

**Ben Hill County  
Pre-Disaster Mitigation Plan**

**Chapter 3**

**Technological Hazard, Risk and Vulnerability (HRV) Summary**

Although not required, the Ben Hill County Pre-Disaster Mitigation Plan Planning Team evaluated all technological hazards effecting Ben Hill County and the City of Fitzgerald. The planning team determined that Ben Hill County and the City of Fitzgerald are most at risk from the following technological hazard: hazardous materials release as a result of a transportation accident.

**I. Technological Hazard – Hazardous Materials Release (fixed/in-transit)**

**A. Hazardous Materials (HAZMAT) Identify.**

Hazardous materials are chemical substances that, if released or misused, can pose a threat to the environment or human health. These chemicals are used in industry, agriculture, medicine, research, and consumer goods. Hazardous materials come in the form of explosives, flammable and combustible substances, poisons, and radioactive materials. Jurisdictions with facilities that produce, process or store hazardous materials are at risk, as are facilities that treat, store, or dispose of hazardous wastes. A major source of hazardous material accidents are spills along roadways, railways, pipelines, rivers and port areas.

**B. Hazardous Materials Profile.**

Hazardous material spills are common in areas where hazardous materials are fabricated, processed, and stored. Transportation of hazardous materials by truck is the cause of the greatest number of hazardous materials events. Many products containing hazardous chemicals are routinely used and stored in homes. These products are also shipped daily on the nation's highways, railroads, waterways, and pipelines. In most cases, disasters involving hazardous materials are confined to a localized area, whether an accidental release occurs at a fixed facility or in association with a transportation incident. The United States Environmental Protection Agency sorts hazardous materials into six categories:

1. Toxic Agents (irritants, asphyxiates, narcotics)
2. Other Toxic Agents (hepatotoxic, nephrotoxic)
3. Hazardous Wastes
4. Hazardous Substances
5. Toxic Pollutants
6. Extremely Hazardous Substances

According to the Department of Transportation (DOT), for the period 1994 to 2004, there were 156,483 hazardous materials spills events in the United States. Of these, 93.2% were highway or railroad events. During this same period DOT recorded 226 deaths and 3,218

injuries. Ben Hill County is most at risk from an accidental release of hazardous materials due to a transportation incident because it is crisscrossed by intra-state highways and railway. Currently, Ben Hill County does not maintain statistical records recording the annual number of hazardous materials incidents. However, according to records maintained by the Georgia Department of Natural Resources, there were 26 recorded incidents of hazardous materials spills in Ben Hill County between 1990 and 2000. With several major trucking routes running through Ben Hill County (U.S. Highways 129 and 319; State Highways 90, 125, and 107), and with CSX Railroad trains making sixty daily runs through the county, the potential for a dangerous release of hazardous materials as a result of a transportation accident is very high. According to the Hazard Frequency Table (Appendix F), Ben Hill County has a 100% chance of 3 hazardous material spills occurring each year.

### **C. Assets Exposed to Hazardous Materials.**

Hazardous materials are transported on Ben Hill County's roadways and railways daily, so generally all people and structures in Ben Hill County are exposed to a hazardous materials accident. While the total replacement value of all critical facilities in Ben Hill County is \$119,879,572, the critical facilities most vulnerable to a hazardous materials accident are those located within a one mile buffer of the major highways and railway in Ben Hill County. According to the ITOS database (see Appendix A-VIII), countywide there are 22 critical facilities valued at \$91,041,867 located within a one mile buffer of the major highways, and 19 critical facilities valued at \$87,930,000 located within a one mile buffer of the railway. By jurisdiction, in Fitzgerald there are 19 critical facilities valued at \$90,352,667 located within a one mile buffer of the major highways, and 20 critical facilities valued at \$59,162,667 within a one mile buffer of the railway. In the unincorporated areas of Ben Hill County, there are 3 critical facilities valued at \$689,200 located within one mile of the major highways, and 2 critical facilities valued at \$28,747,705 located within a one mile buffer of the railway.

