TPO SMART Moves Program Application
Coral Gables, FL

1. Contact Information:

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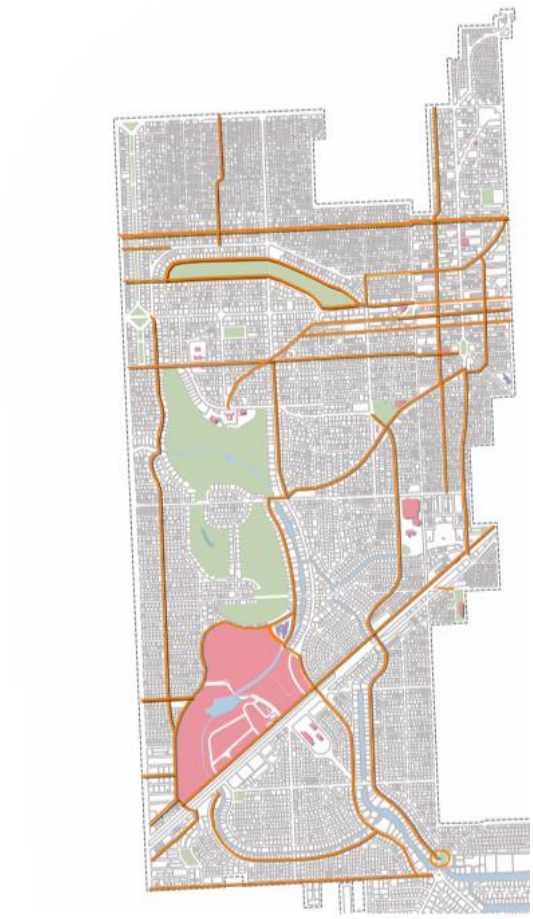
2. Name: Roadway Network Level of Stress Assessment

3. Project Need: Improved Safety

4. Project Type: Bicycle and Pedestrian Implementation, Connection to SMART corridor

5. Project Location: Will include most of the streets assessed in Coral Gables Bike Master Plan as well as other streets which are known walking and cycling routes.



6. Project Goals and Objectives: To ascertain the level of pedestrian and cycling comfort of Coral Gable's streets using visual preference surveys and corridor data collection. The study will be used to inform future CIP funding priorities and capital transportation projects to make streets safer for vulnerable roadway users. The study can also be used by regional transportation and planning agencies in assessing potential pedestrian/bicycle project opportunities in Coral Gables.

7. Project Justification: Coral Gables adopted its Bike Master Plan in 2014 (http://coralgables.com/index.aspx?page=1024) . The plan proposes more than 27 miles of new or improved bikeways, sidewalks and crosswalks. It recommends a comprehensive expansion of bike infrastructure that will appeal to all types of users. As people increasingly choose to use a bicycle and walk for shorter trips, it's more important than ever to ascertain the level of access and comfort alternative mode users experience on our streets. The proposed stress assessment study will support our bike plan through assessing the more qualitative aspects of our current and future bike network while also providing valuable pedestrian safety assessments. Measuring the comfort and experience of cycling instead of just designating a line on a map will help create a safer network which attracts riders of all ages and abilities.

The existence of bike lanes and sidewalks by themselves may not be enough to provide safe, comfortable transportation for all ages and abilities. Many pedestrian and cycling facilities provide bare minimum access and create stressful conditions for users. In order to support Coral Gable's adopted bike plan, our comprehensive plan and the upcoming multi-modal plan, a more detailed assessment of our network is necessary which measures the qualitative aspects of Coral Gables' sustainable transportation facilities. The result of the study will help create a low-stress biking and pedestrian network in order to improve roadway safety and increase the number of people using sustainable modes.

This proposed study will also help connect two proposed SMART corridors through safer pedestrian and cycling access. Coral Gables lies between the future East-West and Kendall rapid transit corridors, and provides direct access to two existing Metrorail stations. Supporting current and future transit access through improved last mile pedestrian and bicycle connectivity meets the goals of the TPO's SMART plan.

