

Agenda

- 01 Introduction
- 02 Why Prepare a Climate Adaptation Plan
- 03 Community Engagement and Support
- 04 Planning Process
- 05 Plan Framework
- 06 Sector Highlights
- 07 Implementation Recommendations
- 08 Q+A



01 Firm Overview

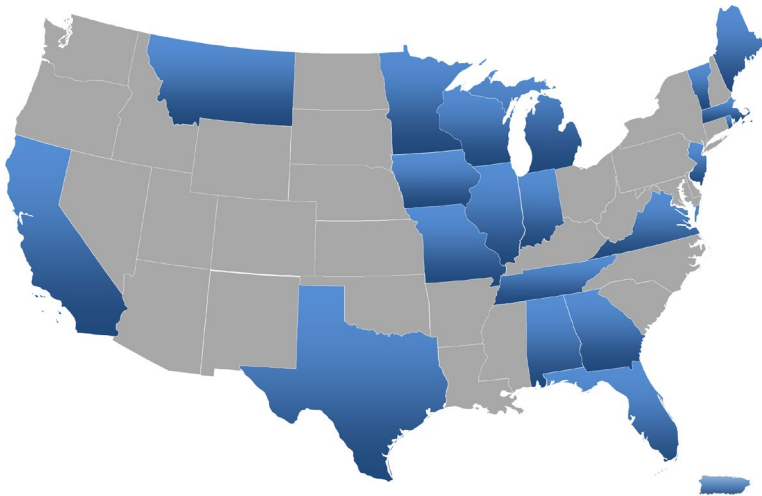
paleBLUEdot LLC

A Maplewood Firm

Our mission:

To hasten the transition to an authentically sustainable, no carbon economy and to elevate the public discourse.

50+ Projects in 21 states



Services:

climate planning

sustainability +
resilience

renewable
energy + net zero



Colleen

Educator
Community
Engagement
Consultant
Climate Planner



Ted

Architect
Urban Planner
Renewable Energy
Consultant
Climate Planner



02 Why Create a Climate Adaptation Plan

Looking Back

From 1950 through 2015,
Maplewood has experienced:

Increase in annual average temperature:	3.2°
Increase in annual precipitation:	21%
Increase in heavy precipitation events:	58%
Increase in Days above 95:	3 days
Decrease in Days below 32:	-10 days
Increase in growing season:	16 days

Storm Weather Events

Number of Events Reported In Ramsey County:

From March 1999 to March 2009: **99 events**

From March 2009 to March 2019: **101 events** - an increase of **2%**

Average Annual Storm Weather Economic Damage 1999-2019: **\$1,550,000**
(source: NOAA National Centers for Environmental Information)

02 Why Create a Climate Adaptation Plan

Looking Forward

By 2100, Maplewood Can Expect:

Increase in annual average temperature:

5-9°F

Increase in annual precipitation:

-5 to 5%
With Significant
Seasonal Variation

Increase in heavy precipitation events:

30%

Increase in Days above 95:

+55 days

Decrease in Days below 32:

