

*Sustainable Maryland Wednesday Webinars*

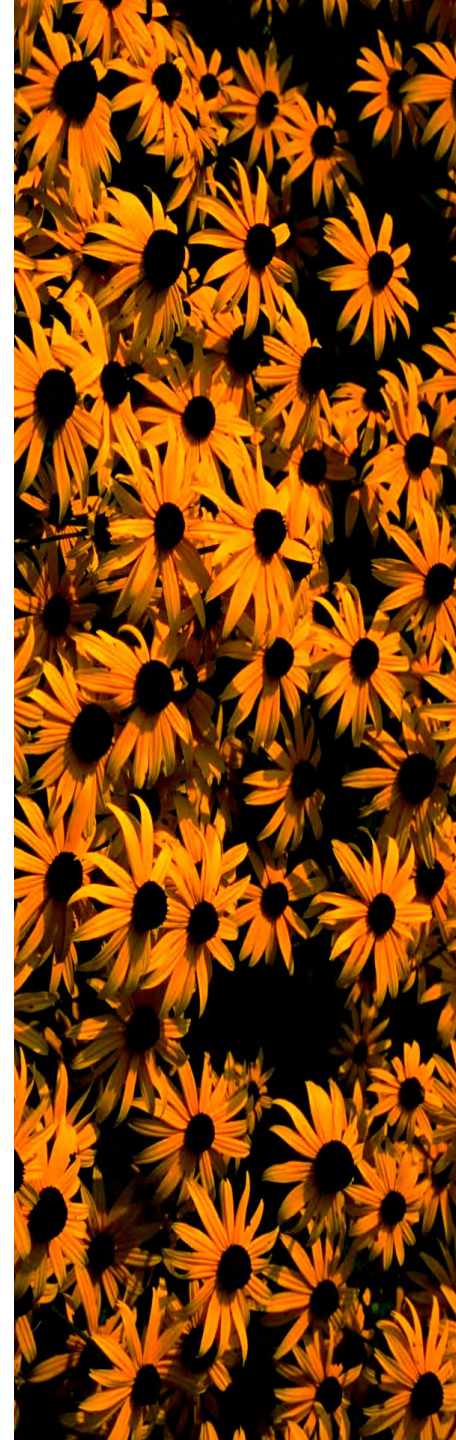
# Green Streets in Gaithersburg

Becky Uebele and Dyan Backe  
City of Gaithersburg

Wednesday, March 8



ENVIRONMENTAL  
FINANCE CENTER



# Sustainable Maryland

- Free & Voluntary program for communities that want to go green and save green!
- We help communities
  - choose a direction for their sustainability efforts
  - Improve access to resources
  - Measure their progress
  - Share success with other communities



## Actions for Sustainable Communities:

To become Sustainable Maryland Certified, municipalities must complete and document actions from the list below. To achieve certification, municipalities will need to complete actions worth a total of 150 points, including two Mandatory Actions (M) and two of six Priority Actions (P), and submit the appropriate documents as evidence that the requirements have been satisfied.

