incident was 39.4 °C (103 °F). The incident site was a residential apartment complex with an uncovered, paved asphalt parking lot. On the morning of the incident, the mother picked up the child from the child's grandmother's residence, where she had stayed overnight. The mother and child then traveled to their residence and soon after arriving home, both laid down to take naps. While the mother slept, the child got out of bed and found the mother's car key, which was a combination electronic fob and manual

key. The child exited the residence and entered the Ford while unattended. Several hours later, the mother awoke from her nap and called 911 after she could not find the child in the residence or in the adjoining courtyard. Police arrived and found the child in the driver's seat of the vehicle in an unresponsive condition and exhibiting obvious signs of death. The child was transported by ambulance to a local hospital where she was pronounced deceased. According to police, surveillance footage showed the child walking out of the apartment and entering the vehicle more than 4.5 hours before the mother called 911. She was charged with a class 3 felony described as "child or vulnerable adult abuse, with recklessness, resulting in death." The mother was arrested and taken into police custody.

Summary

Incident Site

The incident occurred in the parking lot of a multiple-unit apartment complex where the mother and child resided. The apartment complex consisted of nine buildings of two or three floors each. The property was surrounded by a wrought iron security fence with two entrance/exit gates, one which was located at the southeast aspect of the property and another which was located at the northwest aspect of the property. The mother's residence was located in a two-story building configured in an east/west orientation and situated on the northwest aspect of the property. The residence was a ground-floor unit with the front door facing south and was the third unit from the west end of the building. A paved walkway led from the unit entrance around the west end of the building and to the parking lot located just north of the building.

The interior of the apartment consisted of a living room, bedroom, bathroom, and kitchen. According to police, the front door was configured with multiple locking devices including a deadbolt and swing style latch, both of which were determined to be operational. The mother and child historically shared a bed in the bedroom.

The exterior area surrounding the apartment building consisted of an open common use courtyard to the south and a paved parking lot to the north. The courtyard was visible through a window on the south wall of the unit and the parking lot was visible through a window on the north wall. The common use area included a fenced-in swimming pool and mature palm trees. The parking lot was level, paved in asphalt and configured with painted parking stalls. A row of parallel parking spaces situated along the north boundary of the property was located approximately 15 m (50 ft) north of the north wall of the unit. The Ford was parked facing east in the third space from the left. Using police photos, the investigation determined the vehicle was likely visible from a window on the north wall of the residence. The minimum walking distance from the residence to the vehicle was approximately 45 m (150 ft).

The mother and child moved to the residence approximately 3 months prior to the incident. The mother later told police that when they moved into the unit the front door had a faulty latch that did not always operate properly to prevent the door from opening. To remedy the situation, the mother's father installed a safety latch similar to those found on hotel room doors. Since then, the child had learned to stand on a sofa near the door and unlatch the safety latch. On several occasions during the 3 months, the child exited the residence without assistance and was found outside by the mother or neighbors. According to the police report, one such instance had occurred three to four weeks prior to this incident and the child was found by a neighbor. Approximately one week before the incident, while the mother was outside of the apartment, the child latched the security latch, locking the mother outside. The mother was able to communicate with the child through a window, and after some prompting the child unlatched the security latch allowing the mother to open the door and re-enter the apartment.

The incident occurred on a Sunday afternoon during warm and dry conditions. Additional vehicles were likely in the parking lot and other residents or visitors were likely coming and going during the day. Trees were present on the north edge of the parking lot but the location of the vehicle relative to the trees and nearest building suggest it was exposed to direct sunlight for much of the day. Surveillance cameras in the area recorded images of the child exiting the residence, walking to the parking lot, and entering the vehicle. Additional images recorded the

mother exiting the residence and searching for the child in the courtyard. An incident site diagram and incident site satellite view are included at the end of this report.

