COMMUNITY RISK ASSESSMENT/ STANDARDS OF COVER | 2024

DeLAND FIRE DEPARTMENT

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City of DeLand Fire Department

Fire Chief Todd B. Allen

Community Risk Assessment/Standards of Cover

Contributors

Fire Chief Todd Allen
Division Chief Matt Dyer
Division Chief Justin Desy
Division Chief Mike Vazquez
Fire Marshal Jamie Lunsford
Lieutenant Justin Bass
Engineer Kyle Grace
Firefighter Ross Pelletier
GIS Coordinator Aaron Schmoyer
GIS Analyst Darlene Pardiny

2024

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Executive Summary

The City of DeLand Fire Department (DFD) conducted the following Community Risk Assessment/Standard of Cover (CRA/SOC) with the contracted assistance of the Center for Public Safety Excellence (CPSE) Technical Advisor Program. This document captures our passion and continued quest to strive to be a superior fire service agency that offers premier all-hazards response and risk reduction services to our community. This document will help us map our path to ensuring we continue to identify areas of improvement and make us aware of potential vulnerabilities within our community.

This CRA/SOC was a collaborative process that engaged stakeholders within our community to ensure we captured their insights into what they expect from their fire services. In addition, we want to continue to emphasize the importance of data-driven decision-making to ensure the financial resources we are given make the highest impact. Utilizing our GIS staff for mapping and inputting our Computer Aided Dispatch (CAD) and Records Management Software (RMS) data, we can identify risk, service demands, and gaps and/or underserved areas. By no means to be overlooked, we also engaged our labor union (IAFF L-4347) as part of our process to ensure complete transparency and buy-in from our greatest asset: our employees.

As our community continues to evolve and grow, so must our unwavering commitment to the people we serve. We continue to go to great lengths to ensure our services are premiers, as shown through our Insurance Services Office (ISO) public protection rating being upgraded to a "1" in 2022. This document is the next step to ensure we continue to improve and validate the services we provide. Our overarching goal is to become an accredited agency and to do so, we must identify our vulnerabilities and areas to improve, which this document serves to provide.

A. Description of Community Served

Introduction

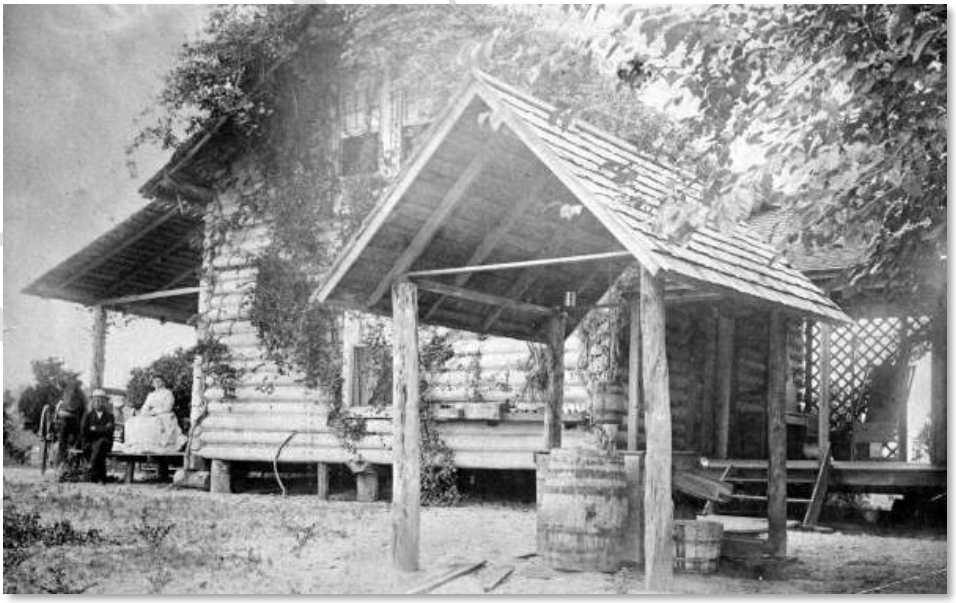
Every community faces its own unique challenges, risks, and hazards. This document, the Community Risk Assessment and Standards of Cover, will discuss the associated risks, hazards, and challenges that the City of DeLand Fire Department faces daily. This document will assist in evaluating the risks to the community, the department's response to these risks, and assist in developing a plan for improving future response capabilities.

Community and Department Legal Basis

The original city charter was created and signed on August 9, 1883. This charter legally established the original volunteer fire brigade for the City of DeLand. A modern charter is established in Article 5, Section 44 of the current city municipal code. This code establishes the fire department, establishes that the department can enforce the current city codes and ordinances, and that the department is under the direction and supervision of the fire chief.

History of the Community

In 1874, a steamboat captain named John Rich built a log cabin and started a settlement on a parcel of land then known as Persimmon Hollow. At that time, the area was known for the abundance of wild persimmon trees that grew on the land. After the Civil War ended, each year, more and more pioneers moved to the area, looking to build a new future for themselves and their families.



John Rich's cabin in Persimmon Hollow

In 1876, Henry DeLand, a baking soda business owner from Fairport, New York traveled to Central Florida with his brother-in-law O.P. Terry to see the land that Terry had purchased for the planting of orange groves. At that time, "Orange Fever" was becoming very common to the early pioneers. Orange Fever was the excitement over investing and planting the new orange groves in the Central Florida area.

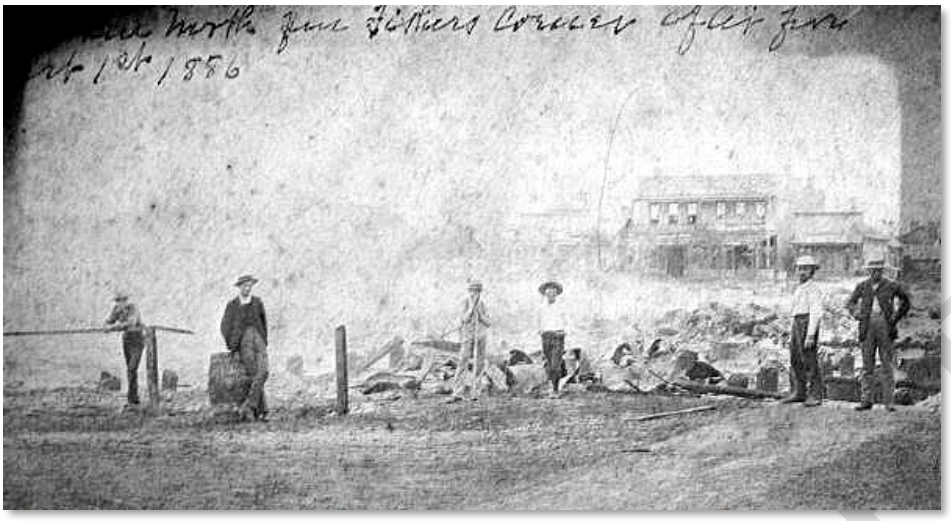
O.P. Terry and Henry DeLand during DeLand's first visit to Persimmon Hollow

Henry DeLand fell in love with the area during his trip. He was impressed with the vast pine trees and rolling landscape - so much so that he purchased a large parcel of land with the hopes of establishing a town. Henry DeLand wanted the town that he was creating to grow and thrive. To help the town grow and to entice other pioneers to move to the area, DeLand guaranteed their investments as an incentive to relocate and would purchase their farm if it failed. The town was officially incorporated in 1882 and became the City of DeLand.

In 1883, the DeLand Academy, the first private college in Florida, was established along with the city's volunteer fire brigade. A hard freeze in 1885 ruined most of the orange groves and farmland in the area. As a result, Henry DeLand had to keep his word and reimburse all of the area farmers as part of his guarantee. DeLand returned to New York as many of his financial investments were deemed nearly worthless after the freeze. Prior to leaving, John B. Stetson, a hat manufacturer from Philadelphia, was entrusted with the DeLand Academy. In 1889, it was renamed Stetson University, which is still a prominent fixture in the city.

The DeLand Academy. This building is still in use today as Deland Hall on the Stetson University Campus.

On September 27, 1886, a fire started in a saloon in the downtown area. Once the fire was finally extinguished, it burned 22 buildings and 33 businesses and destroyed two blocks of the downtown area. As a result, the next day, two new city ordinances were created. One required all new buildings to be constructed of masonry, and the second banned saloons. Some of these new masonry buildings are still in use today. The City of DeLand became the county seat of Volusia County in 1887 and was the first city in Florida to have electricity.



The aftermath of the Great Fire in 1886

In 1920, an airfield was created just north of the downtown area. In World War II, the airfield was donated to the U.S. Navy, and in 1941 the DeLand Naval Air Station was established. The naval air station was in operation until 1946. Once the war was over, the airfield was returned to the city and is still in operation today. The airport is home to Skydive DeLand, one of the top skydiving locations in the world.

DeLand Naval Air Station in 1942

Community Financial Basis

The City of DeLand Fire Department is funded through ad-valorem taxes against taxable properties located in the city. The tax rate for each property is based on the assessed property values and is set by the DeLand City Commission. The current millage rate for the 2022/2023 fiscal year is set at 6.5841, which is a 7.02 percent increase from the 2021-2022 fiscal year, which was set at 6.1520 mills. Much of the commercial tax base in DeLand is classified as tax exempt. Educational facilities, medical facilities, and churches account for 40 percent of the taxable commercial properties. From the 2020 – 2021 budget year to the 2022 – 2023 budget year, there

has been a 79.78 percent increase in the total city budget. The revenue that supports the city's budget is from multiple sources.

2020-2021 budget year total city budget: $85,265,559
2021-2022 budget year total city budget: $109,744,438
2022-2023 budget year total city budget: $153,295,660

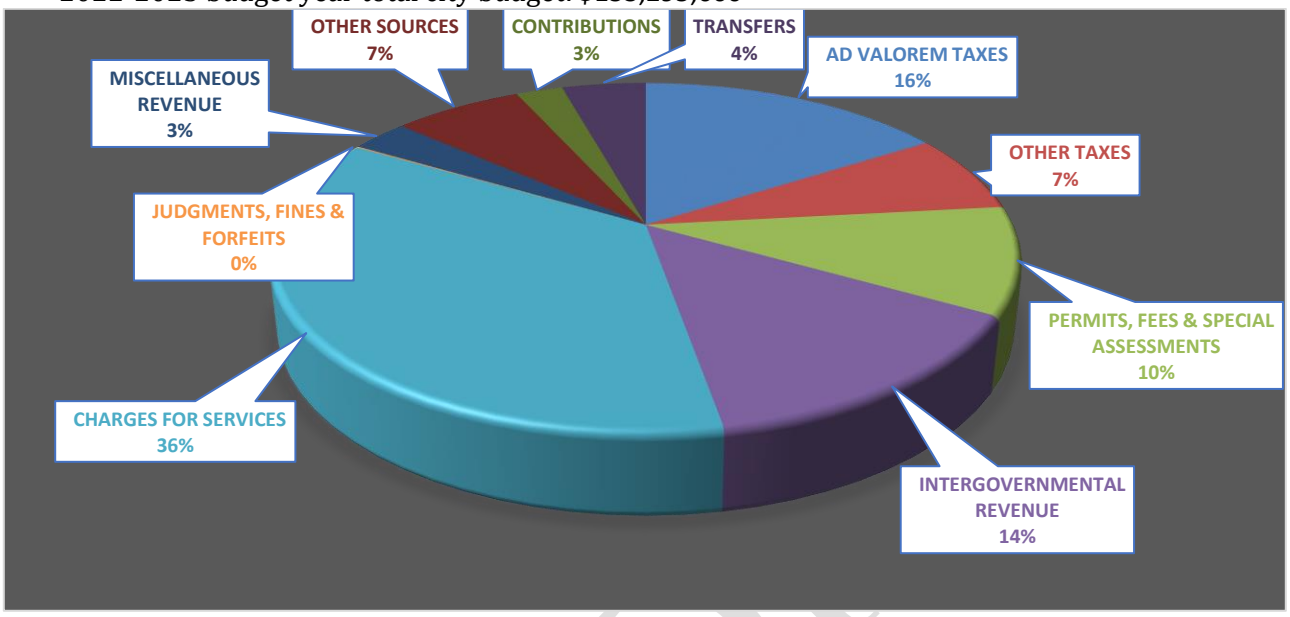


Figure 1: Fiscal Year 2020-2021 Budget Revenue Breakdown

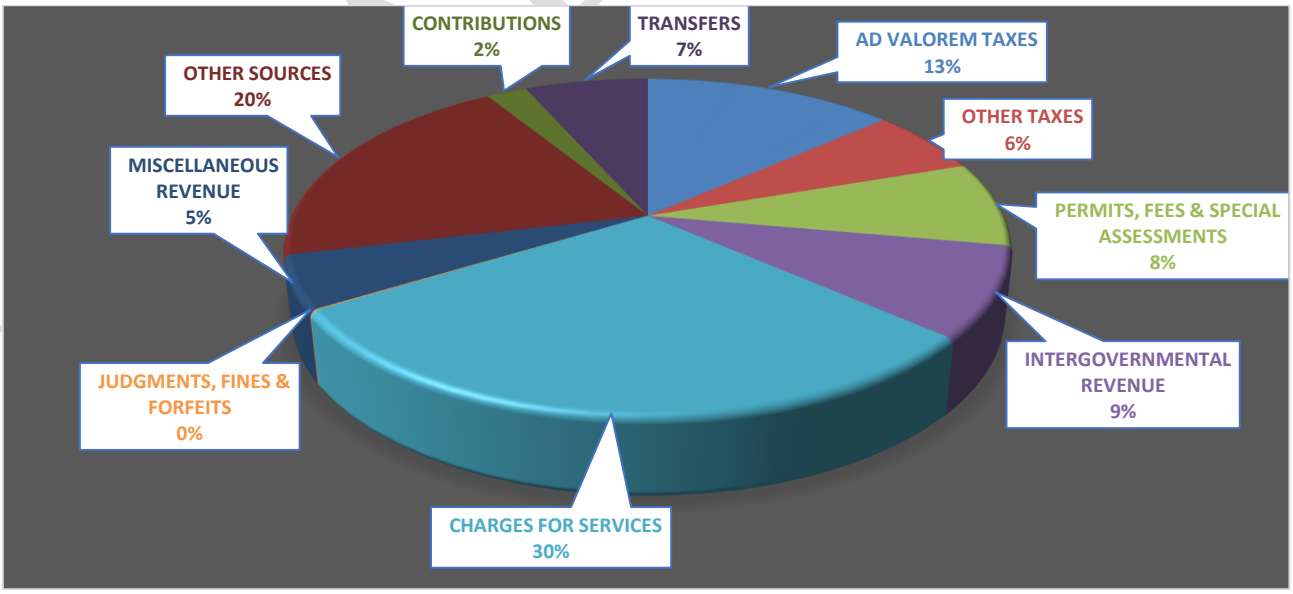


Figure 2: Fiscal Year 2021-2022 Budget Revenue Breakdown

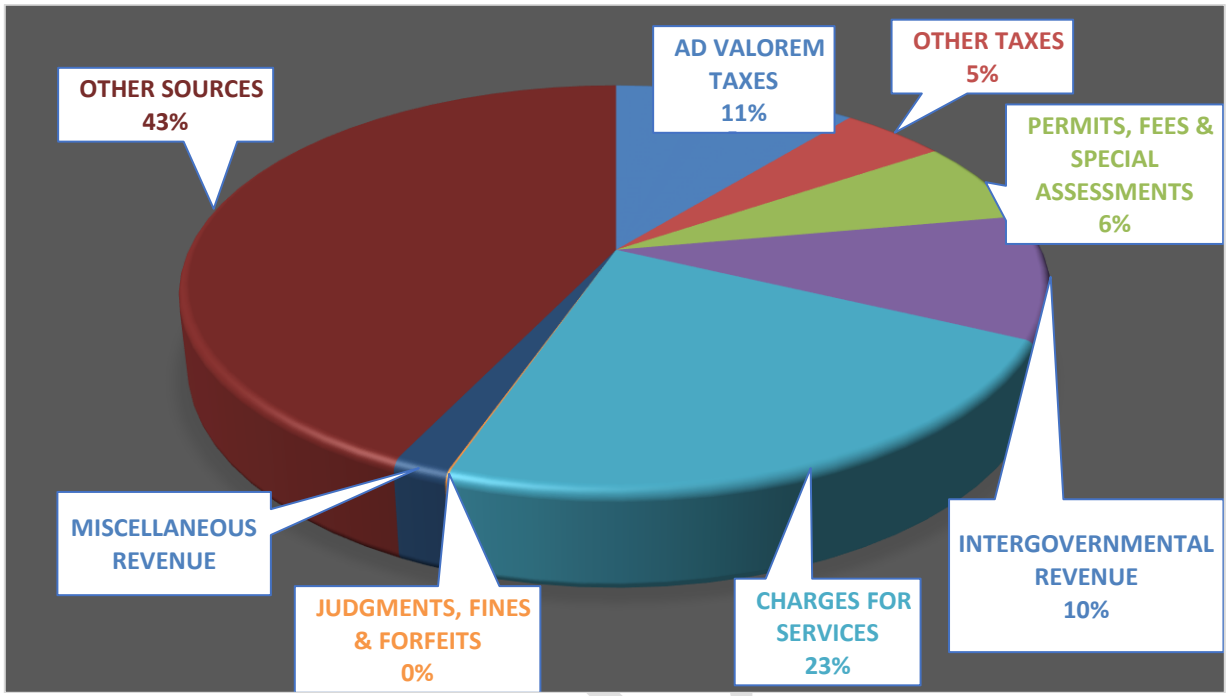


Figure 3: Fiscal Year 2022-2023 Budget Revenue Breakdown

The total city budget is dispersed to multiple city departments to use as their staffing, operating, and capital budget.

