ALBANY 2030

your city. your future.

METRICS AND TARGETS

FOR THE

ALBANY 2030 COMPREHENSIVE PLAN

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EXECUTIVE SUMMARY

The City of Albany, NY, seeks to serve as an exemplary capital city by instituting a proper sustainability plan: "Albany 2030: Your City, Your Future." Albany's Department of Planning, in collaboration with the citizens of Albany, created a sustainability plan to ensure that, in the future, Albany continues to provide a decent quality of life for its residents and an attractive location for businesses, while maintaining the environmental and fiscal health of the City.

Albany's sustainability plan is unique for a number of reasons. First, the community was an integral part of the plan's creation. They provided input, reviewed proposals, and provided valuable feedback, ensuring that the plan incorporated their values, needs, and goals. Second, the plan focuses on the interrelationships of its various system components. This approach helps to identify which goals and actions have the greatest impact across the community.

Albany's Department of Planning, spearheaded by Doug Melnick, provided students from Columbia University's Sustainability Management program with an opportunity to work on the Albany 2030 plan. The student team was asked to determine best practices in measuring sustainability performance and developing appropriate metrics and targets that Albany could adopt to evaluate the success of the Albany 2030 plan upon implementation.

The team used an analytical framework called the "Triple Bottom Line" (TBL) for measuring sustainability performance. TBL is an emerging field of metric reporting that combines standard metrics of financial success with those that measure environmental stewardship and social justice. The team used this TBL framework to identify, where possible, "double," or "triple bottom line" metrics (e.g. eco-efficiency, socio-environmental, and socio-economic metrics).

The team conducted research to find case studies and existing metrics and targets used by other cities similar to Albany in terms of population, economy, and topography. Metrics were developed based on existing practices, relevance to achieving the goal, and whether the metric impacted the double or triple bottom line. When metrics were difficult to benchmark with similar cities, case studies of particularly innovative cities were highlighted to provide Albany with criteria to determine successful implementation of its goals.

Based on targets set by other cities, the team identified a range of targets for Albany with the understanding that each city agency must have the final say in what target works best for them. When quantitative targets from other cities were not found, examples of cities that proposed strategies for qualitatively tracking and evaluating goals were included instead.

The core of this report is the documentation of the team's findings and recommendations. For each goal in the plan that was evaluated, the team outlined the goal description, metric category, metric, target, data needed for tracking the metric, alternative metrics, benchmarks and/or case studies from other cities and the rationale behind choosing the metric. A summary chart of the goals, metrics and targets is provided in Appendix A.

In conducting research, team members found that cities were in various stages of developing and implementing their sustainability plans. While many cities have sustainability plans, not all of them have established quantitative targets. It was difficult to find sustainability metrics that were integrated in the interrelated, systems-thinking approach that Albany took in developing its Albany 2030 plan. Additionally, it was a challenge to identify metrics that Albany could track without expending significant additional human and financial resources.

In essence, sustainability plans are a crucial component to any community seeking to thrive in the years ahead. Cities that are establishing and implementing sustainability initiatives with clear and quantitative metrics and targets will be favorably positioned to achieving a sustainable future. This report recommends metrics and targets as the basis for monitoring and reporting on the progress of the actions in the plan. If approved by Albany's various stakeholders, these metrics and targets could be adopted into the final version of the Albany 2030 plan.

INTRODUCTION

Albany is the capital city of the state of New York, and has a city population of approximately 97,856.[1] The City's economy is dependent on government, health care, education, and an emerging high-tech industry.[2] As Albany's population continues to grow and its sectors expand, its environmental concerns deepen.[3] Albany seeks to serve as an exemplary capital city by instituting a proper sustainability plan: "Albany 2030: Your City, Your Future." This comprehensive city plan is the first of its kind in the City's 400-year history. In conjunction with the citizens of Albany, the Department of Planning developed a plan intended to make the City a sustainable and prosperous place to live and work in the next twenty years.

This is a critical juncture for such a plan to be taking shape in Albany. Its technology industry is evolving and the City has many ongoing planning initiatives such as neighborhood revitalization plans, redevelopment programs, economic development plans, housing initiatives and studies, and recreation and greenway plans.[4] The sustainability plan is intended to work in conjunction with these initiatives to ensure that a future city takes shape that meets the needs of residents and businesses while maintaining the desired character, quality of life, and environmental and fiscal health of the City.

A plan for future change cannot effectively develop without constant and direct communication with the individuals whom this plan will affect, taking into account their values, needs, goals, and lifestyles. The developers of the Albany 2030 plan have reached out to the community to make them an integral component in its creation. Community members have been asked to review the proposed plan and provide feedback. Opportunities for input were provided through online forums, an interactive website, surveys, and meetings. The draft of the plan is available online in order to ensure complete transparency in its development.

Having received a great deal of valuable feedback from the community, the City planners are now looking for more detail regarding the proposed initiatives by seeking metrics to measure the goals outlined in the plan. During the fall semester of 2011, students in Columbia University's Sustainability Management Integrative Capstone Workshop were presented with the opportunity to aid Albany's Department of Planning, spearheaded by Doug Melnick, Director of Planning and Director of the Mayor's Office of Energy & Sustainability. They were tasked with determining best practices in measuring sustainability performance and developing appropriate metrics and targets to evaluate the success of the plan's implementation. This document outlines the metrics and targets recommended for each goal in the plan according to an analytical framework that incorporates holistic thinking, interconnectedness, and a "Triple

Bottom Line" (TBL) approach. Such recommendations were devised thorough appropriate benchmarking, case study research, and a critical analysis of each goal.

Plan Structure

The Albany 2030 plan is unique from most other city sustainability plans because of its interdisciplinary nature. An interrelationship chart identifies hundreds of touch points between various goals and actions and can be referenced in the plan beginning on page 192. This chart helps to identify which goals and actions have the largest impact across multiple systems. The interrelationships also help to form the structure of the report itself. In the plan, Albany outlines four keys, or themes, that aim to achieve the sustainable vision for Albany in 2030. The keys are to improve Albany's image and quality of life, increase fiscal capacity, facilitate and mobilize private investment, and establish Albany's reputation as a green community.

Keys for Defining Albany's Vision for 2030

Key 1	Key 2	Key 3	Key 4
Improve Albany's Image & Quality Of Life	Increase Fiscal Capacity	Facilitate and Mobilize Private Investment	Establish Albany's Reputation as a Green Community
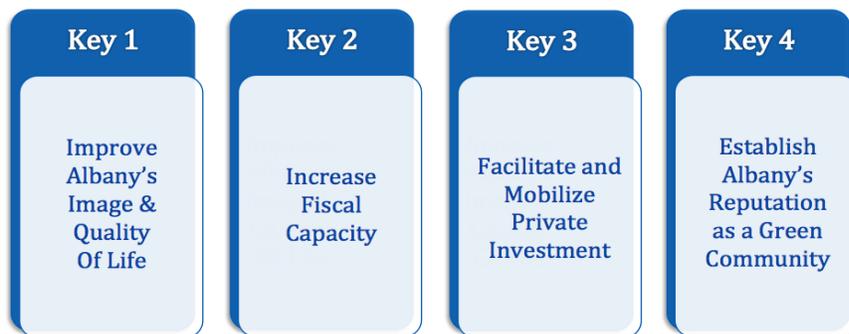
The plan is organized into eight "comprehensive plan systems": community form, economy, social, transportation, natural resources, housing and neighborhoods, utilities and infrastructure, and institutions. Each plan system is comprised of multiple goals. For example, the natural resources system has goals related to protecting or improving waterways, the urban forest, natural habitat and air quality.

Comprehensive Plan Systems (8)

Goals (39)

Strategies (~150)

Actions (~500)

In all, there are 39 goals associated to the eight plan systems. The plan proposes strategies the City can use to achieve these goals. Examples of strategies that would fall under the goal of promoting an urban forest include developing an urban forestry program and using zoning and environmental review tools to protect the urban forest. In all, there are approximately 150 strategies.

Several actions are proposed to outline the necessary steps

towards implementing each strategy. For example, a few of the actions behind the strategy to develop and implement a comprehensive urban forestry program are to measure the existing tree canopy and quantify its CO_2 sink capacity and then to set targets for planting trees in parks, along streets, and in sensitive environmental areas. In all, there are over 500 identified actions to implement the approximately 150 strategies. A copy of the draft Albany 2030 plan can be found online (click here).

METHODS

Analytical Framework

In trying to find meaningful metrics and targets for the goals listed in Albany's plan, the team wanted to ensure Albany measured sustainability in a comprehensive way. One of the significant problems with the traditional method of measuring success for government goals is the silo approach which tends to use metrics designed to measure progress in one specific area. For example, traditional methods of environmental measurement might measure the percentage of phosphorous in the water system; economic measurement might be the Gross Domestic Product (GDP) growth of a community; and social measurement might be the number of users of a community network.

The problem with the silo approach to metrics is that it focuses solely on addressing one problem while failing to recognize the trade-offs that have to be made in the real world. It is possible to eliminate phosphorous in the water system, but at what cost to the economy? Similarly, by eliminating pollution regulations, it may be possible to increase GDP, but at what cost to the environment? In this way, one can see that measuring success in silos fails to directly account for externalities that may manifest in other areas.

A relatively new field of metric reporting is emerging called the Triple Bottom Line (TBL). The TBL framework is "intended to capture the whole set of values, issues, and processes that companies should address in order to minimize any harm that results from their activities and to ensure creation of positive economic, social, and environmental value."[5] TBL incorporates the status of environmental and social capital into corporate and government reporting. Corporations and governments investing in TBL thinking "should combine standard metrics of financial success with those that measure environmental stewardship and social justice."[6] The TBL approach, also referred to as the "3P approach" - people, planet, and profits – attempts to incorporate goals in three dimensions, rather than the silo approach focusing on just a single dimension. Examples of quantifiable environmental impacts include consumption of finite

resources, water and air quality, and pollution. Social impacts include community health, education quality, worker safety, diversity, and living wages.

Implementing TBL metrics is important for several reasons. First, if metrics and goals do not measure environmental and social aspects, then the health of the environmental and social dimensions will tend to be exploited in order to maximize the economic goals. However, measuring social and environmental performance alone fails to account for the real-life decisions that must be made with regard to trade-offs between different stakeholders.

Second, TBL incorporates basic human intuition into the governing and reporting framework. Any measurement that reports on the health and success of a single aspect of human lives is intuitively lacking. An extremely wealthy society in which very few people are rich and the majority is poor and uneducated would not be considered by many to be successful. Similarly, a society with a pristine environment that lacks infrastructure, electricity, and safe buildings would also not be considered successful. When we measure the health of our families, people certainly do not look solely at how much wealth the family has accumulated. Rather, people are concerned with the family's health, the children's education, and the amount of love and caring within the family.[7] So why would governments measure the success of their policies solely by economic means? By combining the reporting of the health on all capital stocks – economic, environmental, and social – it is possible to more accurately measure the health of our broader communities.

One criticism of the TBL is a lack of universal standards from which to compare and contrast different organizations and governments.[8] Critics argue that the lack of universal standards makes it difficult for leaders to determine what constitutes success, how results can be compared across localities, and calls into question whether the TBL can be considered an effective way of measuring the bottom line at all. While the lack of a standard poses a challenge, this criticism could be levied against any new and emerging practice. The fact that a universal standard has yet to be developed hardly is cause to invalidate TBL thinking. If it were, how could any new standard ever be adopted? Instead, the lack of standards should only serve as a reminder of the challenge in incorporating this new framework into traditional reporting metrics.

There are several examples of localities adopting and measuring progress against TBL metrics. A report on TBL approaches created by Jigsaw Services and prepared for the city of Salisbury, United Kingdom details some individual approaches to TBL reporting and is included in Appendix B.[9] Grand Rapids, MI transforms a traditional measure of garbage from total waste collected to tons of waste collected per household. By doing so, Grand Rapids incorporates a

social metric into environmental performance.[10] In another way, Grand Rapids incorporates social equity into economic performance by tracking per capita personal income and comparing it against county and state averages.[11] They state that "sustainable cities develop a diverse and local economy that supports community families and individuals with sufficient personal income and a high quality of life and personal well-being."[12] Grand Rapids hopes to increase per capita personal income levels to exceed county and state levels by 2020.

Based on this analytical framework, the project team tried to incorporate holistic thinking and TBL metrics that take into account the interconnectedness of the physical world around us. Most metrics proposed in this report will belong to one of three categories: eco-efficiency metrics that measure the environmental good as it relates to economic terms, socio-environmental metrics that measure environmental benefit and social justice, and socio-economic metrics that measure economic productivity and equality.

Research Methodology

Given the complexity of the Albany 2030 plan, one of the team's initial challenges was to determine at which level - goal, strategy, or action - to develop metrics.

As mentioned previously, one of the central ideas of the plan is that of system interrelationships. The plan contains a matrix that highlights interrelationships between various goals. For example, the goal to develop an urban forestry program also relates to goals related to air quality. The plan also associates some of the goals to the four keys mentioned earlier.

The team decided to develop metrics at the goal level, rather than the more granular strategy or action level, to ensure that the recommended metrics and targets would have a large impact on plan systems and goals. The team used the following criteria to prioritize the goals (in order of importance):

- High number of relationships to the four keys
- High level of system interrelationships
- Prioritization from the client
- Breadth of goal

For each goal examined, team members researched case studies and existing practices used by other cities. Whenever possible, the team examined cities that were similar to Albany in terms of population, economy or topography. Where comparable cities with quantitative goals were not found, cities with qualitative goals were highlighted.

Metrics were developed based on existing practices, relevance to achieving the goal, and whether the metric impacted the TBL in terms of touching upon a combination of environmental, social and economic qualities. Based on targets set by other cities, the team identified a range of targets for Albany with the understanding that each city agency must approve the target that is most appropriate. When quantifiable targets from other cities were not found, case studies of cities that proposed strategies for qualitatively tracking and evaluating goals were included instead.

FINDINGS AND RECOMMENDATIONS

The findings and recommendations are the core of this report. They include the team's research in determining appropriate metrics for the majority of the goals outlined in the Albany 2030 plan. The research includes the goal description, number of keys each goal touches, the metric category, metric, the recommended target for Albany, alternative metric suggestions, the data needed in order to track the metric, the benchmarks and case studies used to determine the metric and target, and finally the rationale behind selecting the metric. A summary chart of the goals, metrics and targets is provided in the Appendix A.

