View from City Hall
Infrastructure, Data and Engagement

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A City and A Natural Disaster

- In the next decades, Austin will have a consolidated data and communications infrastructure.
- We are going to imagine a natural disaster :
  - A series of flash floods inundate parts of Austin
  - Neighborhoods will have fully, partially or non-functioning infrastructure
- We tell this story in terms of the infrastructure, its data, and the critical decisions before and after the disaster to engage the community so that they are safe and trusting of their government's response.

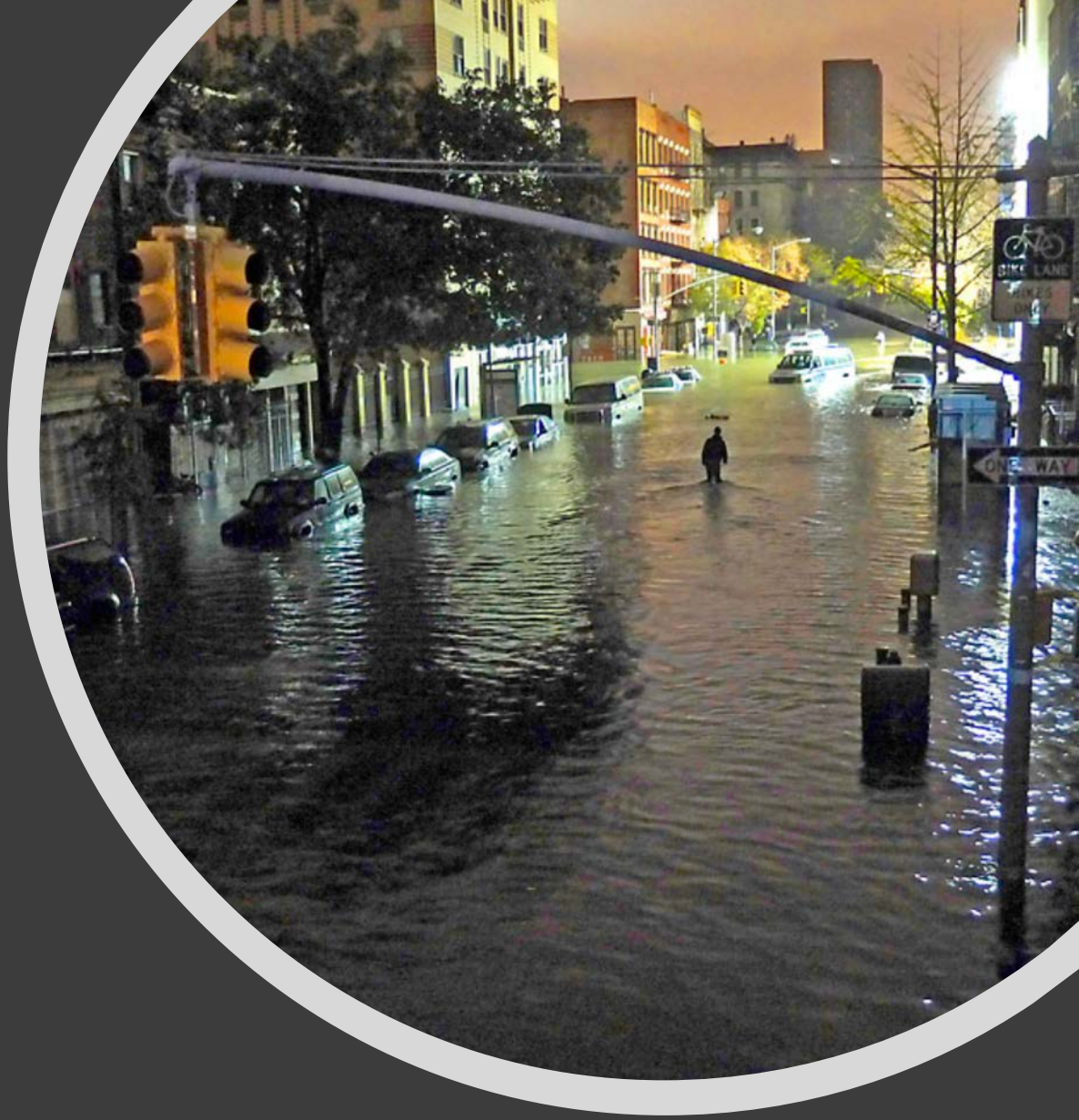


Image from realestate.aol.com

Austin Infrastructure for Autonomy and Advanced Services

- Cities have had infrastructure for energy, transportation and water.
- We are exploring dedicated new infrastructure for advance data services.
- For advanced services like autonomy, drone management, energy delivery, public safety, commercial and the arts.

