Project Summaries 2014 / 2015

PALS
Partnership for Action Learning in Sustainability
Part of the National Center for Smart Growth @ University of Maryland - College Park

University-wide focus on advancing environmental, economic and social sustainability in Maryland communities

FREDERICK
Introduction

The following pages offer a snapshot of coursework completed during the 2014-2015 academic year of the University of Maryland (UMD) Partnership for Action Learning in Sustainability (PALS) program in Frederick, Maryland. This summary, and an online version, comprises work derived from 25 courses, covering a breadth of challenges and topics identified by the City in their efforts to create a more sustainable community.

The reports summarized here are organized into three categories—Community Development, Economy, and Environment—which represent the three-legged stool of sustainability. In some courses, several teams addressed the same topic and all the reports are included since they present different analyses and perspectives that may be useful to Frederick’s efforts. Each report summary identifies the course number and name and email of the faculty member who taught the course.

The coursework was completed over two semesters and an entire summer urban planning studio was devoted to synthesizing much of the work completed to date by enhancing the City’s Sustainability Plan. The University is extremely grateful to The City of Frederick for their assistance, feedback and enthusiasm during our inaugural year of PALS. We could not have asked for a better team with whom to launch this pilot program. The City’s staff, in particular Joe Adkins, Matt Davis and Jenny Willoughby, spent many hours working with us, faculty and students to nurture and support the fine work produced. We thank the Mayor, Board and staff of the City for their outstanding support and cooperation.

The success of the PALS program would not be possible without the support of the University. We particularly thank Provost Mary Ann Rankin and Dean of the School of Architecture, Planning and Preservation, David Cronrath.

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Community Development

HISP655 Class Project – Abby Tesfaye, Fall 2014
Don Linebaugh  dwline@umd.edu

The City of Frederick – An Architectural Tour Guide
This project explored presentation of a city's architectural resources and history by examining a variety of online and hard copy precedents in five other communities. This research informed the project’s full-color, fold-out brochure that guides visitors through the architecture of downtown Frederick. The brochure explores the City’s building stock in historical context, pointing out architectural details and the community’s civic, economic, and cultural life. The 20 featured buildings date primarily to the mid- and early-19th century, but range from a 1785 stone farmhouse to a 1936 Art Deco commercial building. The brochure includes photos, a keyed map, and websites and book references for further information.

ARCH700 Advanced Urban Design Studio VII, Fall 2014
Matthew Bell  mattbell@umd.edu

Six New Neighborhoods and Carroll Creek
This studio examined how neighborhoods east and west of the downtown and located close to the creek could become part of a “greater Carroll Creek,” and reconceived to benefit from proximity to the creek, Baker Park and the historic city center through the following design interventions.

West Side
Baker Heights: This new neighborhood proposes West Patrick Street as a new western gateway into the City by replacing two aging shopping centers and a variety of automobile-oriented businesses with pedestrian focused streets and blocks and a park network.
Jefferson Circle: Like Baker Heights, this intervention defines a gateway on the City’s western side, in this case along Jefferson Street at Catoctin Avenue. The proposal reorganizes an outdated retail center next to McCurdy Field into a mixed-use set of stores, residential development and public places.
Creek View: This intervention addresses the “back-door” aspects of Carroll Creek in the downtown around Mullinix Park by inserting new development that “fronts” onto the creek.

East Side
Frederick Fields: On the east side, Frederick Fields brings a new neighborhood to the area bounded by Carroll Creek, East Street and Church Street. Public spaces connect directly to the green space of Carroll Creek Park and the corner of East Patrick Street is identified as an important node for a public or iconic building.
South Creek: Many of the existing light industrial businesses, such as McCutcheons, located on the City’s east side, lend a unique character to the downtown. This intervention improves connections to Carroll Creek, introduces new retail and residential adjacent to the creek and historic industrial businesses, and proposes maintaining the industrial/agricultural character of the neighborhood.
**Fairview Park:** The Frederick Fairgrounds is not well connected to other existing assets. This intervention proposes to link the fairgrounds to Carroll Creek Park via a series of small streets and open spaces, and new residential development on the eastern side of the fairgrounds itself.

