ON TO 2050

Alternative Futures:
Intensified Climate Impacts

January 5, 2017

CMAP

ON TO 2050 Development Process

ON TO 2050 development timeline
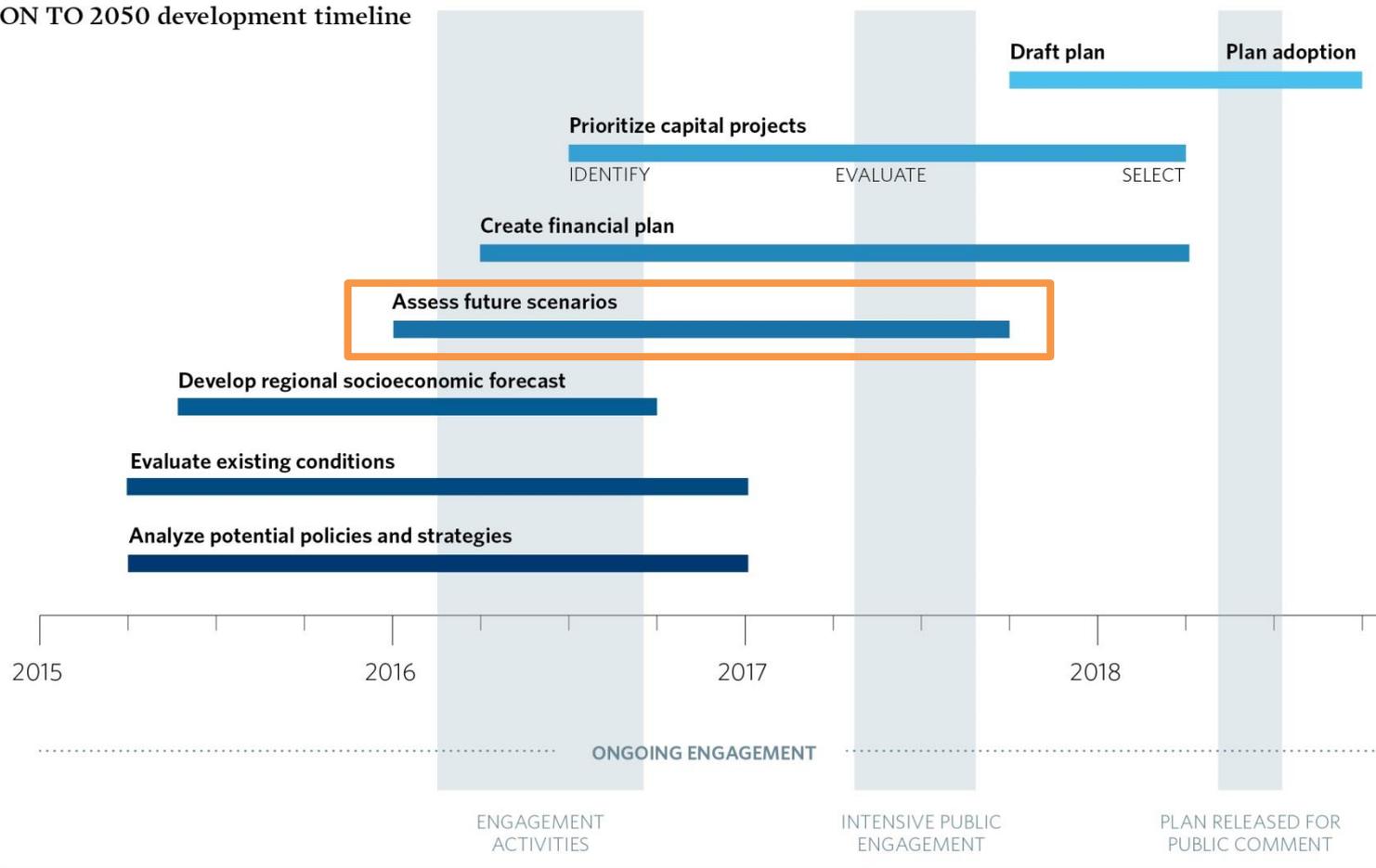
Five alternative futures

- In 2050, what would happen to our region if…
  - Climate change impacts intensified?
  - More people chose mixed use, walkable neighborhood
  - Technology enabled greater mobility?
  - Public resources are further depleted?
  - Economic restructuring continued?

LESS PUBLIC RESOURCES

INNOVATIONS IN TRANSPORTATION

CHANGING CLIMATE

CHANGING ECONOMY

MORE PEOPLE LIVING IN URBAN AREAS

For each future…

- **Memo** that outlines key aspects of the future
  - Driving trend
  - Impacts
  - Outcome
  - Strategies
- **Interactive app** to be used for public engagement
- **MetroQuest** survey

Final memo: cross-cutting strategies across each future

What will this region look like
with a changed climate?

