CONGESTION MANAGEMENT PROCESS (CMP)

2009 Plan Update

Indian River County
Metropolitan Planning Organization

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I. INTRODUCTION

This document constitutes Indian River County MPO's Congestion Management Process (CMP) Plan Update. This CMP Plan, combined with the MPO's ongoing strategy monitoring efforts, represents the MPO's total Congestion Management Process. The CMP Plan development process and results are presented in the following sections:

- Section II – CMP Plan Update Process describes the general steps taken to identify the CMP Plan.
- Section III – 2009 CMP Priority Corridors describes the results of the prioritization process and identifies the priority corridors for further evaluation.
- Section IV – 2009 CMP Plan Update describes specific CMP strategies for the top two priority corridors, including the prioritization of the strategies.

II. CMP PLAN UPDATE PROCESS

As illustrated in *Figure 1*, updating the CMP plan involves five steps (table references are to tables presented later in this report). The first step is to conduct a corridor prioritization analysis which ranks those roadway segments that have high scores based on a formula that considers current and future congestion. Those scores are weighted by whether they are currently congested or will be congested in the future.

The second step involves eliminating segments from Step One, where improvements are programmed (within the next five years) or segments were evaluated as part of previous MPO CMP efforts. Also, any segments on I-95 are removed because the Florida Department of Transportation maintains jurisdiction over that roadway. This step results in a list of candidate CMP segments.

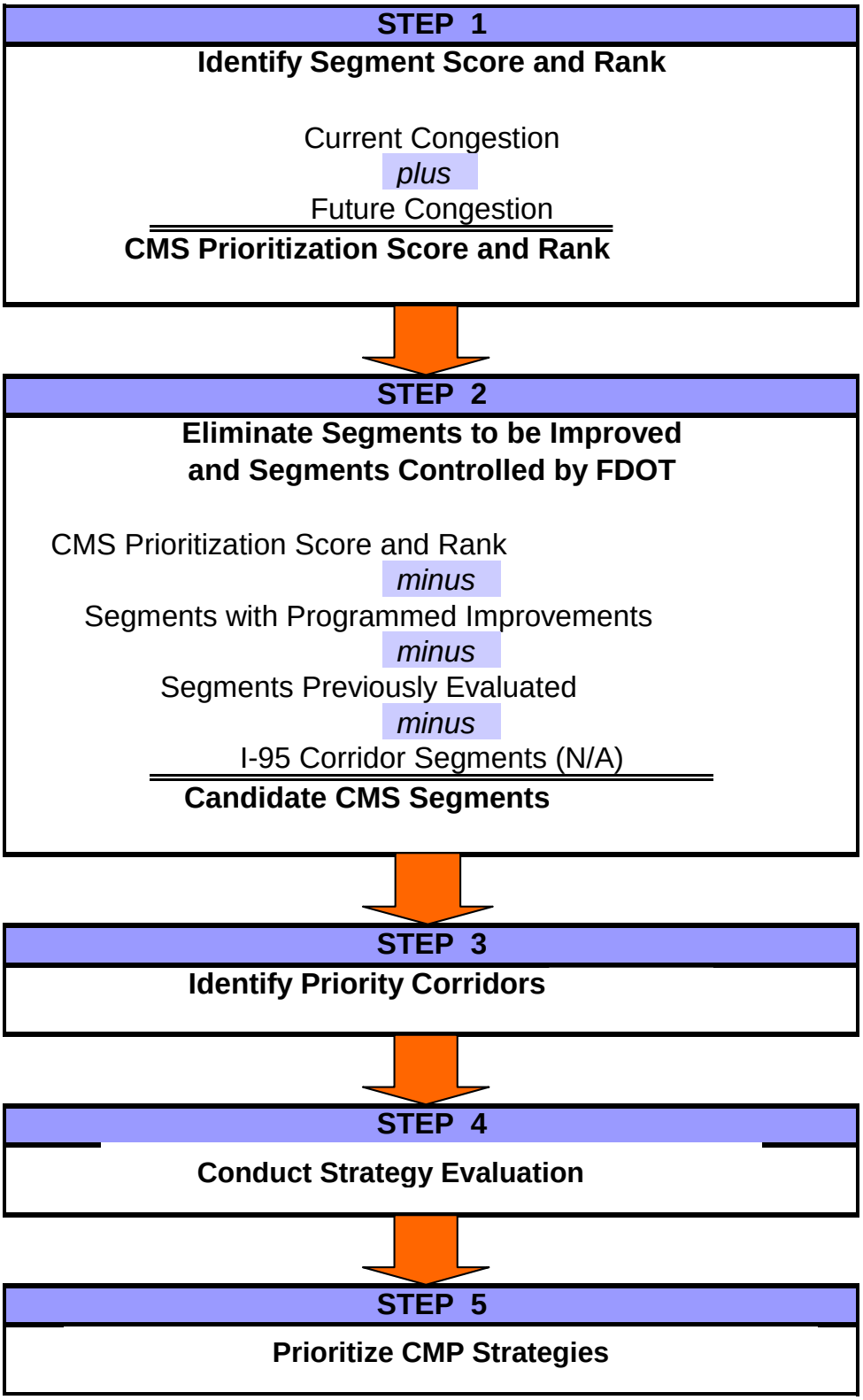
The third step involves identifying priority CMP corridors by grouping adjacent CMP segments identified in the second step.

