Complete Streets
TOUCH Initiative
Broward Complete Streets Implementation Training
November 7, 2012
Implementation of Street Manual and Complete Streets
Key Actions to Implement Complete Streets

- Adopt complete streets policies
- Policies effect new construction, reconstruction, repair, resurfacing, maintenance, operations of streets
- Adopt and use complete-streets-oriented design manuals
- Adopt new street standards
- Staff training
- Establish coordinator position
Key Actions to Implement Complete Streets

- Bike plans, pedestrian plans, SRTS plans, ADA transition plans, transit plans, transportation elements, specific plans
- Modify land use planning documents
- Ordinances
- Public parking policies
- Capital improvement project plans
- Funding
- Design and construction
- Education, encouragement, enforcement programs
- New performance measures
An ideal complete streets policy

1. Sets a vision
2. Includes all forms of travel
3. Emphasizes connectivity
4. Applies to all transportation projects & phases
5. Adoptable by all agencies to cover all roads
6. Specifies and limits exceptions, with management approval required
7. Uses latest design standards & is flexible
8. Is context-sensitive
9. Sets performance standards
10. Includes implementation steps
Why have a complete streets policy?

- To make the needs of all users the default for everyday street design practices:
  - No need to prove ped, bike and transit facilities are needed
  - Automatically look to make streets more livable and vibrant
  - Rather, it’s assumed they're needed unless proven otherwise
Why have a complete streets policy?

• To ensure existing funds are used differently:
  • Every project creates better streets now.
Why have a complete streets policy?

• To save money:
  • Retrofits cost more than getting it right initially
Why have a complete streets policy?

- To gradually create a complete network of roads that serve all users
Why have a complete streets policy?

- To give street design professionals political and community support for innovative solutions that help make active living possible
Sample low-cost improvements:

- Restripe for bike lanes without moving curbs/drainage
- Do not construct overly wide lanes (12’ instead of 10’)
- Sidewalks installed during drainage project add little cost
- Timing signals to control speeds and increase safety
- Countdown ped signals reduce crashes
- LID can be cheaper than moving catch basins
A Complete Streets Policy

... ensures that the entire right of way is planned, designed, and operated to follow complete streets principles.
Road Map to Adopting Complete Streets Policies

1. Research existing and emerging policies: (i.e., are you about to adopt Smart Growth or other relevant policies?)
2. Introduce resolution: publicize local jurisdiction’s Vision
3. Conduct interdepartmental review of Guidelines - generate buy-in by impacted partners
4. Asses impacted parts of the code, standards, processes and regulations: Identify which parts will have to change
5. Establish training for impacted parties
6. Adopt Guidelines through ordinance
7. Draft ordinance that provides the mandates and blueprint for change
8. Establish performance measures
9. Influence and shape practices
10. Evaluate impacted projects
11. Report findings to the Community
12. Propose/make changes based on findings. Continue to course correct and monitor progress
What Determines Community Form?

- Manuals, standards and guidelines are the DNA of streets
- Land use planning is DNA of land use
Design Manuals

Key elements for local adoption and implementation
Using the Manual

- Local planning and transportation departments require new development to follow
- Local jurisdiction uses for new streets
- Local jurisdiction uses to retrofit or rebuild streets
- Developers use for new street networks in large subdivisions
- Developers use to juxtapose new buildings
- Developers use for new sidewalks
- Community groups use to advocate for street improvements
Street Networks and Classification
Alley
<table>
<thead>
<tr>
<th>Street Type</th>
<th>Description</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Street</td>
<td>Slower vehicle speeds, favors pedestrians most, contains the highest level</td>
<td>Functions differently than other streets in that it is a destination</td>
</tr>
<tr>
<td></td>
<td>of streetscape features, typically dominated by retail and other commercial uses</td>
<td></td>
</tr>
<tr>
<td>Drive</td>
<td>Located between an urbanized neighborhood and park or waterway</td>
<td></td>
</tr>
<tr>
<td>Transit Mall</td>
<td>The traveled way is for exclusive use by buses or trains, typically</td>
<td>Excellent pedestrian access to and along the transit mall is critical.</td>
</tr>
<tr>
<td></td>
<td>dominated by retail and other commercial uses</td>
<td>Bicycle access may be supported.</td>
</tr>
<tr>
<td>Bike Boulevard</td>
<td>A through street for bicycles, but short distance travel for motor vehicles</td>
<td>Usually a local street with low traffic volumes</td>
</tr>
<tr>
<td>Festival Street</td>
<td>Contains traffic calming, flush curbs, and streetscape features that allow</td>
<td></td>
</tr>
<tr>
<td></td>
<td>for easy conversion to public uses such as farmers’ markets and music events</td>
<td></td>
</tr>
<tr>
<td>Shared Space</td>
<td>Slow, curbless street where pedestrians, motor vehicles, and bicyclists</td>
<td>May support café seating, play areas, and other uses</td>
</tr>
<tr>
<td></td>
<td>share space</td>
<td></td>
</tr>
</tbody>
</table>
Transit Mall
Festival Street
Traveled Way Design
Travel Lane Widths and Design Speed

