



## **Public Facilities Committee Report** **City of Newton** **In City Council**

**Wednesday, April 18, 2018**

**Present:** Councilors Crossley (Chair), Leary, Kelley, Danberg, Laredo, Gentile

**Also Present:** Councilors Albright, Downs

**City staff Present:** Director of Planning and Development Barney Heath, Urban Designer Shubee Sikka, Long Range Planner Rachel Blatt Nadkarni, ADA Coordinator Jini Fairley, Director of Transportation Nicole Freedman, City Engineer Lou Taverna

**#204-18      Verizon petition for grant of location on Walnut Street**

VERIZON petition for a grant of location to install 215'± of conduit from existing Manhole #16/182 in a southeasterly direction to 227 Walnut Street to provide new service. (Ward 2)

**Action:**      **Public Facilities Approved 5-0 (Danberg not Voting)**

**Note:**      Right of Way Agent Verizon Everette Bryan presented the petition for a grant of location to install 215'± of conduit from existing manhole #16/182 to an easement on the property line at 227 Walnut Street. At the public hearing on April 4, 2018, the property owner at 227 Walnut Street said that no easement had been granted to Verizon. Mr. Bryan stated that the request for work was to the property at 241 Walnut Street; the plans submitted were inaccurate. Committee members held the item pending submission of corrected plans. The revised plans show the proposed conduit installed to an easement at 241 Walnut Street. It was noted that the proposed conduit is for telecommunications fiber distribution. The Engineering Department reviewed the proposed grant and has no concerns.

### **Public Comment**

Gerard Slattery, 227 Walnut Street, expressed gratitude to the Committee and Verizon for holding the item to ensure that the plans were revised, and the petition was granted to the correct location.

With no other member of the public wishing to speak, the public hearing was closed. Councilor Kelley motioned to approve the item which carried unanimously.

**#226-18      National Grid petition for grant of location in Karen Road**

NATIONAL GRID petition for a grant of location to install 220'+/- of 4" main in Karen Road from existing gas main at #40 Karen Road trenching in a southerly direction to houses #50 and #60 for new gas service. (Ward 5)

**Action:**      **Public Facilities Approved 5-0 (Danberg not Voting)**

**Note:** National Grid Permit Representative Barbara Kelleher presented the request for conduit in Karen Road to provide service to two newly constructed homes at 50 and 60 Karen Road. The Public Hearing was opened and closed with no member of the public wishing to speak. Committee members expressed no concerns relative to the petition. Councilor Laredo motioned to approve the item which carried unanimously.

**#227-18 National Grid Petition for a Grant of Location in Brookside Avenue**

NATIONAL GRID petition for a grant of location to install and maintain approximately 40'± of 8" gas main in Brookside Avenue from the existing 12" gas main at #85 Brookside Avenue in a southwesterly direction to a proposed regulator station thence turning in a southeasterly direction to the existing 12" gas main approximately 300'± at the intersection of Brookside Avenue/Washington Street. (Ward 3)

**Action:** Public Facilities Approved 6-0

**Note:** National Grid Permit Representative Barbara Kelleher presented the request to replace the existing regulator station in Brookside Avenue. Ms. Kelleher noted that the existing regulator station aging and confirmed that the equipment is located underground.

Nathan Aronow, 79 Brookside Avenue, noted that National Grid is frequently on Brookside Avenue to complete repairs. He questioned whether competition of this work will decrease the number of visits to the site.

Renee Rubio, 80 Brookside Avenue, noted that there may be gas leaks due to the smell of gas on Brookside Ave. She questioned the extent of the proposed work.

Ms. Kelleher could not provide an estimate of time for construction but confirmed that completion of the work would reduce the number of repair visits to the site. Residents were encouraged to request information relative to possible gas leaks on Brookside Avenue through the Clerk's office or through Ward Councilors. With no other member of the public wishing to speak, the public hearing was closed. City Engineer confirmed that the grant of located was reviewed and is subject to the conditions shown on the petition form. Councilor Leary moved approval of the grant of location which carried unanimously.

**#228-18 Mayor's appointment of Robin Maltz to the Solid Waste Commission**

ROBIN MALTZ, 20 Chatham Road, Newton Highlands, appointed as a member of the SOLID WASTE COMMISSION for a term to expire May 31, 2021. (60 days: 6/16/18)

**Action:** Public Facilities Approved 6-0

**Note:** The Public Facilities Committee invited Ms. Robin Maltz of 20 Chatham Road to discuss her appointment to the Solid Waste Commission. Ms. Maltz noted that she is passionate about solid waste management and eager to volunteer for the SWC. She stated that she is particularly interested in

food and organic waste initiatives. Committee members were thankful to Ms. Maltz for volunteering. With a motion from Councilor Danberg to approve, Committee members voted unanimously in favor of the appointment.

