Adaptation Action Areas Project

Supplement to the **DeSoto County** Comprehensive Vulnerability Assessment

TASK 3: IDENTIFICATION AND PRIORITIZATION OF ADAPTATION ACTION AREAS

Methodology Exposure and Sensitivity Analyses

AND

Refinement of Critical Assets

February 24, 2026

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I. Task 3 Overview: Identification and Prioritization of Adaptation Action Areas

Task 3 Description: Adaptation Action Areas (AAAs) will be identified and prioritized based on critical assets, exposure and sensitivity analysis and on each flood scenario from the DeSoto County Comprehensive Vulnerability Assessment (CVA) flood modeling, as well as input from community workshops, and local government feedback including from DeSoto County and the City of Arcadia. This task also includes identifying, mapping (GIS shapefile layer) and PDF of a GIS map, and prioritizing the AAAs in order of highest priority where the most critical assets are most severely impacted to least priority where the least amount of critical assets are clustered and impacted.

Deliverable: The deliverable for Task 3 is an AAAs Technical Memorandum summarizing:

- Detailed description of the methodology for identifying AAAs as well as the methodology prioritizing AAAs justification for choosing each AAA.
- Map illustrates where the AAAs are located within the County; illustrating the location of each adaptation area compared to the locate of all critical assets within the geographic extent of the study.
- Tables listing each AAA with any critical assets that are contained therein.
- GIS files and associated metadata used in completing this task, including GIS shapefile boundaries of the identified adaptation areas and the critical assets therein.

II. DeSoto County Exposure and Sensitivity Methodology

A.) Overall Approach

This section presents a combined Exposure and Sensitivity Analysis Methodology applied consistently to all critical assets in DeSoto County, Florida. The intent is to provide a single, technical reference describing how rainfall-driven flood exposure and regional sensitivity were evaluated and integrated into planning, prioritization, and decision-making. Together, these analyses ensure that the critical assets included are evaluated for physical exposure to rainfall-driven flooding as well as the social, environmental (hydrological), and hazard sensitivity context. This approach is foundational for the baseline components for the Adaptation Action Areas (AAA) project. Discussion regarding the refinement of critical assets needed for the AAA project is provided in Section III.

Exposure Analysis:

The exposure analysis quantifies modeled flood depths and the spatial extent of inundation at the asset level using depth, ponding, and drain flow rasters for multiple rainfall return periods and planning horizons.

Sensitivity Analysis:
The sensitivity analysis characterizes relative regional sensitivity using a framework incorporating social vulnerability (SOVI), population distribution, FEMA flood hazard extent, and natural environmental (hydrological - canals, ditches, stormwater facilities, lakes, rivers, and streams) features, and exposure inundation.

B.) Critical Assets

GIS data containing critical assets as defined in 380.093, F.S. was downloaded from the Florida Department of Environmental Protection Geospatial Open Data portal. DeSoto County and the City of Arcadia provided additional data used to verify and update the statewide dataset. This data includes four asset groups and their associated subtypes.

1. **Transportation Assets and Evacuation Routes Asset Group**
    - **Subtypes:** Airports, bridges, bus terminals, ports (not applicable in DeSoto County which is an inland county), major roadways, marinas, rail facilities, and railroad bridges.

2. **Critical Infrastructure Asset Group**
    - **Subtypes:** Wastewater treatment facilities, lift stations, stormwater treatment facilities, pump stations, drinking water facilities, water utility conveyance systems, electric production and supply facilities, solid and hazardous waste facilities, military installations, communications facilities, and disaster debris management sites.

3. **Critical Community and Emergency Facilities Asset Group**
    - **Subtypes:** Schools, colleges, universities, community centers, correctional facilities, disaster recovery centers, emergency medical service facilities, emergency operation centers, fire stations, health care facilities, hospitals, law enforcement facilities, local government facilities, logistical staging areas, affordable public housing, risk shelter inventory, and state government facilities.

4. **Natural, Cultural, and Historical Resources Asset Group**
    - **Subtypes:** Conservation lands, parks, shorelines, surface waters, wetlands, and historical and cultural assets.

