

Smart City Initiative (SCI@UMD): Update on COVID-19 Related Capstone Class Project Partnerships Between the University of Maryland and Surrounding Communities

Smart Cities Roundtable
December 8, 2020

Overview

Background of the iSchool Capstone Projects

Previous Projects

Current COVID-19 Projects

Short Term Collaboration Opportunities

Long Term Vision

Background and Context of the Current Projects

- 1993-1995 College Park Vision Process/City-Campus Cooperation
- 1997-present College Park City University Partnership
- 2011-present Sustainable Maryland Certified
- 2012-present Good Neighbor Day
- 2014-present Partnership for Action Learning in Sustainability (PALS)
- 2015-present Campus Community Connection
- 2016-present Purple Line Corridor Coalition
- 2016-present Smart Cities Initiative/SCI@UMD
- 2019-present iSchool iConsultancy



University Communities

7 Municipalities and Prince George's County

- Berwyn Heights
- College Park
- Greenbelt
- Hyattsville
- New Carrollton
- Riverdale Park
- University Park
- Prince George's County (e. g. Adelphi/Beltsville/Langley Park/East Riverdale/College Heights Estates)

History of Campus Community Connection

A Historic Context: 1696 (the County);1856 (the Campus); Municipalities: 1886 (Hyattsville), 1896 (Berwyn Heights), 1936 (University Park), 1937 (Greenbelt), 1945 (College Park), 1953 (New Carrollton)

The Development of the Idea – A Vast Campus of 12 Schools

Agriculture and Natural Resources (AGNR)

College of Education (EDUC)

Architecture, Planning, Preservation (ARCH)

Clark School of Engineering (ENGR)

Arts and Humanities (ARHU)

Information Studies (INFO)

Behavioral and Social Sciences (BSOS)

Merrill College of Journalism (JOUR)

Smith School of Business (BUSN)

School of Public Health (SPH)

Computer/Mathematics/Natural Sciences (CMNS)

School of Public Policy (SPP)



Experiential Learning

College Park Scholars

Honors Program

First Year Innovative Research Experience (FIRE)

Academy of Innovation and Entrepreneurship

The Do Good Institute

Partnership for Active Learning In Sustainability (PALS)

Capstone Courses throughout the University



Other University Interests



Applied Research



Civic Engagement



Competitive Grants to Fund Research



Service-Learning Opportunities



Making the University of Maryland's surrounding community a great college town/urban university.



More faculty and staff living closer to campus



Reducing the carbon footprint of the campus

Previous Capstone Projects

- 2016-2017 1 project - First HCIM Capstone – Sustainability App prototype
- 2017-2018 3 projects –Follow-up HCIM Capstone – Sustainability Dashboard; Smith School and ESSIC Capstones on Wells Run
- 2018-2019 4 projects ENSP Capstones in Hyattsville, Riverdale Park, New Carrollton; MIM/PALs in PGCO
- Spring 2019 – 7 projects Greenbelt, H, RP, Berwyn Heights, Prince George’s County, College Park
- Fall 2019 – 5 projects in New Carrollton, RP, H, CP
- Spring 2020 (half in person/half on-line) – 9 projects in BH, NC, PGCO; PSLA in NC
- **Total Previous Capstones – 29 projects (24 in iSchool)**

Current Projects

- Greater Riverdale Cares
- University Park Sustainability and Resiliency Dashboard
- College Park Sustainability and Resiliency Dashboard
- College Park Carbon Footprint follow-up
- College Park Black Lives Matter in the University Communities
- Hyattsville Watershed Implementation Plan
- Berwyn Heights Flood Risk Assessment
- New Carrollton Educational Training
- Greenbelt Story Mapping

Berwyn Heights Flood Risk Assessment



Team: Alexander Dao, Tsun Lai, Ayesha
Raza, Sihui Feng, Christian Flores





Deliverables:

- **Deliverable:**

- Final Report
- Presentation
- User Manual

- **Walkthrough:**

- <https://floodfactor.com/city/berwyn-heights-maryland/2406925> fsid

Black Lives Matter in College Park and Surrounding Communities Charter

Taylor Green, Afnan Abdella, Melissa Lima,
Shelby Watman, Samantha Barlage



Final Deliverables

- Final Wireframes
- Draft Wireframes
- Zip File



Carbon Footprint Tracking


For The City of College Park

Alexey Jeffers, Aiden Kovacs, Tanishq Kausik, Ray Domjan, Mahmood Adebayo

Project Deliverables


- Website Prototype
- Wireframes
- Carbon emission formula
- Project report





Final Project Presentation: CP SARD

By: Stephen Payne, Zackary Richards,
Michael Stripling, Joelle Everett, Liuxian Chen



