



# Planning Pedestrian & Bicycle Improvements

City of Burlington  
Department of Public Works  
*Fiscal Year 2012 and beyond*

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## Pedestrian Planning

### *Overview*

- DPW plans & manages...
  - Pedestrian crossings
    - 619 marked crosswalks and stop bars
    - 326 "enhanced" crosswalks
    - 5 in-street signs
  - 70 signalized intersections
    - 58 have pedestrian signals
      - 330 total pedestrian signals
        - 117 countdown LEDs
        - 213 upgrades needed = \$95,850
  - 150.2 miles of sidewalk
    - 4.5 miles of sidewalk needed to have sidewalk on at least one side of every street and both sides of Complete Streets

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## Bicycle Planning

### *Overview*

- DPW plans & manages on-road improvements
  - Parks & Recreation manages shared use paths
- Existing DPW-managed bike facilities
  - 11.1 miles of bike lanes
  - 1.7 miles of shared lane pavement markings
  - 194 bike parking spaces (67 u-racks, 2 in-street racks, 11 hitches, 10 lockers)

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## Funding

### *City Capital*

- Pedestrian improvements
  - Traffic Program – pedestrian signals, markings & signs
  - Street Capital Concrete Set Aside – sidewalks, curb ramps
- Bicycle improvements
  - Traffic Program – maintenance of existing markings & signs
  - Street Capital Bicycle Set Aside
    - New infrastructure (markings, signs, construction)
    - Outreach, education, & planning
  - Street Capital
    - Paving project inclusion
  - Stormwater Program – catchbasin upgrades

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## Design Standards

### *State and Federal Guidebooks & Manuals*

- Manual on Uniform Traffic Control Devices (MUTCD)
- Americans with Disabilities Act (ADA)
- American Association of State Highway and Transportation Officials (AASHTO)
- Vermont Pedestrian & Bicycle Facility Planning and Design Manual
- NACTO Urban Bikeway Design Guide (National Association of City Transportation Officials)
  - newly released, not yet endorsed

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## Pedestrian Planning

### *Traffic Signals – standard improvements*

- Signal upgrades will include...
  - LEDs
  - Countdown pedestrian signals
  - “mushroom” push buttons
  - Priority given to school crossings, busy crossings, and wide crossings
  - Marked crosswalks & stop bars

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## Pedestrian Planning

### *Unsignalized Crossings – standards*

- Pedestrian crossings will include...
  - Continental crosswalk markings outside of downtown or traffic-calmed streets
  - Yield markings/signs at high-volume and/or limited sight distance crossings
    - Reviewed as needed or requested
  - In-street pedestrian signs as requested and contracted for maintenance

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## Pedestrian Planning

### *Signalized Intersection Improvements*

- Home Avenue / Shelburne Street
- Battery Street / Pearl Street
- Battery Street / Main Street
- Install pedestrian signals at signalized intersections
  - North Winooski Avenue / Archibald Street
  - Pine Street / Lakeside Avenue
  - Battery Street / King Street
  - Battery Street / Maple Street
  - Colchester Avenue / Barrett Street
  - Colchester Avenue / East Avenue (west side)

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## Pedestrian Planning

### *Unsignalized Crossing Improvements*

- Battery Street / Sherman Street crosswalk evaluation in fall/winter 2011
- Mid-block crosswalks
  - Evaluating Pine Street between Lakeside Avenue and Maple Street
  - Relocating crossing on Main Street at Edmunds schools
  - Planning for Colchester Avenue / East Avenue

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## Pedestrian Planning

### *Sidewalk Strategic Plan (SSP)*

- Citywide sidewalk inventory in 2008
- SSP completed in 2009, implemented in FY2010
  - DI + PPI = SCI...ranks sidewalks in worst condition, in most heavily traveled areas
  - Meet ADA requirements and walkability goals
- New sidewalk construction
  - Utilize alternative funding sources
- Budget
  - 80% for long runs (>20'), 10% for patches (<20'), and 10% for curb/greenbelt restoration
  - Long runs = more efficiency = more repairs annually