Weather Data

On the day of the incident, the low ambient temperature was 26 °C (78 °F) and the high ambient temperature was 38 °C (101 °F). Maximum wind speed was 40 km/h (25 mph) with gusts to 56 km/h (35 mph), conditions varied from fair to mostly cloudy, and visibility was clear. Precipitation was measured at 0.0 cm. At 1545 hours the ambient temperature was 38 °C (101° F), the solar azimuth angle was 252.5° and the solar elevation angle was 38.5°. Temperatures and conditions during the incident are documented in the table below.

Time (24 hours)	Temperature °C (°F)	Humidity percent	Heat Index °C (°F) (calculated) ¹	Conditions
0951	32 (90)	42	33 (91)	Fair
1051	34 (93)	37	35 (94)	Fair
1151	35 (95)	31	35 (95)	Partly cloudy
1251	37 (98)	28	37 (98)	Partly cloudy
1351	38 (100)	27	38 (101)	Partly cloudy
1451	37 (99)	26	37 (99)	Partly cloudy
1551	38 (101)	25	38 (101)	Mostly cloudy
1651	36 (96)	33	36 (97)	Mostly cloudy

Vehicle Information

The 2017 Ford Fiesta SE was identified by police using the Vehicle Identification Number 3FADP4BJ7HMxxxxxx. The mother owned the vehicle. The Ford was a 4-door sedan with two rows for five occupants. The vehicle was equipped with a 1.6-liter, 4-cylinder, gasoline engine, front-wheel drive, and automatic transmission. It had options including a power moon roof and satellite radio. The exterior color was Oxford white and the interior had charcoal black fabric seats and black vinyl trim. The Fiesta did not appear to have aftermarket window tinting. The right rear quarter-panel was missing from the vehicle. The cause of the damage was unknown. A Cosco Rise No Back Booster safety seat was located in the second-row left seat position.

The status of the door locks prior to the incident was unknown. When police arrived, the front and second row doors were unlocked. When they discovered the child in the vehicle, they found the key fob for the vehicle next to her on the driver's seat cushion (Figure 2). The security system consisted of an engine immobilizer and anti-theft alarm. The vehicle had exterior pull-out style handles, a wireless remote key, and a cylinder style lock for the driver's door. The Fiesta had electric power interior door locks. Each door in the vehicle could be unlocked by pulling the interior handle. The front door handles needed to be pulled once to unlock and unlatch the front doors. The second-row handles required two pulls, one to unlock the door and a second to unlatch the door. The second-row doors had child safety locks that actuated using the vehicle's manual key. Police photos revealed the left and right child safety locks were in the locked setting. The vehicle had electric power window regulators and the windows were closed during the incident.

¹ www.wpc.ncep.noaa.gov/html/heatindex.shtml



Figure 2. Vehicle key (police photo)

The Ford had Bluetooth and USB technology. It was unknown if the mother connected a phone to the vehicle via any of the available methods. It was unknown if the vehicle was configured with unattended child detection, monitoring, or warning systems. It was unknown if the mother had a plan in place to prevent such incidents from occurring, or if she had ever been informed about the dangers of leaving a child in a hot car. It was unknown if she was aware of campaigns focusing on the issues of heatstroke and hyperthermia.

Pre-Incident

The mother was the child's 23-year-old mother. The child spent the night at the residence of her maternal grandmother. On the morning of the incident, the mother picked up the child from the grandmother's residence at an unknown time and traveled to their residence without making any intermediate stops, arriving at 0958 hours. She parked the Ford facing east in the third space from the left in the northwest aspect of the apartment complex parking lot. The parking space was configured parallel to a curb on the north edge of the property. This parking configuration resulted in other vehicles possibly parking in front of, or behind, the Ford but not to the left or right sides of it. The mother unloaded the vehicle of unspecified items and she and the child walked from the parking lot to their residence.

The residence was a one-bedroom apartment and the mother and child typically slept in the same bed. They both laid down for a nap at approximately 1100 hours. The mother watched the child fall asleep and then she fell asleep.

