CITY OF MCKINNEY

SUSTAINABILITY ROADMAP

2025-2030

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EXECUTIVE SUMMARY

Creating a **Sustainability Roadmap** is a critical step in identifying the actions necessary to safeguard resources and ensure a prosperous future as McKinney continues to grow. At the heart of this Roadmap is **behavior change**, which underpins all other sustainability efforts. To protect human health and the environment, we must collectively reduce waste, conserve energy, and use resources more efficiently.

The bulk of the Roadmap is broken down into four key areas:

- Materials Management program improvements in solid waste & recycling help save space in the landfill and money in the long term. Improvements to the code and outreach help the city be compliant with state law and in sync with our city council's adopted Solid Waste Management Strategy.

- Water Conservation efforts help reduce water consumption as well as non-revenue water that is lost to leaks and infrastructure needs before it reaches McKinney's residents and businesses. McKinney's Department of Public Works has made remarkable strides in decreasing non-revenue water loss from 28% down to single digits. Protecting limited freshwater helps make this vital resource available for countless needs.

- Stormwater Management helps protect human health, infrastructure, ecosystems and natural landscapes. These efforts decrease pollutants from entering bodies of water and help ensure rainwater is directed to areas where it can replenish the groundwater supply.

- Air Quality efforts give us the very air we breathe. McKinney is in a nonattainment region, which means the air has higher levels than recommended of particulate matter and ozone. We must clean up emissions to reach health-based limits for pollution.

Each key area is broken down into the following sections:

- Goals, Why, Targets & Action Items: Specific, measurable steps to advance sustainability.
- Guiding Documents: Relevant laws and plans that help the city achieve its objectives.
- Needed Resources: Staff time and additional resources required to meet targets.
- Partnerships: Associations and organizations that strengthen McKinney's programs.
- Grant Opportunities: Potential funding sources to support initiatives.

Community Input also played a key role in shaping the Roadmap. Insights from the **2025 Citizen Survey** helped ensure the city's actions reflect residents' priorities. Survey results highlighted growing concerns about mobility, with nearly 40% of respondents rating traffic flow and bicycle access below expectations. Residents also emphasized quality-of-life priorities, particularly the creation and preservation of open spaces and natural lands, with 93% rating these as high or medium priorities. These findings directly informed the Roadmap's goals, ensuring the city addresses the issues that matter most to the community.

GUIDING PRINCPLES

Guiding principles establish the values that shape the Roadmap, ensuring actions balance resource efficiency, public health, and quality of life while conserving McKinney's natural assets. The selected guiding principles promote informed, data-driven decisions and encourage residents and businesses to adopt sustainable practices through education, incentives, and partnerships. Designed to be adaptive and forward-looking, the Roadmap evolves with new data, technology, and community input to ensure a resilient and thriving future for McKinney.

- ❖ **Resource Efficiency & Fiscal Responsibility**
  Initiatives emphasize efficient use of resources, cost savings, and the pursuit of partnerships and grants to limit reliance on taxpayer dollars.

- ❖ **Enhancing Quality of Life**
  Sustainability efforts strengthen McKinney's reputation as a safe, vibrant, and family-friendly community.

❖ **Conserving McKinney's Natural Assets**

Efforts protect and preserve the land, water, and air that make McKinney a desirable place to live and raise a family.

❖ **Protecting Public Health**

Strategies aim to improve air and water quality, reduce hazards, and promote healthier living conditions for all residents.

❖ **Encourage Informed Choices**

Programs are designed to provide tools, education, and incentives so residents and businesses can voluntarily adopt cost-saving, resource-smart practices that benefit both residents and the city.

❖ **Holistic & Data-Driven**

Decisions are grounded in reliable data and consider impacts at the resident, neighborhood, and city-wide level.

❖ **Adaptive & Forward-Looking**

The Roadmap will evolve with new data, technology, and community input to ensure continued success over time.

BEHAVIOR CHANGE

Creating sustainable behavior change involves a multifaceted approach that addresses individual resident, neighborhood, and systemic city-wide needs.