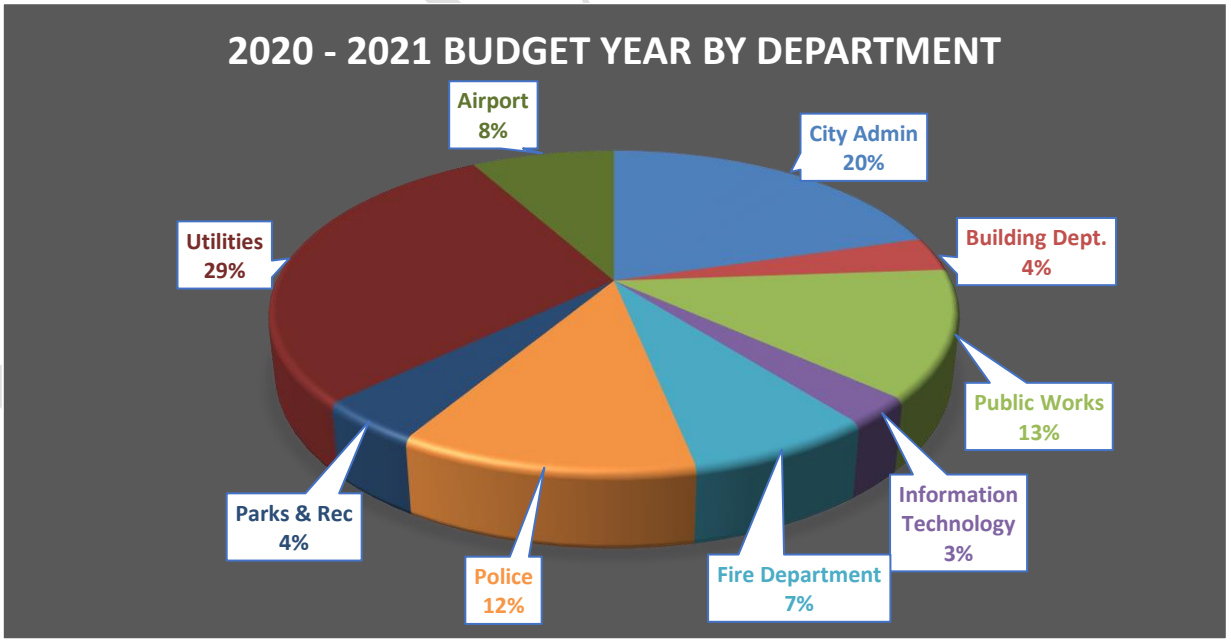


Figure 4: Fiscal Year 2020-2021 Budget by Department

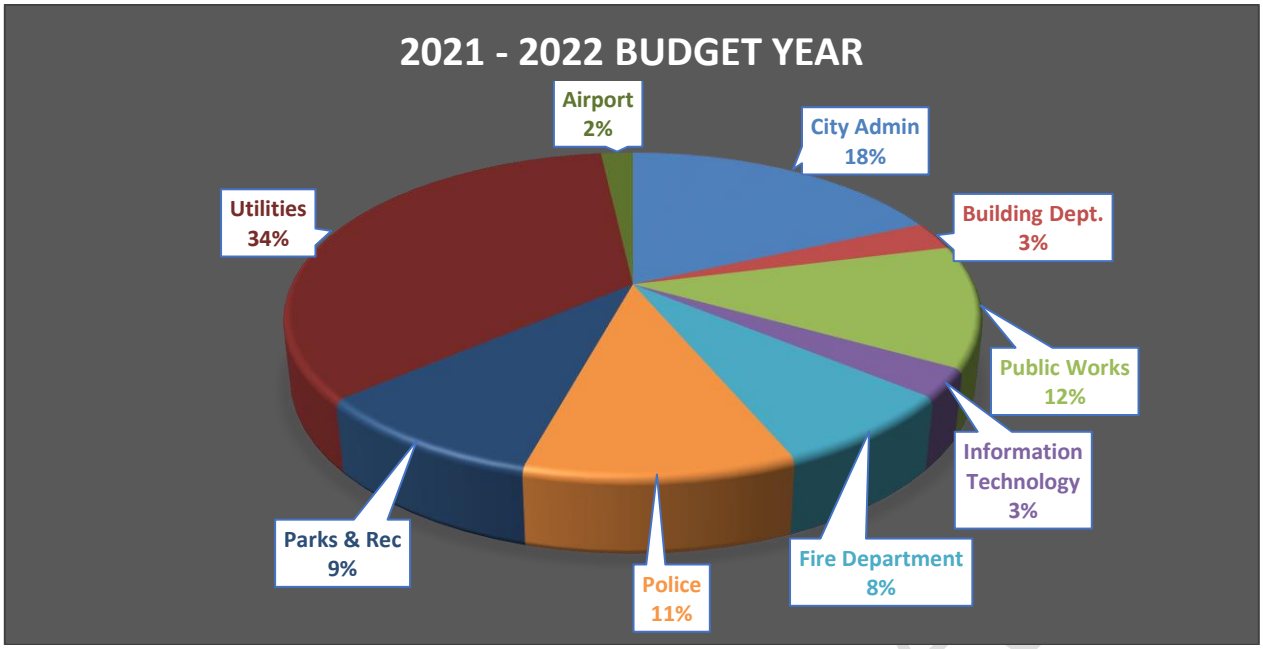


Figure 5: Fiscal Year 2021-2022 Budget by Department

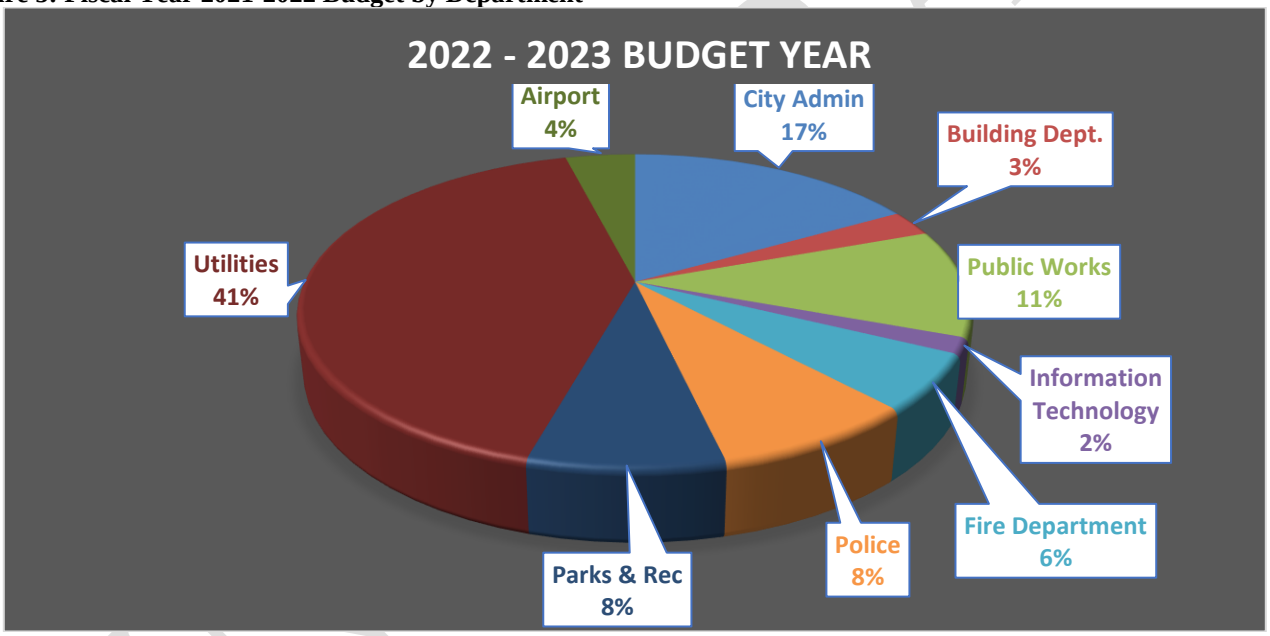
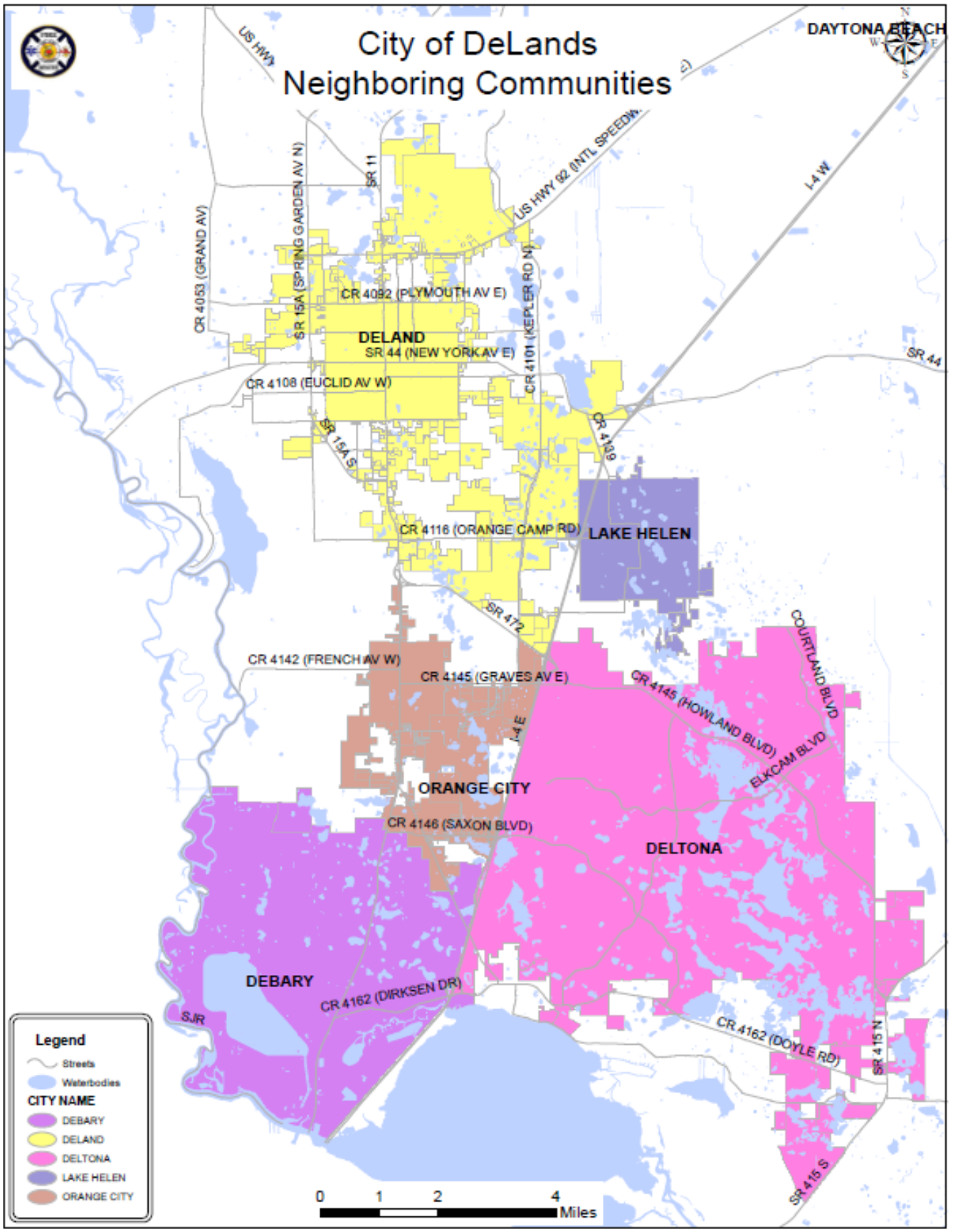


Figure 6: Fiscal Year 2022-2023 Budget by Department

Community Boundaries

The City of DeLand covers 19.5 square miles of land. The southern city boundary follows along State Road 472 and is bordered on the south by the city of Orange City and on the southwest by the City of Deltona and the City of Lake Helen. Unincorporated Volusia County areas border the east, west, and north sides. Since 2013, 497.58 acres of land have been annexed into the city limits. These annexations bring the current annexed land total to 12,453.63 acres.

Map 1: Community Boundaries



Community Planning Areas

The city has four distinct planning districts or overlay districts. These districts are established in the city municipal code, Chapter 33, Section IV, Sections 33 – 37.

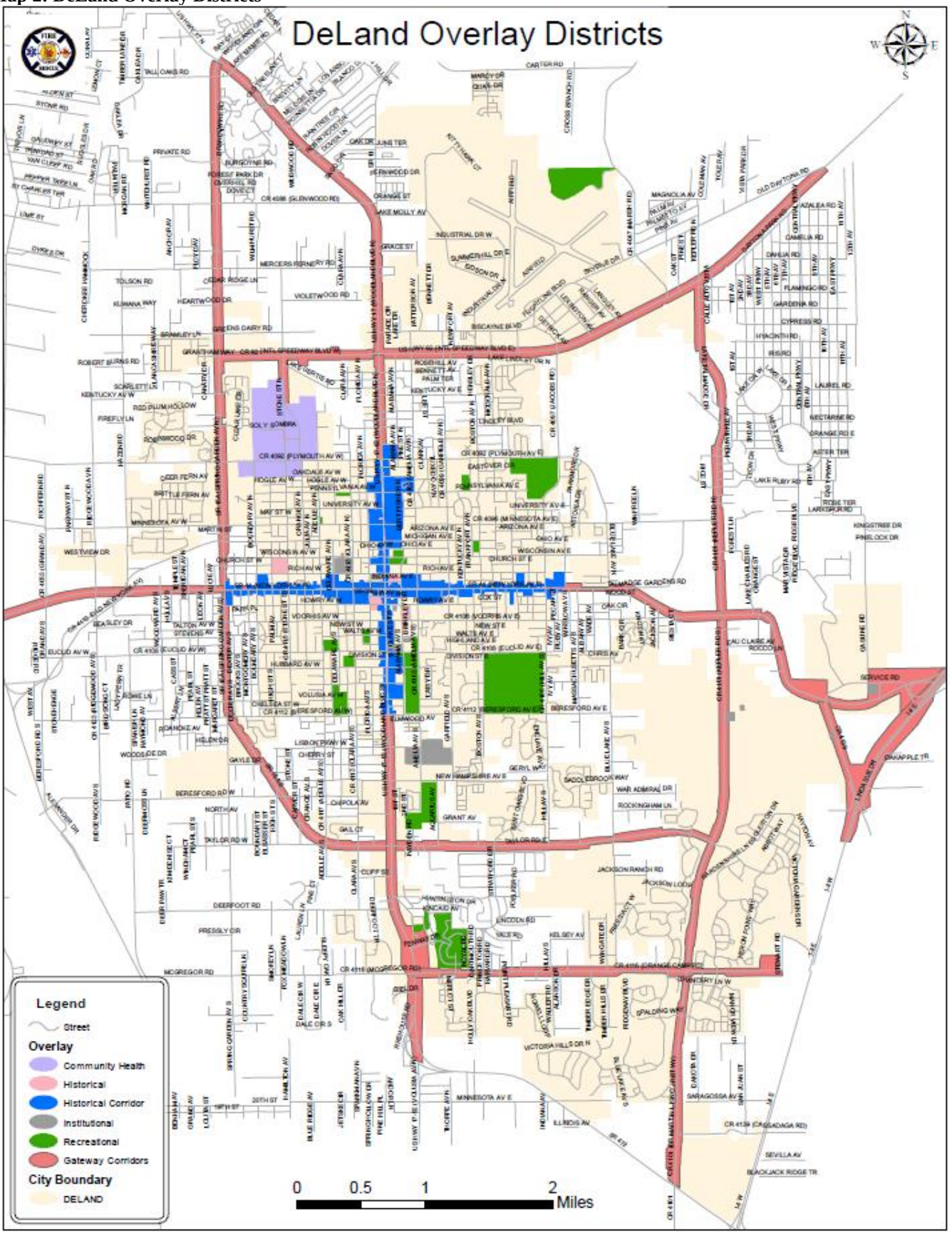
Historic District – The historic district established the historic districts and landmarks. Much of the downtown area is historic, and some of the buildings are original to the city and are still in operation. This planning zone covers the renovations and additions to historic buildings. It also covers new construction in the area and creates requirements for any new construction to be modeled and designed after the historic buildings also in the area.

Airport District – The airport district was established to designate the airport area located in the northern portion of the city. This planning zone established height restrictions for building construction in the location of the current airfield. Height restrictions are designated to meet height requirements for aircraft flight patterns. The building height restrictions increase with the relative distance from the airfield and runways. This zone also establishes where commercial businesses can be in relation to the airfield.

Medical Services District – The medical services district is located near the hospital by the northwest corner of DeLand. This district was established to create a campus-like setting for the hospital and other medical care offices and facilities in the area. This planning district also creates guidelines for residential areas in and adjacent to this zone.

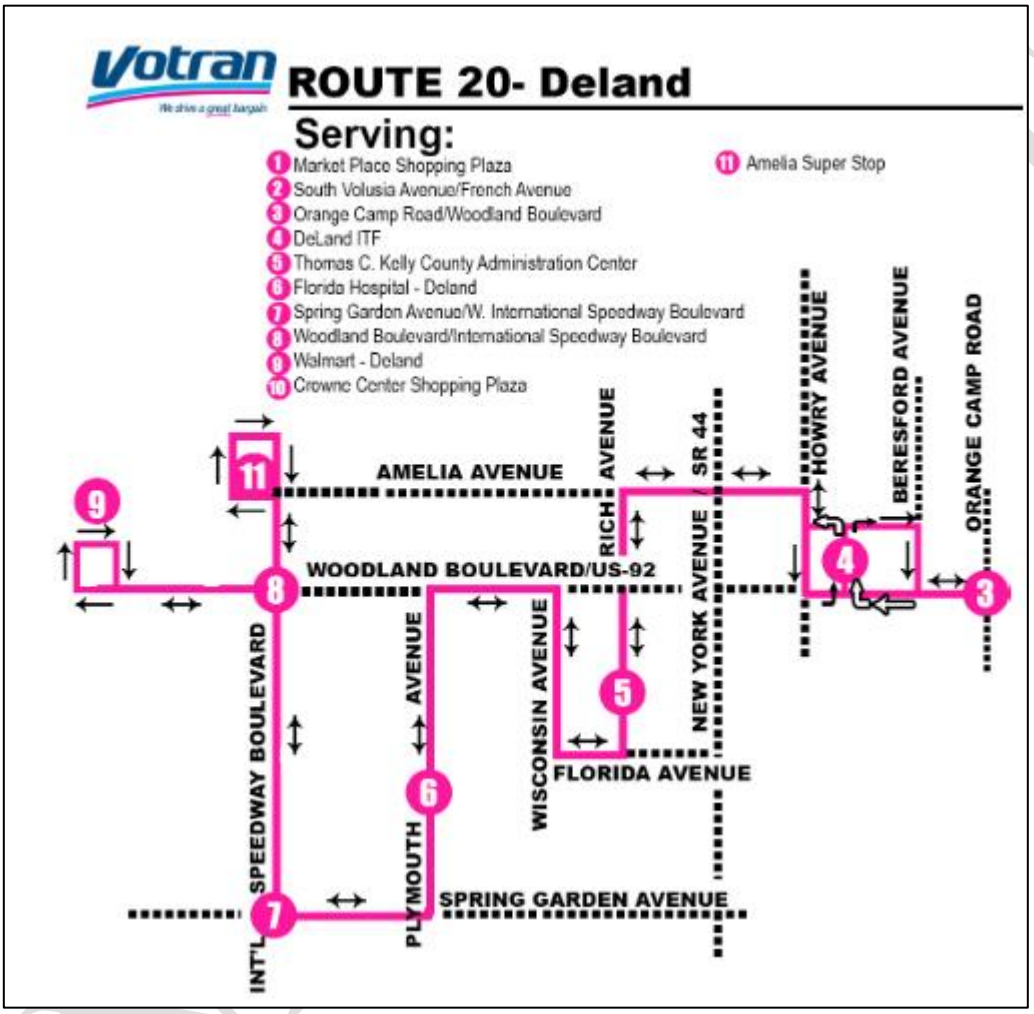
Gateway Corridor – The gateway corridor district covers all roadways leading into the city. This section covers signage and landscaping for commercial businesses located on these roadways.

Map 2: DeLand Overlay Districts



Community Transportation Systems

The transportation systems for the community are comprised of personal and commercial vehicle traffic and a county-operated bus transit system. The bus transit system operated countywide, with multiple stop locations throughout the city. There is a large bus transit depot located within the city on Woodland Boulevard near the downtown area.



Votran bus route through the DeLand area

The roadways within the city are maintained by either city, county, or state. There are three state-maintained roadways in the city, and they are maintained by the Florida Department of Transportation. Volusia County maintains one county highway that is a major thoroughfare to the east side of the county. All other roadways in the city are smaller local roads and are maintained by the city streets department.

Map 3: Major City Area Roadways

On the west side of the city, there is a local rail line spur that provides freight car access to local manufacturing businesses. This rail line has minimal use but does cross several city roads and a state highway. In the future, there is a possibility of this rail spur being used to access a new commuter train that will be located at the commercial train station on the west side of the city in the unincorporated county area. The Sunrail commuter train expansion is scheduled to open in the summer of 2024.

Map 4: CSX Rail Spur into DeLand

Community Critical Infrastructure

The City of DeLand's local infrastructure consists of electric service provided by Duke Energy, which serves the entire city area. The electrical service consists of above-ground and buried service lines throughout the area.

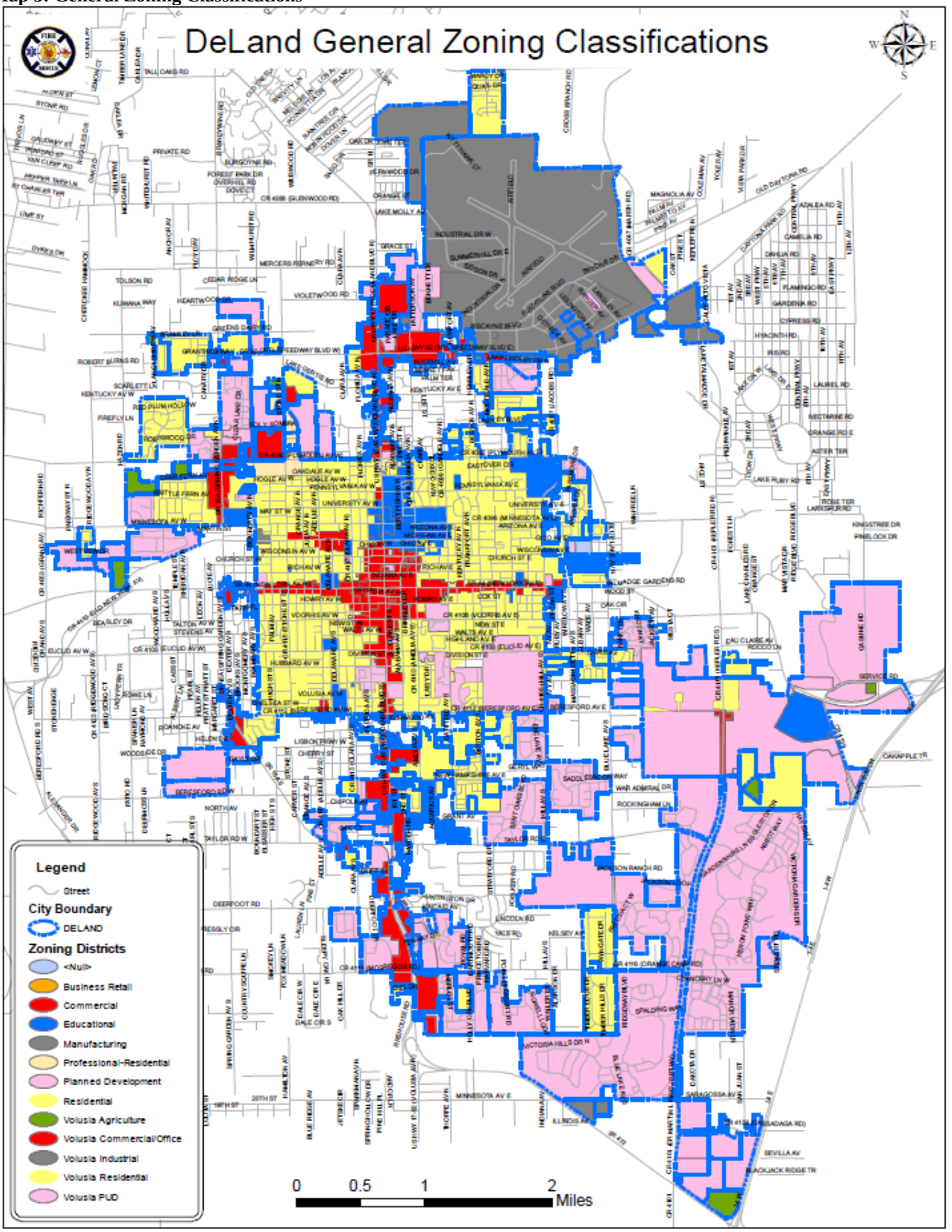
Municipal water service is provided and maintained by the City of DeLand Public Utilities Water Department. The water department also maintains a well-established hydrant and water supply system that extends well into the adjacent unincorporated county area. Local sewage and wastewater services are also supplied and maintained by the city water department.

Natural gas service is available throughout the city and is maintained by Florida Public Utilities. Gas service consists of residential and larger commercial buried piping running adjacent to many of the roadways. A larger buried gas transmission line follows Beresford Avenue near the southern end of the city. There is a gas transmission station located on this line.

Community Land Use and Zoning

The growth and development of the City of DeLand and its annexed areas are primarily controlled by the DeLand City Commission. The planning and zoning of city areas is controlled by the city planning department. While the zoning of the city area is primarily residential, there are areas zoned for industrial and business. The city is currently expanding into outside unincorporated areas. The new city growth and expansion are largely zoned for residential construction, but there are areas zoned for new industrial and business expansion.

