



120 South Sixth Street, Suite 1220
Minneapolis, MN 55402
tel 763 / 898 4185

Danya Littlefield, Project Manager
danya.littlefield@graef-usa.com
dir 414 / 266 9221

Stephanie Hacker, Principal
stephanie.hacker@graef-usa.com
dir 414 / 266 9226

June 18, 2021

City of La Crosse

Climate Action Plan



120 South Sixth Street
Suite 1220
Minneapolis, MN 55402
763 / 898 4185
www.graef-usa.com

collaborāte / formulāte / innovāte

June 18, 2021

City of La Crosse
Lewis Kuhlman, Environmental Planner
400 La Crosse St
La Crosse, WI 54601

SUBJECT: Climate Action Plan Request for Proposals

Dear Mr. Kuhlman,

The GRAEF team, comprised of GRAEF, Eastern Research Group (ERG), and SB Friedman Development Advisors, is pleased to provide this professional services proposal to the City of La Crosse for the consulting and planning services associated with the Climate Action Plan. We are inspired and energized by your commitment to facing the challenges of a changing climate in a holistic and comprehensive way. As your partner in this important work, we will help the City of La Crosse achieve:

- A process incorporating the best available science, comprehensive community outreach, and robust economic analysis to accomplish key tasks that will create an ambitious and actionable Climate Action Plan for La Crosse.
- An innovative approach highlighting low-, moderate-, and high-value emissions reductions mitigation measures accompanied by a cost-benefit analysis that clearly displays how the City's investments will impact goals in the short and long term. This will result in a Climate Action Plan that goes beyond the numbers to set transparent environmental and economic benefits for the City's residents and businesses.
- An experienced team of diverse professionals possessing expertise in emissions modeling and projections, economic analysis, community planning, resiliency and mitigation planning, renewable energy and energy efficiency, and, most importantly, dedication to the project at hand.

We all understand that now is the time to act on climate and strive to ensure the City is well-positioned to respond to threats, become energy independent, and established as a thriving place to live, work, and play well into the future. We believe our team's expertise, experience, and relationships position us as uniquely qualified to help La Crosse achieve these goals.





120 South Sixth Street
Suite 1220
Minneapolis, MN 55402
763 / 898 4185
www.graef-usa.com

collaborāte / formulāte / innovāte

Thank you for this opportunity and we look forward to working with you on this exciting project. Should you have any questions regarding this proposal, feel free to reach out at any time.

Sincerely,

A handwritten signature in black ink, appearing to read "SH".

Stephanie Hacker, AICP, LEED AP
Principal-in-Charge

A handwritten signature in black ink, appearing to read "Danya Littlefield".

Danya Littlefield
Project Manager

Table of Contents

section	1	Overview
section	2	Scope and Timelines
section	3	Community Engagement
section	4	Qualifications
section	5	Cost Proposal

Section 1: Overview

Overview

The City of La Crosse recognizes the significant challenges associated with rising Greenhouse Gas (GHG) emissions, accelerating pace of climate change, and urgent need to react and plan for the future today. The City's extensive history of identifying and implementing goals related to reducing waste, conserving energy, environmental protection, and building resilience signifies the commitment to a sustainable, equitable, and bright future. The development of a Climate Action Plan is a logical step to take to take the City's efforts to the next level and bring about community-wide change that provides a myriad of benefits for every resident and business.

La Crosse sets itself apart from other communities through the diversity of its efforts to make sustainability a core community value. The City's Bicycle & Pedestrian Master Plan, Flood Hazard Mitigation Planning, Parks, Recreation, and Forestry Strategic Plan, Green Complete Streets Ordinance, 2009 Strategic Plan for Sustainability, 2018 Sustainability Indicators Report, 2018 Transportation Demand Management Plan, and City Vision 2020 Master Plan showcase a commitment to comprehensive sustainability planning. These efforts each have an important, interconnected role in the overall health and long-term vibrancy of La Crosse. The Climate Action Plan doesn't have to start from scratch; we will analyze the efforts already underway and take them to the next level in climate action.

To date, the City's efforts have focused on GHG inventories which provide a helpful overview of the City's emissions portfolio. A 2009 Sustainability Plan and associated 2019 Report include a wide range of goals including four long-term goals to reduce energy consumption in government facilities and four long-term goals regarding fuel consumption in fleet vehicles and fuel related emissions. Of note, clean energy, energy efficiency, and sustainable transportation technologies have advanced exponentially since the drafting of the 2009 report. These technology advances present unique opportunities for revised, aggressive goals to lead the city towards a net-zero future by 2030.

A Climate Action Plan can complement the City's Comprehensive Plan Update and provide a detailed, action-oriented roadmap to achieving the City's goals. Addressing the City's vulnerabilities and outlining short and long term realistic, strategic goals will set the City on the right path forward.

We propose a process incorporating the best available science, economic analysis, and industry best practices to accomplish key tasks that will create a robust and actionable Climate Action Plan. Through extensive public engagement and stakeholder involvement along every juncture, we will ensure the City's Climate Action Plan is robust, understandable, and, most importantly, implementable. Too often, well-intentioned sustainability goals are relegated to the dusty top-shelf; La Crosse's Plan will not suffer this fate, but will be championed by City staff, residents, and businesses alike as a key asset for the betterment of the community long into the future.



Overview

The Project Team, led by GRAEF and our renowned partners ERG and SB Friedman, will work together to accomplish the scope of work in an expeditious timeline that recognizes the time is now to act on climate. ERG will use available data to develop an inventory of GHG emissions from La Crosse for 2020, as well as retroactive emissions for 2015. ERG will also assess existing policies, existing programs, and anticipated regulations to develop a business as usual (BAU) model of future emissions in La Crosse. ERG will draw from a wealth of experience in GHG inventory methods and application as they conduct this task, as they have been a lead technical contractor for the U.S. EPA's national GHG emissions inventory for 20 years, served on IPCC inventory method development panels, and recently completed inventories for other municipal clients as described in the Qualifications section of this proposal.

If the city determines that a 2020 inventory would not provide a representative snapshot of emissions due to the pandemic, GRAEF and ERG will divert resources to the 2015 inventory or other project tasks. Based on previous inventories and our work with other municipalities, we expect the major sectors of GHG emissions will be facilities (commercial and residential buildings), transportation, and waste management. ERG's staff of engineers and scientists includes experts in all these areas as well as the related GHG inventory protocols.

After collecting and compiling relevant activity data, ERG will perform all inventory calculations either in a custom-built (Excel-based) platform or within ICLEI's ClearPath model, which is available to municipalities such as La Crosse. In either case, we will use the most recent established protocols for inventory development, such as ICLEI's GHG Protocol and those developed by the World Resources Institute. We will share the results of the GHG inventory with the city using tabular and graphical output generated by the chosen platform and then adjust the results based on comments received. This inventory will serve as the basis for the BAU forecast of GHG emissions and GHG reduction scenarios developed in other tasks, so it is important that the inventory provides a complete and accurate baseline.

GRAEF and ERG will work with the city and its stakeholders to consider multiple possible GHG emissions reduction targets. These considerations will be based in part on the GHG inventory and BAU emissions forecast developed in Tasks 1 and 3 and in conjunction with state targets and national and international recommendations. Wisconsin's statewide goal of carbon-free electricity by 2050 will both affect and be considered when setting targets for La Crosse, which will include city-specific targets for 2050 and interim years as well (e.g., 2030, 2040). These goals will require engagement and agreement among city staff, residents, businesses, and other stakeholders to achieve.

Using the GHG emissions inventory developed in Task 1, ERG will create a forecast of future GHG emissions through 2050 based on a BAU scenario. This forecast will serve as the baseline by which we will consider future scenarios for GHG emissions reductions and their impacts toward reaching the city's GHG emissions reduction targets that will be set in Task 2. The BAU scenario assumes no changes to current practices except those that city, state, and local policies and programs have already mandated.



Overview

To create a model of future GHG emissions, GRAEF and ERG will first work with the city to identify the best available forecast growth factors for estimating future emissions. Forecast growth factors are data projections that can be applied to the GHG inventory to calculate future GHG emissions under BAU conditions. Economic or demographic data (e.g., projections of population, housing, or commercial growth) are common growth factors that may be applied to certain categories of emissions to predict growth. The text box on the right lists other factors that may be useful (followed by the emissions sector to which they might apply).

GRAEF and ERG will work with the city to determine the best available forecast growth factors for each sector of emissions and will calculate the BAU projections of future GHG emissions for each sector annually through 2050. For example, using housing units as a growth indicator for residential energy use, ERG will apply the forecast of housing units in La Crosse to the current per-household energy use and GHG emissions factors associated with the energy used to forecast future emissions from residential energy consumption in the BAU scenario. As part of the process, we will also work with the city team to estimate GHG reductions from existing city programs, state legislation, and state policies to incorporate into the analysis.

Throughout this project—and particularly in this phase of analysis and goal-setting—strong messaging and presentation based on robust analysis will help ensure the city has a clear and specific understanding of the BAU scenario and other information necessary to move forward. When it comes to setting goals and priorities, we'll incorporate a robust community engagement strategy to involve all sectors of the La Crosse landscape, ensuring every voice is heard. Both GRAEF and ERG have recent success in executing strategies with equity at the forefront of this engagement process, and we could continue this in our work with La Crosse.

At the conclusion of this task, GRAEF will provide the city with a draft Climate Action Plan outlining the results of the GHG emissions inventory and the BAU emissions forecast. The team will develop a draft outline for the summary CAP and discuss the draft with the city team at a project working session. Following this, we will share the inventory and BAU assessment frameworks and outline at the session, and GRAEF will revise it based on city team input. The team will finalize this work by reviewing and compiling relevant information on the selected existing policies, programs, and best practices in detail. Once the team has collected and analyzed the data, we will submit the final memorandum summarizing the analysis, findings, and how this affects the development of GHG emissions reduction targets.

GRAEF and ERG will work with city staff to develop new, innovative, and custom-tailored GHG reduction measures for all sectors. These will integrate with relevant existing city plans, programs, and policies and incorporate input from stakeholder engagement and meetings with city groups conducted in Task 4. Opportunities identified from GRAEF's review of the city's existing plans, stakeholder feedback, and ERG's previous experience will influence measure development. We will identify, analyze, and characterize potential new GHG reduction measures that would have the greatest impact, be within the scope of the city's influence, be the most cost-effective, and produce the most co-benefits for the city. We will

Example Forecast Growth Factors (by Emissions Sector)

- Number of housing units (residential energy use).
- Number of jobs (commercial and industrial energy use).
- Vehicle miles traveled (on-road transportation).
- Number of housing units (off-road transportation).
- Service population (solid waste).
- Service population (water and wastewater).

