

Evaluating the State Environmental Quality Review Act (SEQRA) Through a Case Study of Global Foundries

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Glossary

CEG: Center for Economic Growth
DEC: Department of Environmental Conservation
EIS: Environment Impact Statement
LFTC: Luther Forest Technology Campus
PDD: Planned Development District
SEDC: Saratoga Economic Development Corporation
SEQRA: State Environmental Quality Review Act

I: Introduction

Significance

By the 1990's, it was clear that New York State's historically strong manufacturing sector had declined significantly. Industry moved overseas in order to reduce production costs causing massive job layoffs and population decreases in the State. Politicians and economists realized that they needed to bring jobs back to New York, and started to look at the regional assets. Regional economic agencies saw potential growth in the industries of advanced materials, biotechnology, clean technology/renewable energy, homeland security/defense, information technology, and nanotechnology such as semiconductors and nanoelectronics (Tucker 2008). There was a strong focus on attracting semiconductor manufacturing facilities to New York because of the industry clusters these manufacturing facilities help create.

The initiative to bring silicon microchip manufacturing to New York started in late 90's, and was realized in 2006 with the contract from GlobalFoundries' to build a semiconductor manufacturing facility. Many hail GlobalFoundries as the beginning of an economic revitalization for the region. However, there are community members who question why the state of New York would spend 1.2 billion in tax payers' dollars to subsidize an industry to develop in forested land outside of the urban core, and in the county with the lowest rate of unemployment. As multiple aspects of developing the site and building the chip manufacturing plant needed permits from the State, the development underwent review through the State Environmental Quality Review Act (SEQRA). Essentially the goal of SEQRA is to balance the economic, environmental, and social impacts of a project by looking at their "cumulative effects," and our analysis evaluated the success of SEQRA in addressing the impacts created by GlobalFoundries' semiconductor manufacturing facility, Feb 8 (DEC 2011).

1.1: SEQRA

The New York State Environmental Quality Review Act (called SEQR or SEQRA) is a New York statute that incorporates environmental factors in governmental decisions requiring planning and approval. It was enacted August 1, 1975 and is very similar to the National Environmental Protection Act (NEPA), but deals with State agencies rather than Federal agencies. The state of New York requires a SEQRA review for any state or local agencies including all, "Political Subdivisions, Districts, Departments, Authorities, Boards, Commissions and Public Benefit Corporations" before final decisions are issued (SEQRA regulation 617.2(c); DEC 2011). As part of the Environmental Conservation Law (Environmental Conservation Law Sections 3-0301(1)(B), 3-0301(2)(M) and 8-0113), SEQRA requires agencies to take a "hard look" at the environmental impacts and prepare an Environmental Impact Statement (EIS) if necessary. The intention of SEQRA was to give "protection and enhancement of the environment" consideration with social and economic decisions in determining public policy (DEC 2011).

It is important to note that SEQRA is not in place to protect against environment impacts or degradation. Rather, SEQRA seeks to find a balance between the environmental, social, and economic effects to allow those affected to be aware of the comprehensive impacts and ask questions. SEQRA is self-enforcing; agencies are independently responsible to comply with the Department of Environmental Conservation (DEC) regulations of the SEQRA process. Citizens or groups who feel an agency has failed in proper SEQRA procedure can take legal action through Article 78 of the New York State Civil Practice Law and Rules in court (DEC 2011). For projects with "significant" environmental impacts, SEQRA may lead to an Environmental Impact Statement (EIS). Not all SEQRA cases require agencies to prepare an EIS, and it may be

helpful to refer to Appendix 6.3 on the SEQRA process. The scope of our capstone focuses mainly on the EIS that was required by SEQRA procedure for GlobalFoundries.

SEQRA is required for actions that need discretionary permits or licenses, use state or local funds, involve resource management plans, or pertain to policy regarding the environment. SEQRA defines the environment broadly as

“the physical conditions that will be affected by a proposed action, including land, air, water, minerals, flora, fauna, noise, resources of agricultural, archeological, historic or aesthetic significance, existing patterns of population concentrations, distribution or growth, existing community or neighborhood character, and human health”
SEQRA regulations 617.2(1)

SEQRA categorizes “actions” that may affect the environment as changes that alter the environment either directly or indirectly. Changes to space, use (ex. recreation) or condition (ex. historic) of an area, along with planning, policy, rules, and procedures are categorized as actions under SEQRA (DEC 2011).

SEQRA compliance is the responsibility of local government “agencies” that are given authority from a New York State statute, local law, or ordinance. Examples of these agencies are county legislatures, town or village boards, city councils, planning boards, zoning boards of appeals, industrial development agencies, school boards, fire districts, State agencies, and special purpose districts (DEC 2011). The SEQRA process is usually either to approve/fund a project, or in response to a direct action which is defined as including site selection (only if the project sponsor is a government agency), site preparation, contracting, or bond resolution (DEC 2011). The SEQRA review of for GlobalFoundries concluded with an EIS that included building regulations, state and federal standards, and expected demands for resources and the providers. The EIS is publically available on the Town of Malta’s website and includes many other details.

1.2: History of GlobalFoundries

The headquarters of GlobalFoundries is Silicon Valley, USA, and their manufacturing centers are in Germany, Singapore and New York. GlobalFoundries produces silicon wafers 200 and 300nm in size that are later broken down into smaller microchips. These microchips end up in electronics such as smartphones, computers, and tablets. According to Gartner, a technology research company, the semiconductor industry is worth an estimated \$300.3 billion, and industry analysts predict a 2-8% growth in the semiconductor sector (George-Cosh 2011). When researching the history of GlobalFoundries, there are two important changes that have occurred. The first being the creation of GlobalFoundries from Advanced Micro Devices (AMD) and secondly, the name of the fabrication plant changed from “Fab 2” to “Fab 8.” AMD was the original company considering building a chip manufacturing plant at Luther Forest Technology Campus (LFTC) in 2006. After construction design started in 2007 and 2008, a joint venture between Advanced Micro Devices (AMD) and Advanced Technology Investment Company (ATIC; owned by an Abu Dhabi Government investment firm) in March of 2009 created GlobalFoundries. AMD split from its manufacturing sector to focus on design, while ATIC funded the company with an 86% stake (George-Cosh, 2011). AMD’s decision to spin off their manufacturing sector occurred after construction in LFTC had begun. GlobalFoundries took the fabrication plant owned and operated by AMD and then acquired Chartered (six chip fabrication

plants based in Singapore). Under AMD, the fabrication plant in Malta was their second, “Fab 2,” but after the addition of the other fabrication plants, the Malta facility was renamed “Fab 8.”

GlobalFoundries is now one of the world’s largest semiconductor foundries with revenue of \$2.5 billion in 2009 and \$3.5 billion in 2010, employing 10,000 people (George-Cosh, 2011). Once finished, Fab 8 will be the most advanced semiconductor manufacturing facility in the world, and most expensive economic development project in the US at \$4.6 billion dollars. “Fab 8” will be operational fully by 2013 and has employed 450 of the 1,650 jobs promised as of March 2011. About half the workforce will be global employees from 15 different countries, and the other half will come from the New York region (McCarty 2011; Bullard 2011). Recently, GlobalFoundries decided to add a 221,000-square-foot administrative office building that can hold 1,500 employees, increasing the potential to directly employ 2,100 employees (McCarthy 2011).

1.3: History of Luther Forest

In 1998, New York implemented Chip Fab ’98, an initiative to pre-permit semiconductor chip manufacturers to New York and create “shovel ready” sites for semiconductor manufacturing (LFTC 2011). The “shovel ready” site was crucial in successfully attracting GlobalFoundries to Malta because it would allow GlobalFoundries to start construction immediately. The regional economic agency, Saratoga Economic Development Corporation (SEDC), spearheaded the hunt for a potential shovel ready site. One of the first places the SEDC looked at was in the Town of North Greenbush at Rensselaer Technology Park. Though the technology park was pre-approved for most industrial development, it was not pre-approved for semiconductor manufacturing. In order to allow chip manufacturing to occur, the Town Board of North Greenbush needed to approve the necessary zoning changes to allow chip manufacturing. The Town Board of North Greenbush did not pass the needed amendments, and the SEDC realized they needed community support if they were going to build a shovel ready site in any community.