<table>
<thead>
<tr>
<th>Movement Type</th>
<th>Design Speed</th>
<th>Travel Lane Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield*</td>
<td>Less than 20 mph</td>
<td>N/A</td>
</tr>
<tr>
<td>Slow</td>
<td>20-25 mph</td>
<td>9**-10 feet</td>
</tr>
<tr>
<td>Low</td>
<td>30-35 mph</td>
<td>10-11*** feet</td>
</tr>
</tbody>
</table>
Universal Access
Sidewalk Zones
Single-Family Residential
Sidewalk Zones
Multi-Family Residential
Sidewalk Zones
Civic
Sidewalk Zones
Mixed Use
Sidewalk Zones
Main Street
<table>
<thead>
<tr>
<th>Boulevard</th>
<th>Avenue</th>
<th>Street</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>Frontage: 18” Pedestrian: 6’</td>
<td>Frontage: 18” Pedestrian: 5’</td>
</tr>
<tr>
<td></td>
<td>Furniture: 5’, 6’-8’ at bus stops, and</td>
<td>Furniture: 4’, 6’-8’ at bus stops, and</td>
</tr>
<tr>
<td></td>
<td>where large trees are desired</td>
<td>where large trees are desired</td>
</tr>
<tr>
<td></td>
<td>Curb: 6”</td>
<td>Curb: 6”</td>
</tr>
<tr>
<td></td>
<td>Min. Width: 11’</td>
<td>Min. Width: 11’</td>
</tr>
<tr>
<td>Residential</td>
<td>Frontage: 18” Pedestrian: 6’</td>
<td>Frontage: 18” Pedestrian: 6’</td>
</tr>
<tr>
<td></td>
<td>Furniture: 5’, 6’-8’ at bus stops, and</td>
<td>Furniture: 4’, 6’-8’ at bus stops, and</td>
</tr>
<tr>
<td></td>
<td>where large trees are desired</td>
<td>where large trees are desired</td>
</tr>
<tr>
<td></td>
<td>Curb: 6”</td>
<td>Curb: 6”</td>
</tr>
<tr>
<td></td>
<td>Min. Width: 13’</td>
<td>Min. Width: 13’</td>
</tr>
<tr>
<td>Commercial</td>
<td>Frontage: 18” Pedestrian: 6’</td>
<td>Frontage: 18” Pedestrian: 6’</td>
</tr>
<tr>
<td></td>
<td>Furniture: 5’, 6’-8’ at bus stops, and</td>
<td>Furniture: 4’, 6’-8’ at bus stops, and</td>
</tr>
<tr>
<td></td>
<td>where large trees are desired</td>
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</tr>
<tr>
<td></td>
<td>Curb: 6”</td>
<td>Curb: 6”</td>
</tr>
<tr>
<td></td>
<td>Min. Width: 13’</td>
<td>Min. Width: 13’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
Traffic Calming
Framework/Non-Framework Streets
Use Cross-Sectional Measures

- Reduction in # of lanes
- Reduction in lane width
- Medians, islands
- On-street parking
- Street trees
- Bike lanes
- Colored or textured pavement
- Shared space
- Pedestrian-scale lighting
- Curbless medians and streets
Non-Framework (& Framework at low ADT) Streets Use Periodic Measures

Horizontal Measures
- Roundabouts
- Mini-roundabouts and mini-circles
- Chicanes
- Impellers
- Short medians