Details regarding the recent history and typical daily routines of the mother and child were obtained from the police report. According to documents found during the police investigation, the caretaker worked 40 hours per week as a medical assistant at a medical care facility. Her employment there began approximately 18 weeks prior to the incident and the facility was located in or near the city where she lived. An online site indicated the medical offices were open for business Monday – Saturday during day time and evening hours, and were closed Sundays and nights. The incident occurred on a Sunday so the mother was typically not working on that day.

The mother and child moved into their apartment approximately 3 months prior to the incident. Before the move, they had lived in the home of the child's maternal grandmother, where the child had stayed the night prior to the incident. The typical daily schedule of the child was not determined, but the police report suggested she was often attended to by the grandmother. Details of her daily care and activities while her mother worked were unknown.

The mother made a statement to police regarding several recent developments in the habits of the child. She indicated that the child had learned to recognize the Ford and would sometimes run to the vehicle upon recognition. She had learned to open the safety latch on the front door, and in the 3- to 4 weeks prior to the incident had exited the apartment unassisted. The child's activities on the day of the incident indicate she had learned the significance and functionality of the vehicle's key fob, as well as where to find it within the apartment.

Incident

The police report indicated the child's activities were captured on the apartment community surveillance video. At an unknown time, the child awoke from her nap, found the mother's car keys and opened the front door to the apartment. At 1152 hours, the child exited the residence unattended and walked to the parking lot where she found the Ford (Figure 3). The child used the remote control key fob to open the trunk, then she closed the trunk without getting inside. She presumably used the remote control to unlock the front passenger's door, which she then opened and used to enter the vehicle. Once inside, she closed the door at 1203 hours. After 1226 there was no more visible movement in or around the vehicle.

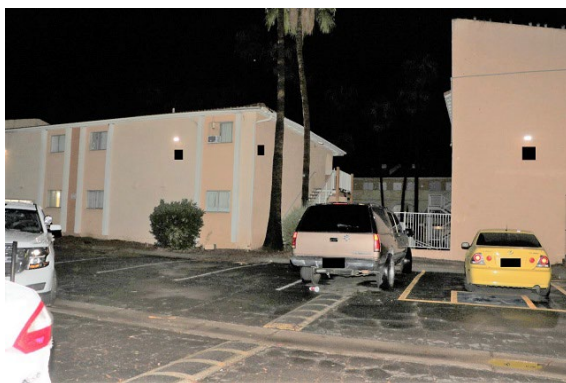


Figure 3. Lookback view from subject vehicle to residence (police photo)

According to the mother, she slept for approximately one hour and then woke up. At that time, the child was not in the bed or bedroom, and the apartment was quiet suggesting to the mother that the child was sleeping in another room. The mother later stated she thought that perhaps the child had moved from the bedroom to the living room and was asleep on the living room sofa. The mother then went back to sleep for one-half hour or longer and awoke at an unknown time. She did not see or hear the child in the residence. After waking up the second time, the mother looked inside the apartment and noticed the front door security latch was unlatched and the front door was partially open. She then exited the apartment at 1610 hours and looked for the child in the courtyard area and parking lot. She walked around the apartment complex and through the parking lot near where her vehicle was parked. She looked around and underneath some vehicles parked near to hers but she did not look inside her vehicle. After searching for approximately 20 minutes, she called 911 at 1630 hours.

When police arrived, some were tasked with canvassing the neighboring units by knocking on doors of apartments and seeking the whereabouts of the child or potential witnesses in the area. It was unknown if they were looking in vehicles when their search began. The mother did not realize her car keys were missing from the apartment until a responding police officer asked her if she had a vehicle in the area and, if so, where was its located. The mother indicated the Ford

was in the parking lot north of the unit and that the child could recognize it upon sight and could distinguish it from other vehicles in the area. Police went to the vehicle, looked inside and observed the child in the driver's seat at 1658 hours. The car key was visible on the seat cushion next to the child. Her total time in the vehicle was approximately 5 hours.