ACTION ITEM	POINTS
<b>COMMUNITY ACTION</b>	
<b>Green Team</b>	
Participate in SMC Green Team Training	5
Create a Green Team	10 M
Complete a Green Team Action Plan	10 M
Conduct Community Barriers and Benefits Assessment	15
Build SMC Resource Center	5
<b>Participation in MD Green Schools</b>	10
<b>Innovative Demonstration Projects</b>	5 to 20
<b>COMMUNITY-BASED FOOD SYSTEM</b>	
<b>Local Food Consumption</b>	
Local Food Fair	10
Local Food Consumption & Preservation Classes	5 per class
Establish Local Farmers Market	15
Promote Local Farmers Market	5
<b>Local Food Production</b>	
Community Gardens	15 P
Spring Transplant Sale	10
Fall Transplant Sale	10
<b>Establish CSA Drop-off Location</b>	10
<b>Innovative Demonstration Projects</b>	5 to 20
<b>ENERGY</b>	
<b>Municipal Energy Audits</b>	10 (1st bldg), 5 (consec bldgs) P
<b>Residential Energy Efficiency</b>	5 to 20+
<b>Wind Energy Project</b>	10
<b>Innovative Demonstration Projects</b>	5 to 20
<b>GREENHOUSE GAS</b>	
<b>Municipal Carbon Footprint</b> (pre-requisite)	15 P
<b>Community Carbon Footprint</b> (pre-requisite)	15
<b>Climate Planning</b>	
Climate Action Plan	10 to 25+
Climate Change Adaptation Element	5
<b>Innovative Demonstration Projects</b>	5 to 20
<b>HEALTH &amp; WELLNESS</b>	
<b>Let's Move</b>	15
<b>Workplace Wellness</b>	
Join Healthiest Maryland Businesses	5
Workplace Wellness Program	5 to 15
<b>Living Well Program</b>	5 per class
<b>Innovative Demonstration Projects</b>	5 to 20
<b>LOCAL ECONOMIES</b>	
<b>Buy Local</b>	
Establish Local Business Directory	10
Promote Local Business Directory	5
Buy Local Campaign	15
Local Business Roundtable	5 per roundtable
Local Business Procurement Notices	10
Economic Analysis of Procurement Practices	15
Local Purchasing Preference Policy	10
<b>Green Business Recognition</b>	
Join Maryland Green Registry	5
Promote Maryland Green Registry	5 points per 2 businesses

ACTION ITEM	POINTS
<b>LOCAL ECONOMIES (CONTINUED)</b>	
Green Business Certification Program	15
<b>Green Purchasing</b>	
Green Purchasing Policy (pre-requisite)	15 P
Evaluate Current Purchasing Practices (pre-requisite)	10
Vendor Preference Statement (pre-requisite)	10
Purchase Recycled Products	10
Purchase Environmentally Preferable Products	10
Implement Waste Reduction Program	10
<b>Innovative Demonstration Projects</b>	5 to 20
<b>NATURAL RESOURCES</b>	
<b>Watershed Stewardship</b>	
Implement Watershed Stewardship/Pollution Prevention Outreach Programs	10
Facilitate Engagement in Existing Watershed Stewardship Opportunities	5 per event
Provide Voluntary Opportunities for Citizen Engagement in Watershed Stewardship	10
Provide Incentives for Watershed Stewardship on Private Lands	15
Create a Watershed Plan	20 P
<b>Stormwater Management</b>	
Stormwater Management Program	15 P
Stormwater Manager/Coordinator	15
Stormwater Fee Structure	20
<b>Septic Management</b>	
Septics System Assessment and Inventory	15
Septics System Management Plan	20
Dedicated Septic System Fund	20
<b>Water Conservation</b>	
Develop a Water Conservation Plan	15
Develop a Water Conservation Outreach Program	10
<b>Tree City USA</b>	15
<b>Pet Waste</b>	
Implement a Pet Waste Program	5
Develop a Pet Waste Program	5
Adopt a Pet Waste Program	5
<b>Innovative Demonstration Projects</b>	5 to 20
<b>PLANNING AND LAND USE</b>	
<b>Participate in DHCD Sustainable Communities Housing and Comprehensive Plan</b>	20
<b>Housing and Comprehensive Plan</b>	10
<b>Land Preservation</b>	
Conduct Outreach that Encourages Inspection, Education, and Stewardship	15
Build Easement Inventory	10
<b>Innovative Demonstration Projects</b>	5 to 20

To learn more visit  
[www.sustainablemaryland.org](http://www.sustainablemaryland.org)



Environmental Finance Center  
[www.efc.umd.edu](http://www.efc.umd.edu)



Please note: Sustainable Maryland Certified actions and points may be subject to change.  
 Printed on 50% recycled & 30% post-consumer waste paper.



A low-angle photograph of a cherry blossom tree in full bloom. The branches are covered in dense, light pink flowers, reaching towards a clear, bright blue sky. The perspective makes the tree appear to be growing upwards from the bottom of the frame.