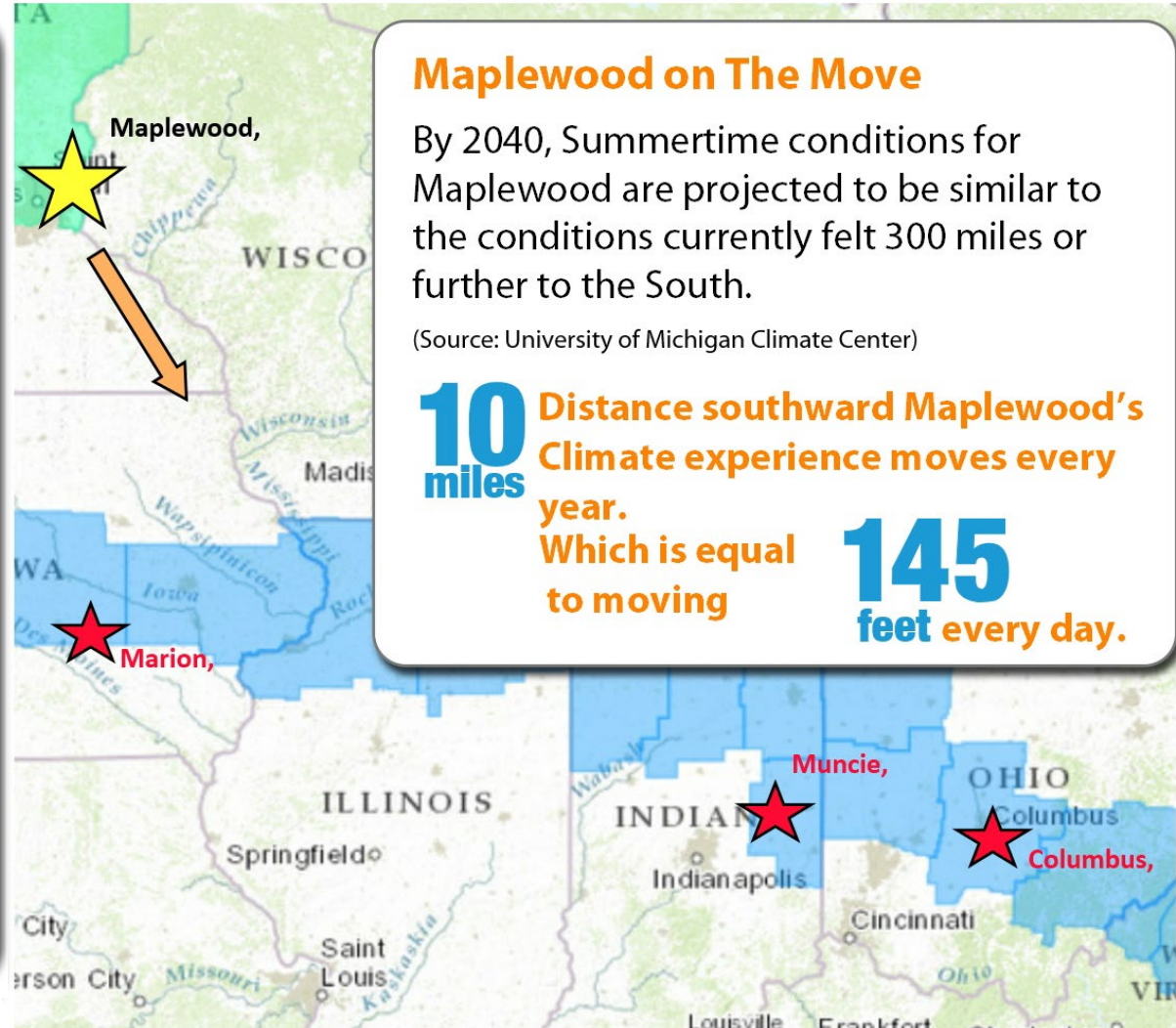
-45 days

Increase in growing season:

30 days

Increase in Air Conditioning Demand:

288%



Maplewood on The Move

By 2040, Summertime conditions for Maplewood are projected to be similar to the conditions currently felt 300 miles or further to the South.

(Source: University of Michigan Climate Center)