The SEDC purchased 1,414 acres of Luther Forest in Malta and Stillwater because it had the specific characteristics needed for nanotechnology such as space, infrastructure (to be created), and transportation access. The history of Luther Forest created the unique situation where there was Superfund site in the middle of a forest. Luther Forest was a managed forestry program started in 1898 by Tommy C. Luther that included 7,000 acres and became one of the largest private pine plantations in the Northeast (LFTC 2011; Town of Malta 2009). Previous use as the Hermes Project Rocket Test site (c. 1945) had created a superfund site in 1986, and approximately 165 acres were fenced off—soon this area will be covered by the GlobalFoundries manufacturing facility (EPA 2011). Through much community targeted efforts by the SEDC, in 2004 the Town Boards of Malta and Stillwater passed the Planned Development District (PDD) that would allow the necessary zoning changes for semiconductor manufacturing and the development of Luther Forest Technology Campus began.

II: Methods

Overview - The methods were designed to compile a fully comprehensive review of SEQRA through a case study of GlobalFoundries’ Fab 8, a new chip-processing plant in Malta, New York. Through the study of Fab 8, our analysis of SEQRA questions whether the “strategic use of SEQRA [proves] to be a useful mechanism for attaining the sustainable development goals of communities” (Council on Environmental Quality, January 1997). The goal of SEQRA

is to look at the cumulative environmental, social, and economic impacts of a project (DEC 2011). In order to determine the effectiveness the SEQRA process had on assessing the potential impacts of GlobalFoundries, we had to look at the cumulative impacts. We researched not only the direct impacts to the local community, the towns of Malta and Stillwater, but also analyzed the indirect impacts affecting the regional community. Our methods first consisted of reviewing the final Environmental Impact Statement (EIS) for GlobalFoundries and the Public Comment period as required by SEQRA. We then researched the projects known impacts through the literature to give us context for interviewing stakeholders. With this research base, we used stakeholder analysis to determine candidates to interview and conducted interviews with pertinent individuals.

2.1 Research and Stakeholder Analysis

Our approach, therefore, was to identify the complete impacts (environmental, social, and economic) of GlobalFoundries as stated by the EIS in order to judge the overall effectiveness of SEQRA. EIS's must be publicly accessible and drafts of the EIS had to be approved by New York State before a final general EIS (GEIS) could be drawn up. In our EIS review, we looked not only at the GEIS, but also at the EIS drafts that led to the final EIS. Additionally, we wanted the community perspective on this project to help determine what was known in the region related to the impending developments. For this perspective, it was prudent of us to not only review all the EIS material for Fab 8, but to concentrate our focus on the Public Comment periods included in the EIS. Since the SEDC wanted to develop the technology park, they were responsible for drafting the EIS and answering questions from the Public Comment period. SEQRA only requires a Public Comment periods where people can send in questions. The Public Comment period for the development in Malta and Stillwater were actual meetings open to the public for local citizens to address their concern. The dialogue from the Public Comment was recorded in the EIS in addition to any submitted written comments. The people who commented in the Public Comment period are the citizens who sought to have their questions answered, thus providing valuable perspectives on community concerns and the project's potential impacts.

All SEQRA review had finished by 2008, so next we researched the current periodicals following the development of GlobalFoundries. Most imperative of these voices were from local news coverage. Therefore, we read articles from the Saratogian, Albany Times Union, Poststar, Sunday Gazette, as well as nationally recognized periodicals like Forbes Magazine, Business Facilities, the Washington Post, and Time Magazine. All these publications provided necessary contextual information from which we could begin to draft our interview list and create relevant interview questions. The facts and concerns mentioned by these journals and newspapers provided an important framework for finding potential interviewees and having a diverse group of stakeholders in order to give us a broad overview of community perceptions on the project.

The interview process involved creating a stakeholder analysis to divide pertinent stakeholders into their respective roles played in Fab 8's progress. These stakeholders were grouped to give us the most complete sense of the plant's development from an environmental, economic, and social perspective based on the findings from the literature review. The analysis was modeled around identifying stakeholders using stakeholder analysis (SA) techniques (Bryson, 2004). Initial research into stakeholder analysis concluded that the term 'stakeholders' was weighted and a working definition of stakeholders was crucial for allowing us to identify individuals to interview. A strong working definition of stakeholder came from environmental management and business ethics author R. Edward Freeman's *Strategic Management: A*

Stakeholder Approach, “a stakeholder is any group or individual who can affect or is affected by the achievement of an organization's objectives.” (1984) With a working definition of stakeholder in place, we were then able to begin to distinguish potential stakeholders for a stakeholder analysis. A stakeholder analysis consists of two parts: “deciding who are the relevant stakeholders and then, conceiving a network to connect the stakeholders in the community” of development based on their role in relation to establishing GlobalFoundries in the region (Bryson 2004). Lastly, when identifying stakeholders, an early and diverse impression of development from an environmental perspective was the primary goal.

To address if SEQRA had successfully prepared the regional community for Fab 8 development, players from both the affected community and groups affecting the community needed to be interviewed to permit a fully comprehensive analysis. Using the context of knowing the EIS, boundaries for the stakeholder analysis were set to narrow the scope of our stakeholder list to find pertinent interviewees. Boundaries of stakeholders were set not only by distinguishing affected from affecting but also through making a distinction between three prominent stakeholders: (i) groups/individuals should be involved for certain, (ii) groups/individuals should possibly be involved, or (iii) groups/individuals should not be involved in this phase of the project (Achterkamp 2007). Additionally, a group was created to note organizations associated with aiding the production of Fab 8. A list of interviews can be in Appendix B with more specific details of Fab 8 relation.

To conduct our stakeholder analysis, we formed a list of interview questions (Appendix B) to access understanding of stakeholders under the relevant frame we provided. The interview questions sought to address major developmental changes related to the environment that may occur in Malta and the surrounding Saratoga Lake watershed as a result of Fab 8. Also, the questions were based on SEQRA’s legislative obligation to provide environmental awareness on a societal level based on the notion of sustainable development and its three main components: environmental (resource use), economic (new jobs) and social (new infrastructure). We grouped our questions to target three potential changes to the watershed: changes in resource consumption (specifically, water and energy), changes in the community (based on new specialized jobs), and changes in infrastructure (developmental demands). The resulting perspectives discovered through stakeholder analysis lead to a synthesis of community perceptions and pre-conceived notions by stakeholders in relation to the development of GlobalFoundries.

2.2 Stakeholders

Elected Officials

Our first, and perhaps most prudent group of stakeholders, were elected officials from the regional community of Saratoga County. Stakeholders who are elected officials, such as town board members, take a greater responsibility for permitting novel development within their locality. Thus, these individuals who were elected to best represent their community’s desires were vital to interview. This group primarily consisted of planning board members, town supervisors, and town planners. To give a sense of some of the stakeholders involved, we interviewed the Director of Planning and Development from Malta to get a better understanding of the development that has resulted from the influence of Fab 8. We also interviewed other Town Planners of Malta in person. Lastly, emails or phone calls were sent to planning and town board members as well as town supervisors from regional communities who will presumably be

impacted by the new fabrication plant and ancillary development. These towns included Malta, Stillwater, Clifton Park, Country Knolls, Ballston Spa, Saratoga Springs, and North Greenbush (the original proposed site location for Fab 8).

Community Members

We interviewed Malta and Stillwater residents. These community stakeholders included concerned citizens from the region who attended the public meetings and had submitted comments during the Public Comment period and were in the Environmental Impact Statement. These stakeholders represent a first-hand look into a community's response towards development. We interviewed a group of these individuals to ask about what opposition GlobalFoundries faced in coming to the region. We also interviewed a representative from a local periodical, *Saratogian*, to obtain background information from a medium that is easily accessible by the public. The *Saratogian* representative also offered an opportunity to compare widely perceived public knowledge of GlobalFoundries' impact with impacts mentioned in the Environmental Impact Statement.