*Wednesday Webinars on  
Sustainability*

**Wednesday, March 8  
Green Streets in Gaithersburg**

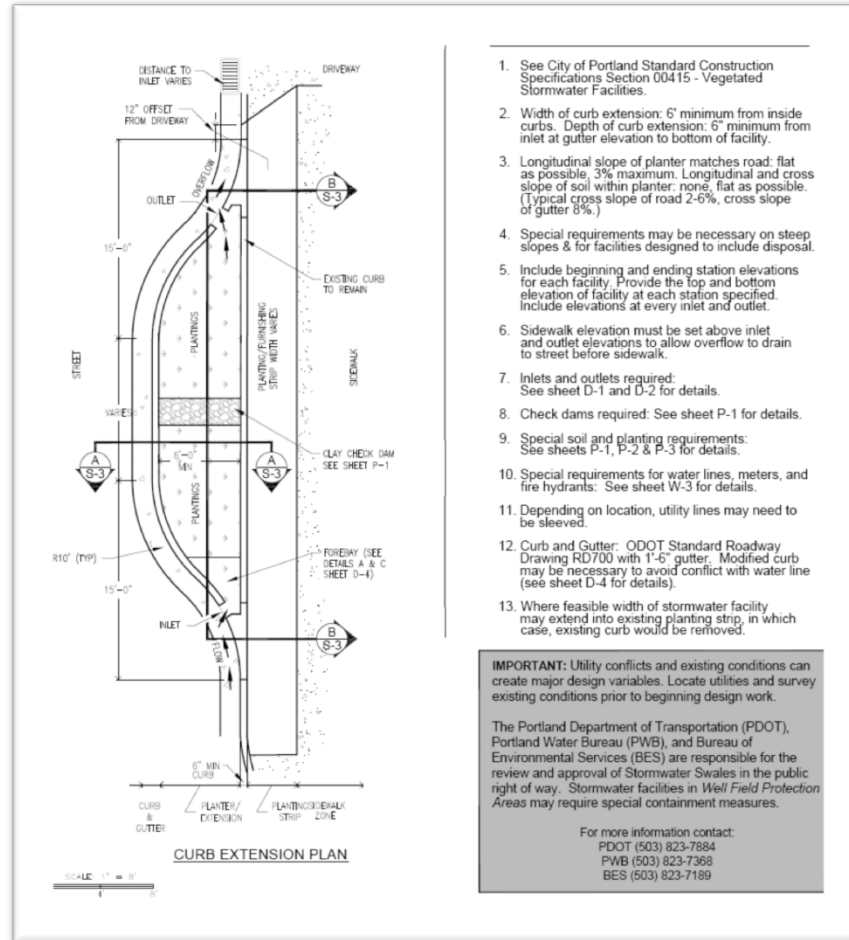
# Agenda

- Background
- Implementation
  - Green Street Assessment
  - Selection Criteria
  - Pilot Project – Rabbitt Road
    - Lessons Learned
    - Summary
- Outreach
  - Publicity
  - Community
- Wrap up and Resources



# Background

- In 2008, the City had an environmental strategic direction (#8) to “implement programs and policies to protect, enhance, and monitor our natural and built environment to support a sustainable quality of life.”
- After reviewing the successful implementation of Green Streets in Portland, Oregon, they were deemed a feasible alternative to traditional Stormwater management practices.



# Why Green Streets?



- Provide for water quality where none exists (i.e. older parts of the City).
- Comply with Stormwater Regulations for Environmental Site Design
- Successfully implemented across the country
- Ease and speed of construction
- Other benefits (watershed health, aesthetics, traffic calming)



