

The State of Climate Change Resilience Awareness in Grand Rapids

Author Bio

Tai Verbrugge is a Junior studying Accountancy and Sustainability at the University of Notre Dame. He hails from Grand Rapids, Michigan, a city that he hopes to return to upon graduation in order to pursue his CPA and to found a sustainability-minded business.

Abstract

As man-made climate change reaches irreversible levels¹, cities across the nation have begun to prepare for the fallout. This climate resiliency will dictate how well cities can respond to various climate-related disasters, from heat waves to flash floods. Cities such as Grand Rapids have charted plans to mitigate the effects of these changes, but it is unclear as to how much of the Grand Rapids population is aware of these plans. This case study explores the role that formal education plays in disseminating this information and raising awareness, primarily through interviews of local educators at the secondary and collegiate levels. By exploring the systems in place for teaching students about local environmental policy, researchers hope to identify the most effective ways of raising awareness.

Introduction

From a policy standpoint, Grand Rapids appears to be ahead of the national curve when it comes to climate change preparedness. In 2013, then-mayor George Heartwell pledged, alongside 45 other mayors and municipal officials, to “creating more resilient cities, towns, and counties in response to our nation’s growing climate change issues, extreme weather, and energy challenges”. That same year, the Office of Energy and Sustainability partnered with a local environmental organization to prepare a Climate Resiliency Report for the city, supplementing the existing Sustainability Plan. However, these steps lose some of their weight if the public is unaware of their existence and fail to hold city officials accountable to the plans and goals. As a paper from the University of Columbia states, “At the immediate neighborhood level, word of mouth is perhaps sufficient to transmit such information, but at any higher level some form of media becomes essential”². This case study explores how effectively the education system, acting as a form of media, in Grand Rapids handles the role of communicating public policy regarding climate change to its citizens. If colleges and high schools can spread awareness of these policies, Grand Rapidsians can better voice support or concern for such actions, prompting officials to either extend their climate change resiliency efforts or to dial them back.

¹ Solomon, Susan et al. “Irreversible Climate Change due to Carbon Dioxide Emissions.” *Proceedings of the National Academy of Sciences of the United States of America*

² <https://www.ciesin.columbia.edu/decentralization/English/Issues/Accountability.html>

Methodology

The majority of this case study is based on interviews with high school teachers and college professors, with some additional information gleaned from school websites and local publications. High school teachers were selected by visiting the chosen school's website and searching the staff directory for whoever teaches AP Environmental Science. Being an Advanced Placement course, APES is the primary class offered at most high schools that deals with sustainability issues and thus provides a clear point of contact. These teachers were then emailed with a link to the ND-GAIN website, an explanation of what ND-GAIN is hoping to do with the upcoming UA tool, and a request to interview them either over the phone, in person, or via email.

College professors received the same email, though more searching was required to find them as not all colleges offer the same majors, minors, or courses. These professors were found by combing the available majors, minors, and courses at the target college for anything sustainability or environmentally-related that might also pertain to local policy. The individual questions used during interviews are provided in a sample at the end of this study.

Educational Background of Grand Rapids

There are a total of 17 high schools in the Greater Grand Rapids area: 8 are public, 6 are private, and 3 are specialty schools that are open to the public but have limited enrollment opportunities (e.g. innovation centers). The Forest Hills Public School District accounts for 3 of these public schools: Forest Hills Central, FH Northern, and FH Eastern, ordered in size and age from largest & oldest to smallest & most recently founded. Northern (FHN) and Eastern (FHE) will be two of the main high schools examined in this study. These schools range in size from 1200 to 800 students per high school. All three schools tend towards the wealthier side of the spectrum, with a median household income of \$120,573³, and are predominantly white in terms of racial make-up at 93% of the population⁴.