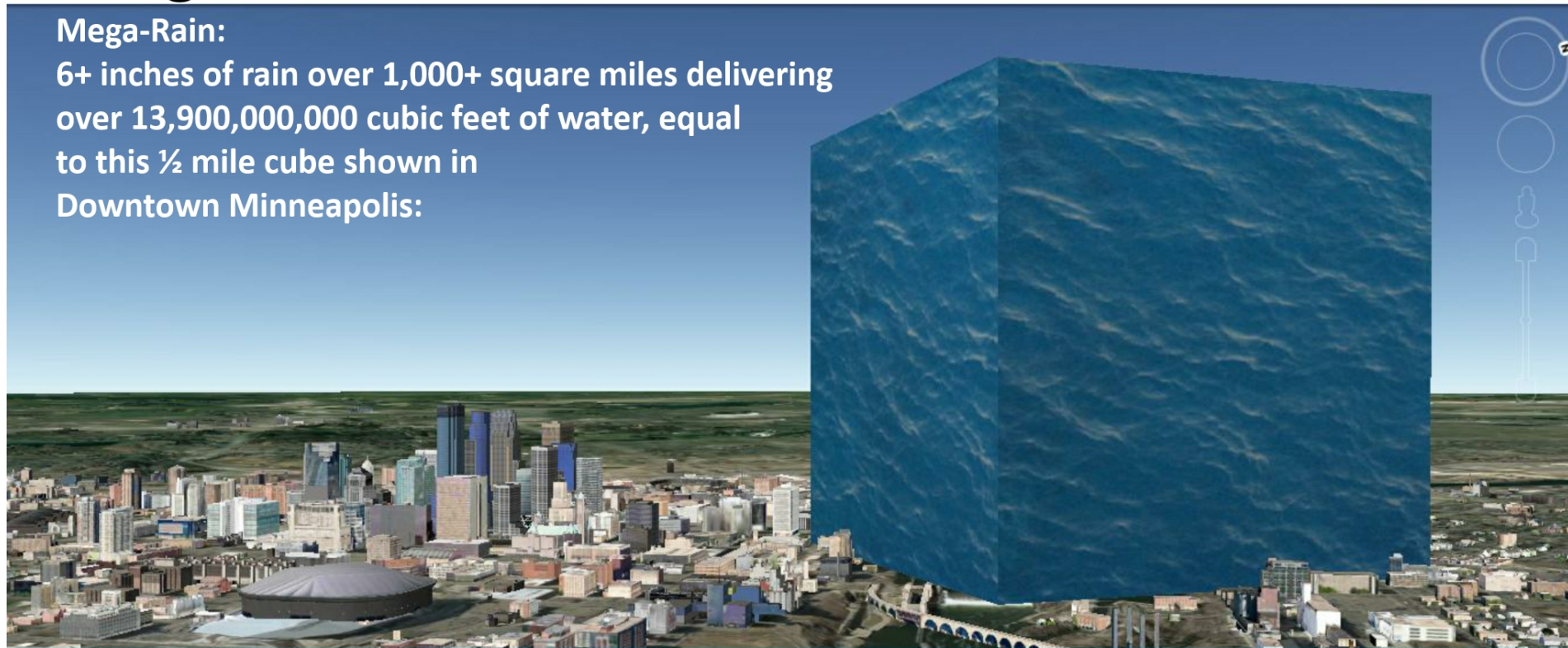
10 miles Distance southward Maplewood's Climate experience moves every year.
Which is equal to moving **145 feet every day.**

02 Why Create a Climate Adaptation Plan

Mega-Rains in Minnesota

Mega-Rain:

6+ inches of rain over 1,000+ square miles delivering over 13,900,000,000 cubic feet of water, equal to this ½ mile cube shown in Downtown Minneapolis:



Timeline of Minnesota's historic mega-rain events 1866-2014



Timeline by NPR News



02 Why Create a Climate Adaptation Plan

What Is A Climate Adaptation Plan:

Climate Adaptation Plans are comprehensive roadmaps that outline the specific Strategies and Actions that a city will implement to protect people and places by reducing their vulnerability to climate change impacts.

This plan does not address Climate Change Mitigation - reducing climate change impacts by reducing the flow of heat-trapping greenhouse gases into the atmosphere. Preparing a Climate Mitigation Plan is an important, recommended, companion effort to this plan.



03 Community Engagement and Support

This planning effort included community engagement and outreach:

Round 1

Summer of 2019 through March of 2020 for initial input that informed the development of the plan