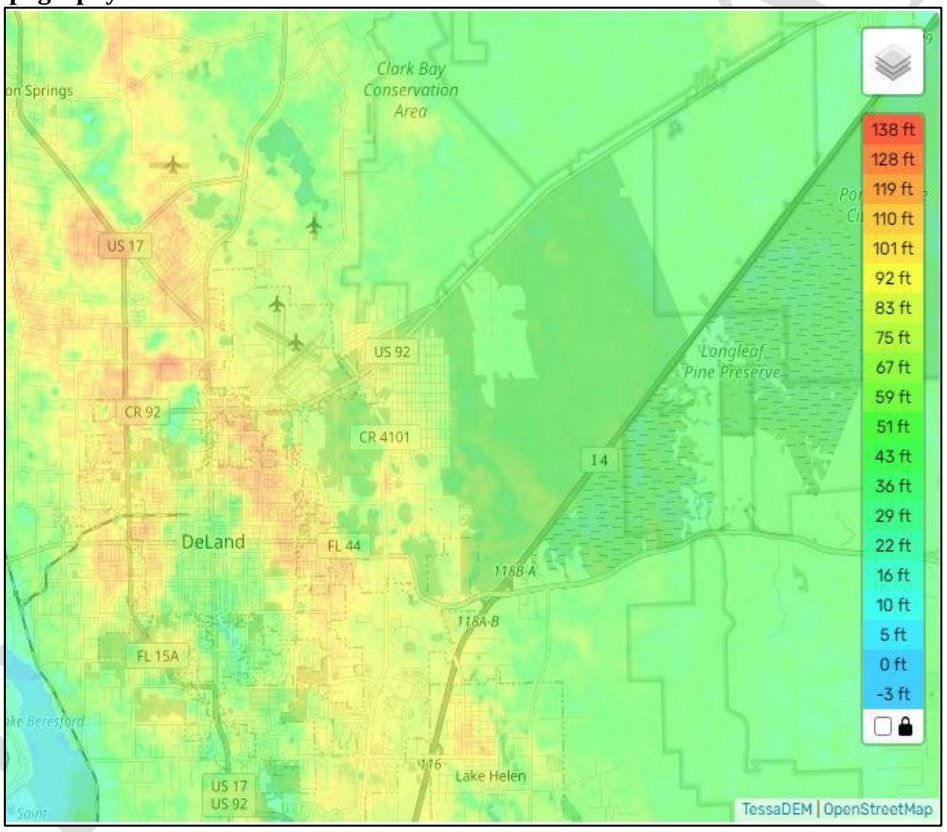
Map 5: General Zoning Classifications



Community Topography

The landscape of DeLand was described by early settlers as rolling hills, and it is still the same today. There are numerous retention ponds and small lakes throughout the DeLand area. Many of these are human-made to combat flooding from new construction and subdivisions. In the downtown area, many of these smaller retention ponds can become overwhelmed during tropical storms or summer afternoon thunderstorms and can overflow their banks and cause localized flooding. This flooding usually subsides quickly with minimal impacts on response. There are areas of undeveloped land, mostly on the east side of the city, designated as wetland areas. While these areas cannot be built on, new construction is encroaching on them. The average elevation of DeLand is 75 feet. The local terrain ranges from an elevation of 31 feet near the center of the downtown area to an elevation of 119 feet on the northeast side of the area near DeLand High School. The center corridor of the city follows a swale that runs north to south with a higher elevation ridge near the east and west sides of the city. This ridge and swale make up what is known as the DeLand Ridge Province, one of two naturally occurring ridges that exist east of the St. Johns River.

Map 6: DeLand Topography and Elevation



Community Geography

The City of DeLand is located on the western side of Volusia County in Central Florida at 29°1'N 81°18'W. DeLand lies between the St. Johns River to the west and Tiger Bay State Forest to the east. Tiger Bay State Forest is a 27,000+ acre, undeveloped state forest of wetlands and pine tree habitat that divides the east and west sides of Volusia County.

Community Geology

Underneath the sandy ridges that make up the landscape of the DeLand area is a deep layer of limestone. Within this limestone layer is clean, fresh water used for personal needs. This limestone and water layer make up the Florida aquifer, which provides water throughout the state. The rising and falling of the sea and subsequent soil erosion shaped the ridges and swales of the state. It is believed that the sand dune terrain that makes up the DeLand Ridge Province was actually the seashore of the Atlantic Ocean 20,000 years ago.

Community Physiography

When first settled, the DeLand area was known as Persimmon Hollow for the wild persimmon trees that grew in abundance. More recently, the area was popular for citrus groves that produced oranges and grapefruit. Over the years, several harsh winter freezes killed most of the wild persimmon trees and significantly reduced the number of once-abundant citrus groves that operated in the area.

A wagon load of citrus in DeLand

Only a minimal amount of orange groves and citrus trees currently remain around the DeLand area. Presently, in undeveloped areas, Slash Pine and Saw Palmetto are the predominant flora found. Along with the Slash Pine, some areas near the center and western side of the city will have old-grown oak trees left by the original settlers.

Community Climate

The City of Deland is in northern Central Florida. This area is categorized as a humid subtropical climate. DeLand does not sit within the designated tropical zone but does have several months of high temperatures and high humidity during the summer. The mean yearly temperature is 70°F, with an average high temperature of 81°F in the summer and an average low temperature of 59°F during the winter months.

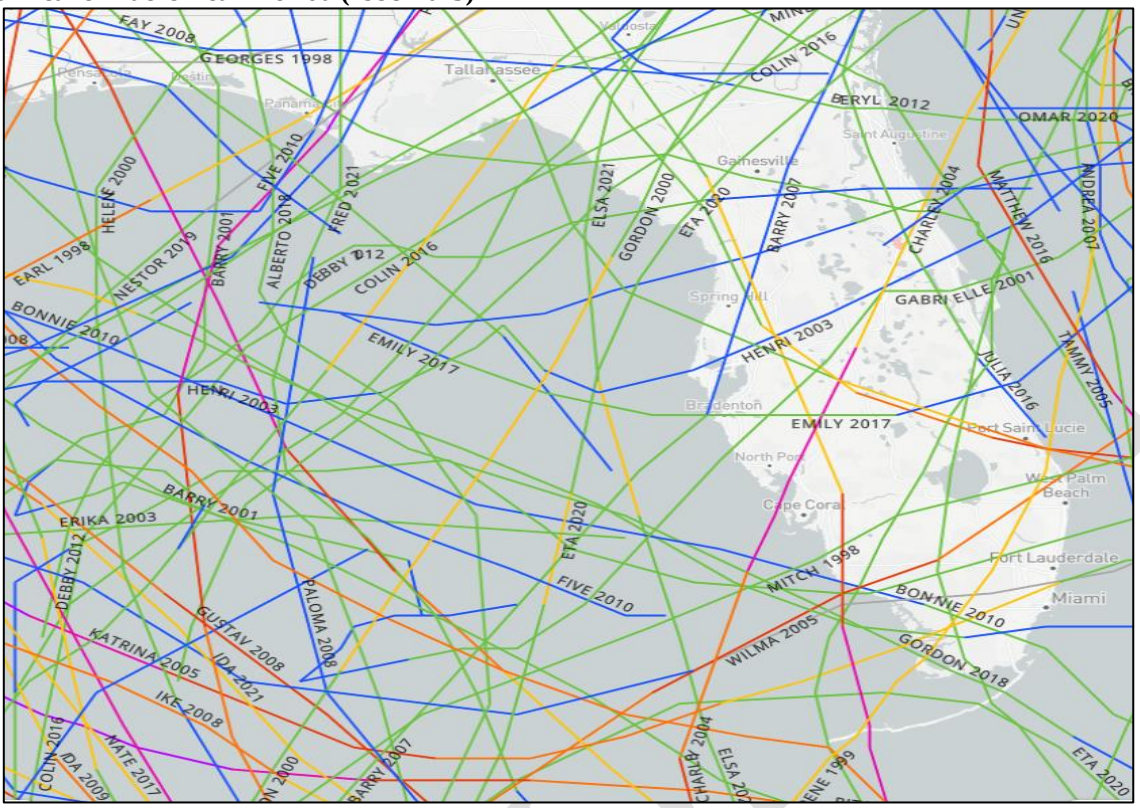
A defined rainy season runs from May through October. During this wet season, strong afternoon thunderstorms are common throughout the area. These storms can bring heavy winds, severe lightning, and possible tornadoes. There is an average annual rainfall total of 58.06 inches. July is usually the wettest month, with an average of 8.34 inches of rainfall. The driest months are November through April, with an average rainfall of 3.05 inches.

Hurricanes and tropical storms are a major consideration and can have a significant impact on the DeLand area. Hurricane season runs from June 1st until November 30th, with the peak of hurricane season on September 10th. The majority of the hurricanes and tropical storms that affect DeLand occur after the peak of the season. Over the past 25 years, 13 hurricanes or tropical storms have been tracked within 50 miles of DeLand. Two storms, Tropical Storm Leslie in 2000 and Hurricane Charlie in 2004, passed directly over DeLand, with their centers passing over the northern and southern end of the city.

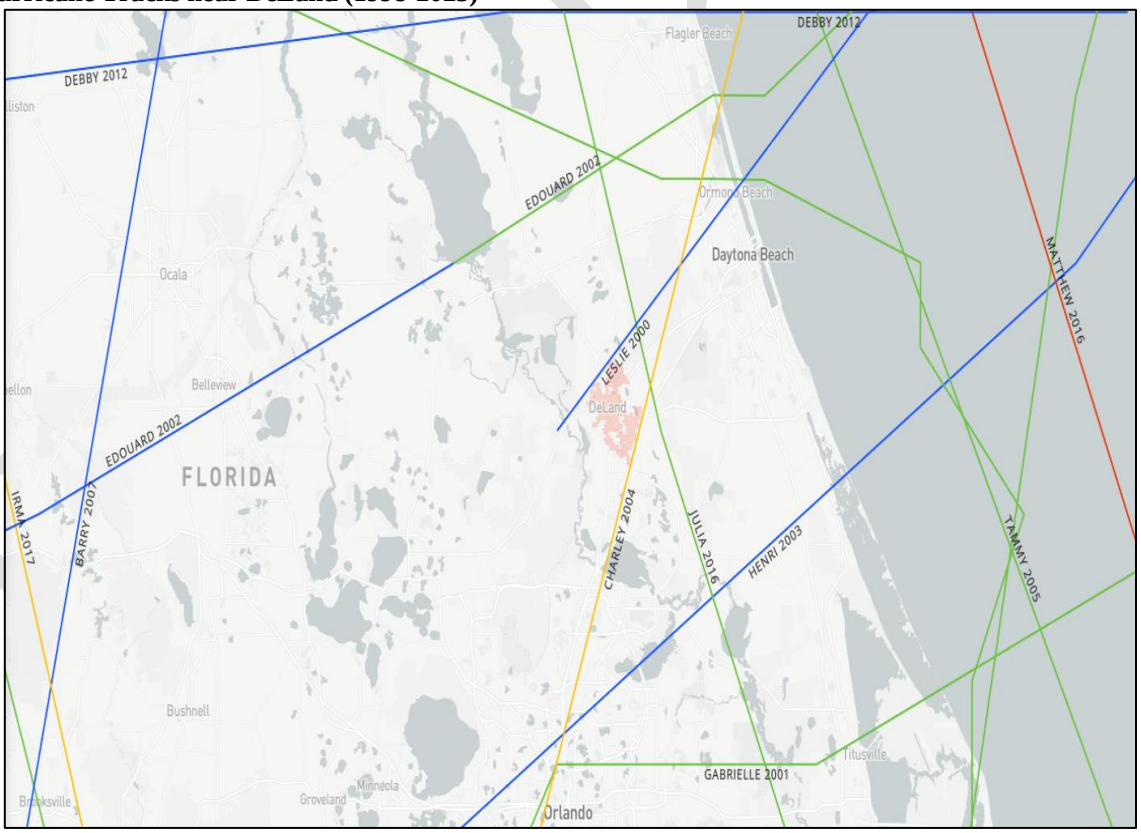
More recently, the DeLand area was affected by Hurricane Ian and Hurricane Nicole in 2022. The official tracks of these storms did not cross the DeLand area, but both of these storms impacted the area with high winds and heavy rains. During Hurricane Ian, some portions of the city received over 15 inches of rainfall over two days. This excessive rainfall caused some localized flooding in lower-elevation areas. The flooding damage in DeLand was minimal compared to other areas in the county. Forty-three days after Hurricane Ian made landfall, Hurricane Nicole affected the area with more rain and wind. The rain totals with Hurricane Nicole were much less than those of Hurricane Ian, but also affected the already saturated area.

Damage from Hurricanes Ian and Nicole

Map 7: Hurricane Tracks Near Florida (1998-2023)



Map 8: Hurricane Tracks near DeLand (1998-2023)



Note the tracks of Hurricane Leslie in 2000 and Hurricane Charlie in 2004.

Community Population/Population Densities

The City of DeLand covers 19.5 square miles of land. The north I-4 corridor, where DeLand is located, is one of the fastest growing areas locally, and DeLand has the highest per capita growth in Volusia County. According to 2020 census data, the population of DeLand is 37,404, with an annual population growth of 3.6 percent. The population density is 2,149 people per square mile, and 20.7 percent of the population is over 65 years of age. The Census Bureau estimates that in July 2022, the population of DeLand had risen to 41,324, noting a 9.4% increase in population since April 2020. The current population is twice the population of 1990, which was approximately 16,500. This measured population does not include the student population of Stetson University, which is currently 3,639 students, with 1,568 living in on-campus housing. This number does not include tourists or residents who live in DeLand for only a portion of the year. DeLand is the county seat of Volusia County. This contributes to an increase in the daytime population of DeLand. Between tourism, partial-year residents and special events, the daytime population of DeLand can be twice the measured population. If the current growth percentage continues, the measured population of DeLand could be over 50,000 by the year 2033.

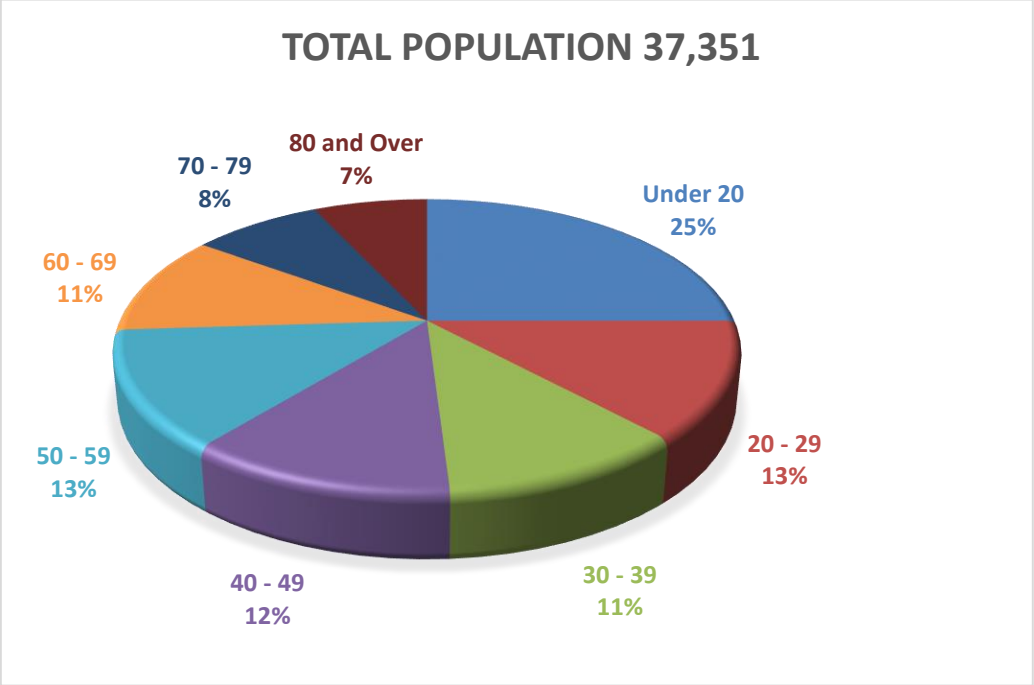
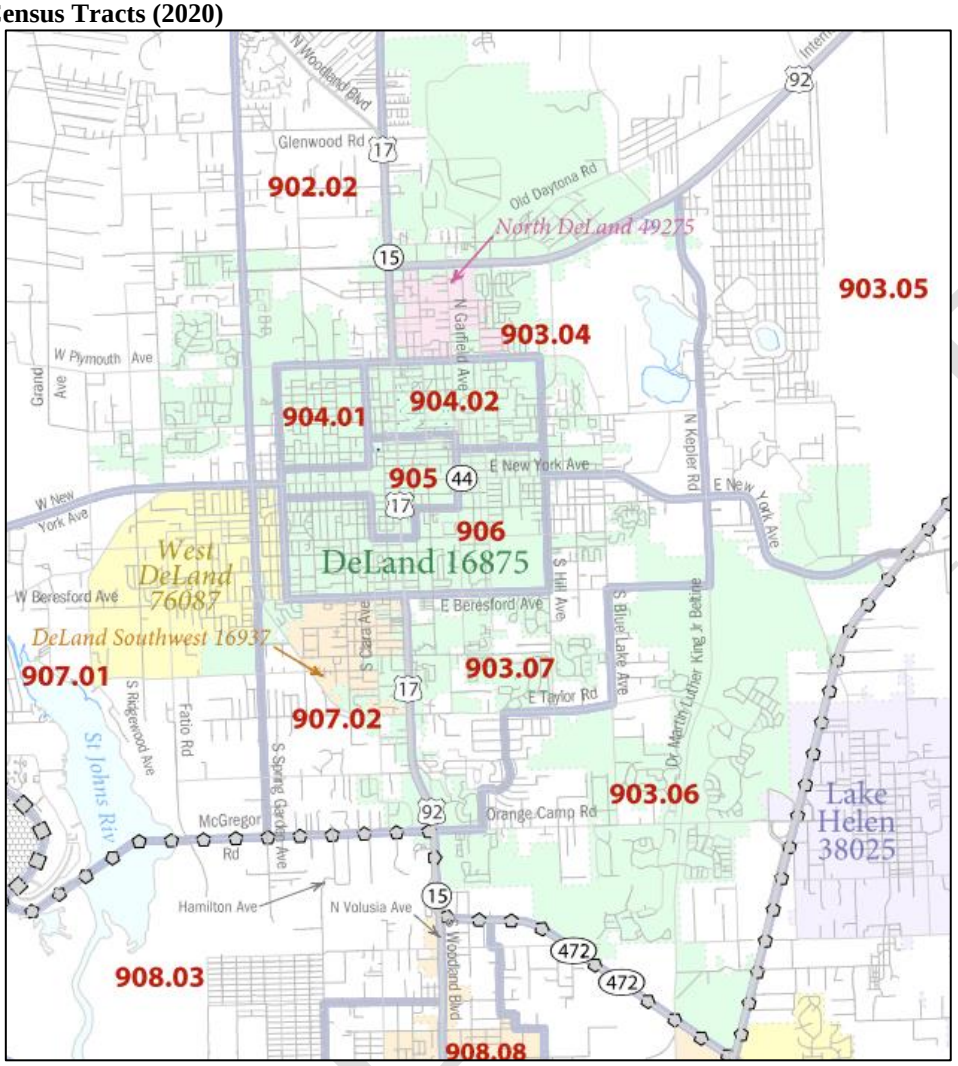


Figure 7: Total Population Percentage Based on Age

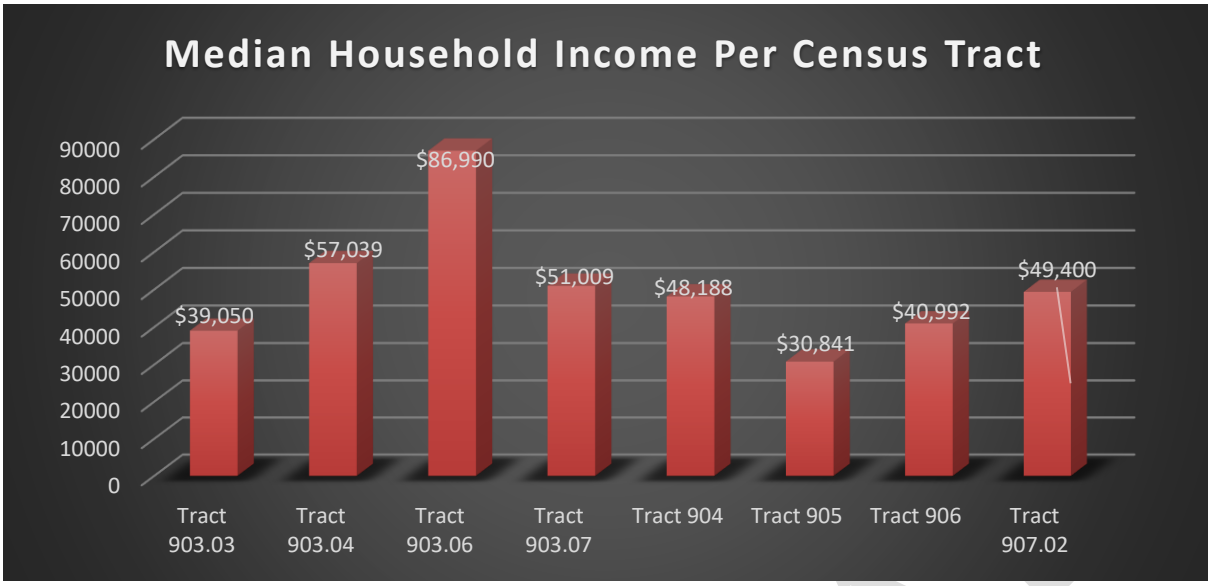
Map 9: DeLand Census Tracts (2020)



Community Demographic Features

The City of DeLand is in northern Central Florida. It is a 30-minute drive to area beaches and a 45-minute drive to Orlando. Because of the close proximity to area attractions and a wide variety of special events held within the city, the area sees visitors and tourists throughout the year. There is also a large population of seasonal residents who reside in the city during the winter months because of the mild winter temperatures.

The total measured population of DeLand is 37,365. The total male population is 16,561, and the female population is 20,804. The average resident age is 42.7 years, with 20 percent of the city's population over 60 years of age. The estimated median household income in 2021 was $51,206, and the estimated per capita income was $28,195. With the current increase in residential construction and population, these numbers should continue to increase over the next several years.


