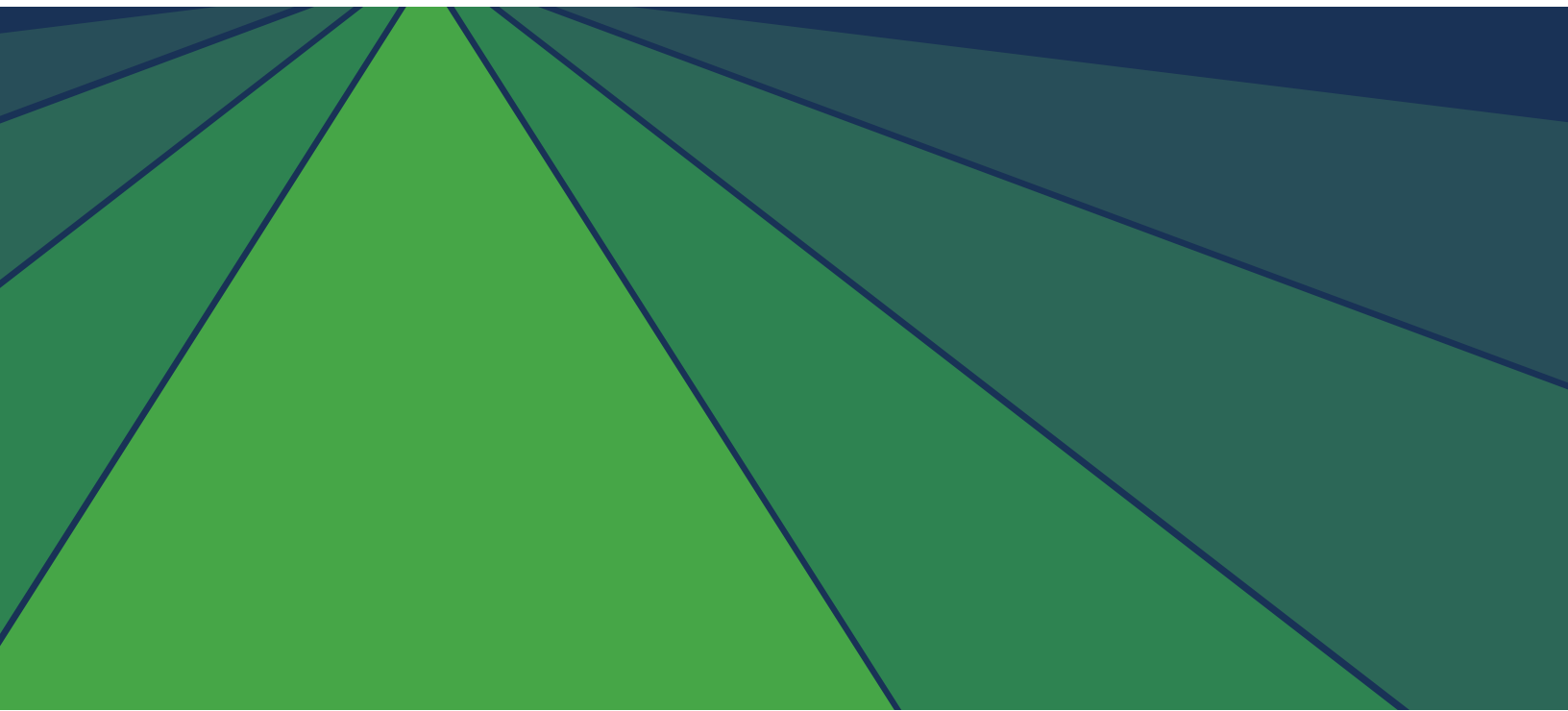


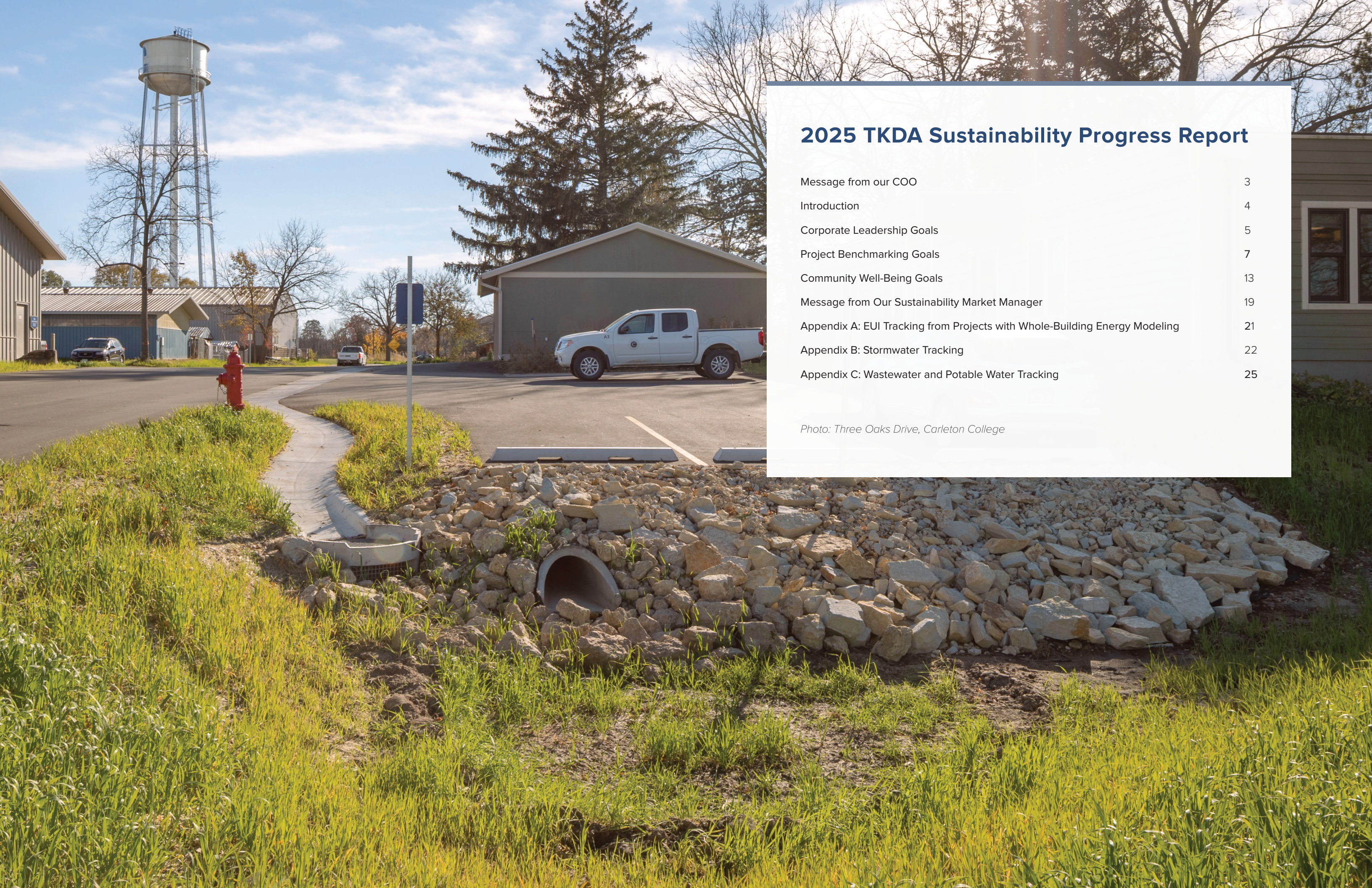


# OWNING OUR IMPACT

Lessons Learned from Our Firm-Wide  
Sustainability Initiatives



**Sustainability Progress Report | 2025**



## 2025 TKDA Sustainability Progress Report

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*Photo: Three Oaks Drive, Carleton College*



## MESSAGE FROM OUR COO

Dear Stakeholders, Partners, and Colleagues,

As we present our biennial Sustainability Progress Report, I am proud to reaffirm TKDA's commitment to building a better future for our employees, clients, and communities. Our 2024–2026 Plan was the first time that TKDA set overarching sustainability goals for the company. That Plan, endorsed by the Board of Directors, marked a pivotal step in our century-long legacy of responsible engineering, design, and planning. Now, we are publicly reporting our progress and the status of each goal, reflecting our dedication to transparency, innovation, and continuous improvement in all aspects of our work.

At TKDA, sustainability is a guiding principle that shapes our culture, our projects, and our relationships. We strive to foster a supportive and inclusive environment for our employee owners, deliver cutting-edge solutions for our clients, and engage responsibly with the communities we serve.

In this reporting period, we made several key advancements that were brought about through our Sustainability Plan:

- Identified and trained subject matter experts across all our operating divisions about embodied carbon, strengthening our capacity to deliver low-carbon solutions and respond to evolving client and regulatory expectations.
- Invested in an in-house sustainability position, ensuring dedicated attention and expertise to drive our sustainability initiatives forward.
- Assisted multiple projects in evaluating or pursuing Envision, LEED, and B3 — recognized rating systems and standards for sustainable projects.

This progress report provides a transparent account of where we stand on each of our goals, celebrates achievements, and acknowledges areas for growth. Thank you for your continued support and collaboration.

Sincerely,

Andrew Wagstrom  
Chief Operating Officer  
TKDA

*Coon Rapids Stormwater Flood Alleviation*

## INTRODUCTION

In 2024, TKDA launched its first unified Sustainability Plan, helping to embed environmental, social, and governance (ESG) principles throughout the organization. This plan was developed through a comprehensive, multi-step process that included extensive market research, stakeholder engagement, and the expertise of internal teams.

The development process began with input from TKDA leadership, employees, and public and private clients across sectors. The team conducted in-depth research into current regulations, industry trends, and market needs to ensure the plan aligned with both client and community priorities. TKDA also performed an internal assessment of its capacity and capabilities, ensuring that sustainability goals were actionable and fit within the company’s strategic direction.

A materiality analysis was conducted to identify the social and environmental issues most relevant to TKDA and its stakeholders. Feedback was plotted on a materiality matrix, helping to prioritize issues and set ambitious, yet achievable, goals. The Board of Directors endorsed the plan, and management was tasked with implementation, including biennial progress reports to ensure transparency and continuous improvement.

