



U.S. Department of Transportation

Safe Streets and Roads for All (SS4A) Grant

# Harnessing AI and High-Fidelity Digital Twins for Proactive Road Safety



UNIVERSITY OF  
CENTRAL FLORIDA



Lee County  
*Southwest Florida*



# SS4A Program Overview

The Infrastructure Investment and Jobs Act (IIJA) established the Safet Streets and Roads for All (SS4A) competitive grant program with \$5billion in appropriate funds over 5 years, 2022-2026. Almost \$2 billion is still available for future funding rounds.

## Planning and Demonstration Grants

Used to develop, complete, or supplement an Action Plan or fund supplemental safety planning activities and safety demonstration activities in support of an Action Plan.

Demonstration activities include:

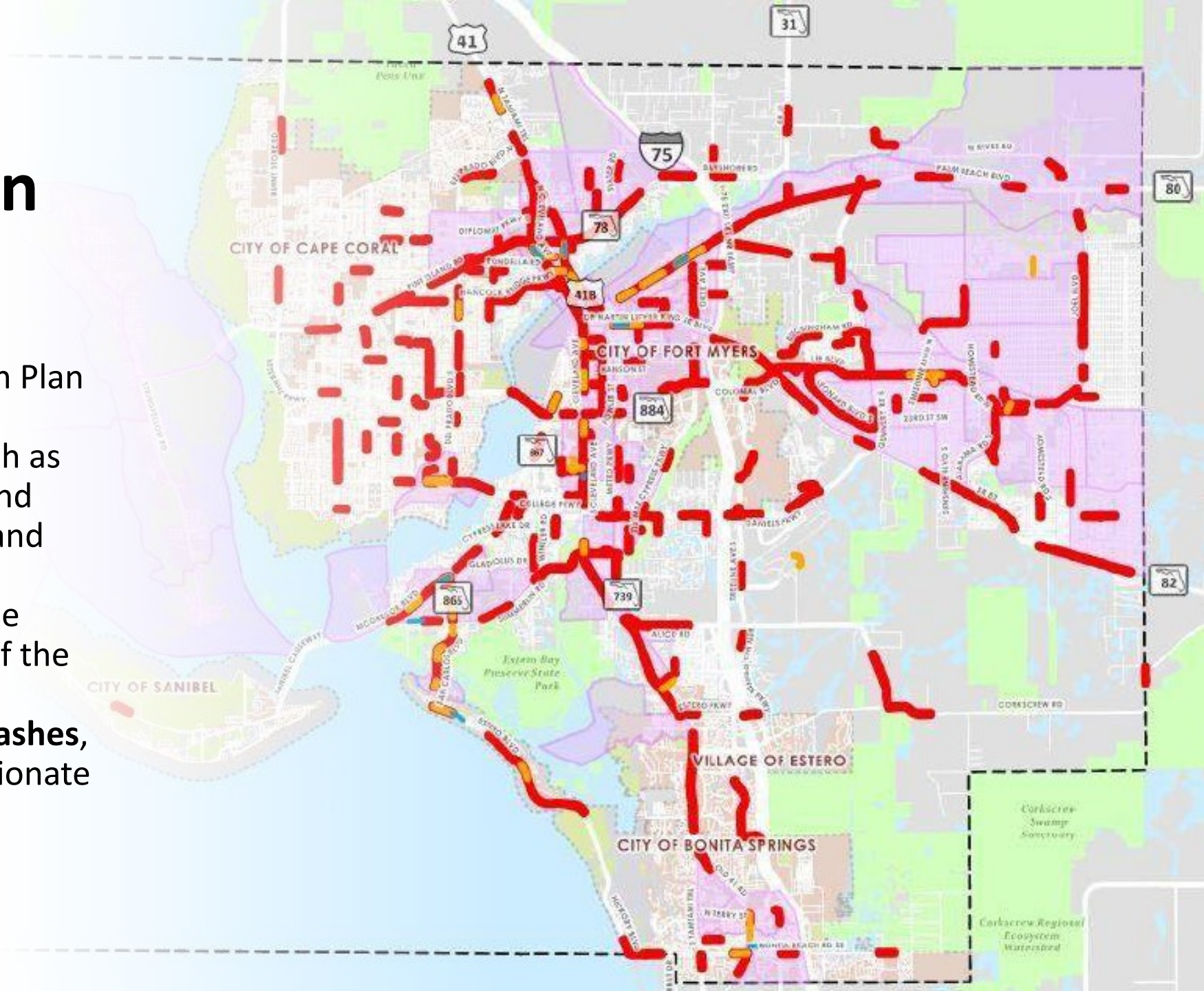
1. Feasibility studies
2. MUTCD engineering studies
3. Behavioral or operational activity pilot programs
4. New technology pilot programs