Median Household Income Per Census Tract
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
$39,050
$57,039
$86,990
$51,009
$48,188
$30,841
$40,992
$49,400
Tract 903.03
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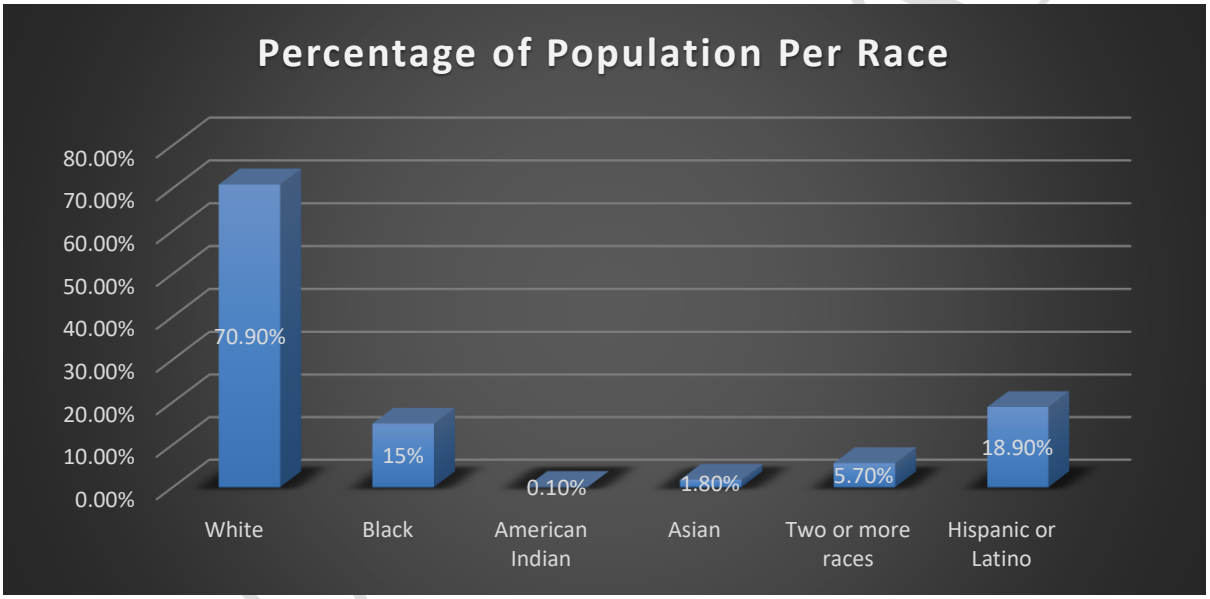
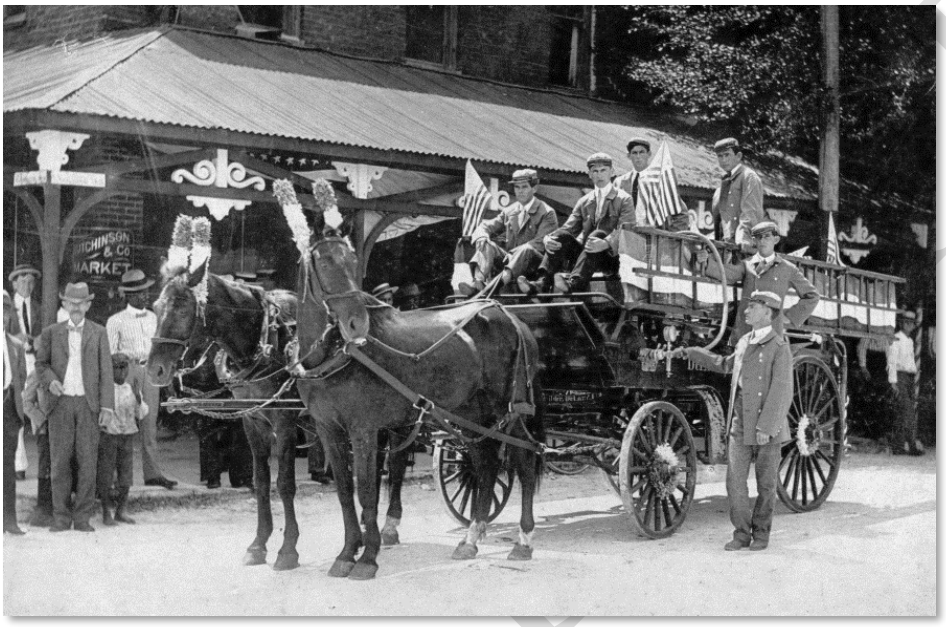

Percentage of Population Per Race
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
70.90%
15%
0.10%
1.80%
5.70%
18.90%
White
Black
American Indian
Asian
Two or more races
Hispanic or Latino

B. History of the Agency

Major Historical Milestones of the Department

The City of DeLand Fire Department was established on August 9, 1883. This makes the department one of the oldest in the area. In 1900, the department's first firefighting vehicle was purchased; a horse-drawn hook and ladder rig.



DeLand's first fire apparatus

Fire Department in new DeLand Safety Complex

In 1926, a new safety complex was built that housed the fire department, police department, and city hall employees. The fire department remained at this location until 1975 when a new Fire Station 81 was constructed. It was around this time that the department started offering emergency medical services. A second fire station, Station 2, was opened in the mid-1970s at DeLand Municipal Airport. This station was closed in the late 1980's due to a department staffing reduction. Due to an increasing population and call volume, a second station opened in 2003 on the northern end of the city. Station 82 covers the north end of

the city area and adjacent unincorporated county area. Along with an engine and a brush truck, the station also housed a unit from EVAC ambulance (now Volusia County Emergency Medical Services [EMS]), the county's advanced life support (ALS) transport service. The lease contract for Volusia County EMS expired in March of 2023, and they vacated the station.

In 2007, a third fire station was opened on the southeast side of the city. Increased growth and the preparation for the future increase in calls prompted the building of Station 83. This station also housed an EVAC ambulance (Volusia County EMS) and responded to calls on the south and east sides of the city area. A Staffing for Adequate Fire and Emergency Response (SAFER) grant assisted with the hiring of nine new personnel needed to staff the new station.

In early 2022, the old Fire Station 81 was closed and replaced by a new state-of-the-art fire station. The old aging station did not meet the needs of the current, larger department. The new station focused on health, safety, and cancer prevention. Individual bunk rooms replaced the older style sizeable single bunk room. A separate gear room and decontamination areas were added to the new station to keep contaminated gear and equipment away from the daily operating areas of the new station.

Station 81: In use from 1975 to 2022

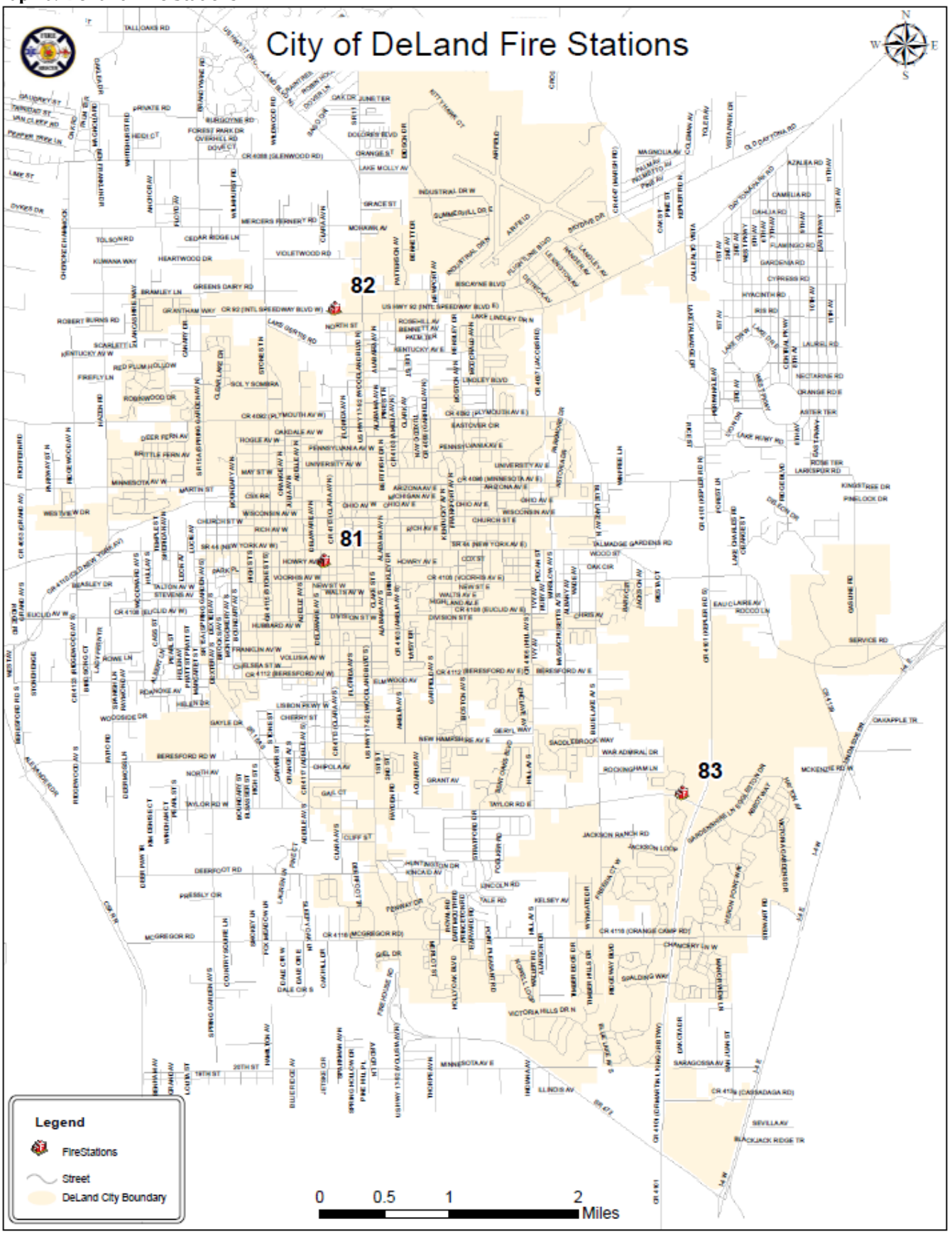
In October of 2022, the DeLand Fire Department received its license from the State of Florida to provide ALS care. Until this point, the department only provided basic life support (BLS) measures on the calls that it responded to. The department was the last in the county, and one of the last departments in the state to provide solely BLS.

On March 1, 2023, the DeLand Fire Department officially became an Insurance Services Office (ISO) class 1 department. The department continues to grow along with the city and surrounding area. Plans are in effect for one and possibly two new stations in the near future. The department will continue to do what is needed to respond to the increasing calls for service.

Current Legal Boundary of Service Area

The DeLand Fire Department has a legal obligation to provide firefighting services to citizens and properties located within the city limits. The department also has standing automatic aid agreements and closest unit response agreements for surrounding unincorporated areas of Volusia County, as well as the nearby cities of Orange City and Deltona. There are also countywide automatic aid agreements for all other cities and jurisdictions within Volusia County.

Map 10: DeLand Fire Stations



Current Organization, Divisions, Programs, and Services

The City of DeLand currently has three fire stations supervised by the fire chief.

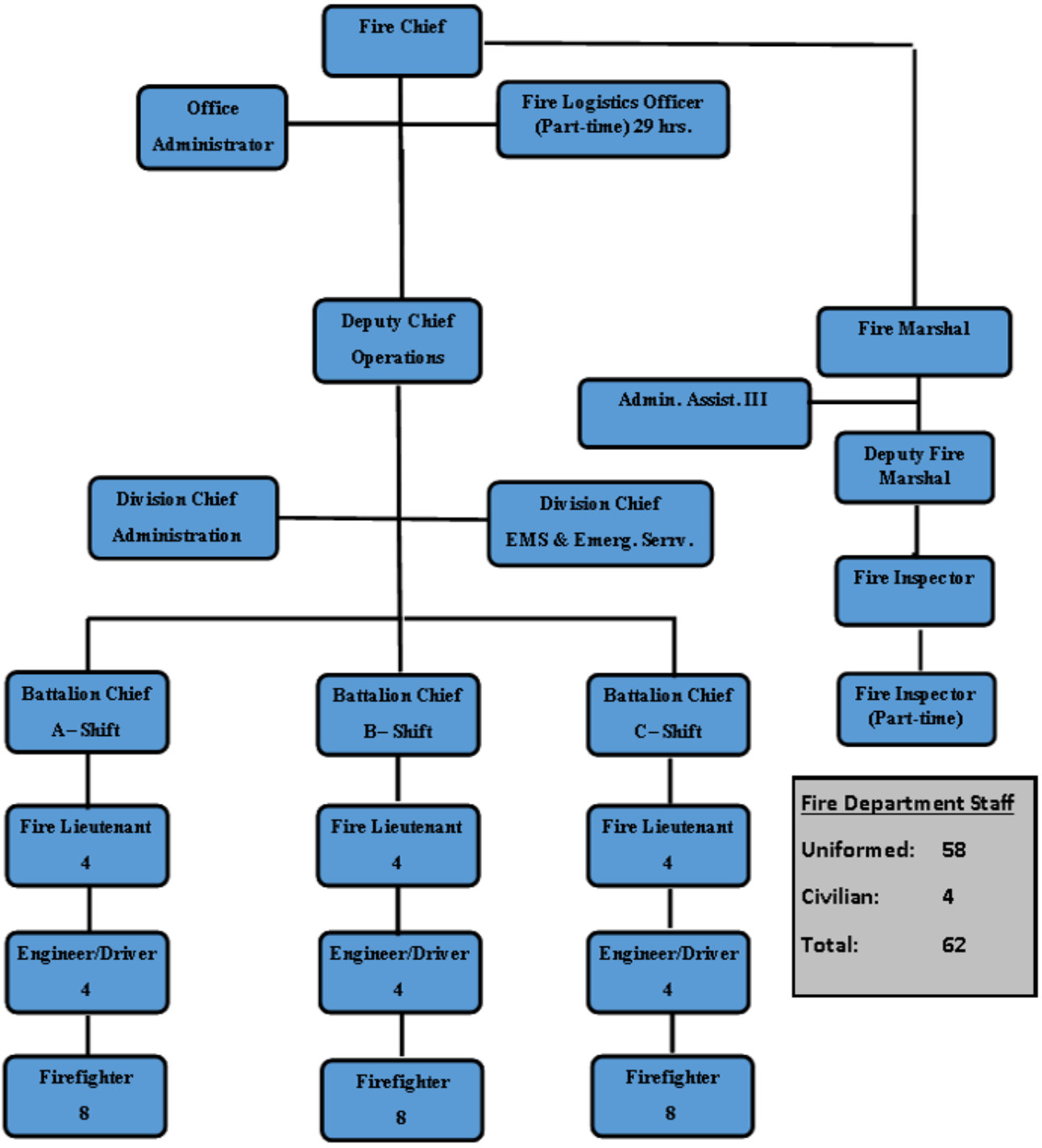


Figure 8: Organizational Chart

The department responds to calls for service and provides ALS and BLS medical care, firefighting operations, fire origin and cause investigations, and fire prevention. These areas and programs are administered through four divisions. The fire department's administration is supported by a civilian office administrator and a part-time civilian logistics officer.

Administration Division – The administration division is responsible for the monitoring of the department budget, purchasing, and logistics. This division is staffed by the division chief of administration. The division also monitors the department's facility and fleet maintenance.

Operations Division – The operations division is responsible for monitoring emergency and non-emergency calls for service, department staffing levels, and department training. The operations division consists of one deputy chief, three battalion chiefs, 12 lieutenants, 12 engineers, and 24 firefighters. The deputy chief position is a 40-hour, Monday through Friday scheduled position. The rest of the positions in the operations division are divided and assigned to respective 24-hour shifts.

EMS and Emergency Services Division – The EMS and emergency services division is responsible for monitoring department ALS and BLS medical care and the department's paramedics and emergency medical technicians (EMT). The division is overseen by a 40-hour division chief, who is also responsible for EMS reporting quality assurance, department EMS training, department special event staffing, and functions as the department's accreditation manager.

Fire Prevention Division – The fire prevention division is responsible for the enforcement of local and state building and fire prevention codes, fire inspections, and fire investigations. The fire prevention division is staffed by the fire marshal, deputy fire marshal, one full-time fire inspector, and one part-time fire inspector. A civilian administration assistant assists the fire marshal.

Fire Stations, Training Facilities, Apparatus, Equipment, and Staffing

Station 81: 343 West Howry Avenue

1. **Squad Engine 81** – 2018 Pierce Enforcer (750-gallon water tank, 1250 gpm pump capacity). Minimum staffing: (1) lieutenant, (1) engineer, and (1) firefighter.
2. **Tower 81** – 2021 Pierce Arrow (300-gallon water tank, 2000 gpm pump capacity, 100-foot elevated platform). Minimum staffing: (1) lieutenant, (1) engineer, and (1) firefighter.
3. **Battalion 80** – 2021 Ford F-250 command vehicle. Staffed by (1) battalion chief.
4. **Rescue 81** – 2013 Pierce Ford F-450. Minimum staffing: (1) lieutenant/engineer and (1) firefighter. Only in service when staffing levels are above minimum.
5. **Reserve Ladder 81** – 2007 Pierce Enforcer (500-gallon water tank, 1500 gpm pump capacity, 75-foot aerial ladder).
6. **Antique Truck 5** – 1942 Ford parade truck.
7. **Eleven shift personnel** assigned (seven minimum personnel)
   a. One battalion chief
   b. Two lieutenants
   c. Two engineers
   d. Six firefighters.
8. **Eleven administration and fire prevention personnel** assigned.
   a. One fire chief
   b. Three division chiefs
   c. One fire marshal
   d. One deputy fire marshal
   e. One full-time fire inspector
   f. One part-time fire inspector
   g. Three civilian administration personnel.

The station has an emergency generator for emergency power backup and operates as the department's emergency operations center during disasters. After Station 81 was completed, a reserve apparatus and logistics garage was constructed behind the station. A reserve aerial apparatus and the department's antique fire truck are stored at Station 81.

Station 82: 257 West International Speedway Boulevard

1. **Engine 82** – 2016 Pierce Sabre (750-gallon water tank, 1250 gpm pump capacity). Minimum staffing: (1) lieutenant, (1) engineer, and (1) firefighter.
2. **Brush 82** – 2000 Dodge 3500 (300-gallon water tank, 250 gpm pump capacity). Unit crossed-staffed with E-82 crew.
3. **Three shift personnel** assigned.
   a. One lieutenant
   b. One engineer
   c. One firefighter.

Station 82 opened in 2002. An engine with three personnel responds from this station. The engine is cross-staffed with a brush truck. The station is equipped with an emergency generator for emergency power backup. Plans are in place to begin renovations and improvements to this station. Individual bunkrooms and mechanical improvements, along with health and safety improvements, are planned for the station beginning in late 2023.

Station 83: 1657 East Taylor Road

1. **Engine 83** – 2019 Pierce Impel (750-gallon water tank, 1500 gpm pump capacity). Minimum staffing: (1) lieutenant, (1) engineer, and (1) firefighter.
2. **Brush Attack 83** – 1994 AMC military 2 ½ ton 6x6 (1000-gallon water tank, 250 gpm pump capacity. Unit cross staffed with E-83 crew.
3. **Reserve Engine 281** – 2007 Pierce Contender (750-gallon tank, 1250 gpm pump capacity).
4. **Three shift personnel** assigned.
   a. One Lieutenant
   b. One Engineer
   c. One Firefighter
5. **VCEMS ALS transport unit and ALS Inter-facility transport unit**.
6. Both units are staffed with **two Volusia County EMS personnel**.

Station 83 opened in 2007. An engine with three personnel responds from this station and cross-staffs a brush attack vehicle. A reserve engine is also housed at Station 83. Volusia County EMS has quarters at this station and staffs a day and nighttime ALS transport unit and an ALS inter-facility transport unit. The station has an emergency generator for emergency power backup. Beginning in the 2023 - 2024 budget year, plans are in place for the expansion of Station 83 to increase staffing and improve health and safety. In June 2025, an additional service unit with two personnel will be placed in service at Station 83. This new unit will respond to incidents in conjunction with E-83. In June, 2026, a ladder company will be placed in service as an additional unit at Station 83 replacing the service unit. The ladder company will be staffed with three personnel.

C. Current Descriptions of Levels of Service with Delivery Programs

Fire Suppression

Fire suppression and extinguishment are the reasons the DeLand Fire Department was established in 1883. Each year, the department responds to and mitigates multiple vehicle, wildland/ vegetation, and building fires. Each of the city's fire stations is equipped with apparatus, equipment, and personnel trained to respond to these types of incidents.

The ISO rates each fire department's Public Protection Classification Rating on a scale of 1 to 10, with 1 being 'superior fire protection' and 10 indicating fire suppression that doesn't meet minimum criteria. The ratings are based on several areas, including water supply (fire hydrants), emergency communications, and fire department operations and equipment. On March 1, 2023, the DeLand Fire Department was awarded an ISO Class 1 rating. Less than one percent of fire departments in the county receive a class 1 rating. The department has automatic aid agreements with surrounding county and city fire departments.

Emergency Medical Services

EMS incidents make up the majority of the department's calls for service. All DeLand Fire Department response apparatus are staffed with firefighters crossed trained as EMTs, or paramedics. Of the 51 department personnel, nine are paramedic certified, and 45 are EMT certified. One division chief is a certified paramedic, and the fire chief and two other division chiefs are certified at the EMT level. The number of certified paramedics will increase to over 15 by the end of 2024. In the State of Florida, EMTs can provide BLS care. BLS care and treatment consists of oxygen, cardiopulmonary resuscitation (CPR), first aid, and minimal medication treatment. Paramedics can perform ALS care and treatment. In the State of Florida, ALS care and treatment consists of advanced airway placement, cardiac monitoring, intravenous access, first aid, and a wide variety of medication treatments and interventions. On October 26, 2022, the DeLand Fire Department was licensed as an ALS-providing agency by the State of Florida. Prior to receiving this license, the department was one of the few remaining departments in the state that could only provide BLS care and treatment. Currently, the department's main station, Station 81, is the only station in the city that can provide ALS. The two remaining stations are scheduled to upgrade to ALS over the next two years. Once all department fire stations have upgraded to ALS status, all department response apparatus will be staffed with EMTs and at least one certified paramedic.