The following outline provides a description of each of these elements to assist the reader in interpreting the findings and recommendations summary for each goal:

- **Goal Description**: The goal description is taken directly from the Albany 2030 plan.
- **Keys:** This section identifies to which of the four keys the goal is linked.
- **Metric Category:** Most metrics will fall under one of the three categories: *eco-efficiency* metrics that measure the environmental good as it relates to economic terms; *socio-environmental* metrics that measure environmental benefit and social justice; and *socio-economic* metrics that measure economic productivity and equality.
- **Metric:** The metric is defined by the unit in which the goal will be measured.

- **Target:** Based on research, targets were set for Albany to reach by 2030. Generally, ranges were provided when data was available. When data was unavailable, a recommendation for developing baseline data was included.
- **Data Needed:** This section outlines the information Albany would need to collect to track the metric. If relevant data was found, this section specifies the type of data that could be used to track the metric. Otherwise, this section explains how one might collect the data.
- **Alternative Metrics**: This section proposes alternate metrics that Albany might consider. Some of these metrics might be more feasible to track in the future.
- **Benchmarks / Case Studies:** As discussed previously, the field of TBL metrics is relatively new and therefore it is difficult to find consistent metrics across different cities. In these circumstances, case studies of how various localities are defining similar measures were provided. If a consistent data set was found to support the metric, benchmarks were used to rank Albany among a similar set of cities.
- **Metric Rationale:** The metric rationale explains how the metric will measure the success of the goal.

Community Form

Community form is the first plan system out of the eight outlined in the Albany 2030 plan. This system seeks to address the physical layout and appearance of the City and includes the interaction between the built and natural environments in Albany. Goals in this section include optimizing the land use pattern and preserving the architectural character of the City's buildings.

1.1 LAND USE PATTERN

Goal

Promote development of a balanced future land use pattern that supports realization of the Albany 2030 Vision Statement (safe, livable neighborhoods; a model educational system; a vibrant urban center; multi-modal transportation; a green city; and a prosperous economy).

Keys

Key 4

Establish Albany's Reputation as a Green Community

Metric Category

Environment

Economy

Social

Socio-Economic
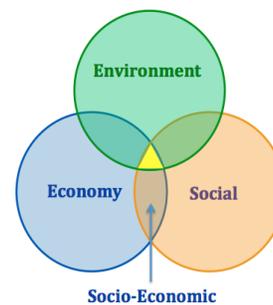
Metric
Percent of vacant lots occupied/restored (as buildings or open space)

Target
Reduce percentage of vacant and unoccupied lots by 15-30%.

Data needed
- Total number of city lots
- Total number of vacant lots (not including open space)

Alternative Metrics
- Enviro-socio-economic: Percent of people who have access to daily needs (e.g., food, health care, employment, open space/parks or recreational opportunities, and education) within 1/2 mile of residence or within 1/2 mile of public transit access

- Environmental: Number of city code changes or land use policies that support sustainable initiatives
- Eco-efficiency: Number of brownfields remediated

Benchmarks / Case Studies
- The City of Wilmington, DE, developed a Urban Greening Program with the help of "Red Fields to Green Fields," a program established by Georgia Tech University, where they surveyed vacant properties and identified opportunities for the city to acquire these lots and convert them into open spaces and parks.[13] The goal is to acquire 165 of Wilmington's vacant land parcels and remove 50% of the vacant property from the target area from the market.[14]
- Baltimore, MD, set a goal of addressing 1,500 of its 16,000 vacant or boarded buildings within year one of its *Vacant to Value* program, representing a 9% decrease in vacant or abandoned properties in the first year of its program.[15]

Metric Rationale

In 2009, the City of Albany had a vacant housing unit rate of 13%, and in 2008, there were over 800 abandoned buildings in the City.[16] In addition to reducing property values, fostering crime activity and furthering neighborhood blight, empty lots and abandoned buildings represent a missed opportunity to optimize the City's land use and create value. Vacant lots could be turned into parks, residences, or commercial businesses in order to make more effective use of the available land within City limits. In order to determine whether Albany's land is optimally used, the number of vacant lots should be compared to the number of occupied lots to determine what percent of buildings and lots remain underutilized. This metric will indicate the success of neighborhood development, establish defined open space, and improve neighborhood density and connectivity.

1.2 ARCHITECTURAL CHARACTER

Goal

Capitalize on diverse architectural and neighborhood-specific character to maintain and revitalize neighborhoods. Preserve and restore existing buildings that are vacant or underutilized through adaptive reuse while allowing for new development and new architecture.

Keys

Key 1

Improve Albany's Image & Quality Of Life

Metric Category

Eco-Efficiency

Environment

Economy

Social
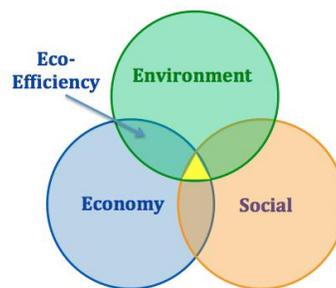
Metric

Number of Historic Resources Commission "approved" projects that are repurposed vacant lots, brownfields, or 'Registered Historic Structures."

Target

Identify baseline of vacant lots, brownfield sites and Registered Historic Structures, and determine appropriate target for yearly increase.

Data needed

Review Status of Historic Resource Commission for the following construction projects:

- Registered Historic Structures
- Vacant lot repurpose
- Brownfield Development

Alternative Metrics
- Eco-Efficiency: Increase number of permits issued for projects that either restore historic properties, or repurpose vacant lots or brownfields.
- Social: Increase number of properties that are registered as Historic Structures.
- Socio-Economic: Reduce number of vacant lots per neighborhood

Benchmarks / Case Studies
- Minnesota's State Historic Preservation Office has drafted the "Preservation Plan for Minnesota's Historic Properties 2012 – 2017" and plans to issue this statewide plan every five years. It includes a detailed list of goals and in 2015, the state plans to hold a "series of listening sessions to measure accomplishments" and "take a fresh look at our progress and the challenges that remain."[17]
- The City of Sarasota, FL, is creating a mechanism for regular review and evaluation of their Historic Preservation Plan through annual reports. It is also measuring the number of historic structures designated on the national register. [18]
- Salt Lake City, UT, has created a Historic Preservation Plan in which they outlined many specific goals for restoration and developed a matrix that identifies the responsible party for each goal. This matrix also includes "timing for each action as: ongoing, within the first year after the plan is adopted, in the one- to five-year timeframe, or five to ten years from adoption" to ensure proper tracking.[19]

Metric Rationale

The architectural character of Albany is defined by its historic pattern of buildings and neighborhoods, which are a source of pride and identity for residents. Albany began to adopt historic preservation practices with the creation of the Historic Resources Commission, and today many historic landmarks throughout Albany are recognized on the federal level. While it is important to maintain the integrity of the existing historically preserved sites, it is also important to make ensure all new construction fits into the existing fabric of Albany. This metric aims to address both the issue of new construction and renovation properties in Albany. Renovation of registered historic structures is encouraged to ensure that the integrity of the existing historic pattern of buildings is maintained. New construction properties also need to fit into the existing landscape of Albany to preserve the architectural city fabric and facades. As many of the goals in the Albany 2030 plan address the issues of vacant properties and brownfields, it is clear that revitalizing those properties is a priority. By incorporating them into this metric, the development of vacant properties and brownfields is encouraged and the newly constructed and renovated properties will be in line with the neighborhood-specific character of Albany.

$ Economy

The economy is often the most commonly considered plan system within city plans since maximizing economic opportunities has been the traditional focus of most governments. However, incorporating social and environmental aspects to economic development plans provides a new way of measuring economic success. By focusing on employment, investment, and economic diversity in a TBL approach, Albany can help to ensure that economic success does not come at the expense of either the environment or social justice. Examples of goals within the economy plan system include increasing employment opportunities, raising local incomes, encouraging development with a focus on placemaking, and diversity of employment.
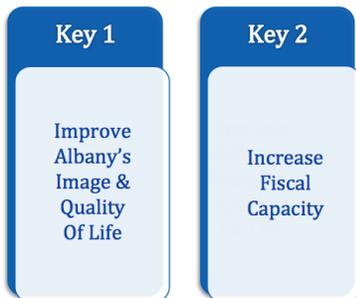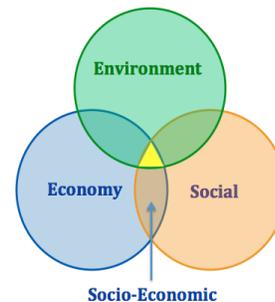
2.1 EMPLOYMENT

Goal

Increase employment opportunities at all education/skill levels, and raise local incomes.

Keys

Key 1	Key 2
Improve Albany's Image & Quality Of Life	Increase Fiscal Capacity

Metric Category

Metric
Percentage of households that earn a living wage

Target
Increase percent of Albany's households that earn a livable wage to 95%.


Data needed

- Household Size by Type (See Appendix C)[20]
- Household Income by Range (See Appendix D)[21]
- Living Wage by Household Size (See Appendix E)[22]

Alternative Metrics

- Socio-Economic: Corporate executive-to-worker wage ratio
- Socio-Economic: Weekly hours of labor required to meet basic needs
- Socio-Economic: Housing price-to-income ratio

Benchmarks / Case Studies

Percent of Households that earn a Living Wage
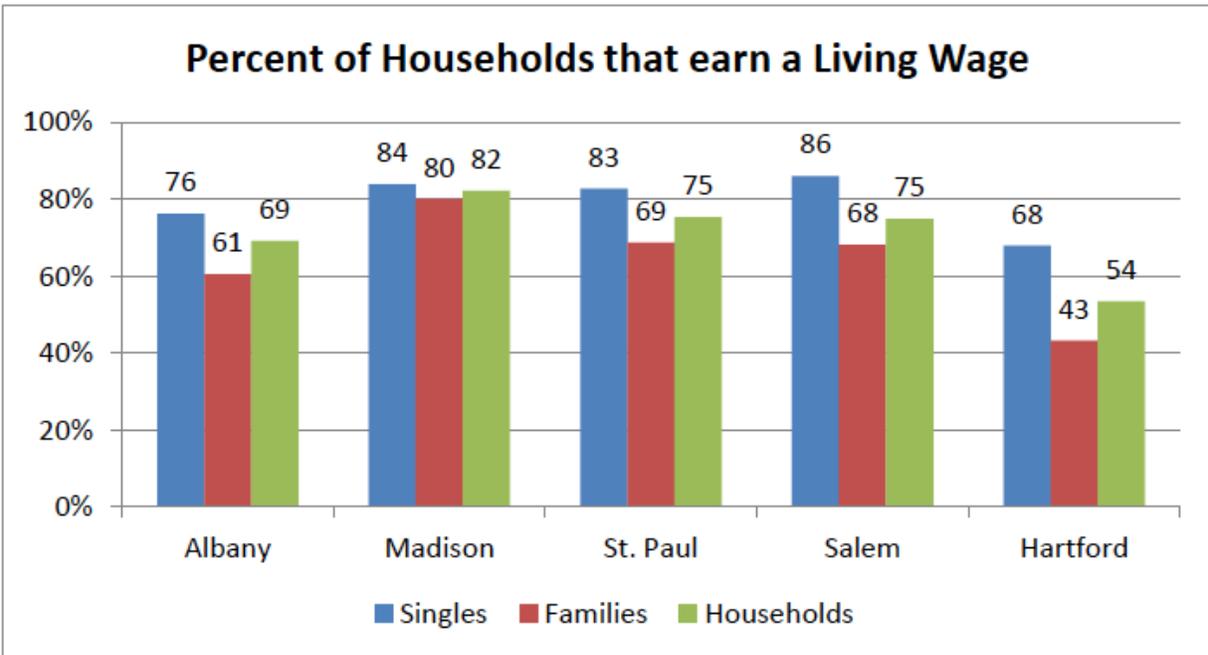
Metric Rationale

A living wage is defined as "a wage adequate to permit a wage earner to live and support a family in reasonable comfort."[23] While macro-level economic growth is relevant, societal benefits from economic growth are realized when the majority of citizens can earn an income to support a healthy family. Economic struggles increase the levels of stress in the population and are correlated to increased crime and many other social disorders, which, in turn, increase the costs of other social services and government expenditures.[24]

Measuring the percentage of households that earn a living wage incorporates a social dimension into what is traditionally solely an economic measurement. When more households have enough income to live a reasonably comfortable life, a positive feedback mechanism can develop that reduces expenditures in law enforcement and social services.[25]

Pennsylvania State University created a living wage calculator to estimate the minimum wage necessary for a single-wage earner to support a family of various sizes.[26] Separate annual living wages were calculated for single households and for family households (Note: Assumption is that an average family consists of two adults and one child). For Albany, the single household living wage is $19,698 and the family household living wage is $48,402 in 2008 dollars. According to the 2000 U.S. Census, 69% of Albany households (76% of single, 61% of family households) currently earn more than the living wage.
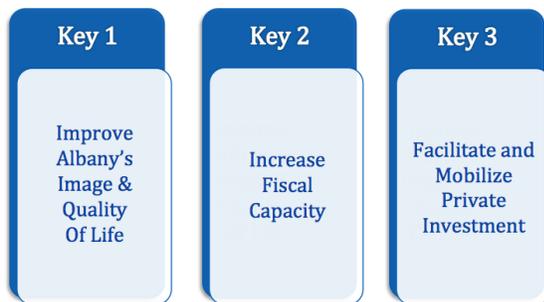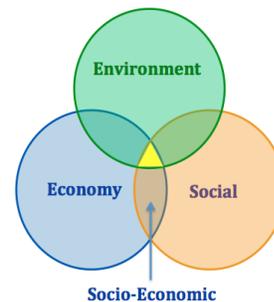
2.2 INVESTMENT

Goal

Encourage investment and reinvestment throughout Albany that supports economic development and placemaking.