**#229-18 Mayor's appointment of Claudine Ellyin to the Solid Waste Commission**

CLAUDINE ELLYIN, 35 Cloverdale Road, Newton Highlands, appointed as a member of the SOLID WASTE COMMISSION for a term to expire May 31, 2021. (60 days: 6/16/18)

**Action:** Public Facilities Approved 5-0 (Danberg not Voting)

**Note:** The Public Facilities Committee invited Ms. Claudine Ellyin of 35 Cloverdale Road to discuss her appointment to the Solid Waste Commission. Ms. Ellyin noted that she is currently a member of Green Newton, has a background in Earth resources and environmental engineering and works in sustainability. She noted that she is passionate about sustainable solid waste management and excited to volunteer for the SWC. A Committee member noted that Ms. Ellyin currently participates at Solid Waste Commission meetings. Councilor Kelley moved approval of the appointment, which carried unanimously.

**#235-18 Mayor's appointment of Amy MacKrell to the Design Review Committee**

AMY MACKRELL, 12 Dexter Road, Newtonville, appointed as a member of the DESIGN REVIEW COMMITTEE for a term to expire December 31, 2021. (60 days: 6/16/18)

**Action:** Public Facilities Approved 6-0

**Note:** The Public Facilities Committee invited Amy MacKrell of 12 Dexter Road to discuss her appointment to the Design Review Committee. Ms. MacKrell stated that she is an architect and Design Principal and is eager to volunteer for the Design Review Committee to contribute to reviewing the unprecedented growth in parts of the City. Ms. MacKrell noted that she has not had an opportunity to go to the DRC meetings, but has experience working with municipalities, including design of higher education institutions and public universities throughout New England. A Committee member questioned Ms. MacKrell's interest in sustainable design and construction. Ms. MacKrell stated that she is interested in sustainable design, and believes it is important to balance good design with community values while maintaining the project goals. A Committee member questioned which projects in the City Ms. MacKrell believes were exceptionally done. Ms. MacKrell noted that she has been impressed by the design of the elementary schools. The Chair thanked Ms. MacKrell for volunteering for the Design Review Committee, noting the importance as well as volume of the work. Councilor Leary moved approval of Ms. MacKrell's appointment, which carried unanimously.

**#236-18 Mayor's appointment of Stephanie K. Gilman to the Design Review Committee**

STEPHANIE K. GILMAN, 16 Lewis Street, Newton, appointed as a member of the DESIGN REVIEW COMMITTEE for a term to expire December 31, 2021. (60 days: 6/16/18)

**Action:** Public Facilities Approved 6-0

**Note:** The Public Facilities Committee invited former Public Buildings Commissioner Stephanie Gilman to discuss her appointment to the Design Review Committee. Ms. Gilman noted that given her experience running the DRC, she is cognizant of the workload and importance of reviewing municipal projects. She noted that she is looking forward to the opportunity to be involved in municipal building. Committee members were thankful for Ms. Gilman volunteering to serve on the DRC, acknowledging her experience with the DRC. Councilor Kelley moved approval of the appointment, which carried unanimously.

**#46-18**            **Discussion with DPW regarding sewer extension billing**  
COUNCILOR GENTILE requesting a discussion on how the City currently bills residents for sewer extensions.

**Action:**        **Public Facilities Held 6-0**

**Note:** City Engineer Lou Taverna provided an overview of how sewer extensions are billed in the City. He noted that prior to 2012, sewer betterment assessments were assessed to residents at the rate of \$1.00/sq. ft. of frontage and .25 cents/sq. ft. of area. These rates were historical and did not reflect inflated costs of sewer extensions. In 2012, the City completed the installation of sewers on Aspen, Hawthorne and Studio Road. Because the calculation for the sewer betterment was completed using the historical rates for sewer extensions, the cost of the extension to the City was approximately 90% of the total cost. It was determined that the rates should be modified for a more proportionate split between residents and the City, resulting in a 50%/50% cost split.

Mr. Taverna noted that there are approximately 440 homes in the City that are not connected to sewer lines. He stated that some reasons sewer mains may not exist in these locations include remote areas and/or difficult topography and/or geology (soil, ledge), and in some cases a pump station may be required to overcome topography. He noted that such conditions mean the cost of installation is likely to be high.

In 2016, some residents on Staniford Street indicated their interest in connecting to the sewer system but identified that the extension of the sewer system may be cost prohibitive. The pending item before the Committee is to possibly reconsider the cost share and possibly raise the City's share. Mr. Taverna state that the Ordinance states that the City will pay a minimum of 50%, noting that the City could opt to pay a higher percentage of the work. He noted that in 2016, the Engineering Department asked Weston and Sampson to provide a preliminary estimate of the cost of the sewer extension at Staniford Street. Because Staniford Street curves, two separate sewers would be required (north/south and east/west), resulting in an estimated total cost of \$630,000 or \$17,000-\$22,000 per residence (estimate also from 2016). It was noted that residents would need to pay the additional cost (\$2,000. Or more) of connecting from the main to their property.