OUTREACH CAMPAIGNS

Use media, social and web-based platforms, and community events to raise awareness about sustainability issues and practices. Promote sustainable behavior as the norm through social influence and making preferred choices visible.

EDUCATIONAL PROGRAMS

Create lesson plans and programs for schools, workplaces, and community centers to teach environmental best practices. Generate online learning modules to reach more residents.

AWARDS & RECOGNITION

Integrate sustainability awards into existing recognition programs for individual residents, staff, community groups, departments, and businesses that lead the way in sustainability practices. Consider offering rebates or discounts for needed behaviors.

SUPPORTIVE INFRASTRUCTURE

Develop infrastructure that makes sustainable choices easier, such as ensuring recycling bins are available in all public buildings next to trash cans, sustainable default settings, adding bike lanes, and expanding public transit systems. Support innovative solutions and technologies that contribute to sustainability, such as AI on collection vehicles to track recycling contamination. Ensure that sustainable options are accessible to all community members, including those with limited resources.

REGULATORY TOOLS BASED ON LOCAL NEED

Update code of ordinances and internal policies that promote sustainability, such C&D recycling and multi-family and business recycling, energy efficiency standards, and green building codes. Advocate for and support legislation that incentivizes or requires sustainable practices at the municipal, state, and national levels.

COMMUNITY ENGAGEMENT

Involve residents in the planning and decision-making process to ensure sustainability initiatives meet community needs and preferences. Partner with businesses and organizations to leverage resources and expertise in promoting sustainability. Encourage local groups and organizations to spearhead sustainability projects, such as organizing litter cleanups and community gardens.

MEASURING SUCCESS

Regularly monitor and report on progress towards sustainability goals to keep all stakeholders informed and motivated. Offer feedback to individuals and organizations on their sustainability practices and areas for improvement. Launch pilot projects that showcase the benefits of sustainable practices, serve as models for broader adoption, and create baseline data. Adjust strategies and approaches based on feedback and evolving needs.

By integrating these strategies, McKinney can foster long-term, sustainable behavior change among residents, businesses, and institutions.

♲ MATERIALS MANAGEMENT

GOAL 1	Increase recycling participation & diversion
WHY	These programs create jobs and reduce landfill use
TARGET	Reduce per capita waste generation and increase recycling & diversion programs

ACTION ITEMS:

- **Update city code** to sync with the council-approved Solid Waste Management Strategy
- **Conduct Commercial and Multi-Family Recycling Study-** to evaluate specific recycling and diversion potential.
- **Ensure all city facilities have recycling bins and service** – to be compliant with state law requiring public buildings to have recycling access.

GOAL 2	Decrease recycling contamination to 10%
WHY	Contaminated recycling increases costs, as materials must be hauled to the landfill for disposal
TARGET	Lower contamination from 41–49% to 20–25%

ACTION ITEMS:

- **Utilize AI technology on collection vehicles** – to identify common contaminates and tailor community outreach based on need.
- **Quarterly communications** – via social media, newsletters, events, and all available channels targeting major contaminates.
- **Identify recycling dumpsters** – with clear language in English and Spanish to help users identify the correct container for their needs.

GUIDING DOCUMENTS

- Comprehensive Municipal Solid Waste Management, Resource Recovery, and Conservation Act (Texas)

- Government Entity Recycling & Purchasing of Recycled Materials Rule (Texas)
  - Preference for recycled, remanufactured, or environmentally sensitive products
  - Purchase and use of paper containing recycled fibers
  - Purchase of recycled motor oil for fleet vehicles
- Solid Waste Management Strategy (City Council Adopted)
  - 71% of community members surveyed said McKinney should strive to be leading and serve as a role model community compared to similar Texas cities.
    - Comparing McKinney to sister cities 25% thought we were performing relatively well with solid waste management, but with some room for improvement and 63% thought we were doing okay with plenty of room for improvement.
- Texas Health and Safety Code
  - Ensure all city buildings have recycling access and all staff are trained
- Waste Management & Recycling Goals (Texas)
  - 40% recycling rate, 15% contamination rate

NEEDED RESOURCES

- Staff support to monitor participation once the code is modified.