Graphics courtesy of the Autonomy Institute

Using data infrastructure to support our communities

- Successful engagement with communities requires their trust.
- Trust and communication comes in many scopes:
  - Neighbor to neighbor
  - Neighborhood Center
  - Activity Corridors
  - Town or Planning Zone
  - Regional
  - City Wide
  - Metropolitan
- A city's data is used to understand these scopes of trust.

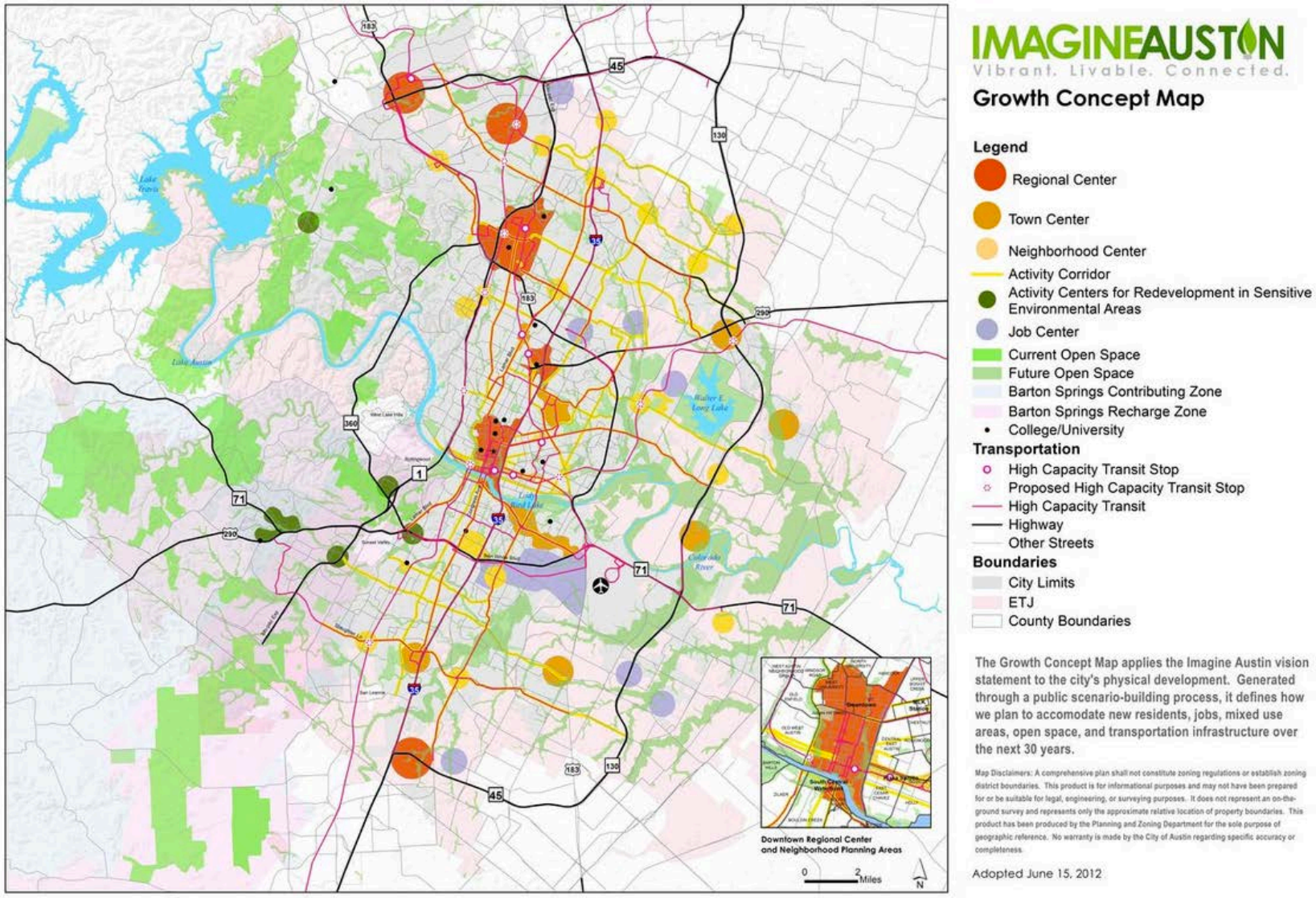
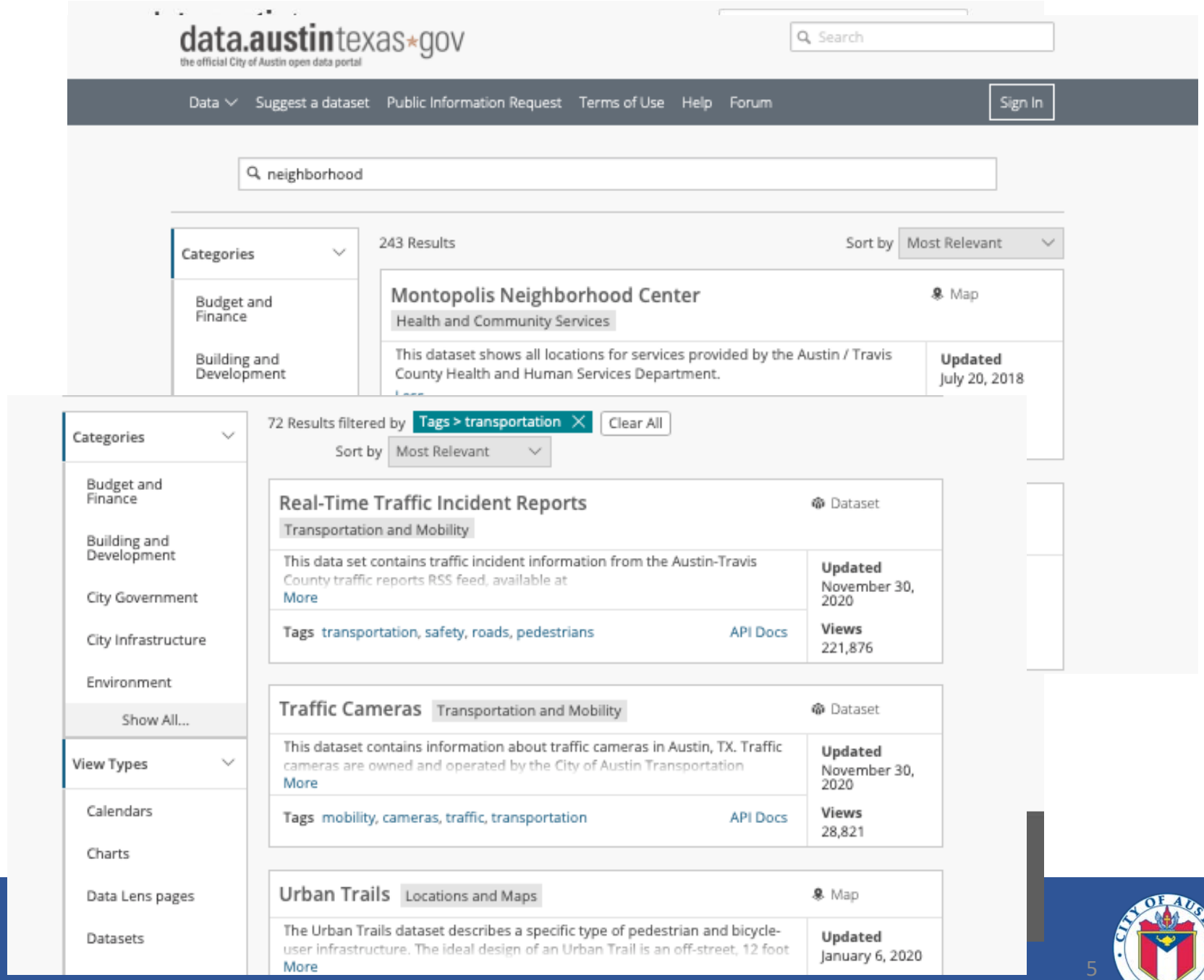


