Growing up just outside of Buffalo, I became familiar early on with the ties between environmental degradation and economic hardship in Western New York. Buffalo’s history of population decline, economic stagnation, and disinvestment in low-income and minority communities has been coupled with heavy industrial pollution and the consumption of productive, natural land. Now, a number of environmental concerns hinder the region’s capacity to grow economically and promote overall well-being. To name a few, sewage overflows are costing the city, contaminated water limits the use of waterfront areas, and the widening range of thermal extremes induced by climate change is placing health and financial burdens on vulnerable community members.

Strategically developed green infrastructure has the capacity to restore natural systems within urban environments and provide economic, recreational, and ecological services to communities. Green spaces improve human and environmental health by mitigating stormwater runoff, capturing air pollution, reducing wind speeds, and minimizing the urban heat island effect. The aesthetic benefits of green spaces also invite housing and commercial investments by raising property values and attracting visitors and businesses. Unfortunately, this region’s history of urban and environmental planning is marked by inequitable placement and removal of green spaces. This process is apparent in destruction of Humboldt Parkway and the burial of Scajaquada Creek. They not only exemplify the historical degradation of natural environments and the services they provide, but also the systemic, inequitable land use practices that have taken valuable public assets away from the East Side of Buffalo and contributed to cycles of disinvestment. As a planner, one must recognize that environmental problems and solutions are not contained within the realm of environmental health – they impact communities’ opportunities for social and economic prosperity.

Through an academic and professional career that has evolved from environmental science to environmental management to urban planning, I have developed an admiration for environmental initiatives, especially those involving strategic green infrastructure planning, that also work towards social and economic well-being. The environmental and economic hardships in Buffalo occurred simultaneously and, through proper planning, can be resolved hand-in-hand. By rectifying environmental damages, Western New York can use its environmental assets to enhance human health, build communities that are resilient
to climate change, and flourish economically through the attraction and retention of businesses. I strive to become an environmental planner to pursue this vision at a level from which I can influence a greater threshold of change in the Western New York community.

My professional growth as an environmental planner has stemmed from a number of significant life experiences. Although I didn’t realize it at the time, the first experience that opened my eyes to environmental and green infrastructure planning took place while studying abroad in Costa Rica. I noticed an ongoing discussion of two particular national accomplishments: the generation of 99% of the country’s energy from renewable sources and the preservation of 30% of the country’s land for national parks. Costa Ricans took pride in their country’s green infrastructure accomplishments and benefitted from the availability of national parks and the ecotourism industry that the parks stimulated across the country. Costa Rica has repeatedly been ranked first on the Happy Planet Index, an indicator that their devotion to environmental sustainability has promoted overall well-being.

After returning from Costa Rica, I traveled to Oregon where I conducted green infrastructure research as a Greater Research Opportunities Fellow for the U.S. Environmental Protection Agency (EPA). While researching the various growing media and vegetation best suited for green roofs, I became familiar with how green infrastructure installments can serve urban communities. Green spaces not only improve human and environmental health, but also create more aesthetically pleasing urban spaces that encourage outdoor socialization and provide an attractive environment for businesses. While these effects are advantageous in any community, they provide the greatest benefits for low-income and minority communities, which are typically the most impacted by air and water pollution, climate change, and insufficient housing. Conversely, low-income and minority communities are the least serviced by the inequitable spatial distribution of parks and other forms of green infrastructure.

This realization of how and which communities benefit from green infrastructure informed my involvement in the Plattsburgh Downtown Revitalization Initiative. The City of Plattsburgh, NY was awarded $10 million to revitalize the downtown area and, as part of a class, I worked with a small group of students to create development scenarios for the waterfront area. Our goal was to improve accessibility, repurpose underutilized space, consolidate conflicting land uses and, ultimately, stimulate economic and social activity in a community that faces a poverty rate of 25%. I focused specifically on the strategic implementation of green infrastructure, which took the form of a public environmental educational center, a sewage overflow prevention system, and a public park. We
presented the scenarios to the Plattsburgh Planning Board and informed the City of specific downtown development opportunities that would attract and retain Plattsburgh residents and visitors.

Since August of 2018, I have been digging my roots deeper in Western New York by actively participating in environmental planning initiatives in Buffalo. I hold a position in the University at Buffalo Community Resilience Lab and am researching the presence of micro-climates within Buffalo, the impacts of extreme heat and cold on city residents, and demographic and geographical factors that make some city residents more vulnerable to thermal extremes. Buffalo has the oldest housing stock in the country, the fourth highest poverty rate of all major U.S. cities, and a history of inequitable land use applications – the combination of these factors make residents especially at risk to severe weather events and the long-term impacts of climate change. For this research, I am managing a city-wide network of indoor and outdoor weather stations and am interviewing city residents to intimately understand who is being impacted by extreme heat and cold and in which ways they are impacted, whether medically, financially, or some other way. As climate change continues to increase the range of thermal extremes, this study will inform local climate resilience planning strategies that identify and build coping capacities with communities that are vulnerable to extreme heat and cold.