Keys   **Metric Category**

Key 1	Key 2	Key 3
Improve Albany's Image & Quality Of Life	Increase Fiscal Capacity	Facilitate and Mobilize Private Investment

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Metric

Percentage of employment/income coming from small businesses

Target

### Increase percentage of employment and payroll attributed to small business to 50%.

Data needed

- Statistics of US businesses Tabulated by Employment Size (Metropolitan Area Statistics) (See Appendix F)[27]

Alternative Metrics

- Eco-Efficiency: Number of enterprises adopting ISO 14000 standards
- Socio-Economic: Number and value of business loans in low-income area
- Socio-Environmental: Investment dollars in environmental protection as percentage of total dollars invested

Benchmarks / Case Studies

Percentage of Businesses that are small (<20 employees)
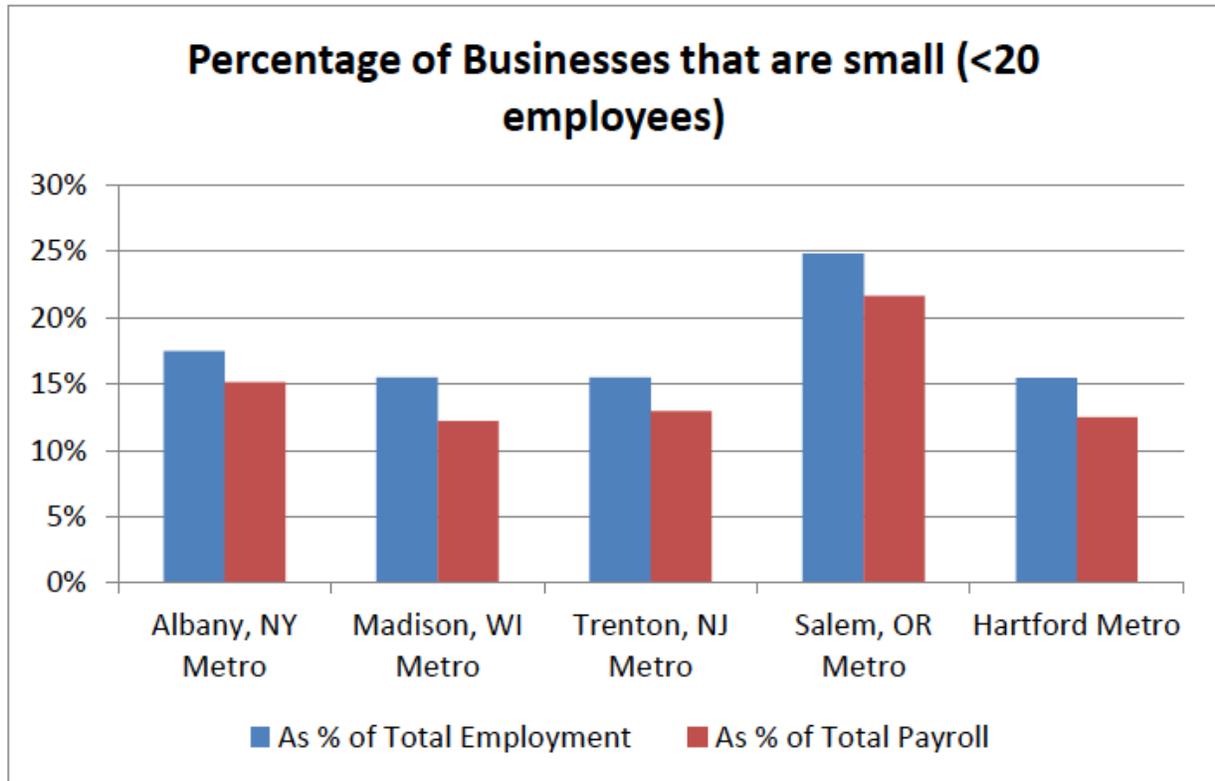
Metric Rationale

Local business is thought to have more benefits to local economies than large chain stores. This is because local businesses usually hire supporting businesses (architects, designers, sign makers, etc.) from the local economy, allowing money to be continually circulated within it. A large chain store that sets up a single franchise will likely undercut prices of local businesses. Eighty-four percent of chain store business is diverted from established local businesses.[28] Local business may also lead to a more resilient economy as one company failure is likely to have a limited effect on the overall economy.

Finding data on which businesses operate using local supply chains is difficult. In "The Future of Business: The Essentials," Lawrence Gitman defines small business as being[29]:

- Independently managed
- Owned by an individual or a small group of investors
- Locally based (although the market it serves may be widespread)
- Not a dominant company (thus it has little influence on its industry)

The size of local business may serve as a proxy to determine which businesses are local for it is unlikely that a company employing a small number of employees would be a non-local business.

The U.S. Small Business Administration defines a small business by either the size of business revenue or the number of employees by North American Industry Classification System (NAICS) code. There are different thresholds for various industries to qualify as a small business. Revenues range between $750,000 for a logging company to $35 million for electronic options. Employee ranges for small businesses range from 50 for heating oil dealers to 1,500 for pipeline transportation of crude oil.[30]

Since the Albany metro area is relatively small compared to most U.S. cities, a measure of 20 employees was used to distinguish a small business. The data source can break down the number of employees by industry into other ranges (0-4; 5-9; 10-19; 20-99; 100-499; 500+) if it is determined that a larger business size is more reflective of local business.
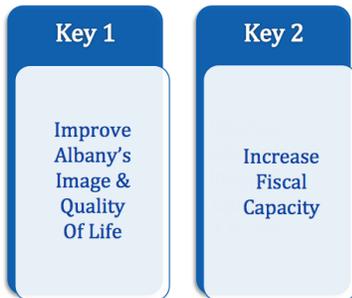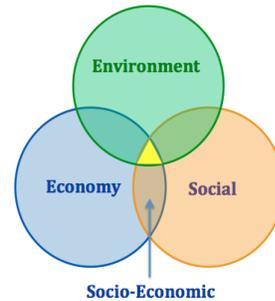
2.3 DIVERSITY

Goal

Create economic resilience through diversity.

Keys

Key 1	Key 2
Improve Albany's Image & Quality Of Life	Increase Fiscal Capacity

Metric Category

Metric

Percent of employment/payroll represented by small business by North American Industry Classification System (NAICS) codes

Target

Increase the percentage of employment/payroll represented by small business NAICS codes to a range of double the current percentages to 50%.
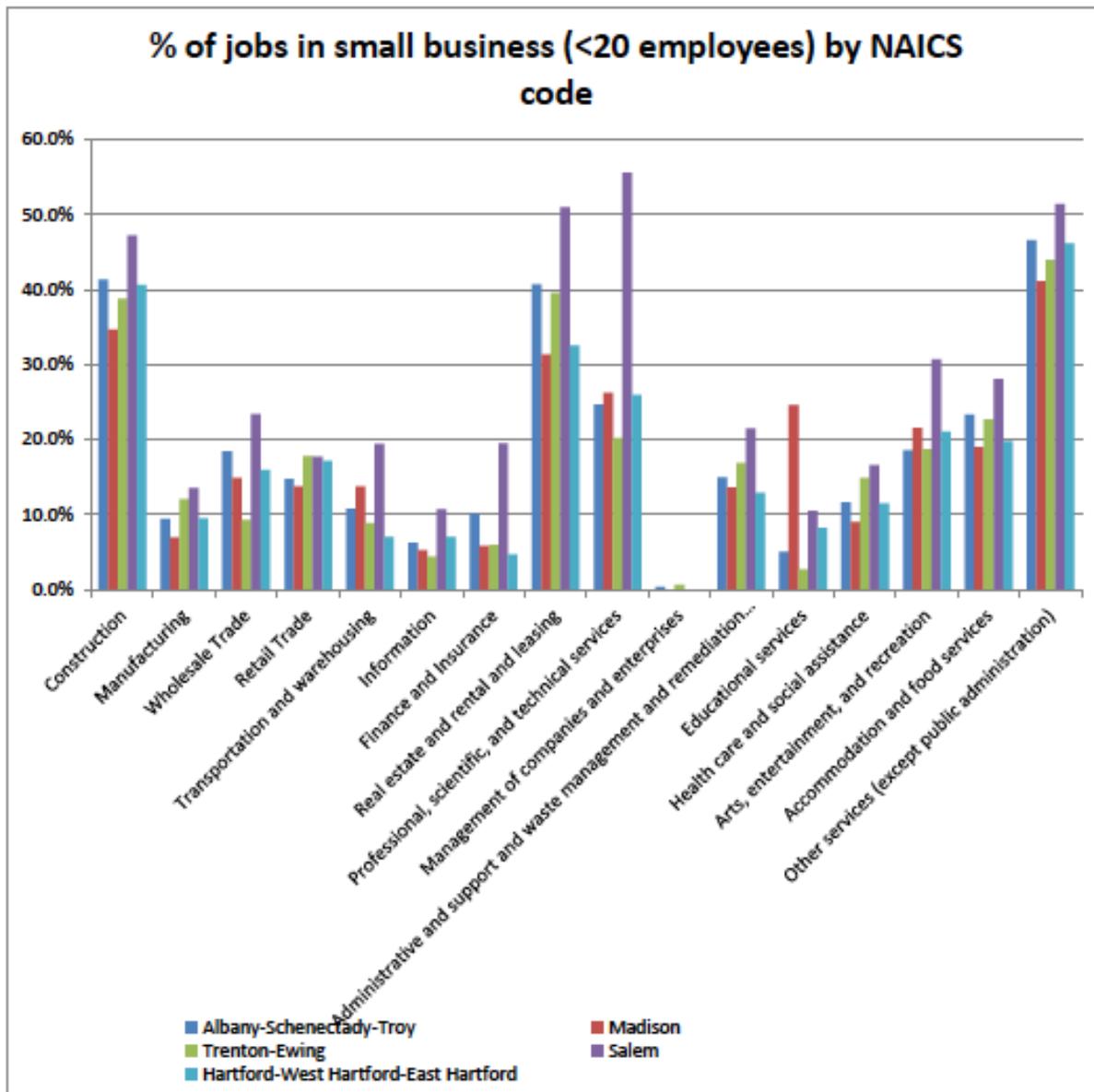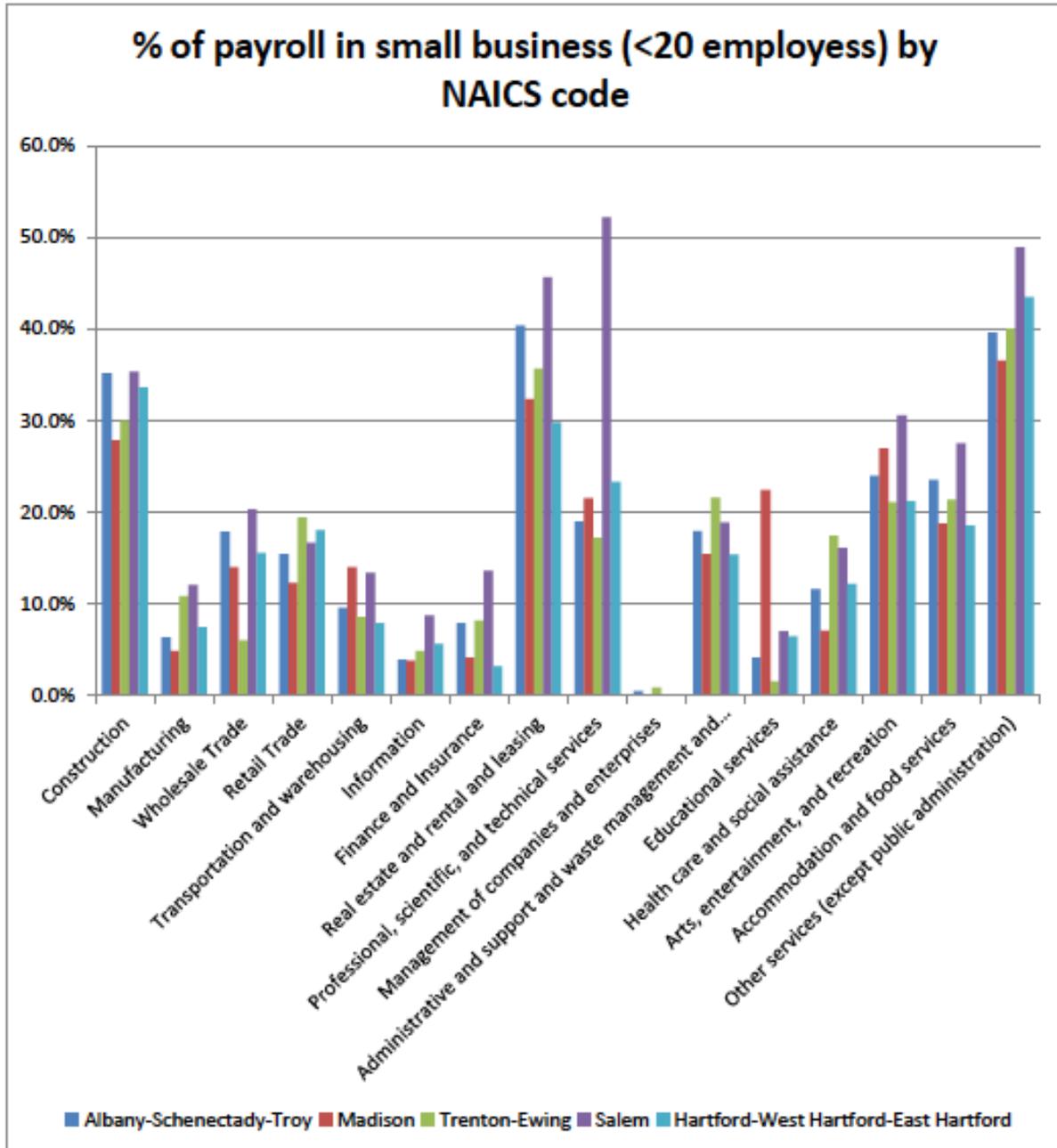
Data needed

- Statistics of U.S. businesses tabulated by employment size (Metropolitan Area Statistics) (See Appendix G)

Alternative Metrics

- Economic: NAICS sector as percentage of total employment/payroll
- Socio-Economic: Number of residents in job-training programs
- Socio-Economic: Percentage of post-secondary graduates finding employment in their field

Benchmarks / Case Studies

% of jobs in small business (<20 employees) by NAICS code

% of payroll in small business (<20 employees) by NAICS code

Legend: Albany-Schenectady-Troy, Madison, Trenton-Ewing, Salem, Hartford-West Hartford-East Hartford

Metric Rationale

Economic diversity is important to create resiliency within a community. By having a vibrant economy with many different sectors, Albany's communities can better weather economic disruption in a few sectors. Small business is being used as a proxy for local business. The data above categorizes employment and payroll data by industry to see which industries tend to promote the establishment of small business.

Social

The needs of Albany's citizens rely heavily on the social infrastructure within the City and the social services that address those needs. Such services are crucial for an urban population with varying incomes, education levels, and accessibility. Improving education and training remains a critical component to improving the lives of Albany citizens in its pursuit to encourage self-reliance. Partnerships among school districts, higher educational institutions, and the business community have been integral in establishing an infrastructure that incorporates a range of services.
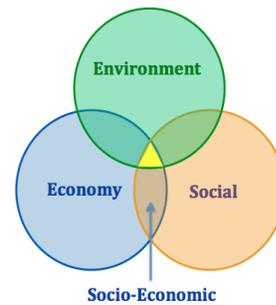
3.1 PUBLIC SAFETY

Goal

Improve and maintain public safety in all parts of the City, including crime prevention and pedestrian mobility.