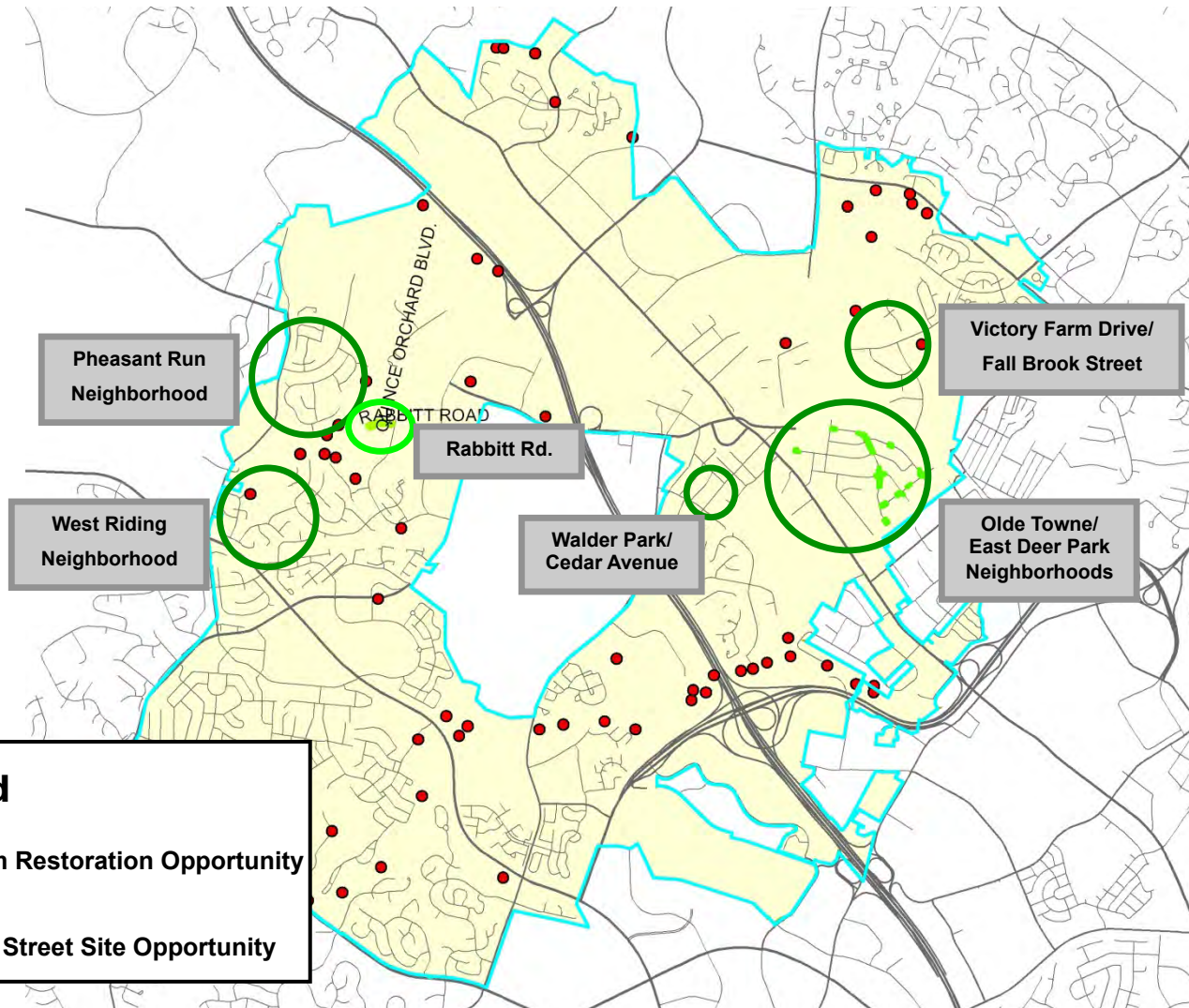
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# Green Streets Assessment



