5 Year Sidewalk and Street Reconstruction Plan

DPW 12/20/11

This is a working document. DPW continues to update this document as a result of internal and public comment.

For the latest version: http://www.cambridgema.gov/TheWorks/OurServices/Engineering/FiveYearPlan.pdf

Introduction:

The 5 Year Sidewalk and Street Reconstruction Plan identifies the streets and sidewalks that are anticipated to be reconstructed each year for the next 5 years.

This year continues the increased emphasis on a complete streets program, includes the reconstruction of missing ramps on major arterials, based on the survey of missing ramps, and includes more details on the construction of pedestrian ramps and modified raised crosswalks.

Complete Streets are streets designed for all users – pedestrians, cyclists, bus riders, drivers and residents. More sidewalks are included, which provides for increased accessibility for pedestrians.

This is intended to be a living document that will be updated regularly as conditions change.

Goals of 5 Year Plan:

- To reconstruct streets and sidewalks with an emphasis on a Complete Streets approach: designing the street for all users.
- To maintain safe, accessible streets and sidewalks.
- To reconstruct streets and sidewalks in a prioritized fashion based on need.
- Provide for comprehensive inspection / repair and upgrading of city utilities, as well as public utilities, to ensure street system integrity is maintained for as long as possible once construction is complete.
- To effectively communicate design and construction projects with neighborhoods and facilitate a more integrated design process.
- To construct projects efficiently with minimum disruption to community life.
- To provide reasonable access for all users, during street reconstruction.

Constraints / Uncertainties:

- Based on budget predictions that are uncertain.
- Based on sewer separation / storm water management project schedules that are uncertain.
- Based on future street condition assessments that are subject to change.
- Does not consider utility failure / repair / replacement which is unpredictable.
- Severe winter conditions can lead to higher than expected levels of deterioration on streets.

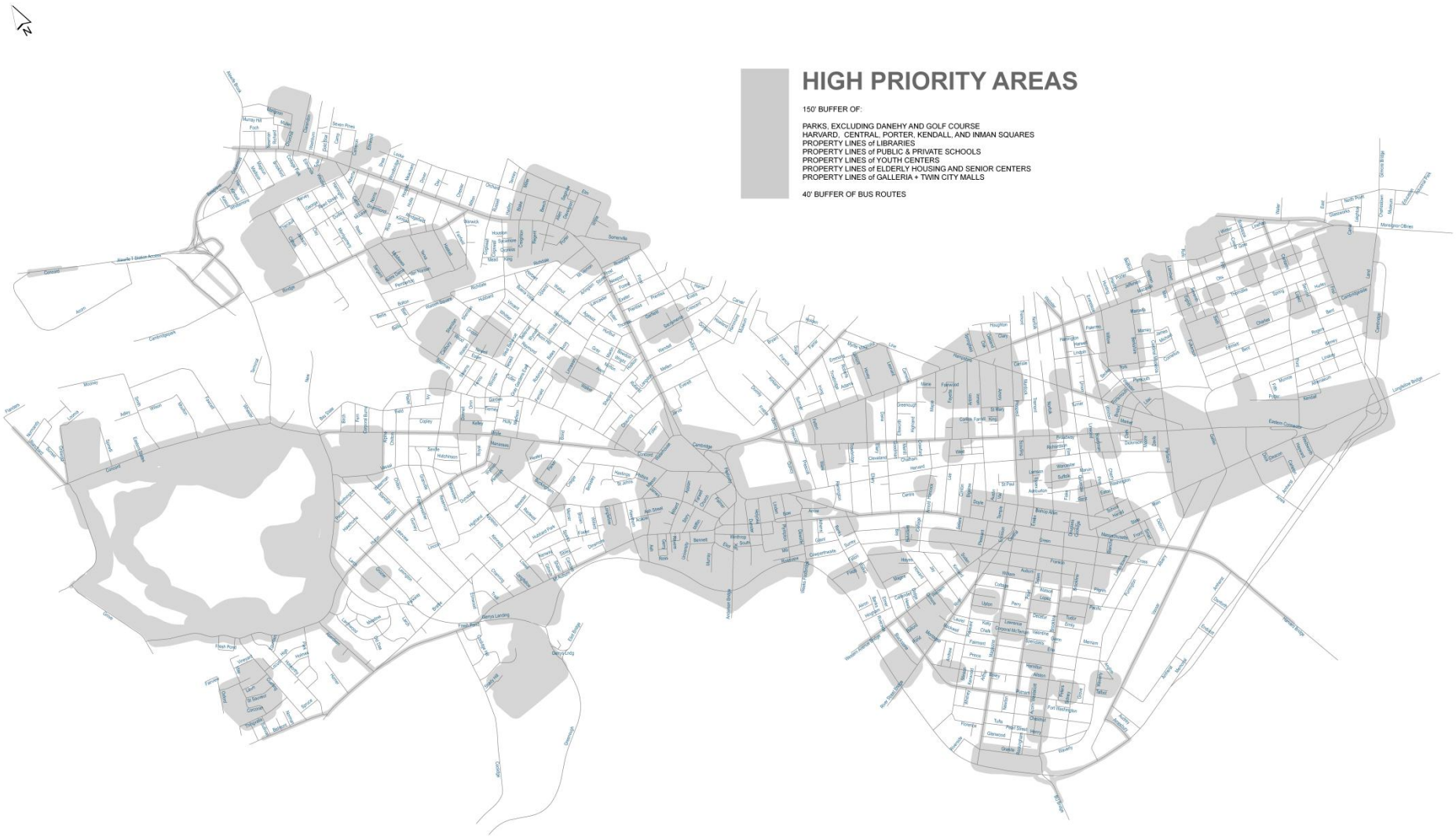
DPW will review on an annual basis. The uncertainties are significant and thus the annual revisions may also need to be significant.