Keys

Metric Category

Key 1

Improve
Albany's
Image &
Quality
Of Life

Environment

Economy

Social

Socio-Economic

Metric
Crime incidents: number of incidents per police precinct
Crime prevention: number of people served by outreach efforts in each neighborhood

Target
Decrease crime incidents per police precinct by 20-40% and increase the number of people served by outreach efforts.

Data needed
- Quarterly updates on crime rates based on incident reports
- Percentage of attendance at community outreach programs

Alternative Metrics
- Social: Number of community forums on public safety in schools, senior centers, and churches

Benchmarks / Case Studies

- Worcester, MA, provides a yearly report benchmarking public safety. This measures the performance of Worcester's police department, fire department, and ambulance/emergency medical services. [31]

Metric Rationale

These metrics are divided into sub-categories of crime incidents and crime prevention, which can both be tracked by police departments. Worcester, MA, has a method for measuring public safety on a yearly level, which could be adapted to a quarterly level to more closely track incidents and accurately determine a decrease in crime. Existing data collected by the police department can be used to measure the success of this target. Additional staffing or training is not anticipated in tracking this metric. This metric aims to better utilize existing information. Expanded outreach programs will raise greater awareness in the community, foster more preventative measures, and decrease crime incidents.
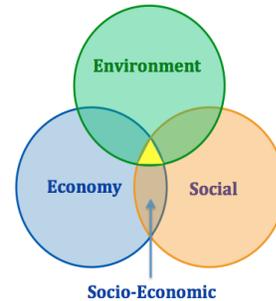
3.2 SOCIAL SERVICES

Goal

Improve the social well-being of Albany citizens in need.

Keys

Key 1

Improve
Albany's
Image &
Quality
Of Life

Metric Category

Environment

Economy

Social

Socio-Economic

Metric

Unemployment: Number of workforce re-entry training programs and their success rates

Health care: Number of free and readily available health care services for women and children and the percentage of the targeted community using such services

Hunger: Number of food pantries and amount of food stock available

Target

Develop baseline and increase percentage of assistance among people who are in need of social services.

Data needed

- Annual figures on level of involvement
- Success rates of individual social service programs

Alternative Metrics
- Socio-Economic: Needs met per dollar spent on social service programs, where each office defines their individual levels of success
- Social: Needs met per social service agency vis-à-vis a quality of life survey

Benchmarks / Case Studies
- The Centers for Disease Control and Prevention (CDC) established a Health-related Quality of Life survey that uses a set of questions called the "Healthy Days Measures," which address well-being in terms of general physical and mental health. [32]
- Galup-Healthways Well-Being Index includes findings and methodologies for measuring well-being within the United States in the form of monthly reports.[33]

Metric Rationale

Since "well-being" is such a broad qualitative concept, measuring this goal requires that components of well-being be separated into smaller sub-categories. The rationale is to focus on the top expenditures for social services programs, divided into sub-categories of workforce re-entry, health care, and hunger. The specific tracking of each of these sub-categories is unique based on individual circumstances of each social service agency. Based on findings from the Galup-Healthways Well-Being Index, some outstanding concerns involve workforce re-entry, health care, and hunger. Different information should be tracked for each sub-category. Increasing or improving training programs for former prisoners beginning to re-enter the workforce will create better well-being for the individuals and the organizations in which they will work. Increasing health care opportunities for women and children will improve the well-being of this population in need. Increasing food pantries and increasing the food stock available will help alleviate hunger within the City. State agencies can track much of this data; there is information on the county level, and City staff can work with them to obtain annual numbers.

Transportation

Albany's transportation system is focused on moving citizens safely and efficiently in, around, and out of the City of Albany. This plan encourages multiple modes of transportation, and a more balanced, complete transportation system to reduce Vehicle Miles Traveled (VMT) and encourage walking, biking, and transit ridership. The components of a complete transportation system for Albany include goals for multi-modal connections, pedestrian, bicycle, transit, and improved vehicular travel.
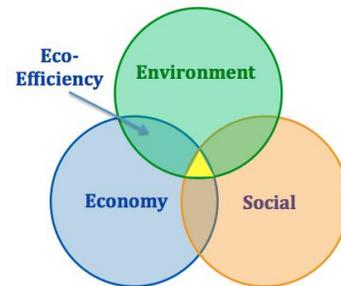
4.1 MULTI-MODAL CONNECTIONS

Goal

Increase options to the private automobile to move people within and between Albany, the Capital Region, and beyond.

Keys

Key 4

Establish Albany's Reputation as a Green Community

Metric Category

Eco-Efficiency

Environment

Economy

Social

Metric

Vehicles Miles Traveled (VMT) by Single Occupancy Vehicle (SOV) commuters in Albany

Target

Decrease commuter VMT by SOV by 5-10%.

Data needed

- Number of total commuter miles by Albany residents alone

Alternative Metrics

- Eco-Efficiency: Increase number of alternate transportation methods per neighborhood
- Economic: Based on bi-annual test, reduce travel time to traverse Albany
- Environmental: Increase public transportation ridership

Benchmarks / Case Studies

- The Mayor's Office of Sustainability of Philadelphia, PA, issued a 2011 Progress Report on "Greenworks Philadelphia," the city sustainability plan for 2015, that included status updates on their 15 measurable targets for five goals. Target 12 is "Reduce Overall Vehicle Miles travelled by 10%" and Philadelphia is currently 47% toward their target after two years.[34][35]

- Boulder, CO, issued a "Transportation Master Plan" in 2000 with the following goals for traffic reduction[36]:
  - To keep VMT in Boulder valley at 1994 levels;
  - Reduce SOV travel by residents to 25% of trips; and
  - Continually reduce mobile source emissions of air pollutants.
    - Progress: In 2008, Boulder had succeeded in reducing SOV use by residents from 44% to 38% and employee SOV commuting from 73% to 69%.[37]

- Seattle, WA's Comprehensive Plan "toward a sustainable Seattle," includes a section on increasing transportation choices. They are choosing to measure both the proportion of work trips and non-work trips made by non-SOV modes by neighborhood. On average in Seattle, 39% of work trips are currently made by non-SOV modes, which they aim to increase to 45% by 2020. As a proportion of all trips made by non-SOV modes, Seattle is currently at 53% and hopes to be at 60% in 2020.[38]

Metric Rationale

Currently, a majority (62%) of Albany residents commute alone, while 11% carpool, 13% take public transit, 11% walk and 2% work from home.[39] Reducing the number of VMT by SOV reduces air pollution from automobiles, energy consumption, and traffic, potentially eliminating the need for more highway lanes. Nationally, "public transportation saves 37 million metric tons of carbon dioxide annually."[40] As more of Albany's citizens are connected to public transportation options, fewer SOV may be seen on the roads. Increasing public transportation is also an important economic goal, as it will assist in connecting potential employees to jobs and housing throughout the region. According to the American Public Transportation Association, public transportation is crucial to the economy as it "creates and retains jobs," "revitalizes business districts," "stimulates commerce," and "increases property value." Every "$1 invested in public transportation generates $4 in economic activity."[41] Albany's investments in public transportation will likely lead to fewer VMTs per resident and may lead to significant economic benefits.
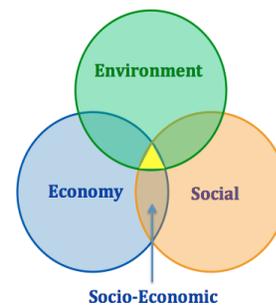
4.2 BICYCLING

Goal

Provide for safe bicycle mobility throughout the City.

Keys

Key 4

Establish Albany's Reputation as a Green Community

Metric Category

Metric

Dollar spent per mile of bike lane per neighborhood

Target

Equalize and then uniformly increase the allocation of the infrastructure funding per mile of bike lane per neighborhood.

Data needed

In each of Albany's neighborhoods the data collected would be:

- Number of miles of bike lane infrastructure
- Albany's costs to implement infrastructure

Alternative Metrics

- Socio-Environmental: Percentage of bike lanes that have adequate signage and shared use markings
- Socio-Environmental: Number of miles of bike lanes mapped and marked
- Social: Number of bike-related accidents

Benchmarks / Case Studies

- Minneapolis, MI, was recently recognized by the U.S. Census Bureau as having the 2nd highest percentage of people who bike to work (4,600 Minneapolis citizens). They issued a Bicycle Master Plan in June 2011, which includes many initiatives, benchmarks, performance metrics and responsible parties. Some of the metrics include:
  - Increasing participation in Bike Week by 10% in 2015, 20% in 2020.
  - Reduce crashes by 10% each year.
  - Annually evaluate top 10 crash locations annually.
  - Increase bicycle parking by 300 spaces per year.
  - 100% schools, parks, post offices, and city owned buildings to have bicycle parking by 3015.
- In Portland, OR, the Portland Bicycle Plan for 2030 provides three different implementation strategies that include the 'Immediate,' '80 Percent,' and 'World-class' strategies. Each strategy has overlapping goals and actions but differ in cost and infrastructure establishment. The '80 Percent' strategy has the most concrete metric and "will result in at least 80% of Portland residents being within ¼ mile of a developed low-stress bikeway." This strategy will also allow Portland to meet its vision of "more than a quarter of all trips made by bicycle."[42]
- Berkley, CA's Climate Action Plan includes a section on sustainable transportation and uses the number of bicycle parking spaces to measure their goal to "increase cycling and walking." From 2004 to 2011, they have increased the number of bike rack installations by 314, installing over 1,600 new bicycle spaces.[43]

Metric Rationale

Bicycling improves health and reduces GHG emissions if used in lieu of an automobile. Increasing bicycle infrastructure will add to the overall network of alternative transportation options, which according to the American Public Transportation Association leads to increased economic activity.[44] Traditionally, city bicycle plans are measured by the number of miles of bike lanes. However, in order to ensure that these lanes are disbursed equally across the City, they should be measured by neighborhood. A potential biker may not have adequate access to bike lanes if the majority of them are concentrated in only a few neighborhoods.

Measuring the costs of bike lane implementation per neighborhood can ensure that resources for bike infrastructure are being allocated across all neighborhoods. Albany is working to become a larger part of the growing regional trail network of the Mohawk-Hudson Hike-Bike trail. Implementing infrastructure equally is important for Albany's bicycle plan to be successfully integrated into the network.[45]
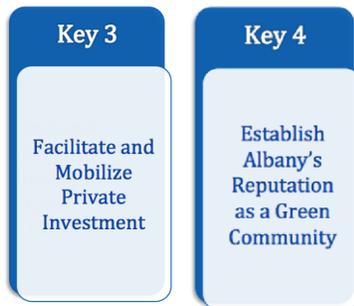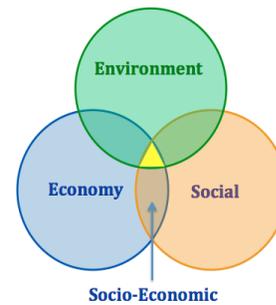
4.3 TRANSPORTATION

Goal

Increase transit options and transit use.

Keys

Key 3

Facilitate and Mobilize Private Investment

Key 4

Establish Albany's Reputation as a Green Community

Metric Category

Environment

Economy

Social

Socio-Economic

Metric

Number of households that are within ½ mile of at least one mode of public transportation

Target

Increase number of Albany households within ½ mile (¼ mile if feasible) of a least one mode of public transportation to 100%.

Data needed

- Using existing Albany Transit Routes map, measure the distances between all bus stops to measure possible distance for each Albany household.

Alternative Metrics

- Eco-Efficiency: Number of park and ride facilities
- Eco-Efficiency: Funding across neighborhoods to maintain and improve mass transit network
- Eco-Efficiency: Number of alternate transportation methods per neighborhood

Benchmarks / Case Studies

- The Madison, WI, Sustainability Plan has laid out a similar goal to "expand the number of neighborhoods where sustainable transportation choices enable mobility without a car." Currently, 60.5% of their residents have access to a transit stop, and they have stated an expansion goal of 15% made by bus by 2025. They are also launching a city-wide alternative transportation marketing campaign that targets groups and individuals.[46]

- In 2010, Pasadena, CA, issued a General Plan Land Use and Mobility Element Update and Metrics report. They determined that, generally, a ¼ mile radius represents the distance and time people would be willing to walk to public transportation. They have the goal of ensuring that 100% of Pasadena's citizens live within a ¼ mile radius of a bus stop or rail station. "Transit services are distributed adequately across the City so that nearly 90%" had access in 2010.[47]

- Minneapolis, MI, issued a 10-year downtown Transportation Action Plan in 2007, which includes consolidating bus service onto priority streets, reducing bus congestion, and expanding and improving sidewalks. The city's Sustainability Plan includes a goal to increase the use of alternative transportation modes to 67% by 2013. In 2003, 72% of trips taken were by automobile.[48]

Metric Rationale

Similar to Multi-Modal Transportation, providing adequate public transportation for all of Albany's citizens is important in order to create and maintain a strong social network and connect potential employees to economic opportunities. According to the American Public Transportation Association, public transportation is crucial to the economy as it "creates and retains jobs," "revitalizes business districts," "stimulates commerce," and "increases property value." Every "$1 invested in public transportation generates $4 in economic activity." Increased use of "public transportation can directly improve and protect the health of all Americans" by fostering "a more active lifestyle" and reducing air pollution.[49] By ensuring that every household in Albany has access to public transportation options, Albany will likely foster increased economic and social opportunities for all residents. According to the Sierra Club, in San Francisco, "30 to 40% of apartment residents living within ½ mile of Walnut Creek and Pleasant Hill BART stations took BART to work and another 25% used other public transit, compared to 13% using transit region wide."[50] The Mineta Transportation Institute defines walking distance as "less than ½ mile."[51] Albany is currently working toward limiting walking distance to public transportation to the ½ mile goal and could go further to pursue a ¼ mile if possible.