TKDA’s Sustainability Plan is organized around three core focus areas:

- **Corporate Leadership:** Emphasizing ethical business practices, transparency, and employee wellness.
- **Project Benchmarking:** Supporting clients in meeting sustainability and ESG commitments through data-driven project performance and impact tracking.
- **Community Well-being:** Expanding the scope from employee wellness to include the well-being of communities impacted by TKDA’s projects.

This progress report provides an account of TKDA’s journey. We are now two years into our three-year plan, and progress has been made on every goal, as seen in Figure 1. Many of our goals require ongoing work, such as annual tracking or managing a training program. For the purposes of this report, we will consider a goal “100% developed” if the processes and systems have been put into place, leaving only annual execution. With the limited exception of participation in the wellness program, we are on track to achieve all our goals and have at least one year of data (where applicable) by the end of the three-year term.

Figure 1. Summary of Progress

	Goal Title	Percent Developed
Corporate Leadership	1. Code of ethics	100%
	2. Wellness participation	15%
	3. Mentorship and training	100%
Project Benchmarking	4. Life-cycle cost analysis	75%
	5. Embodied carbon	100%
	6. Water metrics	100%
Community Well-Being	7. Stakeholder engagement and DBE	100%
	8. Air quality best practices	100%
	9. Basis of design	25%

## CORPORATE LEADERSHIP GOALS

### 1. Develop a code of ethics and share it with all employees. [100% complete]

Driving innovation while managing risk depends on excellent corporate governance. Our Sustainability Plan identified that our governance practices could be bolstered by a formal code of ethics policy. A defined ethics policy clarifies expectations for our employees and improves TKDA’s ranking as a supplier to clients that engage in ESG reporting.

The TKDA Code of Ethics policy was developed in 2024 and adopted by reference into our Employee Guidelines in 2025. It is the foundational guide for ethical conduct at TKDA, applying to all employees, officers, directors, and trustees. It is designed to uphold the company’s core values — Trust, Integrity, Inclusion, and Excellence — and to ensure that all business activities reflect these values. Key principles of the plan include: 1) follow the rules, 2) act with honesty and integrity, and 3) value and promote human rights.

In 2025, 18 of TKDA’s clients asked for information about our ESG practices.

### 2. Increase by 10% the percentage of people achieving 100+ points in TKDA’s wellness program and provide fresh fruit and vegetables on-site. [15% complete]

TKDA has a strong foundation in caring for employees through our wellness committee. The wellness committee’s mission is to educate, motivate, and reward employees to make healthy choices through a supportive environment of wellness programs, services, and events. Employees earn points to incentivize participation in these programs and events. Employees who are covered by TKDA’s health insurance and earn more than 100 wellness points receive a discount on their insurance policy. Spouses can also participate if they are covered by TKDA insurance. Employees who are not covered by TKDA insurance receive a \$50 gift card for earning 100 points.

