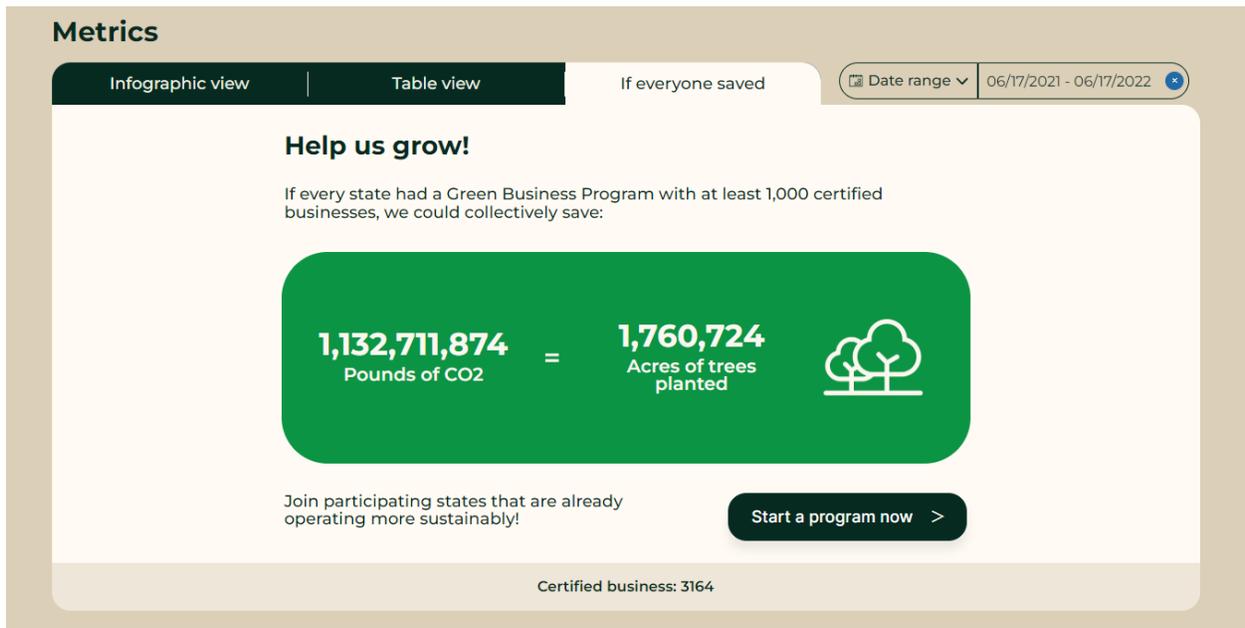


“Enhancement and Expansion of National Business Environmental Data Collection”

Highlight Report

Project Funded by the U.S. EPA Exchange Network



Introduction

Green business programs across the U.S. are increasingly collecting and tracking business environmental data that EPA officials and policy makers need. However, there are two major shortcomings in the quality of data collected and how this data is gathered, analyzed, and shared publicly.

First, many states do not have access to the tools needed to collect and access such data. The existing methods for collecting and sharing this data are burdensome for both green business coordinators and participating businesses. While some states are able to track and share their environmental data in an existing national database, other states cannot contribute to this database or share their program information. When less environmental data is collected, we have an incomplete picture of the impacts of green business programs.

Second, to truly harness the potential of this data, additional environmental metrics are needed, existing metrics need to be more accurately calculated, and data collection and uploading needs to be easier.

The Smart Energy Design Assistance Center (SEDAC) at the University of Illinois at Urbana Champaign, in partnership with the California Green Business Network (CAGBN), have completed significant work to expand existing environmental data collection, analysis, and sharing capabilities. This project directly strengthens green business programs and their partners by developing and enhancing systems that are responsive to the needs of environmental decision makers, regulators, and other consumers of environmental information. The result of this work will empower green business programs to evaluate the effectiveness of their programs in real time and study trends over time. This will boost green business programs' ability to rapidly adapt to market conditions and provide better service to businesses. This report provides a brief overview of the progress we have made towards our goals, outputs and outcomes. We look forward to highlighting our completed work.