Project Status

Remaining Tasks:

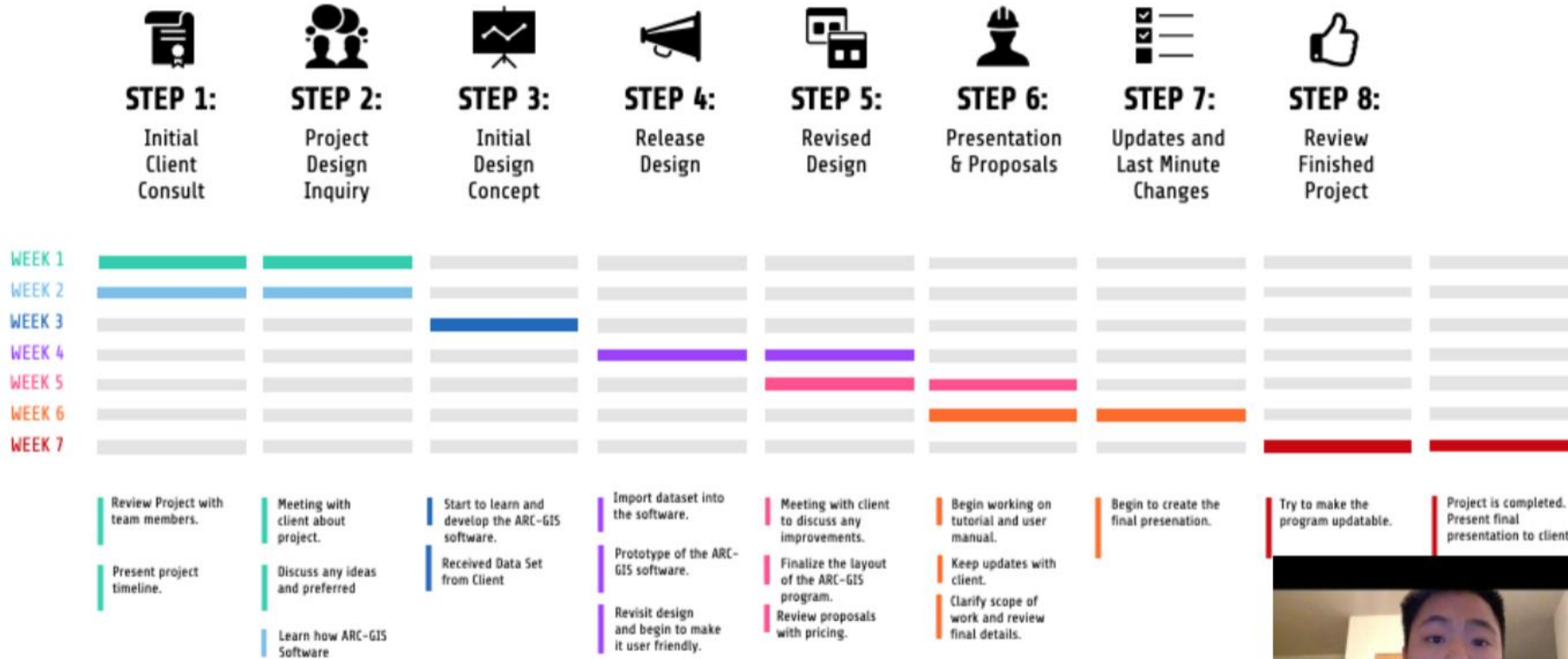
- Data re-formatting
- Adding data sheets to dashboard once formatted
- Touch up visualizations
- Ensure ease of use
- Create user-manual



Greenbelt GIS

Kameil Williams, Gwangjin Cho, Tiger Miao, Nuku Monu, Dennis Ihedioha

Project Deliverables



Hyattsville Watershed Implementation Plan

James Nicol, Haider Abbas, Rahul Bajaj, Alan Cheng, Jessica Tsai

The Final Stretch

- Infographic design
 - Map - James
 - Rainfall Data - Haider
 - Water Conservation - Alan
 - Drinking Water + Water Quality Standards - Rahul
 - Website set-up - Jessica