Master of Landscape Architecture Design Studio III, Fall 2014
Christopher Ellis  cdellis@umd.net

**Carroll Creek Wildlife Recreation Area (Shared Use Path Study)**
The design team prepared a detailed site analysis of the Carroll Creek floodplain between Highland Street and the Monocacy River then developed a conceptual design for a shared use (bicycle and pedestrian) path that would connect existing infrastructure through upcoming development in East Frederick to the future Monocacy River Trail. The Team’s research, design, and review led them to four general recommendations, supported by detailed plans and images.

- Implement a **shared use path trail network** to connect planned and existing communities and to encourage non-motorized transportation across the City.
- Create a **high quality recreational open space** that respects the floodplain’s inherent conditions and helps increase property values, provides recreational areas, and establishes an identity for East Frederick.
- **Treat stormwater** entering the floodplain by improving the function of floodplain hydrology and habitat and by incorporating green stormwater designs.
- **Restore the floodplain’s ecology** to restore and create new habitat communities, while fulfilling recreational activities through a shared use path system.

Recommended areas for future study may include bicyclist and pedestrian counts at key locations to guide bicycle and pedestrian policy within the City, a thorough assessment of the public transportation system, and a review of neighborhood zoning to determine whether it creates a desirable and functional land use pattern.

URSP688L Recent Developments in Urban Studies: Planning Technologies, Fall 2014
Chao Liu  liuchao1112@gmail.com

*Four reports were completed for this course that used GIS technology to map data to help illuminate social and physical relationships in the City.*

**Neighborhood Locations and Amenities**
This report presents exploratory research examining the relationship between neighborhood boundaries and amenity location/accessibility in the City of Frederick. The data is a combination of maps depicting neighborhoods based on distance to amenities and surveys to understand which amenities draw locally and which draw regionally. This research provides a framework for addressing the amenity accessibility of neighborhoods.
PALS: Neighborhood Identification, City of Frederick, Maryland
This study focused on different planning methods that can develop and improve a neighborhood identification system in The City of Frederick to address questions of changing demographics. The study uses data from the US Census and a site visit to answer three questions:
• how has the City of Frederick changed from 2000 to 2010?
• how to create a neighborhood identification system for the City?
• how do people perceive their neighborhoods?
The report finds that GIS mapping, online surveys, and social media such as Twitter and Facebook offer multiple layers of information and can be used as tools to create a neighborhood identification system but analysis should be based on both quantitative and qualitative data.

A Comparison of the Accessibility of Three Neighborhoods’ Institutions and Amenities in Frederick, MD
This report studied the institutions and amenities in three City of Frederick neighborhoods: Downtown Frederick, the area to the immediate south and west of Downtown Frederick, and the area west of the Frederick Bypass anchored by the Golden Mile and US-40.

The locations of institutions such as schools, banks, churches and parks, and amenities such as groceries, and retail service areas were used to determine the boundaries of the neighborhoods. The mapping analysis also used differences in building age and physical barriers to refine neighborhood borders. This data was paired with the neighborhoods’ demographic characteristics—age, income, race, and household size. Further data came from an in-person survey that explored how often respondents visited amenities and institutions and what form of transportation they used to reach them. Respondents indicated that:
• convenience stores were the type of service they used the most often
• most trips to such destinations were less than five miles
• the mode of transportation depended on the destination
• many respondents support bike lanes, traffic abatement, and crosswalks.

The results lead to the following recommendations:
• add bike lanes wherever possible
• improve walkability
• implement policies that help establish a grocery store in Downtown Frederick.