C.) Data Inputs

1. Critical Asset Datasets

   All asset classes share a common unique identifier: CFRPC_ID. This is a unique number for each critical asset and is the primary tool used for all joins, summaries, and cross-dataset relationships. Critical assets are organized into the following feature classes:

   a. Point Assets which are identified as:
   CFRPC_PT: critical assets: points. Point assets include: critical infrastructure -

Wastewater treatment facilities; lift stations; stormwater treatment facilities; pump stations; drinking water facilities; water utility conveyance systems; electric production and supply facilities; solid and hazardous waste facilities; military installations (none in DeSoto County); communications facilities; disaster debris management sites; critical community and emergency facilities - schools, colleges, universities, community centers, correctional facilities, disaster recovery centers, emergency medical service facilities, emergency operation centers, fire stations, health care facilities, hospitals, law enforcement facilities, local government facilities, logistical staging areas, affordable public housing, risk shelter inventory, and state government facilities; and Natural, Cultural, and Historical Resources - Conservation lands, parks, shorelines, surface waters, wetlands, and historical and cultural assets.

b. Polyline Assets which are identified as:
CFRPC_PL- critical assets: general linear assets. Polylines include: electric production and supply facilities; stormwater treatment facilities and pump stations; historical and cultural assets; shorelines; and surface waters.

c. Transportation Polyline Assets which are identified as:
CFRPC_PL_TRANS_critical assets: transportation linear assets. These assets include: bridges; major roadways; and rail facilities.

d. Polygon Assets which are identified as:
CFRPC_PG: critical assets: polygon areas. Polygons include: stormwater treatment facilities and pump stations; conservation lands; historical and cultural assets; parks; surface waters; and wetlands.

2. Rainfall Induced Flooding Rasters

These rasters represent rainfall-driven flooding based on modeling exclusively created for the 100-, 200-, and 500-year events for the current year, 2040, and 2070 forecast year's exposure analysis by HighTide (subcontractor for the CFRPC).

All raster datasets were synced to a common coordinate system, resolution, and vertical unit (feet, Foot_US) prior to analysis.

- **100-Year Rainfall Events (Current, 2040, 2070):** For the 100-year rainfall event, the analysis relies on the modeling completed by HighTide developed for the 100-year rainfall event surfaces for:
    - Current-year conditions
    - 2040 forecast conditions
    - 2070 forecast conditions

- **200-Year Rainfall Events (Current, 2040, 2070):** For the 200-year rainfall event, the analysis relies on the modeling completed by HighTide developed for the 200-year rainfall event surfaces for:
    - Current-year conditions
    - 2040 forecast conditions
    - 2070 forecast conditions

- **500-Year Rainfall Events (Current, 2040, 2070):** For the 500-year rainfall event, the analysis relies on the modeling completed by HighTide developed for the 500-year rainfall event surfaces for:
    - Current-year conditions
    - 2040 forecast conditions
    - 2070 forecast conditions

D.) Exposure Analysis

Critical assets exposure analysis within DeSoto County uses four primary geometry types (Points, Polylines, Transportation Polylines, and Polygons) to quantify modeled flood depths and spatial extent of inundation at the asset level using depth, ponding, and drain flow rasters for multiple rainfall return periods and planning horizons. Each geometry type was handled in a consistent and intentional manner to support the exposure analysis.

- **Point Assets**

  Point features represent assets with a discrete geographic location (e.g. facilities or site-specific infrastructure). These point locations were used directly for both exposure analysis. Flood exposure values were extracted at the point location.

  Exposure Analysis Specific Fields include:

  - 100-Year
    - RF_100YR_2025 (Rain flow 100-Year 2025 Scenario)
    - RF_100YR_2040 (Rain flow 100-Year 2040 Scenario)
    - RF_100YR_2070 (Rain flow 100-Year 2070 Scenario)

  - 200-Year
    - RF_200YR_2025 (Rain flow 200-Year 2025 Scenario)
    - RF_200YR_2040 (Rain flow 200-Year 2040 Scenario)
    - RF_200YR_2070 (Rain flow 200-Year 2070 Scenario)
    -

  - 500-Year
    - RF_500YR_2025 (Rain flow 500-Year 2025 Scenario)
    - RF_500YR_2040 (Rain flow 500-Year 2040 Scenario)
    - RF_500YR_2070 (Rain flow 500-Year 2070 Scenario)

- **Polyline Assets**

  General polyline features represent linear assets such as utilities, irrigation canals, ditches, trails, etc. For exposure purposes, a single representative point was generated at the midpoint of each polyline feature. This midpoint was used to obtain the modeled flood exposure values.