In 2024, we set a goal of growing participation by 10%, which equates to 38% of eligible employees earning 100+ points by 2026. As seen in Figure 2, we are currently not on track to hit this goal, which we attribute mostly to our current phase of company growth. Of the new employees that joined TKDA in 2025, 59 joined after Q1, which may have made it more difficult to earn enough points by the end of the calendar year. We will continue to monitor participation rates in relation to company size and will also further explore ways to expand the reach of this program in future years.

The relocation of TKDA’s headquarters to Bloomington offered an opportunity to change food provider vendors and our vending machines now offer fresh fruit, vegetables, and salads. We will continue to work on offering similar options at our regional offices.

Figure 2. Wellness Program Participation

	2023	2024	2025
Percentage of eligible employees that achieve 100+ points	28%	25%	26%

**3. Develop a training and mentorship program for employee safety and sustainability topics. [100% complete]**

Investing in sustainability-focused training and mentorship has tangible benefits for both TKDA and its stakeholders. It enhances employee engagement, improves project outcomes, and positions the company as a trusted advisor in the marketplace. Targeted training programs and capacity-building initiatives equip staff with up-to-date knowledge and are key to empowering our staff to drive sustainable outcomes. Mentorship amplifies the impact of training by fostering a culture of continuous learning and collaboration.

TKDA has 13 employees with LEED professional credentials and 7 employees who have earned the Envision credential.

To date, we have pursued a hybrid model of leveraging existing channels for company-wide training, while creating dedicated training courses with assigned subject matter experts. Below are short descriptions of trainings we conducted in 2025. See Figure 3 for participation statistics.

- TKDA Sustainability Brown Bag: TKDA already had an established sequence for company-wide brown bag meetings. We dedicated the April 2025 Brown Bag lunch to educating our staff about our Sustainability Plan and providing an update about our progress.
- Mentorship program: TKDA also already has an established mentorship program where participants are matched with experienced staff at the company. The pairings are established by matching mentees whose professional development interests align with a mentor's background and strengths. In 2025, we highlighted sustainability in a subject matter training for all mentorship pairs. As our sustainability program grows, sustainability interests may be factored into future mentor-mentee pairings.

- PM training: All Project Managers at TKDA are required to attend a series of trainings on important topics like contracting, project planning, ethics, and risk management. In 2025, we incorporated a training on how to discuss sustainability with clients and how to budget and scope for sustainability analysis.
- Embodied Carbon Trainings: After developing the embodied carbon toolkit (see Goal #5), we decided to take the added step of identifying subject matter experts in every division and training them on the latest embodied carbon research. The subject matter experts are identified on the company's internal website and serve as point people for their division.

Figure 3. 2025 Training Sessions

Training	Number of Staff
TKDA Sustainability Brown Bag	115*
Mentorship Program: Subject Matter Presentation	22*
PM Training	152
Embodied Carbon Trainings (5 sessions)	20

\*Hybrid meeting. Number of people attending in person is estimated.

**PROJECT BENCHMARKING GOALS**

**4. Develop an approach to life-cycle cost analysis (LCCA) that helps clients evaluate co-benefits, such as longevity, decarbonization, and health and safety. When energy modeling is conducted as part of the LCCA, benchmark results against the Commercial Buildings Energy Consumption Survey (CBECS). [75% complete]**

Many of TKDA's clients are cost conscious, so sustainability items face increased scrutiny. However, most clients are also long-term owners, meaning they don't just pay for the upfront cost of the project — they are also responsible for operations, maintenance, and end-of-life disposal. The quality of the project could also have far-reaching effects on the client's underlying business, either supporting increased safety, health, and reputation, or becoming a liability.

To help clients fully understand the impact of sustainable design features, TKDA has developed resources to help our project teams apply different methods of value analysis. Our internal guide highlights the range of analysis: from a simple payback calculation to a comprehensive cost-benefit analysis (See Figure 4). It also cites academic research that contextualizes qualitative environmental and health information in business terms (See Figure 5). While most teams are already familiar with life-cycle cost analysis, we have now developed a standardized template to accelerate the process and allow for customization based on the client's needs.

These resources were developed by a committee of sustainability champions in 2025, and work will continue into 2026 to identify and train a wider group of subject matter experts.

Figure 4. Range of Value Analysis

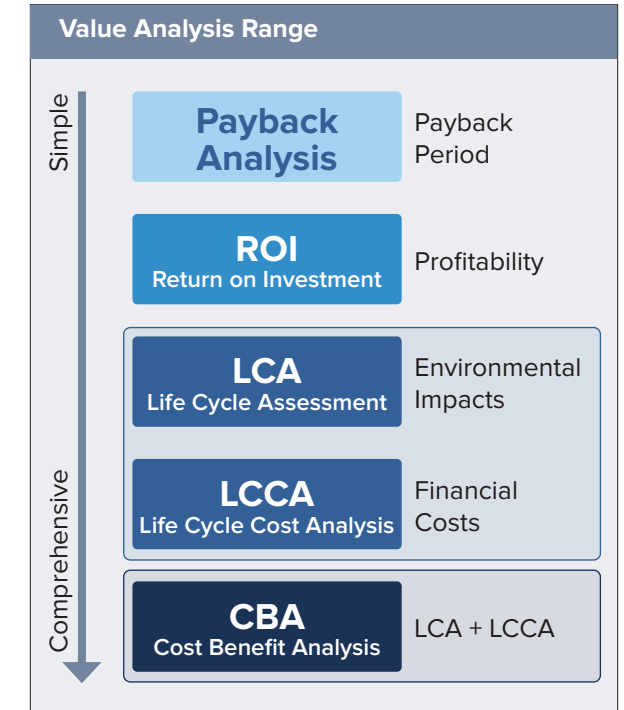


Figure 5. Sustainability Factors for LCCA Analysis

- Environmental and Health Factors Included in Our LCCA Guidance Document**
- Whole-life carbon
  - Air quality
  - Sustainable sites
  - Resilience
  - User safety

TKDA has in-house energy modelers and we also work with outside energy modeling teams when requested by a client. We specialize in system energy modeling for existing building upgrades, analyzing the operational energy efficiencies between different HVAC systems, plant equipment, or processing lines. With system energy modeling, a code base building energy model is created and used to compare alternative energy efficiency improvements against the base energy model.



### Geothermal LCCA for Johnson High School

Johnson High School, in the Payne-Phalen neighborhood of Saint Paul, had a heating system that was decades old with no central cooling system to provide air conditioning throughout the school. Saint Paul Public Schools is attempting to reduce greenhouse gas emissions from its buildings by 45% by 2030.