Overview

propose innovative ways to reduce GHG emissions in commercial/industrial energy use, residential energy use, and transportation. Our team members have deep experience in electric vehicle infrastructure and advanced energy systems (including energy storage) and will incorporate measures in these sectors into the city's plan. Table 1 lists example measures we have used in other city engagements.

Table 1. Examples of Potential Additional Innovative and Advanced GHG Reduction Measures

Sector	Example Measures for Consideration
Electricity	Growth in utility-scale renewable energy options.
	Distributed energy resources to balance load and reduce centralized power needs.
	Multidirectional electric distribution system to allow greater use of distributed energy resources.
	Advanced solar technologies and enablement of safe development of battery storage.
Commercial and Residential Building Energy Use	Corporate incentives for onsite renewable generation.
	Revised building codes to encourage green building and further optimize energy efficiency.
	Campaign to encourage more businesses to become certified under green business programs (for example, our Alameda plan cited the California Green Business Program).
Transportation	Implementation of vehicle-to-grid integration.
	Electric vehicle charging station development subsidies and financing.
	Plans for additional bike paths.
Waste	Use of alternative methane capture methods.
	Implementation of biomass energy generation.
	Coordination of recycling and organic waste diversion to composting or anaerobic digestion.
Water	Use of local vegetation to impact water use.
	Switch to two-day watering schedule.
	Underground leakage assessments.

Using the BAU forecast of GHG emissions and the estimated impact of city, state, and federal policies and programs as the baseline, GRAEF and ERG will help the city identify the most impactful and cost-effective measures to achieve additional GHG reductions and meet the city's emissions reduction targets for 2050 and beyond. ERG will bring together its economists and sector-specific climate experts to provide a "high," "medium," or "low" ranking for each mitigation measure. This will allow us to efficiently develop a list of measures tailored to La Crosse and present them in an easy-to-digest matrix, which helps prioritize measures for further analysis (see Table 2). Within a prioritization matrix, we will include factors such as capacity to reduce GHG emissions, political considerations, environmental justice considerations, and co-benefits.

Overview

Table 2. Example Prioritization Matrix to Capture Benefits and Other Factors for Mitigation Measures

Measure	Capital Cost	Financial Return on Investment	Capacity to Reduce GHGs	Public Health Benefits	Environmental Benefits	Other Benefits	Other Factors Such as Barriers/ Environmental Justice
More Bike Lanes	Medium	Low	Low	High (exercise, reduced criteria pollutants)	Medium	Medium (reduced congestion)	
Growth of Utility-Scale Renewables	High	Medium	High	Medium (reduced criteria pollutants)	High	Medium (resilience)	
Residential Education About Electrification	Low	High	Medium	Medium	Medium	High	

Based on the prioritization of GHG reduction measures, we will assess each measure (or combination of measures as scenarios) to prepare a wedge diagram time series graph that visually communicates the GHG emissions reductions of individual measures and their cumulative impacts relative to the BAU projection and future GHG emissions reduction targets. As we develop emissions reduction measures for the city, we will integrate their effects into the model platform to get a real-time look at their impacts and better assess which ones are affecting the most measurable changes—and how much further the measures may need to go. This iterative process will be critical to developing an effective pathway with achievable and comprehensible goals. Following feedback from the community on draft emissions forecasts, we will develop a final forecast for publication in multiple formats.

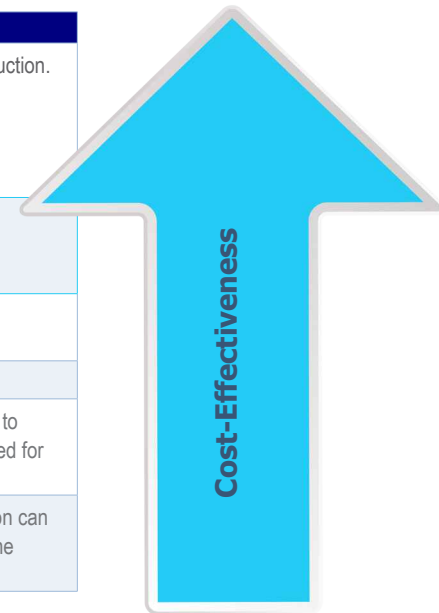
Based on the prioritized mitigation and adaptation measures, GRAEF will develop an implementation plan that maps out clear roles for lead agencies and partner organizations, as well as costs, a timeframe, and co-benefits for each measure. This plan will be incorporated into the development of the draft and finalized CAP in Tasks 6 and 7. ERG will work with GRAEF to tailor the implementation plan to the resources and needs of the city and its stakeholders. Many of these activities will occur after the plan is completed, so the team will provide ample detail and guidance for the city to effectively continue implementation of the plan.

Overview

Figure 5 provides an example that clearly summarized the key findings of a recent analysis of mitigation strategies for the state of Maine. We will tailor this approach for La Crosse.

Figure 5. Example Project Findings (Maine): Cost-Effectiveness of Strategies

GHG Reduction or Sequestration Strategy	Cost-Effectiveness to Reduce or Sequester Carbon Dioxide (CO ₂)
<ul style="list-style-type: none"> Building codes focused on energy Geothermal heat and cooling for buildings Heat pumps and heat pump water heaters Building weatherization A well-crafted work-from-home policy 	Highest cost-effectiveness: cost savings over the strategies' lifetimes and CO ₂ reduction.
<ul style="list-style-type: none"> Electrical vehicle adoption Renewable energy adoption 	Very cost-effective, with potential for cost savings over time with mass production
<ul style="list-style-type: none"> Preserving natural working lands to sequester carbon 	Very cost-effective: about \$4-\$20 per metric ton of CO ₂ sequestered
<ul style="list-style-type: none"> Methane-to-energy projects 	Medium cost-effectiveness: about \$100-\$200 per metric ton of CO ₂ reduced
<ul style="list-style-type: none"> Fuel tax Carbon tax 	Lower cost-effectiveness: about \$150-\$250 per metric ton of CO ₂ reduced (cost is to consumers and revenue to the state; can improve cost-effectiveness if revenue is used for projects that further reduce emissions)
<ul style="list-style-type: none"> Restoring marsh and eelgrass to sequester carbon Vehicle miles traveled fee 	Less cost effective: more than \$1,000 per metric ton of CO ₂ reduced (but restoration can provide other value for flood protection and commercial fisheries; the revenue from the vehicle miles traveled fee can be used for projects that further reduce emissions)



Many of these strategies will also have non-monetary benefits, as well as tradeoffs or uncertainties that could affect their potential. Throughout this process, our team will be in contact with city staff to ensure we evaluate the strategies and pathways with these considerations in mind, along with external factors (e.g., equity, governance, social, political, economic) that might affect their performances. As we produce the final deliverables, we will consider sector-based mitigation measures for community and municipal operations; an analysis of financial costs and the fiscal benefit of mitigation measures, including cost avoidance; and identification of co-benefits of mitigation measures.

Based on the prioritized mitigation and adaptation measures, GRAEF will develop an implementation plan that maps out clear roles for lead agencies and partner organizations, as well as costs, a timeframe, and co-benefits for each measure. This plan will be incorporated into the development of the draft and finalized CAP in Tasks 6 and 7. We will work with the prime contractor to tailor the implementation plan to the resources and needs of the city and its stakeholders. Many of these activities will occur after the plan is completed, so GRAEF and ERG will provide ample detail and guidance for the city to effectively continue implementation of the plan.

Overview

A cost-benefit analysis of measures is critical to decision-making and planning implementation of the CAP. Once the list of mitigation measures is finalized, we will further examine costs and benefits of the prioritized strategy list. SB Friedman will develop strategies for building- and citywide-scale emissions reduction performance improvements, ranked by impact, cost, feasibility, associated co-benefits (e.g., impacts for communities of color, low-income neighborhoods, and otherwise vulnerable citizens), and long-term vs short-term strategies. Potential recommendation areas may include:

- Energy efficiency – strategies to increase energy efficiency for homeowners, renters, businesses and municipal buildings;
- Buildings – guidelines to help developers build highly energy efficient, and eventually net-zero energy and net-zero carbon buildings;
- Transportation – strategies to encourage and incentivize the purchase of EVs;
- Land use - planning strategies to reduce vehicle miles traveled (e.g., strategies to support smart growth, active transportation, regional transit);
- Renewable Energy – strategies to support solar and wind energy development; incentives for installing solar energy;
- Waste Materials Management – strategies to support a transition from traditional waste programs to resource management system; and
- Water Management – strategies to support water efficiency programs.

SB Friedman will coordinate with GRAEF and ERG to understand GHG emissions reductions scenarios and evaluate the economic impact of emissions reductions in each scenario against a baseline scenario (no intervention). This quantitative analysis will adhere to economic value standards accepted by federal agencies including the U.S. Environmental Protection Agency and the Benefit-Cost Analysis Guidance for Discretionary Grant Programs, as required by the U.S. Department of Transportation.

SB Friedman will also coordinate with GRAEF and ERG to understand up-front capital, operating and maintenance expenditures, and operational costs savings associated with each scenario to conduct a benefit cost analysis. Additionally, we will identify existing finance programs, such as the Property Assessed Clean

Energy (PACE) program and performance contracting, to help finance clean energy projects for businesses, residents, local government and other organizations. We will also explore viability of partnerships to initiate stronger climate action and other creative financing tools such as loans with credit enhancements, climate bonds, and green banks.



Overview

SB Friedman will conduct additional qualitative research to understand other associated co-benefits with an emphasis on impacts for communities of color, low-income neighborhoods, and otherwise vulnerable citizens.