Project Summary

Green business recognition and certification programs across the United States are taking a giant leap forward thanks to the activities associated with this funded project. The core mission of this project is to develop tools that green business programs and businesses can use to encourage sustainable operations. The tools we have developed make it easier for businesses to gather data, reduce barriers to implementation and provide accurate advice that can be used.

Goal 1: Create an IL database that imports data into the National GreenBizTracker database.

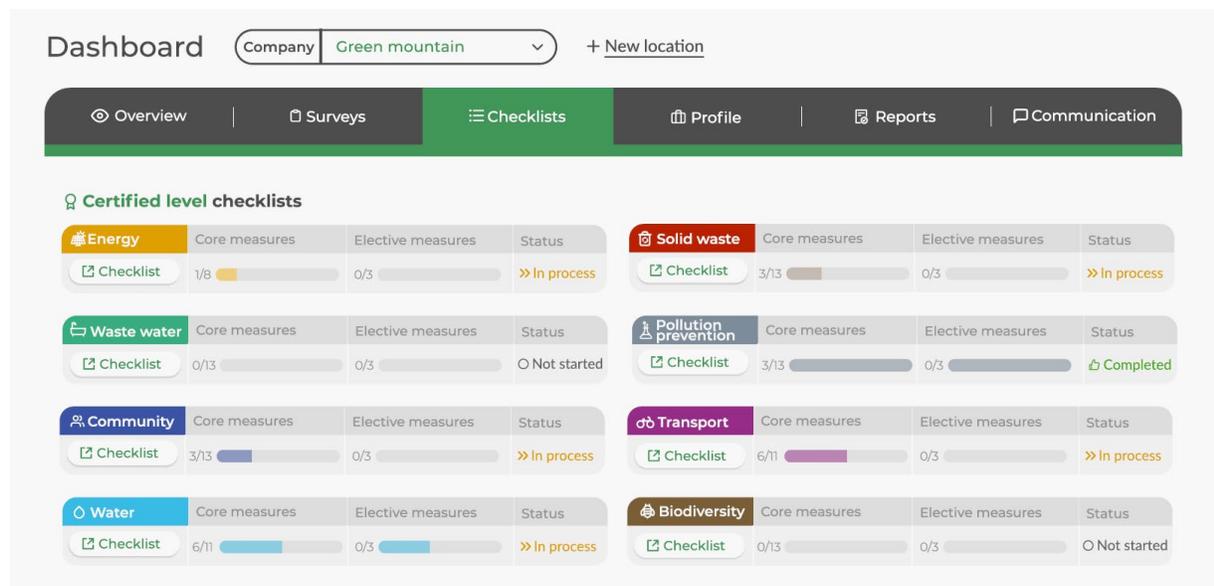
Illinois is home to over 1.2 million small businesses, employing nearly 2.5 million people, about 45% of the state's workforce. Expanding access to the GreenBizTracker tool in Illinois was critical to growing the Illinois Green Business Program's reach across the state. It helped to increase ease of data collection, reduce errors in environmental outcome measurement and calculation, and increase the efficiency of green business program operation and management. All benefits have resulted in more businesses accessing and using the tool across Illinois to become green certified and implement sustainable business practices. As program participation continues to grow, we can collect high quality environmental outcome data via the platform, helping our program and state understand implementation trends, impacts, and outcomes. Illinois is the first Midwest state to receive access to the tool, increasing the diversity of business data accessible to environmental professionals and leaders nationally.

We've created database tools that make program management and data collection easier for green business programs, starting with the Illinois Green Business Program. The tools will be available for other states as well, imported into the National GreenBizTracker database. A new dashboard helps businesses seamlessly track progress towards green certification. The new customized Illinois homepage helps the program recruit businesses and will allow businesses to sign up for the certification programs. Data collection spreadsheets will help green business programs guide businesses as they collect data for program application and environmental metrics. Finally, a training webinar will help businesses know how to use the GreenBizTracker tool.