TKDA was engaged to study the options for a whole-building HVAC system upgrade which included adding air-conditioning throughout the building. The study analyzed three options, 1) air-cooled chillers to produce chilled water, 2) packaged rooftop air handling units, and 3) geothermal wells coupled with heat pumps that would produce both chilled water for cooling and hot water for heating.

While the geothermal system had the second-highest capital cost, the low operating cost over 30 years made it the forerunner in lowest overall lifetime cost. Heating and cooling between the ground and schools is now transferred by 160 vertical bore wells. A high-efficiency condensing boiler and two steam boilers are still available for when temperatures drop below freezing; however, it is projected that the school will cut natural gas consumption by more than half. In this case, advancing sustainability lowered costs for the school district, allowing precious resources to instead be directed towards education.

The project was completed in 2022, and the LCCA developed for Johnson High School is now one of the primary examples cited in TKDA's training resources about life-cycle cost analysis.

We have begun to track our projects and have compared them to an energy benchmark. (See Appendix A). In general, we see that our projects are significantly more energy efficient than a code baseline or the CBES benchmark. However, they fall short of achieving the targets set by the AIA 2030 Commitment or Minnesota's SB 2030 program. We will continue to educate our clients about these industry goals and work together to close the gap.

### 5. Research the tools necessary to estimate and benchmark embodied carbon. [100% complete]

Embodied carbon is a critical metric across all our divisions because it is a substantial portion of total emissions across all our project types. Embodied carbon refers to the greenhouse gas emissions associated with the extraction, manufacturing, transportation, and installation of building materials, as well as the construction process itself. Operational carbon is emitted during the use phase of a building or infrastructure project and could change with new technology or grid decarbonization. However, embodied carbon is locked in before the project is even occupied.

For our civil infrastructure projects, including roads, stormwater systems, and aviation runways and taxiways, embodied carbon is by far the biggest driver of the project's carbon footprint (excluding vehicular and airplane emissions). For vertical infrastructure, like schools, maintenance facilities, and manufacturing facilities, embodied carbon typically accounts for about half of the project's lifetime carbon footprint.

Design choices that minimize the quantity of materials needed, maximize the use of salvaged or reused materials, and prioritize the procurement of low-carbon products all help lower embodied carbon. To socialize these practices across the company, we developed a toolkit describing best practices and trained a group of subject matter experts in every division. Our teams are now using tools like EC3, Tally, and C. Scale to do embodied carbon analysis.

We also participate in the work groups convened by Infrastructure 2050, an organization dedicated to helping infrastructure professionals understand, reduce, and ultimately work to eliminate embodied carbon by 2050.

Energy modeling on a select number of projects showed TKDA designs reduced energy use intensity 12-62% compared to baseline.



**Embodied Carbon Case Study: Superior, WI**

Build new, or reuse? That is one of the most critical questions to answer when attempting to lower the embodied carbon of a building project.

When a TKDA client sought to build a combination vehicle storage and personal support building adjacent to a railway, the team thought carefully about the space demands. The project called for administrative space, a four-bay vehicle storage area, and permanent storage space. All this programming could be accommodated onsite with a newly constructed building. However, in partnership with the client, the team developed a creative solution — reusing shipping containers for the permanent storage space to reduce the footprint of the new building.

Five Grade B shipping containers were repurposed for permanent onsite storage, which ultimately saved \$130,000 in new construction costs and avoided 25,000 kgCO<sub>2</sub> of embodied carbon compared to newly constructing the same amount of square footage.

This design repurposes and extends the life of existing assets, avoids the purchase of new construction material, and lessens the carbon associated with jobsite construction (since the shipping containers are already assembled). The design meets all of the client’s needs and saved money in the process.

**6. Develop a process to track meaningful water metrics as defined by relevant divisions. [100% complete]**

On one hand, stormwater, wastewater, and water supply projects inherently advance sustainability by protecting water quality and providing safe, clean water for all. These projects are all highly regulated to ensure water resources are protected while still allowing for community growth. TKDA’s water resource team has found creative ways to meet increasingly stringent regulations even while urbanization increases permeable surfaces, changing weather patterns increase the frequency and intensity of storms, and investment in water infrastructure consistently lag behind the need.

Water/wastewater services were provided in 18% of our projects in 2025.

On the other hand, we also know that best management practices bring co-benefits and triple bottom line wins and are not always prescriptively regulated. For example, green stormwater infrastructure — where water is managed by mimicking the function of natural systems using bioswales, permeable pavements, or rooftop gardens — lowers the urban heat island effect and supports biodiversity. As another example, trenchless technologies help us rehabilitate underground pipes without disturbing large amounts of soil and requiring large excavation equipment.

We found that it was not feasible to try to collect data on every project because of the number of projects we design annually and because of the number of different services we provide. Instead, we grouped our services by typology, selected several projects for each typology, and attempted to collect metrics for that group of projects. If a metric could not be identified, we analyzed the sustainability impacts of a given service typology and described project results. We expect that having our water projects listed and described in relation to their sustainability impact will help us further improve as our portfolio of these projects expands.

*Coon Rapids Stormwater Flood Alleviation*



Figure 6 shows how we grouped our service typologies and lists the projects that we analyzed for our tracking effort. A more detailed reporting is attached as Appendix B and C.

Figure 6. Water Data Tracking

Typology	Projects	Data points
Parks and campus stormwater management	Cleveland Park	Impervious area changes Volume of water treated Native vegetation area
	Glen Gale Park	
	Lorraine B Smaller	
	Farview Park	
	Hall Park	
	Three Oaks Drive	
	Lilac Hill Student Housing	
Alleviating stormwater flooding	Flood Area 63	Runoff volume detained
	Eustis Street	Conveyance capacity change
	Coon Rapids	Flood control result
Lead pipe inventory and/or replacement	White Bear Township	Number of replaced service lines
	Farmington	
	Stillwater	
Backwash recycling	Wausau Systems	*No metric
Odor management	Rosemount Lift Station	*No metric
	Minneapolis Metering Station	
	Shakopee Odor Control Facility	
Siphon inspections	Lake Street and Saint Paul	*No metric
Trenchless pipe rehabilitation	Forest Lake Interceptor Rehabilitation	*No metric
	Minneapolis and Fridley Interceptor Rehabilitation	

After researching our peers, it does not appear common for engineering firms to track metrics or the application of best management practices across a firm's water portfolio. However, doing so — even on a handful of projects — has helped us share knowledge across the firm and identify strengths that we did not know we had.

## COMMUNITY WELL-BEING GOALS

### 7. Track projects that deploy a meaningful stakeholder engagement process (similar to the National Environmental Policy Act) and track contracted spend with diverse-owned businesses. [100% complete]

This goal is intended to funnel more diverse voices (both professional and layperson) into our project development process. Partnering with disadvantaged businesses and pursuing stakeholder engagement brings new ideas and perspectives into our projects, which leads to creative solutions that are better tailored to address community health and well-being.