# Green Street Criteria (initial)

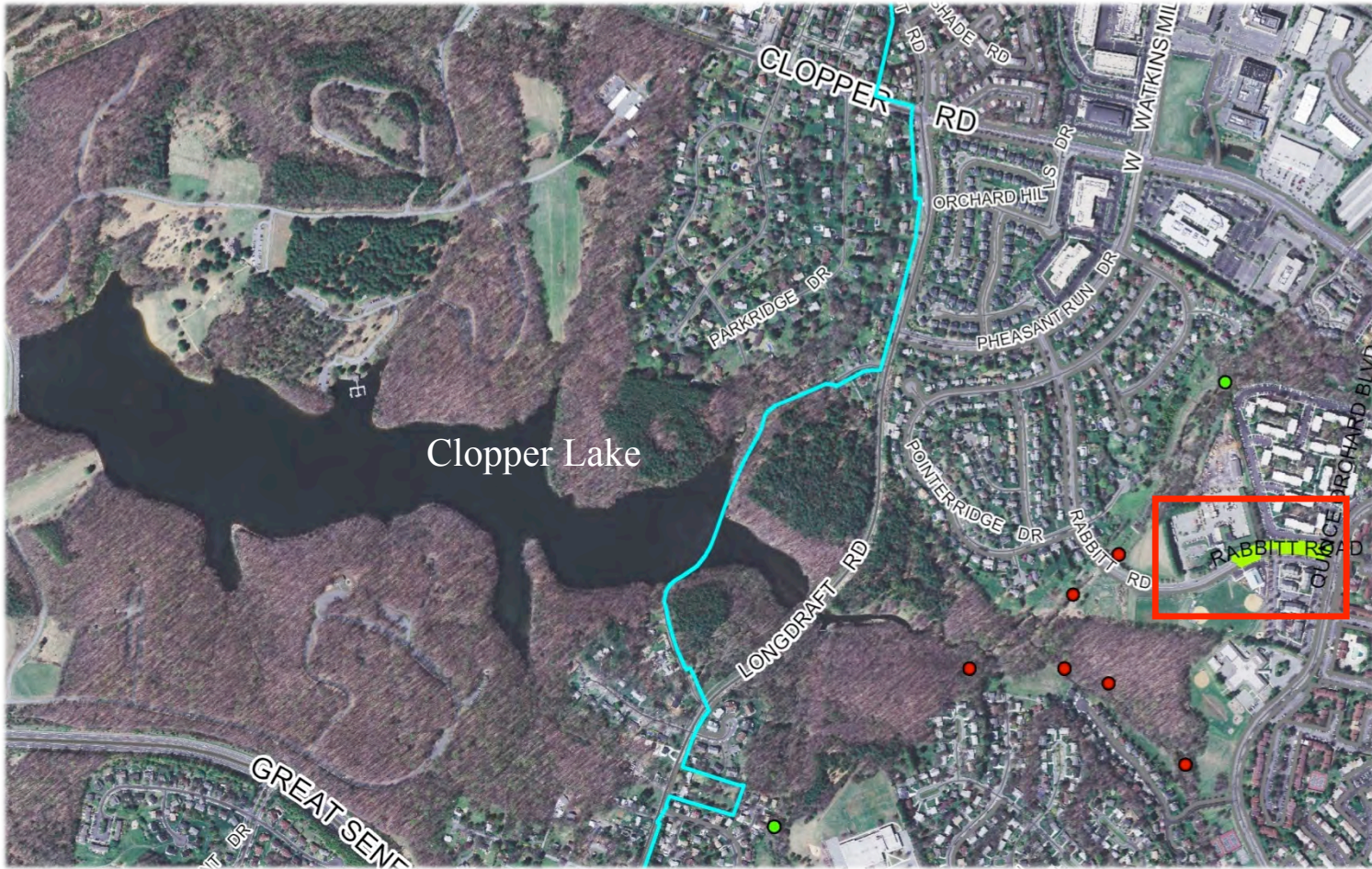
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- Requires street width  $\geq$  **36 feet**
- Requires street slope  $\leq$  **5%**
- Requires continuous curb  $\geq$  **30 feet**
- Preserves necessary on-street parking
- Accommodates neighborhood expectations