There are 9 general colleges/universities in Greater Grand Rapids, excluding those colleges that are satellite campuses for larger universities based in other cities. Only two of these colleges, Grand Rapids Community College and Grand Valley State University (GVSU), are public schools. The rest are all religious, private schools save for Davenport University. Despite repeated attempts to contact most of these institutions, only GVSU, and Aquinas to an extent, responded with pertinent information. The two schools differ in almost every way: GV has a student body of nearly 22,000 while AQ only has 2,000; GV is a public university with multiple colleges and AQ is a private, Roman-Catholic liberal arts college. However, they both are in urban areas, though AQ is more directly centered in the city than GV. Cornerstone University (CU) is another school of note in this study although they did not respond to interview requests. CU is a private, non-denominational Christian university with total enrollment of roughly 2,000 students in the undergrad and graduate programs. It may be of note that CU has experienced

³ <http://www.city-data.com/city/Forest-Hills-Michigan.html>

⁴ <https://suburbanstats.org/population/michigan/how-many-people-live-in-forest-hills>

declining enrollment in recent years and consequently has cut various teaching positions; this may have played a significant role in CU's sustainability education efforts as available funds have also dwindled.⁵

Emphasis on Science & Neglect of Policy

As expected, the Advanced Placement courses for Environmental Science (APES) were the primary classes that covered environmental and sustainability-related topics at Forest Hills Northern High School (FHN or Northern) and Forest Hills Eastern (FHE or Eastern). However, neither APES course touched upon public policy, despite Grand Rapids' multitude of environmental stances. Matt Tracey, the APES teacher at Northern, pointed out that these courses are designed to teach students the *science* behind environmental issues and nothing more - a fact that is aptly reflected in the course title. He also noted that because students take the course with the intent of taking the national AP test, teachers have little to no wiggle room for adding extra material, such as local environmental policy, to the curriculum. A better option for teaching students about these issues would be to offer an entirely different course focused on local policy, though neither high school teacher seemed to believe that there would be enough student interest to sustain such a course. At Northern, growth is focused in the STEM subjects: the school recently opened a new STEM program that includes chapters on biology and ecology, but only through a purely scientific lens.

While AP Environmental Science courses narrowly focus on the science behind environmental issues, AP Government courses tend to teach the fundamentals of government with precious little time devoted to covering current local policy. From my own experience in the AP Government class at Northern, I cannot recall a single instance wherein my teacher spoke about what current policies the city of Grand Rapids was adopting. The clear majority of the class was spent learning about the form and function of government and any coverage of current affairs was limited to national or state news, never municipal. This was not due to oversight on the teacher's part; Bill Kennedy, the teacher of AP Government at Northern, stated that he wished he could have covered more public policy but that his priority was preparing us students for the material that would be on the AP test at the end of the year.

Cornerstone University doesn't offer any major or minor programs for sustainability; the closest option is their Environmental Biology major, which again, is science and research-heavy and appears to be light on local policy coverage. Cornerstone also appears to lack a sustainability or environmental-based student organization. Without any educational programs or clubs that are aimed to educating and dealing with environmental issues, students at Cornerstone will struggle to stay updated on Grand Rapids' sustainability efforts.

Emphasis on Action & Neglect of Awareness

Forest Hills Eastern has one sustainability/environmental club that exists outside of the classroom: The Planeteers. While the size of the club varies year to year, it typically retains

⁵ http://www.mlive.com/news/grand-rapids/index.ssf/2015/10/enrollment_down_58_percent_at.html

around 15-20 student members who are looking to serve the environment. One of the major projects undertaken by The Planeteeers was the launch of the Broken Bottle Project, which sold reusable water bottles in order to discourage consumption of single-use, plastic water bottles. The profits from these sales then were used to purchase automatic bottle-filling stations at the three Forest Hills high schools. At Forest Hills Northern, the Environmental Club similarly spent an entire year fundraising for one of these filling stations, with a handful of other events scattered throughout the semesters, like trash cleanups and hikes. While these efforts are laudable, it should be noted that these environmental clubs focus their energy almost exclusively on these projects and neglect to spend significant time or resources on educating their members on local environmental policy. Noah C., a student at Northern and 2-year member of the FHN Environmental Club, admitted that he was not aware that Grand Rapids had a Sustainability Plan and a Resiliency Report. According to him, the club had never devoted time specifically to discussing the environmental state of the city; instead, they spent most of their time fundraising, collecting recycling at the school, or planning other such events. The Broken Bottle Project at Eastern sought to have a positive local impact by reducing litter and promoting greener habits at nearby high schools but did so without any rationale other than common sense that using less plastic bottles was good for the planet. The students were eager to act and make an impact but did not consult with local officials or public documents to determine the best way to serve the local environment or community.