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## Pedestrian Planning

### *Sidewalk Improvement Plans*

- Strategic Plan improvements
  - Re-inventory sidewalks in 2012
  - Change Deficiency Index to include priority for “worst of the worst”
- Sidewalk Improvements
  - Grant-funded new sidewalks
    - Flynn Avenue, Colchester Avenue, Cliff Street
  - 2011 work:
    - Complete Pearl Street sidewalks
    - Complete patching list of worst areas
  - Spring 2012 work:
    - long run list & additional patching, pending completion of Pearl Street & budget evaluation
    - expect improvement list to be available by February 2012

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## Bicycle Planning

### *Overview*

- Burlington-specific planning
  - North / South Bicycle & Pedestrian Route Study (2002)
  - Burlington Transportation Plan (2011)
  - Bicycle Friendly Community blueprint
    - Engineering, Education, Encouragement, Enforcement, & Evaluation/Planning = 5 e's
- Planning & Design
  - Adhere to State and Federal standards
  - Non-traditional designs considered, but need analysis for each street

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# Bicycle Planning Definitions

\*non-traditional design,  
needs further analysis

Bike lane



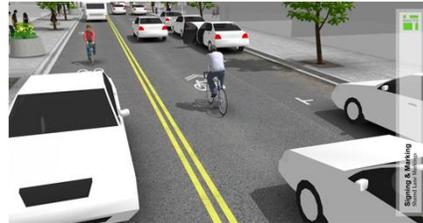
Buffered bike lane\*



Cycletrack\*



Shared Lane Marking("Sharrow")



# Bicycle Planning Definitions

\*non-traditional design,  
needs further analysis

Bike Box\*



Bike Boulevard\*



Contra flow lane\*



Shared Use Path



## Bicycle Planning

### *Infrastructure Improvements*

- New bike lanes
  - Northbound on South Willard Street between Cliff and Main Streets
  - Both directions on Colchester Avenue between East Avenue / Mary Fletcher Drive and Prospect Street
  - Both directions on Pearl Street between Winooski Avenue and Saint Paul Street
- Pending Transportation Enhancement grant application
  - North Winooski Avenue

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## Bicycle Planning

### *Planning for Improvements*

- Infrastructure
  - Colchester Avenue eastbound bike lane transition to shared use path?
  - Colchester Avenue shared use path?
  - Downtown art racks
  - Shared lane marking expansion
- Cycletrack public meetings
  - North Winooski Avenue?
- Plan
  - Update & expand N/S Plan
  - North Avenue Corridor Study – 2012
  - UVM research projects
    - Pearl Street, North Winooski, Cherry Street, South Winooski corridor, Cyclovia

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## Projects by others

### *VTrans*

- Shelburne Street Roundabout
  - 2014 construction
- Waterfront North / Lake Street Extension
  - Relocate a portion of bike path
- Route 2 paving
  - Main Street, Willard Street to South Burlington town line

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## BWBC + DPW

### *Collaboration = progress*

- Identified obstacles to progress
  - Infrastructure emphasis
    - “If you build it, they will come” doesn’t include everyone
    - Annual budget is too small for large projects and too large for little projects
  - Limited people power
    - BWBC committees have ideas but lack momentum
    - DPW relies on BWBC but with limited direction
  - Unclear roles
    - BWBC unsure of how to make priorities happen
    - DPW hesitant to pursue projects that may not be BWBC priorities

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## BWBC + DPW

### *Overcoming Obstacles*

- BWBC / DPW budget committee
  - Developed for FY2012
  - Identified goals
    - Higher level of BFC recognition
    - Commit defined % of time or money to all 5 e's
    - Increase budget to 2% of street capital for FY13
  - Drafted workplan, will revise after annual meeting
  - Next Steps
    - Prioritize projects
    - Set budget for each workplan item
    - Identify partner organizations to work with