Regional Agencies

Regional economic agencies are largely responsible for bringing GlobalFoundries to Malta, New York. We interviewed representatives from both the Saratoga Economic Development Corporation (SEDC) and the Central for Economic Growth (CEG). These developers spent nearly two decades attracting wafer-manufacturing industries to the region (CEG) and took the directive to prepare a site for the semi-conductor facility (SEDC), which included creating the PDD and EIS. The SEDC collaborated with relocation firms to allow for seamless acclimation of new international workers coming to the region to work for GlobalFoundries. Additionally, we interviewed a regional planner from the Capitol District Regional Planning Commission to get a sense of the project's development through a regional planners perspective verses a regional economist's perspective.

GlobalFoundries brings with its' facility many international engineers and technicians from other fabrication plants to set-up operations in Fab 8 and help with training semi-conductor operators. These new individuals will impact the region through population changes that will inevitably result in a need for new development such as in housing and childcare services. Brookfield Global Relocation Services is the primary relocation entity used by the SEDC and GlobalFoundries for familiarizing and integrating international workers into the region.

Utilities

GlobalFoundries' fabrication plant required major infrastructure to be built and needed utility companies to be able to provide for their water, energy, and sewer needs. Several utility companies were researched to understand the conservational impacts of Fab 8's resource use. Utility organizations supporting GlobalFoundries' production includes water authorities/services and electrical companies. This led us to interviewing and researching Saratoga Water Services (SWS), Saratoga County Water Authority (SCWA), and representatives from the Saratoga Wastewater Treatment Facility Sewer District #1. Data on electrical providers was from an interview with GlobalFoundries and further research. The electrical utility companies providing electricity to GlobalFoundries include National Grid and their upstate New York provider (NYGRID) and NYSEG, a subsidiary of Iberdrola USA.

GlobalFoundries

Lastly, and undoubtedly the most crucial stakeholder group we interviewed was GlobalFoundries itself. An interview was conducted with the Media Relation representative from GlobalFoundries. This interview, in particular, was vital to our stakeholder analysis in understanding how GlobalFoundries was going to affect the community environmentally socially, and economically. Bringing a wafer facility into the area requires a large amount of infrastructure changes, but also brings with it direct and indirect ancillary businesses and jobs. For example, chip manufacturing facilities need businesses such as warehouses for storage and companies performing mechanical maintenance to the facility nearby in case of unexpected repairs.

III: Analysis Interpretation

Overview -Our results find SEQRA did not preparing communities regionally for major commercial development because it addressed the concerns of the immediate location only —the Town’s of Malta and Stillwater. Our analysis first walks through researching SEQRA’s Environmental Impact Statement (EIS) for GlobalFoundries’ semi-conductor fabrication plant involved as well as the Planned Development District (PDD) and Generic Environmental Impact Statement (GEIS) for Luther Forest Technology Campus (LFTC). Then, pertinent stakeholders were identified and interviewed for a stakeholder analysis to address public reactions to the anticipated development of Fab 8. A comprehensive review of the SEQRA in properly informing the regional community of ongoing and future was contrasted against our stakeholder analysis. The results explicitly show Fab 8’s development through figures, graphs, and stakeholder analysis.

3.1 Stakeholder Analysis

Stakeholders were identified by their relationship to GlobalFoundries, which was broken down into several groups: elected officials, community members, regional agencies, utility companies, and the corporation itself GlobalFoundries (Appendix 6.1). These groups gave our analysis the full spectrum of responses to the new commercial developments and permitted an understanding of how critical ‘diverse perspectives’ are for such a large-scale project.

In addressing the stakeholders, the questions asked were modeled around contextual knowledge of the individual/group on the project’s development (Fab 8). Additionally, the questions poised were intended to address a wide range of viewpoints from both critical ends of the development spectrum.

In conducting our stakeholder analysis and interviewing significant stakeholders, several themes came out of our interviews. The analysis of impacted and impacting stakeholders exposes a diversity of opinions and judgment in regards to the development of GlobalFoundries. The themes in interviews identified are parallel points of understanding between diverse stakeholder groups. Additionally, these themes note mitigation of certain impacts from groups involved while completely omitting to address other impacts to the community, such as the regional effects that will be paired with a project of this magnitude.

3.2 Themes

Just as an example of what we were able to glean from a stakeholder interview and how we were able to identify relevant themes, we would like to provide an analysis of a sample stakeholder interview and the information we were able to take away.

Our interviews began by talking to Lucian McCarty, a writer for the *Saratogian*, to expand our stakeholder list and to learn background information of public perceptions around the fabrication plant. McCarty mentioned the 1.2 billion dollar in tax incentives GlobalFoundries was receiving from the State and even the Federal government, provide us with important regional impacts such as predicting possible new jobs, housing options available to new workers, and infrastructure needs. Crucial pieces of knowledge obtained from our interviews helped in our full analysis of SEQRA and its ability to evaluate the cumulative impacts of GlobalFoundries.

3.2.1 *Finding the Right Location*

In the 1990's, nineteen counties in New York came together to create the region "Tech Valley" to globally attract specific key industries targeted in a joint study between the CEG and the Lally School of Business at Rensselaer Polytechnic Institute. Of the proposed sites for semiconductor development, Luther Forest Technology Campus was the most attractive being "shovel ready" for construction with a pre-approved Planned Development District (PDD) zoned to the average semiconductor manufacturing facility. The term "shovel ready" implies the site is ready for construction to begin, and the PDD refers to the permitted development within the specified area. In general, PDD's are intended to balance development with the surrounding land uses and can create zoning allowances that would otherwise be prohibited in the zoning district. The Town of Malta describes its PDD as:

A planned development district is intended to provide a means for the development of entirely new residential, commercial or industrial subdivisions, parks or estates or creative architectural or planning concepts which may be used by the developer without departing from the spirit and intent of the Town's Master Plan while substantially benefiting the Town in a manner not otherwise available through development under the Town's existing zoning.
(Malta Town Board, 2011).

The PDD falls under SEQRA review, and Luther Forest Development Corporation (created by the SEDC) had to submit an EIS before the Town Boards' of Malta and Stillwater before beginning infrastructure construction.

The efforts of New York State and economic regional players to advertise "Tech Valley" as a "premier site for the development of innovative, high-technology companies," and the availability of a "shovel ready" site attracted GlobalFoundries to build a semiconductor manufacturing facility in New York (Tucker 2011). In the 1990s, with the help of regional economic growth organizations, New York began aggressively advertising its-self as the place for high-technology companies. A key player in advertising New York to different industries was the Center for Economic Growth (CEG), created as a private, not-for-profit organization in 1987. The CEG includes members of the private sector, public sector, and academics who share a common desire to see the Capital Region (eleven counties in New York including Albany and Saratoga Springs) thrive economically. CEG first had to overcome the "perception" of New York as being a high cost state with high taxes and strong unions making an unfavorable business climate. After CEG examined the assets within the eleven counties, they determined the

Region's current strengths and future strengths should be marketable to "industries that were going to be growing and global in nature" (Rooney interview 2011).

New York had a strong history of innovation as home to one of GE's Research and Development centers and IBM, but the manufacturing base that was historically a dominant player in the region's economy was no longer a viable economic option for New York in a global economy. CEG and the Lally School of Business at the Rensselaer Polytechnic Institute (RPI) identified six key industries for the Region to pursue: "advanced materials, bio/life sciences, cleantech/energy, homeland security/defense, information technology and nanotechnology/semiconductors" (CEG 2011). Political will, excellent nanotechnology institutions (universities), and available land that met industry requirements allowed the Region to "pursue game changing industry like semiconductors" (Rooney interview 2011). The semiconductor manufacturing industry was targeted especially because of the "industry clustering" and ancillary businesses that creates indirect jobs three to fifteen times the number of direct jobs (Tucker 2011). However, finding a suitable location for a semiconductor manufacturing plant proved to be another challenge.