Station 81: ALS engine, ALS aerial, and ALS non-transport response unit; no VCEMS unit.
Station 82: ALS engine; no VCEMS unit.
Station 83: BLS engine: VCEMS ALS transport unit and VCEMS ALS interfacility transfer unit.

Technical Rescue

Technical rescue is the use of specialized training and equipment for life safety and rescue. Areas of technical rescue include rope, confined space, trench or excavation, vehicle or machinery extrication, or structural collapse rescue. All DeLand Fire Department personnel are trained to an awareness level in all technical rescue disciplines. Many department personnel are trained at the operations rescue level or technician rescue level. The table below shows the current number of department personnel trained at the operations and technician levels for each discipline.

Table 1: Department Technical Rescue Training Level

Discipline	Training Level	
	Operations Level	Technician Level
Rope Rescue	49	49
Vehicle & Machinery Rescue	42	33
Trench Rescue	37	37
Confined Space Rescue	46	46
Structural Collapse Rescue	27	14
Hazardous Materials	57	18
Radio Tower Rescue	N/A	8

The department is part of a joint technical rescue response team consisting of members from three local departments. The West Volusia Special Operations Interlocal Agreement was agreed upon and established in 2019. Members from the DeLand Fire Department, Orange City Fire Department, and Deltona Fire Department, operate together as part of the State of Florida SERP resource Light Technical Rescue Team (LTRT) 532 and train together monthly.

Hazardous Materials

Hazardous materials (hazmat) incidents are just one of the incident types that the DeLand Fire Department responds to. Currently, all certified firefighters in the department are trained to the hazardous material operations level. Eighteen department members are also trained at the hazardous materials technician level. The department's abilities on a hazmat response are limited to initial operations. The department members trained to the technician level are able to assist when responding with Volusia County or the City of Deltona. These two agencies are the main response agencies for hazardous materials incidents in the county. Currently, an agreement is in the works with the City of Deltona to assist more and have a larger role on their hazmat team.

Aviation Rescue and Firefighting Services

In the 1920s, a small municipal airport was built several miles north of downtown DeLand. This airport became a naval air station during World War II and was turned back over to the city after the war ended and the naval air station closed. The airport is owned by the city and is still in operation today as a non-indexed airport. The airport does not have a control tower. The DeLand Fire Department responds to calls for service on airport property and the airfield. The department does not have a dedicated airport response fire station or crash/rescue apparatus but does provide coverage to the airport area from Station 82. Over the years, calls for service at the airport have ranged from injured skydivers to industrial accidents and aircraft crashes. In 2022, the DeLand Municipal Airport had over 100,000 aircraft take-offs and landings, and over 90,000 skydiver jumps. The majority of aircraft take-offs and landings are private and experimental aircraft.

Wildland Fire Services

Wildland and brush fires are common in Florida during the spring and summer months. Dry conditions and lightning from summer afternoon thunderstorms often ignite wildland fires, which can grow rapidly in size. Mitigation of wildland fires requires specialized equipment and training. Due to recent increases in growth and development, the wildland areas located within the city have decreased. All DeLand Fire Department personnel are certified in wildland firefighting and basic wildland fire behavior. The DeLand Fire Department maintains and staffs a brush truck with off-road capabilities at Station 82 and a large military-style off-road capable brush attack at Station 83. The department provides automatic aid to other local cities and Volusia County to assist with brush and wildfire response and mitigation. When needed, department apparatus and personnel will assist with wildfire task forces to assist other areas in Volusia County, or other neighboring counties.

Community Safety and Remediation Programs

The DeLand Fire Department has a long history of community involvement. The department offers several programs related to community safety and public education.

Smoke detectors are provided to city residents and are installed by fire department crews upon request. Often, crews are assigned designated areas and will go door to door, providing smoke detector checks and installations if needed. On-duty crews will also provide child car safety seat checks and installations.

Throughout the year, the department provides many fire station tours, public education details, and safety talks to schools and adult groups. In 2023, the department provided public education to over 6,000 individuals. During October, the department can provide up to three school public education requests per day during fire prevention week.

The department also provides and staffs EMS bike response teams for many of the city's larger special events. This allows quicker access to patients in congested areas or areas where it is not possible to gain access with an engine company.

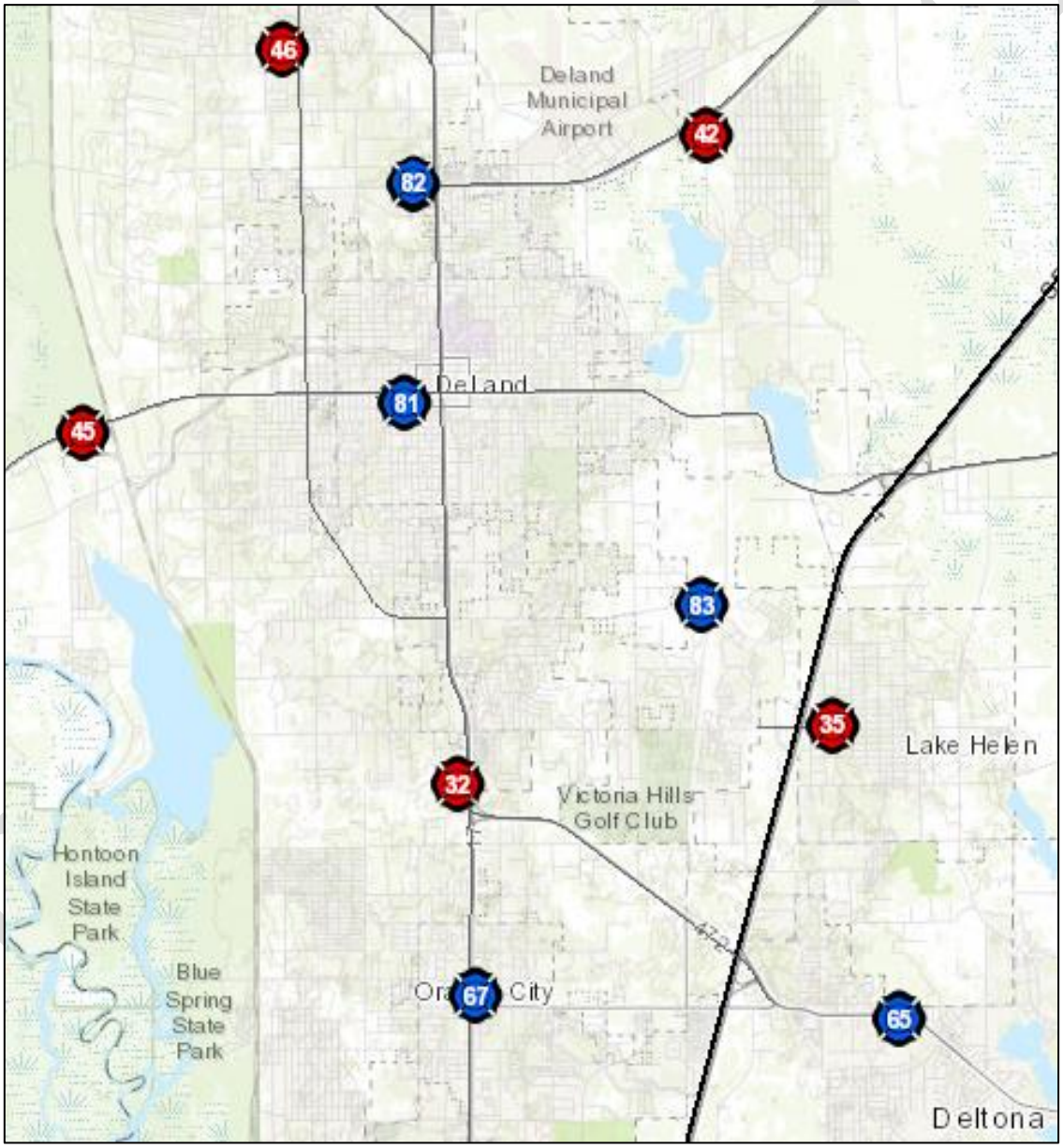
D. Current Deployment and Coverage Areas

Points of Service Delivery

Coverage of the City of Deland annexed area is accomplished by the three strategically located city fire stations within the 19.5 square miles of city area. Automatic aid from Volusia County Fire Rescue also assists with area coverage and responses.

Station 81: 343 West Howry Avenue
Station 82: 257 West International Speedway Boulevard
Station 83: 1655 East Taylor Road

Map 11: DeLand Stations 81, 82, and 83 and Automatic Aid Stations



Minimum Deployment Resources

The DeLand Fire Department has a staffing level of 51 shift operations personnel. Each shift consists of a battalion chief, four lieutenants, four driver/engineers, and eight firefighters. Shift personnel report to the division chief of operations. The department has a minimum staffing level of 13 personnel per shift. If the daily staffing level falls below the minimum, positions will be backfilled with overtime to reach the minimum level of 13 personnel.

Table 2: Position Staffing by Unit and Station

Station 81	Station 82	Station 83
Battalion 80	Engine 82	Engine 83
Battalion chief	Lieutenant	Lieutenant
Squad Engine 81	Engineer	Engineer
Lieutenant	Firefighter	Firefighter
Engineer		
Firefighter		
Tower 81		
Lieutenant		
Engineer		
Firefighter		

Response Areas

The incorporated City of DeLand area encompasses 19.5 square miles with over 161 miles of roadways located within the city. The DeLand Fire Department's response area is divided into three response zones or districts. The downtown area, District 81, is the response area for the downtown businesses, Stetson University, and a large portion of the city's residential population. There are over 121 miles of roadways in District 81. District 82 covers the northern aspect of the city. This response area covers a large commercial area, a large elderly apartment complex, several large apartment complexes, and the city's only hospital. The city's municipal airport is located within District 82. District 82 also covers several smaller unincorporated county areas. District 82 has over 40 miles of roadways. District 83 is in the southern and western portions of the city. This area is predominantly residential and is the area of the city with the largest increase in construction and population.

E. Summary of Community Response History

The DeLand Fire Department responds to an increasing number of emergency and non-emergency calls for service. Over the past three years (2021-2023), there has been a four percent increase in total combined emergency and non-emergency responses by the department. In 2021, the department responded to 7,887 calls. In 2022, the department responded to 8,226 calls for service. In 2023, the total number of responses rose to 8,498. Over the three years, the majority of calls for service were the "300 Series," or medical-related incidents.

Table 3: Incident Type Totals (2021-2023)

Incident Type Group	2021	2022	2023
100 Series – Fire	131	186	174
200 Series – Explosions or Ruptures with no fire	2	3	3
300 Series – Emergency Medical Services	5085	5278	5524
400 Series – Hazardous Conditions	179	236	146
500 Series – Service Calls	987	910	797
600 Series – Good Intent Calls	997	992	1202
700 Series – Fire Alarms and False Alarms	498	545	589
800 Series – Weather-Related and Natural Disaster	4	72	2
900 Series – Special Incident	4	4	61
Total Incidents Per Year	**7887**	**8226**	**8498**

F. Community Priorities, Expectations, and Performance Goals

Mission Statement

Each fire department must have a mission statement that explains what the main mission of the department is.

It is the mission of the DeLand Fire Department to provide our citizens and visitors with the highest level of life safety and property protection available.

Community Service Priorities

Each fire department must understand what its community and stakeholders deem priorities for the citizens and the department. On April 10, 2023, community stakeholders met with representatives from the Center for Public Safety Excellence to provide needed feedback for services that the Deland Fire Department offers. During the meeting, information about the department was provided, and each stakeholder in attendance prioritized each service provided by the department. The final ranking of the programs and services are as follows:

Table 4: Community Prioritized Programs

Programs	Ranking
Emergency Medical Services	1
Technical Rescue	2
Fire Suppression	3
Hazardous Materials Mitigation	4
Emergency Management	5
Community Risk Reduction	6
Aviation rescue and Firefighting	7
Fire Investigation	8
Public Fire and Life Safety Education	9

Community Service Expectations

A fire department must know what is expected of them by the citizens that they respond to. Once these expectations are known, departments must evaluate their performance and service levels to meet these expectations. The following are the top expectations of the community stakeholders:

1. Quick response times
2. Training and proactive education to mitigate loss
3. Public Education
4. Responsible governance and leadership
5. Effective incident response.

Historical Performance Goals

The department has several performance goals established that are monitored quarterly:

1. Response times for emergency response fire calls for service must have a unit on scene within six minutes 90 percent of the time.
2. Medical calls for service with an emergency response must have a DeLand Fire Department unit on scene within 5 minutes, 90 percent of the time.
3. All incident staffing levels must meet the defined effective response force established by the department for each incident type that it responds to 100 percent of the time.
4. Apparatus reaction time, or turnout time, is the time from the unit being dispatched to an incident to the unit responding and leaving the station. The apparatus reaction time must be less than 1 minute 45 seconds 90 percent of the time.

The department monitors these performance measures quarterly.

G. Community Risk Assessment and Risk Levels

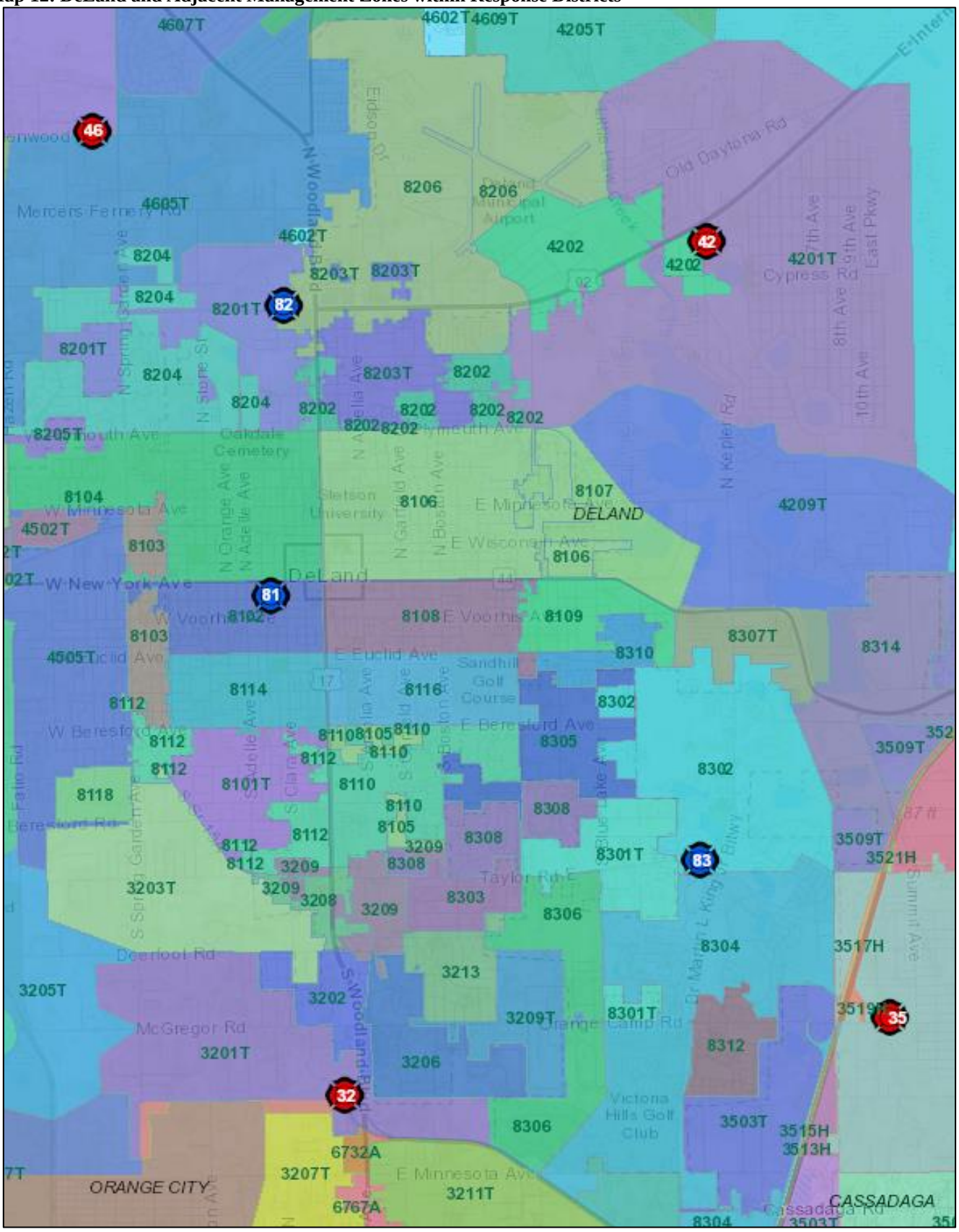
Geographical Planning Areas/Zones

The City of Deland's annexed area is separated into three fire department planning or response areas. Each response area, or district, is established based on the location of the fire station that services that zone, locations of annexed city areas, and major roadways that act as boundaries to each zone. Each response zone is broken down into smaller management zones or "run card" areas. These "run card" areas allow for more specific unit response management and allow for any area response modifiers to be set.

The more populated downtown business area is the center of the response zone for the department's main station, Station 81. This area and associated response zone are the core of the city, and the majority of the agency's responses occur within this zone. The city's municipal airport is the boundary of the northern response zone for Station 82. District 82 also covers a large area of unincorporated Volusia County as a closest unit. On the southern and eastern sides of the city is District 83. This response area was previously the least populated, but since 2020, it has seen more growth and construction than anywhere else in the city.

With the addition of new fire stations and increased city annexations, these response districts could change in the future. A planned upgrade to computer-aided dispatch (CAD) software would stop the use of run cards or management zones, and all agencies would be dispatched by vehicle location and use a true closest unit response methodology.

Map 12: DeLand and Adjacent Management Zones within Response Districts



City of DeLand fire stations are shown in blue. Adjacent automatic aid fire stations are shown in red.

Risk Assessment Methodology

The City of Deland Fire Department has developed a risk classification for all incidents that the department responds to. This risk typing is completed for all dispatched incident types. After the risk classification analysis is completed for each incident type, they are then broken down into the following risk classifications: fire suppression, emergency medical service (EMS), technical rescue, hazardous materials, and aviation incidents.

Once the five risk classifications have been separated, a low-risk, moderate-risk, and high-risk score is calculated to determine a risk severity category for each risk classification. An assessment matrix is used for each category to determine the calculated risk score. Risk scores are determined using three criteria:

Probability of occurrence – How often does the department respond to this incident type. This can range from multiple incidents per day to one call per year or less. When evaluating the probability of an incident occurring, a value of ten is given to an incident that occurs multiple times per day. An incident that could occur daily is given a value of eight, incidents that occur weekly are given a value of six, monthly is four, and incidents that only occur once per year or less are assigned a value of two.

Consequence to the community – How many people or what portion of the community is affected by the incident. This can range from one person or less affected to the entire city affected by the incident. Values assigned for consequence to the community are two for incidents that impact one person or less and increase depending on the number of affected people, to ten for incidents that have multiple patients or affect large portions of the city or population.

Vulnerability Impact – This criterion is based on how the incident impacts the daily on-duty staffing of the department. An incident that requires one apparatus and crew will have much less impact on the department than an incident that requires all on-duty staffing and automatic aid personnel to mitigate. An incident that requires one apparatus and crew to mitigate is assigned a value of two. The range increases up to a value of ten for incidents that require 28 or more personnel to mitigate.

Table 5: Sample Risk Assessment Scoring Matrix

Risk Assessment Matrix		
Probability		
2	Quarterly/yearly	0 - 4 events per year
4	Monthly	5 - 12 events per year
6	Weekly	13 - 52 events per year
8	Daily	53 - 365 events per year
10	Multiple times per day	366 or more events per year
Consequence		
2	Single individual/vehicle peril or loss	
4	Two to four people, vehicle with exposure, or single occupancy peril or loss	
6	Four people, multiple vehicles, or single occupancy with exposure peril or loss	
8	Multi-family occupancy, institutional structure, strip mall, or box store	
10	Mass casualty, major hazards class disaster	
Vulnerability Impact		
2	Critical tasks requiring four or less personnel	
4	Critical tasks requiring five to nine personnel	
6	Critical tasks requiring ten to 16 personnel	
8	Critical tasks requiring 17 to 26 personnel	
10	Critical tasks requiring 27 or more personnel	

Once these number values are established, a final risk score is determined using Heron's Formula. An example of Heron's Formula modified for tetrahedrons follows.

The final risk score is determined using a three-axis model and numerical calculation. Each axis of the three-axis model represents the numerical value for each of the criteria used to determine the risk score.

Heron's Formula modified for tetrahedrons:

$$Risk\ Score = \sqrt{\frac{(PC)^2}{2} + \frac{(CI)^2}{2} + \frac{(IP)^2}{2}}$$

P = Probability (Y axis)
C = Consequence to the community (X axis)
I = Impact on the agency in drawdown vulnerability (Z axis)

Figure 9: Heron's Formula

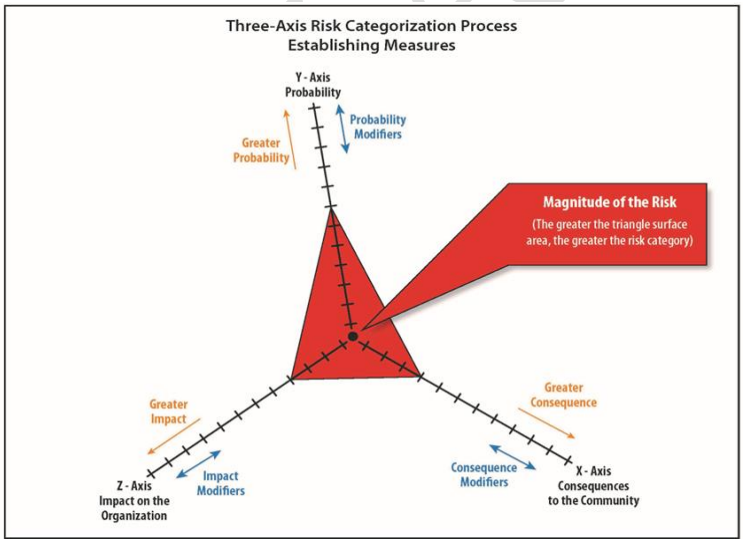


Figure 10: Example Three-Axis Model

The following is an example of a three-axis model and risk score for a low-risk EMS incident.