Key Driver and Impacts

By 2050, 28% increase in **greenhouse gas emissions causes…**

More intense storms and drought

- Increase in **annual precipitation** of 20-30% by 2100

- More frequent **heavy storms**

- Wetter winters and **drier summers**

Warmer average temperatures

- Temperatures increase between **3-5 degrees** Fahrenheit

- 15 days a year above **100 degrees** Fahrenheit (increase from 0 to 2 days)

- **Heat waves** on par with 1995 happen almost every other year

- More **freeze-thaw cycles** in winter

Outcomes

- Increased **flooding** and **property damage**

- More frequent combined sewer overflows and **deteriorating water quality**

- **Lack of sufficient groundwater** and/or high quality surface water in some areas of the region

- Changing **habitats** and species

- Disruption of **transportation** networks

- Strained **energy** system

- Regional **population growth** and **limited economic gain**

Disproportionately Impacted Communities

- **Lower income populations**

- **Elderly populations**

- **People of color**

- **Residents and businesses**

  - **In areas dependent on groundwater**

  - **In areas with few transportation options**

Strategies

1. **Effectively price** use of energy, natural resources, and public infrastructure

2. Integrate **green infrastructure** at site specific, community, and regional scales

3. Prioritize and protect **critical assets**

4. Explicitly integrate climate change into **planning and development**

5. Provide people with **multiple mobility options**

6. Enhance multi-sector, **cross-jurisdictional** planning

7. Lead **data driven** policy and programming analysis and implementation

8. Protect **agricultural assets**

9. Strengthen resiliency of **disproportionately impacted residents**

10. Build **climate literacy** among decision makers and the public

11. Capitalize on **new economic opportunities**

Strategies

1. **Effectively price** use of energy, natural resources, and public infrastructure

   - Mileage based fees for the transportation system

   - Full-cost pricing for water

   - Real-time pricing of energy, water, and transportation

   - Ecosystem service banking and wetland mitigation

Strategies

2. Integrate **green infrastructure at** site specific, community, and regional

- Update ordinances and design standards to incorporate green infrastructure

- Identify and protect wildlife corridors and conservation zones

- Encourage rain barrel, landscaping and tree planting programs, particularly in neighborhoods experiencing the urban heat island effect

Strategies

3. Prioritize and protect **critical assets**

- Identify critical assets at regional and local scales through technical analysis and participatory processes

- Update design standards and maintenance, and operating procedures for physical infrastructure to account for intensified climate change impacts

- Invest in flexible, resilient communication systems for immediate shocks as well as long term stresses.

- Encourage research, adoption, and coordination of decentralized energy systems and communication systems

Strategies

4. Explicitly integrate climate change mitigation and resilience goals into **planning and development**

- Update floodplain maps based on new rainfall information

- Direct development away from floodplains through conservation easements, zoning restrictions, and transfer of development rights (TDR) programs

- Encourage and incentivize infill development

- Update stormwater management ordinances and zoning codes to improve stormwater mitigation and reduce impervious surface creation

Strategies

5. Provide people with **multiple mobility options**

- Invest in public transit

- Implement complete streets best practices when doing road construction and maintenance

- Invest in highway operations technologies like traffic control centers and dynamic message boards that can re-route travelers in case of sudden road closures

- Encourage transit-oriented development

Strategies

6. Enhance multi-sector, **cross-jurisdictional** planning

- Implement a groundwater monitoring system, requiring coordination with Illinois State Water Survey and municipalities

- Transportation, stormwater, and development agencies incorporate green infrastructure at all scales

- Land use, economic development, and transportation agencies and private sector partners work to enable higher density, mixed-use developments

Strategies

7. Assume leadership role in **data driven** policy and programming analysis and implementation

   - Develop more accurate predictive modeling

   - Improve aquifer monitoring

   - Conduct outcome analysis of policies and investments

   - Incentivize or mandate performance based management in all sectors

Strategies

8. Protect **agricultural assets**

- Acquire land for preservation

- Enact conservation easements

- Adopt land use planning strategies (e.g., farmland preservation ordinances)

- Incent and/or mandate more resilient farmland management practices (e.g., cover cropping and no-till planting)

Strategies

9. Strengthen resiliency of **residents disproportionately impacted** by climate change

- Develop relationships and partnerships with local community partners, especially those representing hard to reach populations

- Implement best practices such as the use of translators or provision of child care and transportation services

Strategies

10. Build **climate literacy** among decision makers and the public

- Develop and refine tools to assess climate vulnerability of community's roadways, land uses, and populations

- Continually update and improve data hub for ease of use

- Provide more educational materials linking data to impacts to communities and residents

Strategies

11. Capitalize on **new economic opportunities**

    - Track indicators related to water consumption

    - Conduct supply chain analysis of water intensive industries

    - Create partnerships with multiple agencies

    - Identify land use and development trends related to water intensive industries

    - Provide workforce development training for green jobs

Next steps

Nov. 2016 – March 2017…..
- Develop alternative futures
- Identify and prioritize strategies
- Prepare for public outreach

April – August 2017 ………..
- Release interactive visuals
- Host public workshops

ON TO 2050

Questions?

Elizabeth Irvin
Eirvin@cmap.illinois.gov

@ONTO2050   #2050BigIdeas
onto2050@cmap.illinois.gov
www.cmap.illinois.gov/onto2050

CMAP