PARTNERSHIPS

- KTB – Keep Texas Beautiful
- NCTCOG RCC - Resource Conservation Council
- NCTCOG RR - Recycle Roundtable
- STAR - State of Texas Alliance for Recycling
- SWANA – Solid Waste Association of North America
- TRP - The Recycling Partnership
- TxSWANA – Texas State Chapter of SWANA
- U.S. Pact – U.S. Plastics Pact

GRANT OPPORTUNITIES

- KTB – Our Texas Our Future – waste reduction, recycling
- KTB – Texas Recycles Day – recycling education, bin, communications
- NCTCOG RCC – myriad of possible grant opportunities
- TRP – multi-family, drop-off recycling program, and recycling facility grants

💧 WATER CONSERVATION

GOAL 1	Increase public awareness of the need to conserve water
WHY	North Texas faces water scarcity due to a growing population and limited local water supplies
TARGET	Reduce per-resident water use from 96 to 90 gallons per day (GPCD)

ACTION ITEMS:

- **Promote free irrigation checkup program-** in partnership with NTMWD
- **Evaluate rebates for water conservation –** Under current tiered rate structure, rates increase as consumption increases. Explore incentives for water-saving technologies and choices such as rain barrels, native lawns, and grey water usage.
- **Promote WaterMyYard program and smart use of irrigation systems** - which prevent wasted water and apply the least amount of water required to maintain healthy individual plant material or turf, reduce dust, and control erosion. Lead by example and plant native and adaptive plants at city parks and city-maintained land.
- **Promote use of MyWaterAdvisor and other tools** - to have on demand information available to residents on leaks, landscaping, and other water conservation topics.

GOAL 2	Reduce non-revenue water by 1% a year. Once 4% is reached, maintain
WHY	Water lost before it reaches the meter represents a financial loss for the city
TARGET	Currently at 8.4%, reduce by 1% annually until 4% is reached, and then maintain it

ACTION ITEMS:

- **Define metrics for asset growth** – refine tracking for how long issues are sitting before repairs are made. Track investments made in new assets, upgrades, or replacements. Calculate the significance of each pipe to help prioritize repairs.

- **Advanced flushing routes** – evaluate auto-flushers and other sophisticated systems to better manage flow and improve system performance.
- **Prioritize leaks** – Prioritize leaks above other repairs such as fire hydrants, angle stocks, and meter replacements to help reduce non-revenue water.
- **Design and upgrade pipe networks** – replace copper pipes and outdated manes and infrastructure to reduce pressure and flow conditions that contribute to leakage.

- **Enhance data monitoring and performance** – check water residuals in every zone daily. Ensure dead end flushing reaches 500 and BacT inspections 150 each month.

GUIDING DOCUMENTS

- Landscape Water Management Plan (City)
- North Texas Municipal Water District Conservation Plan (NTMWD)
- Water Conservation Plan (City)
- Water Development Board's Regional Goals (Texas)
- Water Resource and Emergency Management Plan (City)

NEEDED RESOURCES

- Additional service line replacement staff to help expedite repairs
- Supplies to replace copper pipes and update infrastructure
- Technology to enhance leak detection

PARTNERSHIPS

- AWWA – American Water Works Association
- NCTCOG – Water Resources Council
- NTMWD – North Texas Municipal Water District
- WENNT – Water Education Network of North Texas

GRANT OPPORTUNITIES

- KTB – Our Texas Our Future – water conservation
- NCTCOG RCC – myriad of possible grant opportunities

🌧 STORMWATER MANAGEMENT

GOAL 1	Increase stormwater tracking and operations
WHY	To better manage flooding risks, protect water quality, and control infrastructure costs
TARGET	Conduct tests quarterly instead of annually, mark 75% of stormwater drains (up from 55%), and expand catchment systems from 1 to 10

ACTION ITEMS:

- **Expand monthly stormwater testing** to include testing for pH, chlorine, ammonia, conductivity, E. coli, heavy metals, herbicides, and pesticides.
- **Mark 75% of storm sewer inlets** – roughly 55% of inlets are presently marked with a requirement that new construction on public roads add markers as part of the plan. Work is needed to mark existing inlets.
- **Increase catchment systems** to collect more floatables in McKinney's waterways. Ensure staff have sufficient scrappers, nets, and time to periodically remove floatables.