Prioritization & Scheduling

Reconstruct sidewalks in poor condition and streets in poor condition in **high priority areas**:

- Areas within a 150 foot buffer of Parks, Major Squares, Libraries, Schools, Youth Centers, Elderly Housing and Senior Centers.
- Areas within a 40 foot buffer of bus routes.
- Major thoroughfares, so as to maintain the structural integrity of the street under heavy traffic conditions.
- Commission for Persons with Disabilities' priorities.

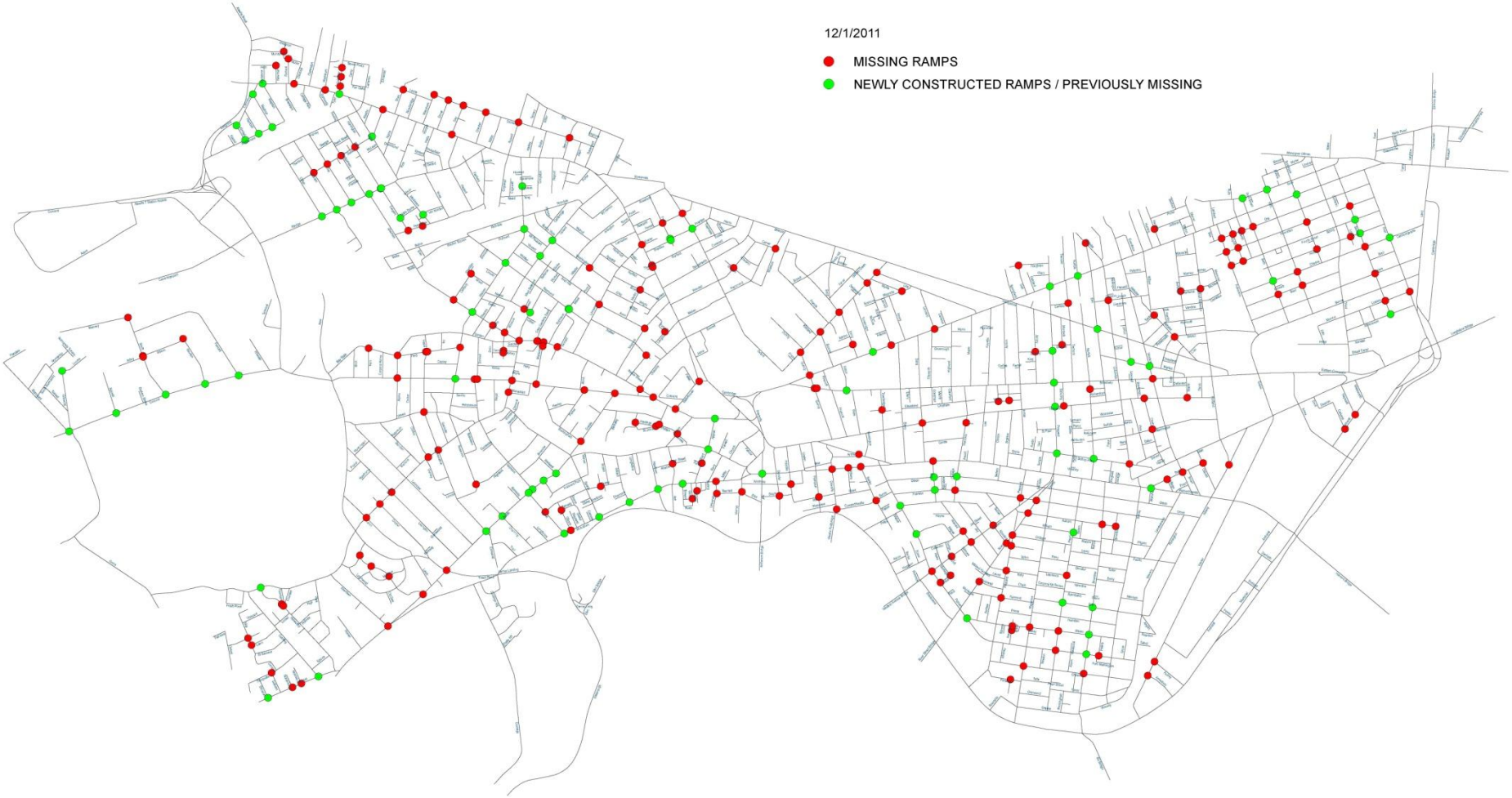
Just over 50% of city sidewalks and streets are located outside of high priority areas. These corridors serve residential connections and need to be maintained, to the extent funding allows. Approximately 20% of street and sidewalk funding will be reserved for these locations.



CITY OF CAMBRIDGE ENGINEERING
FIVE YEAR PLAN - 5/1/09

New Street condition assessments are completed every three years and the plan is updated accordingly.

Missing Ramp Survey



<u>2011 to 2012</u> – Continuing to prioritize missing ramps on major arterials: Mass. Ave., Concord Ave., etc.

<u>2010 to 2011</u> – Constructed 75 previously missing ramps

<u>From 2009 to 2010</u> – Constructed 96 previously missing ramps.

Budget Assumptions:

This plan assumes $2 million per year for street and sidewalk reconstruction. Additional funds are occasionally allocated for additional enhancement projects or for other street and sidewalk restoration projects.

Over the last 3 years, the City has also appropriated the following:

Broadway (Prospect to Portland)	$2,000,000
Broadway (Third to Ames)	$750,000
Harvard Square – JFK Street	$2,000,000
Kendall Square – Main Street	$500,000 design FY11 $5,000,000 construction anticipated FY13
Additional street and sidewalk work	**$10,250,000**

Budget Assumptions

<u>Sewer Separation and Stormwater Management Program</u>

The City has an on-going 5-Year Capital Program for sewer separation, stormwater management and infrastructure renewal throughout the city.

The City is committed to restoring streets and sidewalks to the maximum extent necessary / possible as an integral part of these projects.