Figure 1. Illinois Green Business Program homepage and directory.



Figure 2. Updated Business and Coordinator Dashboard in GreenBizTracker.



Goal 2: Modernize and add environmental metrics to GreenBizTracker database.

We've created a more comprehensive list of business sustainability measures and developed and updated metrics to track these measures. We developed a total of 36 new metrics for 17 existing measures and 8 new sustainability measures. We worked with industry experts to find resources and calculation methodologies for these metrics. We created a comprehensive methodology guide that outlines all of our work. Our goal was to improve the quality of the metrics' outputs, while keeping them as simple as possible to not overburden users. Now, green business programs can collect more quality data than ever before.

Figure 3. Excerpt from Methodology Guide for water bottle elimination measure highlighting measure text and development approach.

Eliminate Water Bottles

New Measure Text: Eliminate individual, single-use bottles of water for employees and guests. Switch to alternatives such as using tap water, buying water filters, providing water coolers, or installing water fill stations.

Discussion: To develop this metric, our team reviewed data from water bottle filling stations to understand estimates for reducing water with reusable water bottles. A study at the University of Chicago found that water bottle filling stations filed about 1,740 bottles per station per week, estimating about 50% of those bottles were reusable. Another study from Southeastern Louisiana University calculated that about 22.29 bottles were reduced per day by refillable water stations. This is about 156 bottles avoided per week by refilling existing or reusable bottles.

Figure 4. Excerpt from Methodology Guide for water bottle elimination measure highlighting metric and sources.

Metric: GHG Saved (lbs of CO₂) = 26lbs of CO₂/employee/year * number of employees

- By eliminating single use water bottles, you can reduce 74 bottles/person and 26lbs of CO₂ per person per year.

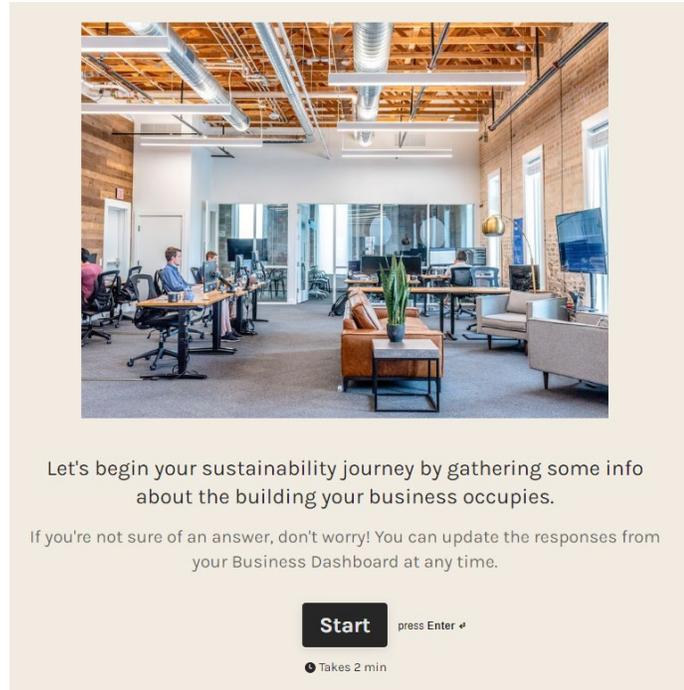
Sources:

- o UChicago Study: <https://knowledge.uchicago.edu/record/2530?ln=en>
- o Southeast Louisiana University Study: <https://www.wired.com/story/how-many-water-bottles-could-a-filling-station-save/>
- o Oregon DEQ: <https://www.oregon.gov/deq/FilterDocs/wprLCycleAssessDW.pdf>
- o BottledWater.org statistics: https://bottledwater.org/wp-content/uploads/2020/03/2018BottledWaterStats_pub2019.pdf
- o UMichigan Study: http://css.umich.edu/sites/default/files/css_doc/CSS09-11.pdf

Goal 3: Create automated energy data collection.