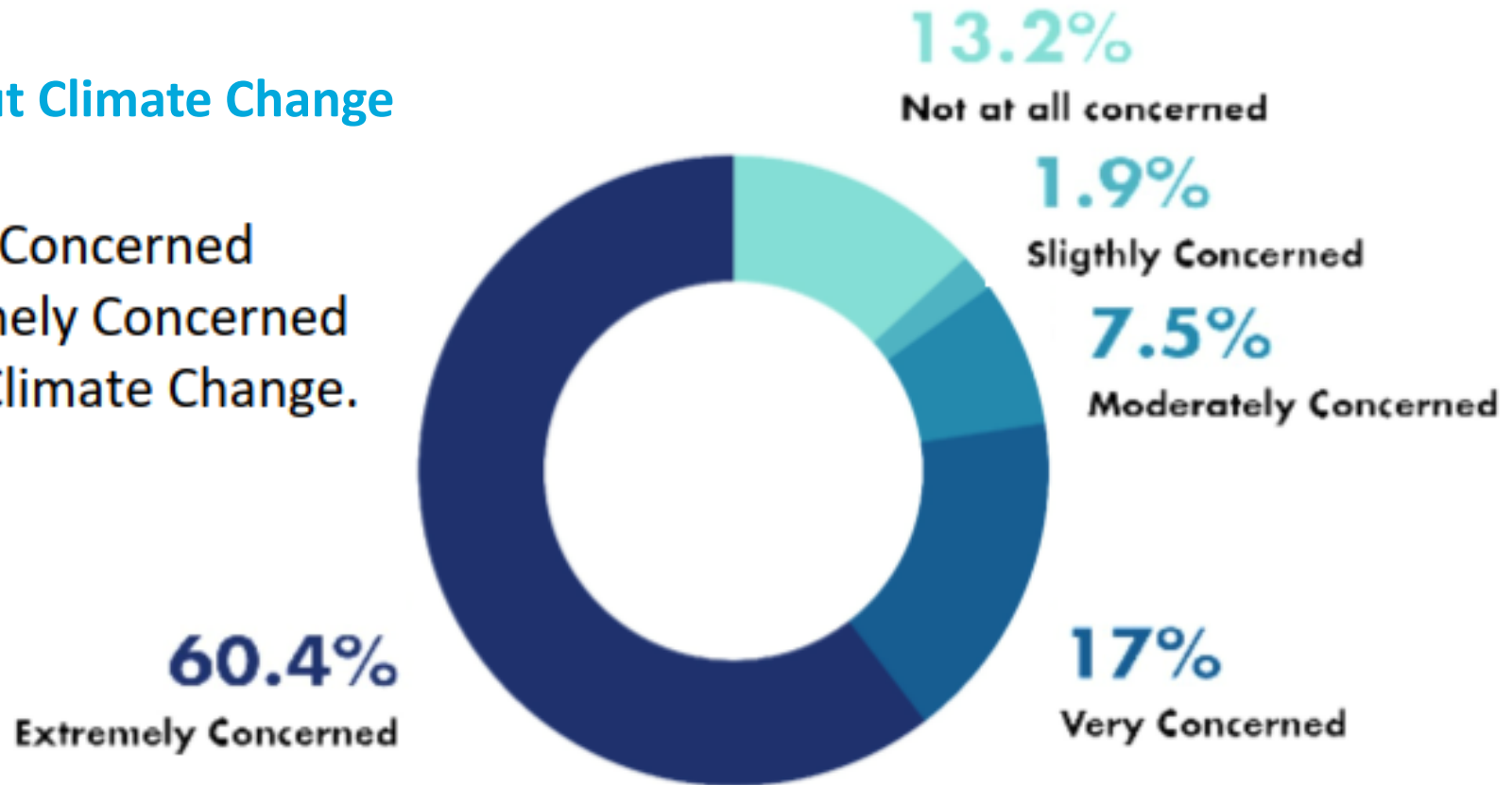
Round 2

February, March, and April for review and input on the Draft Climate Adaptation Plan