The Engineering Department noted that the cost estimates are based on the connection of approximately 18 houses to the sewer system. Mr. Taverna noted that it is likely that many homes on septic systems are at failure point, require annual emptying and may be a source of soil contamination. He noted that some locations are adjacent to wetlands. The Department of Public Health maintains an

inventory of residences not connected to sewer, but the alternate systems are not subject to any testing other than at point of sale, to comply with Title V.

Committee members were in agreement that there is a public benefit to having all homes on sewer but acknowledged the significant number of homes in the City that must be connected. It was noted that while all properties along the route would be required to pay a betterment, the betterment may be paid back over 20 years, but the City must pay 100% of the cost of construction up front. Additionally, the cost of designing the system is at the expense of the City. Committee members noted that the City needs a long-range capital plan to address sewer main extensions and questioned whether current rates (designed to increase at a rate of 3/9%/year in order to fund system rehabilitation) are sufficient to being incorporating this additional work. The Chair noted that next week as part of the DPW budget review, we can discuss the status of the fund. Councilors discussed whether it is better for ratepayers to wait until the completion of the ongoing sewer rehabilitation project but agreed that planning must begin now.

### **Public Comment**

James and Donna Pine, 50 Staniford Street, noted that they are interested in connecting to the sewer system.

Jim Barberio, 49 Staniford Street, noted that his system is 40 years old and he has it pumped annually. He stated that many septic systems on Staniford Street are much older than his. Mr. Barberio is interested in connecting to the sewer system.

It was noted that a petition for a sewer extension requires a public hearing. The Ordinance is written in a way that if the sewer passes by the house, the residents must pay the betterment. It was noted to residents in attendance (approximately 12) that the public hearing would be taken up soon after budget, but that there needs to be a discussion with the Administration and CFO. Councilor Laredo motioned to hold the item, which carried unanimously.

### **Referred to Public Facilities and Public Safety and Transportation Committees**

**#52-18**      **Discussion/ Review on the Street Design Guide**  
**COUNCILORS CROSSLEY AND ALBRIGHT** requesting a discussion and review of the Street Design Guide, and how it will inform the Accelerated Roads Program.

**Action:**      **Public Facilities Held 6-0**

**Note:**      Director of Planning and Development Barney Heath, Long Range Planner Rachel Blatt Nadkarni and Urban Designer Shubee Sikka provided an overview of the Street Design Guide. Mr. Heath began the presentation, noting that input on the draft document has been received from Planning, Transportation, DPW, Engineering, ADA Coordinator Jini Fairley, Police, Fire, Parks & Recreation and the Director of Sustainability. Mr. Heath emphasized that the Street Design Guide will be a living document

that provides a variety of options and standards that will help guide objective street design. Ms. Sikka presented details of the Street Design Guide as shown on the attached presentation.

Ms. Sikka reviewed the intent to design safe streets that are livable and sustainable for pedestrians, drivers, bicyclists and motorcyclists. She noted that data of crash hot spots is being used to inform decisions in the guide. Ms. Sikka stated that the document will be used as a reference guide for Capital Improvement Projects and noted that the guide will provide recommendations/standards to guide design by private entities. Ms. Sikka demonstrated examples of how different options will be reflected in the guide for a variety of street and roadway conditions. The Street Design Guide will include standards and recommendations for design features including; sidewalks, lighting, storm water management systems and bikeways.

Committee members expressed concerns that rather than providing standards and prescriptions for following, the Street Design Guide is providing a menu of options for the user to choose. Mr. Heath confirmed that there will be clear recommendations based on best practices and internal practices. He reiterated that the departments are working together to establish standards that will vary as appropriate to different environments (e.g. village v. neighborhood) and street classifications (eg. arterial, collector, side street) within the City. Committee members asked whether policy decisions are being made that may benefit from Council input. Mr. Taverna noted that many aspects of the guide will include standards and recommendations based on best practices, not policy decisions. It was noted that where policies (i.e. tree policy) are not based on engineering and design guidelines; discussion remains ongoing. It was noted that the guide will be used interdepartmentally and by developers to identify the City's preferred treatment in different scenarios and will identify where and how specific tools should be used. ADA Coordinator Jini Fairley noted that she is drafting an accessibility plan for the City which is helping to inform the guide.