  Exposure Analysis Specific Fields include:

  - 100-Year
    - RF_100YR_2025 (Rain flow 100-Year 2025 Scenario)
    - RF_100YR_2040 (Rain flow 100-Year 2040 Scenario)
    - RF_100YR_2070 (Rain flow 100-Year 2070 Scenario)

  - 200-Year
    - RF_200YR_2025 (Rain flow 200-Year 2025 Scenario)
    - RF_200YR_2040 (Rain flow 200-Year 2040 Scenario)
    - RF_200YR_2070 (Rain flow 200-Year 2070 Scenario)
    -
  - 500-Year
    - RF_500YR_2025 (Rain flow 500-Year 2025 Scenario)
    - RF_500YR_2040 (Rain flow 500-Year 2040 Scenario)
    - RF_500YR_2070 (Rain flow 500-Year 2070 Scenario)

- **Transportation Polyline Assets**

  Transportation features were treated consistently with other linear assets. A midpoint was generated for each transportation polyline, and that midpoint served as the representative location for flood exposure extraction values. This approach ensures uniform treatment across linear asset classes while maintaining a clear spatial reference.

  Exposure Analysis Specific Fields include:

  - 100-Year
    - RF_100YR_2025 (Rain flow 100-Year 2025 Scenario)
    - RF_100YR_2040 (Rain flow 100-Year 2040 Scenario)
    - RF_100YR_2070 (Rain flow 100-Year 2070 Scenario)

  - 200-Year
    - RF_200YR_2025 (Rain flow 200-Year 2025 Scenario)
    - RF_200YR_2040 (Rain flow 200-Year 2040 Scenario)
    - RF_200YR_2070 (Rain flow 200-Year 2070 Scenario)
    -
  - 500-Year

- RF_500YR_2025 (Rain flow 500-Year 2025 Scenario)
- RF_500YR_2040 (Rain flow 500-Year 2040 Scenario)
- RF_500YR_2070 (Rain flow 500-Year 2070 Scenario)

- **Polygon Assets**

  Polygon features represent areal assets such as facilities, campuses, or other spatially extensive features. For exposure analysis, a centroid was calculated for each polygon. The centroid location was used to extract flood exposure values.

  Exposure Analysis Specific Fields include:

  - 100-Year
    - RF_100YR_2025 (Rain flow 100-Year 2025 Scenario)
    - RF_100YR_2040 (Rain flow 100-Year 2040 Scenario)
    - RF_100YR_2070 (Rain flow 100-Year 2070 Scenario)

  - 200-Year
    - RF_200YR_2025 (Rain flow 200-Year 2025 Scenario)
    - RF_200YR_2040 (Rain flow 200-Year 2040 Scenario)
    - RF_200YR_2070 (Rain flow 200-Year 2070 Scenario)

  - 500-Year
    - RF_500YR_2025 (Rain flow 500-Year 2025 Scenario)
    - RF_500YR_2040 (Rain flow 500-Year 2040 Scenario)
    - RF_500YR_2070 (Rain flow 500-Year 2070 Scenario)

Single Point Rationale: Using a single representative point for each asset ensures methodological consistency across asset types, simplifies exposure results, and supports clear interpretation at the planning scale. This approach allows every asset, regardless of geometry, to be evaluated uniformly within the flood exposure modeling framework.

E.) Sensitivity Analysis

The sensitivity analysis provides a context for interpreting exposure results by identifying areas of social vulnerability (SOVI), population distribution, FEMA flood hazard extent, natural environmental features (hydrological – canals, ditches, stormwater facilities, lakes, rivers, and streams), and exposure inundation. The methodology was applied across DeSoto County and results are applicable to all critical assets that were evaluated.