GOAL 2	Increase stormwater outreach and resident participation
WHY	Community volunteer efforts save costs and provide valuable hands-on learning opportunities
TARGET	Expand community cleanup events from 14 to 30 and establish baseline data for grow zones

ACTION ITEMS:

- **Create adopt-a-spot map** to help businesses and community groups easily identify available areas to adopt. Indicate difficulty level and level of need on the map.
- **Advertise free litter cleanup supply check-out** to support neighborhood associations, local businesses, schools, and other groups with litter cleanup needs.

- **Have quarterly outreach campaigns** on the most common contamination: 1) pet waste, 2) sanitary sewer overflows, 3) lawn clippings going, and 4) pools being drained into the street instead of drain to clean close to house.
- **Increase Monarch Initiative Commitment** to ensure milkweed planted is being preserved and investigate the creation of more no-mow zones and creek sides, and wild-scaped lots to help filter water and protect pollinators.
- **Participate in the <u>Community Cleanup Challenge</u>** and strengthen presence with local, regional, and national campaigns and organizations.

GUIDING DOCUMENTS

- <u>Goal to Eliminate Sanitary Sewer Overflows – FOG Related Outflows and/or Overflows</u> (EPA)
- <u>Greenhouse Gas Emissions from Electric and Plug-In Hybrid Vehicles</u> (EPA)
- <u>National Pollutant Discharge Elimination System (NPDES)</u> (EPA)
- Stormwater Management Plan (MCM-1)
- <u>Stormwater Pollution Prevention Plan</u> (MS4 Permit)

NEEDED RESOURCES

- Additional testing materials, kits
- Storm sewer inlet markers

PARTNERSHIPS

- KAB - <u>Keep America Beautiful</u>
- KTB - <u>Keep Texas Beautiful</u>
- NCTCOG - <u>Bacteria Total Maximum Daily Load Program</u>
- NCTCOG – <u>Illicit Discharge Detection and Elimination</u>
- NCTCOG – <u>P2 Pollution Prevention</u>
- NCTCOG – <u>Public Education Task Force</u>
- NCTCOG – <u>Regional Stormwater Management Coordinating Council</u>
- NCTCOG – <u>Wastewater and Treatment Education Roundtable</u>

GRANT OPPORTUNITIES

- <u>KTB – Our Texas Our Future</u> – wildlife protection and habitat restoration, beautification, litter prevention

☀️ AIR QUALITY

GOAL 1	Green the City's fleet and support sustainable transportation
WHY	Reduces air pollution and protects public health
TARGET	Increase EV charging stations from 23 to 33 and create baseline data on City fleet emissions

ACTION ITEMS:

1. **Create a plan and timeline to reduce emissions from the City's fleet** - Prioritize strategies that reduce vehicle use and fuel consumption before vehicle replacement. Emphasize reducing unnecessary vehicles and miles traveled through operational efficiency measures, such as route optimization, anti-idling practices, and improved vehicle maintenance. Focus initially on light-duty, low-mileage vehicles for electrification where appropriate. Use the <u>Department of Energy's greenhouse gas calculator.</u> Revisit the Clean Fleet Vehicle Policy.

- **Install electric vehicle charging stations** - add stations available for public charging to EV charging maps.
- **Create Air Quality webpage and campaign** – providing air quality information, including ozone monitoring and air quality and protection measures to the public. Promote carpooling and sustainable transportation.
- **Validate vehicle usage to see if a city-wide motorpool is beneficial**, sharing vehicles within departments to optimize the fleet.