These projects are subject to change in schedule due to financial, legal, environmental and level of service considerations and are reprioritized every five years.

Sewer Separation & Stormwater Management Program

The Alewife Sewer Separation Program:

Federally Mandated program requiring extensive infrastructure work between Danehy Park, Brattle Street and Appleton Street. Construction expected to begin summer 2012. www.cambridgema.gov/theworks/cityprojects.aspx , under *Alewife Sewer Separation Project.*

The Agassiz Area Sewer Separation Program:

On-going sewer separation and stormwater management program between Beacon Street in Somerville, Kirkland Street and Massachusetts Avenue. www.cambridgema.gov/theworks/cityprojects.aspx, under Agassiz Area Sewer Separation *Project.*

Harvard Square Sewer Separation Program:

On-going sewer separation and stormwater management program on the west side of JFK Street. www.cambridgema.gov/theworks/cityprojects.aspx, under Harvard Square Sewer S*eparation Project.*

Area 4 Sewer Separation Program:

On-going sewer separation and stormwater management program, including work on South Mass Ave. and on Bishop Allen Drive as well as those neighborhood streets to the immediate east of Columbia Street. www.cambridgema.gov/theworks/cityprojects.aspx, under *Area 4 Sewer Separation Project.*

Common Manhole Elimination Program:

State mandated program requiring the elimination of all common manhole structures in existing separated areas throughout the city. There are a significant number of such structures in the Area 4 neighborhood and Cambridgeport neighborhood.

Western Avenue Infrastructure Renewal Program:

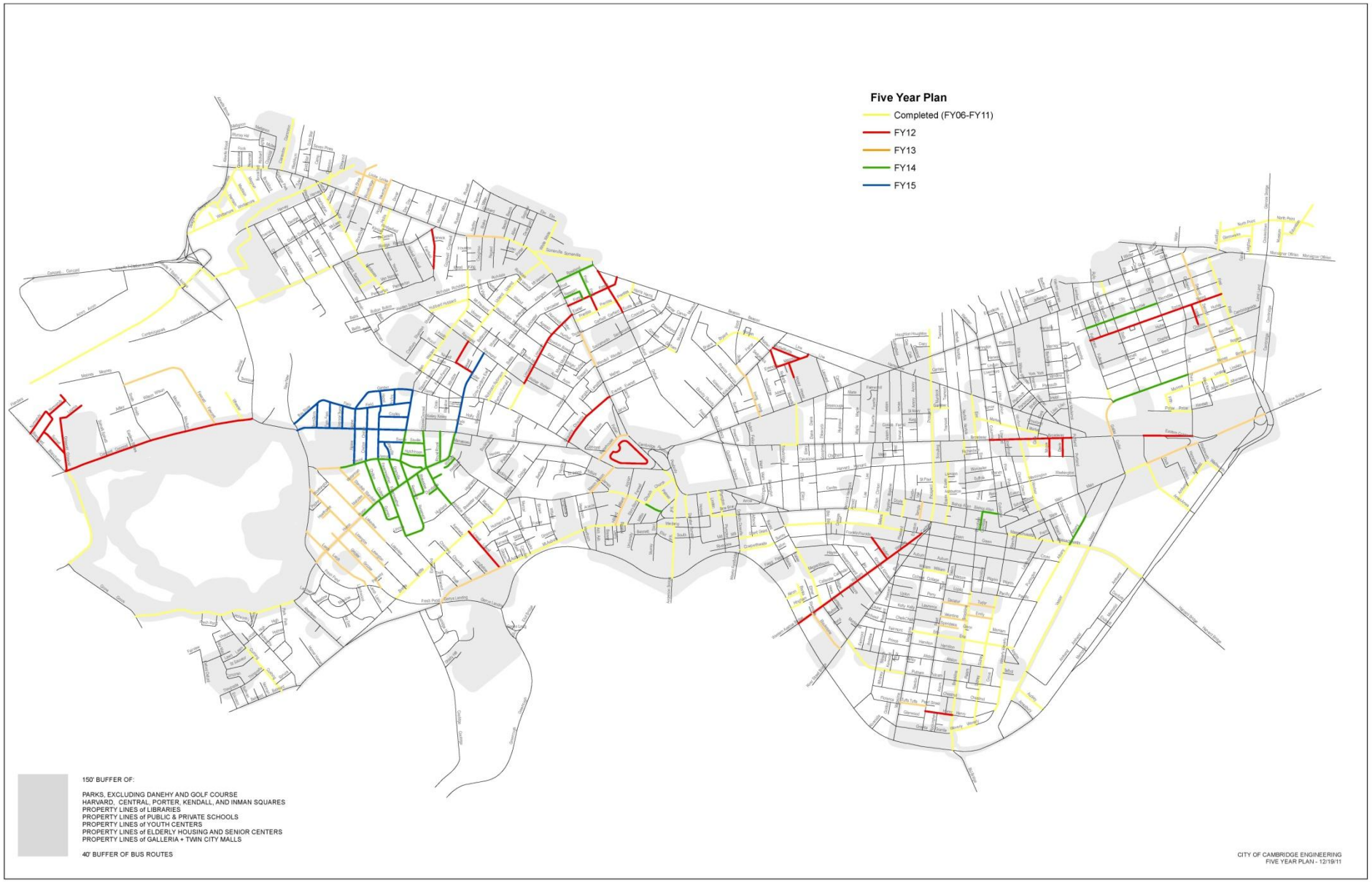
This new project seeks to reconstruct the infrastructure in and immediately around the Western Avenue area of the city to include sewer separation / stormwater management, water mains, public utilities, streets and sidewalks. Construction expected to begin in Spring 2012. www.cambridgema.gov/theworks/cityprojects.aspx under Western Avenue Project.