The sensitivity analysis applies to a standardized framework where the inputs are used to derive a relative sensitivity index representing baseline conditions for each exposure rainfall event and

forecast year. The inputs needed to determine the Sensitivity Analysis include the following inputs:

1. Social Vulnerability (SOVI)
2. Population Distribution
3. FEMA Flood Hazard Extent
4. Natural Environmental features (hydrological – canals, ditches, stormwater facilities, lakes, rivers, and streams)
5. Exposure Inundation

Inputs 1 through 4 used hexagon grid frameworks to ensure uniform comparison across the County. Hexagons intersecting the regional boundary were retained while open-water areas (lakes, reservoirs) were removed. Wetlands were also retained. Each hexagon serves as a container for aggregated scores derived from multiple assets. Input 5 was developed by computing inundation exposure percentages.

1. Social Vulnerability (SOVI)

   SOVI data at the Census tract level were spatially joined to a hexagon grid. Each hexagon was assigned a SOVI score based on a five-class system from low to high.

Table 1: SOVI Scoring

SOVI Class	Score
Low	1
Medium Low	2
Medium	3
Medium High	4
High	5

2. Population Distribution

   Population was estimated using Census block data and redistributed into hexagons through a weighted point-based approach. Hexagon population totals were then classified into a five-tier score reflecting relative population concentration.

Table 2: Population Scoring

Score	Population
1	0 to 100
2	101 - 400
3	401 - 700
4	701 – 1,000
5	1,001 – 4,100

3. FEMA Flood Hazard Extent

FEMA 100-year and 500-year flood zones were combined and summarized within each hexagon after removing open-water areas. The percentage of each hexagon intersecting flood hazard zones was calculated and translated into five-class flood sensitivity scores. The scores are reflected in Table 3.

Table 3: FEMA Scoring

Score	Percentage Flood Zone
1	0 - 1%
2	1.01 25%
3	25.01 – 49.99%
4	50 – 74.99%
5	75 – 100%

4. Natural Environmental (Hydrology) Factors

   Environmental sensitivity was captured by incremental scoring hexagons intersecting natural environmental hydrological features including wetlands, lakes, and rivers. Coastal boundaries and coastal erosion/critical erosion zones are not applicable as DeSoto County is an inland county.

Table 4: Intersecting Natural Hydrology Scoring

Boundary Touching	Score	*Coastal*
Every Hexagon	1	-
Lakes and Wetlands	2	-
River	3	-
Ocean and Lagoons	4	*Not applicable*
Coastline	5	*Not applicable*

5. Exposure Inundation

   Inundation Hazard Inputs (Rainfall-Based Surfaces Only)

   Flood exposure is derived from modeled rainfall depth rasters as discussed earlier representing storm intensity and projected climate conditions. Surfaces were generated for the following:

   Storm Recurrence Intervals (provided for each planning horizon)

   - 100-year
   - 200-year
   - 500-year

   Planning Horizons

   - Current
   - 2040
   - 2070

The rasters represent expected rainfall depth and intensity under present and future climate scenarios. They serve as the foundation hazard layer for inundation analysis.

a. Percent Inundation Computation (Raster-to-Polygon Method)

To compute inundation percentages, rainfall depth rasters were first converted into area polygon surfaces. This provides for area-based spatial intersection with critical asset geometries. The process is described as follows. The asset polygons are separated from various area polygon surfaces used for analysis. Different analyses were run on the four asset groups utilizing various geoprocesses, scripts, tools, temporary features, and tables. Ultimately, the analyses and results are always ascribed and populated back to the primary four asset features. Any working and temporary tables or asset features (like the area polygon surfaces) used during analysis processes are temporary and simply are referenced to clarify the process used. The geometries refer to the Point Assets (PT), Polyline Assets (PL), Transportation Polyline (PLT), and Polygon Assets (PG).