03 Community Engagement and Support

Concerned About Climate Change

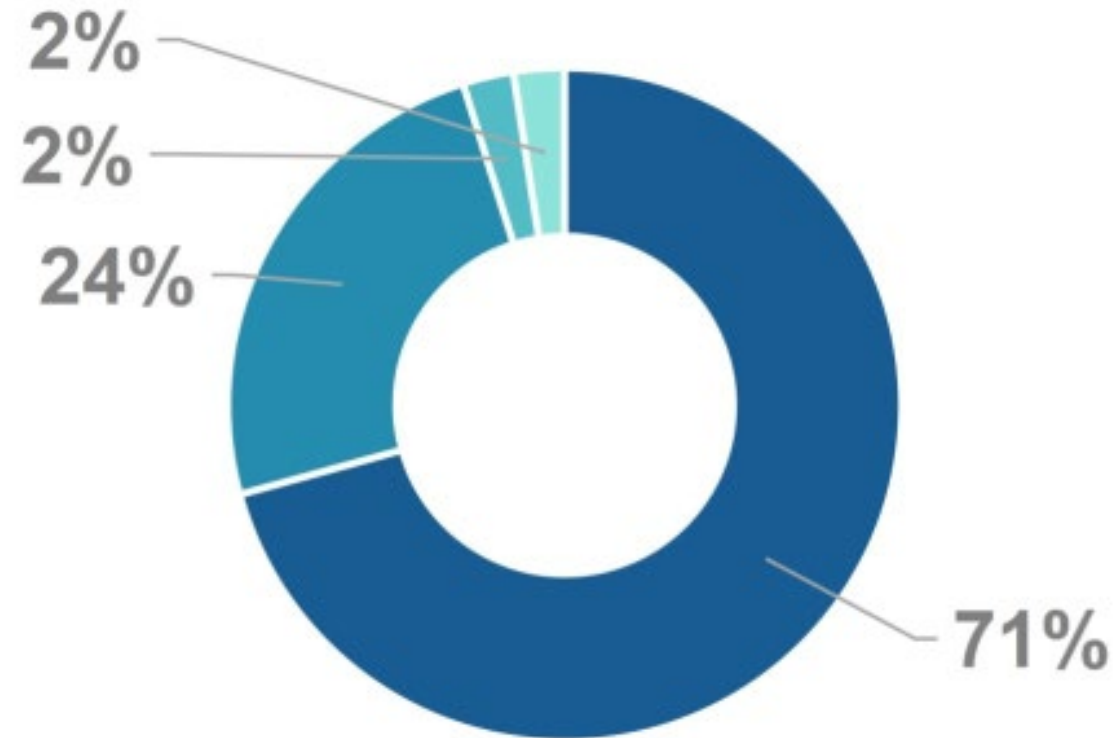
77.4% are Very Concerned (17%) or Extremely Concerned (60.4%) about Climate Change.



03 Community Engagement and Support

Agree With The Climate Adaptation Plan

- Agree Completely 71%
- Agree Mostly/Somewhat 24%
- Neither agree nor disagree 2%
- Disagree Completely 2%



04 Planning Process

The Process

The work that went into developing the Maplewood Climate Adaptation Plan

23 month
planning timeframe

+ - 200
community members
providing input

15
planning team
members

4
foundational research
study documents

2
community-wide
input surveys

12
planning and input
meetings

05 Plan Framework

The Plan

The Maplewood Climate Adaptation Plan

addresses **8 sectors**
of climate vulnerabilities

through **34 strategies**
addressing climate
vulnerabilities

supported by **155 actions**
detailing steps to be
taken

during a **10 year**
implementation
timeframe



06 Sector Highlights



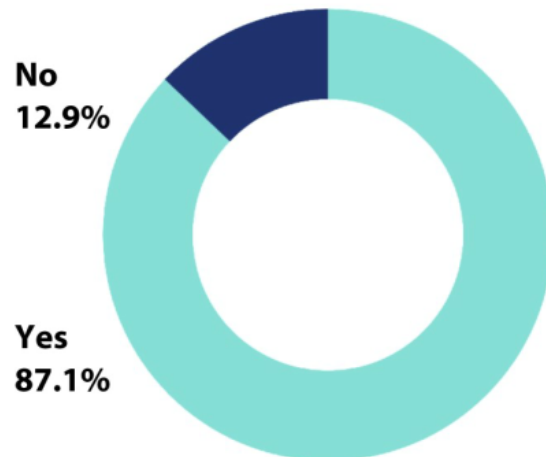
Section

02

Health and Safety

Climate Impacts Already Felt

Over **87%** of respondents reported being personally impacted by the effects of Climate Change.



Sector Strategies

Strategy HS-1:

Prepare the community for anticipated climate change impacts.

Strategy HS-2:

Improve community health and well-being.

Strategy HS-3:

Educate, engage, and empower the public on health and safety risks of climate change impacts.

Strategy HS-4:

Implement City policies to address health and safety considerations of climate change.

Key Actions

HS 2-2

Execute an assessment on completeness of sidewalks connecting all streets and prioritized implementation plan coordinated with County.