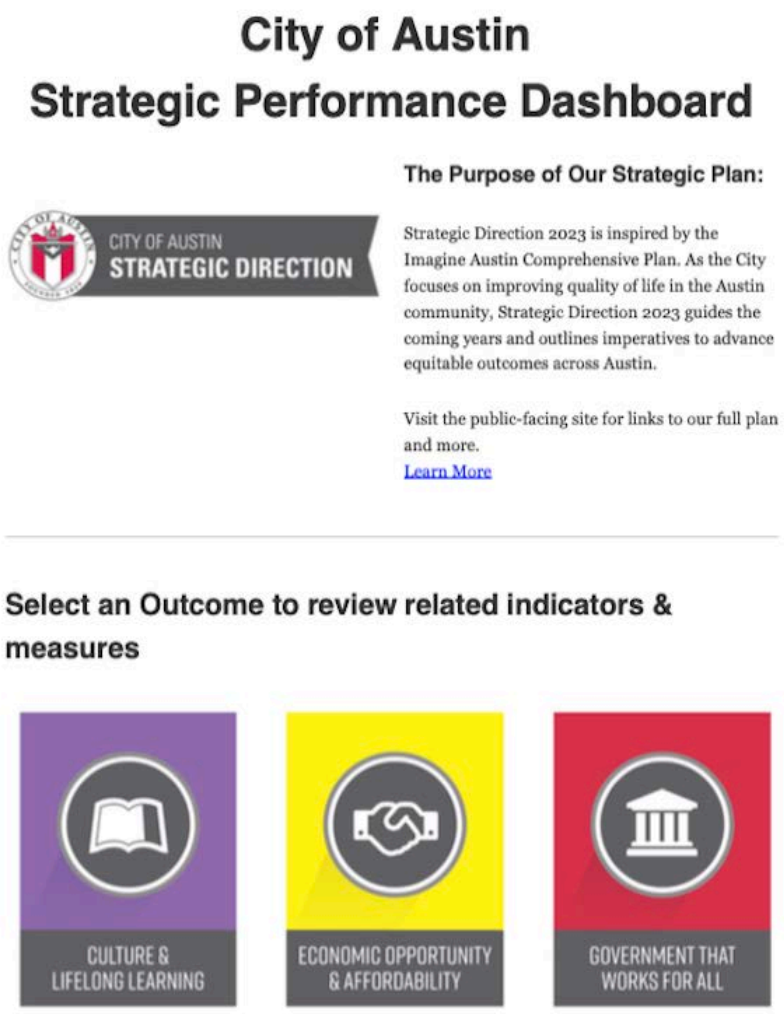
Image from https://data.austintexas.gov/stories/s/Compact-and-Connected/jqwk-xf8g/

Operational Data

- Locations of
  - Health services
  - Traffic cameras
  - Trails
  - Fire stations (not fire hydrants)
  - Crime
  - Scooter Use
  - And more
- Service calls
  - Infrastructure repairs
  - Uncollected trash
  - Dangerous animals
  - Fallen trees