Future areas of study may include bicyclist and pedestrian counts at key locations to guide bicycle and pedestrian policy within the City, a thorough assessment of the public transportation system, and a review of neighborhood zoning to determine whether it creates a desirable and functional land use pattern.
Accessibility and Infrastructure in the City of Frederick
This report analyzed pedestrian and bus accessibility within the City of Frederick using three technologies: geospatial analysis, surveys, and cataloging photographs. More specifically, ArcMap mapped the locations of four vulnerable populations: the elderly, renters, minorities, and communities with low vehicle ownership. The locations of these communities were overlaid with a quarter-mile walkshed from Frederick County TransIT bus lines to identify neighborhoods that are both vulnerable and appear to have limited accessibility. The research also catalogued and geocoded existing infrastructure and included a survey of City residents about their attitudes and habits about the bus and walking as a means of transportation. The report finds that bus accessibility and usage is low, while the City excels in walking infrastructure and accessibility.

URSP688Z Planning and Design in the Multicultural Metropolis, Fall 2014
Willow Lung-Amam lungamam@umd.edu

The Golden Mile: Outreach and Engagement to Immigrant and Minority-Owned Businesses
With information gathered in a literature search, from previous reports, a door-to-door business survey, and interviews with community leaders, this report described the needs of minority and immigrant-owned businesses along The Golden Mile and recommends ways to prepare them for the City’s redevelopment plans. All stakeholders share the goal of creating The Golden Mile corridor as a vibrant commercial and cultural destination.

To reach this goal, planning and future outreach should address:
• a communication gap between the businesses and the City
• fully representing minorities in The Golden Mile Alliance
• using community-based organizations as intermediaries between the City and businesses
• retaining and expanding immigrant-owned small businesses
• redevelopment that benefits all businesses, including immigrant and minority owners
• a humanized urban design plan that connects businesses and creates a safe pedestrian and vehicle roadway.

The continuation of this topic by the same faculty member in the spring semester explored some of these items.
Towards a Shared Vision for the Golden Mile
The Golden Mile, once a thriving retail hub anchored by the Frederick Towne Mall, has lost key retail establishments in recent years. The City has since looked for ways to revitalize the Golden Mile and encourage capital reinvestment. In the fall 2015 semester, a graduate level urban planning program class assessed the needs of the business community in the Golden Mile. As a continuation of their work, the spring 2015 students held a community forum, open to the public, which brought together City officials, civic leaders and community members. Research, combined with information from the community forum, shaped recommendations and goals for further outreach strategies to the Golden Mile’s business community, including building trust between City officials and Golden Mile community members, developing a community outreach and partnership strategy, and creating a stronger sense of place.

Re-Imagining North East Street
Graduate students in Landscape Architecture studied East Frederick’s North East Street corridor, an area of mixed commercial, residential, and industrial uses next to the historic city center. The corridor is a prime candidate for redevelopment to accommodate a growing population. The two-phase study identified the area’s cultural and natural resources as well as problems posed by existing conditions and anticipated redevelopment. The study assessed strategies for increasing the built environment’s density while improving ecological and transportation connections throughout East Frederick and into the city center. The study process recognized the scope and character of business opportunities, identified a number of key sites along the corridor and introduced alternative residential development scenarios, recommended civic park, open space and street improvements that encourage walking and bicycling for healthy, active lives. The urban design proposal emphasizes resource management, spatial organization, and urban landscape character.
The following four reports result from a collaborative studio of graduate Architecture and Real Estate Development students.

**East Frederick Monocacy Boulevard City-Owned Property Development**
In this project, students worked with staff and community stakeholders to shape a development plan for the vacant 32-acre Monocacy Boulevard site in Frederick, Maryland. Through research and community workshops ARCH 407 explored relationships between cultural, social, and ecological systems in the built environment. The final product was three schematic design proposals and supporting market analysis executed by three Real Estate Development students in collaboration with this studio.