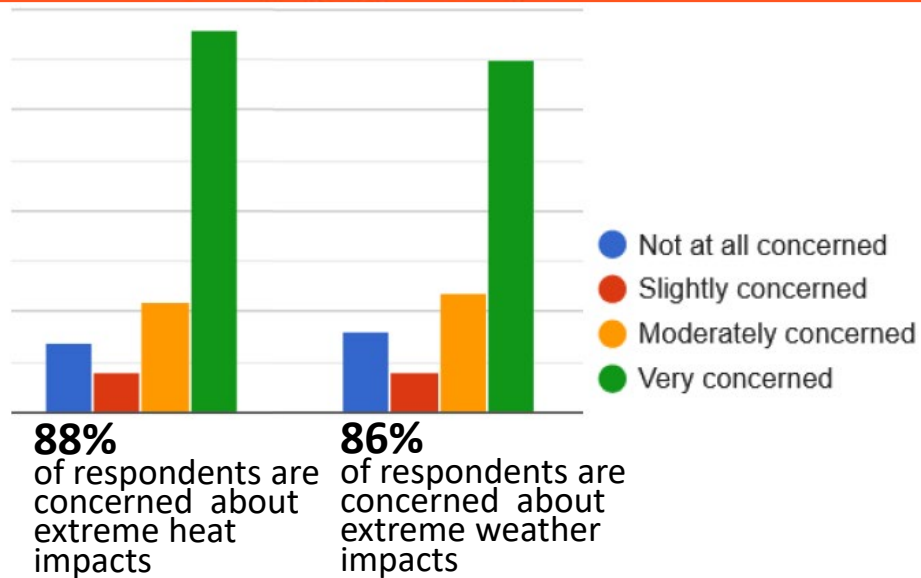
HS 4-2

Develop city-wide ordinances or policies to encourage, incentivize, or require the reduced use of water-related illness agents such as phosphorus and synthetic nitrogen fertilizers, herbicides and pesticides, that have potentially negative impacts on natural resources and human health.

Section

03

Extreme Heat



Sector Strategies

Strategy EHW-1:

Address health impacts of extreme heat.

Strategy EHW-2:

Educate, engage, and empower the public on Extreme Heat and Weather and linkage with health.

Strategy EHW-3:

Implement effective systems and processes to manage and respond to extreme weather events.

Strategy EHW-4:

Improve the capacity of the City and community to provide support during extreme weather events.

Strategy EHW-5:

Decrease the urban heat island effect, especially in areas with populations most vulnerable to heat.

Key Actions

EHW 3-2

Review debris management plans to support response to severe storm events and flooding.

EHW 5-1

Develop a policy that requires all housing development projects receiving City funding, PUD approval, and/or Conditional Use Permitting to implement residential scale heat island mitigation strategies which may include cool surfaces, solar-friendly landscape shading strategies, impervious surface reduction, and breeze capture.

Section

04

Air Quality

Sector Strategies

Key Actions

Strategy AQ-1:

Increase and maintain air quality for residents and businesses.

Strategy AQ-2:

Reduce auto-generated particulate matter, tailpipe pollutants, waste heat, and ozone formation.

Strategy AQ-3:

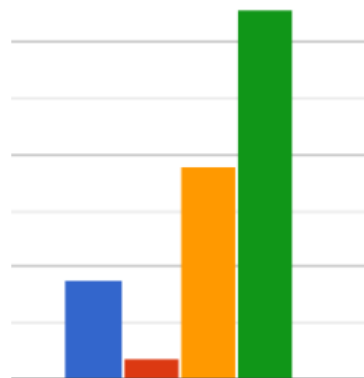
Educate, engage, and empower the public on Air Quality and linkage with health.

AQ 1-1

Work with the Air Quality Management District, MPCA Air Quality Alerts, and County Public Health Department to establish a process (and expand the number of platforms e.g., social media) to notify schools, community organizations, residents, and businesses of air quality alerts.

AQ 2-1

Reduce generation of air pollution and waste heat from mobile sources by promoting and incentivizing public transit, biking and walking.