GRAEF's proposal features the following highlights:

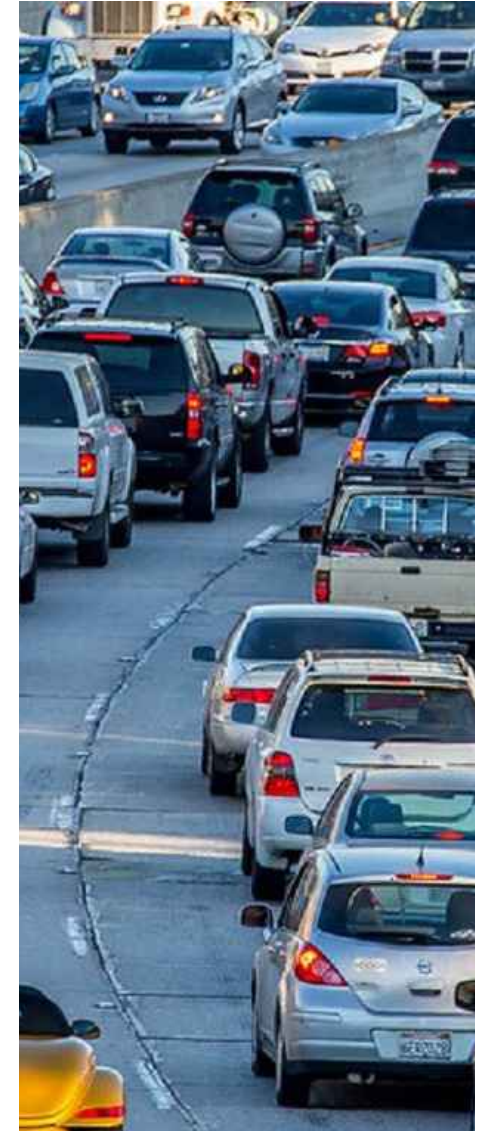
GHG Emissions Modeling and Cost-Benefit Analysis: We will work to use the best available science to capture a snapshot of the City's GHG emissions from all sectors. This will provide the basis for delineating realistic, actionable goals for emissions reductions targets. We will go a step further to analyze the costs and benefits associated with various pathway options, providing the City with a complete picture of the investments and associated economic, environmental, and social benefits that can be achieved. Our approach is not just about lowering emissions; it's about creating a vibrant, healthy community that will thrive long into the future.

Special Focus on the Transportation Sector: Our experts will provide a special focus on emissions reductions goals for the transportation sector, largely an under-recognized contributor to community-wide emissions and a massive opportunity to achieve reductions quickly. The 2019 Greenhouse Gas Emissions Inventory and Summary Report estimated city transportation emissions based on state available data. As Transportation is commonly the largest emitted of GHGs in communities, we propose a more detailed analysis measuring the City's residential, commercial, and municipal transportation emissions.

We will closely evaluate the 2018 Cycle La Crosse Economic Impact Analysis of a Better Bikeway Network, the 2012 Bicycle and Pedestrian Master Plan, Bike Share Feasibility Study, 2015 Transportation Vision, 2020 Safe Routes to School Plan, and the 2018 Transportation Demand Management Plan as important resources when designing and implementing sustainable transportation goals in La Crosse. We will take a technology-neutral approach to evaluate emissions-reducing opportunities from passenger vehicles, including expanding electric vehicle (EV) infrastructure, efficient transportation opportunities for City departments, expanding pedestrian-friendly and bike-friendly modes of transportation, and more. Recommendations will include funding and financing resources and opportunities to ensure the City is well-positioned to achieve goals as part of the Climate Action Plan.

An Experienced Look at Renewables & Efficiency: Our team has extensive experience evaluating renewable energy and energy efficiency options. We will provide creative solutions that balance community development, natural resource conservation, and economic growth. We'll analyze the wide variety of technologies available on the market as well as the local, state, and national policy landscape to provide the City with energy options that can achieve emissions reductions and serve to make La Crosse a model for energy independence.

Community Resilience: Sustainability goes beyond emissions. It encompasses the health and wellbeing of the community's environment, its people, and its systems. We will take a comprehensive approach to the City's Climate Action



Overview

Plan to ensure all aspects of climate risk are identified and recommendations are structured to provide cross-functional benefits. We'll align with the City's efforts to preserve and enhance its natural resources in the face of uncertainty, such as by incorporating the results from the 2020 Flood Hazard Mitigation Plan, and information and best practices gathered from the Building Resilient Infrastructure and Communities and Mississippi River Cities and Towns Initiative to develop a Strengths, Weakness, Opportunities, and Threats Analysis for the Mississippi River waterfront and surrounding natural ecosystems in La Crosse.

Resources for Success: Even the most well-intentioned goals can fail if there are no resources to achieve them. We will incorporate opportunities for innovative programs, funding, and financing for the City to consider, facilitating a streamlined pathway to success.

Our proposal also includes the following high-level features:

Beyond the Numbers: Emissions reductions targets are most useful when they resonate with the people who have the ability to achieve them. We will ensure the City's pathways for achieving net-zero reach, and are understandable, by the residents and businesses in La Crosse.

Championed By All, For All: Too often, climate change goals experience a "boom and bust" cycle where a relative few community champions burn out after a short time. By working with the Common Council, Climate Action Plan Steering Committee, and community organizations, we will ensure the needs of the City are front-and-center in the Climate Action Plan. This will create a Plan that is appealing, useful, and championed by all, for all, now and in the future.

Big Picture, Local Focus: Our team is skilled in understanding and communicating the "big picture", in this case, the timely importance of climate and resiliency, while maintaining an on-the-ground focus on the community level. We'll work with the diverse stakeholders across the City and the community, from the Climate Action Plan Steering Committee and Common Council to the local activists, business owners, and beyond. Implementing the Climate Action Plan should not be the responsibility of one champion or department, but rather a community-wide effort that everyone can reap value from.

Optional Services: Our team is pleased to offer the City a suite of additional services that can compliment the core scope and Climate Action Plan. The City may consider assistance developing public education materials and online content to further engage and energize the community behind the Climate Action Plan goals, such as neighborhood action plans, website page links and resources, and infographics highlighting key aspects of the Plan for display at City Hall, library, schools, and beyond. The City may also consider more in-depth assessments of place-based emissions from specific districts within or outside City limits. Specific districts could include the Gunderson Lutheran Medical Center, UW – La Crosse, and Western Technical College. In addition, we could prepare replicable action items that can be utilized in the



Overview

region to assist with widespread climate action and greater impact for lowering emissions, or a cost-effectiveness analysis of various emission-reduction items. Our team can also prepare a strengths, weaknesses, opportunities, & threats (SWOT) analysis based on the GHG emissions inventory, the upcoming Flood Hazard Mitigation report, and the Partners in Energy report.

Finally, the City may benefit from GRAEF's proprietary, powerful GIS software, Infinite GIS, an online asset management system that allows users to not only map their systems but also to track the maintenance activities related to the systems. Infinite GIS allows a user to edit the physical points, lines, and polygons, along with the associated attributes that make up the maintenance records for the particular asset. The system is completely cloud based and available to any user who has access to the internet. This could be synchronized with the GHG inventory to display areas of concern via a heat map that the city can use to update the information as energy efficiency, renewable energy, and other GHG emissions reduction technologies and infrastructure are implemented over time.



Section 2: Scope and Timelines

Scope and Timelines

	2021					2022												
	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
Task																		
Task 1: Analyze GHG Emissions																		
Review GHG data																		
Perform 2020 GHG inventory																		
Task 2: Recommend GHG Emissions Reduction Targets																		
Recommend GHG emissions reduction targets																		
Task 3: Forecast GHG Emission Reductions																		
Develop business as usual forecast																		
Develop baseline GHG emissions																		
Compile mitigation measures for consideration																		
Measure selection and prioritization																		
Conduct public outreach to receive feedback on emissions reductions strategies and priorities (up to 3 meetings, ongoing outreach)																		
Analyze scenarios of GHG reduction measures																		
Perform cost-benefit analysis																		
Develop implementation plan																		
Task 4: Engage City Commissions, Common Council, & Community																		
Establish community outreach plan in conjunction with City Staff																		
Work with City staff to identify and analyze existing City efforts related to climate change																		
Engage CAP Steering Committee, Plan Commission, Common Council																		
Meeting attendance																		
Task 5: Coordinate with Related City Efforts																		
Coordinate with Xcel Energy																		
Coordinate with Comprehensive Plan & General Plan																		
Identify and meet with potential partners that can assist with the CAP implementation																		
Task 6: Draft Climate Action Plan																		
Review draft and receive feedback from City & community																		
Second draft																		
Task 7: Support City in Adoption of the Climate Action Plan & General Plan Amendments																		
Support CAP Steering Committee in Plan finalization																		
Presentation of final CAP																		
Project Management & Team Coordination																		
Assemble data																		

Section 3: Community Engagement

Community Engagement

We offer public education and participation methods that afford the community opportunities to be closely involved and share ideas, values and concerns that become integral to the Climate Action Plan development. Some options available for informing the public and obtaining input include:

Community Involvement Stakeholders

- Public Officials
- Property Owners
- Local Institutions – Specifically UW-La Crosse, Viterbo University, Western Technical College, Gundersen Health System, Mayo Health System
- Business Leaders - Specifically Trane, Chart, and Kwik Trip
- Local Residents
- Neighborhood Groups
- Special Interest Groups
- Civic Groups
- Local Government Staff
- Young Professionals

Workshops

Workshops provide a means of introducing the consultant team; informing the public about the scope of the project; exploring community values and vision; and obtaining public input throughout the process. Workshops are often conducted as listening sessions that document the detailed concerns of residents and business owners.

Exhibits

Graphic displays can be used to inform and generate interest in the Climate Action Plan planning process. GRAEF's exhibits are often used in press conferences and stand-alone displays in public venues like city halls or libraries. These can include the dates of workshops, survey information, or other opportunities to get involved and submit feedback.



Community Engagement

Social Pinpoint

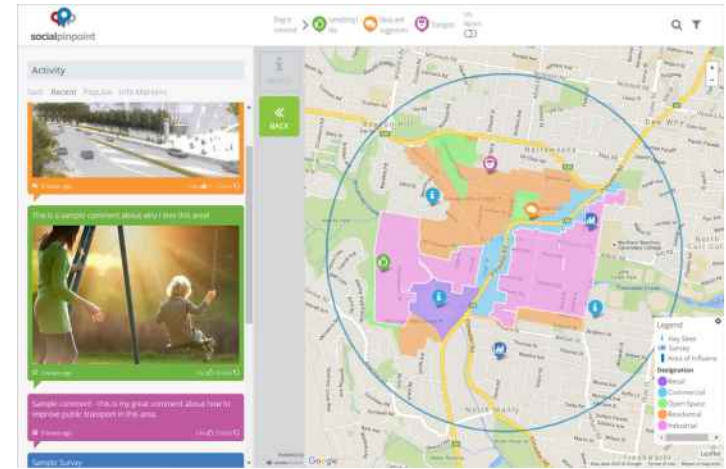
We offer a unique community engagement platform that allows community members to post feedback via an online virtual forum. This enables stakeholders who might be unable to attend workshops in-person to provide input, allowing us to reach traditionally hard-to-reach constituents and better structure recommendations based on wide representation from the community.