**URSP688i Capstone Seminar in Real Estate Development, Spring 2015**
Margaret McFarland mmcf@umd.edu

**The Shoppes at Frederick Landing**
This report proposes a 155,000-square foot retail neighborhood center on a 32-acre site adjacent to the Frederick Municipal Airport. The development will work in partnership with a mix of commercial uses including retail, office, and light industrial. The proposal examines risks, including the site’s location in a floodplain, its isolation, and lack of public transit access. The proposal also identifies key opportunities, including the 1,500 residential units in the redevelopment of the nearby Renn and Nicodemus sites and proposed new public transportation routes connecting to downtown Frederick, Baltimore, and Washington, D.C.

**Keystone Business Development Center**
In response to the City’s goal to stimulate local job creation, this report proposes a business center that can accommodate both lightly capitalized tenants and larger businesses seeking short-term project space or a telecommuting center to retain valued Frederick employees. The Center is envisioned as part of an attractive, master-planned retail and employment area, and will be a prototype for how technology and new media entrepreneurs establish professional networks and grow their businesses. East Frederick will benefit from substantial real estate investment, smart growth development, improved local transit, and a compact design complementing the adjacent downtown.

**The Concourse Commercial Center**
This report proposes developing a mixed-used project in the East Frederick Rising area, near the city-owned airport along Monocacy Boulevard. Consistent with area zoning and land uses, the project envisions flexible office and light-industrial space targeted to the life sciences, health, and technology industry sectors for users seeking modern facilities near the airport and interstate system.
East Frederick's Industrial Land Study
This study, developed by the Urban Planning program, complements the market analysis studies described above and evaluates the implications of converting industrial areas in East Frederick and south of Patrick Street to mixed use in response to City concerns over the potential loss of industrially designated lands. Analysis of Costar data on industrial buildings indicated that East Frederick’s industrial buildings have higher vacancy rates and lower rents than the City average, and that industrial land south of Patrick Street is underused. A demographic analysis showed that the North East Street corridor has both high residential and job density, indicating a trend toward mixed use. Areas south of Patrick Street have low/moderate job density and up to 2,500 jobs might be affected by industrial redevelopment. New mixed use should include sufficient commercial uses to make up the difference in jobs. This study supports the redevelopment of the industrial land in this area into mixed use, which could be potential for an innovation district and suitable for startups.
The following two reports are by two different teams for the same site in the same course.

**57 Creekside, A Luxury Apartment & Retail Community**

This report summarizes the potential of a mixed-use luxury rental and retail project on a 0.39-acre site abutting Carroll Creek Linear Park. It suggests that the original site, offered in a City RFP in 2009 is too small to develop profitability and that the best option would be to acquire nine surrounding lots, creating a 1.74-acre site in partnership with the City. The project would include new construction and renovation of historic buildings, bringing a new and desired product to the Frederick market and supporting the City’s goals for downtown redevelopment. The study includes an in-depth market study, planning and policy evaluation, design review, construction schedule and planning, financial evaluation, and a marketing plan.

**Hotel 162 at the Creek and Artist Studios**

This report describes the leasing, financing, and design plan that implements adaptive reuse and design to convert the original 0.39-acre site offered in the City’s 2009 RFP along with adjacent properties into an art-centric 120 key hotel with a restaurant, local food market and rentable studio spaces that meet Frederick’s goals for downtown redevelopment. The project would use some existing historic structures to create the critical mass necessary for a destination along the Park, while locating a majority of the mass behind the existing buildings on East All Saints Street, accommodating a large structure while maintaining the rhythm of the historic streetfront. Research indicates that even using conservative assumptions, the proposed project is financially viable and will complement the planned Marriott hotel.
The following six reports describe the work of six teams in the same course: four teams worked on the conference center and two on the airport.

City of Frederick Hotel & Conference Center Proposal
In its proposal to build a Marriott hotel and conference center on the Carroll Creek Promenade, the City seeks to maximize the facility’s economic impact by driving activity to the conference center and surrounding local businesses. To that end, the City’s Office of Economic Development should act as a highly engaged liaison between the conference center, local businesses, and potential conference attendees to optimize the economic impact. A two-phase approach to integrate the new hotel-conference center into the community should begin with the development, expansion and deployment of the “Fred” Carpet Treatment—partnerships with local businesses for support, supplemental accommodations and after-hours entertainment. Phase two is a long-term marketing plan that engages the center’s management, local business owners, and present and future conference attendees to create a sustainable business ecosystem.

