

ARTERIAL GRID ANALYSIS



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2045 LRTP Steering Committee

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**Miami-Dade Transportation
Planning Organization**

Study Purpose

- Update the Arterial Grid Analysis – Phase I study results (2006)
- Evaluate the operation of arterial grid roadway system in Miami-Dade County
 - Develop a consolidated database of traffic counts and estimate level of service
 - Develop roadway characteristics maps
 - Identify ways to improve capacity and efficiency of roadway network

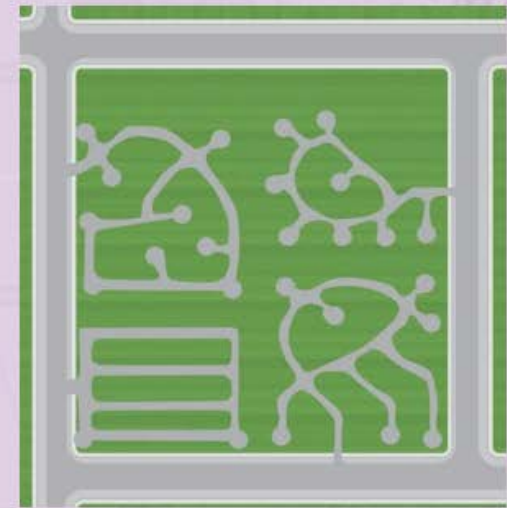
Historical Development of Grid System

- Pre World War II
 - Based on land planning and surveying principles from the 1800s and early 1900s
 - Section line and half-section line roads



Hierarchical System

- Hierarchical system favored between 1960s and 1990s
 - Focused on moving cars
 - Concentrates traffic onto fewer roadways by reducing connectivity of non-arterials
 - Modern areas of the County including many western suburban residential areas developed in this manner



Grid vs. Hierarchical System

Hierarchical and Connected Road Systems (Kulash, Anglin and Marks, 1990)



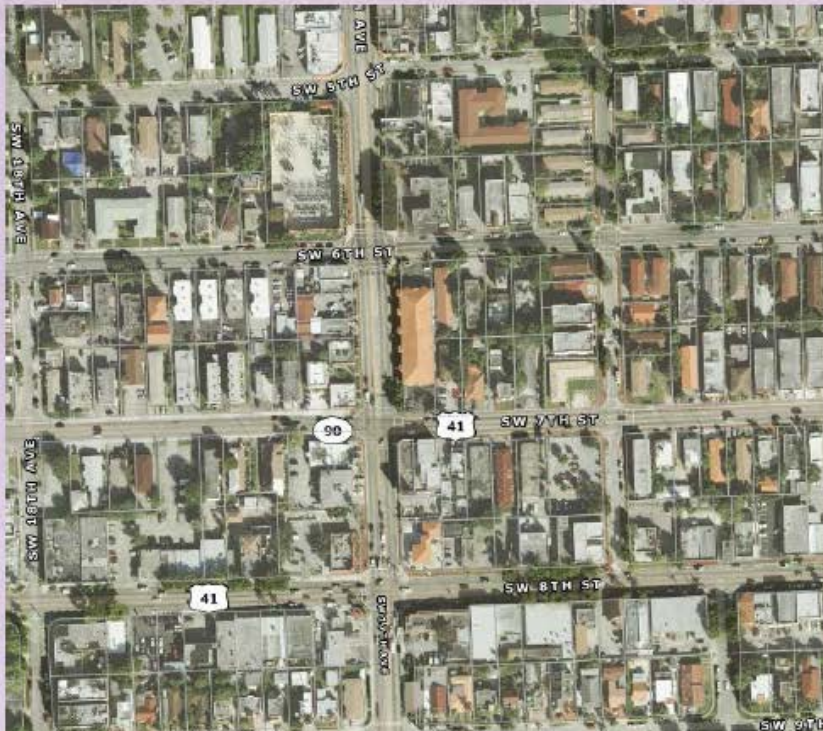
Why is a Grid Network Important?