Natural Resources

Albany's natural resources provide vital benefits to the city and its residents. The efficient use or maintenance of its land, water, air and vegetation can improve the overall health of the environment in which residents live. Goals associated with Albany's natural resources plan system include protecting waterways and natural habitat, promoting an urban forest and improving the City's air quality.
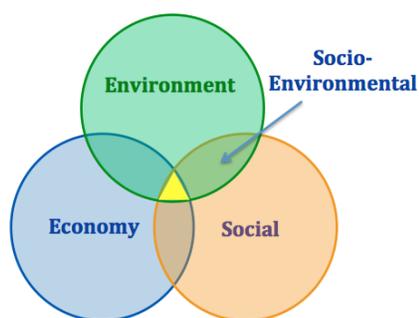
5.1 WATERWAYS

Goal

Preserve and protect the City's waterways.

Keys

Key 4

Establish Albany's Reputation as a Green Community

Metric Category

Metric

Water contaminant levels as defined by State Water Quality Standards (drinking and surface water)

Target

Reduce levels of all contaminants in drinking and surface water by 20-30% according to their respective New York State standards.

Data needed

The Albany Water Board, as part of the Department of Water and Water Supply for the City of Albany, should continue to sample the drinking water quality daily. Officials would need to track the individual levels of contaminants with the goal of improving upon all present.

Alternative Metrics

- Socio-environmental: Water use per capita
  Environmental: Number of long-term impaired stream segments

Benchmarks / Case Studies

- Madison, WI, has set a goal for its water utility to continue to annually meet or exceed all federal and state drinking water standards, including secondary standards for iron, manganese, and other contaminants. [52]

- Madison, WI, has also set several goals to improve surface water quality. It will reduce phosphorus runoff in the City of Madison by 50% and reduce total suspended solids by 40% by 2013. They also aim to reduce the likelihood of algal blooms on any given summer day from 50% to 20% and meet the NR 151 and Dane County Chapter 14 standards. As a qualitative goal, they aim to "preserve the lakes as a natural feature and protect the lake waters, shorelines and associated wetlands from development or activities that would increase lake pollution or adversely affect the lakes' spawning grounds, fish and other aquatic life."[53]

- Minneapolis, MN, rates the health of its lakes based on a Lake Aesthetic and User Recreation Index (LAURI). The LAURI measures: 1) public health status at swimming beaches 2) water quality including clarity 3) aesthetics such as color, odor and debris 4) availability and ease of public access for recreational uses 5) habitat quality for plant and fish diversity. These five indices are scored on a scale of one to 10. The city has set a goal for each lake to receive a ranking of eight, nine or 10 (with 10 being excellent) by 2014.[54]

- Cincinnati, OH, measures the percent of stream miles meeting state water quality standards.[55]

Metric Rationale

The goal of protecting Albany's waterways was established as a way to ensure that residents and wildlife are able to benefit from the services that those waterways provide. Albany's reservoirs are used as a source of drinking water for residents, and the rivers and streams could also be ideal places for recreational boating, fishing and swimming. In addition, healthy waterways promote healthy natural habitats, which increase residents' leisurely enjoyment of the land. Albany's waterways are currently threatened by erosion, spread of invasive species, runoff from combined sewer overflows, fertilizer and chemicals applied to City land as well as upstream contaminants of PCBs, heavy metals and toxins.[56]

In case studies and benchmarks of similar cities, most are determining the overall health of their city's waterways by measuring both drinking and surface water quality.

In 2007 and 2010, the City of Albany won first prize for the best tasting drinking water in New York State. In 2010, the City was in compliance with drinking water standards set by Local,

State and Federal authorities and had no violations of maximum contaminant levels.[57] While the drinking water meets expectations, there is always room for continual improvement. Because the quality of drinking water is already being measured by the Albany Water Board, continuing to measure against these standards in order to determine successful protection of the City's waterways would be the most efficient use of the City's resources. [58]

In addition to drinking water, the City of Albany could significantly improve the contamination levels of its surface water. The New York State Department of Environmental Conservation currently tests the majority of surface water bodies within the state.[59] Using this information to determine progress in the health of Albany's waterways would also be an efficient use of resources.
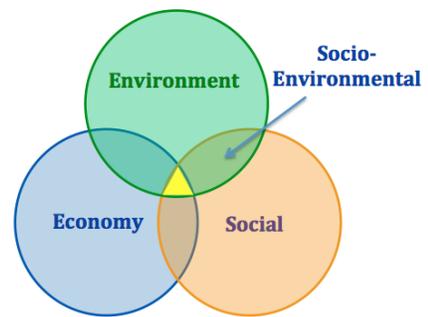
5.2 URBAN FOREST

Goal

Protect and enhance the City's urban forest, including nature preserves, parks, open space, street trees, and trees planted on private property.

Keys   **Metric Category**

Key 4

Establish Albany's Reputation as a Green Community

Metric

Percent of tree canopy coverage by neighborhood

Target

Increase tree canopy coverage by 5-15% per neighborhood.

Data needed

- Tree canopy coverage by neighborhood (with assistance from the Urban Forest Management Program).

Alternative Metrics

- Environmental: Total percent of tree canopy coverage citywide
- Environmental: Number of trees planted
- Environmental: Percent of plant species that are native or adaptive

Benchmarks / Case Studies

- The City of Minneapolis, MN, has set a target to maintain the city's 26% tree canopy level through 2015 and increase the urban tree canopy to 30% by 2030.[60]

- The City of Denver, CO, aims to plant thousands of new trees each year in parks, natural areas and on private property to increase Denver's tree canopy from six percent to a total of 18% tree cover.[61]

- According to the US Conference of Mayors, Wilmington, DE, has set a goal to increase its tree canopy by 10%.[62]

- The City of Chattanooga, TN, aims to increase tree canopy in the downtown area from the current seven percent to 15%, with an overall canopy goal of 40% citywide.[63]

- Savannah, GA, has set a goal of 50% tree canopy coverage using satellite images.[64]

Metric Rationale

The urban forest provides numerous benefits to the City of Albany. These include shade (or decreases in the heat island index and cooling needs), increased property value, reduced stormwater runoff, increased carbon sequestration, and improved air quality. New York City's Million Trees project has determined that trees provide $5.60 in benefits for every dollar spent on tree planting and care.[65] Across many cities with sustainability plans, tree canopy coverage is used as a measure of success of protecting and enhancing the urban forest. A larger tree canopy equates to more shade and carbon sequestration and less stormwater runoff and air pollution.

The best way to ensure the benefits of the urban forest are distributed equitably, and not just planted in parks or more affluent communities, is to determine the percent of tree canopy coverage in each neighborhood.
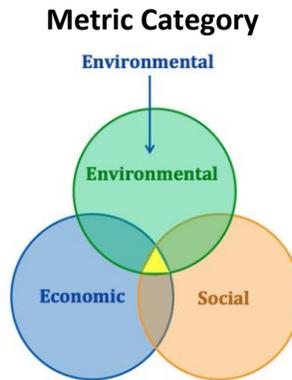
5.3 NATURAL HABITAT

Goal

Protect, enhance, restore, and expand the City's natural habitat areas (e.g., Albany Pine Bush Preserve, Corning Preserve, and Tivoli Preserve).

Keys

Key 4

Establish Albany's Reputation as a Green Community

Metric Category

Environmental

Environmental

Economic   Social

Metric

Number of native flora & fauna species present in the Albany Pine Bush Preserve

Target

Create a baseline and database of native flora and fauna within the Albany Pine Bush Preserve and set target to increase.

Data needed

Work with the Albany Pine Bush Preserve Commission to establish a baseline of native and adaptive species within the preserve and regularly monitor fluctuations in species populations.

Alternative Metrics

- Socio-environmental: Number of conservation education events or programs
- Environmental: Increase in acres of natural area

Benchmarks / Case Studies
- Miami Beach, FL, seeks to maintain or increase the number of sea turtle nests on its shoreline as well as increase the number of programs promoting species protection.[66]

Metric Rationale

Albany's Pine Bush Preserve is one of the few areas of natural habitat remaining in Albany, and the Albany Pine Bush Commission is an organization that oversees stewardship of the preserve.

Increased numbers of native flora and fauna, in comparison to populations of invasive species, within natural habitat systems can serve as an indicator of a healthy ecosystem. The Albany Pine Bush Commission currently seeks to reduce the number of invasive species within the region and increase the health and frequency of native species.[67]
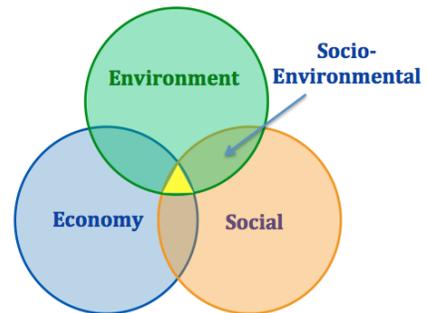
5.4 AIR QUALITY

Goal

Maintain and improve the air quality in the city of Albany.

Keys

Metric Category

Key 4

Establish Albany's Reputation as a Green Community

Metric

Pollutant levels and number of days that levels achieve a "good" rating on the Environmental Protection Agency's (EPA) Air Quality Index (AQI)

Target

Reduce pollutant levels by 20% and maintain 100% "good"-rated days on the EPA's Air Quality Index.

Data needed

Obtain AQI levels from Albany County Health Department.

Alternative Metrics

- Environmental: Maintain "Attainment Status" for National Ambient Air Quality Standards and set a target to reduce pollutant levels

Benchmarks / Case Studies

- Miami Beach, FL, seeks to increase the number of days of "good"-rated air quality as defined by the EPA.[68]

- Cincinnati, OH, measures the number of days that air quality is "unhealthy" based on the EPA's AQI.[69]

- Philadelphia, PA, seeks to reduce the number of days that the AQI is "unhealthy" from 30 to 20, while continuing to decrease ozone and fine particulate matter levels.[70]

- Minneapolis, MN, has set targets to reduce air pollution to health-based levels recommended by the Clean Air Scientific Advisory Committee (CASAC) of the EPA.[71]

Metric Rationale

According to the American Lung Association, Albany County currently has a weighted average of three days per year that are below the "good" rating level for High Ozone levels and 1.3 days per year that are below "good" for particulate pollution levels.[72] Most cities surveyed are using the EPA's AQI as a metric to track improvements in air quality in their cities' sustainability goals. AQI translates the National Ambient Air Quality Standards set by the EPA into easily understandable rating levels of "good," "moderate," "unhealthy for sensitive groups," "unhealthy," "very unhealthy" and "hazardous." Maintaining a "good" rating each day requires achieving AQI levels of 0-50 out of a total possible value of 500. The AQI level of 100 corresponds to the National Ambient Air Quality Standards, therefore achieving a level of 50 means the City must exceed national standards.[73]

While Albany's air quality is already better than most examined cities, this goal seeks to "maintain and *improve* the air quality" of Albany, therefore Albany's targets should be more ambitious than its peers. Continuing to monitor the AQI would be the best way to evaluate the City's air quality.
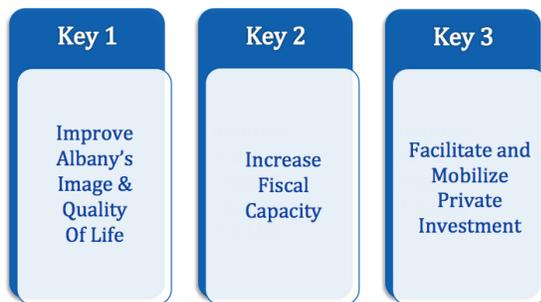
Housing & Neighborhoods

Albany's housing and neighborhoods aim to maintain a defined physical character determined by existing housing stock. Developing and maintaining safe, livable and diverse neighborhoods is paramount to the well-being of Albany's residents. Adapting older housing stock into contemporary lifestyles, while challenging, is important to maintaining the character of Albany's neighborhoods. Vacancy rates, poverty status, and homeownership rates have been analyzed in determining the quality of Albany's neighborhoods. Goals included in this system are housing and diversity choice, neighborhood diversity, and neighborhood services.
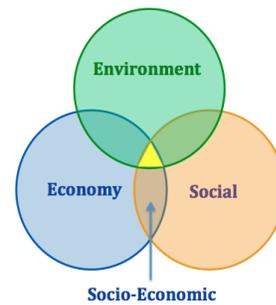
6.1 HOUSING AND DIVERSITY CHOICE

Goal: Provide a range of decent, affordable housing choices, densities, ownership opportunities, and price ranges to accommodate the housing needs of existing and new residents. Maintain the supply of quality affordable housing while encouraging mixed-income neighborhoods.

Keys

Metric Category

Key 1	Key 2	Key 3
Improve Albany's Image & Quality Of Life	Increase Fiscal Capacity	Facilitate and Mobilize Private Investment

Environment

Economy   Social

Socio-Economic

Metric
Percent of affordable housing units per neighborhood and percent of existing affordable stock preserved

Target
Increase percentage of affordable housing units by 20-30%.

Data needed
- Income figures for citizens of Albany in each neighborhood.
- Number of preservation committees in the community.

Alternative Metrics
- Socio-Economic: Percentage of income people should be spending on housing measured against the recommended percentage of affordable housing

Benchmarks / Case Studies

- Honolulu, HI's shelter-to-income ratio is nearing the national ratio of 22% of income spent for homeowner housing, and 30% for rental housing. The Housing Policy Study indicated that about 54.2% of households statewide pay less than 30% of their income for housing. Housing for this group is affordable. Thirty-four percent of households are cost burdened (11.3% of households pay 30-40% of income for housing and 22.7% have housing payments exceeding 40% of income). [74]
- Seattle, WA, is reserving and restructuring affordable housing through the Office of Housing's Rental Housing Program. Project sponsors apply to develop affordable rental housing. [75]
- Mercy Housing explains that the critical gap in the supply of affordable housing is filled through affordable housing preservation. [76]
- U.S. Census Bureau shows mortgage status and selected monthly owner costs by owner-occupied housing units. [77]

Metric Rationale

Housing affordability is defined as "being in the financial means of most people."[78] It is a crucial component for any urban environment, but is often a challenging goal to achieve given economic restraints. The way to ensure that all of Albany's residents can find housing within their financial means is for the City to increase the percentage of affordable housing units.

Albany can ensure adequate housing stock by preserving existing affordable housing units and continuing to increase affordable housing stock in each neighborhood. By measuring the amount of affordable housing stock preserved in each neighborhood, Albany can determine whether the needs of Albany's lower income citizens are met. The supply of affordable housing will decline sharply without proper preservation efforts. Due to population growth in Albany, increased demand for limited space has led to an increase in real estate prices and is leaving low-income families behind.[79] Closely monitoring the percent of affordable housing units per neighborhood and percent of existing affordable stock preserved will help to ensure a healthy supply of affordable housing.
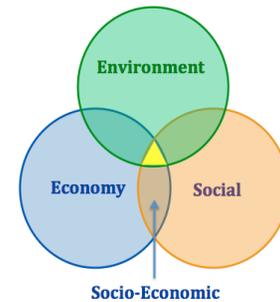
6.2 NEIGHBORHOOD DIVERSITY

Goal

Maintain distinct, safe, quality neighborhoods that preserve and enhance the natural beauty, historic/architectural character, and cultural diversity in Albany.