City of Frederick Downtown Hotel and Conference Center, Demand Analysis
The City is pursuing necessary approvals to build a Marriott hotel and attached conference center but faces competition locally and across the State from similar facilities. The City must leverage its existing strengths and position the DHCC to be an economic engine for the City by forging connections with key nonprofits and regional organizations as well as meeting planners, the gatekeepers of the conference center industry. Second, the pitch to these groups must be about Frederick’s lively downtown, historical sites, and natural beauty to differentiate Frederick from similar conference facilities. And third, the DHCC should make a play for government business in the long-term, particularly nearby Fort Detrick’s leadership in biotechnology.

Analysis of Proposed Hotel and Conference Center in Downtown Frederick, MD
The City of Frederick is interested in assessing the impact of a proposed conference center, particularly the demand for meeting space, and the likely economic impacts of businesses and non-profit organizations using the conference center. This analysis of the trade show and events industry provides additional background as the City and its private partners develop project plans and goals. Two conference centers in similar cities were analyzed to assess likely economic impacts and best practices for marketing strategies. Frederick can be competitive in the educational and biomedical/health science sectors, and should court these groups with traditional and social media marketing tactics that focus on finding customers and building a long-term relationships with them.
Analysis of Proposed Frederick Hotel and Conference Center
In 2009, The City of Frederick and community partners determined that downtown Frederick needed a hotel and conference center. The team accepted the feasibility studies that determined the demand and market for such a facility and a proposal to develop a Marriott branded hotel with 207 rooms and 21,165 square feet of meeting space was accepted. Further analysis reveals that, while the demand and market for this facility exists, the City faces challenges in gaining full usability. This report determines what the City can gain from participation in the center, where it should focus attention to maximize the project’s success, and strategies to overcome challenges and increase opportunities, specifically:
• maximizing the amount of people that attend conferences in the City
• increasing “brand” awareness of the City to encourage people to travel there
• creating opportunities for increased consumer spending in the local economy.

Frederick Municipal Airport Consulting Project
The City of Frederick is interested in exploring ways to increase revenue at Frederick Airport (FDK) through both current operations and future business possibilities, to become the number one corporate executive airport in the Baltimore/Washington area. The City and its operator should explore improved infrastructure, including extended runway length, additional rental hangar space, an airport fence, other uses for airport land, and an extended bus route connecting FDK to existing public transportation. The City and operator should also develop a marketing strategy to enhance the airport’s online presence and market directly to regional businesses, including:
• improved website content
• improved corporate outreach
• name change and consistent branding strategy
• increased presence of FDK staff and advocates at industry conferences.

Frederick Municipal Airport: Expansion & Business Development Strategy
By focusing on increasing the number of customers and leveraging existing space and expertise, Frederick Airport (FDK) has the potential to become a self-sufficient, leading executive airport. The runway extension will increase the number of potential customers, and an improved online presence will attract customers who simply were not aware of FDK. Frederick can also leverage existing space to capture additional revenue by building additional T hangars in order to satisfy the backlog of customers waiting for hangar space to rent.

Additionally, FDK’s community value can be improved by hosting aviation-related events and participating in agritourism with hot air balloon type services. Likewise, the unmanned aerial vehicle industry may allow FDK to provide valuable services as well. It will certainly present safety issues and Frederick should make a concerted effort to stay apprised of the best practices in order to keep air travel at FDK safe.
Environment

CONS 670 Conservation Biology, Fall 2014
Dr. Keryn Gedan  kgedan@umd.edu

In this course, three teams produced three complementary reports addressing the Frederick City Watershed, an important source of the City’s drinking water.