Vertical Measures
- Raised crosswalks and intersections
- Speed cushions
- Speed tables
- Speed humps
Streetscape Ecosystem
Street Trees
Street Furniture

- Benches and seating
- Bollards
- Street vendor stands
- Informational kiosks
- News racks
- Parking meters
- Signs
- Refuse receptacles
- Public art
- Sidewalk dining
- Clocks, fountains, etc.
Re-Placing Streets
Designing Land Use Along Complete Streets
Design Principles

- Compact, connected, complete, continuous
- Organize places at a human scale
- Safety, convenience, comfort for all users
- Create places for people to interact; plazas, parks, squares
- Well connected street network of small blocks
- Locate land uses within walking distance of one another
- Buildings should face the street, have windows looking onto the street and open to the sidewalk
- On-street parking provides a buffer
- Setbacks should enhance pedestrian experience
- Off-street parking should not disrupt pedestrian experience
- Shared off-street parking reduces non-productive land use
Retrofitting Suburbia
Cul-de-Sac Connector
Existing

Remade Neighborhood
Staff Training

- Complete streets
- Bikeway design
- Pedestrian safety design
- Universal access
- Transit planning
- Sustainable streetwater management
Complete streets coordinator

- Liaison among city agencies, commissions and city council
- Liaison to various community groups
- Publicity
- Liaison to outside agencies
- Facilitate planning and implementation of CS projects
Develop and Adopt Plans

- Comprehensive plan
- Transportation element
- Transit
- Bicycle plan
- Pedestrian plan
- ADA Transition plan
- Safe Routes to School plan
Comprehensive Plan – Relevant Elements

- Transportation
- Land use
- Housing
- Recreation
- Health
Transportation Element

- Goals, objectives, policies, actions
- Street network
- Transportation mode overview
Land Use Element – Relevant Aspects

- Growth areas
- Mix of land uses
- Concentration of land uses
Housing Element

- Mix of affordability
- Concentration of housing near transit
Health Element – Relevant Components

- Complete Streets
- Philosophical framework
- Call for relevant plans
Recreation Element - Relevant Component

- Trails
- Bikeways
- Pedestrian routes
- Mixing parks into neighborhoods
Transit Plan

- Routes
- Stops
- Schedules
- Fares
- Equipment
- Para transit
Bicycle Plans

- Assessment of current cycling environment
- Goals, objectives, policies and actions
- Bikeway network
- Bicycle parking
- Amenities
- Links to other transportation modes
- Programs
- Funding and implementation
- Design guidelines
Pedestrian Plans

- Assessment of current situation
- Goals, objectives, policies, actions
- Walkabouts
- Identify missing sidewalks
- Plan for capital improvements
- Funding and implementation plan
- Design guidelines
Specific area or street plans

- Street network redesign
- Street redesign
- Specific land use planning
Ordinances

- Zoning
- Building codes
- Parking codes
- Transportation Demand Management
Broward Complete Streets Initiative
Safer, Healthier Streets for ALL Users

Ordinances and Building Codes

- Bicycle parking, showers and clothing lockers in new worksites
- Transportation Demand Management requirements
- Building codes relating to land use mix
- Building codes relating to juxtaposition of buildings to one another, to each other, to sidewalks and driveways
Building Codes - Parking

- Required or not
- Quantity
- On-site or off site
- Separation of cost from lease
Other parking code issues