5-Year Plan

The following sheets identify the streets and sidewalks that the City anticipates reconstructing over the next 5 years.

Scope of Work:

- The approach includes an increased emphasis on complete streets – streets designed for all users – pedestrians, cyclists, bus riders drivers and residents.
- Streets will be repaved and restriped.
- To improve bicycle accommodation, streets will be evaluated for appropriate bicycle facilities such as bicycle lanes or raised bicycle lanes.
- To improve access, all curb cuts will be reconstructed.
- Any crossing islands or medians shall be built or retrofitted to accommodate accessible pedestrian crossings.
- In accordance with City Council goals, projects will include planting additional street trees. See page 17 for more on street trees.


Five Year Plan
Completed (FY06-FY11)
FY12
FY13
FY14
FY15
150' BUFFER OF:
PARKS, EXCLUDING DANEHY AND GOLF COURSE
HARVARD, CENTRAL, PORTER, KENDALL, AND INMAN SQUARES
PROPERTY LINES of LIBRARIES
PROPERTY LINES of PUBLIC & PRIVATE SCHOOLS
PROPERTY LINES of YOUTH CENTERS
PROPERTY LINES of ELDERLY HOUSING AND SENIOR CENTERS
PROPERTY LINES of GALLERIA + TWIN CITY MALLS
40' BUFFER OF BUS ROUTES
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FIVE YEAR PLAN - 12/19/11

The following links provide lists of the various street segments where construction is scheduled over the next five years, as well as recently completed projects. The tables are sortable chronologically, alphabetically or by scope or contract. The degree of uncertainty concerning, locations, scope and schedule increases in the later years of the plan.

Upcoming Projects:
http://www2.cambridgema.gov/theworks/departments/engnr/fiveyearplan.aspx

Completed Projects:
http://www2.cambridgema.gov/theworks/departments/engnr/fiveyearplancompleted.aspx

Miscellaneous Sidewalk Program:

This program is used to address discrete sections of sidewalk throughout the city.