Keys

Key 1

Improve Albany's Image & Quality Of Life

Metric Category

Environment

Economy

Social

Socio-Economic

Metric

Percentage of vacant lots or brownfields per neighborhood

Target

Decrease the number of vacant lots or brownfields by 10-20% per neighborhood, while increasing by 30-40% the number of completed lots that preserve historic buildings and repurpose vacant lots and brownfields.

Data needed

- Baseline data needed of current square footage of brownfields and vacant lots

Alternative Metrics

- Socio-Economic: Percentage of land designated by the City to preserve open space
- Social: Percentage of land designated as historic by preservation committee

Benchmarks / Case Studies

- Seattle, WA, preserves and restructures affordable housing through the Office of Housing's Rental Housing Program. Project sponsors apply to develop affordable rental housing.[80]
- Philadelphia, PA, is increasing vacant lot license fees, discouraging landowners from keeping vacant lots.[81]

Metric Rationale

This metric aims to decrease the number of vacant lots and brownfields, while at the same time ensuring that the preservation committee approves new projects to make sure they are in line with the neighborhood-specific character of Albany, which is line with the goal of maintaining distinct, safe, quality neighborhoods. Decreasing the number of vacant lots and brownfields will increase safety in the community since empty lots can be a potential source of criminal activity. Once the number of vacant lots is decreased, completed or repurposed lots can take their place. The project members in charge of completing or repurposing lots may work directly with preservation committees to ensure such projects will be held to the committee's standard of historical and architectural character.
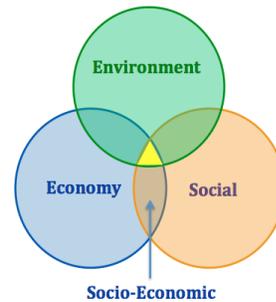
6.3 NEIGHBORHOOD SERVICES

Goal

Provide access to basic neighborhood services, including commercial centers, parks, schools, transit, police protection, libraries, community centers, etc. for all neighborhoods.

Keys

Key 2

Increase Fiscal Capacity

Metric Category

Environment

Economy

Social

Socio-Economic

Metric

Number of households that are within a ¼ mile of basic services

Target

Increase the percentage of households within a ¼ mile of basic services by 20-40%.

Data needed
- Viability of survey distribution and collection among Albany citizens
- Establish baseline data of how many neighborhoods are currently within a ¼ mile of basic services.

Alternative Metrics
- Socio-Economic: Number of access points to public transportation.
- Socio-Economic: Percentage of bicycle use among a neighborhood's population enabling them access to basic neighborhood services.

Benchmarks / Case Studies

- Beverly, MA, has a "Bookmobile" that visits neighborhoods without library access. This program fosters the idea of sharing services among neighborhoods rather than developing dedicated services in each neighborhood. [82]
- Boise, ID, uses a "benchmarks cities" survey to measure levels of service within respective communities. [83]

Metric Rationale

Measuring basic services by household ensures that they will be available to all of Albany's residents, regardless of neighborhood. Survey distribution to garner this information will reflect which basic services exist in each neighborhood and which services are lacking. The City must determine how many neighborhoods are currently within a ¼ mile of basic services in order to ascertain which neighborhoods have proximity and accessibility issues. The City should conduct additional analysis to determine baselines for this information. Quantitative feedback from a survey can allow the City to alter the frequency at which the service is provided as well as the quality at which it operates, thereby best utilizing the City's resources in meeting its residents' needs.

Utilities & Infrastructure

Utility and infrastructure systems are the engineered facilities and conveyance networks designed to serve Albany and its citizens. These systems have a significant impact on the sustainability of the City and health of its residents. They also provide numerous opportunities to move Albany towards the sustainable city articulated in its 2030 Vision Statement. Goals in this section relate to key utility and infrastructure system components such as energy supply and use, public drinking water, sewer systems, stormwater management, solid waste management, and communications.
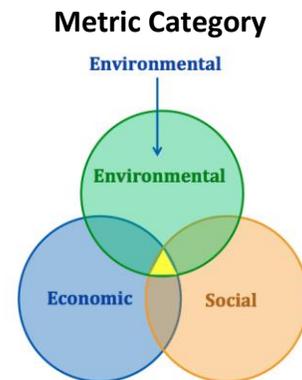
7.1 ENERGY

Goal

Promote energy conservation, efficiency, and use of renewable technologies as a mechanism for climate change mitigation.

Keys

Key 3

Facilitate and Mobilize Private Investment

Metric Category

Environmental

Environmental

Economic   Social

Metric

Amount of electricity used by energy source (e.g. coal, natural gas, alternative energy) and sector

Target

Reduce energy from fossil fuels 20% and obtain 25% of renewable energy used by Albany's buildings and operations by 2017.

Data needed

- Baseline and annual updates on amount of electricity used by different energy sources and sectors. The Mayor's Office of Energy & Sustainability and utility companies may be able to provide this data.

Alternative Metrics

- Energy Efficiency: Reduce the BTU/ft^2 of heating degree days of each building
- Eco-Economic: GHG emission per dollar spent on energy

Benchmark / Case Study

- Colorado Springs, CO, is targeting 50% of all energy consumed to come from renewable sources and to reduce energy use by 20%.[84]
- Madison, WI, is working to obtain 25% of its electricity, heating, and transportation energy from clean energy sources by 2025.[85]
- Minneapolis, MN, wants to increase electricity consumed from renewable sources to one megawatt by 2014.[86]
- New York State has set a goal to have 25% of its energy comes from renewable sources by 2013.[87]
- Asheville, NC is focused on "green" building projects and measures the buildings' energy performance using EPA's Energy Star's Energy Use Index.[88]
- Fort Collins, CO tracks progress with "green" building retrofit projects and City buildings' utility usage.[89]
- New York City wants a 30% energy reduction in City buildings and operations, and an increase Clean Distributed Generation energy of 180 MW by 800 MW.[90]

Metric Rationale

This metric is recommended because it enables the City of Albany to monitor improvements in energy conservation and efficiency by each sector. This information will also document progress toward efforts to mitigate climate change.

Equally important is that these measurements enable Albany to seek specific targets for the various energy sources (e.g. 25% of total energy should come from renewable sources) and use by various sectors. Setting such energy targets provide a clear direction to guide municipal and private-sector energy decisions, investments, and behavior.
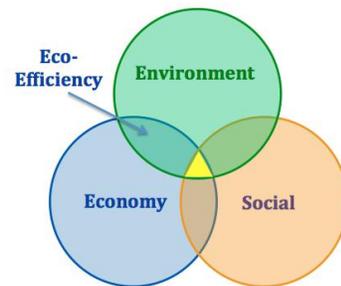
7.2 WATER & SEWER

Goal

Maintain the quality of the City's wastewater management system, conserve water, and protect the City's drinking water supply.

Keys

Metric Category

Key 3

Facilitate and
Mobilize
Private
Investment

Eco-Efficiency

Environment

Economy

Social

Metric

Biochemical oxygen demand (BOD) levels (number of days in violation)

Target

Reduce levels of Biochemical oxygen demand (BOD5) to 20 milligrams per liter (mg/L) or less. (Note: BOD5 has been replaced with Carbonaceous BOD (CBOD5), which are lower than BOD5 limits.)

Data needed

- Baseline and quarterly measurements of BOD5 (or CBOD5) levels and number of days in violation of regulatory limits
- Minimum requirements set by NY State Environmental Office and EPA Regional 2 Office

Alternative Metrics

- Environmental: Number of stormwater Combined Sewer Overflows (reductions)

Benchmarks / Case Studies

- The Federal Clean Water Act stipulates a maximum 30-day average concentration of BOD levels of 30 mg/l.[91]
- The LOTT Wastewater Alliance in Washington has a Reclaimed Water Program where water is treated to "Class A Reclaimed Water" standards, which means it is clean enough for any use except drinking.[92]
- New York State provides extensive details on water quality standards.[93]

Metric Rationale

Albany's drinking water is considered to be a very high quality. Protecting the quality and conserving the supply of water is critical to the health and welfare of Albany's citizens. By tracking the number of days in violation of acceptable BOD levels, as determined by the federal and state standards, Albany can monitor whether the quality of its water is being maintained, if not improved.

7.3 STORMWATER

Goal

Use stormwater management best practices to reduce impacts on water quality and mitigate costs of engineered stormwater systems.

Keys

Metric Category
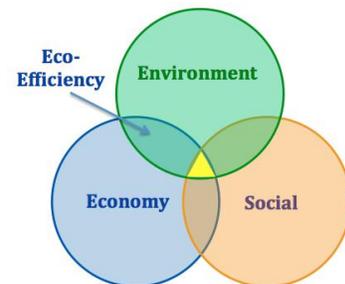
Metric

Amount of stormwater diverted into green infrastructures

Target

Capture the first inch of rainfall on 10% of the impervious areas in combined sewer watersheds through detention or infiltration source controls. (This could also be expressed as diverting 1 billion gallons/year stormwater into green infrastructures.)

Data needed

- Baseline and annual updates on the number of gallons/year of rainfall amount diverted into green infrastructure

Alternative Metrics

- Eco-Efficiency: Cost savings from reducing the number of annual CSOs
- Eco-Efficiency: Amount of stormwater management costs mitigated per unit of water absorbed by impervious surfaces

Benchmarks / Case Studies

- New York City (NYC) would like to capture the first inch of rainfall on 10% of the impervious areas in combined sewer watersheds through detention or infiltration source controls by 2030. As a result, CSOs will be reduced by approximately 1.5 bgy. This reduction in water entering the system will reduce NYC's long-term sewer management costs by $2.4 billion over 20 years.[94]
- Philadelphia, PA, is institutionalizing green infrastructure across the city. New ordinances focus on a performance-based approach, which requires developers to manage the first inch of stormwater on-site.[95]

Metric Rationale

"Green infrastructure" seeks to pre-empt additional costly engineered "grey" wastewater treatment infrastructure with the use of natural ecological systems (e.g. soil, plants, etc.) to intercept and absorb stormwater, allowing it to be slowly released into the sewer system. Because the rate at which stormwater flows into the sewer system is reduced, the amount stormwater discharged into surface waters is reduced and the water itself is cleaner. Both Philadelphia and New York are using this metric as part of their sustainability initiatives.
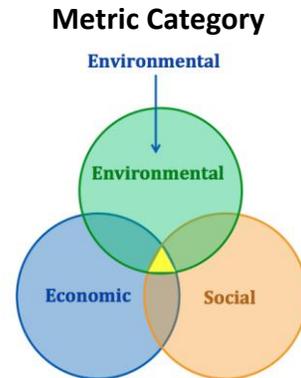
7.4 SOLID WASTE MANAGEMENT

Goal

Increase recycling and reduce the solid waste stream.

Keys

Key 3

Facilitate and Mobilize Private Investment

Metric Category

Environmental

Environmental

Economic   Social

Metric
Amount of waste diverted from landfills

Target
Increase the amount of waste diverted from the landfill from 42% to 65% (already set by Albany), and expand organic waste diversion to 10%.

Data needed

- Baseline and annual updates on total tons of recycled waste handled, tons of municipal waste reused, and tons of waste reduced
- Baseline and annual updates of municipal composting and recycling programs
- Municipal Solid Waste national averages and guidance

Alternative Metrics

- Environmental: Cite specific reduction targets for each waste stream component (e.g. residential, commercial, construction & demolition, non-hazardous industrial)
- Eco-Environmental: Percent and volume of waste converted back to beneficial uses

Benchmarks / Case Studies

- Asheville, NC, diverts 70% of its solid waste from landfills. This includes diverting 6% of its nonresidential food waste, a rate that is double the national average. Also, Asheville compares its solid waste generation with EPA averages and monitors the cost of collecting and diverting solid waste.[96]
- New York City diverts 75% of its solid waste from landfills, and hopes to divert and compost 20% of its organic waste by 2030.[97]
- Minneapolis, MN, wants to increase waste diversion to 50% and composting to 10% by 2013.[98]
- Madison, WI, plans to divert 75% of its waste from landfills by the year 2020.[99]
- Fort Collins and Colorado Springs, CO, are seeking to reduce or divert their solid waste by 50-70%.[100]

Metric Rationale

The solid waste metric supports the target that Albany has already set for 2030. Adding a specific metric for organic waste will enable Albany track the successful expansion of its exiting composting program and motivate them to achieve the proposed target. These are the metrics that most cities are using to track progress in increasing recycling and reducing their solid waste stream.

7.5 COMMUNICATIONS

Goal

Provide equitable communication opportunities for communities throughout the City.
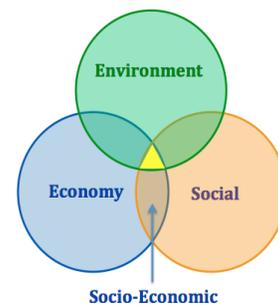
Keys

Key 2

Increase Fiscal Capacity

Metric Category

Metric

Number of households, by neighborhood, with access to broadband Internet service with a minimum speed of 4 megabits per second

Target

Increase percentage of all Albany households that have broadband connections with at least 20 Mbps to 60%.

Data needed

- Baseline and annual updated information on number of households, by neighborhood, with access to broadband Internet services
- New York State benchmark data, funding opportunities, IT partners, etc.
- Number of households that currently have access to Albany's FreeNet
- Survey of households on their ability to connect to the Internet and the speed of the connection

Alternative Metrics

- Socio-Economic: Increase public access to wireless Internet service

Benchmarks / Case Studies

- Pew Research Center's Internet & American Life Project cites that, as of December 2009, 60% of American adults use broadband connections at home. But the percentage is lower for Black (52%) and Hispanic (47%) households earning less than $30,000 (42%), people without high school education (24%), and people over 65 years-old (26%).[101]
- New York State Broadband Development and Deployment Council cited in a May 2011 report that 39% of all New Yorkers still report speeds of less than 4 Mbps. The report also stated that a 7% increase in broadband adoption would create nearly 148,000 jobs and a nearly $10 billion total in economic impact in New York State.[102]

Metric Rationale

Many cities are concerned about the gap between individuals, households, businesses and geographic areas at different socio-economic levels regarding their opportunities to access information technologies and use the Internet for job hunting, research, work, communications, online education, and other purposes.[103] The percentage of Internet use at home is notably lower for minorities, poor, elderly and those without a high school education.[104] This gap, also known as the "digital divide", creates imbalances in terms of technology skills, economic opportunity, and democratic political participation.[105]

This metric is recommended because it incorporates both social and economic dimensions. The social justice component is measured by how equitably internet access is distributed across Albany's diverse neighborhoods. The economic component is the positive impact internet access has on improving educational and economic competitiveness.[106]

Institutions

Federal, state, and local governments, health care facilities, multiple colleges and universities, and government agencies play a major role in Albany. Many of these institutions are exempt from property tax which creates a funding gap for the city of Albany. Creating lasting partnerships with these institutions will help Albany realize the vision outlined in the plan. Goals within this system include expanding the City's tax base and partnering with institutions to ensure public projects promote mutual benefits.