Online & Household Surveys

We can work with officials to develop and administer a survey that captures the ideas and values of the community pertaining to general land use planning and redevelopment, care and management of the environment, transportation types, renewable energy, energy efficiency, waste reduction, and overall sustainability. Our surveys are customized to fit the specific types of issues and concerns that are voiced by each community. We achieve this high level of customization through a series of pretests with local officials and volunteers. When local communities have already conducted surveys, we help with analysis and interpretation. In some cases, follow-up surveys examine key issues or seek opinions on recommended actions. We believe surveys will be an important factor in understanding the public's willingness to embrace new and alternative technologies to reach emissions reduction goals.

One-on-One Interviews

Results of in-person stakeholder interviews uncover key issues and are kept confidential. Typically, stakeholders are identified by the client as key individuals representative of different community groups or interests and can provide ideas for promoting solutions.



Community Engagement

3-D Scale Models

We help communities maximize public dialogue about specific projects where design details are critical. We often construct large-scale models of the design options using a base model to show both existing conditions, and alternatives. The model is interactive so participants can discuss and actually manipulate the model to envision, explain, and understand the possibilities. Models could be used to illustrate potential sites for solar or wind power, electric vehicle charging station depots for municipal fleets, or others.

GIS Visuals

GRAEF maintains exclusive GIS software for client use. In this case, GRAEF could use GIS software to highlight rooftops or ground sites suitable for renewable energy development, areas for land conservation, redevelopment potential, and more. [Demo Infinite GIS here.](#)

Plan Documents

We prepare final plan documents in formats suitable to a range of audiences: in digital format, in PDF, and in hard copy.



Section 4: Qualifications

References

In this section, please find references and work samples for endeavors that the Consultant team has completed. While no two projects are alike, we selected those with similar characteristics to those services required in the RFP. These represent only a portion of our experience, yet we feel they demonstrate relevance for you.

We are incredibly excited about the opportunity to partner with you to procure an effective Climate Action Plan. We have worked with a large number of cities, towns, villages, and regions throughout the Midwest on a wealth of related projects. We hope our references can give you a taste of our excitement and passion.

WHEDA Transform Milwaukee Strategic Action Plan

Wyman Winston
Former Executive Director
Wisconsin Housing and Economic
Development Authority
wealthconcepts2015@gmail.com
503 / 810 6530

Beerline Equitable Implementation Plan

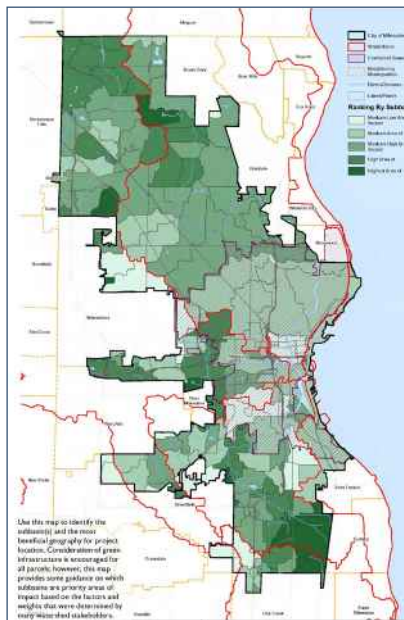
Beth Haskovec
Small Business and Lending
Specialist
Local Initiatives Support
Corporation (LISC)
bhaskovec@lisc.org
414 / 273 1815

Village of Whitefish Bay Comprehensive Plan Update

Paul Boening
Village Manager
Village of Whitefish Bay
P. Boening@wfbvillage.org
414 / 755 6516

City of Milwaukee Green Infrastructure Plan

City of Milwaukee Environmental Collaboration Office (ECO) | Milwaukee, WI



Triple Bottom Line Co-benefits for Green Infrastructure Strategies

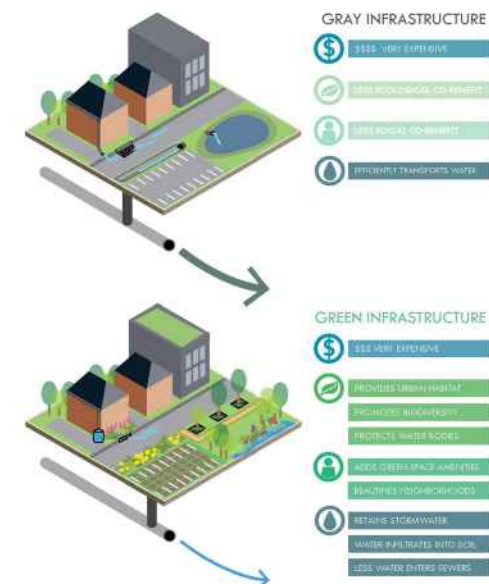
Triple Bottom Line of Sustainability	Co-benefits	Ranking By Subbasin									
		High	Medium	Low	None	High	Medium	Low	None	High	Medium
Economic	Initial Cost Of Investment										
	Cost Of Operations & Maintenance										
	Job Growth										
	Property Value Increase										
Social	Existing Gray Infrastructure Relief										
	Potential To Reduce Crime Through Design										
	Recreation / Education Opportunities										
Environmental	Community Connectedness										
	Water Quality Improvement										
	Energy Savings										
	Urban Heat Island Reduction										
	Habitat Improvement										
	Air Quality Improvement										



By 2030, Milwaukee will add approximately 36 million gallons of stormwater storage by implementing green infrastructure. This is the equivalent of adding 143 acres of green space throughout the city. Green infrastructure will be designed, installed, and maintained by an inclusive workforce that is representative of the city's diversity. The Green Infrastructure Plan for the City of Milwaukee was created to provide more guidance on where to strategically plan for green infrastructure implementation throughout the city, with public and private partners.

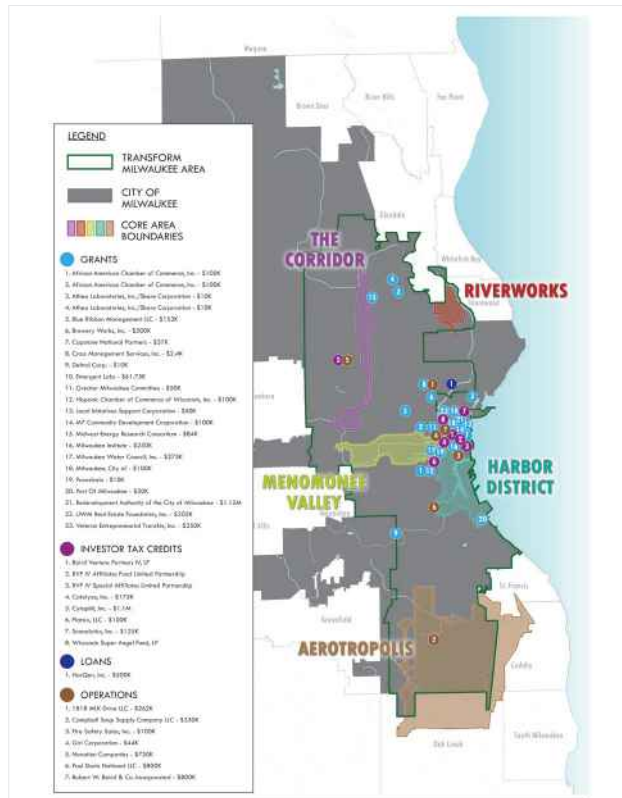
The City of Milwaukee Green Infrastructure Plan is a roadmap to achieve this vision, providing leaders with strategic and comprehensive strategies for implementing green infrastructure and prioritizing projects. It identifies various green infrastructure practices and potential financing mechanisms, formalizes policy changes within the City, and recognizes stakeholders within City, County, private, and non-profit community groups that can partner to accomplish these goals.

As part of the partnership with the Environmental Collaboration Office (ECO), GRAEF worked with City and MMSD staff to create a geospatial analysis in ArcGIS to evaluate site suitability and priorities in order for the City to meet its capture and water quality goals. This analysis builds on the methodology of MMSD's Regional Green Infrastructure Plan and the Kinnickinnic River Watershed Green Infrastructure Plan. Subbasins were ranked by level of priority for implementation, which is critical for effective placement of green infrastructure in meeting the capture and water quality goals. Additionally, ECO will now use this Plan and its analyses moving forward to educate the community about "GI", garner additional support (including funding support) for GI, provide guidance on critical areas for implementation, and market to developers, funders, and additional stakeholders.



Transform Milwaukee Strategic Plan

Wisconsin Housing and Economic Development Authority | Milwaukee, WI



The 5 Key Strategies

- Use new and existing financing resources to expand business development and spur job creation
- Make neighborhoods more desirable for housing and business development by reducing the number of foreclosed and vacant properties
- Increase job training, skill enhancement and educational opportunities by fostering partnerships between state agencies and nonprofit community groups
- Prevent future flooding by developing alternatives to storm sewers, such as bioswales or stormwater runoff conveyance systems
- Direct resources to establish intermodal transportation infrastructure – water, air, rail and highway systems

The 6 Expected Results

Through WHEDA financing and public-private partnerships, the initiative is expected to:

- Generate \$200 million in development in Milwaukee over the initial two-year period that began May 2012
- Improve the city's unemployment levels by creating thousands of construction-related and other permanent jobs
- Diversify and strengthen local property values, housing stock, retail businesses and manufacturing facilities
- Remediate longstanding flood issues to help rebuild confidence in Milwaukee's stormwater management
- Unite transportation networks to boost the shipment of Milwaukee goods and commodities to national and global markets
- Decrease the city's reliance on social service assistance while increasing state and local revenues

Transform Milwaukee is a public-private partnership focused on restoring economic prosperity to the industrial, residential and transportation areas within and between the **Corridor, Riverworks, Menomonee Valley, Harbor District and Aerotropolis**. The Wisconsin Housing and Economic Development Authority (WHEDA) and the Wisconsin Economic Development Corporation (WEDC) are leading the initiative with a team of partners.