- Transportation benefits
- Broader community benefits



Grid Road System - Benefits

- Choice
- Redundancy
- Safety
- Economic activity
- Smart growth
- Healthy communities



Key Findings from Phase I

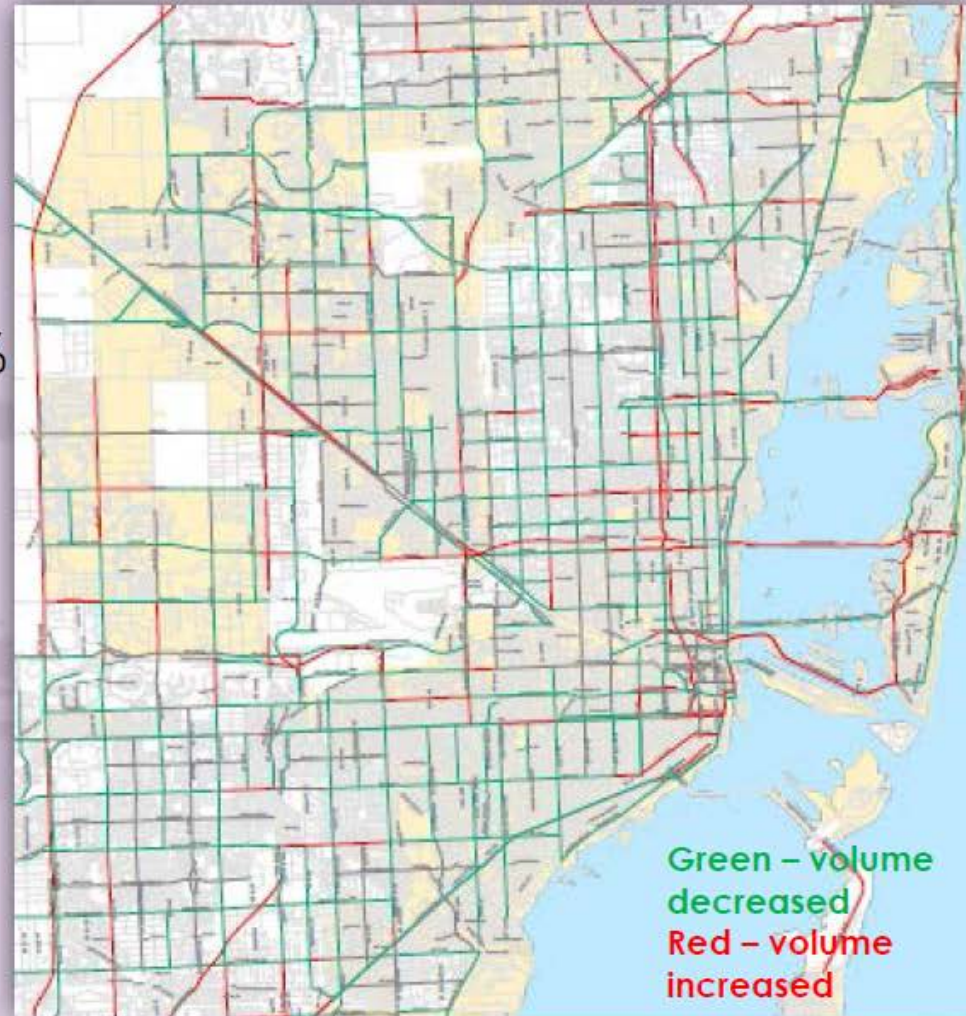
- Well-defined grid roadway system in urban core areas is able to handle **higher** density with less congestion
- Modern areas of the County developed with **lower** density tend to exhibit worse traffic congestion
 - Lack of a well-defined grid roadway system
 - Concentration of commercial land use along arterial roadways