## Implementation Grants

Used to implement projects or strategies that are consistent with an existing Action Plan to address a roadway safety problem.

# Lee County Safety Action Plan

The Lee County Safety Action Plan (2025) identifies High Injury Network (HIN) corridors, such as Lee Blvd., McGregor Blvd., and Sunshine Blvd., where fatal and serious injury crashes are concentrated. Although these corridors comprise just **1%** of the total centerline miles, they account for **56% of all KSI crashes**, highlighting their disproportionate risk.

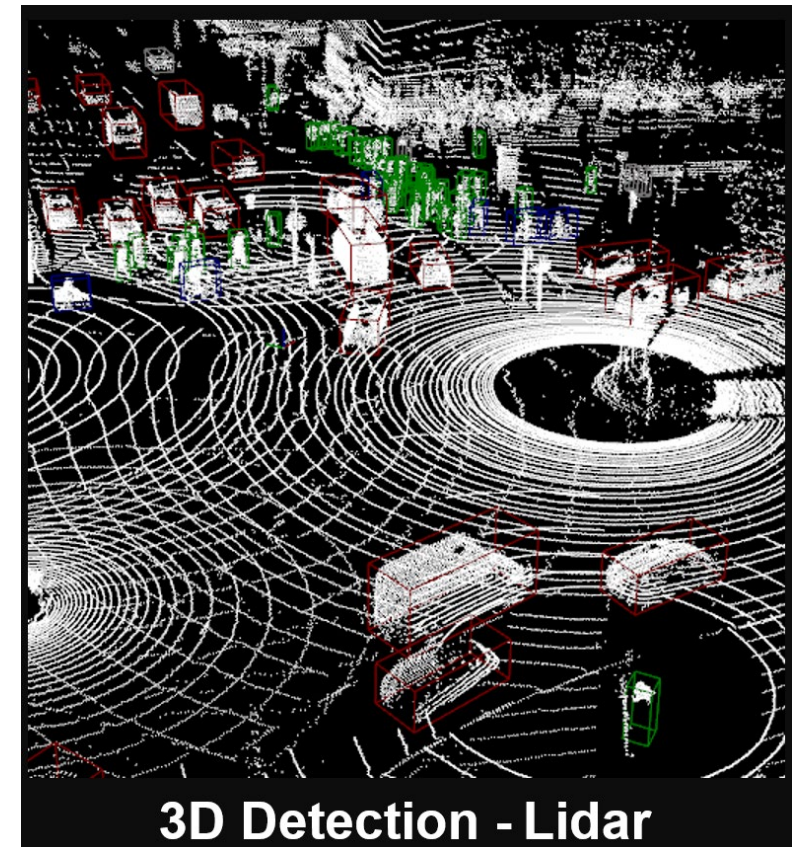




# Proposed Demonstration Project

Deploy a coordinated system of roadside lidar, radar, and camera sensors at selected pilot locations, chosen based on the HIN corridors with recurring crash complaints. The sensors will capture high-resolution traffic data, which will be analyzed using AI-powered detection algorithms, econometric modeling, and digital twin simulations.

- Support the proactive identification of crash precursors
- Help evaluate the effectiveness of targeted countermeasures.
- Generate actionable insights to inform real-time operations and long-term safety planning



# Project Tasks

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1. Regional Safety Evaluation and Data  
Compilation

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2. Site Selection and Readiness Assessment

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3. Smart Sensor Deployment and System  
Integration

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4. Data Analytics, AI Models, and Digital Twin  
Development

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5. Evaluation, Knowledge Transfer, and Action  
Plan Integration

**THANK YOU**