TKDA's public sector clients are often required to pursue community engagement as regulated by the National Environmental Policy Act. Even in the private sector, where it is not regulated, most of TKDA's clients prefer to engage some stakeholder groups, like future occupants, maintenance and operations staff, or the surrounding community with the aim of improving project outcomes and mitigating the risk of project opposition. Our Planners Forum, which is comprised of planners within the aviation, wastewater, transportation, and government markets, was tasked with tracking the number of projects that included community or stakeholder engagement. For our purposes, stakeholder engagement does not need to be a fully public process, but it does need to have been planned and managed by a dedicated facilitator.

TKDA planners engaged with 75 projects in 2025, all of which included a formal stakeholder engagement process with a dedicated facilitator.

Connecting Camden Community Engagement





**Fergus Falls Vicinity Rest Area: Phase 1 Public Engagement**

TKDA led a public engagement process for MnDOT as it was trying to select a site for a new rest area in the vicinity of Fergus Falls. The project kicked off in 2023 and was complete in 2024. Multiple engagement opportunities were offered, including: a small-group community meeting with local stakeholders, on-site engagement at four rest areas along I-94, social media outreach, and an interactive online website. The project focused on engaging the commercial trucking community, as well as general travelers of the corridor.

A survey generated 456 total respondents, including 138 commercial truck drivers. The truck drivers' perspective was particularly relevant for making the siting decision. They expressed a desire for quick access to the highway because some trucks are limited from using flyover bridges or highways based on their size or hazardous materials that they are carrying. They were also in need of parking for oversized loads along the I-94 corridor and preferred to stop after traveling through the town of Fergus Falls.

TKDA delivered a summary of the engagement results to MnDOT in a digestible form with graphics to visualize the data.

The federal Department of Transportation's Disadvantaged Business Enterprise (DBE) system experienced massive change over this reporting period. The Trump administration changed the qualifying definitions and all existing certified DBEs will be required to be re-evaluated and recertified. At the same time, states are also shifting their regulations, sometimes to further favor race-based or gender-based supplier diversity programs.

Because most organizations have not yet re-certified under the new federal definitions, our tracking is based on the legacy qualifying definitions. This means our data for 2024 and 2025 in Figure 7 is comparable under the same classification system, but we expect 2026 to reflect the recent changes to the DBE program.

Figure 7. DBE Utilization

	2024	2025
Gross spend to DBEs	\$4.2M	\$3.5 M

**8. Develop a reference document outlining division-specific best practices to manage one air quality impact area. [100% complete]**

TKDA's broad array of project types have different air quality considerations, and vary in the degree to which impacts can be mitigated through design:

- Highway, roadway, and bridge projects introduce vehicular emissions to surrounding communities
- Rail facilities have high emissions from idling locomotives, switchers, and line-haul locomotives that disassemble trains, and hostlers that move goods around the yard
- Manufacturing or industrial environments can generate harmful dust or gasses
- Aviation runways, aprons, and gate infrastructure impact taxiing and idle time of aircraft trying to land and depart
- Office or education buildings can create sub-optimal conditions for working and learning if indoor air quality is poorly managed

Over this reporting period, we convened a group of experts to consider these impacts and develop a list of best practices. The resulting quick-reference sheet is intended to build awareness across the firm and share with clients (See Figure 8).

One realization was that jobsite construction is also a source of air pollutant emissions and is common to all our project types. While TKDA is not a contractor, we can influence construction practices by advocating for zero emissions equipment, renewable diesel, and anti-idling policies. In fact, TKDA has been on some very high performing projects pursuing these strategies and could be considered a leader in understanding how to incorporate low-emission construction into project implementation.

Figure 8. Best Practices Table

TKDA Best Practices for Enhancing Air Quality	
<p>Stewarding clean air directly benefits the occupants of our projects, the jobsite workers who build our projects, and the communities that live in proximity to our projects. This reference sheet describes services and strategies for enhancing air quality to consider with clients.</p>	
<b>Jobsite Construction</b> All Projects	<b>GOOD</b> Develop a vehicle idling plan and a dust control plan
	<b>BETTER</b> Require renewable diesel in construction vehicles
	<b>BEST</b> Deploy zero-emission equipment, such as solar light towers, electric cranes, batteries in concert or in lieu of generators
<b>Surface Transportation</b>	<b>GOOD</b> Provide air quality report (NOx, CO, HC) based on transportation operations analysis
	<b>BETTER</b> Maintain or increase vegetation and design sound walls to reduce near-road pollution exposure
	<b>BEST</b> Implement offsets identified in the GHG Emissions Impact Assessment within the local community
<b>Rail</b>	<b>GOOD</b> Configure the facility for optimal efficiency
	<b>BETTER</b> Locate rail facilities away from vulnerable populations when possible, or install sound walls and vegetation barriers
	<b>BEST</b> Explore options to reduce locomotive idling, such as shore connection systems, yard air plants, or transloading
<b>Facility Engineering</b> Industrial Clients	<b>GOOD</b> Meet PEL limits for airborne contaminants (as defined by the agency having jurisdiction)
	<b>BETTER</b> Design to be below contaminant action limits
	<b>BEST</b> Apply higher standards in occupied spaces (LEED, WELL)
<b>Architecture</b>	<b>GOOD</b> Obtain an indoor air quality test, assessing CO <sub>2</sub> , TVOC, and PM <sub>2.5</sub>
	<b>BETTER</b> Pursue LEEDv5 IAQ credits
	<b>BEST</b> Pursue WELL or RESET certification
<b>Aviation</b>	*Operational air quality impacts are difficult to influence through engineering/design. See jobsite construction practices.

CASE STUDY

Battery Electric Locomotive Study

It is rare that the air quality benefits of electrification projects are directly studied, but that is what BNSF Railway was able to do with a grant from the San Joaquin Valley Air Pollution Control District (SJVAPCD) through the California Air Resources Board (CARB).

In 2021, BNSF tested a battery electric locomotive (BEL) hybrid, made up of two diesel locomotives and a single battery electric locomotive. TKDA engineered the wayside charging equipment for the BEL and assisted with a safety review of the charging equipment. The train was used and monitored on 17 round trips along a route between Barstow, CA and Stockton, CA — around 375 miles in each direction.

Compared to a virtual model of an entirely diesel train, the BEL reduced air pollutants and emissions by the following amounts on average:

- Particulate Matter (PM): 3%
- Oxides of Nitrogen (NOx): 8%
- Total Hydrocarbons (THC): 3%
- Carbon Monoxide (CO): 3%

The BEL also reduced carbon emissions by 12% and saved 63,400 gallons of fuel.