8. Project Schedule: If Coral Gable's project is selected, the expected project length is 6 months from the time of initiation.

Task	**Length**
Data Collection	2 months
Analysis	1 month
Draft of recommendations/findings	1 month
Multi-agency review and comments	1 month
Public comment period/Final draft	1 month

9. Project Budget and Cost: Approximately $100,000.

Funding source	Amount
Transportation funds (local match)	$20,000
TPO SMART Program	$80,000

10. **Additional Information:**

Transit Links

Coral Gables serves as a critical transportation link between downtown Miami and the municipalities on the west side of Miami-Dade County. The city sees substantial through traffic volumes which causes safety concerns for neighborhood pedestrians and cyclists. Balancing our transportation network with safe, comfortable, active mobility infrastructure can help mitigate the effects of through traffic while still accommodating the many drivers who pass through our city each day.

Directly to the south of the city are two Metro Stations (Douglas and University of Miami) which serve as transportation hubs to the county's transit system. Making our streets safer for pedestrians and cyclists will not only reduce roadway crashes and fatalities, but support the county's burgeoning transit network by making last mile connections between transit stations and rider destinations. Providing safer walking and cycling routes connected to transit stops can encourage ridership for the county's massive transit investments in decades to come.

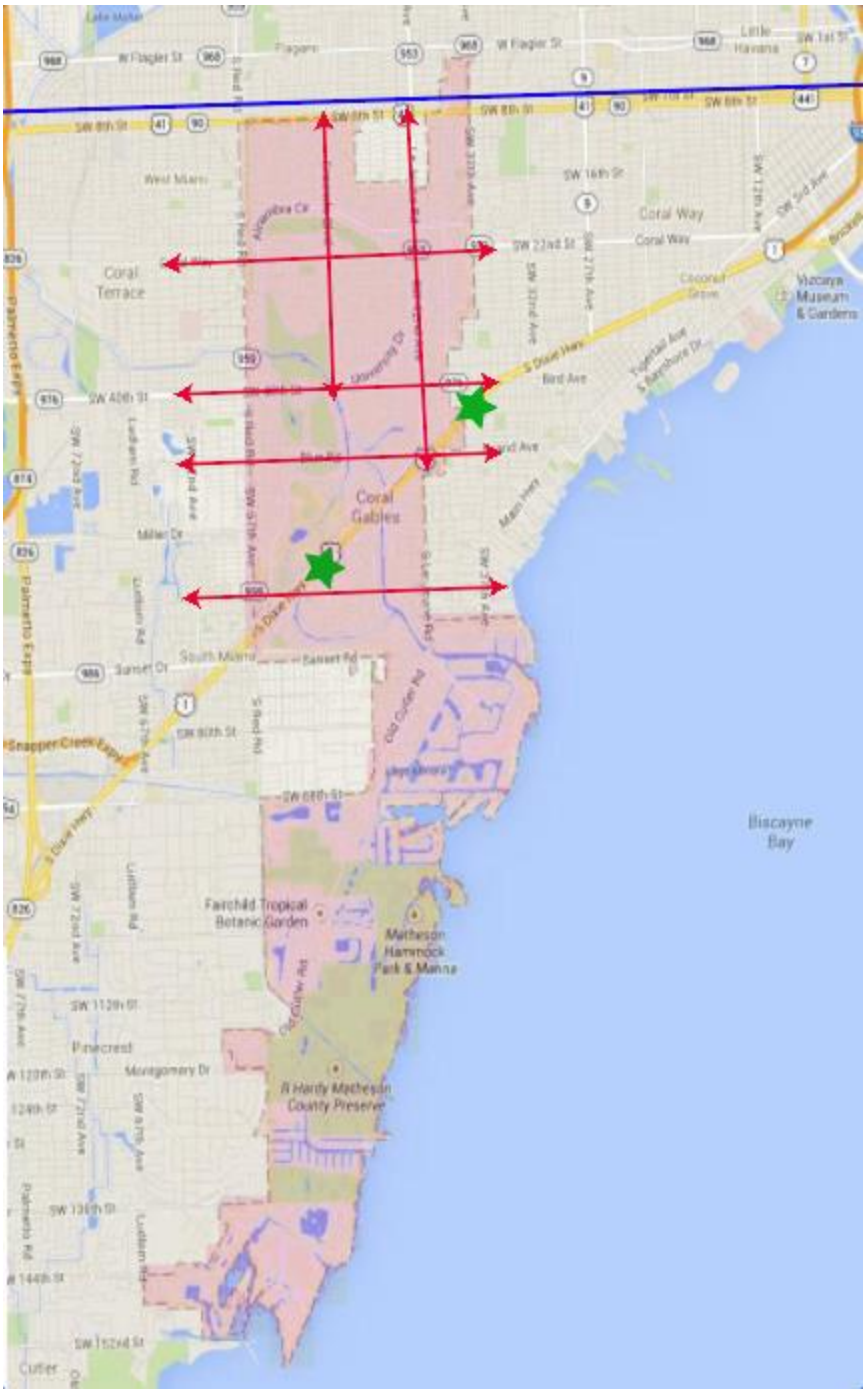


Figure 1: Coral Gables: Major through traffic routes in red. Green stars = Metro Stations. Blue line = Proposed SMART BERT line. The city is a critical last mile link for the existing and proposed county transit network. It is also a major through route for high volumes of county traffic, creating a need for safer pedestrian and cycling facilities.

Traffic Safety

Streets in Miami-Dade County are becoming increasingly dangerous for cyclists as well. The number of bicycle crashes increased by 74 percent between 2008 and 2013 (http://miamidadetpo.org/library/studies/countermeasures-for-pedestrian-and-bicycle-high-crash-

locations-executive-summary-2016-06.pdf). Miami-Dade's Transportation Planning Organization (TPO) has recently taken steps to implement safety projects for vulnerable roadway users in response to increasing crashes. This proposed project would support the Miami-Dade TPO's efforts by providing publicly available data which other agencies can use in identifying high-risk streets and designing safety solutions.

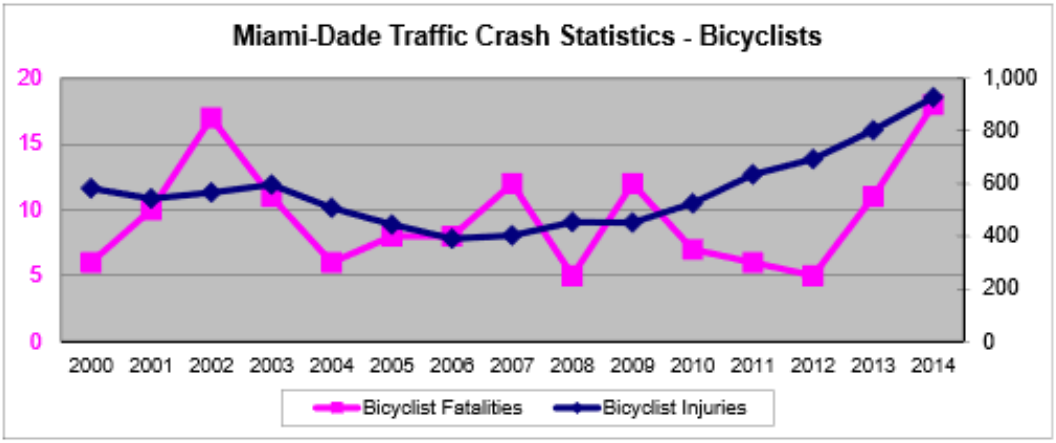


Figure 2: Cyclist Crashes by Year: (Source: Miami-Dade TPO)

Assessing past crash data has historically been the primary method for planning roadway safety improvements. A proactive approach using a stress assessment study will assist the city in planning safety upgrades before injuries and fatalities occur.