We developed a bidirectional API to import ENERGY STAR Portfolio Manager and utility data into GreenBizTracker. The connectivity of platforms to track and share energy data has been a request from GreenBizTracker for years, and many green business program coordinators are thrilled with this new capability to share and transfer information.

Figure 5. Business baseline survey welcome page.



Goal 4: Business environmental data collection in Illinois and program operation.

We have completed data collection with ten businesses through the GreenBizTracker platform. By piloting this program with Illinois businesses, we can test and refine the data collection process and encourage additional companies to participate. This will jumpstart efforts in Illinois and allow us to troubleshoot the platform before rolling it out into other states. We also created the Illinois Green Business Baseline program. Businesses receive a simplified climate impact report using the CoolClimate Calculator, an analysis of energy and water consumption trends, customized recommendations and resources for their business, and recognition for their implemented green practices.

Figure 6. CoolClimate Calculator results for small Illinois law firm.

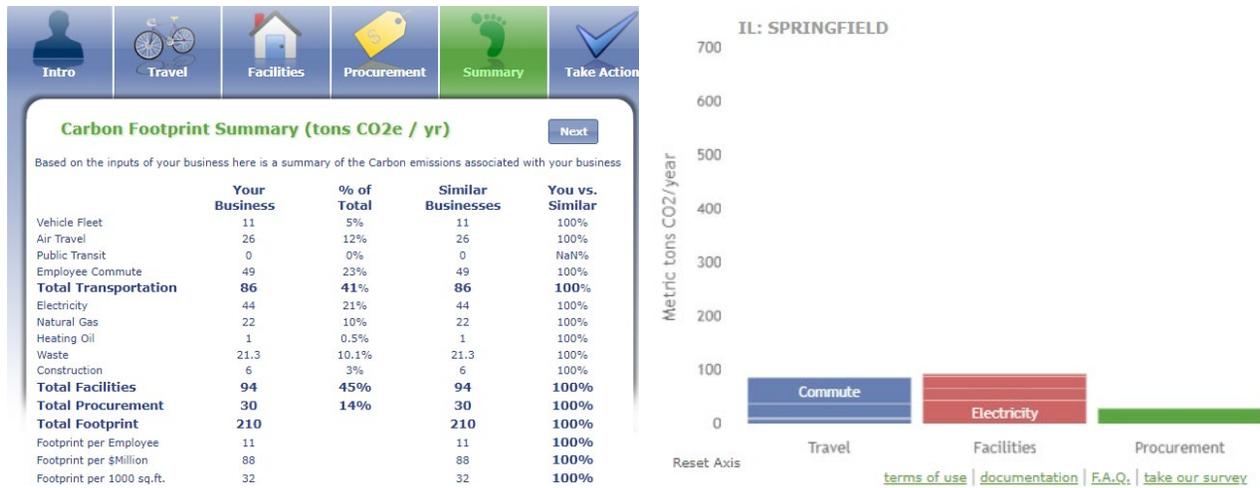


Table 1. Small law firm: potential environmental reduction outcomes.

Electricity Saved (kWh)	Natural Gas Saved (therms)	Water Saved (gallons)	Gallons of Fuel Saved (gallons)	Solid Waste (pounds)	Metric Tons of CO ₂ Saved
8,020	233	15,093	156	1,453	131

Goal 5: Develop national environmental data collection and reporting, expanding data access outside GreenBizTracker.

We developed a new nationwide microsite that delivers nationwide aggregated metrics. By displaying aggregated national metrics, visitors to the page will understand the magnitude of the impact of green businesses. We included a variety of tools allowing users to view metrics and publish National Green Business Homepage and an RSS feed from the Green Business Directory. We also developed a bidirectional API to allow 3rd party access to aggregate metrics data and GreenBizTracker to incorporate data from non-system users.