- Screening
- Access through lots
Public parking policies

- Sharing
- Pricing
- Ground floor uses
Capital Improvement Project Plans

**Table 10-3: Short-Term Bikeways**

<table>
<thead>
<tr>
<th>Bikeway</th>
<th>Cost/Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Fe Ave.</td>
<td>$22,600</td>
</tr>
<tr>
<td>State St.</td>
<td>$41,100</td>
</tr>
<tr>
<td>State St. / Santa Fe Ave.</td>
<td>$1,939,200</td>
</tr>
<tr>
<td>Long Beach Blvd.</td>
<td>$143,000</td>
</tr>
<tr>
<td>Bullis Rd.</td>
<td>$58,200</td>
</tr>
<tr>
<td>Thorson Ave. - Thorson Alley</td>
<td>$8,900</td>
</tr>
<tr>
<td>Harris Ave. - Sanborn Ave. - Pine St. - Beechwood Ave. - Harris Ave.</td>
<td>$30,800</td>
</tr>
<tr>
<td>Atlantic Ave.</td>
<td>$49,500</td>
</tr>
<tr>
<td>Duncan Ave. - El Granada Ave.</td>
<td>$23,400</td>
</tr>
<tr>
<td>Wright Rd.</td>
<td>$89,200</td>
</tr>
<tr>
<td>Abbott Rd.</td>
<td>$3,171,900</td>
</tr>
<tr>
<td>Martin Luther King Jr. Blvd.</td>
<td>$171,900</td>
</tr>
<tr>
<td>Platt Ave.</td>
<td>$18,900</td>
</tr>
<tr>
<td>Josephine St.</td>
<td>$26,500</td>
</tr>
<tr>
<td>Josephine St.</td>
<td>$4,300</td>
</tr>
<tr>
<td>Agnes St.</td>
<td>$6,800</td>
</tr>
<tr>
<td>Yvonne Burke John D. Ham Park</td>
<td>$130,400</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$5,937,000</strong></td>
</tr>
</tbody>
</table>
Funding

- Federal
- State
- Local
- Resurfacing/reconstruction
**MPO Criteria for Federal Fund Applications**

**TIP**
- Is project consistent with CS objectives?
- Does project include CS elements?
- Does project connect to a CS project?
- Has applicant completed a CS plan?

**Enhancements**
- Is this a CS demo project?
- Has applicant adopted a CS policy (or adopted Guidelines?)
- Has applicant adopted Guidelines?
- Has applicant completed a CS plan?
- Is the project identified in the CS plan?

*Extra Credit*
- +
- ++
- +++
- ++++

*If Yes, then applicant receives extra points in ranking process*
Design and Construction
Ongoing Programs

- Education
- Encouragement
- Enforcement
Education
Encouragement
Enforcement

- Speed trailers
- Active speed monitors
- Traffic complaint hotline
- Photo enforcement
- Pedestrian ‘decoys’
- Progressive ticketing
Benchmarks

- Every street and neighborhood is comfortable to walk and bicycle in.
- Every child can walk or bike to school safely.
- Seniors, children, and disabled people can cross all streets safely and comfortably.
- An active way of life is available to all.

- There are zero traffic fatalities.
- No unfiltered streetwater flows into local waterways or the ocean.
- Retail streets become one of the most popular destinations for tourists in the country.
Performance Measures

- Street fatalities and injuries decrease for all age groups.
- The number of trips by walking, cycling, and transit increases.
- Vehicle travel is reduced.
- Prevailing speeds of vehicles on local streets decrease.
- Streetwater runoff is reduced.
- Water quality in rivers and the ocean improves.
- Retail sales and tourism increase.
- Resident satisfaction increases.
Street Design Workshop

- Existing cross section
- Traffic volumes
- Examine adjacent land uses
- You design future improvements
Primary Tools for Street Redesign

- Road diets
- Bike lanes
- Cycle tracks
- Trails
- Crosswalks
- On-street parking
- Roundabouts
- Traffic circles
- Curb extensions/bulb outs
- Medians/crossing islands
- Streetscape enhancements
- Bus shelters
- Lighting
Road Diets
Road diets: reclaim street space for other uses

Not just for bike lanes
Road Diets and Traffic Operations
3 crash types can be reduced by going from 4 to 3 lanes: which ones?
3 crash types can be reduced by going from 4 to 3 lanes: 1 – rear enders
3 crash types can be reduced by going from 4 to 3 lanes: 2 – side swipes
3 crash types can be reduced by going from 4 to 3 lanes: 3 – left turn/broadside
Case study: Edgewater Drive Resurfacing Project (Orlando FL)
Reality: Before
Reality: After
Before/after studies: 1. Crash rate
Before/after studies: 2. Injury rate

- Before: 3.6 injuries per MVM, 1 injury every 9 days (41 per year)
- After: 1.2 injuries per MVM, 1 injury every 30 days (12 per year)

68% Reduction
Before/after studies: 3. Speeding analysis
Before/after studies: 4. Traffic volumes
Before/after studies: 5. On-street parking utilization
Before/after studies: 6. Pedestrian volumes
Before/after studies: 7. Bicyclist volumes
Total width = 62’ 6”