Key Findings from Phase I

- Connectivity improvements to collector roadways may help relieve adjacent failing arterials
- Functional classification analysis
 - Arterials
 - 48 percent of arterials operate at LOS F
 - Collectors
 - 19 percent of collectors operate at LOS F

Key Findings

- A decreasing trend of traffic volume between 2004/05 and 2011/12
 - Traffic volume decreased in 68% of roadway segments evaluated
 - Net change of Average Daily Traffic at 1040 roadway segments is (-)1.94 million vehicles
- Consistent with national trends



Key Findings

- Level of service deficiencies
 - A higher proportion of deficient corridors are located south of Flagler Street

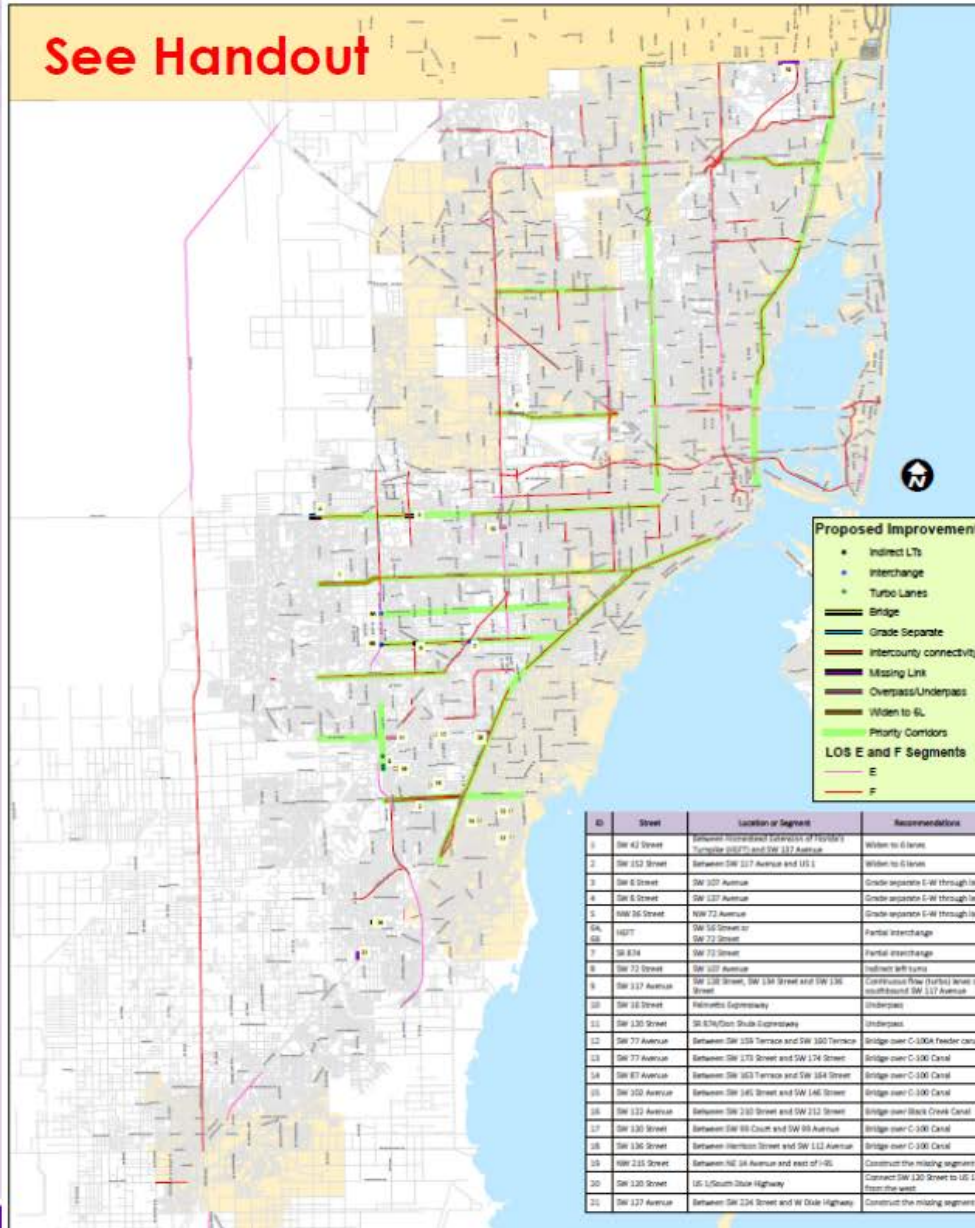
LOS Summary by % Centerline Miles

North/South County Distribution	C or better	D	E	F	Total
North of Flagler St	52%	24%	6%	18%	100%
South of Flagler St	44%	26%	6%	24%	100%
Total	48%	25%	6%	21%	100%

Improvement Strategies

- Improvements within Priority Corridors (Type 1 projects)
 - Roadway widening
 - Arterial grade separation
 - Interchanges at expressways
 - Intersection improvements
- Grid Network Connectivity (Type 2 projects)
 - At expressways
 - At canals
 - Other locations