Transform Milwaukee was established by Governor Walker and WHEDA on April 30, 2012. While Transform Milwaukee is intended to focus on actions through April 2022, its framework will further a long-term, multi-jurisdictional commitment to Milwaukee. A thriving Wisconsin economy depends on a vibrant and prosperous Milwaukee. Transform Milwaukee will catalyze reinvestment in key areas to strengthen Milwaukee's role as a prominent industrial powerhouse. The Strategic Action Plan was undertaken not as a planning exercise, but as a strategy to prioritize investments (both public and private) based upon economic outcomes and needs of the core urban economy.

Beerline Equitable Implementation Plan

Local Initiatives Support Corporation (LISC) and Beerline Trail Project Leadership Team | Milwaukee, WI

Established in 2002, the Beerline Trail runs north to south along the western side of the Milwaukee River. The trail is named the Beerline because of its location near where many of the old Milwaukee breweries were located. The trail connects the Riverwest and Harambee neighborhoods, providing access to recreational and green space. The trail has developed as a spine to advance efforts to strengthen connections among the Harambee, Riverwest, and nearby neighborhoods; spur equitable development; and reinforce the centrality of arts, makers, and creative entrepreneurs to the past and future identity of the area.



The GRAEF team was retained by LISC (Local Initiatives Support Corporation) and the Beerline Trail Project Leadership Team to continue the Beerline Trail's progress following a phase of successful community input gathering and key initiative development. Our team helped to determine the next steps for the project, identified responsible parties for key areas, assisted in seeking funding sources, and determined clearly laid out priorities to keep the project moving forward in a responsible manner. These next steps are compiled in the Equitable Implementation Plan to guide work on this project for the next 10 years. A seminal idea of the plan is to move forward with equity, assuring the public space investment on the trail does not displace current residents and workers, whenever possible, while encouraging the growth of the trail as public enhancement. To achieve the above goals, the GRAEF team:

- Facilitated monthly meetings of the Beerline Trail Project Leadership Team and quarterly meeting of the Guiding Lenses Group. Collaborated with arts and neighborhood engagement consultants to focus on local resident, business owner, and worker needs.
- Identified appropriate partnerships to result in long-term sustainability, including reviewing pertinent neighborhood plans to identify opportunities for alignment.
- Advised neighborhood groups in the development and implementation of trail-related projects.
- Encouraged local creativity and diversity to represent the range of neighborhood cultures.
- Attended community meetings to become a visible and accessible presence during the project.

Loop the Lake Boardwalk Bridges

City of Neenah | Neenah and Menasha, WI



GRAEF completed the full detailed design, bidding, and construction management of two (2) separate boardwalk bridges. One bridge is located in the City of Neenah spanning the Neenah channel. This bridge is 768 feet long with twelve 64-ft spans. The other bridge is located in the City of Menasha spanning the Menasha channel and is 715 feet long with ten 63-ft spans and one 84-ft span. Both bridges were steel girder structures supported on steel pipe pile bents and concrete piers. Timber under-decking supported a 14-ft clear width composite deck boardwalk with aluminum and cable railings. Mid-span of both bridges includes an observation bumpout with covered canopy allowing pedestrians and bikers to enjoy the view while not impeding the through traffic.

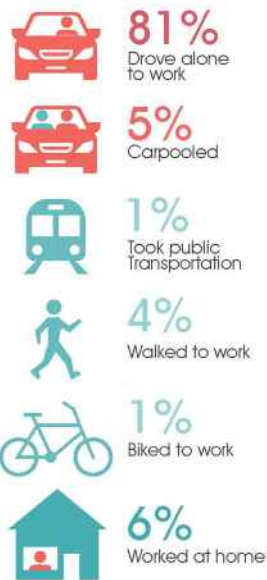
Approaches on the Neenah bridge had to tie into the Arrowhead Park trail on one side and ended in a vacant lot along River St. Approaches for both bridges included new parking, landscaping, benches and picnic tables. At Menasha, close proximity of a railroad spur created challenges that were solved by including a pile supported boardwalk switchback that met the railroad pedestrian crossing requirements.

Also at Menasha, the first span from Fox St. needed to be angled and lengthen to span a sanitary interceptor and the treatment plant discharge lines into the channel. During design, soil borings revealed an extremely dense hard pan and gravel substrate that required pre-boring for all pier pipe piling.



Whitefish Bay Comprehensive Plan Update

Village of Whitefish Bay | Location: Whitefish Bay, WI



for 73% of Whitefish Bay workers, commuting takes 24 minutes or less

With a limited general fund allocation to update the comprehensive plan, the Village of Whitefish Bay and GRAEF undertook an overhaul of its 2009 comprehensive plan to procure a compact, graphic-forward 2019 Comprehensive Plan Update. Whitefish Bay is a community of 14,050 people with a prominent shoreline and reliance upon the Milwaukee metropolitan economy. The question before us: with budgetary and process constraints due to other major Village priorities, how could we devise the community's first framework to focus more intentionally on sustainability and resilience?

First-Ever Community Engagement at a Longstanding Event

| As noted by Village President Julie Siegel, "[The plan] will serve as a blueprint to guide our decision-making efforts in the decade ahead." To make inroads on the topics of sustainability and resilience, we intentionally set up the Village's first-ever community engagement booth at Bay Day, the community's day to raise awareness about being green, sustainable, and recreating outdoors. Special attention is given within the plan to drive the Village's triple bottom line [i.e., economy, environment, equity] and working with a resilient way of thinking.

Building Sustainability & Resilience Amidst Constraints

In addition to covering the nine elements of comprehensive planning in a customized structure, sustainability and resilience are given a special focus through outlining how Whitefish Bay can advance via the lenses of UN sustainable development goals, RainReady and StormReady community elements, and holistic land uses to make the community less reliant on outside sources. Finally, the plan offers an intentionally simple implementation framework per the Village Board's desires so as not to tax the Village. While an economically stable community, the Village does not provide planning or economic development in-house — making a simple implementation set all the more important in order to set the foundation for success.

"We have a unique challenge of addressing [resilience] with a makeup of primarily residential plots. How do we effectively address this when most of the land in our village is privately owned?"

– Whitefish Bay Resident, June 27, 2019

SUSTAINABLE DEVELOPMENT GOALS



South Milwaukee Comprehensive + Downtown Plan Update

City of South Milwaukee | South Milwaukee, WI



In 2014, the City of South Milwaukee recognized a need to update not only its comprehensive plan, but also its economic development and downtown strategies. The GRAEF team worked closely with the City's staff, Plan Commission, Downtown Advisory Committee, and Common Council through 2016 to create a customized action plan to jump-start community revitalization. The City and GRAEF have since created a Downtown Guide, executed a Downtown Revitalization Grant program, created / amended / extended 3 TIDs, and secured \$2.45m in economic development grants to the City.

Building from Assets with Candy in Hand | With its founding dating to the latter half of the 19th century, South Milwaukee has been an integral component in the larger Milwaukee economy serving as a manufacturing hub, a provider of quality housing, and a gateway to ample green space and waterfront access on Lake Michigan. Our comprehensive and downtown planning worked to preserve and strengthen these characteristics and values, while simultaneously creating new opportunities for growth. Our Trick or Treat on the Street community engagement session filled a vacant storefront with "What I Want for South Milwaukee" activities (and coloring sheets and candy!). With the community, we identified key assets for preservation, which were then reflected in the urban design concepts and implementation strategies.

A Focus on "Making it Happen Here" | Our comprehensive plan update recommended the City rebrand, which we undertook with Savage Solutions following plan completion. The resulting unofficial tag line became "make it happen here", as the community is actively in the maker space economy. With industrial land uses shifting from traditional manufacturing toward leaner, compact facilities, the City and GRAEF saw an opportunity to develop concepts that would attract businesses and catalyze re/development concepts. Together, we completed facade grants, small business expansions, and major City investments like The Bucyrus Club renovation to open in Summer 2021. We undertook the due diligence and real estate negotiations leading to the \$5m purchase and renovation project that is bringing entertainment, a heritage museum, dining and event space back to downtown South Milwaukee.



(Zimmerman rendering of a GRAEF-led City deal)



Neenah InfiniteGIS Implementation

City of Neenah Water Utility | Neenah, WI

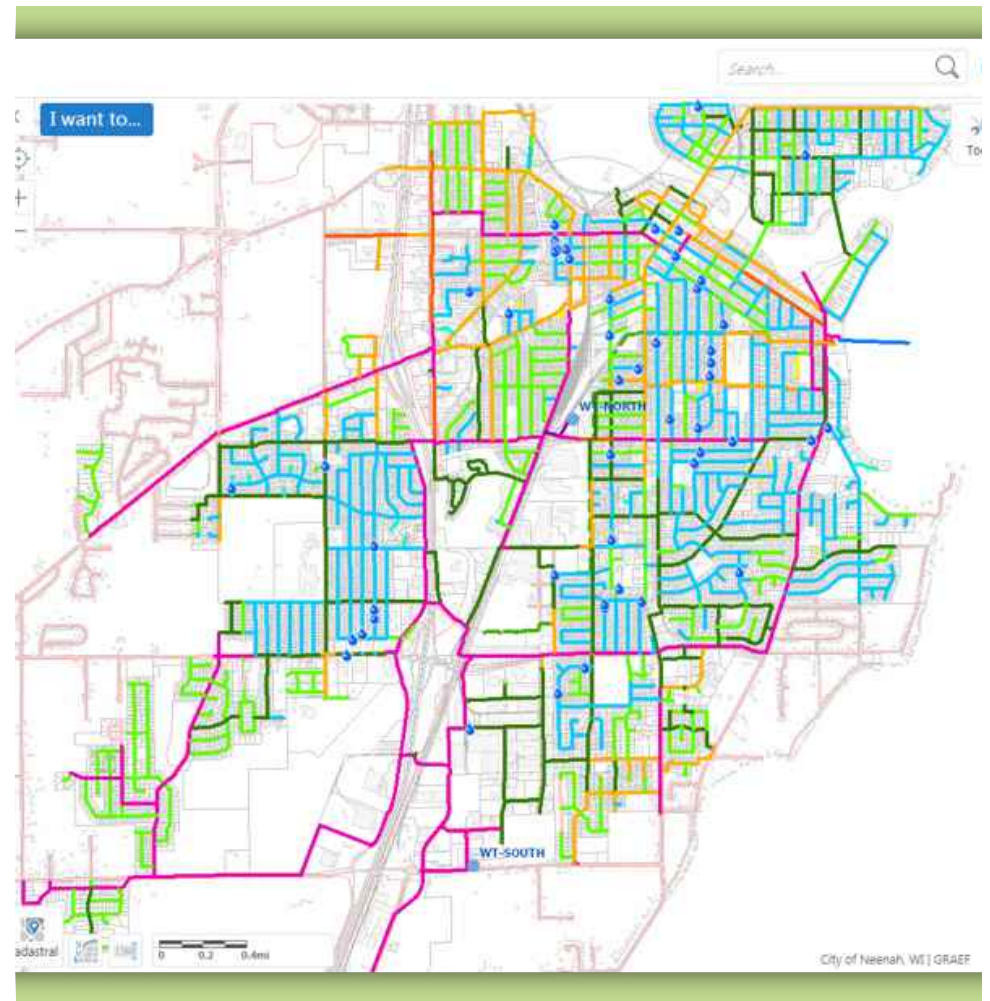
InfiniteGIS is a web-based asset management tool hosted and managed by GRAEF. The City of Neenah Water Utility adopted InfiniteGIS to manage the City's water utility infrastructure. By making this decision, the City was able to replace both ArcGIS online and the Cartegraph Asset Management database.