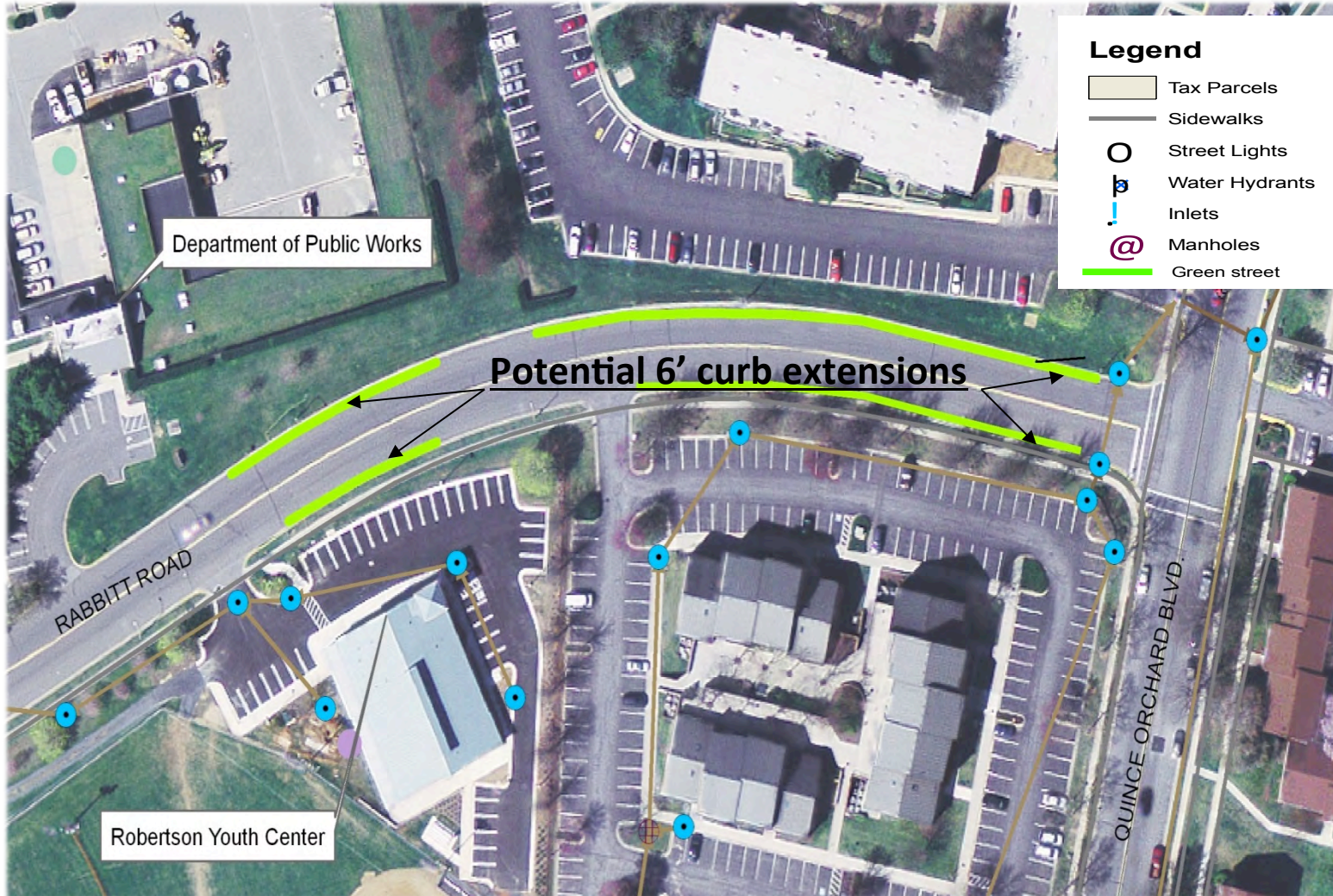
# Proposed Public Green Street Pilot Project