Figure 7. National Green Business Homepage.

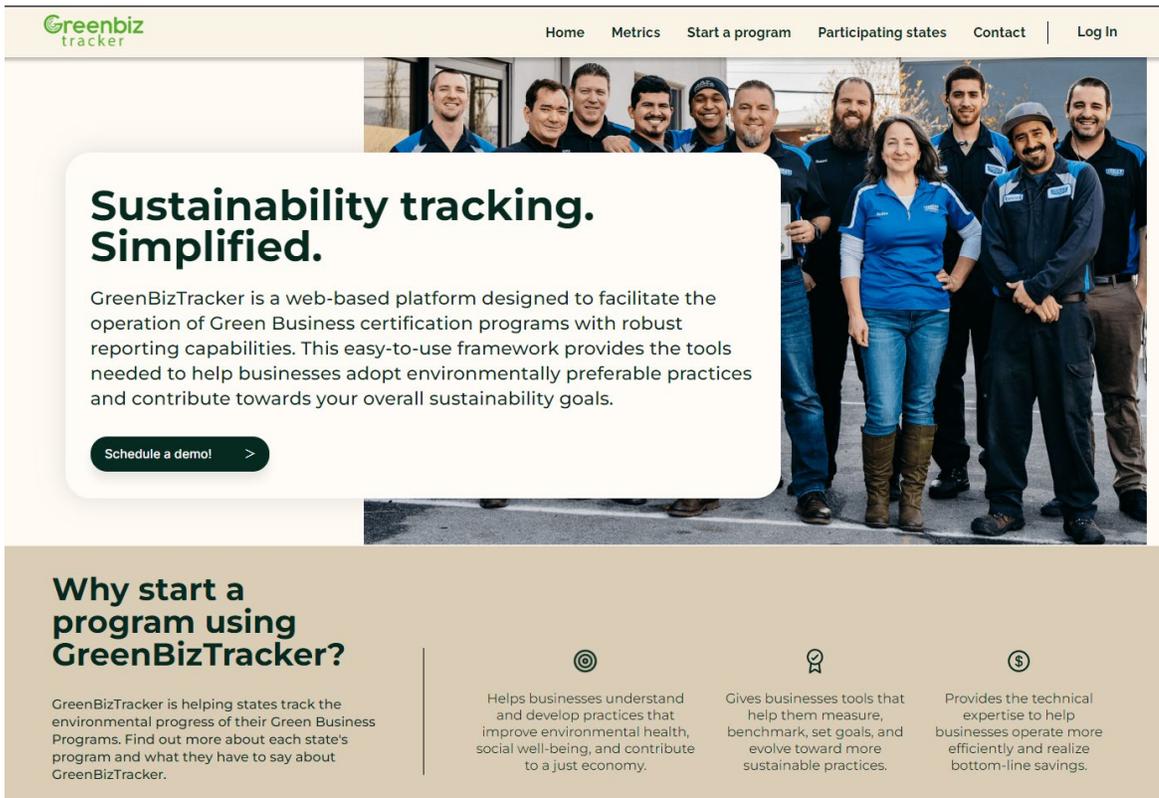


Figure 8. GreenBizTracker national webpage; metrics microsite, infographic view.