Semiconductor manufacturing facilities run 24/7 and require redundant sources of power, large volumes of water and therefore an equally large wastewater capacity, and a trained workforce. Once the CEG had successfully advertised the region, the Saratoga Economic Development Corporation (SEDC) took over and started looking for potential sites. One site was located at the Rensselaer Technology Park in the town of North Greenbush. SEDC's jubilation of finding a suitable site near an urban center with infrastructure already in place was cut short when the Town Board of North Greenbush rejected the PDD zoned to fit an average semiconductor manufacturing plant because of community's hostility towards the project. SEDC realized that if they wanted to create a "shovel ready" site they were going to need the support of the community and created a public relations strategy. They engaged public officials in the Town of Malta and Stillwater to support the project through education about semiconductor manufacturing plants by flying them to Chandler, Arizona, to see the Intel's semiconductor manufacturing facility. A public relations expert was hired to survey Malta and Stillwater and fliers were sent out to community members to educate residents of the possible developments. After over a hundred and fifty meetings, the PDD was approved unanimously by the Town Boards of Malta and Stillwater (Shelby interview 2011, SEDC 2011). It was crucial to have a PDD for an average chip manufacturing facility approved before negotiating details with GlobalFoundries. When industries are willing to make gigantic investments, the competition for those investments is "fierce, globally fierce" (Rooney interview 2011). Companies want to know they will have a "predictable development process" and the support of the community (Rooney interview 2011).

3.2.2 Economic Expectations

In modeling potential development that might come to the region as a result of GlobalFoundries' new semi-conductor facility, the CEG researched the development of another fabrication plant owned by GlobalFoundries in Dresden, Germany (Fab 1). An example of the possible development from the facility was modeled for Saratoga Springs by the CEG (Fig 1).

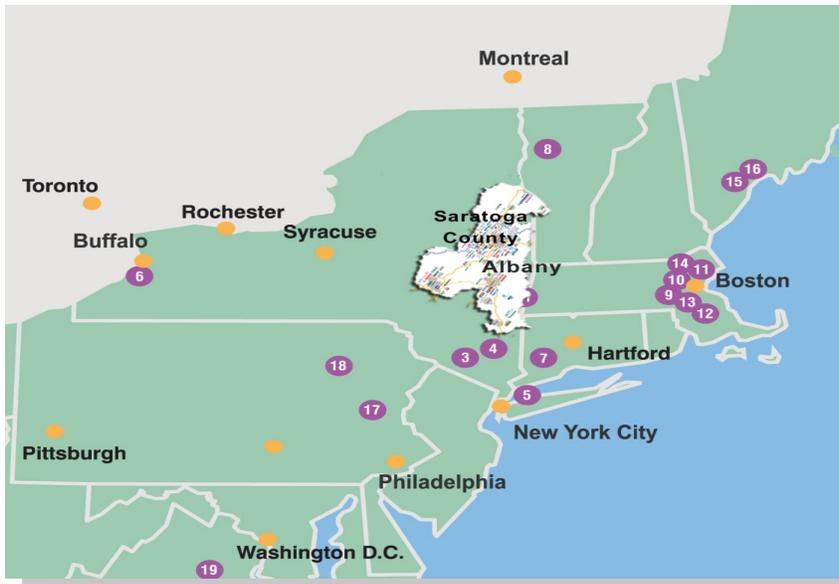


Figure 1: This image reveals the range of development by GlobalFoundries in its Dresden site (Fab 1) transposed on the region to display the stretch of potential development. The purple spots represent industry assets and the yellow major urban areas. In Dresden, ancillary businesses grew out of industry clusters (assets) and the same could happen in Upstate New York. As GlobalFoundries begins production, supporting business and manufacturing centers will move to the region creating their own industry clusters and supply chain ecosystem resulting in the creating more jobs and businesses.

In Dresden, investments to the region came to over \$20 billion between the years of 1990 to 2008 and industrial growth increased from 10 companies with 3,300 employees (including 2,600 employees at Fab 1) in 1989 to 1,200 companies with 44,000 employees by 2008. The industrial growth also supported major development of eighteen research institutes within the region. The \$4.6 billion dollars for GlobalFoundries is a high cost, but with an expected higher pay off in the form of industry clusters and ancillary job creation, Construction of Fab 8 alone is estimated to create 2,700 local construction jobs, and an estimated 5,000 indirect jobs (Rogers 2010; Bullard interview 2011). With GlobalFoundries, Saratoga County has the potential to become an elite training workforce unparalleled in the United States outside of Silicon Valley through the expansion in educational research institutions. The expectation of GlobalFoundries is and has been, job creation. GlobalFoundries was named 2010 Gold Shovel Project of the Year by Area Development for this reason. The PDD for Luther Forest Technology Campus publicly documented the economic expectations of GlobalFoundries. It stipulates GlobalFoundries is obligated to provide a minimum of 1,400 jobs in the Grant Dispersal Agreement.

Travis Bullard, public affairs and communication manager for GlobalFoundries, explained where these jobs would be coming from, “[GlobalFoundries] started with zero local employees two years ago when we launched the company and right now [there are] 350 employees in the temporary office space... We hope to have 900 local employees by end of summer” (Bullard interview 2011). Experienced international employees are needed initially during the construction phase to set up the tools for operation then local employees will be hired to help run the facility. GlobalFoundries hopes to incrementally employ locally at a continued rate after the initial influx of international support (Bullard interview 2011). GlobalFoundries’ economic expectations were clearly a driving force in bringing the semi-conductor industry to

the area. High job creation and cutting edge manufacturing technology are economic expectations GlobalFoundries is expected to provide to the region. The nationally recognized periodical Business Facilities went with a cover story on the development of GlobalFoundries in the October 2010 edition. Based on these estimates, GlobalFoundries' predicts that by "late 2012 more than 1,400 people will be employed at Fab 8, a number that could increase significantly if the foundry decides in coming years to ramp up to full capacity – 60,000 wafers per month utilizing the entire 300,00 square feet of the shell" (Rogers 2010). These jobs are specialized from engineering and technicians (mainly experienced international hires as of now), to Fab operators, who are generally local workers trained at regional community colleges.

Not everyone in the community is looking forward to GlobalFoundries and the anticipated growth. A community member opposed to the development in Luther Forest stated,

"Are we so desperate that we are willing to sacrifice Saratoga County's natural resources with a growth at any cost mentality? With the massive amount of taxpayer subsidies provided to this project we could do a lot better, such as locating the factories closer to our urban cores where jobs are most needed and infrastructure needs reinvestment. These are missed opportunities that will have long-term impacts on the region."
(Community member interview 2011).

This outspoken citizen argues New York should have "invested \$1 million in 1,200 locally owned businesses, each promising to create at least one job" to create sustainable growth (Community member interview 2011).

Regional economic corporations such as the CEG and later on SEDC spent over fifteen years attracting chip-manufacturing facilities to the region in order to boost regional economic growth. The preparation by the CEG and SEDC in order to bring GlobalFoundries to the region was financially and time wise immense, but their efforts were successful because of their preparation and community efforts.

3.2.3 *Incentives*

Incentives were readily offered on both sides to ensure the project was a success. Considering \$4.6 billion is going into constructing Fab 8, both the regional community and state had to be on board with GlobalFoundries and the economic entities that brought the semi-conductor business to the region. The SEDC did a good job of attracting GlobalFoundries through flaunting regional assets and working in conjunction with New York State to make tax based incentives readily available. This ended up being a \$1.2-1.3 billion incentive package from the state (Fig 2.), the largest public-private investment in the history of New York State. According to the president of the SEDC, Dennis Brobston, the "incentive package was vital to this project" and the state needed to put up at least \$1 billion in incentives to compete with the other global locations.