- ***Repairs are typically a block in length, but can be as small as one panel.***
- ***Priority is given to sidewalks and curb cuts in high priority areas.***
- ***The Budget for this program is typically $400,000 to $450,000 per year.***

Miscellaneous Sidewalk Program

A portion of the Miscellaneous Sidewalk Program funding will be reserved for sidewalks and curb cuts where access is of acute importance, as identified by the Commission for Persons with Disabilities and DPW.

If you know of a location that is a critical access issue and is not addressed in the 5 Year Plan, please contact the Commission at:

Cambridge Commission for Persons with Disabilities
Michael Muehe, Executive Director
Kate Thurman, Disability Project Coordinator
51 Inman Street, second floor
Cambridge, MA 02139
mmuehe@cambridgema.gov
617-349-4692 voice : 617-492-0235 TTY : 617-349-4766 fax
www2.cambridgema.gov/DHSP2/disabilities.cfm

Highlights of the year's priority locations include: Completed construction of entrance pathway at sidewalk adjacent to school, Portland St, Danehy Park path, sidewalk adjacent to accessible parking; Gore Street Park, senior center and school facilities .

Street Trees

Goals:

- Increase the number of street trees and maintain accessible sidewalks.
- Protect existing street trees during construction, in accordance with state law.

New Tree Plantings: The City Arborist will review each street and sidewalk project to determine tree planting opportunities; evaluating the location of overhead and underground utilities, proximity to intersections, site lines, building setbacks, locations of entrances, etc. The Arborist will also work with residents interested in back of sidewalk tree plantings.
http://www.cambridgema.gov/theworks/ourservices/urbanforestry.aspx

On ***narrow sidewalks*** (less than 8' wide), smaller stature trees will be planted and a minimum of 4' of sidewalk width will be retained adjacent to new trees.

On ***wider sidewalks*** (8' wide or greater), larger stature trees will be planted and a minimum of ½ of the overall sidewalk width will be retained for pedestrians.

Existing Street Trees: Existing street trees will be protected during construction and the sidewalks will be carefully evaluated to ensure adequate accessible routes through the neighborhood.

Access During Construction

MUTCD, 2009:

The Manual on Uniform Traffic Control Devices, (MUTCD), published by the US DOT / Federal Highway Administration, includes specific requirements for pedestrian access in work zones.

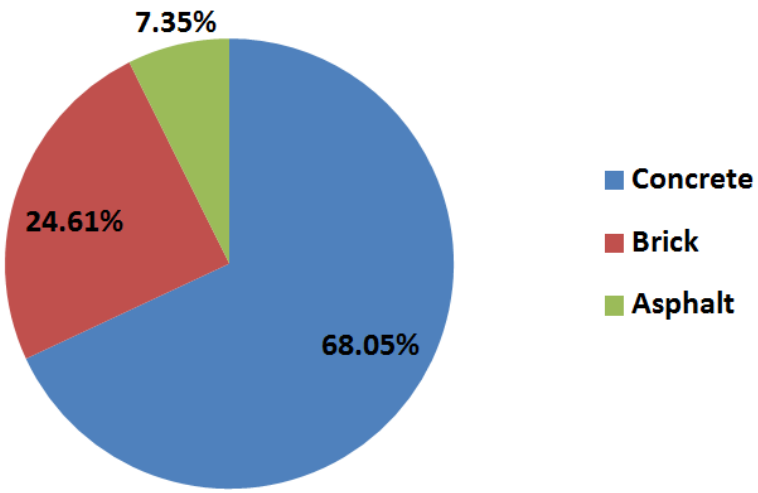
Where pedestrian routes are closed, alternate pedestrian routes shall be provided.

Whenever possible, work should be done in a manner that does not create a need to detour pedestrians from existing routes or crossings.

Sidewalk Materials

Pedestrian Ramps:
All new pedestrian ramps, including landing areas, will be concrete, and include truncated domes.

Sidewalk Materials:
Concrete and wire cut brick without beveled edges, placed on a smooth asphalt base, will be utilized as the sidewalk materials of choice throughout the City.



Concrete is the material most frequently used in the city (~ 70%) and provides a relatively inexpensive, durable and easy to maintain accessible sidewalk.