Staff in the Neenah Water Utility use InfiniteGIS on a daily basis to track:

- facility inspections
- repairs
- costs
- water meter exchanging.

The all-in-one asset management tool adds significant efficiency to reporting with accurately located facilities in an interactive GIS map.

An added benefit of InfiniteGIS is the ease of use on any device, anywhere, at anytime. Base map layers hosted by the City and the County are used dynamically to provide the most current data available.



WATER VALVE REPORTS					
Valves Inspections Repairs Needed Repair Activity					
Filter Parameters					
ID		Date Inspected		Page Size: 10	
		From: 1/1/2019 To: 3/3/2020			
Row	ID	Date	By	Issues	
1391	Details 545-1	11/12/2019	MLafave	Box Broken	
1392	Details 238-3				
1393	Details 235-1				
1394	Details 2-8				
1395	Details 316-3				
1396	Details 397-1				
1397	Details 2-844				
1398	Details 710-3				
1399	Details 610-2				
1400	Details 104-3				

VALVE INSPECTION

Date Inspected: 11/12/2019 Inspected By: MLafave Purpose: Repair/Rebuild

☐ Exercised Turns: 20 Torque:

☐ Leak Tested ☐ Found Shut Condition: Good

Repair(s) Needed

☐ Cannot Locate ☐ Replace Lid ☐ Op Nut Problem ☐ Packing Leak

☐ Buried ☒ Box Broken ☐ Frozen ☐ Replace Bolts

☐ Clean out ☐ Adj. Box Height ☐ Turns Hard ☐ Replace Stem

☐ Box Misaligned ☐ Spins Free ☐ Remove Manhole

Comments:



City of Alameda, California Climate Action and Resiliency Plan

ERG provided technical, economic, and public engagement support to the City of Alameda, California to review, refresh, and augment its 2008 climate adaptation plan. ERG updated Alameda's 2008 climate adaptation plan, including its GHG emission inventory, into the new and comprehensive Climate Action and Resiliency Plan (CARP), which addresses both GHG reduction and climate adaptation to increase Alameda's resilience to climate change and ensure a sustainable and healthy environment, society, and economy. In considering transportation, land use, solid waste, recycling, and energy, the updated CARP integrates efforts on hazard mitigation planning, vulnerability assessments, and other city plans. We supported engagement with the City Green Working Team, a special community CARP Task Force, and three community input sessions. ERG produced a plan that identifies scalable actions to be implemented at all scales and that factors in municipal, regional, and state policies and priorities for Alameda.



City of Raleigh, North Carolina Community Climate Action Plan

The City of Raleigh's Community Climate Action Plan (CCAP) sets aggressive goals for GHG emissions reduction despite significant expected growth in population and forecasted GHG emissions. The ERG team engaged stakeholders—including representatives from city departments, a team of technical advisors, and a community-wide action team—and developed all the materials and exercises for these engagements, including graphics-rich presentations and interactive techniques. ERG developed a forecast of future GHG emissions through 2050 and assisted Raleigh with setting GHG emission reduction targets. We produced a tailored set of GHG reduction strategies based on stakeholder input that address GHG emissions from the buildings and energy (supply and demand), transportation and land use, and solid waste and wastewater sectors. We analyzed the GHG reduction strategies for their potential GHG reduction, implementation timeframe, co-benefits, and impact on social equity—a key part of this project at every phase—through the lens of a social equity framework developed specifically for this project. ERG modeled the strategies' impacts on the projected future emissions and their cumulative contribution toward meeting the city's GHG reduction targets. ERG's final plan described the project process, the results of our analyses and modeling, and an approach for implementing the strategies to achieve the city's climate goals.



Climate Change Impacts Assessment on Maine's Economy

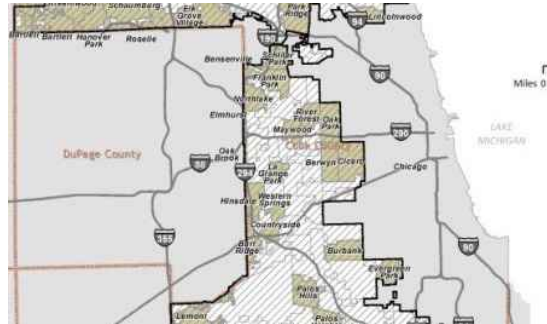
ERG produced four volumes of reports, which included analyzing Maine's vulnerability to the future impacts of climate change, the cost to the state of doing nothing in response to climate change, an emissions analysis of draft GHG reductions strategies proposed by the working groups, and an economic analysis of the draft emissions- and adaptation-related strategies proposed by the working groups.

- Volume 1, Statewide Vulnerability Analysis.
- Volume 2, Cost of Doing Nothing Analysis.
- Volume 3, Emissions Baseline and Analysis of Reduction Strategies.
- Volume 4, Economic Analysis.

ERG also drafted a 30-page executive summary to highlight key findings and recommendations across the work.

Regional Economic & Development Impact of Watershed Maintenance Ordinance | Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)

SB Friedman was retained by MWRDGC to study the impact of more stringent stormwater requirements on suburban Cook County development. The purpose of the study was to determine whether development patterns would shift, as a result of the increased costs and in certain circumstances, less developable land caused by more stringent requirements.



MWRDGC is the regional agency that manages the treatment of wastewater and regulates stormwater management in suburban Cook County. In 2007, MWRDGC began the process of developing more standardized stormwater regulations under the Draft Watershed Maintenance Ordinance (WMO) to mitigate flooding. The ordinance, once implemented, would require developments to retain more stormwater capacity than what was required under MWRDGC's current regulations. Understanding the new regulations would have some effect on development, MWRDGC initiated an engineering study to quantify the incremental cost and, where applicable, loss of land to comply with the stricter requirements. Five projects representing different land uses were analyzed as case studies. Both the case study projects and the resulting engineering impacts were used as a basis for our economic analysis.

SB Friedman evaluated how the incremental increase in stormwater cost would impact the development economics of the five case studies and, based on the outcome, examined the potential implications of the draft WMO on suburban Cook County development. Our analysis included a literature review to identify the range of impacts on development activity, a survey polling the development community, and an assessment of implications on infill versus greenfield development. The results of the analysis helped identify potential implications for suburban Cook County development, and range from increases in purchase price in robust markets to slower development pace and increased need for development incentives in more price-sensitive markets.

Results: A draft report was submitted to MWRDGC and the WMO Advisory Committee in 2012. The report was reviewed and approved by committee members.

Property Value Impact Analysis of Green Infrastructure Center for Neighborhood Technology, Various Cities Nationwide

SB Friedman assisted the Center for Neighborhood Technology in analyzing the impacts of green stormwater infrastructure (GSI) improvements on property values in several cities nationwide. The Center for Neighborhood Technology (CNT), a Chicago-based non-profit organization committed to improving cities' economic and environmental stability, received a Kresge Foundation grant to research the impacts of green infrastructure improvements (e.g., rain gardens, bioswales, neighborhood greenways) on nearby real estate values. The research is intended to help inform property owners and public officials on the benefits of making investments in green infrastructure improvements. As part of our engagement, we:



- Engaged with real estate data providers in Philadelphia, PA, Seattle, WA, and Milwaukee, WI to obtain historical home sale values in each city;
- Developed a database of green infrastructure improvements, grouped by type, joined with the home sale values data for each city;
- Built a hedonic regression model to test the real estate impacts of green infrastructure improvements in each of the three cities; and
- Informed a white paper with our results that discusses the overall impacts on property values and specific funding mechanisms for making green infrastructure improvements

Results: CNT published a report of our collaborative research and analysis in November 2020.

Your Primary Project Connections

Stephanie Hacker
Principal-in-Charge



Danya Littlefield
Project Manager



Your Project Team



Eric Phillips
Resilience Planner



Brianna Fiorillo
Planner



Ed Freer
Senior Landscape Architect

Subconsultants



Brian Schneider
Environmental Engineer



Jon Schwichtenberg
GIS Expert



Jason Gerke
Facilities Engineer



Andre Ost
Transportation Engineer



John Carter
GHG Inventory & Modeling | **ERG**



Robert McIntosh
Emission Reduction Measures Expert | **ERG**



Eric Bell
GHG Inventory & Modeling | **ERG**



Hannah Stroud
GHG Inventory & Climate Adaptation | **ERG**



Geoff Dickinson
Economic Development
SB Friedman



Caitlin Johnson
Economic Development
SB Friedman

Stephanie Hacker^{AICP, LEED AP}

Principal-in-Charge



Stephanie's experience spans comprehensive and master planning, public participation strategies, municipal code review, neighborhood revitalization, and ongoing planning services for urban, suburban, and rural communities. At the core of Stephanie's work in economic development, planning, and urban revitalization lies her dedication to building a central vision and establishing systems that kick-start physical change. She cares deeply about using urban design and planning to enhance the nexus of community and neighborhood vitality, public health, and the triple bottom line. Stephanie works with business, nonprofit, and government clients to implement vital enhancements in our physical environment.

Comprehensive, Master, Strategic, and Resilience Planning

In her work as project manager for the Transform Milwaukee Strategic Action Plan for the Wisconsin Housing and Economic Development Authority and as project manager for the Whitefish Bay Comprehensive Plan Update, Stephanie infused as much about triple bottom line sustainability and resilience as feasible amidst the tasks at hand. These planning efforts required that Stephanie develop, manage, and see to completion structured assessments, public participation plans, community survey analyses, mapping and data gathering, document and report composition, and team coordination including subconsultant management.

