Proposal for West Columbus Boulevard as a Complete and Green street

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Overview of The Presentation

- Goals and Objectives
- Design Concept
- Activity Map of the Existing Conditions
- 2025 Design Concept
- 2040 Future Design Concept
Goals and Objectives

1. A safe and a complete street for every user and mode
   a) Estimated reduction of crashes upto 23-30%
   b) Reducing speed limits at certain areas from 30MPH to 20MPH leading to a 15% reduction in crashes

2. To promote better livability
   a) Increasing system efficiency to about 70%

3. Finally, to achieve sustainability by providing a happier environment in every possible aspect
Why Good Design???

- Increases Ridership
- Improves Customer Experience
- Improves Public Mentality
- Reduces barrier between Public Vs Private (Both get Benifited)
2025 DESIGN CONCEPT
Dale Mabry Highway
Dale Mabry Section – 130 feet

- Side walk with tree: 4 feet
- Side walk: 8 feet
- Bike rack: 3 feet
- Transit shelter: 9 feet
- Side walk with traffic light: 2 feet
- Bike lane: 6 feet (suitable for ROW > 85 feet)
- Turn lane: 10 feet
- Drive lane: 10 feet
Mac Dill Avenue
Mac Dill Avenue Section – 85 feet

- Side walk with tree: 4 feet
- Side walk: 6 feet
- Transit shelter: 9 feet
- Side walk with traffic light: 1 feet
- Turn lane: 10 feet
- Drive lane: 10 feet
- Planting strip: 5 feet
Lincoln Ave
Lincoln Ave Section

- Side walk: 6 feet
- Transit shelter: 9 feet
- Side walk with traffic light: 1 feet
- Turn lane: 10 feet
- Drive lane: 10 feet
- Planting strip: 3 feet
N Tampania Ave
Between Habanna Ave & Amenia Ave

60' width • Tampa, United States • 1 minute ago

9' Transit shelter
10' Turn lane
10' Drive lane
10' Drive lane
10' Turn lane
10' Transit shelter

CUTR
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N Tampania Ave

- Transit shelter: 9 feet
- Side walk with traffic light: 1 feet
- Turn lane: 10 feet
- Drive lane: 10 feet
Traffic Demand Management

N Lincoln Ave — N Macdill Ave
2025 Special Project – N St Vincent St

- Right turn only
- Extend raised median, cross walk
- Extended curb for cross walk
- Traffic road divider/raised median
2025 Special Project

- Right turn only
- Traffic road divider/raised median
Bus Stops

Increase Passenger Safety and Comfort
1. Stable surface area
2. Shelter, but the shelter should also clearly distinguish a bus stop from the rest of the landscape.
   ◦ Guide route and time information and energy efficient LEDs
   ◦ An alert system
2025 Design Concept

- Bicycle lane
- Raised median and refuge
- Traffic demand management
- Bus stop
- Traffic road divider/raised median
2040 DESIGN CONCEPT
Solar Roads

Smart microprocessing interlocking hexagonal solar units
Features

- Clean energy generation
- Load requirements
- LED bulbs
- Surface temperature
- Recreate the court and choose configuration
- Pressure sensitive
2040 Design Concept
Project Bottle Stops

- Soft Drink bottles are equipped with Solar powered LED lights to form walls
- During the day time, energy gets stored from the Sunlight
- Uses stored energy to illuminate the structure at night
On Street Parkings

Projection of U.S. market share of automobiles

Forbes:
10 million self-driving cars on the road by 2020
1 in 4 cars being self-driving by 2030

Energy Policy Simulator:
1 in 2 cars is electric car by 2050

Less traffic congestion
Less need for parking space
More shared service

Source: Energy Policy Simulator, Energy Innovation LLC.
Driveways Safety
2040 Special Project – N Habana Ave and N Gomez Ave

- On-street parking
- Plug-in charging station
Roundabout Implementation
Location For Roundabout
According to Geometry Design of FHWA:

- **Type:** Single-lane round about
- **Inscribed Circle Diameter:** $D = 30$ metres
- **Design speed:** $S = 21$ kmph
Improve safety

- Low travel speeds
- No light to beat
- One way travel

Reduction in collisions

- Overall collisions: 37% reduction
- Injury collisions: 75% reduction
- Fatality collisions: 90% reduction
- Pedestrian collisions: 40% reduction

Source: Federal Highway Administration and Insurance Institute for Highway Safety (FHWA and IIHS)
Roundabout Benefits

- Improves safety
- Reduces delay, improves traffic flow
- Less expensive
- Less space
A **tidal lane** is a lane in which traffic may flow in either direction, depending on certain conditions.

- Typically, it is meant to improve traffic flow during rush hours.
- Ideal for the Marti Cemetery cross section and cross sections having a lesser road width.
2040 Design Concept

- Tidal Road
- W Columbus Drive
- N Dale Mabry Hwy
- N Himes Ave
- N Macdill Ave
- N Armenia Ave
- N Howard Ave

Solar Road
Roundabout
On-street parking, charging stations
Future Works

- Stormwater Management
- Tidal Roads
- Metro Station
Thank You!

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