Policy Maker Data



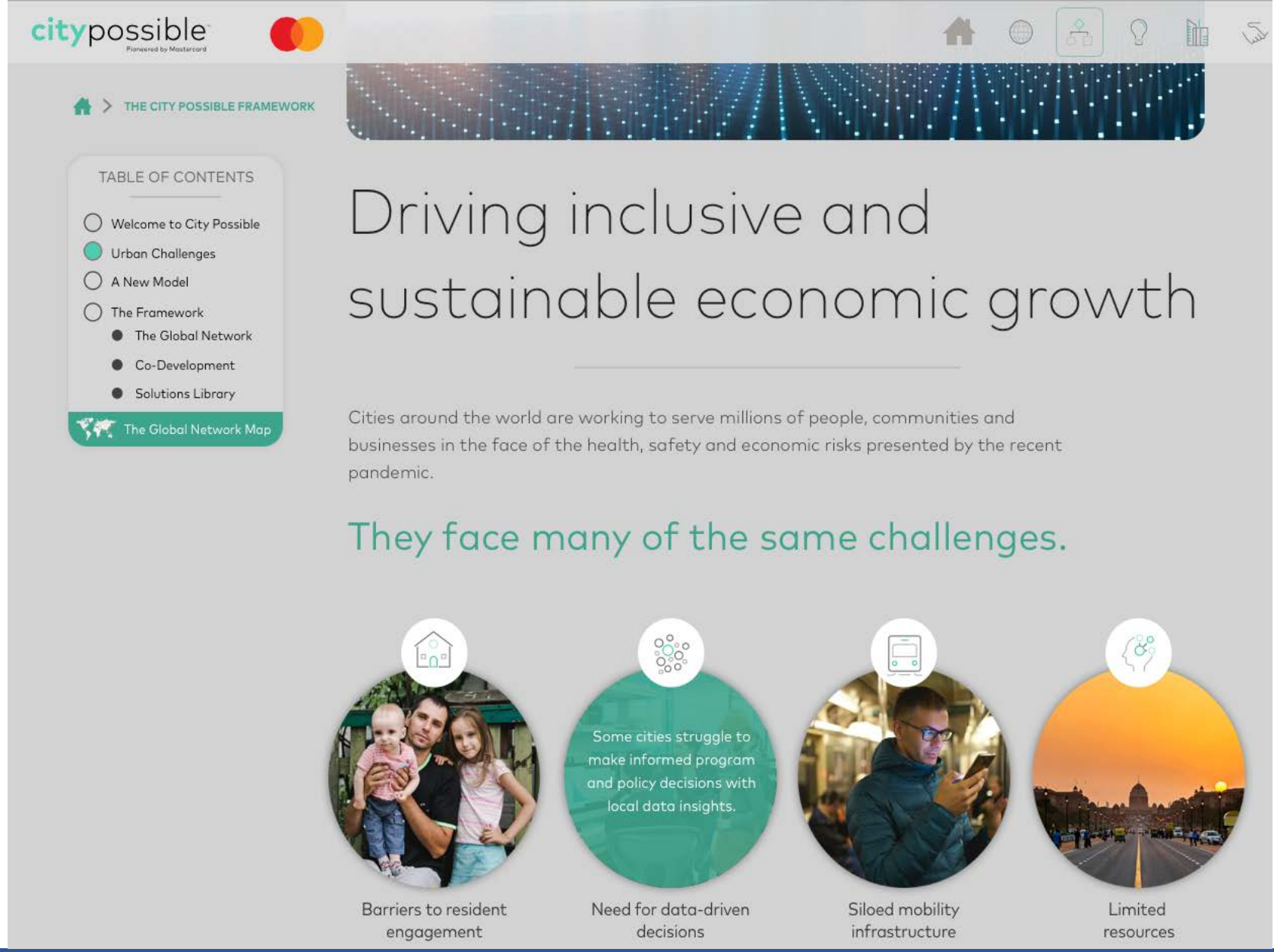
Austin has six strategic outcomes and publishes data that reports on whether and how well it is meeting them.

Public dashboards like this categorize data in terms of the priorities of a city's policy makers.

Other Data Sources:
Private Foundation Data

Anonymized private sector data about community understanding:

- Where residents go for services in their neighborhood.
- Share of spending going to food, transportation, housing, etc.
- When coupled with city data, may be useful in understanding economic and stress profiles of a city's different communities.