Stephanie manages the Planning Group at GRAEF, overseeing approximately \$1 million in gross revenue annually.

Danya Littlefield

Project Manager



Danya's experience is focused around physical planning and design in support of society's broader goals, such as inclusive economic and community development, efficient and equitable transportation systems, and environmental sustainability. She is passionate about people and the ways that they interact with their physical environment, which has led her to pursue work and projects related to urban design and land use planning, creative placemaking, and energy and environmental planning.

Danya believes that great public places that support social interaction are a vital part of human life and is dedicated to shaping people-focused places through collaboration and partnership between governments, business owners, organizations, and residents. Her core competencies include coordination of complex planning and research projects, community engagement, and the ability to synthesize complex information through writing, mapping, and graphics. Danya works with municipalities, non-profits, and private companies to imagine, create, and strengthen the built environment.

Community Planning & Economic Development

Danya has wide-ranging experience serving as an advocate for community development, from reviewing development proposals to working with municipalities on strategic funding efforts. She has worked as an ongoing services planner to review development for the City of Franklin, the Town of Oconomowoc, and the Village of Twin Lakes. Danya has supported economic development projects in the City of South Milwaukee and the Village of Whitefish Bay, including crafting grant proposals and reviewing funding applications for local businesses.

Eric Phillips

Resilience Planner



Eric has developed regional comprehensive plans and individual site plans through classwork, research, and outreach extension projects at Michigan State and DePaul University. A Michigan State University Asian Planning and Practice Study Abroad during the 2010 Shanghai World Expo sparked his interest in developing regional plans centering around the social, economic, and environmental legacy impacts of short-term events. In his professional career, he

has project management experience in wireless telecommunications, commercial and residential developments, and solar energy projects. As a Resilience Planner, renewable energy is an important focus in sustainable development for which Eric has non-profit experience at Mid-Michigan Environmental Action Council and the Clean Energy Coalition in addition to working for a national community solar developer.

Michigan State University Planning Practicum - SWOT analysis, demographic and socio-economic research to determine economic development potential for the port of Cheboygan, MI. Presented findings to the City of Cheboygan and Northeast Michigan Council of Governments

Chicago Life Expectancy – DePaul University graduate research assistantship for GIS analysis of health disparities and spatial impacts on life expectancy in Chicago. Applied statistical analysis to determine correlation of access to transit, recreation, open space, health care facilities, food, crime rates, income, employment, education, drug usage, environmental pollutants, and demographics to life expectancy. Presented findings at 2016 College of Liberal Arts and Social Sciences Graduate Student Conference and to The Chicago Department of Public Health range of information with data-driven maps, including: site conditions, existing and future property information, and conceptual development plans.

Brianna Fiorillo

Planner



Brianna Fiorillo has a broad range of experience in the public and non-profit sectors including the New Hampshire Public Utilities Commission Sustainable Energy Division, where she managed a statewide grant program for solar PV, and the NH Local Energy Solutions Workgroup, where she worked with dozens of cities and towns to implement energy and sustainability projects. She also worked with the Sustainability Institute at the University of New

Hampshire, the oldest endowed, university-wide sustainability program in US higher education, where she was a member of the Energy Task Force. Brianna's specialty is incorporating clean energy, energy efficiency, and clean tech into the planning and development process and assisting local community groups with diverse sustainability projects. Brianna is an experienced communicator in all forms of media and has organized and conducted various public relations projects and campaigns as well as presentations at meetings, conferences, and industry events.

Community Engagement

Brianna has extensive experience in community engagement and public participation including presenting at town meetings, preparing briefs for decision-makers, conducting focus groups, executing educational events and programs, stakeholder outreach strategies, and techniques for engaging business leaders.

Mapping & Design Visualization

Brianna has experience using a variety of mapping and other digital technologies to produce compelling visual images and achieve desired goals. These include maps, diagrams, tables, charts, and infographics.

Ed Freer^{PLA}

Sr. Landscape Architect



Over the course of his professional career, Ed has built a significant and award-winning portfolio in waterfront design, landscape architecture, historic architecture, and planning projects throughout the U.S. He is highly accomplished at facilitating a consensus vision and broad stakeholder support for urban design and redevelopment initiatives. Ed has served as a resource member to many civic task forces and professional panels and as a member of national design juries. He has been an urban design resource for the Mayors Institute on City Design, Urban Land Institute and AIA Community by Design. Ed also participates as a local professional practitioner in academic programs at the University of Wisconsin - Madison (Landscape Architecture, College of Human Ecology, and Capstone Course in Civil Engineering) and the University of Wisconsin - Milwaukee (Urban Design and Planning).

Brian Schneider^{PE, LEED AP, CDT}

Environmental Engineer



Brian brings more than 25 years of environmental engineering experience to your project. He has managed both technical and administrative aspects of projects including environmental studies and permitting, soil and groundwater clean-up, utility corridor environmental studies and permitting, industrial facility permitting and compliance, environmental risk analysis, and construction monitoring and site civil engineering.

Brian demonstrates the ability to analyze a specific situation, communicate its critical elements to the client, and subsequently create and manage a successful solution. Among his related experiences are: Menomonee River Restoration for Milwaukee Metropolitan Sewerage District; ATC Solar Facility in Milwaukee; Dam Failure and Flooding Analyses for several dams and waterways throughout Wisconsin; Project Manager for Waterford Ecosystem Restoration; Engineering and TEA Grant Rail Improvements for Bucyrus International; Blighted Property Redevelopment of a former malting facility in West Milwaukee; Various Environmental Impact Assessments and Studies throughout Wisconsin; Economic Analysis for Canadian Silica Mine and Processing Facility in Arcadia, WI ; Sierra Nevada Corporation extensive environmental services for rocket test facility.

Jon Schwichtenberg^{GISP}

GIS Expert

GRAEF



Jon brings 31 years of experience in Computer Aided Drafting and Design (CADD) and Geographic Information Systems (GIS) related work, with a focus in strategic vision, technology innovation, Technical Services and delivering quality projects to clients. Jon is responsible for the development of CADD and GIS at GRAEF, both internally and externally for clients. His experience includes working with local, county, state and federal government agencies, as well as private companies and industries in respect to CADD and GIS. Jon has experience in many aspects of CADD and GIS, including base standardization (libraries, templates, guidelines, etc.), needs assessments, system design and integration, mapping, survey, global positioning systems (GPS), data development, cartography, analysis, database design and implementation, software development, hardware configuration and many other aspects of CADD and GIS. He has worked with many communities in Wisconsin including the City of Shawano, City of Chetek, Village of Frederic, Village of Roberts, Village of Elsworth, City of Hayword, Village of Newburg, and the City of Fitchburg. His experience with a variety of cities and villages offers a broad range of experience and great insight for problem-solving and project development.

Jason Gerke^{PE, SE}

Structural Engineer

GRAEF



A Principal at GRAEF, Jason has experience in HVAC and plumbing design for commercial, residential, entertainment, industrial and educational facilities. He focuses on energy use in buildings related to mechanical, electrical and plumbing systems along with associated utilities. He has completed heating, ventilating, and air conditioning designs for retail stores, elementary/middle/high schools, universities, office buildings and warehouses. He has also completed ventilation design, utility design and energy analysis for industrial facilities. In addition, his work experience includes aquatic facilities, residential complexes, hotels and entertainment facilities.

Jason will be available to answer questions, provide design and design guidance, and be a part of your expert project team.

Andre Ost PE, PTOE

Transportation Engineer



Andre has more than 15 years of experience at GRAEF providing transportation expertise on various projects throughout the state of Wisconsin. Andre's project involvement has included conceptual design, alternative analysis, public involvement, utility coordination, pavement design, preliminary design, environmental documents, feasibility studies, design reports, and the preparation of plans, specifications and estimates. He currently works as a project manager for various projects involving freeway design, rural & urban roadway reconstruction, and wetland mitigation.

Andre is extremely knowledgeable about the Wisconsin Department of Transportation's requirements for all project types and is adept at planning and hosting public information events. He enjoys the interaction with impacted populations and understands how to address concerns in a manner that is easily understood by non-technical community members.

Andre has designed and engaged the public on projects ranging from small rural roadways to large interstate highways. His presence on the project team will instill confidence during public interactions.

John Carter

GHG Inventory and Modeling; Task 1,2,3 Lead



John Carter is a Certified Energy Manager and a chemical engineer with over 20 years of professional experience. Mr. Carter's primary areas of expertise include greenhouse gas (GHG) emissions inventories and mitigation strategy development, alternative energy and energy use analyses, waste management (combustion, landfills, and anaerobic digestion), and building energy efficiency. John supported the City of Alameda's Climate Action Plan Update and managed the City of Raleigh's Community-Wide Climate Action Plan development and has managed climate action plans for several major universities, including Cornell University, the University of North Carolina (UNC) at Chapel Hill, Duke University, North Carolina State University, and UNC Greensboro. John also led a renewable energy study for the University of Virginia and helped develop GHG inventory methodologies and solid waste projects in China.

John brings a wealth of experience and knowledge of the climate action planning process and technical expertise in GHG emission mitigation.

Municipal Community-Wide Climate Action Planning John managed the development of a community-wide climate action plan for Raleigh, North Carolina, and provided technical support for the update of Alameda, California's, climate action and resiliency plan. For both projects, provided technical, economic, and public engagement support related to GHG reduction strategy development, analysis, and modeling. Drew on expertise in building energy use and waste management. Developed forecasts of future GHG emissions based on each municipality's most recent GHG inventory, projected growth, and analysis of forecast drivers, and under a "business as usual" scenario for planning purposes. Worked with each city to establish targets for GHG reduction in 2030 and 2050 that are in line with state and peer city targets. Synthesized complex modeling and analysis results for presentation to clients and key stakeholders to facilitate discussion, engagement, and involvement with the community to reach agreement on the goals and strategies that will ultimately lead to the success of the plans and GHG reduction targets.

Robert McIntosh

Emission Reduction Measures
Expert; Task 1,2,3 Co-Lead



Robert McIntosh has ten years of experience in complex systems analysis and program management in the U.S. and internationally. Predominantly has been in modeling, policy support, and implementation of transportation management, advanced energy technologies, and energy efficiency measures. He has crafted five-year industrial and transportation plans for the Chinese National Development and Reform Commission, built solar deployment strategies

for Australia, established port expansion plans in the Netherlands, fashioned energy growth plans for Rwanda and Sierra Leone, and established advanced mobility technology development strategies for the Government of India. He has also worked extensively in the U.S. in emissions mitigation at the national (EPA) level, state level (Maine) and with city governments such as Boulder, Denver, and Austin.