As for the potential impact of hazardous material spills on the total built community, GIS tax parcel data reveals that countywide there are 9,350 structures with a total value of \$872,176,952 located within one mile of the major transportation routes, putting them at higher risk of being exposed to hazardous material spills in Ben Hill County. This vulnerability can be further broken down by jurisdiction: in Fitzgerald, there 4,930 structures valued at \$654,445,139 located in the hazardous materials spill zone, while in unincorporated Ben Hill County there are 4,420 structures valued at \$217,731,813 (see Worksheet 3A in Appendix D). But the public health is most vulnerable to the release of hazardous materials. Hazardous materials affect people through inhalation, ingestion, or direct contact with skin, and can cause death, serious injury, and long-lasting health problems. The estimated Ben Hill County population residing within the one mile buffer of the highways and railways is 16,561, with 9,433 residing in Fitzgerald and 7,128 residing in unincorporated Ben Hill County.

#### **D. Estimated Potential Losses to Hazardous Materials.**

As noted above, the critical facilities most at risk in Ben Hill County are those located within a one mile buffer of the major highways and railways (see above for a breakdown of the number and value of these critical facilities by jurisdiction). Also, GIS data reveals that countywide there are 9,350 structures with a total value of \$872,176,952 and a population of 16,561 located within one mile of the major transportation routes (see above for a breakdown by jurisdiction). At this time, there are no known buildings, infrastructure or critical facilities to be located in the hazard zone requiring special mitigation strategies.

#### **E. Land Use and Development Trends Related to Hazardous Materials.**

Ben Hill County and the City of Fitzgerald at this time have no land use or development controls related to hazardous materials release events. Because the hazard zone is essentially countywide, existing land use patterns and development trends will result in future development in the county that may be affected by hazardous materials release. The mitigation strategy in Chapter 5 includes action steps intended to reduce the possible adverse effect on such development.

#### **F. Multi-Jurisdictional Differences**

Due to its denser population and location on several major highways and the route of CSX trains through the city, Fitzgerald is much more vulnerable to a hazardous materials release due to a transportation accident than the unincorporated areas of Ben Hill County. The following ITOS countywide and municipal maps show the critical facilities in Ben Hill County most at risk of a hazardous material release due to their location within a one mile buffer of the major highways and railway. See Appendix A-VIII for a listing of the critical facilities located within the buffers.

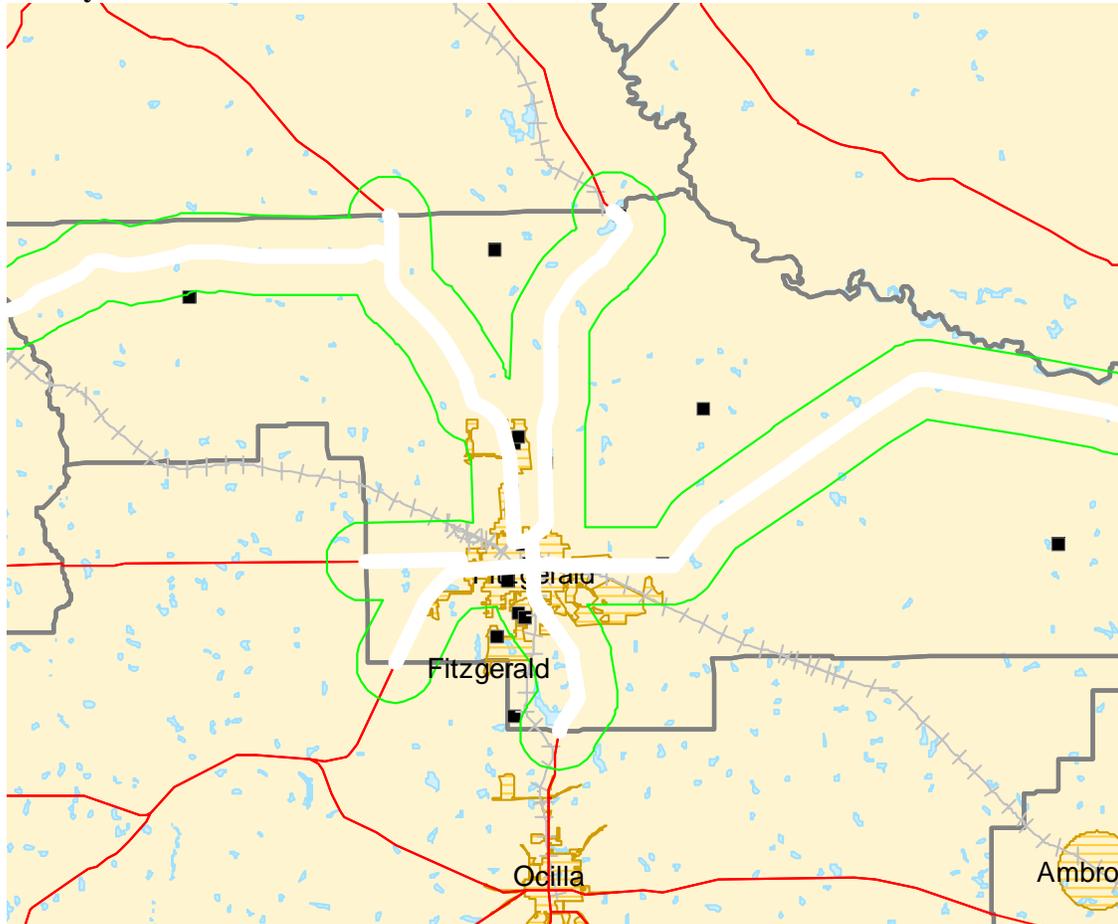
#### **G. General Summary Hazardous Materials.**