Valencia Street (SF) - before road diet
Valencia Street (SF) - after road diet
Mission District, San Francisco
North-South ADTs

Dolores: 1998 - before bike lanes vs. 2000 - after bike lanes
Guerrero: 1998 - before bike lanes vs. 2000 - after bike lanes
Valencia: 1998 - before bike lanes vs. 2000 - after bike lanes
Mission: 1998 - before bike lanes vs. 2000 - after bike lanes
S. Van Ness: 1998 - before bike lanes vs. 2000 - after bike lanes
Valencia Street Bicycle Volumes

PM peak hour counts

- Before bike lanes: 88 bikes/hr
- After bike lanes: 215 bikes/hr
Road Diet Simulation
Bike Lanes
Trails
Crosswalks
On-Street Parking
Roundabouts
A roundabout is a type of intersection control
A roundabout is **not**:
1. A New England style rotary, with large size & high speeds
A roundabout is not:
2. A Washington DC style circle, with traffic signal controls
Why roundabouts are safer for all users:

Slow speed:

*Deflection, truck apron, splitter islands, “reverse super”*

Reduced conflicts

No left turns

Yield on entry

CRF (all users):

*About 54% overall*

*27% pedestrian crashes*

*Up to 76% fatalities and serious injuries*
Essential roundabout characteristics

- Slow speed entry = yield
- Slow speed exit
- Truck apron
- Lots of deflection = slow speeds throughout
- Slow speed entry = yield
- Separated sidewalks
direct peds to crosswalks
- Splitter island
- Crosswalk 1 car length back
Constrained entry slows drivers
Traffic Circles
Can replace 4-way stops
And beautify
Curb Extensions/Bulbouts
Mid-block Curb Extensions
Medians
Crossing Islands
Streetscape Enhancements: Furniture, Hardscape and Landscape
Bus Shelters
Lighting
Economic Development

- Increased real estate values
- Faster selling properties
- New businesses
- Tourism
- Grants
Lancaster Boulevard Transition

- Changed from 4 lane high-speed street to 2-lane walkable inviting street
- Approximately 40 new businesses in one year
- New movie theater
- New museum
- Weekly farmers’ market
- New adjacent apartments filling
- Old nearby housing selling
Broward Complete Streets Initiative
Safer, Healthier Streets for ALL Users

High Visibility Crosswalk
Parking
Bike Lane

Crossing Islands
Bulb Outs with Perpendicular Ramps

Curb Extensions
Median Islands
Existing 6th Street East of Fairfax Avenue
Road Diet Concept 6th Street East of Fairfax Avenue
Existing 6\textsuperscript{th} Street at Arden Blvd.
Road Diet Concept for 6th Street at Arden Blvd.
Existing 6th Street in Koreatown
Road Diet Concept for 6th Street in Koreatown
Existing 6th Street, East of Alvarado
6th Street East of Alvarado
Road Diet Concept
Existing San Vicente Blvd. – 6 Lanes
Road Diet Concept San Vicente Blvd. – 4 Lanes
San Vicente Blvd.

Existing

Concept

Tennis Court

Bench Jogging Path

Basketball Court
Broward Complete Streets Initiative
Safer, Healthier Streets for ALL Users

MIRAMAR

Bike Lanes  Multi use trails  Curb extensions  Crosswalks  Lighting  Traffic circles/roundabouts  Median Islands

Onstreet parking  Shading/Trees  Cycletracks  Bus Shelters  Road Diets
CORAL SPRINGS

Bike Lanes  
Multi use trails  
Curb extensions  
Crosswalks  
Lighting  
Traffic circles/roundabouts  
Median Islands  

Onstreet parking  
Shading/Trees  
Cycletracks  
Bus Shelters  
Road Diets
HOLLYWOOD

Bike Lanes
Multi use trails
Curb extensions
Crosswalks
Lighting
Traffic circles/roundabouts
Median Islands

Onstreet parking
Shading/Trees
Cycletracks
Bus Shelters
Road Diets
Ryan Snyder
Ryan Snyder Associates

ryan@rsa.cc
310-475-3895
Thank you for participating in this Transforming Our Community’s Health (TOUCH) event.

To Learn More:

www.BrowardCompleteStreets.org

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