The fourth step involves identifying various strategies with respect to the characteristics of each of the CMP corridors. This screening process relies on technical review based on data collected from each of the priority corridors. This step results in the identification of priority CMP strategies that are appropriate for implementation.

The fifth step involves the prioritization of CMP strategies that are identified for the corridors.

Additional details describing the process of selecting CMP segments and strategies are provided in the following sections.

Figure 1: CMP Plan Update Process



SEGMENT SCORES AND WEIGHTS

Segment scores are calculated based on a formula that considers current and future levels of congestion. The level of congestion is based on the volume to capacity (V/C) ratio for roadway segments. These weights and scores are identified in *Table 1*. It should be noted that the weight places more emphasis on existing congestion than on future congestion.

Table 1: Prioritization Scores and Weights

PRIORITIZATION CRITERIA	RANGE	SCORE	WEIGHT
Existing V/C ratio	0.0 – 0.69 0.70 – 0.89 0.90 – 1.09 1.10 and higher	0 4 8 10	6
Existing + Vested V/C ratio	0.0 – 0.69 0.70 – 0.89 0.90 – 1.09 1.10 and higher	0 4 8 10	4

STRATEGY EVALUATION AND PRIORITIZATION

Strategies are identified based on a consideration of the characteristics of each of the priority corridors and the identification of CMP projects that are appropriate for implementation. This screening process is guided by a technical review of the CMP priority corridors. Factors that are considered to develop strategies include the following:

- Traffic volumes
- Roadway and intersection geometry
- Intersection Analysis
- Schools and other unique traffic generators in corridor
- Land Uses along the corridor
- Transportation Improvement Program projects along corridor

Each of the potential strategies is reviewed based on available data. Then, potential strategies are prioritized based on their effectiveness and applicability to the CMP priority corridors.

III. 2009 CMP PRIORITY CORRIDORS

The above mentioned CMP plan update process was applied to identify the 2009 priority corridors and the recommended congestion management strategies to improve the corridors. The corridor prioritization analysis involved collecting annualized average daily traffic counts, vested trip information, and capacity for every major roadway segment in the county. These data were entered into the MPO's CMP spreadsheet. Using weighted scores previously identified in *Table 1*, each segment was assigned a prioritization score. The top 20 segments are shown in the *Table 2*.