According to an analysis using EPA's COBRA model, air pollution from the rail industry is responsible for health-related costs of \$36-\$48 billion annually. These harms are particularly acute in communities near rail yards. Although the BEL did not eliminate problematic pollutants, it proved to have a positive impact and advanced the railway's understanding of how to incorporate battery charging into its operations.

**9. Update TKDA's Basis of Design to allow for documentation of client discussions about potential risks and vulnerabilities, including site challenges, operational needs, projected future weather conditions, and resilient design. [25% complete]**

This goal identified the need to more formally document project constraints and clients' goals, particularly around resilience. As we further defined what was needed with a group of subject matter experts, we found that project managers also need more resources on how to have these conversations with clients.

Our work on this goal to date has been centered on what happens before a Basis of Design is even developed. Clients express sustainability and resilience goals as early as the project proposal phase and those need to be documented and tracked to align the team, as well as to inform a realistic scope and budget. We have now developed a project definition template for new construction projects to prompt a more structured conversation with clients and to more consistently document the results.

We have planned for a more concerted focus on this goal in 2026. Over the next year, we will be building an information pathway that ties together the project definition template with our basis of design resources and our quality control procedures.



## MESSAGE FROM OUR SUSTAINABILITY MARKET MANAGER

### Finding firm footing

In many ways, developing a cohesive sustainability plan for TKDA has meant charting our own path. ESG reporting frameworks are targeted to larger, public firms. Few resources exist to track impacts across disparate project types, especially in hard-to-abate industries like rail, aviation, mining, and energy. Finally, industry benchmarking and commitment programs tend to focus on new construction, when the bulk of our portfolio is upgrading existing infrastructure and system replacements.

Understanding where we stand and how we can improve is a challenge. And yet, the projects we do are so foundational to a sustainable future. Civil infrastructure that provides transportation mobility, clean water, and energy is the backbone of every community. Government and higher education buildings model for society the future we aspire to create. Manufacturing and industry are many people's livelihoods, have large environmental impacts, and cannot be ignored just because finding solutions is not easy.

Luckily, we have found our footing in executing our plan and are discovering bright spots to further incorporate as our program evolves. Envision, the sustainability rating system for infrastructure projects, has been a useful tool for some of our clients and has helped deepen our expertise. Our emerging technologies market has taken off, developing the infrastructure to electrify fleets and specialized equipment. Our staff is engaged and is generating ideas about improving our corporate operations.

This document is our first progress report on our first sustainability plan. We are new to this journey, as our plan acknowledges, and yet, we are building on an excellent foundation of innovative practice, good governance, and a deep culture of care at TKDA.

I am proud of the progress we have made so far in the two short years of executing this plan and look forward to experiencing the momentum-building and acceleration that is sure to come.

Sincerely,

Candace Pearson  
Sustainability Market Manager  
TKDA

*Hall Park, Minneapolis*



## APPENDIX A: EUI TRACKING FROM PROJECTS WITH WHOLE-BUILDING ENERGY MODELING

For this reporting period, we had three projects that included whole-building energy modeling in the design scope. Project A is a commercial kitchen for a university campus, which is why it is an outlier in terms of energy intensity. Project B is a vehicle garage, and Project C is a service center with mixed uses, including office space, warehouse space, and a test lab.

All three projects reduced energy use intensity (EUI) from the applicable benchmark (See Figure 9). Strategies across these projects included demand control ventilation, chiller heat recovery, employing air source heat pumps, and highly insulated building envelopes. Our average EUI reduction across all three projects was 38%.

Figure 9. Energy Modeling Results

	Benchmark (kBtu/ft <sup>2</sup> /year)	Benchmark Source	Design (kBtu/ft <sup>2</sup> /year)	Percent Reduction
Project A	879	Custom model modifying B3 web tool	772	12%
Project B	80	CBECs Survey Year 2012	48	40%
Project C	100	ASHRAE 2019 ECB baseline	38	62%

For context, we compared our results to the AIA 2030 Commitment. This program asks firms to report predicted design data from all active projects in order to track progress towards net zero carbon emissions by 2030. While TKDA is not currently a signatory of the 2030 Commitment, we recognize the imperative of the carbon reduction goals set by the program. These same goals are adopted into Minnesota’s Sustainable Building 2030 energy efficiency standards, which often applies to our public projects.

Our EUI reductions fall short of the 2030 Commitment reduction targets. For 2024, the reduction target was 80%, and it increased to 90% for 2025 (from 2003 CBECs baselines). However, in 2024, the average EUI reduction from all 2030 Commitment participants was 56%, according to the AIA 2030 By the Numbers Report, which is closer to our average.

It could be argued that the project types in our portfolio make it difficult to drastically reduce energy use. Most projects have high energy needs and are located in a northern climate with high heating demands. Even with these constraints, we will continue to investigate ways to further improve. In this first year of tracking, we also struggled to find a consistent system for benchmarking because of the unique project types. We hope to develop a more robust system moving forward so that the reduction percentages are more comparable and more aligned with 2030 reporting.

Commercial Kitchen, University Campus (Project A)



Lilac Hill Student Housing, Carleton College

## APPENDIX B: STORMWATER TRACKING

### Green Spaces: Infiltration, Filtration, and Native Plantings

Parks and green spaces are key assets for stormwater infiltration and filtration. When designing upgrades to these places, TKDA seeks opportunities to preserve and enhance these functions. Maximizing stormwater infiltration offers multiple benefits, including improving water quality by filtering out pollutants before they reach water bodies, recharging groundwater, mitigating floods by reducing the volume and speed of runoff, and reducing the costs of conventional stormwater infrastructure. If the practice utilizes vegetation — particularly native plantings — then additional benefits include cleaner air, carbon sequestration, improved biological habitat, and often a new space for the community to gather.

In 2025, TKDA collected stormwater performance metrics from our parks and campus projects to better understand our firm’s impact and capture lessons learned (See Figure 10).