8.1 FISCAL IMPACTS

Goal

Address the positive and negative impacts of government and institutional expansion on the City's tax base.

Keys

Key 2

Increase Fiscal Capacity

Metric Category

Environment

Economy   Social

Socio-Economic
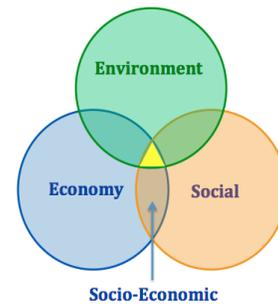
Metric

Amount of payments in lieu of taxes (PILOT) money collected as percentage of total revenue

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Target

Increase the percentage of city revenue collected as a PILOT to 5%.

Data needed

- Total payments in lieu of revenue as percentage of total revenue

Alternative Metrics

- Socio-Economic: Survey of local government employees as to relationship with institutions

Benchmarks / Case Studies [107]

PILOT % of City Revenue
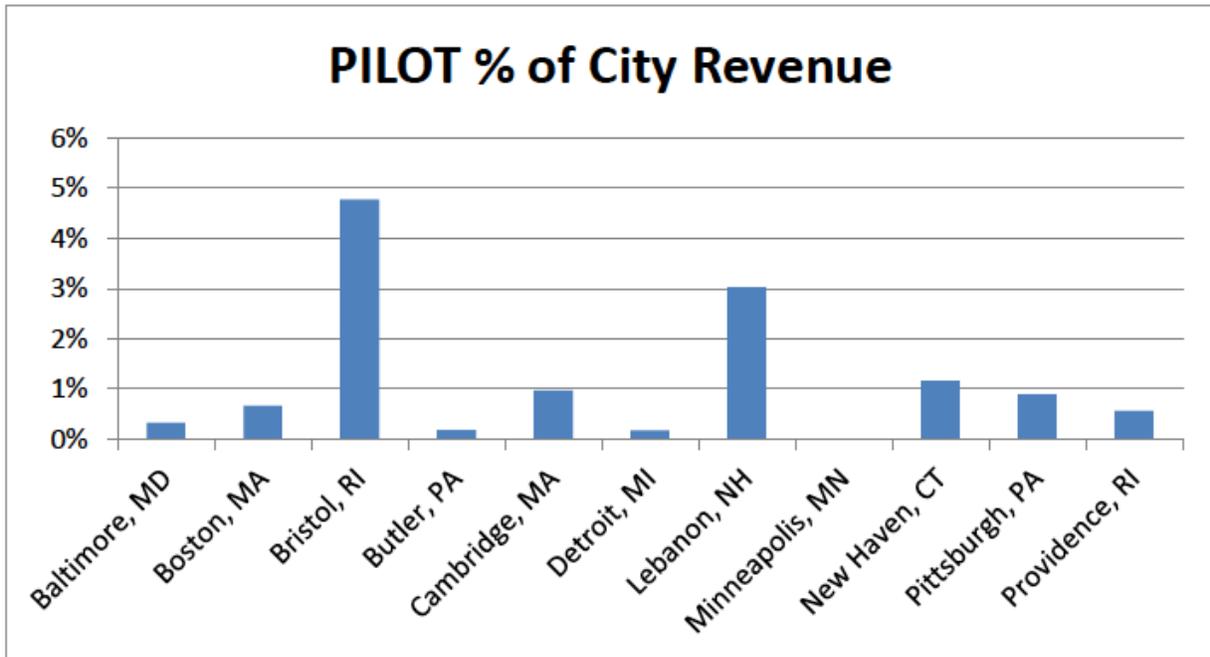
Metric Rationale

Payments in Lieu of Taxes (PILOT) are negotiated in situations where tax-exempt institutions make payments to local governments to maintain good relations. The City of Albany has many tax-exempt institutions that diminish the tax base for the city. Convincing tax-exempt institutions to help pay for public works projects is important to realizing many parts of the plan.

ANALYSIS

The metrics and targets established for the Albany 2030 plan should help the City in progressing toward its sustainable vision. In nearly all forms of management, performance indicators are an effective tool for monitoring and driving improvement. Similarly, in sustainability management, organizations that commit to defining and measuring sustainability goals are better able to demonstrate progress. Identifying quantitative goals, rather than qualitative, provides an objective way to indicate improvement to all relevant stakeholders.[108] For these reasons, establishing metrics for sustainability is crucial to effectively managing a city's sustainability plan.

In conducting research on other cities in order to establish metrics and targets for Albany, the project team was challenged by a lack of precedent. The trend of creating sustainability plans in U.S. cities is relatively new and highly variable; therefore finding other cities that have set targets relevant to Albany's 2030 goals was difficult.

Many cities that are still in their sustainability planning stages have not defined concrete targets or published data on their progress. Of the cities that did have published sustainability plans, few had identified quantitative metrics and targets for their goals. Because of the lack of precedent, those cities that do set quantitative goals are working in uncharted territory. Many cities are hesitant to take a pioneering role and face potential risks of failure to meet the target. City administrators may also want to avoid being held accountable for concrete, quantified sustainability goals given the realities of budget constraints and uncertainties about impact of climate change. Another possible explanation for why many cities lack quantitative goals may be due to a lack the resources to gather data. Many cities decide to use qualitative goals because they do not have the resources to measure against quantitative goals.

Of those cities that have identified quantitative metrics, few have taken the interrelated, systems-thinking approach that Albany used in developing its plan. The team struggled to find cities that were using TBL metrics.   Another significant challenge was finding metrics that Albany would be able to track with its current resources. In many instances, the client expressed concern about the City's ability to track progress due to lack of available data, or the complexity of data collection.

The team found that, in general, larger cities were able to establish quantitative metrics and targets.   For example, cities like New York, NY Philadelphia, PA and Seattle, WA have set quantitative targets in order to achieve their visions and remain accountable to their

stakeholders. Smaller cities like Asheville, NC, Sarasota, FL, and Berkeley, CA, have established more general, qualitative goals, which could be attributed to the fact that larger cities generally have more resources at their disposal. Not only do they have more capital to implement pressing sustainability projects outlined in their goals, but they also have more financial and human resources with which to track the metrics and progress toward their quantitative targets.

Cities that dedicated funding for sustainability were more likely to have quantitative goals. For example, Boulder, CO, which is considered a smaller city with a population under 100,000, dedicated three percent of its annual budget ($6.3 million) in 2011 to its Community Planning & Sustainability department. [109] [110] Through this dedicated funding, the city was able to develop quantitative sustainability metrics, indicating the importance the city places on sustainability. By contrast, Asheville, NC, a city of comparable population (74,543), did not dedicate specific funds for their sustainability initiatives, but rather divided individual initiatives within each department's budget.[111] They have dedicated $80,138 to employing one full-time position in sustainability, but requiring this person to work entirely within other departmental budgets limits their impact.[112] The lack of significant, dedicated funding and resources could explain why Asheville's metrics were more qualitative then quantitative.

An operating assumption is that cities that are able to track their sustainability goals with quantifiable metrics will likely progress further toward the goals outlined in their sustainability plans. Because of the nascent trend of developing sustainability plans, the team was unable to validate this assumption. Further research on this topic should be conducted as cities continue to track goals toward their vision for the future.

CONCLUSION

Albany's sustainability plan integrates the diverse natural, cultural, human and institutional resources of Albany in outlining a path for a prosperous future. The sustainability initiatives included in the plan will help enable the City to thrive. The City aims to become a model for sustainable revitalization by maintaining the environmental and fiscal health of the City and providing a decent atmosphere for residents and businesses alike.

The Columbia University team was tasked with developing metrics for the goals outlined in the plan that address key themes related to sustainability in Albany. The team built upon the plan that was initially created by Albany's Planning Department and chose to provide metrics for the goals in the plan that contained the highest number of interrelationships. These metrics were developed using a TBL analytical framework in lieu of metrics that use a traditional silo

approach. By incorporating integrated social, economic, and environmental factors into the metrics and targets, Albany will be able to achieve a significant impact across multiple systems.

One challenge faced by the team resulted from using a TBL approach in analyzing goals and metrics. Most cities with sustainability plans are not using this approach, nor are they quantitatively measuring success. Where TBL metrics were too difficult to track, "double" or "single" bottom line metrics were suggested. Some of the metrics were difficult to benchmark with other cities based upon either the uniqueness of the goal or insufficient data. In such instances, case studies of innovative cities were researched and creative approaches were incorporated in order to provide a useful metric.

The absence of quantitative goals could be attributed to the emergent nature of the field of sustainable city planning. Cities may be either hesitant to take a pioneering role, lack the funding to accurately track quantitative goals, or fear being held accountable for specific targets. The suggested metrics and targets will allow Albany to measure the success of implementing the plan.

Looking forward, the next steps will likely include presenting the recommended metrics and targets outlined in the report to various stakeholders. First, the Department of Planning and the Office of Energy and Sustainability should confirm the appropriateness of the team's proposed metrics before presenting them to stakeholders. There are likely to be other city agencies that could determine more precise and appropriate targets. Finally, once targets are set, they could be presented to Albany's residents, who will be the primary beneficiaries of these goals. The Albany 2030 Capstone team is optimistic that the metrics and targets suggested in this document will help Albany's Planning Department implement a successful sustainability plan that adequately prepares the City for a prosperous future.

APPENDIX

Appendix A

Based on the team's research methodology of focusing on the goals in the Albany 2030 plan, the table below articulates the specific metric and target associated with each goal. Even though the goals are cited individually below, the approach to developing the metric and target for each goal is integrative in that it addresses economic, social, and environmental concerns (see Analytical Framework section).

Goal	Metric	Target
Land Use Pattern	Percent of vacant lots occupied/restored	Reduce percentage of vacant and unoccupied lots by 15-30%
Architectural Character	Number of Historic Resources Commission "approved" projects that are repurposed vacant lots, brownfields, or 'Registered Historic Structures"	Identify baseline of vacant lots, brownfield sites and Registered Historic Structures and determine appropriate target for yearly increase
Employment	Percentage of households that earn a living wage	Increase percent of Albany's households that earn a livable wage to 95%
Investment	Percentage of employment/income coming from small businesses	Increase percentage of employment and payroll attributed to small business to 50%
Diversity	Percent of employment/payroll represented by small business by North American Industry Classification System (NAICS) codes	Increase the percentage of employment/payroll represented by small business NAICS codes to a range of double the current percentages to 50%
Public Safety	*Crime incidents*: number of incidents per police precinct *Crime prevention*: number of people served by outreach efforts in each neighborhood	Decrease crime incidents per police precinct by 20-40% and increase the number of people served by outreach efforts

Goal	Metric	Target
Social Services	*Unemployment*: Number of workforce re-entry training programs and their success rates *Health care*: Number of free and readily available health care services for women and children and the percentage of the targeted community using such services *Hunger*: Number of food pantries and amount of food stock available	Develop baseline and increase percentage of assistance among people who are in need of social services
Multi-Modal Connections	Vehicles Miles Traveled (VMT) by Single Occupancy Vehicle (SOV) commuters in Albany	Decrease commuter VMT by SOV by 5-10%
Bicycling	Dollar spent per mile of bike lane per neighborhood	Equalize and then uniformly increase the allocation of the infrastructure funding per mile of bike lane per neighborhood
Transportation	Number of households that are within ½ mile of at least one mode of public transportation	Increase number of Albany households within ½ mile (¼ mile if feasible) of a least one mode of public transportation to 100%
Waterways	Water contaminant levels as defined by State Water Quality Standards (drinking and surface water)	Reduce levels of all contaminants in drinking and surface water by 20-30% according to their respective New York State standards
Urban Forest	Percent of tree canopy coverage by neighborhood	Increase tree canopy coverage by 5-15% per neighborhood
Natural Habitat	Number of native flora & fauna species present in the Albany Pine Bush Preserve	Create a baseline and database of native flora and fauna within the Albany Pine Bush Preserve and set target increase
Air Quality	Pollutant levels and number of days air pollutants levels achieve a "good" rating on the EPA's Air Quality Index (AQI)	Reduce pollutant levels by 20% and maintain 100% "good" rated days on the EPA's AQI
Housing & Diversity Choice	Percent of affordable housing units per neighborhood and percent of existing affordable stock preserved	Increase percent of affordable housing units by 20-30%

Goal	Metric	Target
Neighborhood Diversity	Percentage of vacant lots or brownfields per neighborhood	Decrease the number of vacant lots or brownfields by 10-20% per neighborhood, while increasing by 30-40% the number of completed lots that preserve historic buildings and repurpose vacant lots and brownfields
Neighborhood Services	Number of households that are within a ¼ mile of basic services	Increase the percentage of households within a ¼ mile of basic services by 20-40%
Energy	Amount of electricity used by energy source (e.g. coal, natural gas, alternative energy) and sector	Reduce energy from fossil fuels 20% and obtain 25% of renewable energy used by Albany's buildings and operations by 2017
Water & Sewer	Biochemical oxygen demand (BOD) levels (number of days in violation)	Reduce levels of Biochemical oxygen demand (BOD5) to 20 milligrams per liter (mg/L) or less
Stormwater	Amount of stormwater diverted into green infrastructures	Capture the first inch of rainfall on 10% of the impervious areas in combined sewer watersheds through detention or infiltration source controls
Solid Waste Management	Amount of waste diverted from landfills	Increase the amount of waste diverted from the landfill from 42% to 65%, and expand organic waste diversion to 10%
Communications	Number of households, by neighborhood, with access to broadband internet service with a minimum speed of 4 megabits per second (Mbps)	Increase percentage of all Albany households that have broadband connections with at least 20 Mbps to 60%
Fiscal Impacts	Amount of PILOT money collected as percentage of total budget	Increase the percentage of city revenue collected as a PILOT to 5%

Appendix B

A report on TBL reporting created by Jigsaw Services prepared for the city of Salisbury, United Kingdom details some individual approaches to TBL reporting.