Research into the state incentive package revealed the package was split pretty much in half between tax credits and tax reimbursement with "\$650 million in Empire Zone tax credits for property tax abatement, \$500 million in reimbursable, cash for construction the last \$150 million for research and development" (Business Facilities 2010). In our interview with GlobalFoundries, the terminology in the incentive pack was expressed at a more manageable level stating "GlobalFoundries pays for everything up front and for about 650 million of dollars worth the costs, we can go back to the state of NY and get reimbursed, and we do that on a

quarterly basis so the state of NY raises bonds and then reimburses us for the costs” (Bullard interview 2011). Additionally, the tax rates will be on the market value of the property and not on the development value for the first ten years, which is incredibly cost-effective for GlobalFoundries.

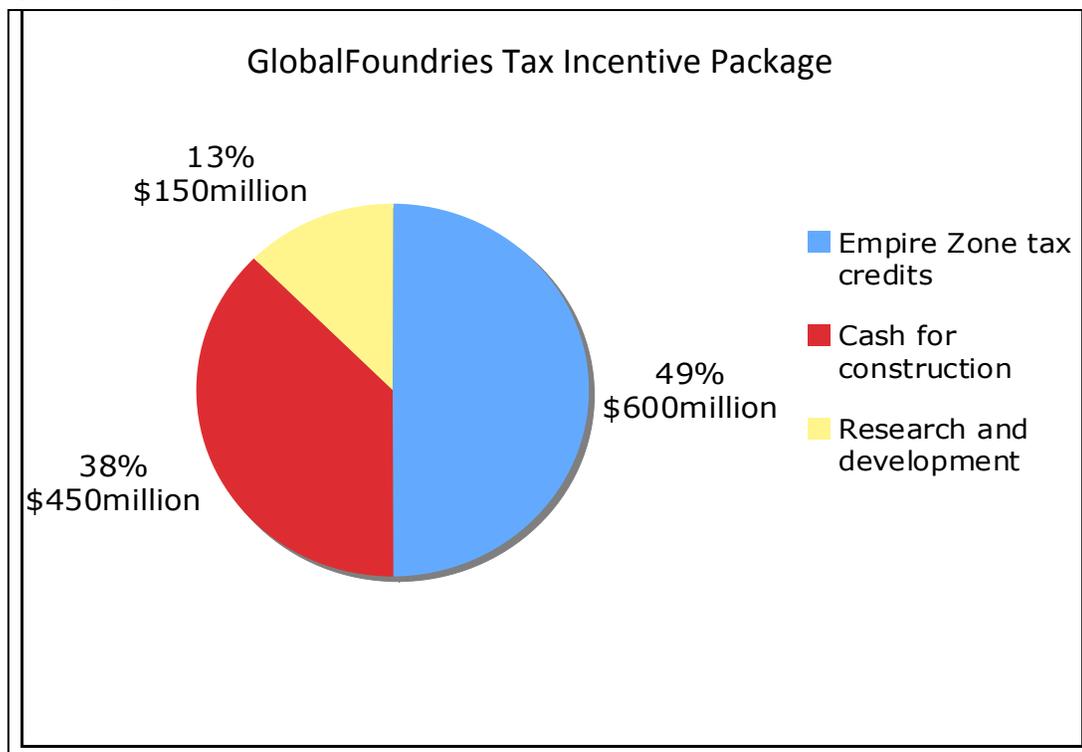


Figure 2: Breakdown of tax incentive package by percent and value totaling to 1.2-1.3 billion.

The SEDC and CEG advertised the Region on its technological advances, such as the presence of major technology organizations like IBM and GE as well as International Sematech. Educational opportunities are also readily available with engineering and semi-conductor training facilities in Albany at the Nanotech school and at Rochester Polytechnical Institute. Also, the potential for training at the community college level is primed and readied. Therefore, the regional assets, the economic incentives, and the tax exemptions (tax-exempt revenue bond financing, sales tax exemptions on tool purchasing as well as mortgage tax exemptions, and no personal property tax), created an unbeatable incentive offering to GlobalFoundries.

The tax incentives offered to GlobalFoundries were immense and necessary to bring such an incredible economic opportunity and technologically advanced manufacturing industry to the region. The incentive package reaches over \$1.2 billion and is the largest public economic incentive package in the history of New York (Schneider interview 2011; Bernstein 2009). The heavy burden of bringing such development to the region has polarized some major stakeholders in the regional community. On one side, GlobalFoundries and the economic agencies responsible for attracting GlobalFoundries to Saratoga County (CEG and SEDC) argue that over 1,400 direct employment opportunities and upwards of 5,000 indirect jobs is well-worth the hefty price of attraction. However, these incentives are not the only ones being offered by GlobalFoundries back to the State. Because Fab 8 must run 24/7, it will steadily consume power and water. For instance, GlobalFoundries is currently in the works with Saratoga County Water Authority to broker a contract for 4 million gallons of water daily once they reach full production, and this

sale of water will be a huge revenue source for the county (McCarty interview 2011). Opinion author John W. Kraus of Saratoga Springs wrote recently in the *Saratogian* that the county “had the foresight to prepare for this requirement in advance. These revenues should allow the county to keep the property tax rate flat for years to come and continue to provide subsidy funding for the Maplewood Manor nursing facility” (*Saratogian* 2011). Utility companies, such as National Grid, were willing to build their own transmission line to Luther Forest Technology Campus knowing they would have a long-term regional partner/consumer. These massive utility incentives create huge sources of income for the region and will persist over many years.

GlobalFoundries job creation was not seen by all as enough to alleviate the pressure of doling out \$1.3 billion in incentives. Community members point out a lack of community involvement in the decision making process articulating that planning decisions in Malta were “driven by politics and desire for growth at any cost,” and not enough effort was put into “utilizing and empowering regional planning agencies to make decision based on sound land use planning” (Community member 2008). These statements address the lack of concern for involving regional planning entities such as the Capitol District Regional Planning Commission (CDRPC) in lieu of following the directives of regional economic and development agencies such as the CEG and SEDC. The lack of collaboration between planners and developers caused discrepancies in how State incentives were handed out; had more attention been paid to addressing planning issues, the incentive package could have been less.

Although regional planning agencies may not have been on the forefront of the project, the SEDC followed the SEQRA process by holding multiple community question and answer sessions and holding the Public Comment meeting. The State incentives plan offered to GlobalFoundries went through more approval than SEQRA even requires with many public hearings going undocumented. Shelby Schneider, from the SEDC responsible for the Empire Zone tax breaks, notes that

“Well over a hundred public meetings with packed houses for every meeting. And people had their questions answered ad nauseum. I mean if someone asked how many stars will be blocked out in the night sky at night, then someone would have to go out and actually spend the night counting stars and factor in how development might change this.” (Schneider interview 2011)

Through her response, Schneider does point to the inclusion of community members and citizens in preparing the EIS and aptly defends the State incentive package offered to GlobalFoundries. As President of the United States, Barack Obama, pointed out during his 2010 visit to the region, “We know that Upstate New York can succeed. And we know that in a global economy – where there is no room for error and certainly no room for wasted potential – America needs you to succeed” (Fannin 2010). In times of economic downturn, new jobs are hard to argue against.

3.2.4 Implications

It is essential to reiterate during our discussion that GlobalFoundries’ Fab 8 project is still under the construction phase and will not be up to full production until late 2012 or early 2013. As such, future implications of Fab 8 are susceptible to change and growth may invariably take off without regard for other regional development. Yet, our results did help to point us in the direction of several key impacts that will drastically change regional community dynamics based on the semi-conductor development. The vast majorities of these implications are not noted in the EIS and as a result, are not taken into account by the role of SEQRA. These implications

include indirect economic development, increased pressures on schools and housing, increased diversity and “ecosystem growth” in the region, and lastly, many of these impacts point to a lack of regional planning that suggests future directions of research for our study. An important point is the sheer number of people coming in to work at GlobalFoundries. In the 2000 Census, the population of Malta was 13,005 and ten years later in the 2010 Census the population grew to 14,183 (Saratoga County Chamber 2010). GlobalFoundries is going to bring 1,400 direct jobs and an anticipated 5,000 indirect jobs. Everyone is not going to be able to fit in Malta if Malta has only grown to accommodate 1000 people over ten years. People are going to have to find places to live close enough to Malta to commute to work every day, meaning there will be greater regional impacts than covered in the EIS statement focused on the Towns of Malta and Stillwater.