Post-Incident

When police discovered the child in the vehicle, all the doors and windows were closed and the vehicle doors were unlocked. At various times, police opened the left front, right front and right rear doors without using a key. Police noted the interior temperature of the vehicle felt noticeably hotter than the outside ambient temperature. The child was sitting in the driver's seat in a posture leaning toward the right with her head tilted to the right, her arms by her sides and her legs and feet forward. Police removed her from the vehicle, placed her on the ground, and began administering chest compressions. At 1702 hours fire department units arrived and took over resuscitative efforts. They placed the child on a patient cot and at 1706 hours transported her to a local hospital where they arrived at 1711 hours. According to her medical records, the child's core temperature measured 43.3 °C (110 °C). She had been in the vehicle for more than 5 hours. She was pronounced deceased in the ER at 1717 hours.

Police treated the mother's apartment complex as a crime scene and initiated a homicide investigation. At 2334 hours, a blood draw was obtained from the mother for the purpose of testing for the presence of ethanol and drugs. According to the report, she was positive for alcohol and narcotics. The mother was charged, booked and transported to jail at 0237 hours the following morning.

Police reported the incident to the state department of child safety who forwarded the incident to a supervisor for the state department of child welfare and investigations.

Police modified their reporting of the incident 25 days after the incident as follows:

The crime analysis and research unit's coding detail reviewed the incident for data quality purposes and to ensure it met the uniform crime reporting (UCR) guidelines mandated by the Federal Bureau of Investigations (FBI) which can differ from Arizona Revised Statutes (ARS). Based on the details provided as of September 2020 and with the permission of the assigned case Detective, police changed the Offense Code from 13-3623a2_020 (child/vulnerable adult abuse-reckless-murder) to 13-3623a_170 (child-physical abuse reckless-endanger health). The child would not count as a homicide victim for UCR.

According to the police report, on the day of the incident between 0958 and 1658 hours, the mother committed child abuse against her 3-year-old daughter by recklessly causing or permitting the child to be placed in a situation under which circumstances produced the death of the child.

Caregiver Data

The caregiver was a 23-year-old female who was the child's mother. She was reported by police to be employed as a medical assistant at a local health care center. Details regarding her employment history, schedule, and duties were limited. Prior to moving into the apartment, the mother and child shared a residence with the maternal grandmother.

Child Data

Age/sex: 3 years/female
Height: 97 cm (38 in)
Weight: 19 kg (41 lbs)
Eyewear: None
Seat type: Bucket with adjustable head restraint
Seat track position: Unknown
Manual restraint usage: Lap and shoulder seat belt not used
Usage source: Police report
Air bags: No crash event
Alcohol/drug data: None reported
Egress from vehicle: Removed while unresponsive through left side door
Transport from scene: Ambulance to hospital
Type of medical treatment: Chest compressions and CPR attempted on-scene, declared deceased in ER

The child was a 3-year-old female. She had the manual dexterity and cognitive development to perform simple mechanical and memory tasks such as locate and identify the mother's remote control car key, latch and unlatch a door security mechanism, open and close a full size residential exterior door, recall the location of a vehicle in a parking lot, recognize a vehicle and distinguish it from others, open and close a trunk, unlock a vehicle door, open and close a vehicle door, enter a vehicle, sit upright in a front row seat, etc.