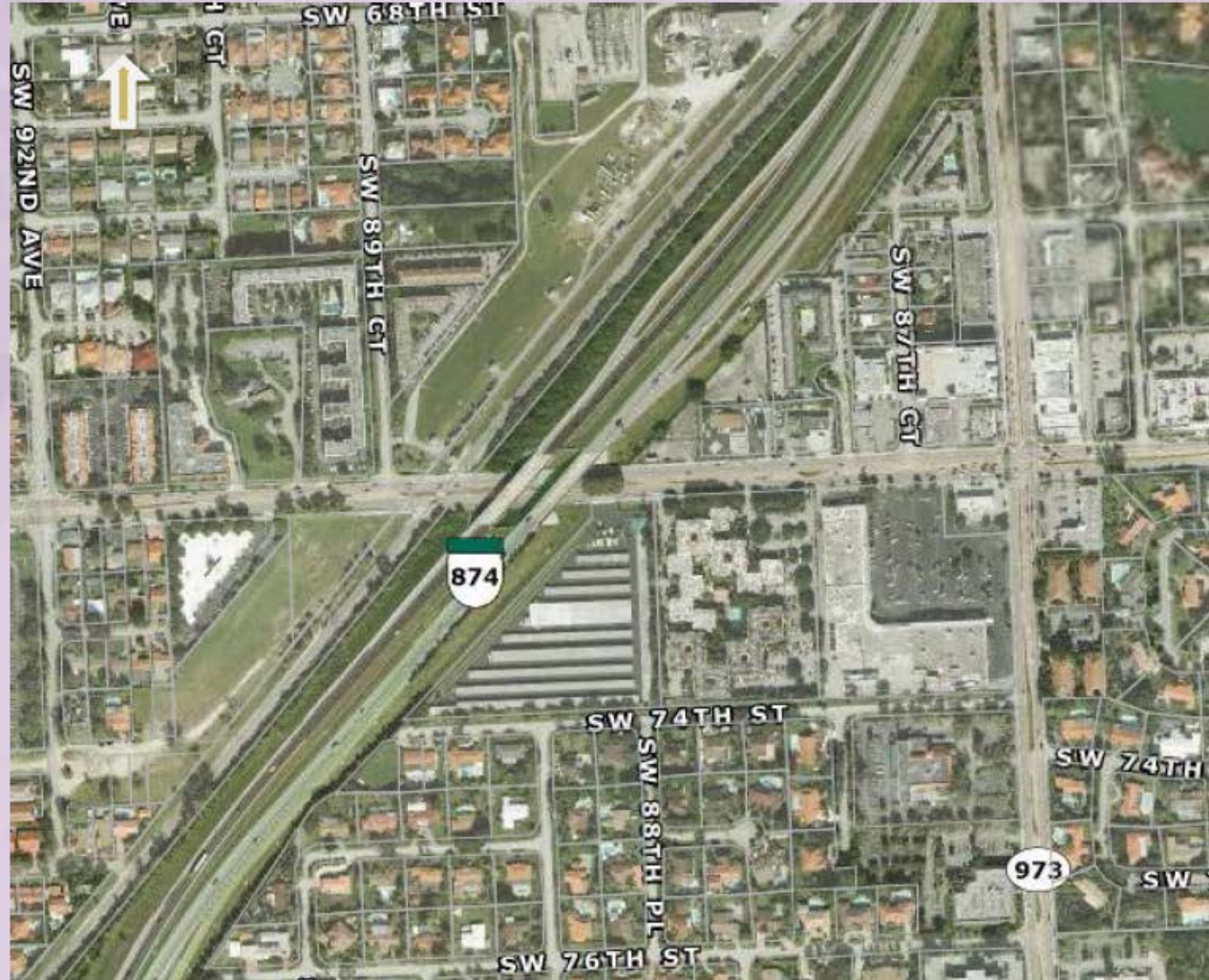
Arterial Grid Study Recommendations



Priority Corridor (Type 1) Projects

Road	From	To	Improvement	Category
SW 42 Street	HEFT	SW 137 Avenue	Widen to 6 lanes	Widening
SW 152 Street	SW 117 Avenue	US 1	Widen to 6 lanes	Widening
SW 8 Street	SW 107 Avenue		Grade separate E-W through lanes	Arterial grade separation
SW 8 Street	SW 137 Avenue		Grade separate E-W through lanes	Arterial grade separation
NW 36 Street	NW 72 Avenue		Grade separate E-W through lanes	Arterial grade separation
SW 56 Street or SW 72 Street	Homestead Extension of Florida's Turnpike		Partial interchange	Interchanges
SW 72 Street	SR 874 (Don Shula Expressway)		Partial interchange	Interchanges
SW 72 Street	SW 107 Avenue		Indirect left turns	Intersection improvements
SW 117 Avenue	SW 128 Street, SW 134 Street, and SW 136 Street		Continuous flow (turbo) lanes – southbound SW 117 Avenue	Intersection improvements

Example – Type 1 Project Partial Interchange - SW 72 Street and SR 874



Arterial Grid Network (Type 2) Projects

Road	From	To	Improvement	Category
SW 77 Avenue	SW 159 Terrace	SW 160 Terrace	Bridge over C-100A feeder canal	Missing link at canal