- Not at all concerned
- Slightly concerned
- Moderately concerned
- Very concerned

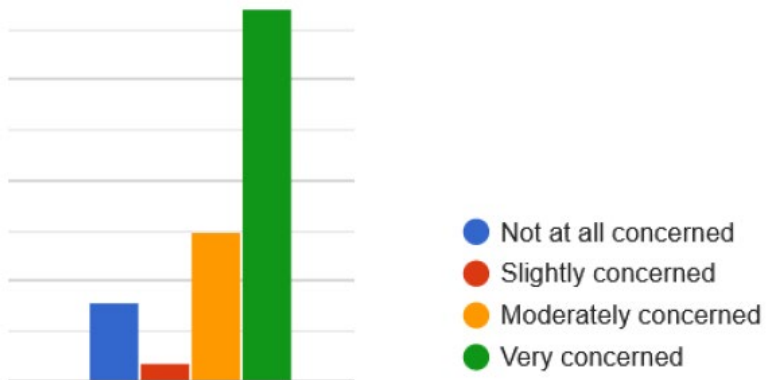
86% of respondents are concerned about air quality impacts of climate change

...and almost half have been effected by increases in asthma attacks, allergies, or other health impacts due to air quality changes.

Section

05

Flooding and



87%
of respondents are
concerned about
water quality
impacts of climate
change

Sector Strategies

Strategy FW-1:

Improve community stormwater preparedness and water conservation.

Strategy FW-2:

Promote and expand green infrastructure.

Strategy FW-3:

Strengthen emergency management capacity to respond to flood-related emergencies.

Strategy FW-4:

Increase the resilience of the natural and built environment to impacts of climate change.

Key Actions

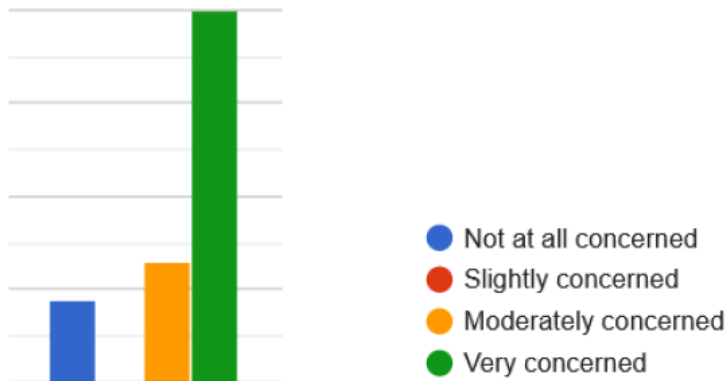
FW 2-2

Establish a policy to prioritize open space preservation. Actively seek partnerships and opportunities to increase preservation of green space, including review development and redevelopment

FW 4-1

Identify and address vulnerabilities in local infrastructure as a result of increased frequency and severity of storms and rainfall and projected changes due to climate change.

Section 06 Greenspace and



87%
of respondents are
concerned about
tree and ecosystem
loss potential of
climate change

Sector Strategies

Strategy G-1:

Increase the accessibility and quality of habitat for native plants and animals.

Strategy G-2:

Improve the resilience of the urban forest and watersheds to climate change.

Strategy G-3:

Expand and sustain urban tree canopy and forests.

Strategy G-4:

Manage ecosystems and landscapes to minimize heat island impacts.

Key Actions

G 1-3

Create a city-wide Urban Forest Master Plan to establish objectives and best management practices for Maplewood's urban forest and to identify appropriate canopy cover and species diversity goals for the City and identify programs and suitable locations to maintain and expand Maplewood's urban tree canopy

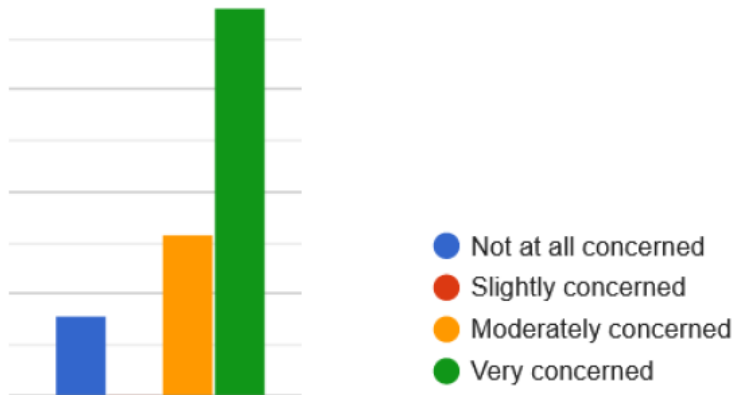
G 3-1

Review and revise parking lot shading guidelines and enforcement of increased canopy cover. Policy should be informed by the Tree Master Plan

Section

07

Local Food



87% of respondents are concerned about potential food security impacts of climate change

Sector Strategies

Strategy F-1:

Educate, engage, and empower the public on food linkage with climate and health.