The City policy is to replace existing sidewalks with the same material at no cost to the property owner. However, during construction, property owners are contacted and may choose to change the sidewalk material. On larger projects, a more unified approach to sidewalk materials has been implemented as part of a larger community process.

Historic Districts:
DPW works collaboratively with the Historic Commission to ensure that sidewalk reconstruction work is "appropriate" and not incongruous to the district.

Standard Details: cambridgema.gov/theworks/ourservices/engineering/Rsources/standarddetails.aspx

Design of Pedestrian Ramps

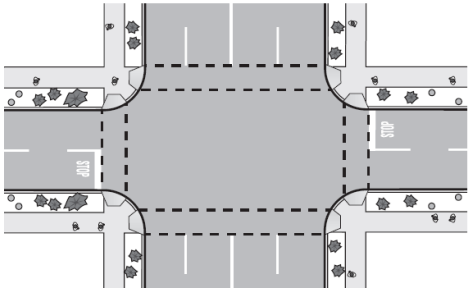
Pedestrian ramps are a critical element of the accessible sidewalk. The details of the design and construction have a significant impact on their usability.

- All new pedestrian ramps, including landing areas, will be concrete, and include truncated domes.
- All slopes will meet ADA / AAB 4-way intersections
- All new pedestrian ramps will be designed to:
  - minimize ponding
  - locate ramps as close to the intersection as possible.

In some cases, particularly on narrow side streets, the best design for pedestrian crossings may be a modified raised crosswalk that

- allows pedestrians to cross the street without having to ramp down.
- reduces the risk of ponding
- keeps the crossing more in line with the sidewalk

Crosswalk Locations

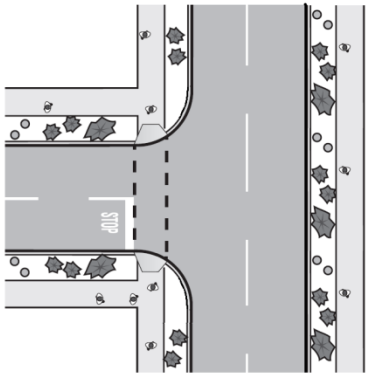


4-way intersections

- Unless site conditions warrant a different treatment, 4 crosswalks and 8 pedestrian ramps should be provided.

“T” intersections

- A minumum of 1 crosswalk and 2 pedestrian ramps are required to provide accessible path of travel along the main corridor.
- Specific site conditions (traffic volumes, pedestrian generators, distance to nearest crosswalk) should be considered to determine if crosswalks across the main street should be provided.

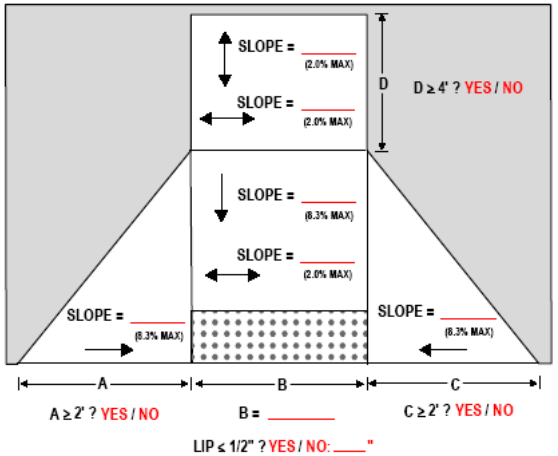


Mid-Block Crossings

- Are generally not used, unless the blocks are especially long or there is an especially large pedestrian flow.

New Construction

City Projects



The following are the requirements specific to all City of Cambridge construction projects in the Public Right of Way. The goals of these requirements are to meet state and federal regulations, maximize accessibility improvements and minimize the extent to which work has to be reconstructed in the future.