Many of these numbers in increased employment and companies reveals a new demand for ancillary business growth in the region. For instance, tool manufacturing and maintenance companies, such as the M+W Group from Austin, Texas, have already started moving to the region in preparation of meeting the needs of companies moving to support GlobalFoundries manufacturing facility. In the event of a system failure in Fab 8, tool replacement and maintenance companies need to be in the local vicinity to quickly take action and fix any issues to ensure that production is not shut down. Semi-conductor facilities lose massive amounts of money if they are shut down for even 24 hours creating a strong demand for such maintenance. Also, storage warehouses and office support outside of manufacturing will need representation in the region to meet the needs of GlobalFoundries at all time. Thus, ancillary business growth will be expected but for the large part, hard to completely model based on changing needs of such an advanced manufacturing facility.

With these enormous changes in local development, pressure is then put on local schools and demands for residential housing. Increased industrial growth to the region brings with it new families in search of housing and schooling opportunities available in the region. One of the stakeholders interviewed even went so far as to say, “The biggest factor was the schools. We have two young kids, and I think that’s the case for a lot of people when they relocate because a lot of them are families ... We wanted our kids to be in Saratoga school district so that’s why we moved to Saratoga” (Community member interview 2011). The factor of school districts leading to housing locations led us to contact representatives from the Ballston Spa public school district to ask what would happen as a result of increased population growth in the region. Since public schools in New York State are required to take on all new students who come to the region, the response was “we’re a public school; therefore, we have to take in all students who enroll” (Ballston Spa School District Representative 2011). Increased population pressures on area will have an affect not only on the schools, but on the residential housing communities as well.

Population growth from such a spike in development leads to changes in housing for the regional community. It is largely expected that increased development and population size will lead housing prices to rise, which makes buying a new home in the region more expensive. Additionally, property values will go up, which is beneficial for homeowners, but will increasing rental rates for housing in the region. Many higher-level plant workers have already moved to the area from around the nation and world. However, SEDC president Dennis Brobston does not expect GlobalFoundries to spur a major housing boom: “housing in this economy has not ratcheted up in any great number. There are 2,500 houses for sale in Saratoga County. Another 6,000 lots have been approved to build on. This ranges anywhere from \$250,000 to more than \$1 million. So there’s a lot of capacity” (Saratogian 2011).

These new high-tech workers will not only come from semi-conductor facilities in the US, but from international sites as well, resulting in changes of population demographics in the region. Aside from some of the negative impacts of the development, surrounding counties around Malta, NY are likely to see increased cultural diversity. This new diverse workforce being contracted to work for in Fab 8 comes from around the world including: Germany, Singapore, and around the nation as well from Texas, Arizona, California, and Oregon, (states with semi-conductor facilities of their own). The region would then experience major social growth in terms of increased population diversity, which may in part lead to cultural changes such as new restaurants, shops, and social groups (Rooney interview 2011). These potential changes in social dynamics would be a benefit for regional.

Many of the changes in development from GlobalFoundries direct their attention to focused scope of the EIS. One final major theme that was present throughout our interview process was the lack of attention given to regional planning in lieu of such attention given to regional economic developing agencies. The CDRPC was not included in the SEQRA analysis, nor were they involved in any of the regional development planning decisions. The regional economic agencies, CEG and SEDC, remained the only two regional entities involved in establishing GlobalFoundries in Malta, New York (CDRPC interview 2011).

Finally, we would like to offer recommendations to future capstone groups interested in pursuing the development of GlobalFoundries. The project is expansive and ongoing; therefore, there is room for further development and discussion especially in the areas of housing, education, regional planning.

IV. Conclusion

The results from of our research into the Environmental Impact Statement and Public Comment period required by the SEQRA process in addition to our stakeholder analysis found SEQRA both failed and succeed in addressing the economic, environmental and social impacts of GlobalFoundries. We have discovered that SEQRA is an inadequate tool for addressing the cumulative and therefore regional impacts of GlobalFoundries even though the EIS successfully looked at the impacts to the Towns of Malta and Stillwater because the EIS did not address the *cumulative* impacts that are going to spill over the town borders into other parts of Saratoga County. However, the focus of the EIS on the towns of Malta and Stillwater are in part because of State and Federal regulations required for the specific building, but also largely driven by the Public Comments. The participants in the Public Comment period were from the towns of Malta and Stillwater. Had surrounding community members participated in the Public Comment period, perhaps the SEQRA process would have address the regional effects as well. Our analysis shows Fab 8 will not only have local impacts, but also large regional effects ranging from population pressures to economic development. The cumulative regional and local influence of GlobalFoundries poises the question of the region's preparedness: is the greater Saratoga County, aside from Malta and Stillwater, ready for such impacts despite exclusion from the SEQRA process? Through our communication with other Saratoga County Town Board Planners and Supervisors, we found private developers within these towns were anticipating growth from GlobalFoundries and preparing by creating apartment complexes, renovating public spaces, and building "shovel ready" sites. The Saratoga County towns beside Malta and Stillwater will have to prepare for additional growth and resource demands as people and companies move to the region in response to GlobalFoundries' direct or indirect job creation. In conclusion, the

effectiveness of the SEQRA process was not fully utilized resulting in its failure to document the cumulative effects of GlobalFoundries.



Figure 3: Luther Forest Technology Park and Fab 8 with Saratoga Lake in the background (GlobalFoundries 2010).

