

Committee of the Whole

Meeting date: November 1, 2017

Subject: Climate Vulnerability Assessment, Part 1 Localized Flood Risk, Chapter 1 Transportation and Transit

District(s), Member(s): ALL

Policy/Legal Reference: Metropolitan Land Planning Act (Minn. Stat. §473.175)

Staff Prepared/Presented: Eric Wojchik, Senior Planner, Local Planning Assistance (651-602-1330)

Division/Department: Community Development / Regional Planning

Proposed Action

No action. This item is for information only.

Background

Thrive MSP 2040, the metropolitan development guide, articulates that the Council will look for opportunities to use both its operational and planning authorities to plan for and respond to the effects of climate change, both challenges and opportunities. The Council is dedicated to expanding its support to local governments in climate change planning.

The Sustainability outcome within Thrive, as well as the Building in Resilience land use policy, provide policy direction to produce a regional Climate Vulnerability Assessment (CVA) to plan for and manage Council infrastructure with the aim of enhancing the lifespan of Council assets through a strategic and proactive planning approach. Beyond extending the life of Council assets and infrastructure, outcomes from this project may reduce Council costs through efficient front-end planning and targeted maintenance. Planning for sustainability also means providing leadership, information, and technical assistance to support local governments' consideration of climate change mitigation, adaptation, and resilience.

The CVA project supports the desired outcomes and land use policies identified in *Thrive MSP 2040* through the identification and analysis of potential vulnerabilities in regional systems resulting from increased frequency and severity of climate events.

Project Focus & Deliverables

Climatologists identify a diverse range of climate-related hazards that can be exacerbated by climate change. This Climate Vulnerability Assessment focuses on climate hazards related to **localized flooding** and **extreme heat**. Council staff chose to focus on these two climate hazards because data is available to help screen areas of potential impact, and the Minnesota State Climatology Office has high confidence in the current time period and likely future occurrence of these two climate hazards in Minnesota. The project consists of the following deliverables:

- 1) Climate Vulnerability Assessment report
 - Part 1: Localized Flood Risk (to be released as separate chapters)
 - Chapter 1: Transportation-Transit
 - Chapter 2: Regional Parks & Trails
 - Chapter 3: Facilities & Council Housing
 - Chapter 4: Wastewater & Water Resources
 - Part 2: Extreme Heat

- Part 3: Human Vulnerability to Localized Flooding and Extreme Heat
- 2) Integrate CVA tools into online *Local Planning Handbook*
 - Interactive, online mapping tools (data sets & shape files) available for public usage
 - Inclusion replicable methodology for conducting CVA
 - Monitor and update GIS data, as required
- 3) Provide in person and/or self-guided education opportunities for the use of CVA in local comprehensive planning processes, climate mitigation and adaptation policies, and creation of resiliency action plans

Localized Flood Risk to the Transportation and Transit Systems

When we commonly think of flooding, we imagine impacts associated with riverway flooding, but there are actually many different types of flooding. The purpose of this assessment is to consider a form of flooding that is occurring more often and is less understood – localized flooding. Localized flooding is often referred to as surface water flooding.

Until now, no regional screening analysis has been done to assess the potential impacts from localized flooding. The assessment allows the Council to screen regional assets for potential flood risk and subsequent vulnerability. In addition, this data analysis may provide leverage in advancing further regional and local investigation and relevant tools. For example, this assessment may highlight the growing need for creating a regional stormwater dataset.

CVA Part 1 Localized Flood Risk – Introduction (Draft)

Part 1: Localized Flood Risk – Introduction is currently in draft form. This introduction to Localized Flood Risk includes the climate change context for the CVA, relevant regional policy, justification for the scope and focus of the study, and the methodology for screening potential flood areas for Council asset vulnerability.

CVA Part 1 Localized Flood Risk, Chapter 1 – Transportation and Transit (Draft)

The Part 1, Chapter 1 – Transportation and Transit draft is also available for review. This Chapter includes a system-wide screening of Council transportation and transit assets for potential localized flood risks. Each asset includes a high-level analysis and a more localized example, including details on the analysis approach and potential strategies for consideration.

The Chapter includes the following transportation and transit assets:

- 1) Regional Highway Network
- 2) Light Rail/Commuter Rail
- 3) Bus Transit
- 4) Aviation
- 5) Regional Bicycle Transportation Network (RBTN)

Next Steps

This assessment is very high-level, and its intent is to spark a conversation about how best to embed use of the localized flooding data into Council practice across the different departments. To get the most out of the data, staff propose a more in-depth analysis of specific bus routes, transit stops, bicycle commuter routes, LRT and commuter rail routes and connections, arterial road and local road networks, and airport connectivity and infrastructure. A more site-specific analysis, coupled with other, complimentary data sources, will help the Council more fully prepare for the impacts of localized flooding within our region.