New Carrollton Educational Training

Miranda Shaw, Biniyam Assefa, Daniel Gurley, Jefferson
Montano, Yiyang Wang

Word Tutorial Video

Video Link:

<https://www.youtube.com/embed/Z8A80GR1SAQ?start=245&end=315>

Script Link:

<https://docs.google.com/document/d/1Cup2Jy2oXlIhe5HqxEL5cMPAEzZhfiipDx9AeDld73y0/edit?usp=sharing>

Riverdale Park Cares

Juan Lopez, Carlos Torre, Pong Li,
Richard Ayodele, Teaven Tedros



Project Deliverable

- RP Cares Gmail Account
- RP Cares Wix site
- Google spreadsheets for resident sign-up page.

- 1 UP SARD
- 2 Objective Requirements
- 3 Energy Consumption
- 4 Tree Canopy
- 5 Tree Canopy
- 6 Link to website
- 7 Challenges to Project Status
- 8 Looking Ahead
- 9 Thank you!

UP SARD

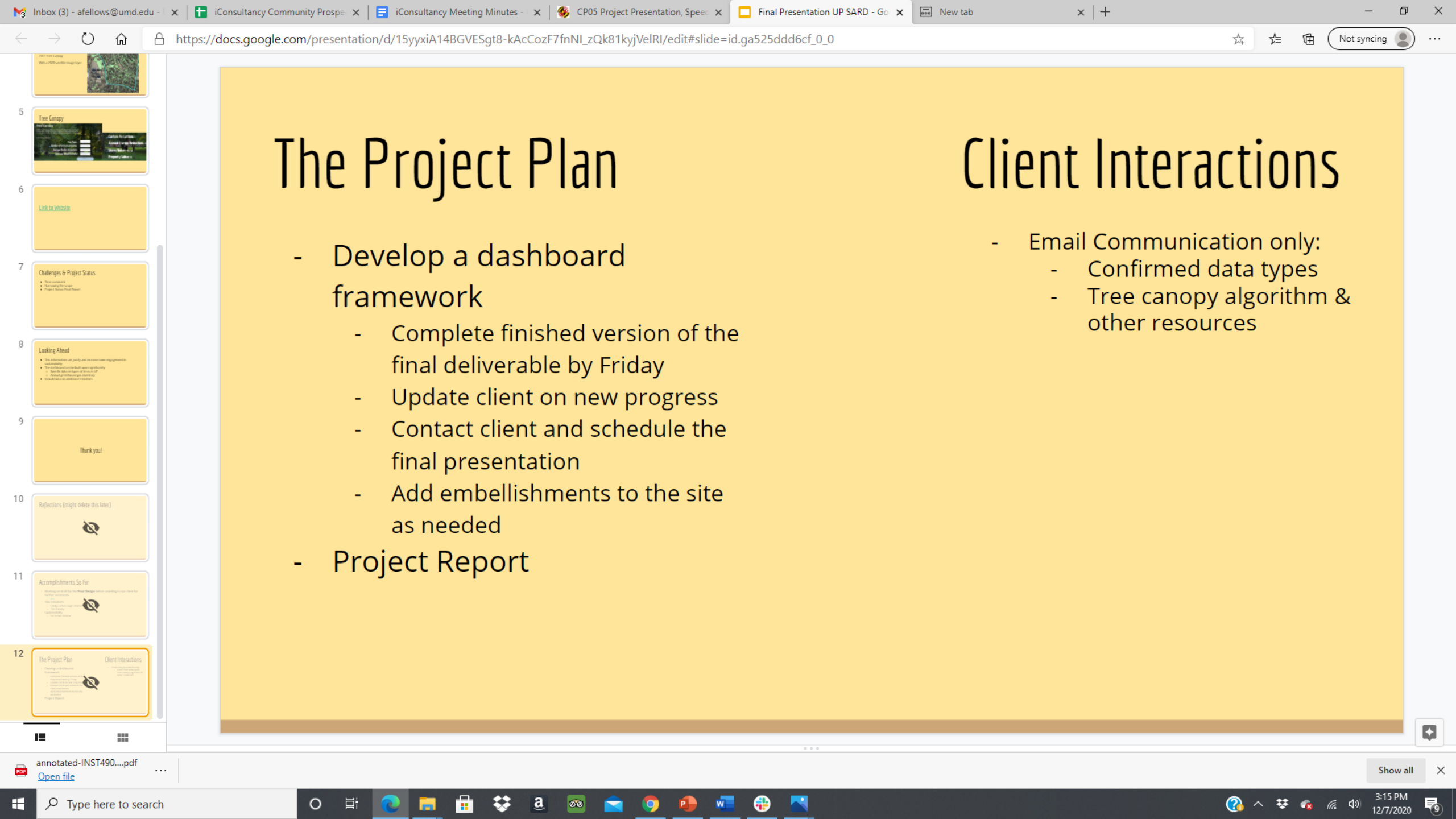
Zainab Sherani, Julio Claros,
Simran Mehra, Abdi Abdullahi,
Mitchell Kalbach