Robert's specific experience relates to greenhouse gas (GHG) emissions reduction, transportation planning, advanced vehicle technology deployment, infrastructure planning, and mixed-modal development.

Climate Change Impacts Assessment on Maine's Economy Robert worked with the State of Maine to design robust strategies, evaluate costs/benefits, and advise on implementation timelines and actions for meeting Maine's 2030 fifty percent greenhouse gas (GHG) emissions reduction and 2045 carbon neutrality goals. This involved extensive coordination and facilitation work with sector-based work groups established by Maine's Climate Council to design strategies that are specific, measurable, and attainable. These strategies have been assessed, prioritized, and adopted into state planning.

Eric Bell

GHG Inventory and Modeling;
Task 1,2,3 Support



Eric Bell is a sustainability engineer with seven years of professional experience. Dr. Bell's primary areas of expertise include climate change mitigation and adaptation, life cycle assessment (LCA), environmental modeling, and data collections and analysis. Dr. Bell has four years of experience advancing the energy and sustainability goals of federal, state, and municipal clients, including the U.S. Environmental Protection Agency (EPA), the U.S. Department

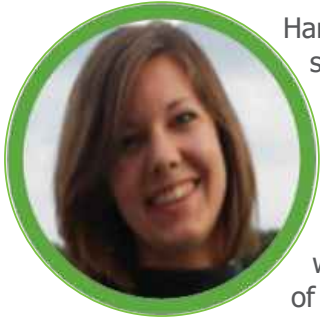
of Justice (DOJ), and the Port of Charleston, South Carolina, among others. For several years, Dr. Bell supported the development of annual greenhouse gas (GHG) inventories and sustainability data reporting for both the DOJ and the Federal Bureau of Investigation (FBI). Dr. Bell also led the development of a DOJ report identifying opportunities to further reduce GHG emissions.

Dr. Bell has published two peer-reviewed articles on the life cycle assessment of sustainable food-energy-water systems, and has taught undergraduate courses at both the University of California, Berkeley, and Swarthmore College on climate change science and mitigation.

Annual GHG and Sustainability Data Reporting Eric supported the annual development of the GHG and Sustainability Data Report and associated GHG Inventory Management Plan for the DOJ and the FBI. Collected, verified, and assessed energy, water, and sustainability data for submission to the Council on Environmental Quality (CEQ) and the Office of Management and Budget (OMB). Helped to lead an onsite training session for Bureau energy and sustainability managers, followed up with DOJ Bureau/Components directly to verify submitted data, and compiled the final Data Reports and Inventory Management Plans. Led the development of a report to characterize DOJ's GHG emissions and identify potential opportunities for further emission reductions.

Hannah Stroud

GHG Inventory and Climate
Adaptation; Task 1,2,3 Support



Hannah is a recent addition to the ERG team, who specializes in climate change adaptation and resilience economics. Her past work includes assessing sea level rise on ecosystem services and vulnerable communities. Much of her academic research has been on the effects on social equity in the adaptation planning process, with an emphasis on quantifying the co-benefits of green infrastructure. She is also experienced in using ArcGIS for geospatial analysis.

In addition to her research skills, Hannah has extensive experience in science communication in various formats, running stakeholder workshops and working with broad audiences and in transdisciplinary teams. Recently she has worked on writing key messages for decisionmakers around the economic contributions of estuarine research reserves.

Cape Cod Commission Assessing the Impacts of Climate Change in Barnstable County, MA. Supported a project to quantitatively estimate and qualitatively describe the socioeconomic impacts from taking no action to address climate change impacts and perform both benefit-cost analyses and economic impact analyses of both adaptation and mitigation strategies for Cape Cod, MA. Managed vulnerability assessments for County, as well as benefits/costs and prioritization of adaptation measures.

Social Indicators of Climate Change Adaptation and Resilience. At the University of Massachusetts Boston, Hannah researched social vulnerability indices and commonly used social indicators for natural hazards and resiliency. Assisted in facilitation of a workshop with experts in planning, community development and adaptation in identifying their use and perception of social indicators.

Geoff Dickinson^{AICP}

Economic Development
Advisor



Geoff is a senior economic development advisor with expertise in fiscal/economic impact analysis, public-private development finance, financial gap analysis, special district establishment, and development strategy. He has led an evaluation of the economic impact of three new infill stations for the Virgin Trains Florida high-speed rail system, including sustainability and quality of life impacts, and has assessed the direct and indirect economic impacts of a proposed University

of Nebraska Cancer Center on both the local economy and state of Nebraska. Geoff is registered with the MSRB as a Series-50 Qualified Municipal Advisor Representative.

University of Nebraska Cancer Center Fiscal/Economic Impact Analysis, Omaha, NE Developed tax and economic impact projections for a planned \$370 million cancer center in the Midtown neighborhood of Omaha for the University of Nebraska Medical Center.

Virgin Trains South Florida Economic Impact Analysis, South Florida Led an evaluation of the economic impact of three new infill stations for the Virgin Trains Florida high-speed rail system in PortMiami, Boca Raton and Aventura, Florida.

TIFIA Loan Feasibility Study for Red & Purple Line Modernization Project, Chicago, IL Assisted the Chicago Transit Authority (CTA) in preparing an application to the USDOT to secure \$622 million of federal funding for the Red and Purple Line Modernization (RPM) program; led a feasibility study to understand the financial capacity of a Transit TIF district to support the loan amount; the City issued bonds and leveraged a large federal grant to fund the RPM improvements, and construction is underway.

Caitlin Johnson^{AICP}

Economic Development Advisor



Caitlin has a background in community and economic development, public- private development finance, and urban planning. She specializes in economic and fiscal impact analysis, market analysis, and redevelopment strategy, focusing on the relationship between infrastructure improvements and land use. Her experience includes conducting benefit-cost analyses for infrastructure projects as part of federal grant applications, including demonstrating the

monetized benefits of the projects, and analyzing stormwater operating expenses, planned capital improvements and potential financing mechanisms to derive stormwater utility fee options for the Village of Libertyville, Illinois.

Pioneer Parkway Benefit-Cost Analysis and RAISE Grant Application

Peoria, IL Conducted a benefit-cost analysis for a project that would reconstruct and extend Pioneer Parkway as part of the federal RAISE grant application; prepared a model and technical memo demonstrating the monetized benefits of the project (including GHG emissions reductions) as well as a qualitative analysis of resiliency impacts.

143rd Street Extension Benefit-Cost Analysis, Plainfield, IL

Conducted a revised benefit-cost analysis for a project that would extend IL Route 126 to I-55 as part of the federal BUILD and INFRA grant application process; prepared a model and technical memo demonstrating the monetized benefits of the project as well as a qualitative analysis of the labor market and planning initiative

Stormwater Fee Analysis, Libertyville, IL Analyzed stormwater operating expenses, planned capital improvements and potential financing mechanisms to derive stormwater utility fee options for the Village of Libertyville.

Section 5: Cost Proposal

Cost Proposal

		Danya Littlefield Project Manager	Stephanie Hacker Principal In Charge	Brian Schneider Environmental Engineer	Jon Schwichtenberg GIS Expert	Jason Gerke Facilities Engineer	Ed Freer Landscape Architect	Andre Ost Transportation Engineer	Brianna Fiorillo Planner	Eric Phillips Resilience Planner	John Carter Chemical Engineer	Robert McIntosh Emissions Reduction Measures Expert	Eric Bell Sustainability Engineer	Hannah Stroud GHG Inventory & Climate Adaptation Specialist	Geoff Dickinson Economic Development Advisor	Caitlin Johnson Economic Development Advisor	SB Friedman Associate
Task	Leader																
Percentage of Hours per staff member		P2	P7	P6	P6	P7	P6	P6	P2	P1	P4	P3	P2	P1	Senior Vice President	Project Manager	
Task 1: Analyze GHG Emissions		4%	2%	≈1%	≈1%	≈1%	≈1%	≈1%	13%	13%	21%	8%	3%	16%	6%	4%	9%
Review GHG data	ERG																
Perform 2020 GHG inventory	ERG																
Task 2: Recommend GHG Emissions Reduction Targers																	
Recommend GHG emissions reductions targets	ERG																
Task 3: Forecast GHG Emission Reductions																	
Develop business as usual forecast	ERG																
Develop baseline GHG emissions	ERG																
Compile mitigation measures for consideration	GRAEF & ERG																
Measure selection and prioritization	GRAEF & ERG																
Conduct public outreach to receive feedback on emissions reductions strategies and priorities (up to 3)	GRAEF																
Analyze scenarios of GHG reduction measures	ERG/SB Friedman																
Perform cost-benefit analysis	ERG/SB Friedman																
Develop implementation plan	GRAEF																
Total ERG Portion																	
Total GRAEF portion																	
Task 4: Engage City Commissions, CAP Steering Cmte, Common Council, & Community																	
Task 5: Coordinate with Related City Efforts																	
Coordinate with Xcel Energy	GRAEF																
Coordinate with Comprehensive Plan & General Plan	GRAEF																
Identify and meet with potential partners that can assist with the CAP implementation	GRAEF																
Task 6: Draft Climate Action Plan																	
Review draft and receive feedback from City & community	GRAEF																
Second draft	GRAEF																
Task 7: Support City in Adoption of the Climate Action Plan & General Plan Amendments																	
Support CAP Steering Committee in Plan finalization	GRAEF																
Presentation of final CAP	GRAEF & ERG																
Project Management & Team Coordination																	
Initiate project, define desired outcomes & involved parties, assemble data	GRAEF																
Total Budget																	
Optional: synthesize final report to a series of infographics for the public	GRAEF																
Optional: provide recommendations to City staff for the creation of a CAP website page with resources and links for residents	GRAEF																
Optional: develop an action guide for community members	GRAEF																
Optional: develop a neighborhood guide book	GRAEF																
Optional: investigate place-based emissions (subcommunities, specific districts, medical campus, etc)	ERG																
Optional: develop a cost-effectiveness analysis	SB Friedman																
Optional: Infinite GIS community emissions mapping	GRAEF																
Optional: Strength, weakness, opportunities, threats (SWOT) analysis based on the GHG emissions inventory, the upcoming Flood Hazard Mitigation report and the Partners in Energy report	GRAEF																
Total Optional Services																	