Ms. Sikka reviewed the timeline for the ongoing drafting and expects that the final draft guide will be ready to present to Public Facilities in June 2018. Committee members emphasized that the document should not be finalized until after feedback from the Council. It was made clear that the final draft signals the end of the consultant's work, however. Ms. Sikka reiterated that the Street Design Guide will be a living document and can be updated to incorporate more information, such as new technology, over time. Councilor Laredo motioned to hold the item which carried unanimously.

**#230-18**      **Mayor's reappointment of Kenneth White to the Designer Selection Committee**  
KENNETH WHITE, 30 Murray Road, West Newton, reappointed as a member of the DESIGNER SELECTION COMMITTEE for a term to expire December 31, 2021. (60 days: 6/16/18)

**Action:**      **Public Facilities Approved 5-0 (Danberg not Voting)**

**#231-18**      **Mayor's reappointment of James Powers to the Designer Selection Committee**  
JAMES POWERS, 11 Star Road, West Newton, reappointed as a member of the DESIGNER SELECTION COMMITTEE for a term to expire December 31, 2021. (60 days: 6/16/18)

**Action:**      **Public Facilities Approved 5-0 (Danberg not Voting)**

**#232-18**      **Mayor's reappointment of Benjamin Tucker to the Designer Selection Committee**  
BENJAMIN TUCKER, 12 Nathan Road, Newton Centre, reappointed as a member of the DESIGNER SELECTION COMMITTEE for a term to expire December 31, 2021. (60 days: 6/16/18)

**Action:**      **Public Facilities Approved 5-0 (Danberg not Voting)**

**#233-18**      **Mayor's reappointment of Marc Resnick to the Design Review Committee**  
MARC RESNICK, 1925 Commonwealth Avenue, Auburndale, reappointed as a member of the DESIGN REVIEW COMMITTEE for a term to expire December 31, 2021. (60 days: 6/16/18)

**Action:**      **Public Facilities Approved 5-0 (Danberg not Voting)**

**#234-18**      **Mayor's reappointment of Jonathan Kantar to the Design Review Committee**  
JONATHAN KANTAR, 672 Chestnut Street, Waban, reappointed as a member of the DESIGN REVIEW COMMITTEE for a term to expire December 31, 2021. (60 days: 6/16/18)

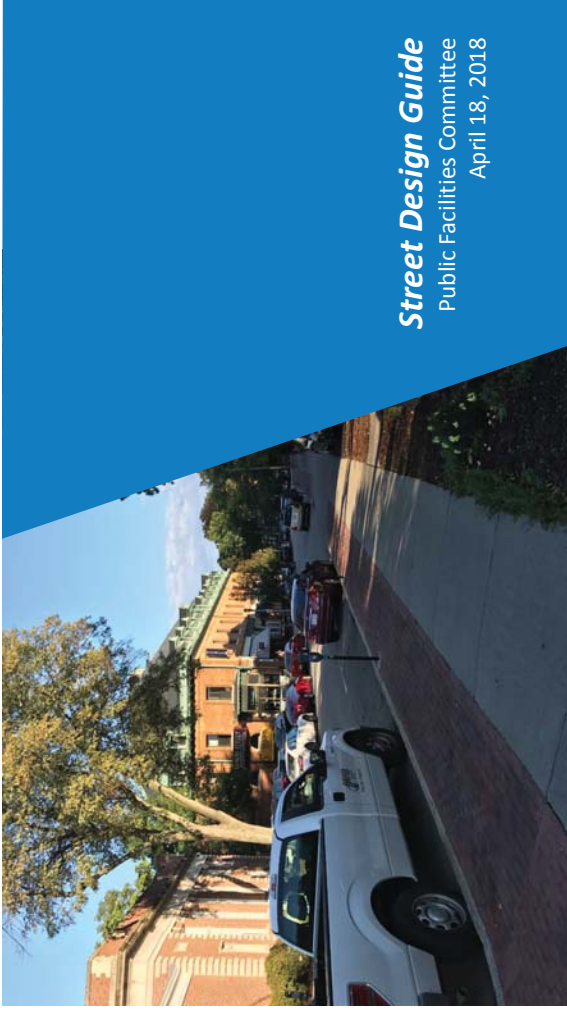
**Action:**      **Public Facilities Approved 5-0 (Danberg not Voting)**

**Note:**            After reviewing resumes for candidates attached to the agenda, Committee members unanimously supported motions for approval on all reappointments.

The Committee adjourned at 9:00 pm.