- New sidewalks (concrete or brick) will meet ADA / AAB requirements.
- All roadway paving that abuts pedestrian ramps, will include the reconstruction of abutting non-compliant pedestrian ramps.
- ***15' Rule.*** To minimize the need for non-compliant transition segments between old and new sidewalks, if a compliant segment within 15 ft. of the end of proposed new work is identified, work will be extended to the compliant segment.
- If a significant portion of sidewalk on a given side of a block is reconstructed, the entire sidewalk on that side should be compliant.

New Construction

Private Entities

The following are the requirements specific to all street and sidewalk reconstruction projects constructed by private entities within the City of Cambridge Public Right of Way. The goals of these requirements are to meet state and federal regulations, maximize accessibility improvements and minimize the extent to which work has to be reconstructed in the future.

- New sidewalks (concrete or brick) will meet ADA / AAB requirements.
- All roadway paving that abuts pedestrian ramps, will include the reconstruction of abutting non-compliant pedestrian ramps.
- ***15' Rule.*** To minimize the need for non-compliant transition segments between old and new sidewalks, if a compliant segment within 15 ft. of the end of proposed new work is identified, work will be extended to the compliant segment.
- If a significant portion of sidewalk on a given side of a block is reconstructed, the entire sidewalk on that side should be compliant.
- If a full block of sidewalk is being reconstructed, a PE stamped design will be required and a PE certification of compliance will be required after construction.
- If more than 30 feet of sidewalk, a curb cut, or a driveway is being constructed, a survey and design will generally be required. Survey and design requirements will be determined by DPW based on the specific location.

New Construction

Private Utilities

The following are the requirements specific to all street and sidewalk reconstruction projects constructed by private utilities within the City of Cambridge Public Right of Way.

- Sidewalks construction subsequent to utility work will meet ADA / AAB requirements.
- Roadway paving, subsequent to utility work, that abuts pedestrian ramps, will include the reconstruction of abutting non-compliant pedestrian ramps.
- If a full block of sidewalk is being reconstructed, due to utility work, a PE stamped design will be required and a PE certification of compliance will be required after construction.
- If more than 30 feet of contiguous sidewalk, a curb cut, or a driveway is being constructed, due to utility work, a survey and design will generally be required. Survey and design requirements will be determined by DPW based on the specific location.
- In lieu of final restoration payments (Street Preservation Offset Fees), made by utility companies, will include the complete cost of the necessary sidewalk restoration required.

Traffic Signals

Accessible Pedestrian Signals: Accessible pedestrian traffic signals (APS) work in conjunction with visual pedestrian signals to provide additional information to pedestrians, including pedestrians who are blind or visually impaired, while they are navigating signalized intersections. APS typically use a combination of auditory and vibrotactile information to alert pedestrians as to when they should cross the street. APS shall be configured so that the auditory portion is not audible from the inside of any nearby buildings.

The City will be implementing APS at new signalized intersections, consistent with the 2009 MUTCD. In addition, APS will be considered for installation at existing signalized intersections, either as part of a significant alteration, or after a request has been received from a member of the blindness community. The City will consult with the Disabilities Commission upon receipt of any such request, and will periodically review the City's accessible pedestrian signals policy with the Disabilities Commission to ensure that it conforms with current state and federal accessibility standards, and with recognized best practices.

Signal Control Cabinets: Traffic signal control cabinets mounted on poles are under consideration for relocation by the Traffic Department. Where viable alternative locations exist, cabinets will be moved to ground mounted locations. This is often done in conjunction with street and sidewalk reconstruction.

Next Steps

The 5 Year Plan is a living document that will be updated regularly. As part of that process, DPW will:

- Review plan annually with the Commission for Persons with Disabilities, Pedestrian Committee, Bicycle Committee and Town Meeting of Seniors.
- Update the pavement condition and sidewalk condition data and corresponding maps.
- Annually update the 5 Year Plan to account for the changing conditions of our streets and sidewalks.

Please send any questions or comments to:

Katherine Watkins, Department of Public Works
kwatkins@cambridgema.gov or 617-349-4751