Invasive Species Survey, Frederick City Watershed

Roads and trails often act as vectors for invasive species that are a concern for ecosystem health. This survey of invasive species along transects running perpendicular to the City’s sanctioned and unsanctioned trails asks three questions:

• does invasive species prevalence differ near sanctioned versus unsanctioned trails?
• does invasive species prevalence decrease with increasing distance from trails?
• does invasive species prevalence increase closer to roads?

Results suggest that invasive species cover increases closer to both trails and roads, and that invasive species cover was greater near unsanctioned trails. Based on these results, trails farthest from roads should be closed to prevent the establishment of invasives in more remote areas, while focusing removal efforts along roads and trails closest to roads.

Human Dimensions of the Frederick City Watershed

This report analyzes historical and current recreational user groups and their impact on the Frederick City Watershed to inform management decisions. Interviews with watershed stakeholders provided historical context for land use, forest cover, wetland modification, native species distribution, and management decisions. Surveys of recreational users imparted a better understanding of use and perception. Eight main topics of interest were identified for further discussion: user group demographics, environmental concerns, trail signage, trail conditions, garbage and illegal dumping, invasive species, forest purpose, and safety.

The range of users and issues led to the following recommendations:

• a recreation management plan geared toward the community that would establish and maintain effective, long-term management of the watershed
• volunteer programs that involve diverse user groups and focus on the clean up of garbage, removal of non-native species, development of educational materials and maintenance of trails
• a website with trail information, off limits areas, safety tips, and hunting season information that allows for user feedback
• adding educational signs along sanctioned trails that alert users to the benefits of an intact ecosystem, and provide information about forest species and ecosystems.
The Frederick City Watershed: Forecasting Climate Change Impacts

This report asks how the watershed will be impacted by shifts in climatic variables and by extreme weather events due to climate change. Using climate models for temperature, precipitation, snowfall, runoff, evapotranspiration and wind speed applied to two scenarios, temperatures are predicted to increase significantly across seasons and over the course of the century. Overall, the results showed a significant increase in temperature which would drive seasonal changes in the duration and type of precipitation, evapotranspiration, soil moisture and runoff, which translate to specific implications for the watershed ecosystem, including decreased water quality due to increased stormwater runoff, increased spread of invasive plant species, and increases in plant diseases. To protect drinking water quality, the City should:

- create a watershed water balance model
- establish regional water management and storage strategies
- implement stormwater management techniques
- monitor water quality
- prepare for increased pest outbreaks.

LARC452 Green Infrastructure and Community Greening, Fall 2014
David Myers  dmyers@umd.edu

Algae in Carroll Creek

This report describes green infrastructure and community greening approaches to address the excess algae in Carroll Creek in the City of Frederick. The report begins with an overview of selected watershed reports that pertain to the Carroll Creek Watershed. The proposed solutions to the algae are organized into three categories. First, a case study of the San Antonio Riverwalk provides watershed management lessons for the City of Frederick. Second, a series of approaches are proposed that address the symptoms of the algae problem. These include algaecides, Algal Turf Scrubbers (ATS), Floating Treatment Wetlands (FTW) and Stargrass. Third, a series of approaches are proposed that deal with the root causes of excess nutrients flowing into the Carroll Creek Watershed. These approaches include adoption of Green Street Principles; parking lot designs standards for minimizing runoff; riparian forest buffers; and establishing a Carroll Creek Watershed Advocacy Group, which would be a useful first step in building awareness. The report suggests using multiple approaches to address both the symptoms of the problem and the root causes of excess nutrients in the Carroll Creek Watershed.
National Center for Smart Growth Independent Study, Fall 2014
Fred Ducca  fducca@umd.edu

Widening US Route 15 Through Frederick: Impacts on Traffic and Emissions
This case study evaluates the impacts that adding a travel lane on US Route 15 would have on traffic, congestion and emissions at the County-wide and corridor level. The specific network improvements studied are the addition of a lane to each direction on US Route 15 from South Jefferson Street and US 15/40 (Jefferson Bridge) to I-70 to Monocacy Boulevard. The study shows that for level of service improvement, the lane addition can be beneficial. For congestion reduction, the impact of adding a lane on both directions will be insignificant at the County level, but have substantial benefits at the corridor level. The effect on emissions is minimal. While emissions on Route 15 increase, they are offset by reductions elsewhere in the County.