**Respectfully Submitted,**

**Deborah Crossley**



## **Street Design Guide**

Public Facilities Committee  
April 18, 2018

### **Agenda**

- **Process to Date**
- **Purpose**
  - *What is Street Design Guide*
  - *Why do we need the Guide*
  - *Who will use the Guide*
- **Outline of the Guide**
- **Next steps**

Newton Street Design Guide

### **Process to Date**

- **Toole Design Group** was selected by RFP Process
- Two work sessions with City staff

Newton Street Design Guide

### **Process to Date**

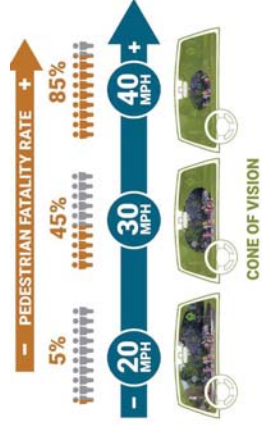
- Representation from the following Departments at the work sessions:
  - Executive Office
  - DPW (Engineering, Transportation, and Utilities divisions)
  - Department of Planning and Development (Long Range, Current, Transportation, and Conservation divisions)
  - Department of Police
  - Department of Fire
  - Office of the ADA Coordinator
  - Office of the Director of Sustainability
  - Parks and Recreation Department

Newton Street Design Guide



## What is Street Design Guide?

- In Feb. 2017, Newton reduced statutory speed limit reduced from 30 mph to 25 mph
- The Guide will help to translate this change to lower default design speeds
- Hence, enabling designers to create streets that work for everyone



## Why a Street Design Guide?

### Outcome:

Apple pie



### How to get there:

Recipe



### What you need:

Ingredients



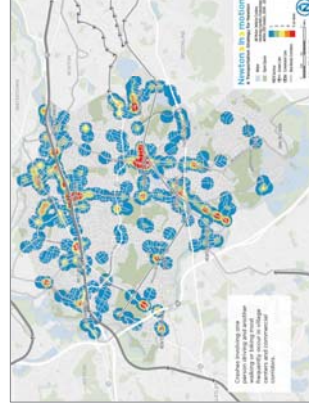
## Why a Street Design Guide?

**Outcome:**  
 Safe  
 Smart  
 Accessible  
 Livable  
 Sustainable

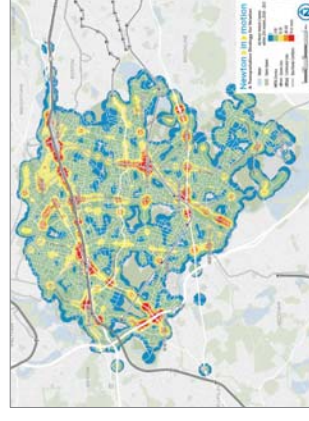
### Recipe:

### Ingredients:

### Bicycle and pedestrian crashes

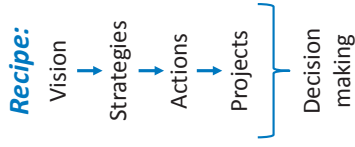


### Crash hot spots



## Why a Street Design Guide?

**Outcome:**  
Safe  
Smart  
Accessible  
Livable  
Sustainable



### Ingredients:

## Why a Street Design Guide?

**Outcome:**  
Safe  
Smart  
Accessible  
Livable  
Sustainable



**Ingredients:**  
*Newton Street Design Guide*  
“Translate values into best practice design strategies.”

## Working Living Document

- *The Guide will be updated on a regular basis*
- *For example – design standards for wireless facilities on poles*



## Who will use the Guide?

- **City Projects:**
  - *Road projects identified in Capital Improvement Plan (CIP) and Accelerated Roads Program*
  - *Street Enhancement Projects*

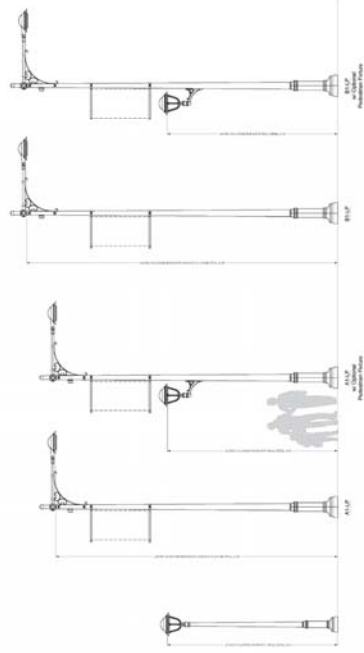
## Street Enhancement Project: Walnut Street