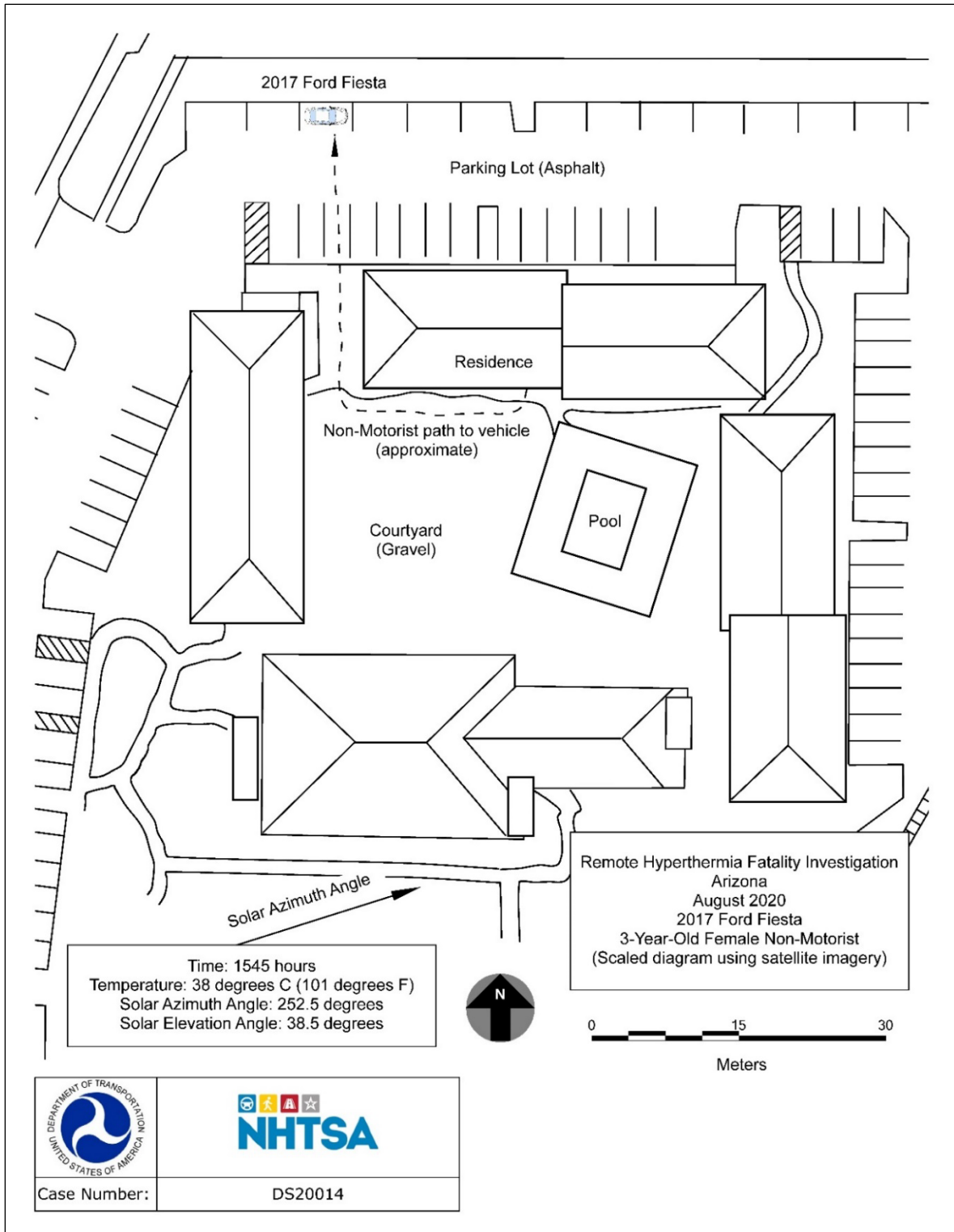
According to the mother, the child was originally wearing an orange shirt, pink and purple shorts, and a white diaper. She was found by police to be wearing the orange shirt and diaper. She was not covered by a blanket or other items concealing her presence in the vehicle. The autopsy stated cause of death was environmental heat exposure and the manner of death was accidental.