Process Overview

- Rainfall depth rasters were converted to polygon flood extent layers.
- Each asset geometry was spatially intersected with the inundation polygons.
- The area of inundated portions was calculated.
- Percent inundation was computed as:

$$Percent\ Inundated = \frac{Area\ of\ Asset\ Intersecting\ Flood\ Polygon}{Total\ Asset\ Area} \times 100$$

Advantages to this Approach

This method produces proportional inundation, avoiding sampling bias and ensuring percentage exposure values which are important for large polygons and complex asset footprints.

Scenario-Specific Fields include:

- 100-Year
  - PCT_100_C (Percent 100-Year Current Scenario)
  - PCT_100_40 (Percent 100-Year 2040 Scenario)
  - PCT_100_70 (Percent 100-Year 2070 Scenario)
- 200-Year
  - PCT_200_C (Percent 200-Year Current Scenario)
  - PCT_100_40 (Percent 200-Year 2040 Scenario)
  - PCT_100_70 (Percent 200-Year 2070 Scenario)
- 500-Year

- PCT_500_C (Percent 500-Year Current Scenario)
- PCT_100_40 (Percent 500-Year 2040 Scenario)
- PCT_100_70 (Percent 500-Year 2070 Scenario)

b. Risk-Sensitive Exposure Scoring (0-5 Scale)

Percent inundation values are translated into a non-linear risk-sensitive exposure score, indicating that higher flood coverage increases risk at an accelerated rate. The scale in Table 5 ensures partial flooding does not over inflate risk, while near-total inundation is prioritized.

Table 5: Percent Inundated Exposure Score Interpretation

Percentage %	Score	Level of Exposure
0%	0	None
>0 – 10%	1	Minimal
>10 – 30%	2	Low
>30 – 60%	3	Moderate
>60 – 90%	4	High
>90 – 100%	5	Severe

c. Sensitivity Calculation

The final sensitivity score integrates: Social Vulnerability (1-5), Population Distribution (1-5), FEMA Flood Hazard Extent (1-5), Natural Environmental (Hydrology) features (1-5), and exposure Inundation (0-5).

Formula

Sensitivity = Social Vulnerability (1-5) + Population Distribution (1-5) + FEMA Flood Hazard Extent (1-5) + Natural Environmental (Hydrology) features (1-5) + and exposure Inundation (0-5).

Table 6: Sensitivity Scoring

Factor	Scoring
SOVI	1-5
Population Distribution	1-5
FEMA Flood Hazard Extent	1-5
Natural Environmental (Hydrology) Features	1-5
Exposure Inundation	0-5
Total Possible Sensitivity Score	***Up to 25***

Scenario-specific total score fields include:

- 100-Year
  - STOT_100_C (Sensitivity Total 100-Year Current Scenario)
  - STOT_100_40 (Sensitivity Total 100-Year 2040 Scenario)
  - STOT_100_70 (Sensitivity Total 100-Year 2070 Scenario)
- 200-Year

- STOT_200_C (Sensitivity Total 200-Year Current Scenario)
- STOT_100_40 (Sensitivity Total 200-Year 2040 Scenario)
- STOT_100_70 (Sensitivity Total 200-Year 2070 Scenario)

- 500-Year
  - STOT_500_C (Sensitivity Total 500-Year Current Scenario)
  - STOT_100_40 (Sensitivity Total 500-Year 2040 Scenario)
  - STOT_100_70 (Sensitivity Total 500-Year 2070 Scenario)

This provides that:

- Highly sensitive assets escalate in priority.
- Moderate flood exposure can yield high overall risk.
- Final rankings reflect both hazard magnitude and asset consequences.

F.) Exposure-Sensitivity Summary

Table 7 summaries how exposure metrics and sensitivity are used together. Assets inherit the sensitivity score of the hexagon in which they are located, allowing asset-level exposure to be interpreted within a broader regional context.

Table 7: Exposure-Sensitivity Crosswalk Table

Component	Spatial Unit	Primary Metrics	Purpose
Exposure Analysis	Asset (point, line, polygon)	Depth (MIN / MEAN / MAX), % Exposed	Quantifies physical flood impact
Sensitivity Analysis	Hexagon	Composite sensitivity score (1–5)	Provides regional vulnerability context
Integrated Review	Asset + Hexagon	Exposure metrics + Sensitivity score	Supports prioritization and decision-making

1. Consultant Attribution and Data Sources

   All datasets were reviewed, standardized, and integrated by CFRPC staff using ArcGIS Pro-based workflows.