## Street Enhancement Project: Walnut Street



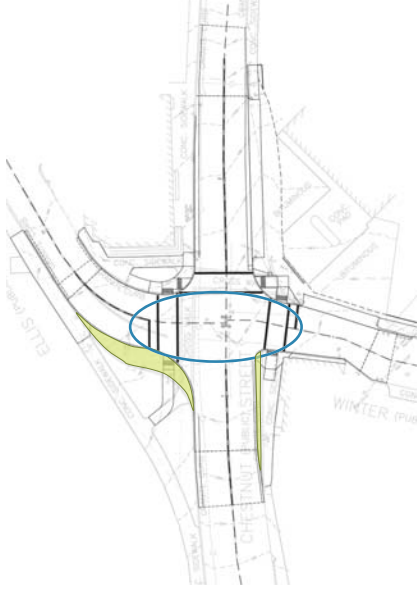
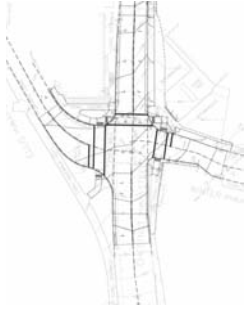
## Street Enhancement Project: West Newton Square Lighting



## Who will use the Guide?

- **City Projects:**
  - Projects identified in *Capital Improvement Plan (CIP)* and *Accelerated Roads Program*
  - Street Enhancement Projects
  - **Complete Streets Committee**

## Complete Street Committee: Chestnut St, Ellis St, and Winter St



## Who will use the Guide?

- **City Projects:**
  - *Projects identified in Capital Improvement Plan (CIP) and Accelerated Roads Program*
  - *Street Enhancement Projects*
- **Complete Streets Committee**
- **Private Developments**

## Development example: Austin Street



## Development example: Austin Street



# Street Design Guide Outline

1. **Introduction**
2. **Street Types**
3. **Sidewalks**
4. **Roadways**
5. **Intersections and Crossings**
6. **Foundation for Guidance**
7. **Index**

# Street Design Guide Outline

1. **Introduction**
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- 1.1 *Purpose of the Guide*
- 1.2 *Safety: Newton's Top Priority*
- 1.3 *Using the Guide*

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- 2.1 *Functional Classification*
- 2.2 *Context*
- 2.3 *Design Vehicle*

# Context

<b>Priority Strategies</b> Newton-in-Motion established broad strategies to achieve its 2040 vision, in consultation with extensive community engagement.		<b>Character Patterns &amp; Historic Districts</b> The <i>Newton Pattern Book</i> , a component of the 2017 Newton Zoning Redesign, defined character patterns based on an analysis of the built and natural environments. Designers should coordinate with the Newton Historic Commission and four local historical commissions, where applicable.		<b>Supplemental Networks</b> Newton's transportation network supports a variety of designated safety and operational needs as well as specific maintenance activities that inform the design of our streets.	
Safe travel	Prioritize implementation of guidance at crash hot spot locations and high-risk locations.	Neighborhood	Sidewalk (Section 3.1), <b>sidewalk management</b> (Section 3.3), traffic calming (4.2), crosswalks (5.1.1), signal timing (Section 5.3)	Designated <b>sidewalk</b> <b>plow routes</b>	Sidewalk clear width (see Section 3.1)
Transit and shared mobility	Implement comfortable and convenient first- and last-mile walking, biking, and drop-off connections to transit.	Village center		Designated emergency response routes	Design vehicle Section 2.3), traffic calming (Section 4.3), crosswalks (5.1.1), corner radius (Section 5.2.1)
Active transportation	Make short trips to village centers, schools, and other nearby, everyday destinations active and attractive.	Commercial cluster		Designated freight routes	
Parking management	Embrace and promote alternatives to driving in parking management districts to reduce the need to drive.	Campus		School bus routes	
Congestion reduction	Leverage multimodal investments with transportation demand management program.	Recreation/public use		MBTA routes	
		Natural/landscape		Safe Routes to School walking/biking routes	
		<b>Local historic districts</b>	Sidewalk materials and curbs (Section 3.1)		

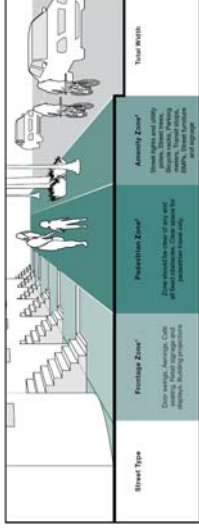
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# Street Design Guide Outline

1. Introduction
  2. Street Types
  3. **Sidewalks**
  4. Roadways
  5. Intersections and Crossings
  6. Foundation for Guidance
  7. Index
- 3.1 Sidewalk Zones  
 3.2 Stormwater Management and Street Trees  
 3.3 Street Lighting

# Sidewalk Design

- **Primary guidance:**
  - Defining sidewalk zones, widths, and materials for residential and village center contexts
- **Supplementary guidance:**
  - Locating streetscape elements, including signage
  - Tree root impacts
- **Elsewhere:**
  - Supporting healthy trees in *Stormwater*



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*Preferred sidewalk zone widths*  
Alexandria, VA