GOAL 2	Increase the City's energy efficiency to promote clean air
WHY	Energy-efficient buildings and a larger urban tree canopy reduce emissions, improve air quality, and lower city temperatures
TARGET	Establish baseline data for energy usage and increase the urban tree canopy from 15.6% to 25–30%

ACTION ITEMS:

- **Conduct a free preliminary energy assessment (PEA)** – PEA details recommendations for cost-effective resource efficiency measures that could be implemented to reduce utility consumption or utility costs.
- **Leverage regional partnerships to promote air quality** - Join Air North Texas, take advantage of existing ozone emissions reduction campaign resources.
- **Increase tree planting, tree giveaways, and garden participation** – under the direction of the City's Urban Forester, Office of Environmental Sustainability, and Stormwater teams.

GUIDING DOCUMENTS

- Clean Fleet Policy (City Council Adopted)
- Air North Texas Agreement (City Council Adopted)
- Government Purchasing Rules and Procedures (Texas)
  - Preference for vendors that meet or exceed air quality standards
- Leadership in Engineering and Environmental Design (U.S. Green Building Council)
- National Ambient Air Quality Standards (EPA)
- State Implementation Plan for Clean Air (Texas)

NEEDED RESOURCES

- Fleet Services' time to analyze city fleet idling and associated costs
- EV charging stations

PARTNERSHIPS

- CCMG - Collin County Master Gardeners
- MPF - McKinney Parks Foundation
- NCTCOG Air NTX - Air North Texas
- NCTCOG RISE - Regional Integration of Sustainability Efforts (RISE) Coalition
- TMN - Texas Master Naturalist Organization, Blackland Prairie Chapter

GRANT OPPORTUNITIES

- Texas A&M Forest Service- Community Forestry Grants offered, with over $1.2 million in grant funding for projects that enhance community forestry initiatives

- <u>NCTCOG - North Texas Electric Vehicle Infrastructure Call for Projects</u>- selects public sector properties on which to build electric vehicle (EV) charging stations
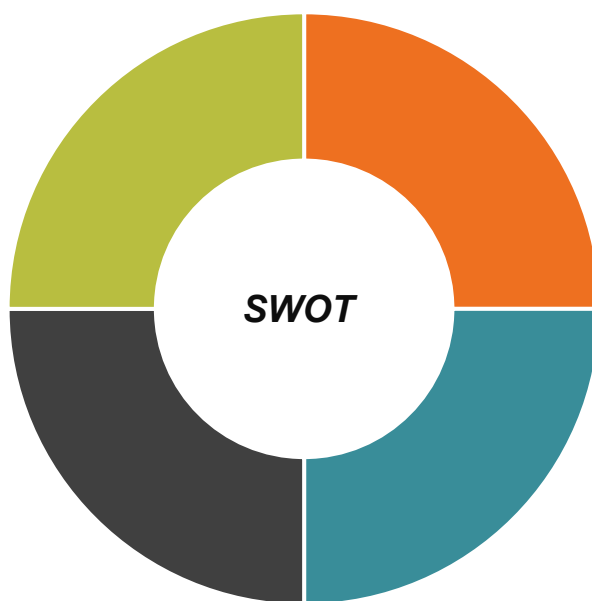
SWOT ANALYSIS

To guide the development of the sustainability roadmap, a SWOT analysis was conducted to assess four critical areas: Strengths, Weaknesses, Opportunities, and Threats. This analysis provides a clear overview of internal and external factors that could influence the roadmap's success. The completed SWOT analysis is presented below.

STRENGTHS
- Our people – well-educated residents, phenomenal city staff
- Renewable energy potential
- Economic growth
- Increasing community engagement and awareness

OPPORTUNITIES
- Public-private partnerships, grants and incentives
- Renewable energy expansion
- Green Building Standards
- Increased Education and Outreach

WEAKNESSES
- Funding constraints for sustainability projects
- Political resistance and polarization of sustainability issues
- Extreme weather conditions
- Infrastructure challenges

THREATS
- Strain on resources from extreme weather events
- Economic fluctuations and uncertain regulatory changes
- Resource scarcity
- Skepticism and misunderstandings

SWOT

By identifying these factors, the analysis highlights both the roadmap's strengths and areas that require attention. The roadmap includes measures to address weaknesses and mitigate potential threats, such as improving infrastructure, securing sustainable funding, and building community awareness and engagement. This approach ensures that the community can capitalize on opportunities while proactively managing risk