## Rabbitt Road

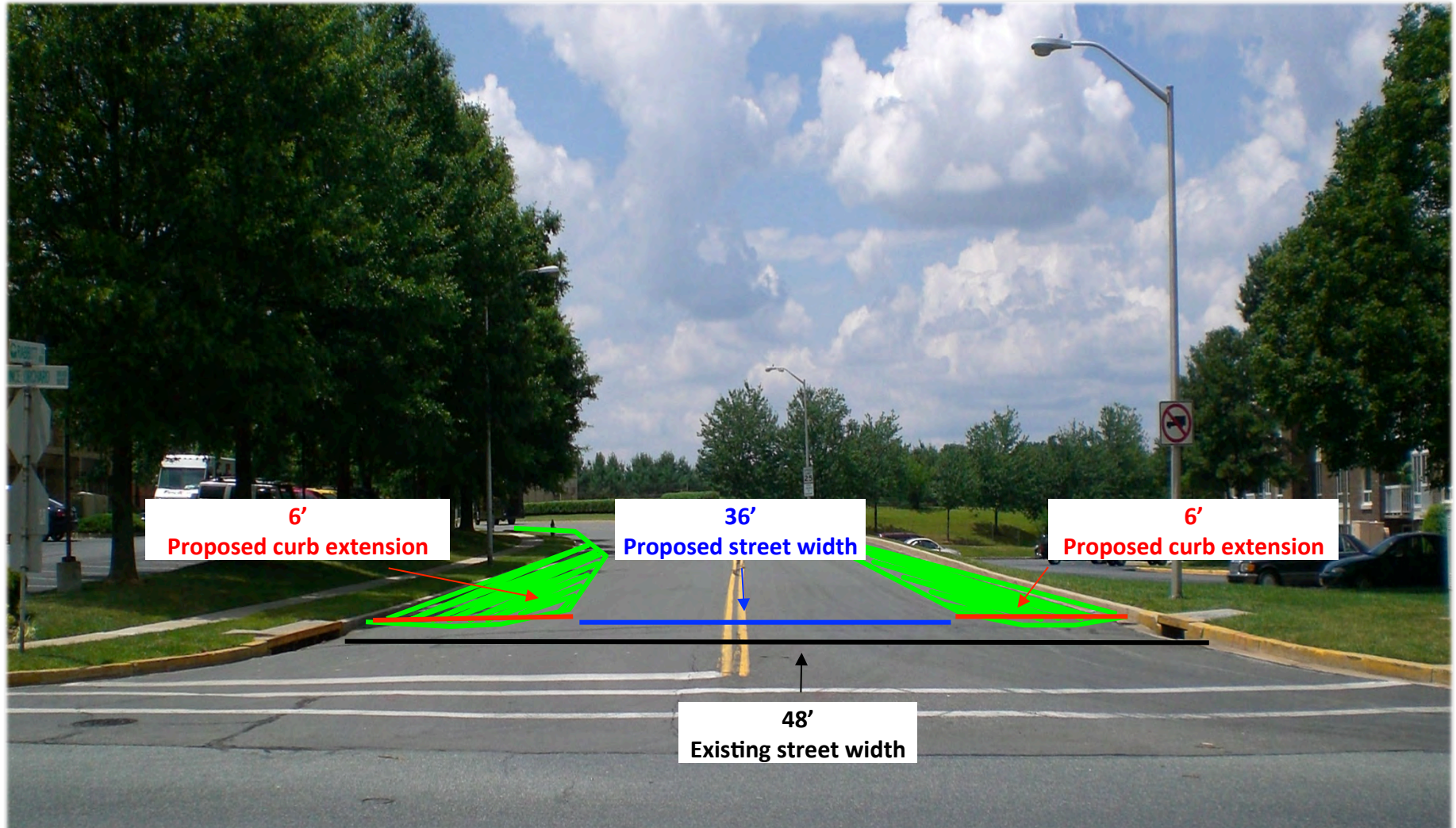


# Proposed Public Green Street Pilot Project

## Rabbitt Road



# Proposed Public Green Street Pilot Project Rabbitt Road – Concept



# Proposed Public Green Street Pilot Project Rabbitt Road – Implementation

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# Proposed Public Green Street Pilot Project Rabbitt Road – Concept

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BEFORE



AFTER

# Proposed Public Green Street Pilot Project Rabbitt Road – Implementation

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# Lessons Learned

You won't get it right the first time!

**FIRST DESIGN**



**SECOND DESIGN**



# Lessons Learned



- Stone and Concrete:
  - Allow for a deeper stone profile
  - Must use larger stone so that it doesn't wash out.
  - Clay weir washes out, use concrete instead.
- Soil and Plantings
  - Spec out "flooding" for topsoil mix placement
  - Stone and mulch placement must immediately follow topsoil mix and clay placement
  - Allow room for shallower slope by existing tree space if there are no utility conflicts
- Engineering:
  - Consider adding enough capacity for upcoming SWM regulations or future development.
  - Detailed design are not always necessary, but have a professional do at least a cursory review.

# Summary

- **Reduced storm flow velocity, provided water quality and other watershed improvements**
- **Landscape enhancements to streetscape.**
- **Street impervious area reduced by almost 2,000 square feet.**
- **Provide traffic calming at an intersection by a pedestrian crosswalk to Brown Station Elementary.**
- **Increase public awareness of low impact development stormwater management techniques**
- **Established new BMP alternative to hard structures that can be constructed quickly**



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# Public Notices – Press Release

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## Gaithersburg Announces New “Green Streets”

**Gaithersburg, MD (October 26, 2012).** The City of Gaithersburg announces the selection of three roads for Green Street construction:

- Victory Farm Drive west of the intersection of Victory Farm Drive and Saybrooke Oaks Boulevard
- Dosh Drive west of the intersection of Dosh Drive and Midline Road
- Cedar Avenue northeast of the intersection of Cedar Avenue and Winnie Place

Gaithersburg’s Green Streets environmental initiative uses a natural approach to manage stormwater flows, improve water quality, reduce urban area heat, recharge groundwater, and enhance watershed health. Through the use of curb extensions, plants, swales and pervious pavings, Green Streets not only handle stormwater on site, they also have the added benefit of reducing runoff, enhancing streetscapes with their native landscaping, and calming traffic by reducing street widths.