Emergency Medical Services Low Risk	
Probability of occurrence	**10**
Consequence to community	**2**
Impact on fire department	**2**
SCORE	**20.199**

Risk Assessment

Fire Suppression Services

The City of DeLand Fire Department provides fire suppression services from all three of its fire stations. Each station is equipped with a fire engine capable of carrying 750 gallons of water and a fire pump capable of pumping 1,250 gallons per minute. Each engine is equipped with 1,200 feet of 4-inch large diameter supply hose, three 1.75-inch attack lines, and one 2.5-inch attack line. Fire suppression incidents are defined as low, moderate, or high-risk. The scoring values assigned to each risk level were produced by a variety of incident types using the three-axis model.

The department also operates a 100-foot aerial platform from Station 81. This aerial unit is capable of carrying 300 gallons of water and is equipped with a 2,000-gallon-per-minute fire pump. The unit also carries 600 feet of 4-inch large diameter supply line and two 1.75-inch attack lines.

Each fire department suppression unit is staffed with a company officer, driver/pump operator, and a minimum of one firefighter.

Examples of fire suppression incidents in each risk category:

- **Low Risk** – (Risk score 0 – 20) Examples – Fire responses only requiring one suppression unit to mitigate the incident, such as dumpster and trash fires, small grass fires, and single vehicle fires.
- **Moderate Risk** – (Risk score 20 – 45) Examples – Fires in single-family residences and fires in commercial structures less than 20,000 square feet in size.
- **High Risk** – (Risk score 45 and over) Examples – Fires in high-rise structures, large commercial structures over 20,000 square feet, big box stores, and multi-family apartments.

Emergency Medical Services

The City of DeLand Fire Department provides EMS responses from all three stations. Each department response apparatus is equipped with medical equipment, and all personnel are trained to a minimum of the emergency medical technician (EMT) level. The city coordinates with Volusia County EMS to provide appropriate medical care and treatment, and Volusia County EMS provides patient transport for city EMS calls. Emergency medical service incidents are defined as low, moderate, or high-risk. The scoring values assigned to each risk level are produced by a variety of incident types using the three-axis model.

Examples of EMS incidents in each risk category:

- **Low Risk** – (Risk score 0 – 20) Examples – EMS responses that can be mitigated by one fire department apparatus and one Volusia County EMS unit, such as invalid assists, advanced life support (ALS), and basic life support (BLS) calls for one patient.
- **Moderate Risk** – (Risk score 20 – 35) Examples - EMS responses with more than one patient, critical patient, i.e., cardiac arrest, motor vehicle accident with two to four patients.
- **High Risk** - (Risk score 35 and over) EMS responses for incidents with multiple patients, mass casualty incidents, and active shooter incidents.

Technical Rescue Services

The City of DeLand Fire Department provides technical rescue incident response from all three city fire stations. The department has equipment capable of mitigating motor vehicle accidents with entrapment, elevator rescues, and high and low-angle rope rescues. Squad Engine 81 is equipped with a full complement of Hurst hydraulic extrication equipment and rope rescue equipment.

The city also participates in a Volusia County west-side technical rescue response agreement with the cities of Orange City and Deltona, which includes the City of Deltona's light technical rescue team.

Technical rescue incidents are defined as low, moderate, or high risk. The scoring values assigned to each risk level were produced by a variety of incident types using the three-axis model.

Examples of technical rescue incidents in each risk category:

- **Low Risk** – (Risk score 0 – 20) Examples – Elevator rescue with no patients.
- **Moderate Risk** – (Risk score 20 – 35) Examples – motor vehicle accidents with patients entrapped and extrication required, elevator rescue with multiple patients.
- **High Risk** – (Risk score 35 and over) Examples – Structural collapse, high angle rope rescue, complex vehicle extrication, or large vehicle extrication.

Hazardous Materials Services

The City of DeLand Fire Department responds to all hazardous materials incidents within the city. The department responds to all hazardous materials incidents with a minimum of one engine company and is capable of providing operations-level hazardous materials response. Operations level response consists of identifying the hazard, isolation, and assisting with decontamination procedures. The Volusia County Fire Rescue Hazardous Materials Team is the primary response agency for these incidents within Volusia County. The department has multiple personnel trained to the hazardous materials technician level and are able to assist and supplement the Volusia County team if a hazardous materials incident occurs within the city.

Hazardous materials incidents are defined as low, moderate, or high-risk. The scoring values assigned to each risk level were produced by a variety of incident types using the three-axis model.

Examples of hazardous materials incidents in each risk category:

- **Low Risk** – (Risk score 0 to 20) Examples – Residential natural gas leak, gas odor investigation, chemical or combustible liquid spills less than 25 gallons.
- **Moderate Risk** – (Risk score 20 – 35) Examples – Chemical or combustible liquid spill totaling more than 25 gallons but less than 55 gallons or leak that requires more than one engine company response.
- **High Risk** – (Risk Score 35 and greater) Examples – Large chemical or combustible liquid leak totaling more than 55 gallons, or incident that require full hazardous materials team response.

Aviation Services

The City of DeLand Fire Department responds to all aviation incidents at the DeLand Municipal Airport. The department responds to all aviation incidents with a minimum of one engine company and one battalion chief. Depending on the type and magnitude of the incident, assistance can be requested from multiple agencies throughout the Volusia County area. Aviation incidents are defined as low, moderate, or high-risk. The scoring values assigned to each risk level were produced by a variety of incident types using the three-axis model.

Examples of aviation incidents in each risk category:

- **Low Risk** (Risk score 0 to 20) Examples – single small aircraft fire.
- **Moderate Risk** (Risk score 20 – 35) Examples – small single aircraft crash with up to four patients.
- **High Risk** (Risk score 35 and greater) Examples – Larger aircraft crash with more than five patients.

Critical Task Analysis

A critical task analysis was conducted for all incident types that the department responds to. As part of this task analysis, all positions and functions required to mitigate all incidents were determined. This final task analysis determination created an effective response force (EFR) for each incident type. Examples of low, moderate, and high-risk incident critical tasking are given. It should be noted that multiple incident types and responses can be classified under the same risk category and could require different tasks to mitigate.

Fire Suppression

Low-Risk

The department responds to all low-risk fire suppression incidents with a minimum of one engine or aerial apparatus. This response gives an ERF of three. The general task guidelines for a low-risk fire suppression incident are as follows:

Table 6: Critical Tasking - Low Risk Fire Suppression

Fire Suppression - Low Risk	
Critical Task	**Minimum Personnel**
Command/Safety	1
Pump Operator	1
Attack Line	1
Total ERF	**3**

Moderate Risk

The department responds to all moderate risk fire suppression incidents with a complement of four engines, one aerial apparatus, one squad company, one EMS transport unit, one EMS battalion chief, and two fire department battalion chiefs. This response gives an ERF total of 19. The general task guidelines for a moderate risk fire suppression incident are as follows:

Table 7: Critical Tasking - Moderate Risk Fire Suppression

Fire Suppression - Moderate Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety/Utilities	1
Attack Line	2
Backup Line	2
Pump Operator	1
Water Supply	1
Search	2
RIT	3
Ventilation	2
Salvage	2
Rehab/EMS	2
Total ERF	**19**

High Risk

The department responds to all high-risk fire suppression incidents with a complement of four engines, one aerial apparatus, one squad, one EMS transport unit, one EMS battalion chief, and two fire department battalion chiefs. This response gives an ERF total of 27. The remainder of the required ERF will be filled through second-alarm responding units if needed. The general task guidelines for a high-risk fire suppression incident are as follows:

Table 8: Critical Tasking - High Risk Fire Suppression

Fire Suppression - High Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Lobby Control/Accountability	1
Attack Line	3
Backup Line	3
Pump Operator	1
Water Supply/FDC	1
Search	4
RIT	3
Utilities	1
Ventilation	2
Equipment Handling	2
Fire Floor Division Officer	2
EMS/Rehab	2
Total ERF	**27**

Emergency Medical Service

Low Risk

The department responds to low-risk EMS incidents with a three or four-person engine company or aerial apparatus. If needed, Volusia County EMS is responsible for patient transport to a hospital facility. The general task guidelines for a low-risk emergency medical services incident are as follows:

Table 9: Critical Tasking - Low Risk EMS

EMS - Low Risk	
Critical Task	**Minimum Personnel**
Command/Safety/Communications	1
Patient Care - BLS	2
Patient Transport	2
Total ERF	**5**

Moderate Risk

Moderate-risk EMS incidents are incidents that present a greater workload, have a critical patient, have more than one patient, or require more resources than a low-risk event. The general task guidelines for a moderate risk EMS incident are as follows:

Table 10: Critical Tasking - Moderate Risk EMS

EMS - Moderate Risk	
Critical Task	**Minimum Personnel**
Command/Safety/Communications	1
Treatment/Airway Management	1
Treatment/ IV access/Medication	1
Patient Assessment/Management	1
Equipment Handling/Hazards	1
Patient Transport	2
Total ERF	**7**

High Risk

High-risk EMS incidents have a lower probability of occurring but have a higher number of patients and require a larger response to mitigate. The general task guidelines for a high-risk EMS incident are as follows:

Table 11: Critical Tasking - High Risk EMS

EMS - High Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Staging	1
Entry Team	3
Backup Team	3
Triage/Treatment/Transport	6
Total ERF	**15**

Technical Rescue Incidents

Low Risk

The department responds to low-risk technical rescue incidents with a minimum of one engine company or aerial apparatus. This gives an ERF of three for low-risk incidents. The general task guidelines for a low-risk emergency technical rescue incident are as follows:

Table 12: Critical Tasking - Low Risk Technical Rescue

Technical Rescue - Low Risk	
Critical Task	**Minimum Personnel**
Command/Safety	1
Patient care/Rescue	2
Total ERF	**3**

Moderate Risk

The department responds to moderate risk technical rescue incidents with a minimum of two engine companies or aerial apparatus and one battalion chief. Depending on the incident type or reports of injuries, an EMS transport unit and EMS battalion chief would be dispatched. This would give an ERF of nine for moderate risk technical rescue incidents. The general task guidelines for a moderate-risk technical rescue incident are as follows:

Table 13: Critical Tasking - Moderate Risk Technical Rescue

Technical Rescue - Moderate Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Extrication	2
Hazards	1
Patient care	2
Patient Transport	2
Total ERF	**9**

High Risk

The department responds to high-risk technical rescue incidents with a minimum of two engine companies or aerial apparatus and one battalion chief. Depending on the incident type or reports of injuries, an EMS transport unit and EMS battalion chief will also be dispatched. This would give an ERF of nine for high-risk technical rescue incidents.

In the event of a structural collapse, the department responds with a total of four engine companies, one aerial apparatus, one squad company, and two battalion chiefs. This gives an ERF of 18 for high-risk structural collapse incidents. The general task guidelines for a high-risk technical rescue incident and a high-risk structural collapse incident are as follows:

Table 14: Critical Tasking - High Risk Technical Rescue

Technical Rescue – High Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Extrication	2
Hazards	1
Patient care	2
Patient Transport	2
Total ERF	**9**

Table 15: Critical Tasking - High Risk Technical Rescue (Structural Collapse)

Technical Rescue - High Risk Structural Collapse	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Utilities	2
Rescue Team	2
Backup Team	2
Patient Care	3
Triage/Treatment/Transport	7
Total ERF	**18**

Hazardous Materials Incidents

Low Risk

The department responds to all low-risk hazardous materials incidents with a minimum of one engine company or aerial apparatus. This response gives an ERF of three for low-risk incidents. The general task guidelines for a low-risk hazardous materials incident are as follows:

Table 16: Critical Tasking - Low Risk Hazardous Materials

HazMat - Low Risk	
Critical Task	**Minimum Personnel**
Command/Safety	1
Investigation/Identification	1
Containment	1
Total ERF	**3**

Moderate Risk

The department responds to moderate-risk hazardous materials incidents with two engine companies or aerial apparatus, and one battalion chief. This response gives an ERF of seven for moderate-risk hazardous materials incidents. If needed, this ERF can be supplemented by a response from the Volusia County Hazardous Materials Team. The general task guidelines for a moderate-risk hazardous materials incident are as follows:

Table 17: Critical Tasking - Moderate Risk Hazardous Materials

HazMat - Moderate Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Investigation/Identification	1
Containment	2
Decontamination	1
Pump Operator	1
Total ERF	**7**

High Risk

A high-risk hazardous materials incident represents a large-scale expanding incident that requires a multi-agency response to mitigate. The department responds to high-risk hazardous materials incidents with a minimum of two engine companies or aerial apparatus and one battalion chief. The remaining required ERF for the incident can be supplemented by a response from the Volusia County Hazardous Materials Team. This response gives an ERF of 15 for high-risk hazardous materials incidents. The general task guidelines for a high-risk hazardous materials incident are as follows:

Table 18: Critical Tasking - High Risk Hazardous Materials

HazMat - High Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Investigation/Identification	1
Entry Team	2
Backup Team	2
Tech Support/Equipment	2
Decontamination	2
Pump Operator	1
Water Supply	1
EMS	2
Total ERF	**15**

Aviation Incidents

Low Risk

The department responds to low-risk aviation incidents with one engine company or aerial apparatus and one battalion chief. This gives an ERF of four for low-risk incidents. The general task guidelines for a low-risk aviation incident are as follows:

Table 19: Critical Tasking - Low Risk Aviation

Aviation - Low Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Attack Line	1
Pump operator	1
Total ERF	**4**

Moderate Risk

The department responds to moderate-risk aviation incidents with two engine companies or aerial apparatus, one EMS transport unit, one EMS battalion chief, and one fire department battalion chief. This gives an ERF of ten for moderate-risk aviation incidents. The general task guidelines for a moderate-risk aviation incident are as follows:

Table 20: Critical Tasking - Moderate Risk Aviation

Aviation - Moderate Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Pump Operator	1
Water Supply	1
Attack Line	2
Patient Care	2
Patient Transport	2
Total ERF	**10**

High Risk

The department responds to high-risk aviation incidents with two engine companies or aerial apparatus, one EMS transport unit, one EMS battalion chief, and one fire department battalion chief. The balance of the remaining ERF will be provided by automatic aid companies. This gives an ERF of 25 for high-risk aviation incidents. If needed, the incident response can be increased to meet the effective ERF for the specific incident. The general task guidelines for a high-risk aviation incident are as follows:

Table 21: Critical Tasking - High Risk Aviation

Aviation - High Risk	
Critical Task	**Minimum Personnel**
Command	1
Safety	1
Attack Line	2
Backup Line	2
Hazards	2
Extrication	4
Triage/Treatment/Transport	13
Total ERF	**25**

Risk Classification and Categories

Fire Suppression

Fire Suppression Risk Level Categories
Low = 0 to 20
Moderate = 20 to 45
High = 45 and greater

Low Risk

The following is an example risk score of a trash fire with no exposures. The score of 4.9 categorizes this as a low risk incident.

RISK - Trash fire with no exposures	
Probability of occurrence	2
Consequence to community	2
Impact on fire department	2
SCORE	**4.898979**

The following is an example risk score for a vehicle fire with no exposures or injuries. The score of 8.5 categorizes this as a low risk incident.

RISK - Vehicle fire with no exposures	
Probability of occurrence	4
Consequence to community	2
Impact on fire department	2
SCORE	**8.485281**

Moderate Risk

The following is an example risk score for a structure fire in a single-family residence. The score of 33.9 categorizes this as a moderate risk incident.

RISK - Single Family residence	
Probability of occurrence	4
Consequence to community	4
Impact on fire department	8
SCORE	**33.94113**

The following is an example risk score for a structure fire in a small commercial structure. The score of 33.9 categorizes this as a moderate-risk incident.

RISK - Single Family residence	
Probability of occurrence	4
Consequence to community	4
Impact on fire department	8
SCORE	**33.94113**

High Risk

The following is an example risk score for a structure fire in a high-rise building. The score of 59.3 categorizes this as a high-risk incident.

RISK - High rise structure fire	
Probability of occurrence	2
Consequence to community	8
Impact on fire department	10
SCORE	**59.39697**

The following is an example risk score of a fire in a large multi-family apartment building. The score of 73.5 categorizes this as a high-risk incident.

RISK - High rise structure fire	
Probability of occurrence	2
Consequence to community	10
Impact on fire department	**10**
SCORE	**73.48469**

Emergency Medical Services

Emergency Medical Services Risk Level Categories
Low = 0 to 20
Moderate = 20 to 35
High = 35 and greater

Low Risk

The following is an example of a low risk score for a BLS EMS incident. The score of 16.2 categorizes this as a low risk incident.

RISK - BLS EMS incident	
Probability of occurrence	8
Consequence to community	2
Impact on fire department	2
SCORE	**16.24808**

The following is an example of a low risk score for an ALS EMS incident. The score of 12.3 categorizes this as a low risk incident.

RISK - ALS EMS incident	
Probability of occurrence	6
Consequence to community	2
Impact on fire department	2
SCORE	**12.32883**

Moderate Risk

The following is an example of a moderate risk score for a motor vehicle accident (MVA) with multiple vehicles and no entrapment or extrication. The score of 34.9 categorizes this as a moderate risk incident.

RISK - MVA with multiple vehicles	
Probability of occurrence	6
Consequence to community	6
Impact on fire department	4
SCORE	**34.98571**

High Risk

The following is an example of a high-risk score for a mass casualty incident with five to ten patients. The score of 36.7 categorizes this as a high-risk incident.

RISK - MCI with 5-10 patients	
Probability of occurrence	2
Consequence to community	8
Impact on fire department	6
SCORE	**36.76955**

The following is an example of a high-risk score for a mass casualty incident with ten to twenty patients. The score of 59.3 categorizes this as a high-risk incident.

RISK - MCI with 10-20 patients	
Probability of occurrence	2
Consequence to community	10
Impact on fire department	8
SCORE	**59.39697**

Technical Rescue Incidents

Technical Rescue Incident Risk Level Categories
Low = 0 to 20
Moderate = 20 to 35
High = 35 and greater

Low Risk

The following is an example of a low risk score for an elevator emergency with no patients. The score of 13.8 categorizes this as a low risk incident.

RISK - Elevator rescue with no patients	
Probability of occurrence	4
Consequence to community	4
Impact on fire department	2
SCORE	**13.85641**

Moderate Risk

The following is an example of a moderate risk score for a motor vehicle accident with multiple vehicles and extrication. The score of 34.9 categorizes this as a moderate risk incident.

RISK - MVA with extrication	
Probability of occurrence	4
Consequence to community	6
Impact on fire department	6
SCORE	**34.98571**

High Risk

The following is an example of a high-risk score for a structural collapse with multiple people trapped or injured. The score of 48 categorizes this as a high-risk event.

RISK - Structural Collapse	
Probability of occurrence	2
Consequence to community	8
Impact on fire department	8
SCORE	**48**

Hazardous Materials

Hazardous Materials Incident Risk Level Categories
Low = 0 to 20
Moderate = 20 to 35
High = 35 and greater

Low Risk

The following is an example of a low risk score for a residential gas leak/gas odor investigation. The score of 12.3 categorizes this as a low-risk incident.

RISK - Gas odor	
Probability of occurrence	6
Consequence to community	2
Impact on fire department	2
SCORE	**12.32883**

Moderate Risk

The following is an example of a moderate risk small to medium-sized combustible liquid or chemical spill or leak with no patients. The score of 28.1 categorizes this as a moderate risk incident.

RISK - Small to medium size spill or leak	
Probability of occurrence	2
Consequence to community	6
Impact on fire department	6
SCORE	**28.14249**

High Risk

The following is an example of a high risk, large-size chemical spill or leak with multiple patients. The score of 59.4 categorizes this as a high-risk incident.

RISK - Large-size spill or leak	
Probability of occurrence	**2**
Consequence to community	10
Impact on fire department	8
SCORE	**59.39697**

Aviation Incidents

Aviation Incident Risk Level Categories
Low = 0 to 20
Moderate = 20 to 35
High = 35 and greater

Low Risk

The following is an example of a low risk small aircraft fire. The risk score of 13.9 categorizes this as a low-risk incident.

RISK - Small aircraft fire	
Probability of occurrence	2
Consequence to community	4
Impact on fire department	4
SCORE	**13.85641**

Moderate Risk

The following is an example of a moderate risk small aircraft crash with four people or fewer on board. The score of 28.1 categorizes this as a moderate-risk incident.

RISK - Small aircraft crash	
Probability of occurrence	2
Consequence to community	6
Impact on fire department	6
SCORE	**28.14249**

High Risk

The following is an example of a high-risk aircraft crash with ten or more patients. The score of 48 categorizes this as a high-risk incident.

RISK - Aircraft crash with ten patients	
Probability of occurrence	2
Consequence to community	8
Impact on fire department	8
SCORE	**48**

H. Historical Perspective and Summary of System Performance

Distribution Factors

The distribution of fire department units pertains to the speed at which the first unit arrives at the scene of an emergency incident. The geographic location of the unit at the time of the incident is one of the key factors that can affect unit distribution. All DeLand Fire Department fire stations are strategically located within their respective response district. The current location of the unit at the time a call for service is received, whether the unit is in quarters at the fire station or out of quarters in their district, will affect the response times and distribution. Other factors that can affect distribution are time of day, traffic, current location of the responding unit, and size of the response district.

District 81

There are 7.4 square miles and 121.03 road miles within District 81**.** This district has the smallest square mile area but contains the most road miles of all the fire department's three districts.