Table 2: 2009 CMP Prioritization Score and Rank

Rank	Link ID	Street/Limits	Priority Score
1	1040S	S.R. A1A//S.R. 60//N. VB CITY L	100
2	1020N	S.R. A1A//S. VB CITY L//17TH STREET	80
3	1020S	S.R. A1A//S. VB CITY L//17TH STREET	80
4	1040N	S.R. A1A//S.R. 60//N. VB CITY L	80
5	1050S	S.R. A1A//N. VB CITY L//FRED TUERK RD	80
6	1510N	SCHUMANN DR//C.R. 510 @ 66TH AVE//S. SEB CITY L	80
7	3170N	66TH AVENUE//69TH ST//C.R. 510	80
8	4460W	37TH ST//U.S.#1//INDIAN RIVER BLVD	80
9	1050N	S.R. A1A//N. VB CITY L//FRED TUERK RD	56
10	2430S	27TH AVENUE//4TH ST//8TH ST	56
11	2440S	27TH AVENUE//8TH ST//12TH ST	56
12	3130N	66TH AVENUE//26TH ST//41ST ST	56
13	1030N	S.R. A1A//17TH STREET//S.R. 60	40
14	1030S	S.R. A1A//17TH STREET//S.R. 60	40
15	1060N	S.R. A1A//FRED TUERK RD//OLD WINTER BCH RD	40
16	1060S	S.R. A1A//FRED TUERK RD//OLD WINTER BCH RD	40
17	1110S	INDIAN RIVER BD.//4TH ST @ US 1//12TH STREET	40
18	1120S	INDIAN RIVER BD.//12TH STREET//S. VB CITY L	40
19	1130S	INDIAN RIVER BD.//S. VB CITY L//17TH STREET	40
20	1140S	INDIAN RIVER BD.//17TH STREET//21ST STREET	40

The ultimate objective of the CMP update process involves screening congested corridors for possible congestion mitigation strategies. The strategy screening is performed on congested corridors for which major roadway improvement projects are not currently programmed. Of the 20 CMP priority corridors shown in Table 2, seven have improvement projects programmed. These are shown in *Table 3*.

Table 3: Segments with Programmed Improvements or Studies

Rank	Link ID	Street/Limits	Priority Score
2	1020N	S.R. A1A//S. VB CITY L//17TH STREET	80
3	1020S	S.R. A1A//S. VB CITY L//17TH STREET	80
6	1510N	SCHUMANN DR//C.R. 510 @ 66TH AVE//S. SEB CITY L	80
7	3170N	66TH AVENUE//69TH ST//C.R. 510	80
12	3130N	66TH AVENUE//26TH ST//41ST ST	56

Three CMP priority segments were previously evaluated under the MPO's CMP process. Therefore, they do not need to be evaluated as part of this update. The fourteen segments with previous CMP analyses are shown in *Table 4*. Congestion mitigation strategies were identified in the previous CMP analyses of segments on S.R. A1A, Indian River Boulevard, and Schumann Drive. Hence these segments were removed from further analysis.

Table 4: Segments with Previous CMP Analysis

Rank	Link ID	Street/Limits	Priority Score
1	1040S	S.R. A1A//S.R. 60//N. VB CITY L	100
2	1020N	S.R. A1A//S. VB CITY L//17TH STREET	80
3	1020S	S.R. A1A//S. VB CITY L//17TH STREET	80
4	1040N	S.R. A1A//S.R. 60//N. VB CITY L	80
5	1050S	S.R. A1A//N. VB CITY L//FRED TUERK RD	80
6	1510N	SCHUMANN DR//C.R. 510 @ 66TH AVE//S. SEB CITY L	80
9	1050N	S.R. A1A//N. VB CITY L//FRED TUERK RD	56
13	1030N	S.R. A1A//17TH STREET//S.R. 60	40
14	1030S	S.R. A1A//17TH STREET//S.R. 60	40
15	1060N	S.R. A1A//FRED TUERK RD//OLD WINTER BCH RD	40
16	1060S	S.R. A1A//FRED TUERK RD//OLD WINTER BCH RD	40
19	1130S	INDIAN RIVER BD.//S. VB CITY L//17TH STREET	40
21	1150N	INDIAN RIVER BD.//21ST STREET//S.R. 60	40
22	1150S	INDIAN RIVER BD.//21ST STREET//S.R. 60	40

The screening process adopted by the MPO in its Congestion Management Process Plan was applied to the list of most congested facilities in 2009. As a result, most of the segments on the prioritized roadway segment list were eliminated from consideration for CMP strategies.

The remaining congested corridor segments are as follows:

1. 27th Avenue, 4th Street – 12th Street
2. Indian River Boulevard, 17th Street to 21st Street
3. 37th Street, US 1 to Indian River Boulevard
4. Indian River Boulevard, 4th Street to 12th Street

Those candidate CMP segments were then evaluated by MPO and County Public Works staff in an effort to identify appropriate congestion management improvements.