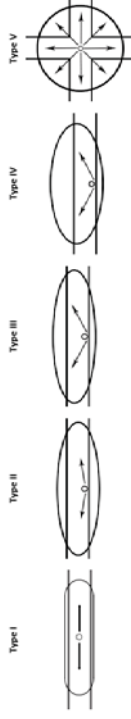
# Street Stormwater Best Management Practices

- | Type and Substrate | Practice   | Use   | Maintenance Considerations              |
|--------------------|--|---|---|
| Impervious         | Use pervious pavement materials like permeable concrete, porous asphalt, or pervious pavers. | Use pervious pavement materials to reduce runoff and improve water quality. | Check for clogging and clean regularly. |
| Grass              | Use grass with a high root density to stabilize soil and reduce erosion.                     | Use grass to stabilize soil and reduce erosion.                             | Check for erosion and reseed as needed. |
| Gravel             | Use gravel with a high root density to stabilize soil and reduce erosion.                    | Use gravel to stabilize soil and reduce erosion.                            | Check for erosion and reseed as needed. |
| Permeable pavers   | Use permeable pavers with a high root density to stabilize soil and reduce erosion.          | Use permeable pavers to stabilize soil and reduce erosion.                  | Check for clogging and clean regularly. |
| Grass pavers       | Use grass pavers with a high root density to stabilize soil and reduce erosion.              | Use grass pavers to stabilize soil and reduce erosion.                      | Check for erosion and reseed as needed. |
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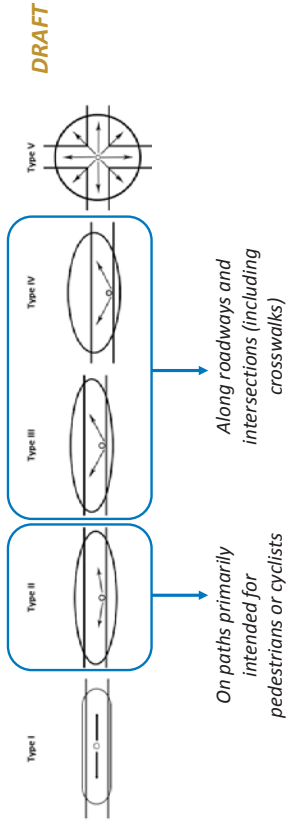
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# Street Lighting – LED Distribution Types

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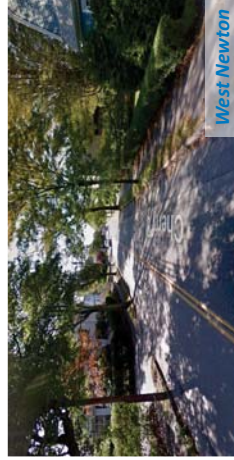
# Street Lighting – LED Distribution Types



# Street Design Guide Outline

1. Introduction
2. Street Types
3. Sidewalks
4. **Roadways**
  - 4.1 Travel Lanes and Parking
  - 4.2 Bikeways
  - 4.3 Traffic Calming Techniques (as necessary)
5. Intersections and Crossings
6. Foundation for Guidance
7. Index

# Constrained ROW: Every Inch Matters



# Bikeways

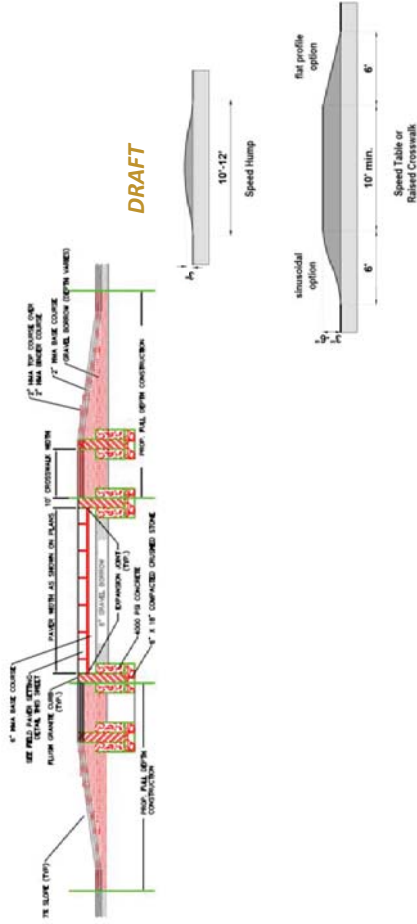
	Shared Use Path	One-way Separated Bike Lane	Two-way Separated Bike Lane	Raised Bike Lane	Buffered Bike Lane	Conventional Bike Lane	Bicycle Boulevard
Usable Travel Width							
Buffer Width							
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## Traffic Calming Techniques