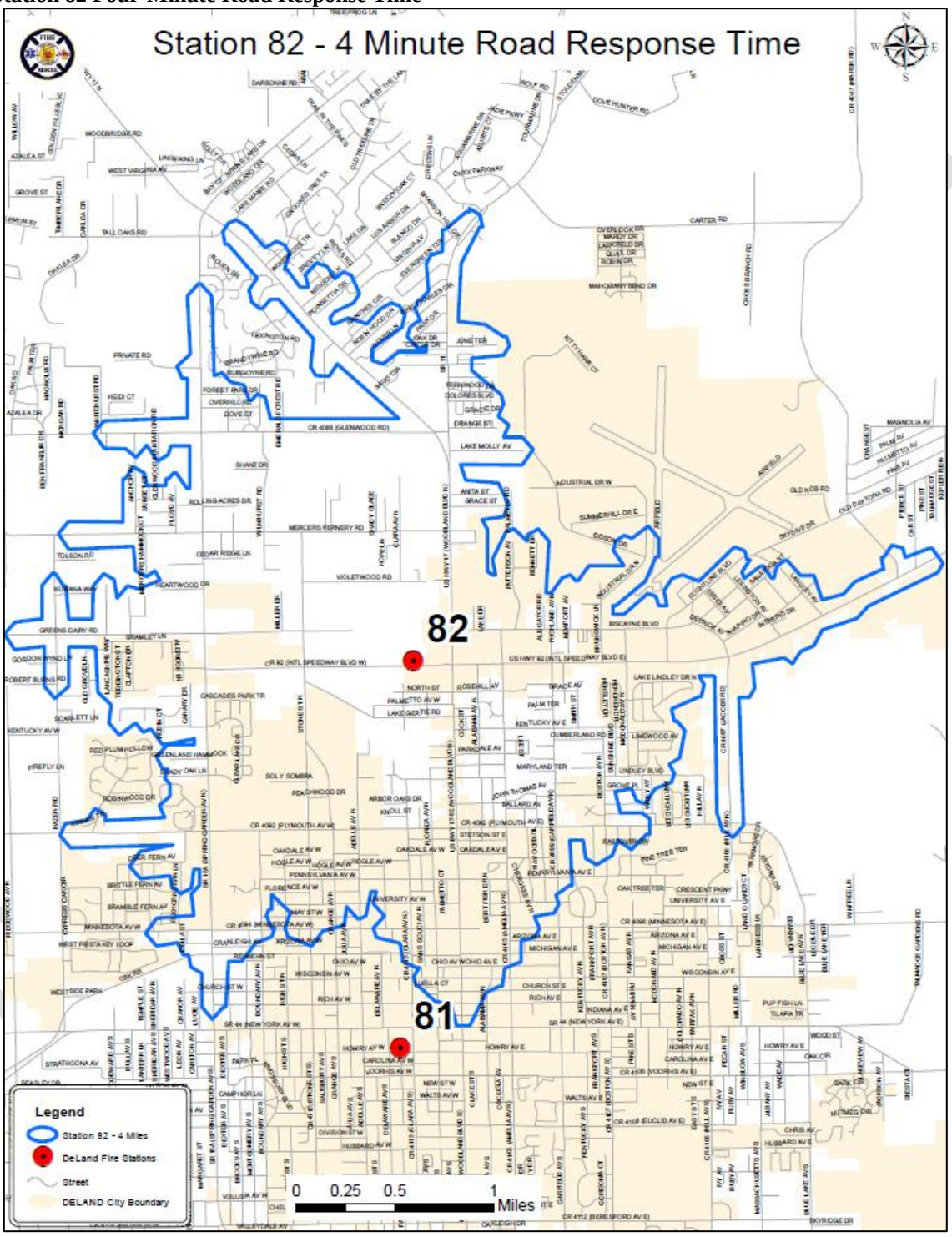
The following graphic shows the areas of District 81 that can generally be reached within under four minutes under emergency response conditions. Recently, Station 81 was relocated one block west of its previous location. This move has affected the 4-minute response area within the district minimally. The new location of the station allows units to reach half of District 81 within a four-minute response time.

Map 13: Station 81 Four-Minute Road Response Time

District 82

There are 5.3 square miles and 40.5 road miles within District 82. This district covers the city's municipal airport. The following map shows the areas of District 82 that can generally be reached within under four minutes under emergency response conditions. The current location of Station 82 allows for units responding from that station to reach most of District 82 and well within to District 81 within four minutes.

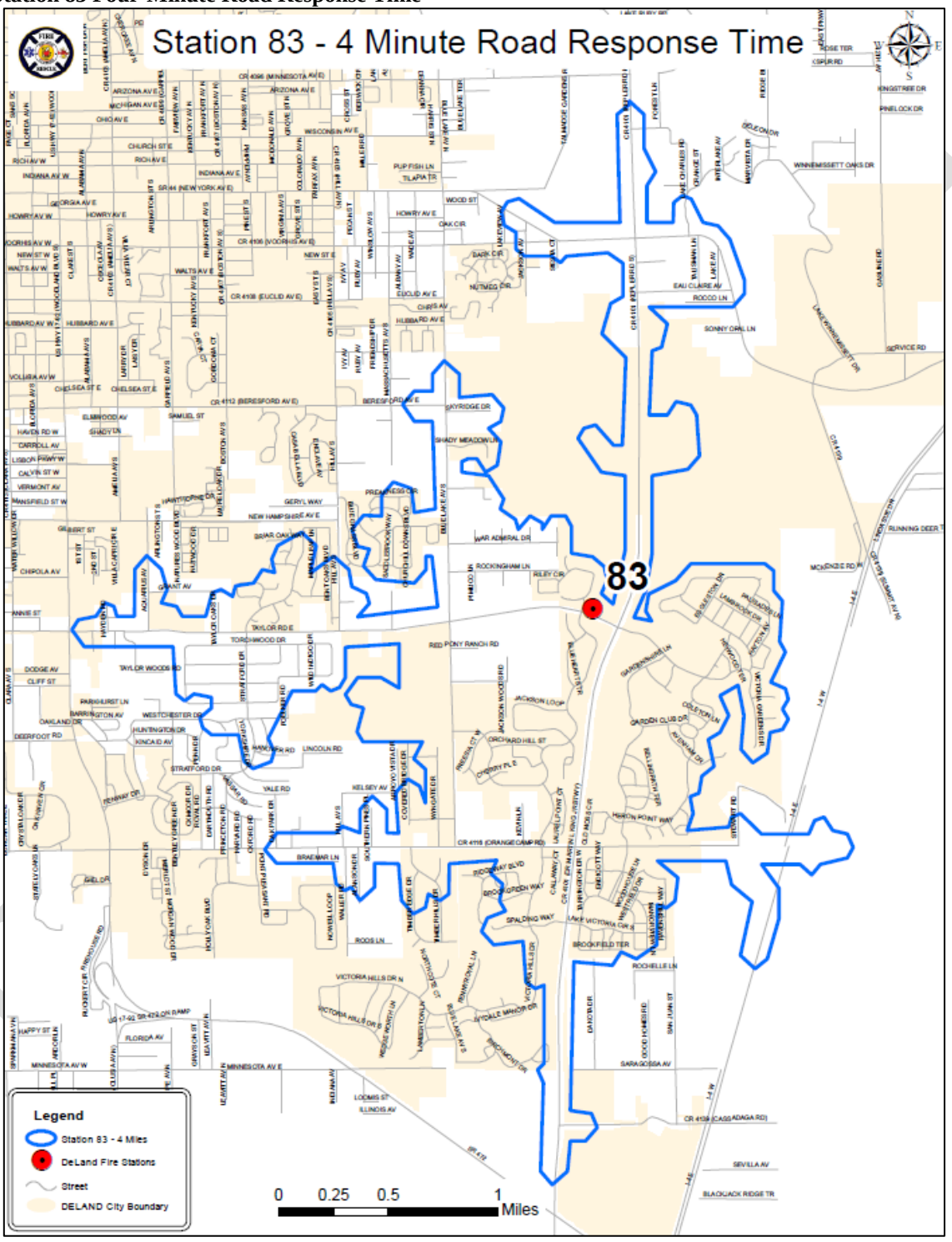
Map 14: Station 82 Four-Minute Road Response Time



District 83

There are 8.5 square miles and 70.4 miles of roadways within District 83. The following graphic shows the areas of District 83 that can generally be reached within under four minutes under emergency response conditions. The current location of Station 83 allows for units responding from that station to reach most of District 83.

Map 15: Station 83 Four-Minute Road Response Time



Concentration Factors

The concentration of fire department units pertains to the ability of the fire department to provide enough staff and equipment to mitigate an emergency in a timely manner.

There are many factors that can affect the ability of a fire department to mitigate an incident. Having the appropriate equipment and staffing is a key concentration factor. The Deland Fire Department maintains a minimum daily shift staffing level of 13 personnel with a maximum staffing level of 17 personnel. This staffing is distributed through the three city fire stations.

Along with the daily minimum staffing requirements, the department requires one company officer, one driver/engineer, and one firefighter on each response apparatus. This is accomplished by having a minimum daily officer staffing requirement and having certified and credentialed personnel work "out of class" to fill these positions when needed. An exception to this staffing rule is when daily staffing levels are elevated and Rescue 81 is placed in service. This unit is able to respond to calls with one company officer and one firefighter.

To assist with meeting effective response force (ERF) needs, the city maintains countywide automatic aid agreements and closest unit response agreements. These agreements allow for the closest appropriate unit to be dispatched to emergency calls, regardless of location.

The following table shows the number of incidents responded to by each station for the years 2021, 2022, and 2023. The busiest stations have a higher likelihood of concurrent calls in their response district. When this happens, the call is responded to by another department unit or an automatic aid unit from another agency.

Table 22: Incidents by Station (2021-2023)

	2023	2021	2021
Station 81	5,539	5,367	5,312
Station 82	1,598	1,544	1,444
Station 83	1,292	1,309	1,112

Reliability Factors

To obtain the best estimate of a fire department unit's availability to respond to calls in their response zone, a reliability factor must be determined. To determine the reliability factor for a unit, the department uses the unit hour utilization (UHU). The UHU is the total number of hours per year that a unit is committed to calls. To determine the UHU, the total number of hours per year that each fire department unit is committed to a call then divided by the number of hours in a year. This will give you the percentage of time that the unit is committed to an incident and unavailable to respond to another incident. The industry standard is to keep the UHU below 25 to 30 percent. Once the UHU increases over the 30 percent mark, the ability of department units to respond in a timely manner decreases, and personnel fatigue and burnout increase. The following table shows the UHU for all DeLand Fire Department units for the 2020, 2021, and 2022 calendar years.

Table 23: Unit Hour Utilization (2021)

Unit	Hours/Year Non-Emergency	Hours/Year Emergency	Total Time	Percentage
Batt 80	11:23:07	89:05:32	100:28:39	1.14%
SE 81	170:05:17	389:19:16	559:24:33	6.38%
T 81/R81	158:19:20	249:31:51	407:51:11	4.66%
E 82/B 82	75:53:58	196:48:26	272:42:24	3.12%
E 83/BA 83	81:10:20	145:41:00	226:51:20	2.59%

Note: In 2021, Rescue 81 and Tower 81 were cross-staffed with the same crew, and UHU times for those units were combined. In 2022, Tower 81 became a primary response unit with a dedicated crew and Rescue 81 is placed in service when daily staffing is at a maximum level.

Table 24: Unit Hour Utilization (2022)

Unit	Hours/Year Non-Emergency	Hours/Year Emergency	Total Time	Percentage
Batt 80	14:09:48	83:56:07	98:05:55	1.12%
SE 81	171:03:38	370:46:14	541:49:52	6.19%
T 81	141:28:51	269:20:31	410:49:22	4.69%
R 81	9:32:27	9:35:44	19:08:11	0.22%
E 82/B 82	95:42:21	211:52:53	307:35:14	3.52%
E 83/BA 83	97:24:42	153:22:24	250:47:06	2.87%

Table 25: Unit Hour Utilization (2023)

Unit	Hours/Year Non-Emergency	Hours/Year Emergency	Total Time	Percentage
Batt 80	27:50:45	175:02:56	202:53:41	2.32%
SE 81	246:08:49	549:29:55	813:38:44	9.29%
T 81	233:15:13	388:35:28	621:50:41	7.10%
R 81	23:34:28	62:31:23	86:05:51	0.98%
E 82/B 82	160:47:53	328:56:54	489:44:47	5.59%
E 83/BA 83	170:40:30	245:25:35	416:06:05	4.75%

Dataset Qualification

All data used for fire department evaluation and monitoring performance must be accurate and complete. Parameters must be established for data inclusion prior to certifying for use. To limit department data and create accuracy, all non-emergency responses, incidents where the DeLand Fire Department gave automatic and mutual aid, and those with incomplete data were eliminated from the completed data set.

The DeLand Fire Department established time standards for dispatch alarm processing, turnout/reaction, travel, and total response times. Once incomplete and outlier data was removed, department performance was calculated to the 90th percentile for each established time standard. The parameters for department time standards and dataset qualification were defined and adopted through DeLand Fire Department standard operating procedures. (See Appendix A: Department Policy 808 Data and Data Set Qualification)

Baseline Performance Tables

To follow are the baseline performance tables for each risk category in the five risk criteria. All performance table data sets are from January through December for the calendar years 2021 through 2023.

Fire Suppression

Table 26: Baseline Performance - Low Risk Fire Suppression

Fire Suppression Low - Risk 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	3:05	3:16	3:42	3:34	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:53	1:31	2:10	2:13	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	6:20	5:33	6:28	5:08	4:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	9:47	6:19	12:20	9:10	6:50
			n=38	n=19	n=11	n=8	

Table 27: Baseline Performance - Moderate Riske Fire Suppression

Fire Suppression Moderate - Risk 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	1:29	2:17	1:25	1:25	1:00
Turnout Time	Turnout Time 1st Unit	Urban	2:13	2:12	1:49	1:11	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	6:33	6:23	6:33	9:44	4:00
	Travel Time ERF Concentration	Urban	11:51	10:14	14:31	N/A	8:00
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	9:55	10:46	9:30	6:42	6:20
			n=35	n=11	n=8	n=17	
	Total Response Time ERF Concentration	Urban	14:23	13:11	15:45	N/A	10:20
			n=13	n=6	n=7	n=0	

Table 28: Baseline Performance - High Risk Fire Suppression

Fire Suppression High - Risk 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	1:24	1:25	1:10	1:25	1:00
Turnout Time	Turnout Time 1st Unit	Urban	1:39	0:23	1:55	1:11	1:20
Travel Time	Travel Time 1st Unit Distribution	Urban	8:52	1:50	5:33	9:44	4:00
	Travel Time ERF Concentration	Urban	0:39:43	0:36:04	N/A	0:40:07	12:10
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	11:55	2:15	8:38	12:20	6:20
			n=4	n=1	n=1	n=2	
	Total Response Time ERF Concentration	Urban	0:39:50	0:37:20	N/A	0:42:08	14:30
			n=0	n=1	n=0	n=1	

Emergency Medical Services

Table 29: Baseline Performance - Low Risk EMS

EMS Low-Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	3:44	3:24	3:43	3:52	1:30
Turnout Time	Turnout Time 1st Unit	Urban	2:01	1:54	2:01	2:00	1:00
Travel Time	Travel Time 1st Unit **Distribution**	Urban	7:01	6:44	7:03	6:56	4:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	11:20	10:36	11:04	11:01	6:30
			n=7107	n=1453	n=2891	n=2763	

Table 30: Baseline Performance - Moderate Risk EMS

EMS Moderate - Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	2:56	1:59	3:14	2:56	1:30
Turnout Time	Turnout Time 1st Unit	Urban	2:02	1:08	1:42	2:08	1:00
Travel Time	Travel Time 1st Unit **Distribution**	Urban	6:19	6:50	5:03	5:09	4:00
	Travel Time ERF **Concentration**	Urban	9:29	0:28:39	7:27	7:50	7:30
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	9:56	10:22	8:15	8:26	6:30
			n=374	n=300	n=34	n=40	
	Total Response Time ERF **Concentration**	Urban	0:12:11	0:29:26	9:28	10:04	11:00
			n=61	n=8	n=24	n=29	

Table 31: Baseline Performance - High Risk EMS

EMS High-Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	1:53	N/A	N/A	1:53	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:07	N/A	N/A	1:07	1:00
Travel Time	Travel Time 1st Unit **Distribution**	Urban	7:42	N/A	N/A	7:42	4:00
	Travel Time ERF **Concentration**	Urban	1:10	N/A	N/A	1:10	10:00
Total Response Time	Total Response Time 1st Unit on Scene Distribution	Urban	10:42	N/A	N/A	10:42	6:30
			n=1	n=0	n=0	n=1	
	Total Response Time ERF **Concentration**	Urban	0:56:03	N/A	N/A	0:56:03	12:30
			n=1	n=0	n=0	n=1	

Technical Rescue

Table 32: Baseline Performance - Low Risk Technical Rescue

Technical Rescue Low - Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	2:24	1:58	3:02	2:07	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:25	1:24	1:58	0:48	1:00
Travel Time	Travel Time 1st Unit **Distribution**	Urban	5:42	5:44	4:30	4:31	4:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	7:58	10:38	9:30	6:43	6:30
			n=15	n=10	n=3	n=2	

Table 33: Baseline Performance - Moderate Risk Technical Rescue

Technical Rescue Moderate-Risk Classification 90th Percentile Times Baseline Performance			2020 - 2022	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	2:24	1:01	1:04	2:07	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:52	1:26	1:32	1:50	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	6:53	4:37	3:55	6:30	4:00
Total Response Time	Travel Time ERF **Concentration**	Urban	14:05	0:12:33	13:48	0:11:54	9:10
	Total Response Time 1st Unit on Scene **Distribution**	Urban	11:09	9:47	6:31	10:27	6:50
			n=16	n=6	n=3	n=6	
	Total Response Time ERF **Concentration**	Urban	15:46	0:14:09	14:47	14:41	11:00
			n=9	n=3	n=2	n=4	

Table 34: Baseline Performance - High Risk Technical Rescue

Technical Rescue High-Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	0:26	N/A	0:26	N/A	1:30
Turnout Time	Turnout Time 1st Unit	Urban	0:51	N/A	0:51	N/A	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	N/A	N/A	N/A	N/A	4:00
Total Response Time	Travel Time ERF **Concentration**	Urban	N/A	N/A	N/A	N/A	18:10
	Total Response Time 1st Unit on Scene **Distribution**	Urban	4:02	N/A	4:02	N/A	6:50
			n=1	n=0	n=1	n=0	
	Total Response Time ERF **Concentration**	Urban	N/A	N/A	N/A	N/A	20:00
			n=0	n=0	n=0	n=0	

Hazardous Materials

Table 35: Baseline Performance - Low Risk Hazardous Materials

Hazardous Materials Category Low-Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	3:07	3:10	3:06	3:02	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:52	2:02	2:03	1:35	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	10:21	10:37	6:43	7:10	4:00
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	13:30	13:30	12:54	11:05	6:50
			n=45	n=28	n=8	n=9	

Table 36: Baseline Performance - Moderate Risk Hazardous Materials

Hazardous Materials Category Moderate - Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	4:37	N/A	6:26	3:28	1:30
Turnout Time	Turnout Time 1st Unit	Urban	1:42	N/A	1:30	1:41	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	8:32	N/A	4:27	6:11	4:00
	Travel Time ERF **Concentration**	Urban	8:03	N/A	8:03	N/A	9:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	14:51	N/A	12:23	11:20	6:50
			n=6	n=0	n=2	n=4	
	Total Response Time ERF **Concentration**	Urban	14:29	N/A	14:29	N/A	11:00
			n=1	n=0	n=1	n=0	

Table 377: Baseline Performance - High Risk Hazardous Materials

Hazardous Materials Category High - Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	0:00	0:00	N/A	N/A	1:30
Turnout Time	Turnout Time 1st Unit	Urban	0:00	0:00	N/A	N/A	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	0:00	0:00	N/A	N/A	4:00
	Travel Time ERF **Concentration**	Urban	N/A	N/A	N/A	N/A	9:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	0:00	0:00	N/A	N/A	6:50
			n=1	n=1	n=0	n=0	
	Total Response Time ERF **Concentration**	Urban	N/A	N/A	N/A	N/A	11:00
			n=0	n=0	n=0	n=0	

Aviation Incidents

Table 38: Baseline Performance - Low Risk Aviation Incident

Aviation Incident Category Low - Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	1:44	1:08	N/A	1:48	1:30
Turnout Time	Turnout Time 1st Unit	Urban	0:52	0:56	N/A	0:25	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	5:17	5:25	N/A	4:12	4:00
	Travel Time ERF **Concentration**	Urban	7:25	5:25	N/A	7:39	9:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	7:22	7:29	N/A	6:25	6:50
			n=2	n=1	n=0	n=1	
	Total Response Time ERF **Concentration**	Urban	9:15	7:29	N/A	9:27	11:00
			n=2	n=1	n=0	n=1	

Table 39: Baseline Performance - Moderate Risk Aviation Incident

Aviation Incident Category Moderate - Risk Classification 90th Percentile Times Baseline Performance			2021 - 2023	2023	2022	2021	Target
Alarm Handling	Pick-up to Dispatch	Urban	N/A	N/A	N/A	1:33	1:30
Turnout Time	Turnout Time 1st Unit	Urban	N/A	N/A	N/A	1:56	1:20
Travel Time	Travel Time 1st Unit **Distribution**	Urban	N/A	N/A	N/A	5:01	4:00
	Travel Time ERF **Concentration**	Urban	N/A	N/A	N/A	N/A	18:10
Total Response Time	Total Response Time 1st Unit on Scene **Distribution**	Urban	N/A	N/A	N/A	8:30	6:50
			n=0	n=0	n=0	n=1	
	Total Response Time ERF **Concentration**	Urban	N/A	N/A	N/A	N/A	20:00
			n=-0	n=-0	n=0	n=0	

No high-risk hazardous materials or aviation incidents occurred in the department's primary response area during the 2021, 2022, and 2023 timeframe.

I. Evaluation of Service Delivery

Performance Objectives – Benchmarks

Fire Suppression Services Program

For 90 percent of all fire suppression incidents, the total response time for the arrival of the first due unit, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds in urban areas. The first due unit shall be capable of providing 300 gallons of water and 1,250 gallons per minute (gpm) pumping capacity; initiating command; requesting additional resources; establishing and advancing an attack line flowing a minimum of 150 gpm; establishing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing salvage operations. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

For 90 percent of all moderate risk fires, the total response time for the arrival of the effective response force (ERF), staffed with 19 firefighters and officers, shall be: 10 minutes and 20 seconds. For 90 percent of all high-risk structure fires, the total response time for the arrival of the ERF, staffed with 27 firefighters and officers, shall be: 14 minutes and 30 seconds. The ERF for moderate risk shall be capable of: establishing command; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the Occupational Safety and Health Administration (OSHA) requirements of two in-two out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. The ERF for high risk fires shall also be capable of placing elevated streams into service from aerial ladders. These operations shall be done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

Emergency Medical Services Program

For 90 percent of all emergency medical services (EMS) responses, the total response time for the arrival of the first-due unit, staffed with 2 firefighters, shall be: 6 minutes and 30 seconds in urban areas. The first-due unit shall be capable of: assessing scene safety and establishing command; sizing-up the situation; conducting an initial patient assessment; obtaining vitals and patient's medical history; initiating mitigation efforts within one minute of arrival; providing basic life support medical aid including automatic external defibrillation (AED); and assisting transport personnel with packaging the patient.