2. Considerations and Appropriate Use

   This methodology is subject to the following considerations.

   - Modeled flood depths represent scenario-based conditions, not observed events.
   - Sensitivity scores are relative, dependent on classification thresholds and input data resolution.
   - SOVI represents baseline social conditions and does not reflect future demographic change.
   - Results should be interpreted as planning-level indicators, not site-specific engineering determinations.

The sensitivity analysis produces a relative index. This is designed to support comparative planning, prioritization, and contextual interpretation. When paired with asset-level exposure results, the sensitivity analysis provides where exposure intersects with social, environmental, and hazard-related vulnerabilities, supporting more informed mitigation and investment strategies.

3. Integrating Exposure and Sensitivity Analyses for Planning Decisions

   Exposure and Sensitivity serve distinct, but complimentary roles within the modeling framework.

   Exposure analysis identifies how much flooding a critical asset could potentially experience under a given rainfall scenario.

   Sensitivity analysis identifies how sensitive the surrounding area is to flooding impacts based on social vulnerability (SOVI), population distribution, FEMA flood hazard extent, natural environmental features (hydrological – canals, ditches, stormwater facilities, lakes, rivers, and streams), and exposure inundation.

   By evaluating exposure and sensitivity together, critical assets may be prioritized not solely on modeled depth, but on contextual importance and potential impacts. Example applications include:

   - Prioritizing mitigation for assets with high exposure located within high-sensitivity hexagons.
   - Identifying critical assets with moderate exposure but elevated social or environmental (hydrological) sensitivity.
   - Supporting funding, phasing, and project justification decision.

III. Asset Refinement Methodology

A. Background

Section II outlined the overall methodology for exposure and sensitivity analyses, which included information regarding all critical assets. This section addresses the refinement of assets by asset features. The refinement of assets was completed due to the following:

- Mindful of budget for project design plan development with cost estimates, it is likely that only priority assets will be included in the design plans which are those critical to protect public health and safety, for example water quality components because bacteria in the water can impact public health and safety.

- It was determined that it is better to narrow down to priority critical flooded assets that are important for the community at this stage and create a refined dataset rather than try to separate this out later in the project.

Appendices A and B provide the **detailed spreadsheets** outlining all critical assets by asset features including Asset Points, Asset Polylines, Asset Transportation Polylines, and Asset Polygons. This refinement has been completed through an iterative process to help identify and prioritize the Adaptation Action Areas (AAAs). For the methodology to yield the best results, there is a need to refine critical asset data gathered for the vulnerability assessment (which casts a broad net to gather all information available) down to a subset that will meet the project objectives for the AAAs.

Appendix A provides the master Excel workbook containing asset feature spreadsheets with colors indicating levels of refinement. There is also a "NOTES" column in the spreadsheet indicating determinations made by the local government or CFRPC for inclusion or removal to the final AAA assets.

Appendix B provides the refined asset Excel workbook containing asset feature spreadsheets. These spreadsheets are the remaining critical assets following the refinement process.

AAA boundaries may be drawn based on the critical assets remaining based on this refinement.

The Baseline Critical Asset dataset, which was identified in Section II of this methodology include four asset groups and their associated subtypes.

1. **Transportation Assets and Evacuation Routes Asset Group**
    - **Subtypes:** Airports, bridges, bus terminals, ports (not applicable in DeSoto County which is an inland county), major roadways, marinas, rail facilities, and railroad bridges.

2. **Critical Infrastructure Asset Group**
    - **Subtypes:** Wastewater treatment facilities, lift stations, stormwater treatment facilities, pump stations, drinking water facilities, water utility conveyance systems, electric production and supply facilities, solid and hazardous waste facilities, military installations, communications facilities, and disaster debris management sites.

3. **Critical Community and Emergency Facilities Asset Group**
    - **Subtypes:** Schools, colleges, universities, community centers, correctional facilities, disaster recovery centers, emergency medical service facilities, emergency operation centers, fire stations, health care facilities, hospitals, law enforcement facilities, local government facilities, logistical staging areas, affordable public housing, risk shelter inventory, and state government facilities.