An assessment of Gaithersburg’s older neighborhoods that lack stormwater management and meet the Green Street design criteria, conducted by the City’s Environmental Services Division, identified several potential public streets that could utilize this retrofit strategy. The three locations listed above were selected because of their wide road widths and the minimal impact on the surrounding neighborhood.

Construction is anticipated in the spring of 2013. After completion, each project will be thoroughly evaluated for effectiveness; the results will be incorporated in future projects.

Gaithersburg constructed its first Green Street on Rabbitt Road in 2008. A portion of Victory Farm Drive was retrofitted as a Green Street in 2010. For more information please contact the Department of Public Works at 301-258-6370 or visit [www.gaithersburgmd.gov](http://www.gaithersburgmd.gov).

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# Public Notices – Mailings

October 25, 2012

Richard Skobel  
Main Street Property Management  
9 Park Avenue  
Gaithersburg, MD 20877

Subject: Victory Farm Dr. and Saybrooke Oaks Blvd. Green Streets Improvement Project Notification

Dear Resident:

The City of Gaithersburg anticipates construction of a "green street" project on the east side of Victory Farm Dr, at the intersection of Victory Farm Dr. and Saybrooke Oaks Blvd in Spring 2013. The project will combine stormwater facilities with streetscape enhancements within the existing road right-of-way. The goal of this green street demonstration project is to test new stormwater management techniques and to encourage green street strategies in new development, redevelopment, and future City street improvement projects.

As indicated in the photos below, green streets techniques use surface vegetated facilities (such as planters and swales) to slow, treat, and infiltrate stormwater at the source which reduces negative impacts to our streams. Green streets also create attractive streetscapes and introduce park-like elements into neighborhoods. Victory Farm Drive was selected because of the street's large width, gradual slope, drainage and minimal traffic impacts.



Above: Example of a "green street" curb extension constructed on Rabbit Road in Gaithersburg. Rain water flows into the planting area where the plants and soil filter out pollutants.

As an adjacent community, the City wants to notify you of this project. The proposed design would narrow the existing street width by 11 feet; however, this narrowed street would still accommodate two lanes of traffic as well as on-street parking, just not parallel to the new median. The design has proven safe and successful in other cities throughout the country. Additionally, the City will landscape and maintain this green street facility.

If you should have any questions or concerns or wish to schedule a meeting to discuss this project, please feel free to contact me at 301-258-6370.

Sincerely,



Becky Uebele  
Project Manager



# Frequently Asked Questions

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- Mosquitoes
- Standing water
- Safety
- Maintenance



# Maintenance

<b>Task</b>	<b>Frequency</b>
Sediment removal	twice per year
Trash removal	spring/summer
Hand-weeding	spring/summer
Leaf removal	winter/fall
Plant replacement	as necessary
Watering	first two years
Check dam repair	as necessary





# Assessing Effectiveness

- Maintenance
  - Monitor plant health after winter season
  - Check site for trash, damage, or vandalism
- Measure flow through under drains visually or with volumetric weir
- Track public comments



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# Gaithersburg Green Streets Program at a Glance

- 2008 – Rabbitt Road
- 2010 – Victory Farm Drive/Belle Grove Road
- 2011 – City Wide Assessment
- 2013 - Cedar Avenue
- 2013 - Victory Farm Drive/Saybrooke Oaks Boulevard
- 2013 - Dosh Drive
- 2014 – Quince Orchard Boulevard



# Resources and Tools

- [MDE Design Manual](#)
- [Montgomery County Rain Garden manual](#)
- [City of Portland Stormwater Management Manual, 2016](#)
- [Philadelphia Water Green Streets Design Manual](#)



# Questions?

## City of Gaithersburg

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