For 90 percent of all moderate risk EMS response incidents, the total response time for the arrival of the ERF, staffed with 5 firefighters and officers, and two medical transport personnel, shall be: 10 minutes in urban areas. For 90 percent of all high-risk EMS response incidents, the total response time for the arrival of the ERF, staffed with 15 firefighters and officers and medical transport personnel, shall be: 12 minutes and 30 seconds. The ERF shall be capable of: providing incident command and producing related documentation; appointing a site safety officer; completing patient assessment; providing appropriate treatment; performing AED;

initiating cardiopulmonary resuscitation (CPR); and providing intravenous (IV) access-medication administration.

Technical Rescue Services Program

For 90 percent of all technical rescue incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds in urban areas. The first-due unit shall be capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

For 90 percent of all moderate risk technical rescue incidents, the total response time for the arrival of the ERF staffed with 7 firefighters and officers, and two medical transport personnel shall be: 11 minutes in urban areas. For 90 percent of all high-risk technical rescue response incidents, the total response time for the arrival of the ERF, staffed with 18 firefighters and officers, and medical transport personnel shall be: 20 minutes in urban areas. The ERF shall be capable of appointing a site safety officer; establishing patient contact; staging and apparatus set up; providing technical expertise, knowledge, skills, and abilities during technical rescue incidents; and providing first responder medical support.

Hazardous Materials Services Program

For 90 percent of all hazardous materials response incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds in urban areas. The first-due unit shall be capable of: establishing command; sizing up and assessing the situation to determine the presence of a potential hazardous material or explosive device; determining the need for additional resources; estimating the potential harm without intervention; and beginning to establish a hot, warm, and cold zone.

For 90 percent of all moderate risk hazardous materials response incidents, the total response time for the arrival of the ERF, including the hazardous materials response team, staffed with 7 firefighters and officers, shall be: 11 minutes in urban areas. For 90 percent of all high-risk hazardous materials response incidents, the total response time for the arrival of the ERF, staffed with 15 firefighters and officers shall be: 20 minutes in urban areas. The ERF shall be capable of providing the equipment, technical expertise, knowledge, skills, and abilities to mitigate a hazardous materials incident in accordance with department standard operating guidelines.

Aviation Services Program

For 90 percent of all aviation response incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, shall be: 6 minutes and 50 seconds in urban areas. The first-due unit shall be capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

For 90 percent of all moderate risk aviation response incidents, the total response time for the arrival of the ERF, including the technical response team, staffed with 10 firefighters and officers, and medical transport personnel, shall be: 11 minutes in urban areas. For 90 percent of all high-risk aviation response incidents, the total response time for the arrival of the ERF, staffed with 25 firefighters and officers, and medical transport personnel shall be: 20 minutes in urban areas. The ERF shall be capable of appointing a site safety officer; establishing patient contact; staging and apparatus set up; providing technical expertise, knowledge, skills, and abilities during technical rescue incidents; and providing first responder medical support.

Performance Objectives – Baselines

Fire Suppression Services Program

The department's baseline statements reflect actual performance from 2021 to 2023. The department relies on the use of automatic aid from neighboring agencies to provide its ERF complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

For 90 percent of all low risk fires, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, is: 9 minutes and 47 seconds in urban areas. For 90 percent of all moderate risk fires, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, is: 10 minutes and 03 seconds in urban areas. For 90 percent of all high-risk fires, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, is: 11 minutes and 02 seconds in urban areas. The first-due unit for all risk levels is capable of providing 300 gallons of water and 1,250 gpm pumping capacity; initiating command; requesting additional resources; establishing and advancing an attack line flowing a minimum of 150 gpm; establishing an uninterrupted water supply; containing the fire; rescuing at-risk victims; and performing salvage operations. These operations are done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

For 90 percent of all moderate risk fires, the total response time for the arrival of the ERF, staffed with 19 firefighters and officers, is: 14 minutes and 23 seconds in urban areas. There were not enough high-risk fire incidents in three years to provide baseline performance. The ERF for moderate risk is capable of: establishing command; providing an uninterrupted water supply; advancing an attack line and a backup line for fire control; complying with the OSHA requirements of two in and two out; completing forcible entry; searching and rescuing at-risk victims; ventilating the structure; controlling utilities; and performing salvage and overhaul. The ERF for high risk fires is also capable of placing elevated streams into service from aerial ladders. These operations are done in accordance with departmental standard operating procedures while providing for the safety of responders and the general public.

Emergency Medical Services Program

The department's baseline statements reflect actual performance from 2021 to 2023. The department relies on the use of automatic aid from neighboring agencies to provide its ERF complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

For 90 percent of all EMS responses, the total response time for the arrival of the first-due unit, staffed with 1 firefighter and 1 officer, is: 11 minutes and 20 seconds in urban areas. The first-due unit is capable of: assessing scene safety and establishing command; sizing up the situation; conducting an initial patient assessment; obtaining vitals and patient's medical history; initiating mitigation efforts within one minute of arrival; providing basic life support aid including AED; and assisting transport personnel with packaging the patient.

For 90 percent of all moderate risk EMS response incidents, the total response time for the arrival of the ERF, staffed with 7 firefighters and officers, is: 12 minutes and 11 seconds in urban areas. There were not enough high-risk EMS incidents in three years to provide baseline performance.

The department relies upon Volusia County EMS, a third-party provider, to complete the ERF component of its EMS program. The initial arriving fire department company has the capabilities of providing first responder medical aid, including AED, until the third-party provider arrives on scene. If the third-party provider unit

arrives on scene first, its personnel initiate care, and the staff from the initial fire department company provide support as needed.

Technical Rescue Services Program

The department's baseline statements reflect actual performance from 2021 to 2023. The department relies on the use of automatic aid from neighboring agencies to provide its ERF complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

For 90 percent of all technical rescue incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, is: 7 minutes and 58 seconds in urban areas. The first-due unit is capable of: establishing command; sizing up to determine if a technical rescue response is required; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

For 90 percent of all moderate risk technical rescue incidents, the total response time for the arrival of the ERF, staffed with 9 firefighters and officers, and medical transport personnel is: 15 minutes and 46 seconds in urban areas. The ERF is capable of: appointing a site safety officer; establishing patient contact; staging and apparatus set up; providing technical expertise, knowledge, skills, and abilities during technical rescue incidents; and providing first responder medical support. There were not enough high-risk technical rescue incidents in three years to provide baseline performance.

Hazardous Materials Services Program

The department's baseline statements reflect actual performance from 2021 to 2023. The department relies on the use of automatic aid from neighboring agencies to provide its ERF complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

For 90 percent of all hazardous materials response incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, is: 13 minutes and 30 seconds in urban areas. The first-due unit is capable of: establishing command; sizing up and assessing the situation to determine the presence of a potential hazardous material or explosive device; determining the need for additional resources; estimating the potential harm without intervention; and begin establishing a hot, warm, and cold zone.

For 90 percent of all moderate hazardous materials response incidents, the total response time for the arrival of the ERF, staffed with 7 firefighters and officers, including the hazardous materials response team, is1412 minutes and 29 seconds in urban areas. The ERF is capable of providing the equipment, technical expertise, knowledge, skills, and abilities to mitigate a hazardous materials incident in accordance with department standard operating guidelines. The department has not responded to any high-risk hazardous materials incidents during this time frame.

Aviation Services Program

The department's baseline statements reflect actual performance from 2021 to 2023. The department relies on the use of automatic aid from neighboring agencies to provide its ERF complement of personnel. These resources are immediately available as part of a seamless response system. The department's actual baseline service level performance is as follows:

For 90 percent of all aviation response incidents, the total response time for the arrival of the first-due unit, staffed with 2 firefighters and 1 officer, and 1 battalion chief, is: 9 minutes and 15 seconds in urban areas. The

first-due unit is capable of: establishing command; sizing up the situation; requesting additional resources; and providing basic life support to any victim without endangering response personnel.

There were not enough moderate or high-risk aviation incidents in three years to provide baseline performance.

Performance Gaps – Baseline to Benchmark Time Gap

Fire Suppression Services Program

The following tables show the baseline and benchmark response times and associated time gap for low-risk, moderate-risk, and high-risk fire suppression incidents.

Table 4040: Baseline to Benchmark Gap - Low Risk Fire Suppression

2021-2023 Low Risk Fire Suppression Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	9:47	6:50	**02:57**
		n=38		

Table 41: Baseline to Benchmark Gap - Moderate Risk Fire Suppression

2021-2023 Moderate Risk Fire Suppression Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	9:55	6:20	**03:35**
		n=35		
ERF	Urban	14:23	10:20	**04:03**
		n=13		

The department responded to less than ten high-risk fire suppression incidents during the 2021 – 2023 time period.

Emergency Medical Services Program

The following tables show the baseline and benchmark response times and associated time gap for low-risk, moderate-risk, and high-risk EMS incidents.

Table 42: Baseline to Benchmark Gap - Low Risk EMS

2021-2023 Low Risk EMS Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	11:20	6:30	**04:50**
		n=7107		

Table 43: Baseline to Benchmark Gap - Moderate Risk EMS

2021-2023 Moderate Risk EMS Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	9:56	6:30	**03:26**
		n=374		
ERF	Urban	12:11	10:00	**02:11**
		n=61		

The department responded to less than ten high-risk EMS incidents during the 2021 – 2023 time period.

Technical Rescue Services Program

The following tables show the baseline and benchmark response times and associated time gap for low-risk, moderate-risk, and high-risk technical rescue incidents.

Table 414: Baseline to Benchmark Gap - Moderate Risk Technical Rescue

2021-2023 Low Risk Technical Rescue Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	9:58	6:50	**03:28**
		n=15		

Table 45: Baseline to Benchmark Gap - Moderate Risk Technical Rescue

2021-2023 Moderate Risk Technical Rescue Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	11:09	6:50	**04:19**
		n=16		
ERF	Urban	15:46	11:00	**04:46**
		n=9		

The department responded to less than ten high-risk technical rescue incidents during the 2021 – 2023 time period.

Hazardous Materials Services Program

The following tables show the baseline and benchmark response times and associated time gap for low-risk and moderate-risk hazardous materials incidents.

Table 45: Baseline to Benchmark Gap - Low Risk Hazardous Materials

2022-2023 Low Risk Hazardous Materials Response Times				
1st/ERF	**Urban/Rural**	**Baseline**	**Benchmark**	**Gap**
1st Due	Urban	13:30	6:50	**6:40**
		n=45		

The department responded to less than ten moderate or high-risk hazardous materials incidents during the 2021 – 2023 time period.

Aviation Rescue and Firefighting Services

The following tables show the baseline and benchmark response times and associated time gap for low risk and moderate risk aviation incidents. The department did not respond to any high-risk hazardous materials incidents during this period.

The department responded to less than ten low, moderate, and high-risk Aviation incidents during the 2021 – 2023 time period.

Community Areas for Program Delivery and Coverage Improvement

A review of department data shows areas for improvement. One main area for improvement is total response times. Out of the five incident categories and classifications, only one has response times that do not exceed the time standard established by the department. The moderate-risk fire suppression incident has a gap time of 0:53 seconds, less than the established time standard. All other classifications have a gap time well over the established time.

A further in-depth look at the total response times shows that improvements can be made in dispatch alarm handling times, travel turnout times, and reaction times.

The department has recently begun a more in-depth look at monthly reaction/turnout times and publishes this information to all crews for the previous month. Since publishing this information for crews to review, the department has seen a significant improvement in reaction/turnout times for all crews.

Unit travel time is another factor that affects the total response time. The department has seen a consistent increase in travel times over the past several years. This increase in travel time can be related to an increased population in the area. The increased population causes an increase in traffic, which will affect travel times. Another factor that can lead to extended travel times is the growth and expansion of city response areas. Expanded areas of the city are farther away from city fire stations and will result in a longer travel time for units.

Recommendations for Improved Effectiveness in Deployment and Coverage

The department has already begun to improve the total response times for fire department units. Monitoring and publishing turnout time data has caused an improvement in this time across all units and shifts. Improvement in this area is already contributing to lower response times.

Improving travel times for units will be difficult to improve. The department is looking to add more fire stations in the future to combat the high travel times and distances. More strategically located fire stations will increase the coverage area and allow more of the city to fall under the established 4-minute response time for first arriving units.

To aid in response times for higher traffic areas, the department is looking to possibly add traffic light preemption devices in the future. These devices would be triggered by the emergency lights on responding units and turn all lights red except for the direction in which the responding unit is traveling.

J. Performance Maintenance and Improvement Plans

Compliance Team / Responsibility

The department will continuously monitor agency performance to ensure that established benchmarks are met. A compliance team has been established. The team will consist of the division chief of emergency medical services (EMS)/accreditation manager, division chief of operations, and members of the fire prevention division.

The accreditation manager will provide data for department reaction and response times for evaluation by the division chief of operations. The data will be reviewed, and response data reports will be generated and distributed to fire department administration personnel.

The fire prevention division will monitor community growth and report on any updates or trends in the city. Fire prevention will also be responsible for maintaining and updating pre-fire planning on commercial structures.

Performance Evaluation and Compliance Strategy

The department's accreditation manager and division chief of operations will continuously monitor department performance and service delivery.

Each quarter, the division chief of operations will develop a summary of department service-level objectives and benchmarks. The quarterly review will compare established benchmarks with the previous quarter's response data, with a comparison to data from the previous year.

Annually, the fire department administration will evaluate and review response demands in each of the agency's response zones. Total responses, response times, and any identified risks will be evaluated to determine if any service level changes need to be made.

The fire prevention division will assign pre-fire plans to crews quarterly. Crews will complete the assigned pre-plans to ensure that the information in the current pre-plan is accurate. The fire prevention division will also monitor and review any new construction permits and plans and inform the administration of any emerging trends in the community.

Compliance Verification Reporting

Monthly

The accreditation manager will provide data for the total number of calls and reaction time for the previous month. The division chief of operations will review the data with each shift.

Quarterly

The accreditation manager will provide data for the total number of calls, reaction times, total response times, and gap time analysis. The division chief of operations will review the data provided and provide a report for an explanation of any negative trends or performance.

Every Six Months

The fire prevention division will provide a report on any new trends in construction or growth in the community. The accreditation manager will review the report and discuss any trends that could affect department service delivery with the division.

The accreditation manager will meet with the fire chief and division chief of operations to review any information from the quarterly and 6-month reports.

Annually

The accreditation manager will develop an annual performance appraisal comprised of information from the monthly, quarterly, and six-month reports developed by the compliance team.

The appraisal will consist of any performance gaps identified in the capabilities of the department's primary response area. It will also include any negative or developing trends and/or inconsistencies within the department's performance.

The compliance team will work with the accreditation manager to compile the annual appraisal. Once completed, the appraisal will be forwarded to the fire chief for his approval. Once approved by the fire chief, the annual appraisal will be forwarded to the authority having jurisdiction for their review.

Continuous Improvement Strategy

To ensure the agency is meeting current service level objectives, continuous monitoring of service level baselines must be conducted on a regular basis. The compliance team, made up of the division chief of EMS/accreditation manager, division chief of operations, and members of the fire prevention division, will review service level baselines on a quarterly basis. Included in the review shall be a summary of the results of the service level objectives, a comparison of current results to previous results and calculations of the difference in results between time periods.

In addition to the review of service level objectives, the division chief of EMS/accreditation manager will review the response demands within each zone and the identified risks within. The division chief of operations will determine if there have been any changes within a planning zone, changes to service demands or changes in standards or operations that impact on the service level objectives or the Standards of Cover document. These reviews will be conducted on a quarterly basis.

To aid in the collection and presentation of this information, the compliance team will work as a group to assemble all required information and assist the fire department administration in the interpretation of data and considerations for improvement toward achieving targets (benchmarks). The final report will be presented to the fire chief by the division chief of EMS and the division chief of operations.

K. Appendices

Appendix A: Policy 808 – Data and Dataset Qualification

Policy
808

DeLand Fire Department
Policy Manual

Data and Dataset Qualification

808.1 PURPOSE
The purpose of this policy is to define department data and datasets used for accreditation, ISO inspections, and monitoring department performance.

808.2 DEFINITIONS

Definitions related to this policy include:

Dispatch processing time - The time elapsed between receipt of the alarm or telephone call and the dispatch of emergency response units.

Response time - The time elapsed between the dispatch center receiving the first notification of the alarm and the arrival of the first emergency response unit. Response time combines dispatch processing, turnout and travel times.

Travel time - The time elapsed between the emergency response unit beginning travel to the emergency and when the emergency response unit arrives.

Turnout time - The time elapsed between the Communications Center notifying firefighters of the emergency and when the emergency response unit begins travel.

Total Response Time - The total amount of time including dispatch processing, turnout time, and travel time for an incident.

90th Percentile - The criteria used to evaluate department goals and standards. (Ex. EMS response times must me 4 minutes or less 90% of the time)

Effective Response Force (ERF) - THe minimum amount of staffing and equipment that must reach a specific emergency location within a maximum prescribed total response time and is capable of initial fire suppression.

808.3 POLICY
1.Data Uses

DeLand Fire Department response and incident data must be accurate and qualified prior to being used. Department data can be used for the following:

(a) Acreditation
(b) ISO Inspections
(c) City Performance Measures
(d) Monitoring department response performance
(e) Incident tracking and locations

Department data can be obtained from multiple sources:

(a) Firehouse reporting program

(b) Zoll emsCharts reporting program

(c) TIburon

(d) CityWorks program

(e) VSO Dispatch

(f) Outside agencies

2. Data Qualification

All department data and datasets must be determine to be accurate and true. Once this is determined, the dataset is qualified and can be used. Only qualified data can be used for department information, evaluation and tracking

(a) **Dispatch Processing Time**

1. Any incident that does not contain a call start time or dispatch time is excluded from the qualified dataset and will, therefore, not be utilized in calculating performance results. Additionally, alarm handling times must be greater than 0 seconds and less than 240 seconds (4 minutes) to be included in the dataset. The upper limit of 240 seconds is applied to ensure erroneous data is not included in the qualified dataset. Extended alarm handling times of 240 seconds or more most frequently result from dispatch procedures that require an address verification process to be completed prior to the call being transferred to dispatch. Extended alarm handling times are generally due to a call taker's inability to readily verify the caller's address or for some other reason outside the call taker's control.

(b) 1. Any incident that does not contain a dispatch time or an en route time is excluded from the qualified dataset and will, therefore, not be utilized in calculating performance results. Additionally, turnout times must be greater than 0 seconds and less than 300 seconds (5 minutes) to be included in the dataset. The upper limit of 300 seconds is applied to ensure erroneous data is not included in the qualified dataset. The justification for this exclusionary rule is that dispatchers are trained to re-dispatch the units, broadcast a "second tone," and call the station if the responding units fail to respond within 90 seconds after a call is dispatched. Should the second dispatch be unsuccessful, the next due units will be dispatched to the incident. This is an extremely rare occurrence, and anything greater than 300 seconds is excluded as erroneous data.

(c) 1. Effective response force (ERF) travel times must be greater than 0 seconds and less than 3,600 seconds (60 minutes) to be included in the dataset. The upper limit of 3,600 seconds is applied to ensure erroneous data is not included in the dataset, such as extended travel times due to units not updating arrival times via the mobile dispatch terminal or voicing arrival times over the radio.

2. Any incident that does not contain a dispatch time or an arrival time is excluded from the qualified dataset and will, therefore, not be utilized in calculating performance results. Additionally, first due travel times must be greater than 0

seconds and less than 1,800 seconds (30 minutes) to be included in the dataset. The upper limit of 1,800 seconds is applied to ensure erroneous data is not included in the dataset, such as extended travel times due to units not updating arrival times via the mobile dispatch terminal or voicing arrival times over the radio. Travel times greater than 1,800 seconds do not accurately reflect the travel times in the City of DeLand.

(d) 1. Total response times for first due and ERF were calculated utilizing only incidents within the qualified datasets for alarm handling, turnout, and travel times. No additional exclusionary rules were applied to the total response times because all incidents with valid alarm handling, turnout, and travel times were already deemed qualified.

(e) **90th Percentile**

1. DeLand Fire Department measures baseline performance at the 90th percentile. There are different ways of calculating a percentile. DeLand Fire Department has chosen to utilize a method of linear interpolation because the percentile sought may not always be a whole number. Linear interpolation is a method that is used to estimate the value of a function between any two known values. The department utilizes a variation of =percentile formula. The function that is utilized in this assessment is as follows:

(a) The department merged data from the computer aided dispatch (CAD) system and record management system (RMS), as well as corrective databases, to ensure each incident was accurately coded based on location and response. was utilized to filter out any missing times or inaccurate data points that should be excluded from the dataset. To arrive at a qualified dataset, the department applied several exclusionary rules for each time measure (alarm handling, turnout, travel, and total response time).

(b) All dada will be analyzed to the 90th percentile.

(c) **Outlier Policy**

1. After arriving at a qualified dataset, the department established an outlier policy with the following parameters:

(a) All non-emergent calls and any units responding in non-emergency mode are excluded

(b) All mutual/automatic aid provided is excluded

(c) All mutual/automatic aid received is excluded unless utilized to meet the effective response force (ERF)

(d) All law enforcement units are excluded

(e) Still Alarms or incidents with a response time on 0:05 seconds or less

(f) Incidents related to severe weather (Hurricane, Tornado, Etc.) when calls are held until after severe weather clears

(g) Incomplete data entries or erroneous times are excluded

COMMUNITY RISK ASSESSMENT/STANDARDS OF COVER