Human error is the probable cause of most transportation incidents and associated consequences involving the accidental release of hazardous materials. Varying quantities of hazardous materials are manufactured, used, or stored in Ben Hill County. Due to the county's location on several major truck and transportation routes, the potential exists for a catastrophic hazardous material release event due to a transportation accident.

# Ben Hill County Critical Facility Inventory – Hazardous Materials Release

## Critical Facilities Located Within One Mile Buffer of Major Highways

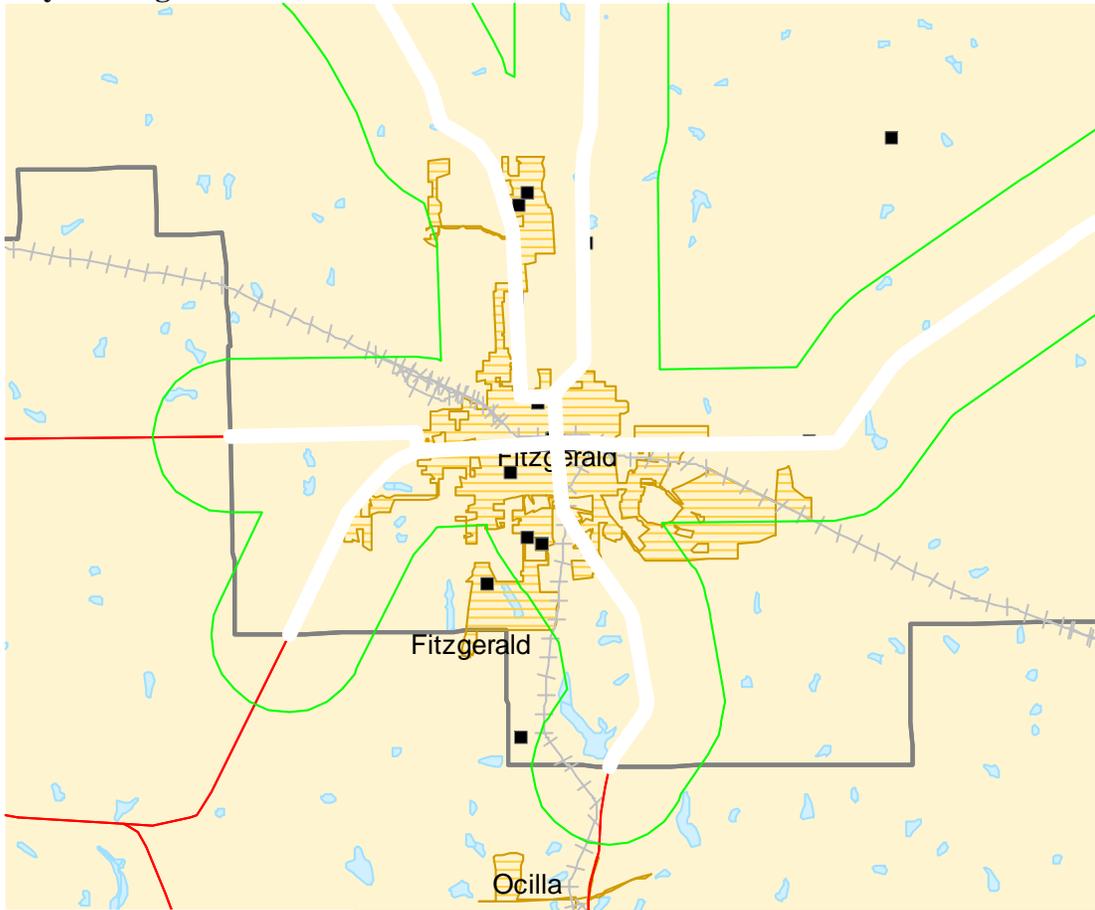
### Countywide



### Legend

- Critical Facilities
- Roads
- +— Railroads
- Major Transportation Routes
- 1 Mile Buffer
- County

## City of Fitzgerald

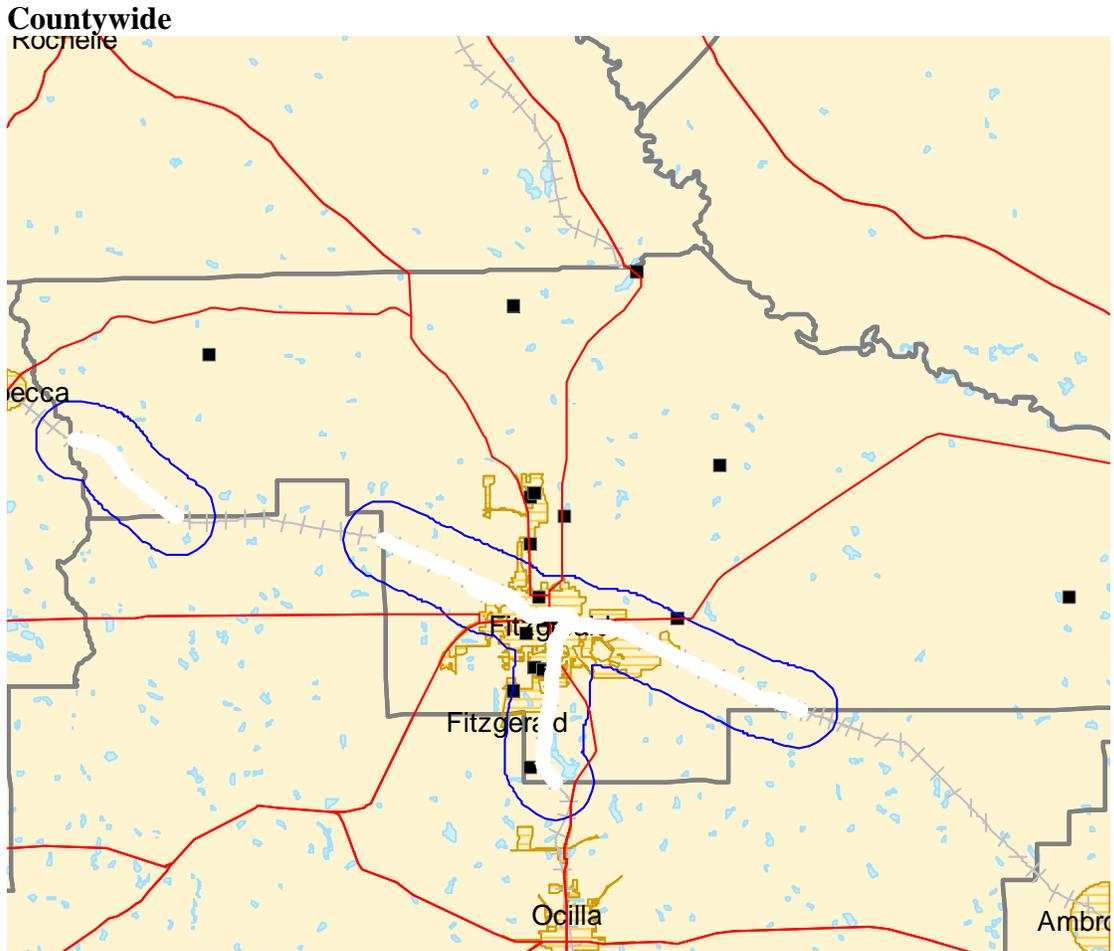


### Legend

- Critical Facilities
- Roads
- +— Railroads
- Major Transportation Routes
- 1 Mile Buffer
- County