Location	Findings	Other Comments
Victoria	Local Government TBL is relatively new but widespread in Victoria. The City of Melbourne is a leader in this area, being largely responsible for the development and rollout of a TBL toolkit and acting as a mentor to other Councils.	The City of Melbourne worked with International Council for Local Environmental Initiatives (ICLEI) to develop the TBL reporting toolkit.
New South Wales	Few councils are identified as having implemented TBL reporting. Notably, Coffs Harbour City Council and Eurobodalla Shire Council have commenced work in this area.	Coffs Harbour City Council has utilised the ICLEI TBL reporting toolkit.
Queensland	Our research did not identify any significant TBL reporting activity in Queensland. Notably, Brisbane City Council and Logan City Council have undertaken some work in this area.	Brisbane City Council has made three attempts at incorporating TBL into its Annual Report and is continuing to investigate opportunities for improvement.
South Australia	Few Councils were identified as having implemented TBL reporting. Adelaide City Council and the City of Onkaparinga currently collect and report economic, environmental and social data.	The City of Onkaparinga produces a 'Report Card', which monitors sustainable progress and serves to guide future strategies and activities.
New Zealand	Extensive work has been done in New Zealand Local Government to extend TBL reporting to 'Quadruple' bottom line (to include cultural well-being of communities). This has been driven by the legislative requirements of new Local Government Act, introduced in July 2003.	The City of Christchurch and Waitakere City Council in particular, were part of a pilot group for the Ministry for the Environment project "Triple Bottom Line Reporting in the Public Sector."

Appendix C

Household Size by Type

Source: American Community Survey 2005-2009 – 5-year estimates – Occupancy Characteristics[113]

Data:

	Household Breakdown				
City	Total Households	Single Households %	Family Households %	# of Single Households	# of Family Households
Albany	40,193	55%	45%	22,187	18,006
Madison	96,667	53%	47%	51,137	45,530
St. Paul	110,705	47%	53%	52,253	58,452
Salem	55,445	37%	63%	20,626	34,819
Hartford	45,761	42%	58%	19,128	26,633

Appendix D

Household Income by Range

Source: American Community Survey 2005-2009 – 5-year estimates – Income in Past 12 Months [114]

Data:

City	Single Households									
	% income (<$10,000)	% income ($10,000-$14,999)	% income ($15,000-$24,999)	% income ($25,000-$34,999)	% income ($35,000-$49,999)	% income ($50,000-$74,999)	% income ($75,000-$99,999)	% income ($100,000-$149,999)	% income ($150,000-$199,999)	% income (>$200,000)
Albany	14%	8%	13%	12%	15%	15%	10%	9%	3%	2%
Madison	10%	5%	10%	10%	14%	20%	13%	12%	4%	3%
St. Paul	10%	6%	11%	11%	16%	19%	11%	10%	3%	3%
Salem	8%	6%	13%	14%	16%	20%	11%	10%	2%	2%
Hartford	20%	10%	15%	13%	13%	14%	7%	6%	1%	2%

City	% income (<$10,000)	% income ($10,000-$14,999)	% income ($15,000-$24,999)	% income ($25,000-$34,999)	% income ($35,000-$49,999)	% income ($50,000-$74,999)	% income ($75,000-$99,999)	% income ($100,000-$149,999)	% income ($150,000-$199,999)	% income (>$200,000)
						Family Households				
Albany	7%	5%	14%	10%	15%	17%	13%	12%	5%	3%
Madison	5%	2%	6%	6%	11%	21%	18%	20%	7%	5%
St. Paul	6%	4%	9%	10%	14%	19%	14%	14%	5%	5%
Salem	5%	3%	10%	12%	16%	22%	14%	13%	3%	3%
Hartford	15%	10%	16%	14%	13%	15%	8%	7%	1%	2%

Appendix E

Living Wage by Household Size

Source: University of Pennsylvania Living Wage Calculator[115]

Data:

City	Single Living Wage ($/hr)	Family Living Wage ($/hr)	Single Living Wage ($/year)	Family Living Wage ($/year)
Albany	$9.47	$23.27	$ 19,698	$ 48,402
Madison	$8.74	$20.91	$ 18,179	$ 43,493
St. Paul	$8.92	$21.36	$ 18,554	$ 44,429
Salem	$7.92	$20.20	$ 16,474	$ 42,016
Hartford	$9.35	$21.67	$ 19,448	$ 45,074

Appendix F

Employment Data

Source: http://www.census.gov/econ/susb/index.html

Region	Total # of Employment	Total # of Employment (0-4 employees)	Total # of Employment (5-9 employees)	Total # of Employment (10-19 employees)	Total # of Employment (20-99 employees)	Total # of Employment (100-499 employees)	Total # of Employment (500+ employees)	Total Small Business (<20 employees)	Small Business % of Total Employment
Albany, NY Metro	337,359	16,285	18,857	23,934	60,176	48,084	167,336	59,076	17.5%
Madison, WI Metro	291,193	10,634	14,193	20,305	54,765	48,246	143,050	45,132	15.5%
Trenton, NJ Metro	186,175	8,052	9,616	11,199	30,076	26,342	100,890	28,867	15.5%
Salem, OR Metro	114,555	7,947	9,361	11,150	25,787	17,781	42,529	28,458	24.8%
Hartford Metro	566,576	22,724	29,023	35,904	91,104	87,032	300,789	87,651	15.5%

Payroll Data:

Source: http://www.census.gov/econ/susb/index.html

Region	Total $ of Payroll ($1000s)	Total $ of Payroll (0-4 employees)	Total $ of Payroll (5-9 employees)	Total $ of Payroll (10-19 employees)	Total $ of Payroll (20-99 employees)	Total $ of Payroll (100-499 employees)	Total $ of Payroll (500+ employees)
Albany, NY Metro	$13,291,966	$539,507	$622,067	$850,467	$2,291,968	$1,838,741	$7,149,216
Madison, WI Metro	$11,701,842	$374,869	$430,889	$624,522	$1,941,892	$1,784,911	$6,544,759
Trenton, NJ Metro	$10,093,036	$356,635	$396,157	$555,724	$1,431,200	$1,217,074	$6,136,246
Salem, OR Metro	$3,588,102	$226,928	$244,813	$305,082	$811,497	$538,923	$1,460,859
Hartford Metro	$27,673,069	$946,325	$1,077,379	$1,434,201	$4,046,778	$3,884,437	$16,283,949

Region	Total Small Business (<20 employees)	Small Business % of Total Employment
Albany, NY Metro	2,012,041	15.1%
Madison, WI Metro	1,430,280	12.2%
Trenton, NJ Metro	1,308,516	13.0%
Salem, OR Metro	776,823	21.6%
Hartford Metro	3,457,905	12.5%

Appendix G

Employment Data

Source: http://www.census.gov/econ/susb/index.html

Region	Construction			Manufacturing			Wholesale trade		
	23			31-33			42		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	7,404	17,913	41.3%	2,031	21,426	9.5%	2,508	13,623	18.4%
Madison, WI Metro	5,608	16,160	34.7%	2,355	33,566	7.0%	1,974	13,241	14.9%
Trenton, NJ Metro	2,392	6,167	38.8%	1,005	8,304	12.1%	1,218	13,077	9.3%
Salem, OR Metro	4,678	9,900	47.3%	1,691	12,461	13.6%	1,058	4,515	23.4%
Hartford Metro	9,499	23,384	40.6%	6,762	71,117	9.5%	4,303	26,967	16.0%

Region	Retail trade			Transportation and warehousing			Information		
	44-45			48-49			51		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	7,307	49,550	14.7%	1,045	9,696	10.8%	640	10,276	6.2%
Madison, WI Metro	5,562	40,312	13.8%	1,159	8,385	13.8%	604	11,397	5.3%
Trenton, NJ Metro	3,665	20,602	17.8%	405	4,538	8.9%	266	6,059	4.4%
Salem, OR Metro	3,396	19,105	17.8%	766	3,939	19.4%	247	2,304	10.7%
Hartford Metro	11,273	65,726	17.2%	1,273	18,010	7.1%	921	13,119	7.0%

Region	Finance and insurance			Real estate and rental and leasing			Professional, scientific, and technical services		
	52			53			54		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	2,136	21,144	10.1%	2,244	5,511	40.7%	7,081	28,661	24.7%
Madison, WI Metro	1,391	23,870	5.8%	1,625	5,177	31.4%	5,268	20,042	26.3%
Trenton, NJ Metro	958	15,975	6.0%	821	2,074	39.6%	4,531	22,398	20.2%
Salem, OR Metro	788	4,035	19.5%	1,373	2,694	51.0%	2,432	4,372	55.6%
Hartford Metro	3,220	68,780	4.7%	2,371	7,283	32.6%	9,116	35,123	26.0%

Region	Management of companies and enterprises			Administrative and support and waste management and remediation services			Educational services		
	55			56			61		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	29	7,289	0.4%	2,584	17,220	15.0%	927	18,442	5.0%
Madison, WI Metro	0	5,303	0.0%	2,211	16,268	13.6%	749	3,042	24.6%
Trenton, NJ Metro	25	3,810	0.7%	1,539	9,100	16.9%	610	22,227	2.7%
Salem, OR Metro	0	1,322	0.0%	1,420	6,608	21.5%	329	3,135	10.5%
Hartford Metro	0	10,638	0.0%	4,484	34,767	12.9%	1,339	16,325	8.2%

Region	Health care and social assistance			Arts, entertainment, and recreation			Accommodation and food services		
	62			71			72		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	7,066	60,880	11.6%	1,328	7,146	18.6%	7,165	30,653	23.4%
Madison, WI Metro	4,011	44,280	9.1%	942	4,365	21.6%	5,446	28,657	19.0%
Trenton, NJ Metro	4,043	27,134	14.9%	491	2,618	18.8%	2,803	12,350	22.7%
Salem, OR Metro	3,065	18,481	16.6%	439	1,431	30.7%	3,366	11,969	28.1%
Hartford Metro	10,944	95,364	11.5%	1,589	7,537	21.1%	8,549	43,167	19.8%

Region	Other services (except public administration)		
	81		
	Small	Total	%
Albany, NY Metro	7,413	15,906	46.6%
Madison, WI Metro	6,008	14,607	41.1%
Trenton, NJ Metro	4,021	9,145	44.0%
Salem, OR Metro	2,893	5,630	51.4%
Hartford Metro	11,673	25,297	46.1%

Payroll Data

Source: http://www.census.gov/econ/susb/index.html

Region	Construction			Manufacturing			Wholesale trade		
	23			31-33			42		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	341,883	972,123	35.2%	74,472	1,166,074	6.4%	125,605	702,121	17.9%
Madison, WI Metro	240,092	860,987	27.9%	78,909	1,610,769	4.9%	88,728	633,688	14.0%
Trenton, NJ Metro	108,888	363,140	30.0%	45,629	420,331	10.9%	76,435	1,260,795	6.1%
Salem, OR Metro	143,659	406,692	35.3%	53,330	441,303	12.1%	40,508	199,229	20.3%
Hartford Metro	476,482	1,416,931	33.6%	317,728	4,230,493	7.5%	252,011	1,615,589	15.6%

Region	Retail trade			Transportation and warehousing			Information		
	44-45			48-49			51		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	176,503	1,144,467	15.4%	33,930	353,731	9.6%	25,041	635,141	3.9%
Madison, WI Metro	120,463	979,365	12.3%	38,202	272,840	14.0%	26,111	683,312	3.8%
Trenton, NJ Metro	95,973	493,576	19.4%	12,602	146,438	8.6%	20,758	422,742	4.9%
Salem, OR Metro	73,525	440,755	16.7%	22,305	166,227	13.4%	7,443	84,760	8.8%
Hartford Metro	296,893	1,643,836	18.1%	51,056	645,016	7.9%	46,862	826,161	5.7%

Region	Finance and insurance			Real estate and rental and leasing			Professional, scientific, and technical services		
	52			53			54		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	98,631	1,244,214	7.9%	74,130	183,518	40.4%	344,609	1,813,074	19.0%
Madison, WI Metro	60,597	1,454,595	4.2%	54,633	168,951	32.3%	257,423	1,194,669	21.5%
Trenton, NJ Metro	119,622	1,455,083	8.2%	30,665	85,969	35.7%	308,935	1,793,656	17.2%
Salem, OR Metro	25,507	187,111	13.6%	31,157	68,262	45.6%	93,345	178,891	52.2%
Hartford Metro	190,017	5,894,668	3.2%	97,847	328,100	29.8%	510,938	2,192,027	23.3%

Region	Management of companies and enterprises			Administrative and support and waste management and remediation services			Educational services		
	55			56			61		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	2,203	451,118	0.5%	89,576	498,963	18.0%	25,495	610,528	4.2%
Madison, WI Metro	0	368,820	0.0%	71,156	461,130	15.4%	14,526	64,749	22.4%
Trenton, NJ Metro	4,445	486,284	0.9%	69,685	322,732	21.6%	14,990	979,859	1.5%
Salem, OR Metro	0	69,802	0.0%	33,695	178,472	18.9%	4,254	60,679	7.0%
Hartford Metro	0	1,088,343	0.0%	177,104	1,151,564	15.4%	31,167	480,690	6.5%

Region	Health care and social assistance			Arts, entertainment, and recreation			Accommodation and food services		
	62			71			72		
	Small	Total	%	Small	Total	%	Small	Total	%
Albany, NY Metro	266,527	2,287,597	11.7%	31,316	130,523	24.0%	104,114	442,150	23.5%
Madison, WI Metro	133,739	1,889,151	7.1%	19,680	72,906	27.0%	65,512	348,870	18.8%
Trenton, NJ Metro	219,157	1,254,242	17.5%	10,203	48,276	21.1%	42,031	196,268	21.4%
Salem, OR Metro	112,239	696,157	16.1%	7,272	23,754	30.6%	42,857	155,804	27.5%
Hartford Metro	505,144	4,149,647	12.2%	44,938	211,782	21.2%	123,937	667,819	18.6%

Region	Other services (except public administration)

	81		
	Small	Total	%
Albany, NY Metro	192,435	486,002	39.6%
Madison, WI Metro	151,749	414,724	36.6%
Trenton, NJ Metro	125,513	313,020	40.1%
Salem, OR Metro	63,020	128,891	48.9%
Hartford Metro	320,287	736,108	43.5%

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