Strategy F-2:

Integration of Local Food Considerations in City Plans.

Strategy F-3:

Increase production of local food.

Strategy F-4:

Strengthen demand for local foods.

Strategy F-5:

Increase food security for residents, especially those most vulnerable to food environment.

Strategy F-6:

Reduce and repurpose food waste and food-related waste.

Key Actions

F 3-2

Identify and prioritize locations to create community gardens throughout Maplewood.

F 4-1

Pass city policy to procure locally grown foods for events and other organized food catering at city-managed facilities. Coordinate with School District, County, and local hospitals to establish similar locally sourced foods procurement policies. Explore development of group purchasing and logistics agreements to increase efficiency of local farm-to-agency process.

Section

08

Climate Economy

Sector Strategies

Strategy CE-1:

Leverage the economic development opportunities of the Green Economy.

Strategy CE-2:

Enhance community resilience through economic resilience.

Strategy CE-3:

Include Economic Resilience in Emergency Response Planning.

Strategy CE-4:

Accelerate the transformation to a low-carbon economy.

Key Actions

CE 1-2

Explore and prepare for the potential of leveraging Federal COVID relief, infrastructure, and/or climate action funding for use in Maplewood. Create a list of priorities that need funding, explore funding potentials with county, state, and federal sources/grants, etc

CE 2-1

Conduct a planning effort focused on identifying economic vulnerabilities and opportunities, especially those affecting the city's vulnerable populations.

Section

09

Adaptation Capacity

Sector Strategies

Strategy AC-1:

Improve City staff capacity and knowledge of their role in meeting climate goals.

Strategy AC-2:

Support equitable climate action.

Strategy AC-3:

Establish a climate impacts mutual aid program.

Strategy AC-4:

Establish financing to support the City's Climate Action efforts.

Key Actions

AC 2-1

Develop and incorporate equity metrics in the evaluation of CAP activities.

AC 4-3

Establish a policy to capture savings from City Facility energy efficiency and renewable energy projects from all city departments. Performance-based rebate checks and operational savings are to be directed to a special Carbon Fund, with the funds being used to implement carbon-reducing projects that align with the Climate Adaptation Plan.

Section

10

Implementation

Implementation is for everyone –
Council, Staff, businesses, households,
and individuals.

Climate action is a journey –
Implementation of the plan should
anticipate period review of
implementation and refinement of
actions based on progress and
opportunity.

Section 10 Implementation

Build internal capacity –

Establish clear guidance for participation in and support of the Climate Adaptation Plan actions by all City of Maplewood departments.

Incorporate Climate Adaptation Action implementation updates in Department staff reports provided to City Council.

Fund and support Sustainability and Climate Adaptation staffing.

Continue executing a community wide GHG inventory on a regular basis.

Implement a Greenhouse Gas Mitigation Planning effort to map climate mitigation strategies as a companion to this Climate Adaptation Plan.

Review Climate Adaptation Plan implementation progress and impacts on a regular basis (1-2 year cycle)

Section 10 Implementation

Build external support –

Establish the Environmental and Natural Resources Commission as the main citizen-body to support the implementation of the Climate Adaptation Plan.

Establish jurisdictional partnerships that advance Climate Adaptation Plan strategies to advance and accelerate action. (Ramsey County, the State of Minnesota, Watershed District, etc).

Provide periodic updates of the Climate Adaptation Plan and its progress to the public in the City's Newsletter.

Funding–

Maintain a budget and identify funding sources for staff and plan implementation.

Identify a budget necessary to support projects on an annual basis as per the detailed actions.

Utilize no-cost technical assistance offerings as available.

08 Q+A



Thank you!