4. **Natural, Cultural, and Historical Resources Asset Group**
    - **Subtypes:** Conservation lands, parks, shorelines, surface waters, wetlands, and historical and cultural assets.

B. Refining Critical Assets

An overview of the list for refining critical asset data (points, polylines, transportation polylines, and polygons) is provided after this section. Details by asset features are provided after this section.

1. Remove non-flooded assets. Keep if Exposure is greater than zero (> 0), remove all assets where Exposure = 0. This was determined for the 500-year 2040 scenario.

2. Ground truth remaining assets on a case-by-case basis to identify what should be grouped or removed based on decisions and expertise and local knowledge from DeSoto County, the City of Arcadia, and the CFRPC.

3. The following actions were taken to refine the critical assets.
    a. If the asset is a private well which only serves one business, then remove.

    b. If there are multiple components of the same asset, they are grouped into one asset.

    c. Remove assets where the County does not have authority to make improvements, so assets don't artificially weigh areas with projects that are not appropriate to be included in Task 4 (i.e., regional rail, private communication towers).

    d. Removal of natural, cultural, and historic sites apply on a case-by-case judgement. Consultation with the County and the City of Arcadia was conducted to decide if this is an asset where they would be likely to develop a project to protect assets from flooding.

Asset Features

Refinement by asset feature is provided below. Asset features are: 1) Point Assets; 2) Polyline Assets; 3) Transportation Polylines Assets and 4) Polygon Assets. Each are described below along with the methodology for refinement for each.

1. **Point Assets** which are identified as: CFRPC_PT: critical assets: points. Point assets include: critical infrastructure - Wastewater treatment facilities; lift stations; stormwater treatment facilities; pump stations; drinking water facilities; water utility conveyance systems; electric production and supply facilities; solid and hazardous waste facilities; military installations (none in DeSoto County); communications facilities; disaster debris management sites; critical community and emergency facilities - schools, colleges, universities, community centers, correctional facilities, disaster recovery centers, emergency medical service facilities, emergency operation centers, fire stations, health care facilities, hospitals, law enforcement facilities, local government facilities,

logistical staging areas, affordable public housing, risk shelter inventory, and state government facilities; and Natural, Cultural, and Historical Resources - Conservation lands, parks, shorelines, surface waters, wetlands, and historical and cultural assets.

POINT ASSET REFINEMENT:

Appendix A provides the master Excel workbook containing asset feature spreadsheets with colors indicating levels of refinement. There is also a "NOTES" column in the spreadsheet indicating determinations made by the local government or CFRPC for inclusion or removal to the final AAA assets.

Appendix B provides the refined asset Excel workbook containing asset feature spreadsheets. These spreadsheets are the remaining critical assets following the refinement process.

Note: CFRPC_PT:020626 - Pair with 133 N. Hills. Correct use is the DeSoto County Probation Office as it was listed as a private residence. In order to not to show a higher number of assets in this AAA area, the CFRPC only showed this asset to represent the assets along the street per the direction given by CHNEP when there are multiple assets in the same area. Appendix A and B show it as being a private asset (as approved by FDEP in the VA) but the County owns it now.

The guide for color coding for Appendix A is provided below.

Yellow Highlighting:

All assets that have no exposure in the scenario of the 500 year flood in the year 2040. Remove non-flooded assets. Keep if Exposure is greater than zero (>0), remove all assets where Exposure = 0. This was determined for the 500-year 2040 scenario. This is reflected in the "RF 500 YR 2040" field in Appendix A.

Pink Highlighting:

Private flooded assets including: private wells that serve RV parks, single businesses, mobile home parks, private business, private communication towers, residences, and other assets. Removal of rail facilities that are not county-owned.

Blue Highlighting:

Private flooded assets that remain due to their significance and community benefit.

Purple Highlighting:

Public assets removed because of minimal impact to public safety and health at time of flood. These assets include communication towers (where design solutions exists), private residences (now owned by public entities), community centers, dams, drainage assets, hotel/motel, law enforcement, library, local govt facility, post office, public school, public water system (PWS + Plant), state govt facility, tank (PWS), wastewater facility, and well (PWS), debris staging areas, small quantity generator disposal sites, and boat ramps.