Figure 10. Stormwater Tracking Results

	Cleveland Park	Glen Gale Park	Farwell Park	Farview Park	Hall Park	Three Oaks Drive	Lilac Hill Student Housing
Project area (acre)	2.4	1.2	0.7	3.3	1.2	3.4	2.7
Impervious area changes (acre)	0.2 Increase	0.1 Increase	0.1 Decrease	0.2 Increase	0.1 Increase	0.1 Decrease	0.7 Increase
Volume of water treated (cubic feet)	2,200 Filtration	2,400 Filtration	300 Filtration	400 Infiltration	1,200 Infiltration	2,000 Infiltration 7,500 Filtration	7,000 Infiltration
Native vegetation area (acre)	0.3	0.1	0.1	0.3	0.1	0.4	0.5

### PROJECT HIGHLIGHTS

Our team excels at incorporating nature-based stormwater management into multi-use spaces with high space demands. Working with Minneapolis Parks, we successfully designed natural planting areas into relatively small playground areas at Cleveland Park, Glen Gale Park, and Farwell Park. At Farview Park, we added a significantly sized stormwater swale into the concept design that will infiltrate stormwater and contribute to the natural landscape of the park. Hall Park features a tree buffer with a berm and adds an orchard for community use. In these spaces where the focus is often on upgraded playground equipment and other community

amenities, it can be difficult to reserve space for green infrastructure projects, but TKDA finds creative ways to integrate them in a way that aesthetically elevates the whole project.

Our university projects also require creativity on constrained sites. This year, TKDA developed a design for improvements to Three Oaks Drive and the Recreation Center at Carleton College. A total of five stormwater treatment basins will be added utilizing infiltration, filtration, and wet sedimentation. We also designed the Lilac Hill Student Housing project, which includes seven infiltration basins in a treatment train that is integrated with trails meandering through the basins.

Three Oaks Drive, Carleton College



### Alleviating flooding: Conveyance, Detention, and Erosion Control

Urban flooding creates runoff and leads to overloaded sewer systems, which ultimately degrades water quality. Flooding can also present a human safety risk by causing vehicular accidents or inundating homes and businesses. TKDA designs and engineers systems that alleviate flooding — particularly around transportation infrastructure, which helps to ensure public safety, and on industrial sites where there is a higher risk of runoff pollution.

In 2025, TKDA collected key performance metrics for several past flood management projects in order to better understand our contribution to flood resilience (See Figure 11).

Figure 11. Flood Management Project Results

	Flood Area 63	Eustis Street	Coon Rapids
Runoff volume detained (acre-feet)	N/A	0.34	N/A
Conveyance capacity change	84 CFS increase (100-year)	N/A	N/A
Flood control result	10-year flood mitigated	10-year flood mitigated	100-year flood mitigated

#### PROJECT HIGHLIGHTS

Our projects clearly demonstrate the tough reality now faced by many cities. The expansion of impermeable surfaces and more extreme precipitation events has made flood mitigation even more difficult. Upsizing stormwater pipes and increasing conveyance is a common solution but comes with the trade-off of increasing volume and velocity of stormwater discharge into stressed waterbodies.

For some projects, added conveyance is the only feasible solution. In 2019, TKDA was commissioned to conduct a flood mitigation

analysis for “Area 63,” a section of Minneapolis bound by West 28th Street, Hennepin Avenue, West 31st Street, and East Lake Calhoun Parkway. The City wanted to investigate storm sewer upgrades to provide capacity for the 10-year design event with no surcharging of storm sewer and to minimize inundation in the 100-year event so that water would not reach primary structures. TKDA considered 12 design alternatives to meet those goals and included some options aimed at minimizing flow rate increases to the lagoon, such as regrading, constructing open overflow channels, or incorporating underground storage. Ultimately, adding a new trunk storm sewer and a new outfall to the lagoon was the only solution that came close to providing enough flood mitigation.

On other projects, we can mitigate flooding while also finding creative ways to provide rate control. In 2025, our TKDA team was engaged to address flooding along Eustis Street for Ramsey County. This project had significant constraints for managing stormwater onsite. A surface infiltration basin, filtration basin, or wet pond were not feasible options for treatment due to a limited right-of-way, steep slopes, and clay soils. Instead, two underground reinforced concrete StormTrap systems are proposed to detain the water and provide filtration through sand media, which will enhance water quality. This design is expected to fully mitigate the 10-year flood condition and actually reduces impervious surface coverage by 0.11 acres.

TKDA also finds ways to pair flood mitigation with restoration. At Coon Rapids Dam Regional Park, flooding and riverbank erosion prompted the closing of a well-used pedestrian bridge in the park and damaged trails. The Park is situated along the Mississippi River and has multiple stream and creek outfalls. By staging trail improvements in multiple phases, we were able to restore the cross-section of Coon Creek, replace culverts with a CONSPAN bridge, and stabilize the banks of both Coon Creek and the Mississippi River. The new bridge will be a steel structure and will be built at a higher elevation for improved flood resiliency. Instead of simply replacing the bridge, this project considered the underlying causes and mitigated the continued risk of erosion and flooding.



Trenchless Pipe Rehabilitation, Minneapolis

## APPENDIX C: WASTEWATER AND POTABLE WATER TRACKING

### Lead Pipe Replacement: Equitable Access to Safe Water

The intent of lead pipe inventory and replacement projects is to identify and eliminate a major public health risk by identifying and removing aging lead service lines from drinking water systems. These efforts aim to ensure safe, clean water delivery to all residents, especially in historically underserved communities. By proactively addressing lead contamination, utilities protect human health and comply with evolving regulatory standards.

Project phases include identifying service line materials, flagging the service lines that are lead or galvanized, and replacing the lines. Sometimes thousands of residences require review per public water supply.

In 2024 and 2025, TKDA identified and supported the replacement of more than 2,000 lead and galvanized service lines.

#### STEWARDSHIP

Replacing lead service lines is a critical public health initiative. By conducting thorough inventories and removing aging lead infrastructure, residents have safer drinking water

and reduced exposure risks. Communities benefit from increased trust in water quality at the tap and reduced healthcare burdens associated with lead exposure. Beyond health, lead pipe replacement contributes to long-term infrastructure resilience. It reduces emergency repair costs and supports equitable access to clean water.

#### PROJECT HIGHLIGHTS

Lead Service Line inventory and replacement – Stillwater, MN – 2024 to 2025

- Inventoried and replaced lead and galvanized service lines. A large portion of the project was conducted concurrently with street reconstruction to reduce the impact on the households and broader community.

Lead Service Line inventory support – Golden Valley, White Bear Township, Farmington – 2025

- Conducted outreach and coordination directly with the residents to identify lead and galvanized service lines for several communities
- Identified more than 2,000 homes that had non-lead service lines. Slated all lead or galvanized requiring replacement for future project stages.

## Recycling Backwash Water: Circular Water Use

The intent of potable backwash recycling projects is to conserve water resources by capturing and reusing water from treatment processes that would otherwise be wasted. These projects promote circular water use, reduce demand on clean water supplies, and support sustainable utility operations. They also help utilities meet regulatory and environmental performance goals.