The Project Plan

- Develop a dashboard framework
 - Complete finished version of the final deliverable by Friday
 - Update client on new progress
 - Contact client and schedule the final presentation
 - Add embellishments to the site as needed
- Project Report

Client Interactions

- Email Communication only:
 - Confirmed data types
 - Tree canopy algorithm & other resources





COVID-19 Impacts

- Budget – Revenue drops and reduced staff capacity
- Increased demand in food security/social services
- Housing – potential eviction protection
- Health – COVID itself, access to tests, vaccine and general health care
- Education – digital divide, community engagement, child-care
- Retail – potential rent mitigation, KNEXT, restaurant support
- Jobs – workplace safety, unemployment, lost benefits
- Project online methodology
- Distributed Team Practices

Next Steps: Short Term Collaboration Opportunities

- Up to 20 capstone projects of 60 total iConsultancy Projects in Spring 2021
- Grants - Demand Response proposal, Dr. Srebic's continuing work with College Park, KNEXT work with Prince George's County Memorial Libraries in support of small businesses, Campus Community Connection/Sustainability Fund
- PALS, Purple Line Corridor Coalition, Sustainable Maryland, CPCUP, GND/Office of Community Engagement, Greater Riverdale Cares/Route One Community Cares, and SCI@UMD




Long Term Vision

Six Categories of Sustainability and Resiliency related to COVID-19

- A) Budget Recovery – return of capacity
- B) Health – building national model of integrative health equity
- C) Climate Crisis Action, Adaptation and Mitigation
- D) Place-making of a Great University Community
- E) Justice, Civic Engagement and Strengthening Democracy
- F) Applied research and a culture of community collaboration to deploy cutting edge technology to improve our communities.



Questions or Comments?



Andrew M. Fellows, Faculty Research
Specialist (he/him/his)

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College of Information Studies (iSchool)
Campus Community Connection
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Smart Growth

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Addendum



The following slides describe the ten projects developed by the Town of Berwyn Heights for long-term collaboration with the University of Maryland.



They are just an example of the eighty projects developed by seven municipalities and Prince George's County with the University of Maryland.

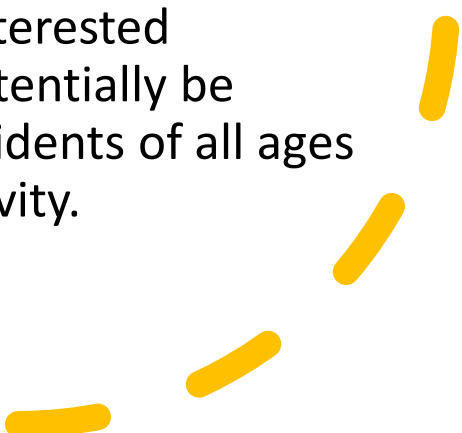
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Berwyn Heights Ten Projects in two areas

Area A - Community Engagement

The Town of Berwyn Heights developed its first Strategic Plan in 2016, with one of the action items to increase the Town's engagement and outreach with its residents and businesses. The Town is fortunate to have tremendous diversity in terms and age and race. As of the 2010 U.S. Census, the median resident age is 34.9, with 35% of the population over the age of 45. 56% of the population is White, 27% is Hispanic, 15% is African American, 8% is Asian, and 14% identified as two or more races.