# Ben Hill County Critical Facility Inventory – Hazardous Materials Release

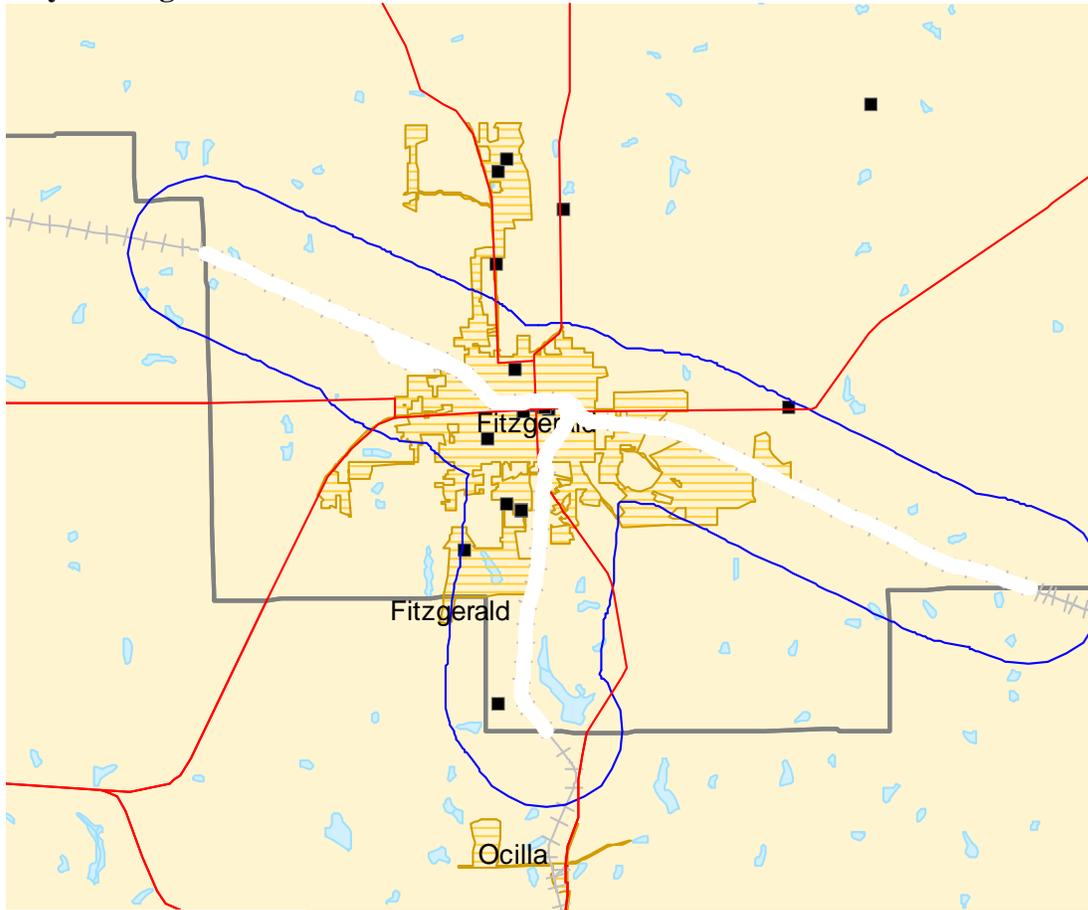
## Critical Facilities Located Within One Mile Buffer of Railway



### Legend

- Critical Facilities
- +— Railroad
- Roads
- Major Transportation Routes
- 1 Mile Buffer
- County

# City of Fitzgerald



## Legend

- Critical Facilities
- +— Railroad
- Roads
- Major Transportation Routes
- 1 Mile Buffer
- County