Projects that TKDA has supported have included a full range of alternatives, from integrating into existing facilities and footprints to new-build storage options.

### STEWARDSHIP

Recycling backwash water from potable treatment processes reduces clean water demand and supports water reuse. This involves capturing, treating, and reusing water that would otherwise be discharged, often for non-potable applications or reintegration into the treatment process.

This practice conserves water resources, lowers energy use, and reduces discharge volumes. It supports drought resilience and aligns with sustainable water management goals. Communities benefit from reduced utility operating costs and enhanced environmental performance.

### PROJECT HIGHLIGHT

Wausau, WI – 2024 to 2026

- Designed a potable water treatment system for an existing industrial facility to reduce exposure to PFAs and include treatment for iron and manganese.
- Designed a backwash storage and recycling system to hold water from both GAC and greensand backwash water, allowing the site to avoid installing a costly connection to a sanitary sewer or trucking wastewater offsite.

## Odor Management: Mitigating Nuisance Odors for Communities

Odor management projects aim to identify and control nuisance odors from wastewater treatment and conveyance systems. The intent is to improve air quality, reduce community complaints, and enhance the overall livability of areas near infrastructure facilities. These efforts reflect a commitment to environmental justice and operational excellence.

Projects that TKDA has supported in terms of nuisance odor reduction cover a large range of solutions, from improved equipment to improving operational procedures onsite and updating HVAC for existing infrastructure.

### STEWARDSHIP

Odor control is essential for maintaining community relations and environmental quality near wastewater facilities and conveyance infrastructure. Assessments identify sources of odor — often hydrogen sulfide — and mitigation strategies include improved ventilation, efficient operating practices, and better infrastructure like chemical dosing systems or moisture removal. With odor control projects comes a reduction of hydrogen sulfide vapors in most cases, which is a significant cause for corrosion in municipal wastewater infrastructure. Removing H<sub>2</sub>S from the system prolongs the life of these assets.

Effective odor management improves air quality, reduces complaints, and enhances the livability of surrounding neighborhoods. It also supports worker safety and regulatory compliance. These efforts demonstrate a commitment to community well-being and environmental stewardship.

This work directly improves air quality, leadership and stakeholder engagement, and pollutant emissions through proactive environmental controls.

## PROJECT HIGHLIGHTS

Rosemount Lift Station Odor Mitigation – 2025

- TKDA partnered with organizations and updated operational practices for the lift stations in this area, reducing odors by streamlining operations. Proposed solutions did not increase operational requirements or complexity.

Minneapolis Vapor-Phase Carbon and Polishing Media – 2025

- The odor control system at this facility was experiencing carbon breakthrough, resulting in excess odors in the area. TKDA developed a plan to troubleshoot and improve operation, reducing O&M costs and improving system efficacy.

Minneapolis Metering Station Odor Issues – 2025

- TKDA designed a new HVAC system for metering stations with excess odors. These systems improved well-being for personnel and improved operational safety.

Shakopee Odor Control Facility – 2025

- The surrounding areas upstream of the interceptor siphon were experiencing odor issues. TKDA worked with a subconsultant, Hazen and Sawyer, to design an odor control system consisting of a solar-powered biofilter and two ancillary buildings

*Odor Management Testing*





Lake Street Siphon Inspection

### Siphon Inspections: Preventing Waste Accumulation

Siphon and force main inspection projects are intended to maintain the reliability and safety of critical wastewater infrastructure located in challenging environments, such as beneath rivers or highways. The purpose is to detect early signs of deterioration or blockage, enabling timely maintenance, and preventing costly failures or environmental contamination. These inspections are a cornerstone of proactive infrastructure stewardship.

#### STEWARDSHIP INTENT

Siphons are critical components in wastewater systems, often located under rivers or highways. Regular inspections help identify blockages, corrosion, or structural issues before they become failures. TKDA helps our clients plan and evaluate inspections considering the variety of advanced technologies like sonar, robotic crawlers, or multi-sensor instruments that are used in the market to enhance inspection accuracy and safety.

Proactive siphon inspections reduce the risk of environmental contamination and emergency repairs. They also improve hydraulic performance and system reliability, ensuring uninterrupted service to communities. This contributes to long-term operational sustainability and cost savings.

#### PROJECT HIGHLIGHTS

Lake Street and St Paul Siphon Inspections – 2023 to 2024

- Supported planning, inspection, and condition assessment for siphon. Navigated project with aged infrastructure to effectively plan for improvement.

### Trenchless Pipe Rehabilitation: Avoiding Disruption and Disturbance

Existing underground pipelines and manholes found in sanitary sewer collection and water distribution systems are typically monitored regularly through condition assessments. When the assets are found to be in poor condition, planning and subsequent updates must take place to keep our infrastructure up and running.

Trenchless rehabilitation projects, including cured-in-place pipe (CIPP) methods, are designed to extend the life of underground infrastructure with minimal surface disruption. The goal is to restore structural integrity and flow capacity of aging pipelines while reducing environmental impact, construction time, and community inconvenience. These methods support efficient asset management and sustainable urban development.

#### STEWARDSHIP

Trenchless technologies like cured-in-place pipe (CIPP) offer a minimally invasive way to rehabilitate aging pipelines. These methods reduce surface disruption, traffic impacts, and excavation waste while extending the life of existing infrastructure. CIPP also allows for faster project delivery and lower labor costs.

Horizontal Directional Drilling (HDD) and microtunneling are other trenchless methods used in rehabilitation. HDD, for example, can be used to construct force main replacement projects.

Environmentally, trenchless rehab significantly reduces carbon emissions, noise pollution, and land disturbance. It preserves urban tree canopies, minimizes community disruption, and supports sustainable urban development. These benefits make it a preferred method in dense or sensitive areas.

This approach protects ecosystems, supports efficient material use, improves quality of life by minimizing construction impacts, and reduces impacts on the climate through reduced emissions.

#### PROJECT HIGHLIGHTS

Forest Lake Interceptor Rehabilitation – Design 2024 to 2025 (Construction 2026 to 2028)

- Planning and design to rehabilitate a 36" and 42" sewer interceptor in poor condition. Minimized impacts to the surrounding area, including a public golf course, multiple wetlands, residential and agricultural properties while improving sewer capacity and providing continued reliable access to sanitary sewer as the suburban community develops and expands.

Minneapolis and Fridley Interceptor Rehab – 2025 to 2026

- Supported planning and design phases for multiple interceptors requiring rehabilitation. Minimized impact on surrounding communities while improving existing infrastructure.

CIPP Lining, Minneapolis





Chicago

Duluth

Milwaukee

Minneapolis/Saint Paul

San Bernardino

Seattle

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