Child Injuries

Injury No.	Injury	Injury Severity AIS 2015	Involved Physical Component (IPC)	IPC Confidence Level
1	Hyperpyrexia $\geq 41^{\circ}\text{C}$ ($\geq 105^{\circ}\text{F}$)	010206.5	Environmental heat	Certain

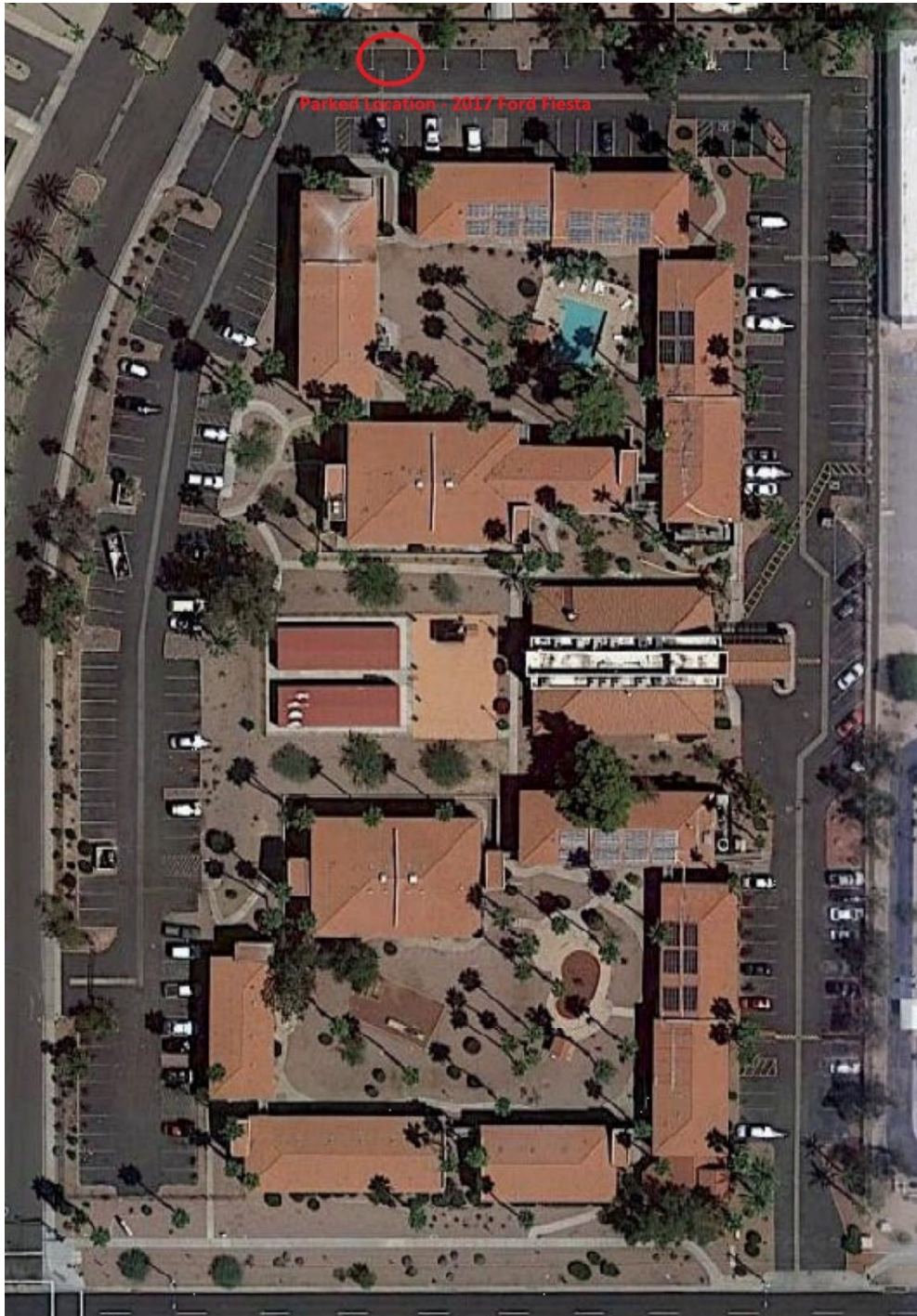
Source: autopsy report

Incident Site Diagram



Incident Site Satellite View

(Image source: Google Earth © 2020 Maxar Technologies)



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