At both Northern and Eastern, the AP Environmental Science teacher was unaware of GR's Sustainability Plan or Resiliency Report. Both teachers were eager to learn more about the documents but had simply never heard of them or had heard of them in passing but had never gotten around to reading them before forgetting they existed at all. This seems like more of an oversight on the part of the city: the Office of Energy and Sustainability should be pushing these important documents out to high schools and colleges, making sure that they at least get read by the teachers who are in charge of environmental courses.

Dr. Kelly Parker, a professor of Environmental Studies at Grand Valley State University (GVSU), actually recommended these documents to me upon receiving my initial interview request. He kindly pointed out that the Resiliency Plan was a "key document and starting point" for a discussion on local efforts to curb climate change. He did not mention how the document initially came to his attention though he was aware that it had been released several years ago, in 2013, so it is possible that he had learned of it when it was first announced. Another college professor, Dr. James Rasmussen of Aquinas College, mentioned how he is "well aware of the minimal danger to people living in Grand Rapids". One possible explanation for why college professors are more attuned to municipal policy regarding the environment is that they have vastly more control over their curriculum than high school teachers. College professors have more flexibility with regards to content being taught, textbooks used, projects assigned, etc. Because of this, they have more of a motive to seek out documents and announcements like the Resilient Cities Pledge and the Resiliency Plan.

Conclusions

Without a strong sustainability presence in the local education system, Grand Rapids' best efforts to prepare for climate change go largely unnoticed. This is especially visible in two of the more affluent, public high schools in the area: Forest Hills Northern and Forest Hills Eastern. At these schools, both students and teachers are generally unaware of local policy regarding climate resilience. A major factor for this lack of awareness is the emphasis that is placed on sticking to national curriculum, especially in Advanced Placement courses, which means foregoing any discussion surrounding local developments. The best opportunity to incorporate local policy into the high school classroom is during that short period after students have taken the AP test but school hasn't ended yet. As Matt Tracey pointed out, teachers can direct their students in any direction they choose at this point, with the main obstacle being a lack of motivation on the students' side since they would no longer be driven by an AP test score. There should also be a closer connection between the Office of Energy and Sustainability (OES) and public high schools. The OES does not produce a newsletter of any sort nor do they update their website frequently - the last post under "Current News" is dated June 30, 2016. This makes it difficult for teachers, students, and other citizens to learn about updates on the city's sustainability and climate resilience.

On the collegiate level, it is clear that awareness of the Resiliency Report and the Sustainability Plan is more widespread than it is in secondary schools. Though it is difficult to ascertain the cause of this, it is possible that this is due to professors' ability to create their own curriculum and the consequential research they must do to find relevant information for their courses. Certain colleges, such as Cornerstone University (a private Christian school), do not offer any educational programs or list any extracurricular activities that pertain directly to sustainability or environmental issues. The nonexistence of these programs and of an Office of Sustainability at Cornerstone most likely contribute greatly to the lack of awareness of its students.

Future Routes of Investigation

This case study provided a basis of questions that could be posed to local educators in order to determine the dissemination of environmental policy information. However, due to time constraints and lack of responses, the sample size that answered these questions was limited to a few institutions out of many. This sample of high schools was also homogenous in that it consisted only of affluent, predominantly white, public schools. A future case study would ideally expand to include a larger majority of high schools and colleges in any given city that is being investigated, and include input from a diverse array of schools in terms of income, demographics, and privatization.

In addition, a possible area of future interest might be the relationship between the local Dept. of Sustainability (or whatever the equivalent may be) and public high schools. It appears that there is precious little communication, if any, between local officials and public high school teachers and it is possible that establishing or expanding such communications could better facilitate the spread of awareness. Further research should explore the existence of any such

communications, the feasibility of establishing this cooperation, and the possible effects of such a link.