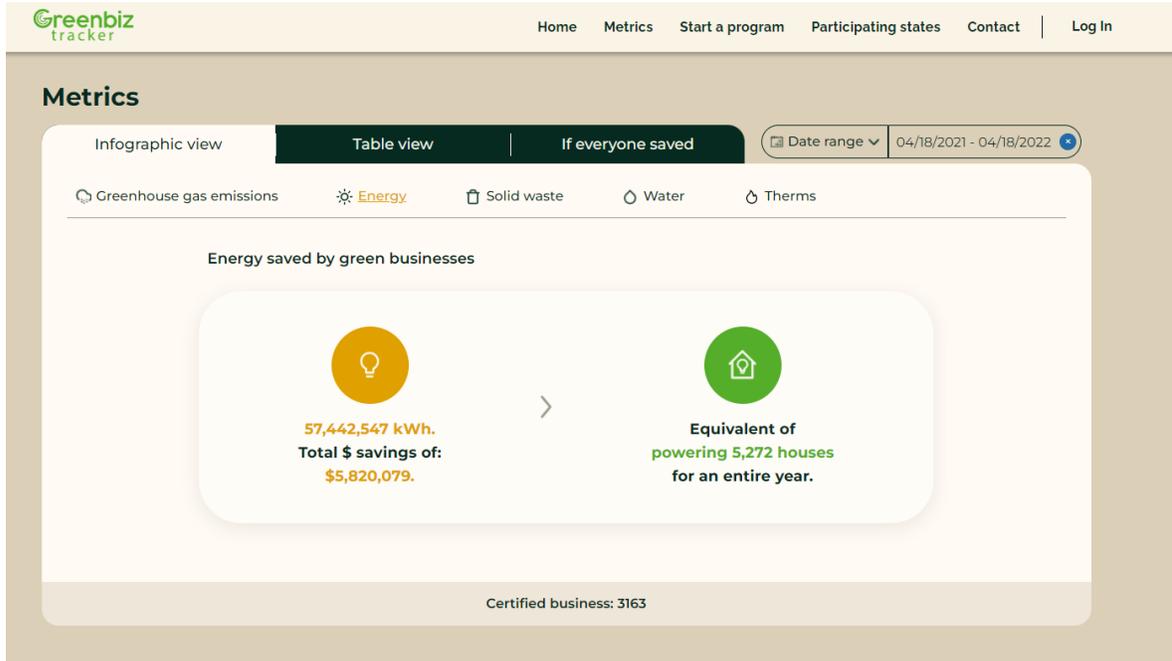


Figure 9. GreenBizTracker national webpage; metrics microsite, table view.