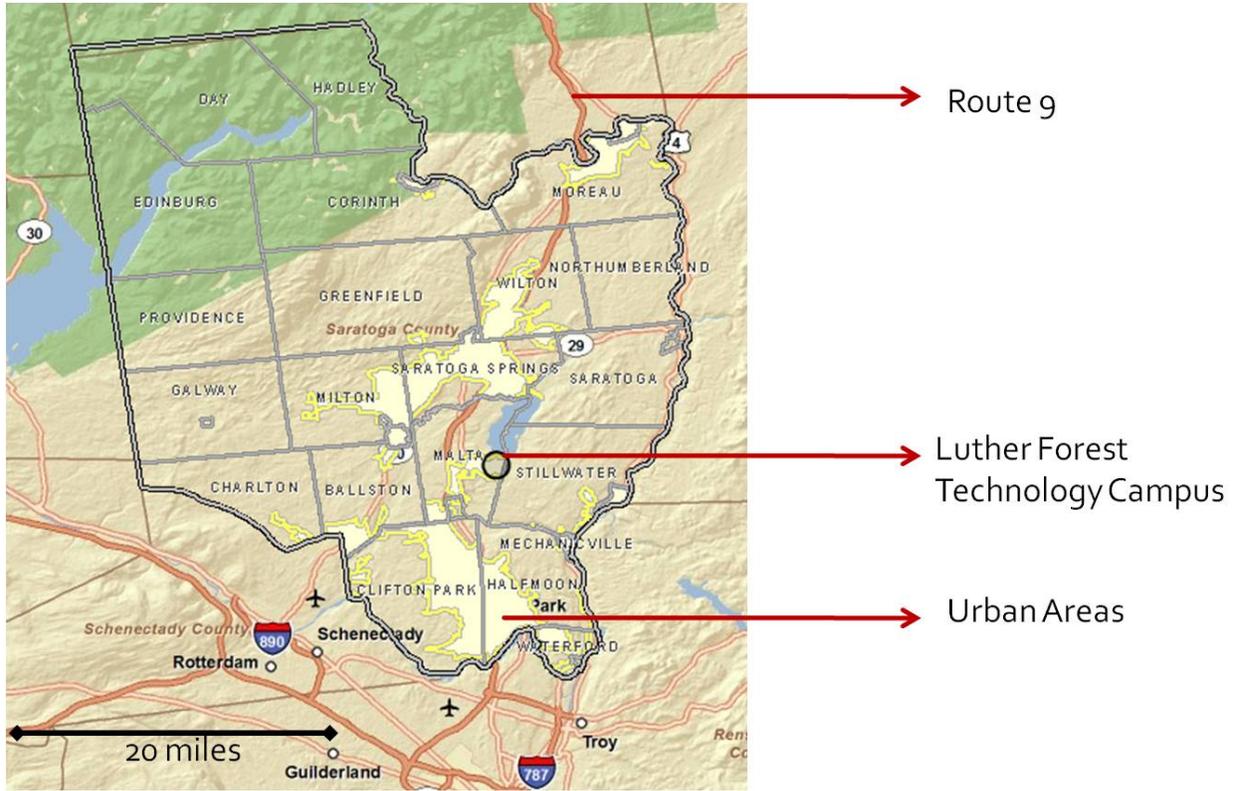
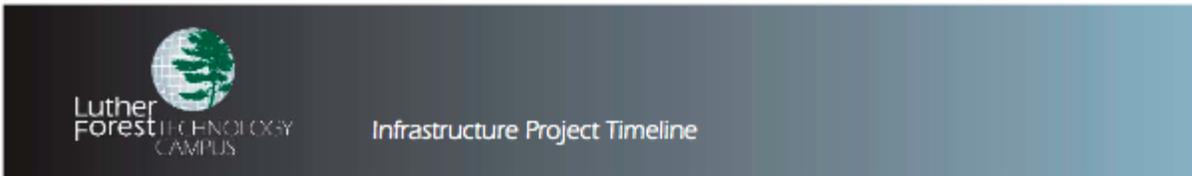
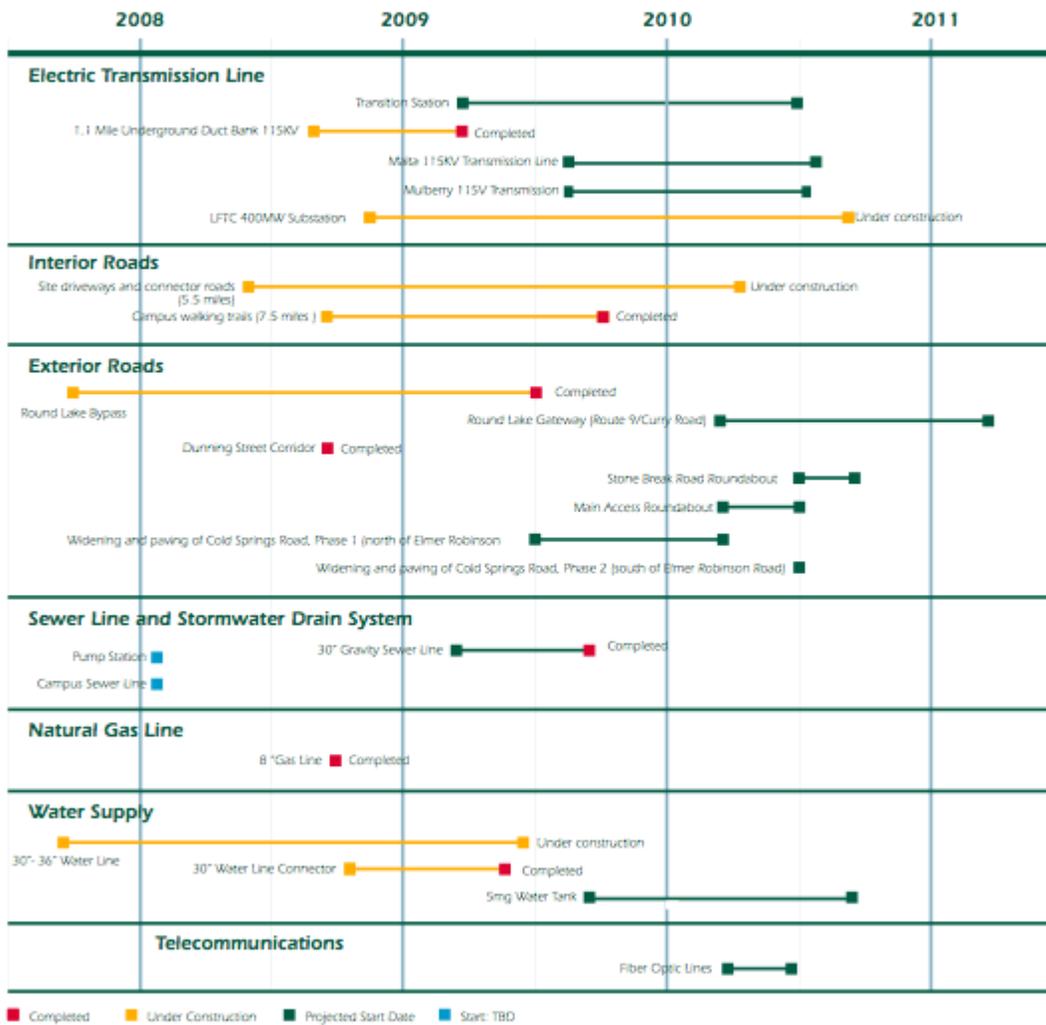


Figure 4: Saratoga County with location of Luther Forest Technology Campus marked. The campus borders rural towns but is off Route 9. Further ancillary development would most likely occur off of Route 9.



Luther Forest TECHNOLOGY CAMPUS Infrastructure Project Timeline



LFTCEDC believes the information set forth herein is accurate. However, LFTCEDC, its officers, agents and employees make no representations or warranties and shall incur no liability under any law, statute, rule or regulation as to the accuracy, reliability or completeness of the information provided hereunder and assume no responsibility for errors and omissions contained herein. Each developer should conduct its own investigations and analysis to check the accuracy of the information contained herein and should obtain independent advice from appropriate sources, including the applicable town having jurisdiction over the developer's project.

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Figure 5: PDD Infrastructure Project Timeline showing all the necessary infrastructure changes needed to build Luther Forest Technology Campus

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6.1 Appendix: Stakeholders Interviewed/Contacted

Elected Officials

- Town of Malta
 - Anthony (Tony) Tozzi: Director of Building and Planning Department
 - Sophie Marossu: Town Planner
- Town of Clifton Park
 - Barbara A. McHugh: Community Development
 - John P. Scavo: Director of Planning
- Town of North Greenbush
 - Josephine Ashworth: Town Supervisor
- Ballston Spa
 - Public School District representative
- Town of Saratoga
 - Amy Durland: Planning Board member

Community Members

- Bob Radliff: Stillwater resident and Executive Director at Community Loan Fund of the Capitol Region
- Amy Durland: Saratoga Springs Planning Board Member
- Bill Kebbeman: Saratoga County resident
- Travis Bullard: Saratoga Springs resident

- The Saratogian
 - Lucian McCarty: Writer from the Saratogian

Regional Agencies

- Center for Economic Growth (CEG)
 - David Rooney: Senior Vice President of Business Development and Marketing
- Saratoga Economic Development Corporation (SEDC)
 - Shelby Schneider: Director of Marketing and Economic Development Specialist
- Brookfield Global Relocation Services (no response)
- Capitol District Regional Planning Commission (CDRPC)
 - Todd Fabozzi: Regional Planner

Utility Companies

- Saratoga County Water Authority
- Saratoga Technology + Energy Park (STEP)
 - Tricia King, Saratoga Technology & Energy Park
- Saratoga Water Services
 - Alexander L. Mackay: President of Saratoga Water Services and relation to the Mackay family who retained previous ownership of the Luther Forest land
- Saratoga County Wastewater Treatment Facility
 - Sue Duff: Chief Operator
 - James DiPasquale

GlobalFoundries

- Travis Bullard: GlobalFoundries' Public Affairs and Communications Manager

6.2 Appendix: Interview Questions

Interview questions asked to major stakeholders involved in determining the influence of the development of GlobalFoundries Fab 8 microchip processing plant to the community (Malta and Saratoga Lake watershed), 2010-11. Questions were tailored depending on stakeholder.