It should be noted that much of the traffic on the congested segments of Indian River Boulevard is accessing destinations (such as medical offices and the Indian River Medical Center) which are located on 37th Street. Since the congested segments of these corridors are in close proximity to one another and impact the flow of traffic throughout the immediate vicinity, strategies for these three corridor segments were grouped together in this report.

IV. 2009 CMP PLAN UPDATE

After the identification of the CMP priority corridors, readily available corridor data were reviewed for the corridors. These data were used in the screening process to evaluate the applicability of the strategies to priority CMP corridors. Appropriate improvement strategies were identified by County and MPO staff for each of the two corridors. The recommended strategies for each of the priority CMP corridors are described below:

PRIORITY CORRIDOR 1

27th Avenue, 4th Street to 12th Street

This corridor currently operates under congested conditions. Several adjacent street segments, including 27th Avenue between 4th Street and 1st Street SW, and 27th Avenue between 12th Street and 16th Street also experience significant delays. The corridor is a 2-lane divided roadway with signalized intersections at the major cross streets. This corridor is illustrated in *Figure 2*.

Opportunities to improve the operation of 27th Avenue within the identified segment limits are provided below:

- Add eastbound and westbound left turn lanes at the intersection of 27th Avenue and12th Street
- Add eastbound and westbound left turn lanes at the intersection of 27th Avenue and1st Street SW
- Widen 27th Avenue approaching 5h Street SW to add paved shoulders
- Utilize Synchro to coordinate the intersections along the corridor in order to optimize the operation of the signal system.

PRIORITY CORRIDOR 2

Indian River Boulevard from 4th Street to 37th Street/37th Street from Indian River Boulevard to US 1

Virtually all of Indian River Boulevard south of 37th Street is identified as a priority corridor in the CMP screening process. This corridor is a four-lane divided roadway with several high-volume signalized intersections and a frontage road (Vero Isles Drive) providing access to a nearby residential neighborhood. The corridor is illustrated in *Figure 3*. Recommended strategies to improve the operation of this corridor are provided below:

- 37th Street and Indian River Boulevard --- add northbound left turn lane (dual lefts) on Indian River Boulevard approaching 37th Street; also add curbed island / landscaping in the center of the intersection to assist motorists in making eastbound-to-northbound left turns from 37th Street onto Indian River Boulevard.

- Indian River Boulevard, 17th Street to 21st Street --- connect 5th Avenue from the Miracle Mile Shopping Center northbound to Royal Palm Boulevard. This will provide a northbound exit from the Fresh Market Plaza which, in turn, provides an additional north-south network alternative to Indian River Boulevard. The project will reduce traffic on eastbound 21st Street thereby relieving the 21st Street/Indian River Boulevard Intersection.

- Indian River Boulevard, 17th Street to 4th Street --- nearly 2% of all trips on the Merrill Barber Bridge are made by transit or non-motorized transportation. Implement a new transit route on 17th Street, connecting the South Beach area of Vero Beach to the South Indian River Boulevard corridor.

V. SUMMARY

The results of the 2009 Indian River MPO CMP Plan Update are summarized in *Table 5*. This table summarizes the strategies for each corridor.

Table 5: CMP Plan Summary of Strategies

CORRIDOR	STRATEGY
27th Street (4th Street – 12th Street)	Add turn lanes at 27th Avenue and 12th Street
	Analyze computerized signal system.
	Implement intersection improvements at 1st and 5th Streets SW
Indian River Boulevard/37th Street	Add turn lanes on Indian River Boulevard at 37th Street
	Connect 5th Avenue to the Miracle Mile Shopping Center
	Provide a new transit route on 17th Street /South Indian River Boulevard

Attachment 1

- Add eastbound/westbound left turn lanes on 12th St approaching 27th Ave

- Add northbound left turn lane (dual lefts) on IR Blvd approaching 37th St

- New Bus Route on IR Blvd

2009 Congestion Management Process Projects of Indian River County

Map Created on 9/18/2009, SC

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