The Town maintains an updated website and social media presence, mailing a monthly 28-page newsletter to every household and business. The following three projects can be taken separately by students, faculty or other interested University groups or individuals, but also can potentially be combined to develop leadership and engage residents of all ages and races to enhance the community's connectivity.

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Improved Berwyn Heights Residential Engagement

- 1) The Town of Berwyn Heights and the University of Maryland will explore strategies and innovative ideas to improve effective engagement of the **residents** of Berwyn Heights, using appropriate communications tools.

Metrics can be developed to measure current rate of engagement and set short term and longer-term goals. The effort will seek to improve residential awareness of Town events or initiatives.



Improved Berwyn Heights Business Engagement

- 2) The Town of Berwyn Heights and the University of Maryland will explore strategies and innovative ideas to improve effective engagement of the **businesses** of Berwyn Heights, using appropriate communications tools.

Metrics can be developed to measure current rate of engagement and set short term and longer-term goals. The effort will seek to improve commercial awareness of Town events or initiatives.



Increased Volunteerism in Berwyn Heights

3) One measure of increased engagement is **volunteerism**, but this project can be undertaken as a separate collaboration, and/or related to the Sustainability efforts listed below. Developing the goals can be done in conjunction with, or separate, from other goals. With any of the Town's active clubs and organizations such as a Senior Center, Boys & Girls Club, Recreation Council, Green Team, and Historical Committee, the goal will be to expand the volunteer base to a larger pool of residents.

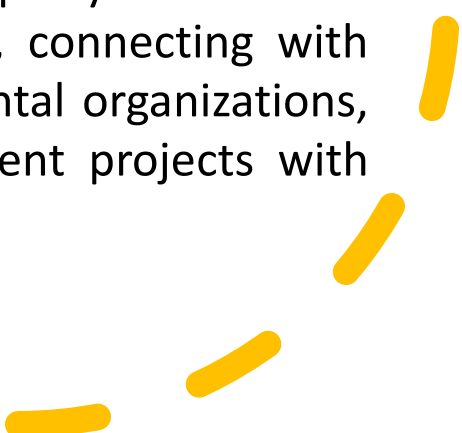
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Berwyn Heights Ten Projects in two areas

Area B) Municipal Sustainability Implementation Efforts

The Town of Berwyn Heights has received designation as a “Sustainable Maryland Certified” community from the University of Maryland for several years. The Town approaches sustainability in a broad-based sense to include environment, economy, transportation, housing, quality of life, and land use. Previous efforts have resulted in a well-developed list of sustainability strategies; the next step is to find ways to implement the sustainability efforts.


On each of the following goals, collaborative exploration can include an assessment of funding needed to achieve the objectives, financing strategies, working with private property owners to demonstrate the value of sustainability projects, connecting with existing regional partnerships and non-governmental organizations, and coordinating with the Community Engagement projects with Berwyn Heights residents and businesses.

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Towards Zero Waste

4) Through improved recycling and the exploration of a regional food waste collection, the Town of Berwyn Heights and the University of Maryland will seek to implement an increase of the Town's waste diversion rate by reducing the percentage of refuse sent to a landfill.



An assessment of the current diversion rate, and appropriate goals, will be conducted with the Town's Green Team.

Reduced Flooding

5) The current flood experience and risk in Berwyn Heights will likely increase without action. Mitigating of flooding can be achieved by residential and business actions on their properties; a more comprehensive water management strategy might be developed to reduce the quantity and intensity of flood events.

If not comprehensive, at least an exploration of efforts aimed at the hardest hit areas of town could be examined.

Protection and Restoration of Indian Creek

6) As its part of the cleanup of the Anacostia and Potomac Rivers and the Chesapeake Bay, the Town of Berwyn Heights seeks to reduce polluted water run-off and improving water quality in local tributaries. Almost all of Berwyn Heights is in the Indian Creek Watershed, and the stream flows as an attractive western edge of the community.

Stream and community clean-ups will decrease litter in Indian Creek and help meet the Trash Total Maximum Daily Load (TMDL) limit set by the State of Maryland for the Anacostia. This project is best combined with the previous goal of reducing flooding, but the two projects can be undertaken separately.