Green Highlighting:

Removed public wells that have plans to prevent flooding, wastewater facility, public water system (PWS-Plant), small quantity generators, community center, shelter, law enforcement, power plant, substation, and fire station. This also includes assets owned by the State or other government entities that are not county or municipal.

2. **Polyline Assets** which are identified as: CFRPC_PL- critical assets: general linear assets. Polylines include: electric production and supply facilities; stormwater treatment facilities and pump stations; historical and cultural assets; shorelines; and surface waters.

POLYLINE ASSET REFINEMENT:

Appendix A provides the master Excel workbook containing asset feature spreadsheets with colors indicating levels of refinement. There is also a "NOTES" column in the spreadsheet indicating determinations made by the local government or CFRPC for inclusion or removal to the final AAA assets.

Appendix B provides the refined asset Excel workbook containing asset feature spreadsheets. These spreadsheets are the remaining critical assets following the refinement process.

The guide for color coding for Appendix A is provided below.

Yellow Highlighting:

All assets that have no exposure in the scenario of the 500 year flood in the year 2040. Remove non-flooded assets. Keep if Exposure is greater than zero (>0), remove all assets where Exposure = 0. This was determined for the 500-year 2040 scenario. This is reflected in the "RF_500YR_2040: field in Appendix A.

Purple Highlighting:

Public/Private assets removed because of impacts to assets the County cannot control. These include: electric production and supply facilities; stormwater facilities; historical and cultural assets including bridges; shorelines; and surface waters.

3. **Transportation Polyline Assets which are identified as:** CFRPC_PL_TRANS_critical assets: transportation linear assets. These assets include: bridges; major roadways; and rail facilities.

TRANSPORTATION POLYLINE ASSET REFINEMENT:

Appendix A provides the master Excel workbook containing asset feature spreadsheets with colors indicating levels of refinement. There is also a "NOTES" column in the spreadsheet indicating

determinations made by the local government or CFRPC for inclusion or removal to the final AAA assets.

Appendix B provides the refined asset Excel workbook containing asset feature spreadsheets. These spreadsheets are the remaining critical assets following the refinement process.

The guide for color coding for Appendix A is provided below.

Yellow Highlighting:

All assets that have no exposure in the scenario of the 500 year flood in the year 2040. Remove non-flooded assets. Keep if Exposure is greater than zero (>0), remove all assets where Exposure = 0. This was determined for the 500-year 2040 scenario. This is reflected in the "RF 500YR 2040" field in Appendix A.

Purple Highlighting:

Roadways owned by FDOT have been removed as the local governments have no control over these roads.

Green Highlighting:

Public roadways that are flooded, but are not as identified as EVAC or EVAC SIS, were removed.

4. **Polygon Assets which are identified as:** CFRPC_PG: critical assets: polygon areas. Polygons include: stormwater treatment facilities and pump stations; conservation lands; historical and cultural assets; parks; surface waters; and wetlands.

POLYGON ASSET REFINEMENT:

Appendix A provides the master Excel workbook containing asset feature spreadsheets with colors indicating levels of refinement. There is also a "NOTES" column in the spreadsheet indicating determinations made by the local government or CFRPC for inclusion or removal to the final AAA assets.

Appendix B provides the refined asset Excel workbook containing asset feature spreadsheets. These spreadsheets are the remaining critical assets following the refinement process.

The guide for color coding for Appendix A is provided below.

Yellow Highlighting:

All assets that have no exposure in the scenario of the 500 year flood in the year 2040. Remove non-flooded assets. Keep if Exposure is greater than zero (>0), remove all assets

where Exposure = 0. This was determined for the 500-year 2040 scenario. This is reflected in the “RF_500YR_2040” field in Appendix A.

In the case of polygons, all polygons are being removed. They consist of biological stations, canals/ditches, stormwater ponds; cemeteries; conservation lands; historical and cultural assets; parks; surface waters; wetlands, and linear resources such as roads, railroads, levees, ditches, and canals.