Study Examples

A similar study was completed in California and can serve as a model for our project: https://bikesiliconvalley.org/wp-content/uploads/170808-5B-Alta-Level-of-Traffic-Stress-Knowles.pdf. Both corridors and intersections were assessed and ranked. Variables studied included posted speed limits, bike lane presence/width, number of travel lanes, on-street parking configuration and location of traffic signals.

Figure 3: Example of a pedestrian/cycling stress assessment

Figure 4: A high-stress sidewalk due to a wide street, narrow sidewalk, overgrown vegetation and poorly placed utilities. The proposed study would identify these problem areas cross the city.

ITE Support

The Institute of Transportation Engineers (ITE) supports stress level assessments and provides the following justification for creating stress maps:

> Traditional bike maps and analysis tools don't always tell the whole story. This practical session will teach you a different way to map routes, a new way to visualize a complete network, and how clients and communities can benefit.
>
> Typical bike maps don't convey the comfort of routes or how far a bicyclist can ride until encountering a high-stress location. To attract new riders - many of whom are only willing to ride on routes they perceive as comfortable and low stress - we need maps and tools to communicate that information. Bicycle stress level maps represent a highly effective, visual means to encourage cycling for all ages and abilities and to identify high-stress segments where bikeway upgrades are needed.
>
> A bicycle network analysis provides a complete picture of the true bikability of a community. Using the results of a stress level analysis, a community's roadway network can be refined to reflect the true network that is comfortable for bicyclists. This network can then be analyzed to provide a comprehensive "score" of how the community's facilities serve bicyclists. This serves as a useful comparison to the existing network available for travel by car as well as a comparison to the network after bicycle improvements are made. (Source: http://community.ite.org/events/event-description?CalendarEventKey=7a021e2a-8bda-459f-a190-17372bd15cec&EventTypeKey=&Home=/events/calendar)

Coral Gables Complete Streets Resolution

Coral Gables passed a Complete Streets resolution in February 2018 which calls for the design and implementation of safer multi-modal streets for all ages and abilities. The proposed study would support the goals and objectives of the resolution. An excerpt from the resolution states:

> “The City of Coral Gables strives to develop a safe, reliable, efficient, integrated, connected, and livable multimodal transportation system that best enables access, mobility, economic development, aesthetics, health, and well-being for people of all ages and abilities, and supports enhancement and sustainability of the environment.
>
> B. This transportation system shall be designed, to the greatest extent possible, to ensure the safety, security, comfort, and convenience of pedestrians, bicyclists, transit/paratransit users, assistive mobility device users, motorists, emergency responders, and routine commercial service providers.
>
> C. When there are conflicting needs among users and modes, the following prioritization will apply: (1) above all, safety is paramount, (2) followed by mobility; (3) among modes, vulnerable users shall come first; and finally, (4) seek balance among all modes involved. It is recognized that all modes cannot receive the same type of accommodation and space on every street, but

the overall goal is that everyone – young, old, and of varying ability – can safely, comfortably, and conveniently travel across the network using all modes. “

Miami-Dade LRTP

The proposed study would also support the Miami-Dade County Long Range Transportation Plan (LRTP). The 2040 Plan is the currently approved LRTP. This is like the Comprehensive Plan guiding transportation for the TPO, complete with goals, objectives and projects. The LRTP is a primary activity in Miami-Dade County's transportation planning process updated every 5 years to meet federal and state requirements. This study would support the following LRTP goals:

- Enhance mobility for people
- Reduce Congestion
- Maximize multimodal travel options and provide travel choices
- Increase access to employment and sites
- Augment multimodal access to major activity centers
- Promote projects that support urban infill and densification