SW 77 Avenue	SW 173 Street	SW 174 Street	Bridge over C-100 canal	Missing link at canal
SW 87 Avenue	SW 163 Terrace	SW 164 Street	Bridge over C-100 canal	Missing link at canal
SW 102 Avenue	SW 145 Street	SW 146 Street	Bridge over C-100 canal	Missing link at canal
SW 122 Avenue	SW 210 Street	SW 212 Street	Bridge over Black Creek canal	Missing link at canal
SW 120 Street	SW 99 Court	SW 99 Avenue	Bridge over C-100C canal	Missing link at canal
SW 136 Street	Harrison Street	SW 112 Avenue	Bridge over C-100 canal	Missing link at canal
NE 215 Street	NE 14 Avenue	I-95	Construct 2 lane facility	Other missing links
SW 120 Street	SW 82 Road	US 1	Construct 2 lane facility	Other missing links
SW 127 Avenue	South of SW 224 Street	W Dixie Highway	Construct 2 lane facility	Other missing links
SW 16 Street	SR 826 (Palmetto Expressway)		Connect SW 16 Street	Missing link at expressway
SW 120 Street	SR 874 (Don Shula Expressway)		Connect SW 120 Street	Missing link at expressway

Example – Type 2 Project Missing Link - SW 120 Street at US 1



An aerial photograph of a city street grid, showing multiple lanes, cars, and buildings. The image is faded and serves as a background for the text.

QUESTIONS?