URSP688R Recent Developments in Urban Studies, Fall 2014
Sean Williamson  srw46@umd.edu

City of Frederick Carbon Footprint and Energy Profile
This report is The City of Frederick’s first inventory of local government operations greenhouse gas (GHG) emissions and covers the year 2013. The detailed calculations of the City’s building, transportation and non-combustion activities found that the City’s energy consumption and carbon footprint are similar to peer communities in the metropolitan Washington, D.C. area. With the data sources, methodology, findings, and recommendations collected or generated as part of this effort, the City is better positioned to continue tracking and managing GHG emissions, energy use, and other resources that will advance sustainability. To that end, the report makes the following recommendations.

- Capture the emissions generated by City-financed personal travel (i.e., air, rail, and reimbursed personal vehicle travel) in future GHG inventories.
- Generate a more accurate estimate of sequestered carbon dioxide with a study of the City’s tree species, soil type, and weather conditions.
- Reconcile the City’s wastewater treatment plant operations with the calculator framework by selecting an alternative calculator or deviating from generalized calculators altogether to conduct a more refined study (e.g., wastewater and urban forest).
- Consider the report’s detailed work plan for conducting a fleet-wide assessment of vehicles and retirement/replacement schedule to significantly improve data quality.
- Supplement the inventory of City-operation emissions with community scale emissions that includes all residential and business property within the City to create a complete picture of the City’s carbon footprint.
CPET240 College Park Scholars: Environment, Technology & Economy Service Learning Practicum, Spring 2015
Mira Azarm mazarm@umd.edu  Nicole Mogul nmogul@umd.edu

**Composting for a Sustainable Frederick**
Undergraduate students pursuing different majors investigated options for a composting program in The City of Frederick. By applying theories and concepts of Sustainability Studies, Design Thinking, and Science and Technology Studies (STS) the students worked with Frederick officials and restaurant owners to find ways to encourage participation in the program, which targeted restaurants in the downtown area. Based on City data, observations of and interviews with restaurant operations, the recommendations included stackable and color-coded recycling bins, work tables that allow for sorting recyclable material, and bumper stickers to raise awareness.

LARC341 Watershed Plan Revision, Spring 2015
Chris Ellis cdellis@umd.edu

**Frederick City Watershed Recreation Plan, Phase I**
The 7,000-acre City of Frederick watershed is an important source of drinking water and is also used by mountain-bikers, equestrians, entomologists, and hunters. But the watershed is not designed to serve the interests of all stakeholders, which has led to conflict and dissatisfaction. This report determined that addressing trails, roadways, parking, and visitor services is the most effective way to protect water quality while also providing environmentally sensitive recreation.

Specifically, poor trail design and maintenance contribute to erosion and this report suggested a trail design that allows for a rich recreational experience while protecting sensitive areas. The watershed’s road system was constructed alongside streams, and run-off pollutants are contaminating Frederick’s water supply. This report’s recommendations include permanent and seasonal road closings to alleviate that damage. The current lack of designated parking spaces forces visitors to park illegally on roadsides and the run-off pollutants contribute to the stream’s deteriorated quality. This report identifies eight parking lot locations. Finally, this report recommends a visitor’s center whereby students, families, and outdoor enthusiasts can learn about the watershed and their effect on it.
URSP705/706 Sustainability Studio, Summer 2015
Jim Cohen jimcohen@umd.edu

Studio Sustainability Plan
This studio report suggested a sustainability plan for The City of Frederick, building on the City’s draft sustainability plan by expanding the current plan elements and drawing on material from other PALS reports. It added material related to economic opportunity and social equity as well as two new plan elements: economic development and housing. The report is designed to be a useful summary of these and other topics by goals and actions, including timing when possible and indentifying relevant agencies and departments.