For the next year, I will be continuing my research with the Community Resilience Lab, while also engaging with local environmental organizations. Starting this summer, I will be volunteering with the Buffalo Niagara Land Trust, which acquires brownfield sites along waterfront areas, remediates them, and develops them into public green spaces to improve access to waterfront. They are currently remediating and redesigning a brownfield property adjacent to Scajaquada Creek at 1660 Niagara Street. I look forward to participating in this project and helping to identify other local waterfront brownfields for remediation, redevelopment, and return to the public. After graduating, I plan to continue contributing my expertise in environmental planning to the Western New York community in which I was born and raised. Local environmental organizations are taking on an increasingly powerful role in the development of a more environmentally healthy and sustainable region, and I strive to be an influential leader in this movement. Specifically, I aspire to develop informed environmental and green infrastructure plans so that urban green spaces are applied as a multifaceted tool – one that not only addresses environmental concerns, but also simultaneously improves urban conditions, especially for underserved communities who are often the most impacted by the joint challenge of environmental degradation and economic decline.
GRACE E. DE SANTIS

ACADEMIC BACKGROUND
State University of New York at Buffalo (UB)
- Major: Master of Urban Planning
- Specializations: Environmental Planning, Urban Design
8/2018-Present
State University of New York at Plattsburgh
- Majors: B.S. in Environmental Science, Environmental Planning and Management
- Minors: Applied Geographic Information Systems, Spanish
- GPA: 3.82
8/2013-5/2017
La Universidad Veritas
- San Jose, Costa Rica
1/2016-4/2016

ACADEMIC ACHIEVEMENTS
- SUNY Chancellor’s Award for Student Excellence
2/24/2017
- EPA Greater Research Opportunities Fellowship
9/2015-5/2017
- Honors Society of Phi Kappa Phi
4/2015-Present
- SUNY Plattsburgh Presidential Scholar
8/2013-5/2017
- SUNY Plattsburgh Honors Student
8/2013-5/2017

RECENT WORK EXPERIENCE
Research Aide
- SUNY Research Foundation, Buffalo, NY 14214
- Researching Buffalo microclimates and the impacts of thermal extremes on residents.
8/2018-Present
Teaching Assistant
- SUNY at Buffalo, Buffalo, NY 14214
- Assisting with classes in the Environmental Design program (END 120 and END 212).
8/2018-Present
Administrative Coordinator
- Cx Associates, LLC, Burlington, VT 05401
- Assisted engineers with technical and project tasks related to designing energy-efficient buildings, developed marketing materials, and managed office supplies.
10/2017-8/2018
Environmental Technician
- KAS Inc., Plattsburgh, NY 12901
- Conducted air monitoring and project monitoring at asbestos removal sites.
5/2017-9/2017
EPA GRO Intern
- Western Ecology Division, Corvallis, Oregon 97333
- Conducted research on growing media and vegetation best suited for green roofs.
6/2016-8/2016
GIS Research Assistant
- SUNY Research Foundation, Plattsburgh, NY 12901
- Developed maps in ArcMap that displayed flood risk in Clinton and Essex counties.
7/2015-12/2015

INDEPENDENT STUDIES (SUNY PLATTSBURGH)
- Cultural Asset Mapping Project
- Developed a pilot map to display cultural and artistic assets in Northeast NY.
1/2017-5/2017
- World Fuel Services Fellowship
- Developed a business plan for a fuel transportation company to use jet biofuel.
8/2016-5/2017
- Lake Champlain Carbon Flux Research
- Collected water and air samples and analyzed them in the lab for carbon content.
8/2016-5/2017
- Biodiesel Production Project
- Collected waste fryer oil from campus dining halls and converted it into biodiesel.
8/2014-12/2014

VOLUNTEERISM
English Extension Program
- La Universidad Veritas, San Jose, Costa Rica
- Taught a basic English class to a group of native Spanish speakers.
1/2016-3/2016
Field and Lab Assistant for Lyme Disease and Painted Turtle Research
- SUNY Plattsburgh, Plattsburgh, NY 12901
- Participated in a field-based study on painted turtle gender ratios in urban vs. rural areas.
6/2015-8/2015