Historic Homes Preservation



7) The Town of Berwyn Heights has historic homes in its community, and efforts to enhance their preservation can be explored, perhaps led by faculty and students in the School of Architecture, Planning, and Preservation.



Removing Invasive Species

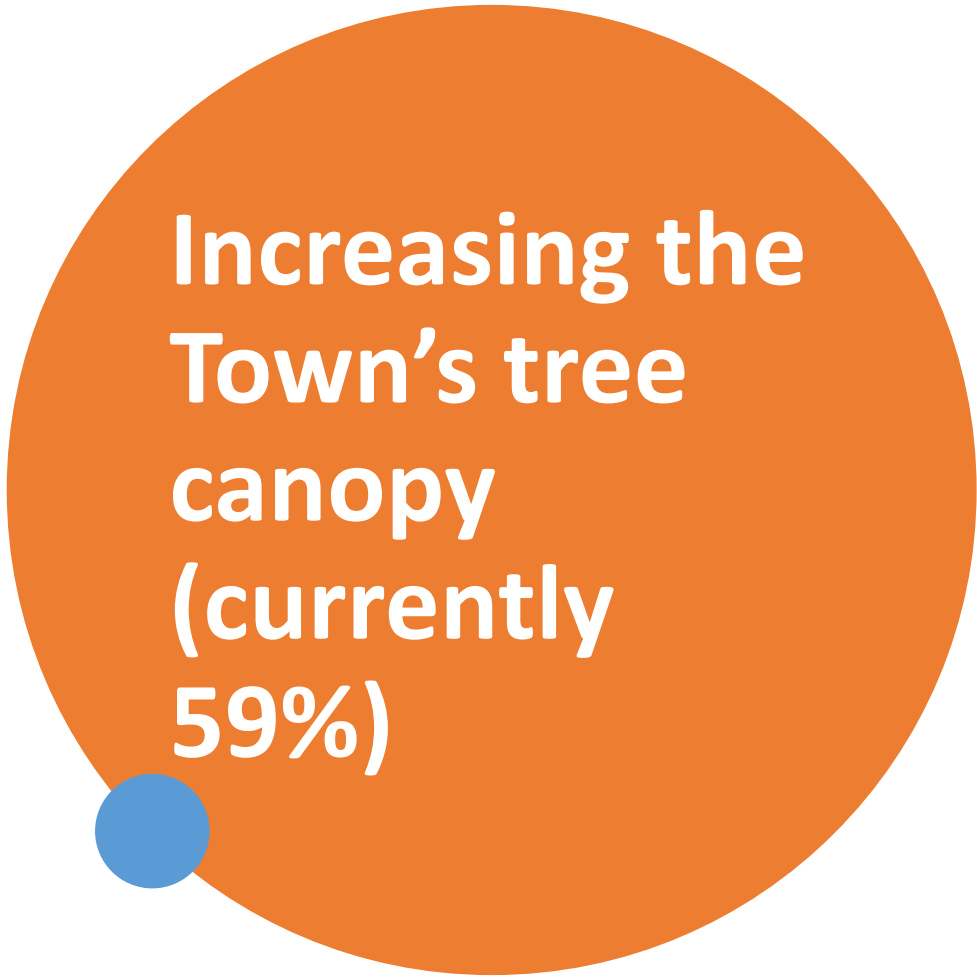
8) As part of the Town's landscape management that accompanies its flood protection and Indian Creek stewardship, removal of invasive species will help native plants and animals survive and thrive, assisting in biohabitat.

Invasive species removal is labor-intensive but can be part of good volunteer recruitment.

***Collaborating with
Berwyn Heights
Elementary School
and Green Team on
Enhancing
Environmental
Literacy***

9) Developing thriving public schools is a goal for every community, and the Town of Berwyn Heights has a centrally located elementary school that can serve as an engagement tool for volunteer recruitment, leadership development, improved academic performance and engagement of the students' families.

The University and the Town will seek ways to collaborate with Prince George's County Public Schools to maximize opportunities to achieve collaborative goals with the community's public school.



**Increasing the
Town's tree
canopy
(currently
59%)**

10) The Town is a well-arbored community but has suffered tree loss through recent storms and PEPCO tree management efforts to reduce future power outages. The University and Town can look at what an appropriate goal for tree canopy might be and develop a plan to reach that goal using an appropriate variety of tree species.

Additional Collaboration