This case study was limited to the education side of the equation; a future researcher should consider interviewing city officials to better understand their efforts on spreading awareness. It would be useful to know *how* they currently aim to educate citizens, *who* they specifically seek to reach (youth, adults, the middle-class, etc.) and what obstacles they face in such endeavors. If the target city lacks a Department of Sustainability or a similarly oriented department, the researcher might investigate why such a department does not exist and the feasibility of creating one.

Reactions to ND-GAIN UA TOOL:

Both high school teachers received a brief explanation and walkthrough of ND-GAIN's current Country Index tool, followed by a synopsis of what ND-GAIN hopes to do with the coming Urban Adaptation Index. Their responses were essentially the same: that while the tool looks promising and clearly contains a wealth of valuable information, it doesn't immediately seem like a useful tool in the classroom. Mr. Tracey from FHN was intrigued mainly by the graphic aspect of the tool and how the color categorization allows viewers to quickly focus in on those countries that are the least prepared. He even stated that he'd like to turn the colored map into a poster for his classroom, because while he may not be able to use the tool during an official lesson, students could still learn from it during downtime in class. Mr. Everse, the AP Environmental Science teacher at Forest Hills Eastern, pointed out that the vast amount of information presented might actually be counterproductive. High school students lose attention quickly and with so many data points for each individual country, along with 3 separate scores and a score matrix, he believes that students will glance at the tool and automatically be overwhelmed to the point of disengagement. A more linearly designed tool that guides the viewer from one point to another might be more effective when dealing with a younger audience such as high school students.

Guided Questions & Their Responses

Below is a copy of the questions that the researcher posed to a local college professor, Dr. Kelly Parker of Grand Valley State University, and the responses that the professor gave. Because this particular interview was conducted via email, there was no room for additional questions or clarifications.

Q: How many students would you say are in the Environmental Studies Program?

A: 120

Q: How many various courses are offered?

A: 3 regular ENS courses; 2 crosslisted with other programs; + internships and independent research.

Q: Is there much exploration of environmental studies by non-majors?

A: At present we offer only a minor, so all our students have another major

Q: Obviously, you're aware of the GR Resiliency Plan - thoughts on it? Does it adequately address the problems that face GR? Have you seen any tangible efforts on behalf of the city, in response to the report?

A: It's an excellent start toward holistic thinking about the problems we are likely to face with climate change. I applaud the movement toward renewable/sustainable energy. Some sustainability leaders have been discussing this and agree that there needs to be a more sustained outreach and inclusion effort to bring more actors into this effort, however.

Q: Some other professors have expressed that GR has very little to worry about in terms of climate change, when compared to the vulnerability of other areas of the country & world. Do you agree?

A: We obviously won't have effects comparable to those in New Orleans or Miami, but there will be large-scale national and regional effects over time that will affect "safe" places like GR. Where do we expect people from, say, Miami to relocate to if not these "safe" areas, for example?

Q: To the best of your knowledge, is there any easy way for students, and the public in general, to plug into all the work that GR is doing to combat climate change? Townhalls, community work days, etc?

A: No single place to connect--efforts are multiple and dispersed.

Q: You teach PHI 220: Aesthetics, in conjunction with ArtPrize downtown. I see you also teach Environmental Problem Solving - is there any collaboration with GR in that course?

A: ENS 401 is built around a model of collaborative community engagement projects designed by students. Many of these projects are with external community partners. There's a repository of past projects here: http://scholarworks.gvsu.edu/ens_undergrad/

Q: Does the environmental studies program cover local policy at all? Or is it mostly science-based?

A: We do look at local policy in a variety of contexts. We are less science-based than many comparable programs: we expect our students to draw on the arts, humanities, economics and politics, as well as the social and hard sciences to address environmental and sustainability problems. They need to be scientifically literate but not necessarily expert.

Q: Is there much collaboration between GV's Environmental program and that of other local schools? Colleges AND high schools?

A: Student projects sometimes collaborate with local K-12 schools; we've found it challenging to do much coordination with other colleges in the area (mainly, people are already plenty busy) but are always open to doing so.

This case study reflects the opinion and sole research of the author, an Urban Ambassador who participated in ND-GAIN's pilot program. Published August 2017.