Horizontal Deflection		Vertical Deflection	
<p><b>Speed Hump</b> A raised area placed across the roadway to slow traffic down. It is designed to be a slight hump to the traffic flow.</p>	<p><b>Speed Table or Raised Crosswalk</b> An elevated portion of a street designed to slow traffic down. It is designed to be a slight hump to the traffic flow.</p>	<p><b>Roadway Narrowing</b> A narrow area placed across the roadway to slow traffic down. It is designed to be a slight hump to the traffic flow.</p>	<p><b>Raised Intersection</b> Requires every vehicle to slow down at every intersection.</p>
<p><b>Chicanes</b> Series of alternating curves or lane shifts to force drivers to slow down.</p>	<p><b>Roadway Narrowing</b> A narrow area placed across the roadway to slow traffic down. It is designed to be a slight hump to the traffic flow.</p>	<p><b>Roadway Narrowing</b> A narrow area placed across the roadway to slow traffic down. It is designed to be a slight hump to the traffic flow.</p>	<p><b>Roadway Narrowing</b> A narrow area placed across the roadway to slow traffic down. It is designed to be a slight hump to the traffic flow.</p>
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## Vertical Deflection Design



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## Street Design Guide Outline

1. Introduction
2. Street Types
3. Sidewalks
4. Roadways
5. **Intersections and Crossings**
6. Foundation for Guidance
7. Index

### 5.1 Pedestrian and Bike Crossings

#### 5.2 Corner Radii, Raised Crossings, and Channelized Right-turn Lanes

#### 5.3 Minimizing Exposure to Conflicts: Signal Timing

## Pedestrian and Bicycle Crossings

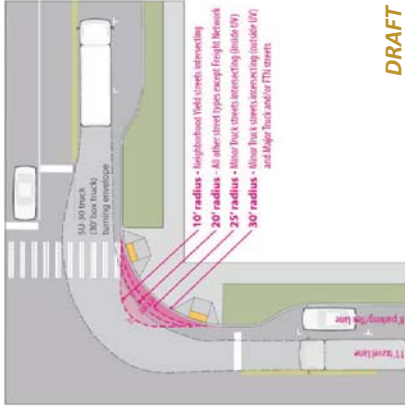


Continental Pedestrian Crossing

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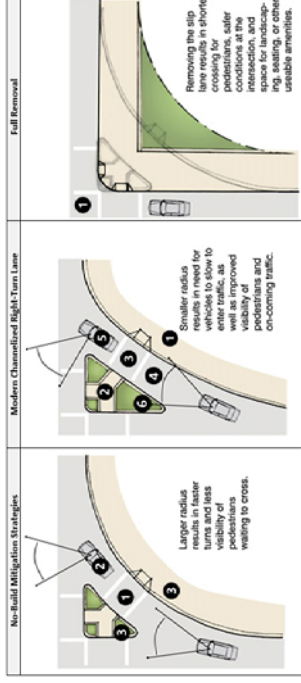


## Corner Radii



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## Right-turn Lanes



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## Pedestrian and Bicycle Signal Timing

- **Primary guidance:**
  - Balancing safety and delay
  - Considerations for selecting schemes
- **Supplementary guidance:**
  - When to consider additional strategies
- **Elsewhere:**
  - Role of accessible pedestrian signals in Accessible Design

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**Signal timing strategies DCR Parkways Study**

## Street Design Guide Outline

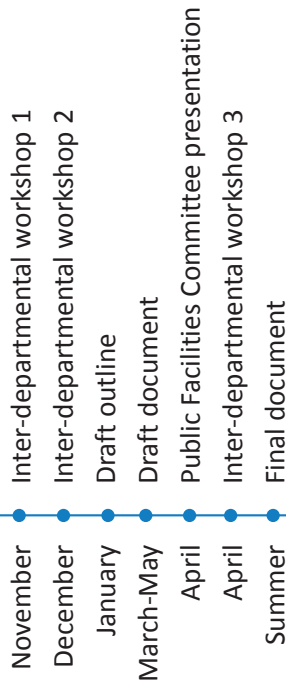
1. Introduction
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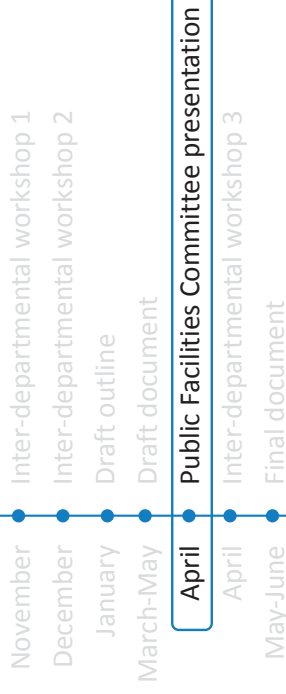
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## Project Schedule



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## What is the Project Schedule?



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## Working Living Document

- *The Guide will be updated on a regular basis by City staff*

Newton Street Design Guide