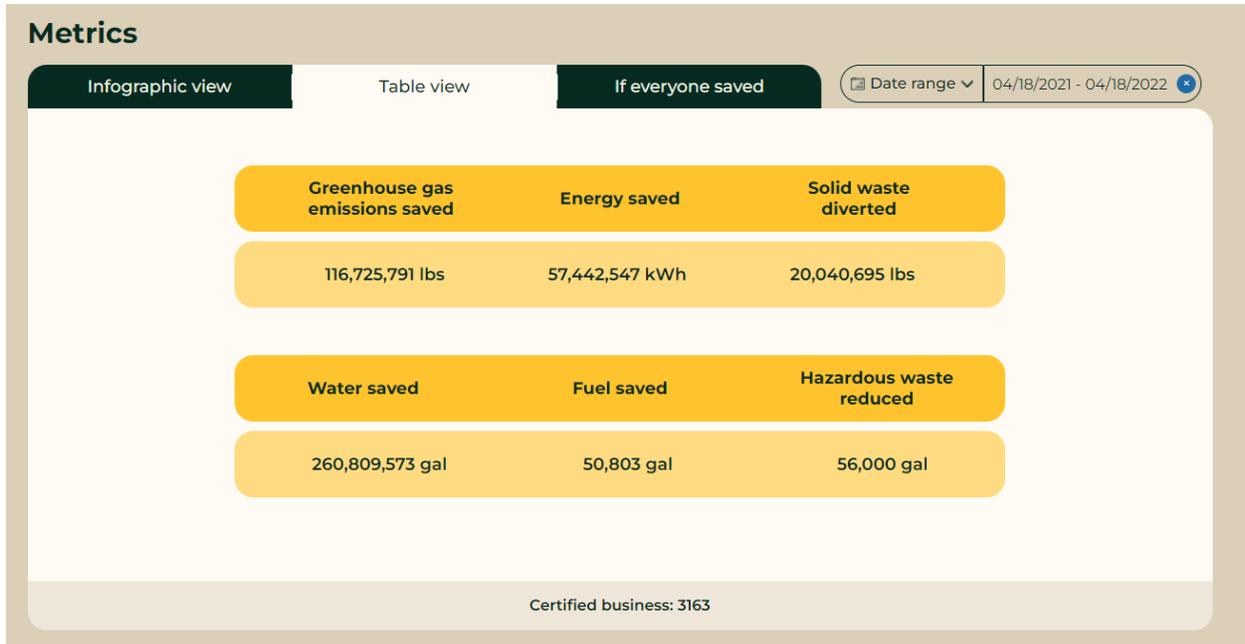
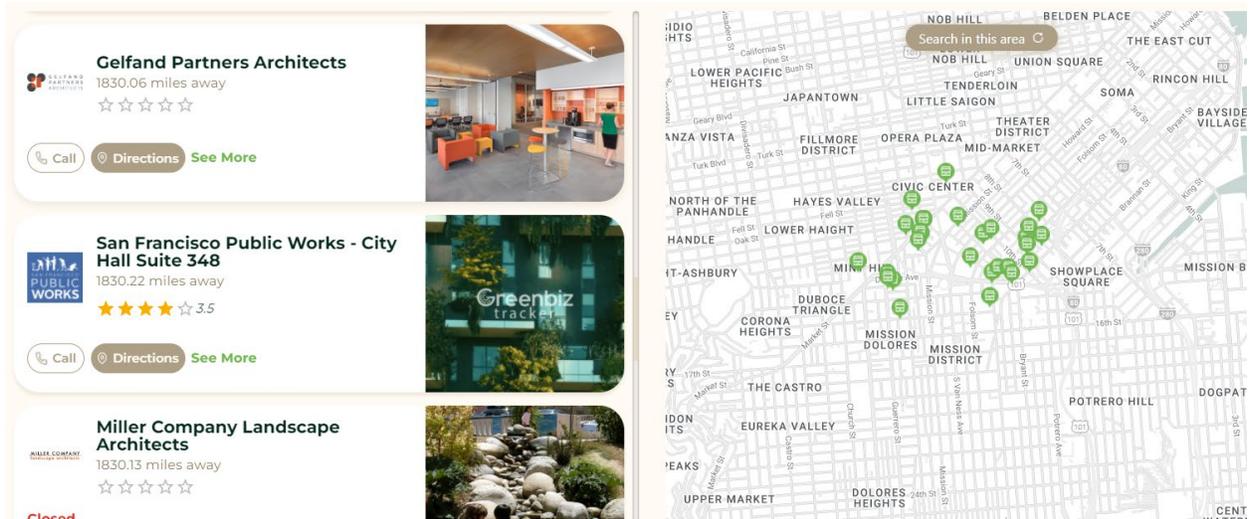


Figure 10. GreenBizTracker User map on National Green Business website.



Figure 11. National Green Business Directory.



Conclusion

The work completed in this grant has created the infrastructure to house the world's most comprehensive database of businesses' green practices. Previously, it was not feasible for green business programs to reliably collect or leverage large amounts of data about green practices. Thanks to the new capabilities built into the GreenBizTracker database, green business programs can now collect more data than ever, import data from other sources such as ENERGY STAR Portfolio Manager, and share and compare their data nationally. This means that green business programs can learn from each other, discover trends, and better target the needs of businesses.

Businesses will also benefit from these improvements. Businesses make decisions based on the data provided. With the updated cost and savings calculation formulas, businesses will receive higher quality financial and environmental savings estimates as they consider which new practices to implement. Businesses will have easier access to their savings data to quantify the results of the new practices. Finally, the new user interface improvements not only look more aesthetically pleasing, they also help streamline the process to make it as easy as possible for businesses so they can focus on implementing their new green practices. Altogether, these improvements have vastly improved the capabilities of green business programs across the country and will accelerate the adoption of greener business practices.