- What is your relation to Fab 8?
- Do you believe that the development of Fab 8 will change the Malta or Saratoga Lake community environment? If so, then how?
- Why, or why not, might Fab 8 have major environmental impacts on the surrounding community?
 - Do you think Fab 8 will change water consumption rates significantly for the area?
 - Where will Fab 8 draw its water from? Does this conflict with pre-existing water obligations to the local environment?
 - Do you think Fab 8 will change energy consumption rates significantly for the area?
 - Where will Fab 8 draw its energy from? Does this conflict with pre-existing energy obligations to the local environment?
 - Will these changes in consumption rates lead to higher utility costs for individuals living in the Saratoga Lake watershed community?
 - How else might the resource consumption of Fab 8 affect the local community? Environmental concerns?
- What types of jobs does Fab 8 offer?
- What are your perspectives on the new job availability potentially being created through the construction of Fab 8?
- Do you think these new jobs will affect life in Malta? If so, how might life be affected?
- Who will be coming to Fab 8 in search of these jobs (regional to international job interest)? What affect will these new workers have on the community?
- Will Fab 8 lead to changes in infrastructure (new roads, housing, schools, telecommunication, etc.) for Malta? Will community dynamics be affected in this way?
- Specifically, will bringing in people to the Malta community through new specialized jobs for the plant create a need for changes in infrastructure in the area?
 - Do you think the economic opportunities provided by the development of Fab 8 will lead to changes in public transportation? If so, what sort of changes?
 - Would new public transportation be required to accommodate for the changes in community infrastructure?
 - Do you think the economic opportunities provided by the development of Fab 8 will lead to changes in community housing? If so, what sort of changes?
 - Do you think the economic opportunities provided by the development of Fab 8 will lead to establishing new schools in area? If so, what sort of changes?

- How might this be an opportunity for Malta to develop in an efficient, environmentally conscious way (smart growth)?
- How might these changes in infrastructure affect established citizens of Malta?
- What town might experience the most growth as a by-product of Fab 8 construction?
- Is there any additional information related to the development of Fab 8 affecting the community of Malta and the Saratoga Lake watershed?

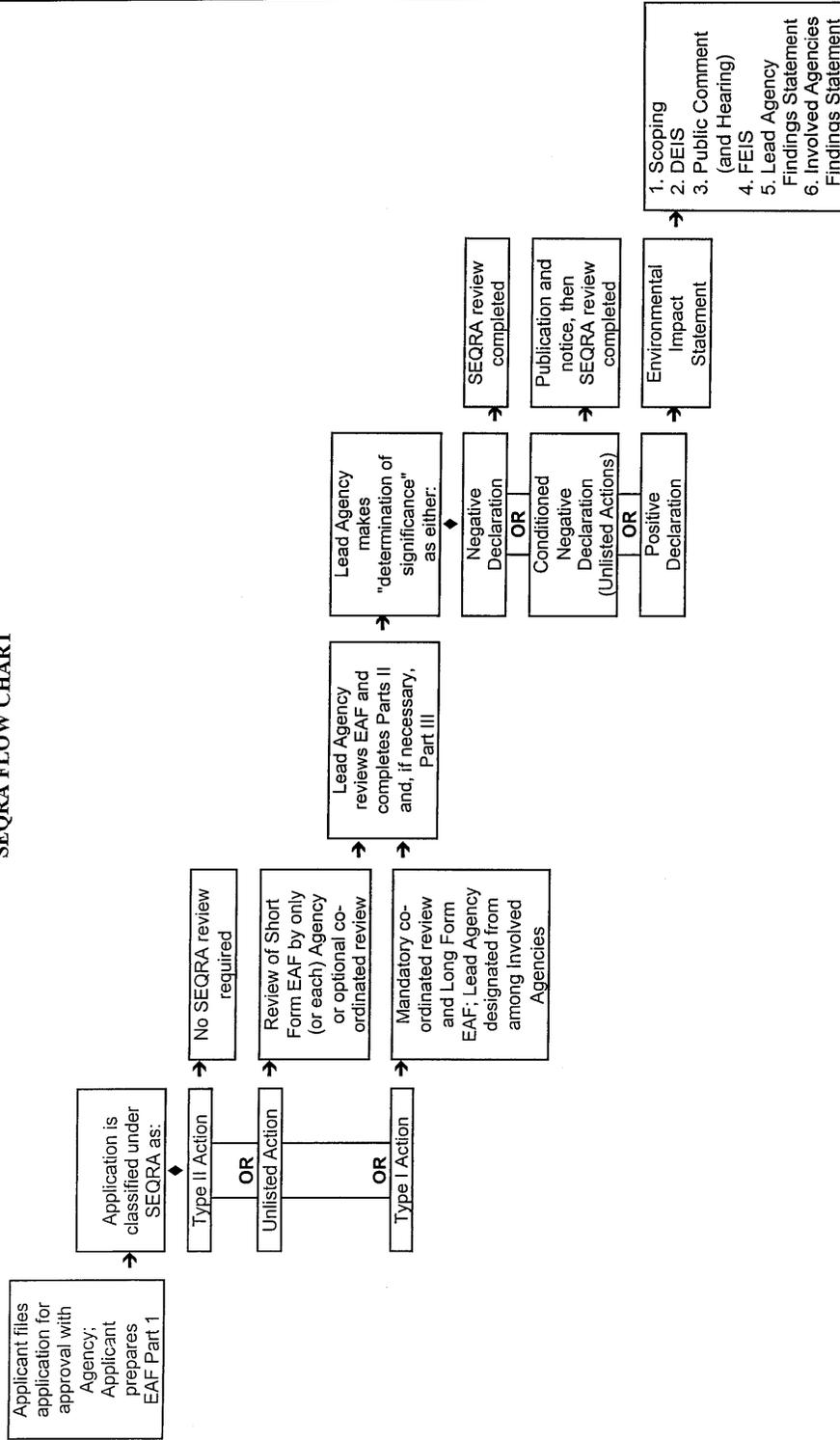
6.3 Appendix: SEQRA

SEQRA: How it Works

It may be helpful to follow the “SEQRA FLOW CHART” when reading along this paragraph. SEQRA begins when “an agency initiates a direct action or when it receives an application for review” (DEC 2011). The “action” is then categorized as Type I, Type II, or Unlisted. The SEQRA process is finished after a Type II classification, while the SEQRA review process continues for Type I and Unlisted actions. A lead agency then completes an Environmental Assessment Form (EAF) to determine if and EIS is needed and is required by state regulations to identify any other “involved agencies” that may have jurisdiction over the project. The first agency to review the application does not automatically assume the role of the lead agency. There is a long EAF for Type I actions and a short EAF for Unlisted actions. The EAF has three parts, part one is prepared by the project sponsor describing the site and project, parts two and three are prepared by the lead agency and address the potential project impacts and the magnitude and importance of those impacts. If there are no significant environmental impacts, then the lead agency completes the SEQRA review with a “Negative Declaration.” A negative declaration must document the relevant environmental concerns and explain why the environmental effects were considered insignificant.

An action requiring an EIS requires the process of a Draft EIS, Public Comment period, Final EIS, and lead agency “Findings” Statement to complete the SEQRA process. It is only until this process is finished that the agencies are able to make a final decision to authorize, approve, fund, permit, or support the action. There are some actions that involved multiple stages or fall under multiple jurisdictions, examples being: “zoning change, extension of sewer service, subdivision approval, and the building of a new road” (DEC 2011). It is imperative that these actions reviewed together and not segmented. Segmenting the SEQRA review and processing the cumulative action as independent or unrelated actions is “unacceptable and may leave the lead agency open to legal challenge” (DEC 2011).

SEORA FLOW CHART



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