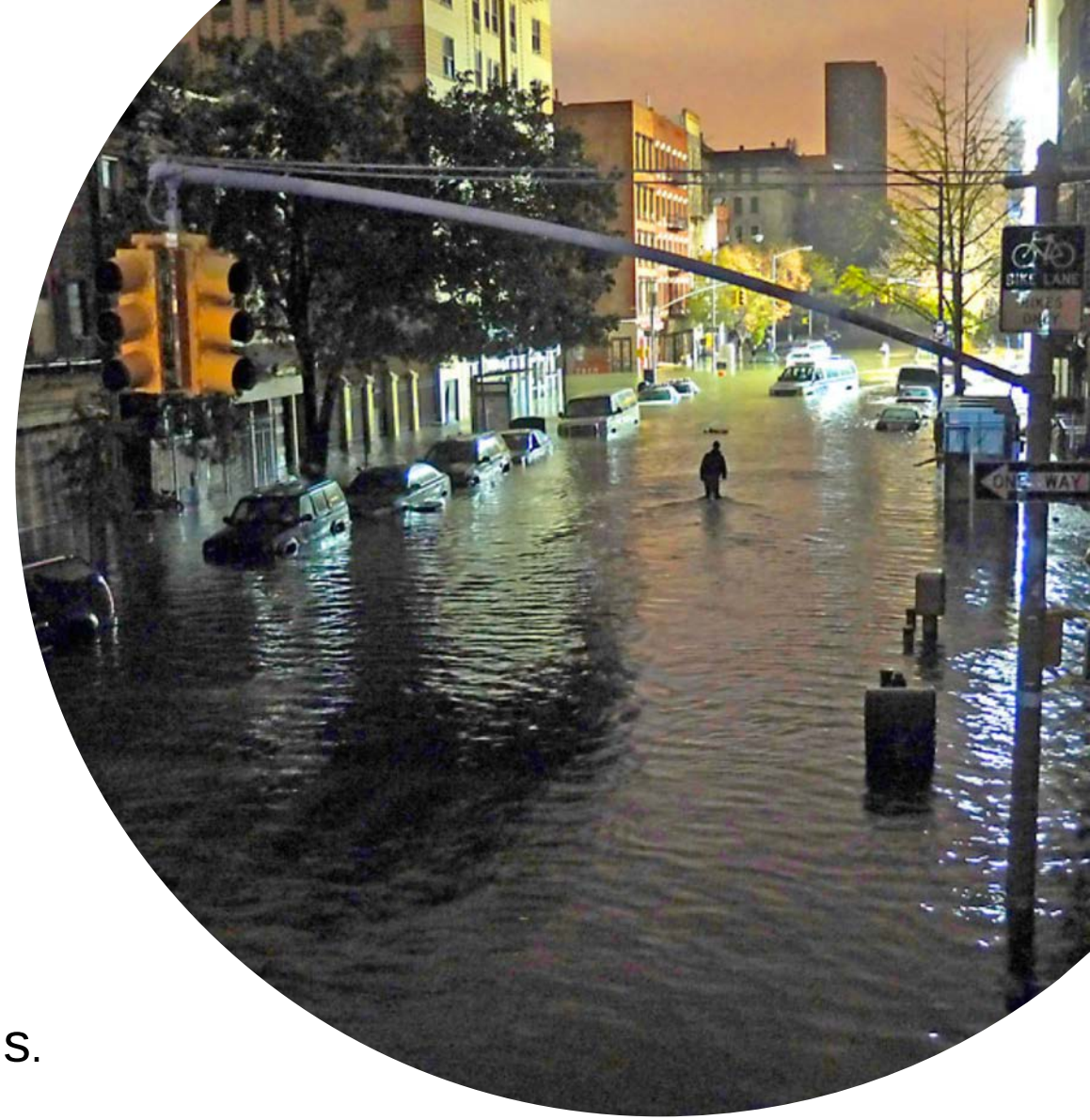


Technical characteristics of city data in the near future

- Realtime
- Autonomous
- Environmental micro-climate
- Physically precise
- Integrated from multiple sources
- Captured along side (but separate from) commercial service data
- AI and computation will be performed at the edge.

A natural disaster: a city's response

- Flash flooding has inundated parts of Austin
- Neighborhoods are impacted unevenly with fully, partially or mostly non-functioning infrastructure.
- There will be three phases:
    1. Emergency Response, including activating the infrastructure
    2. Stabilization and Cleanup
    3. Renewal and recovery



Success requires the trust we have built and maintain with our residents and their organizations.

Image from realestate.aol.com

Planning

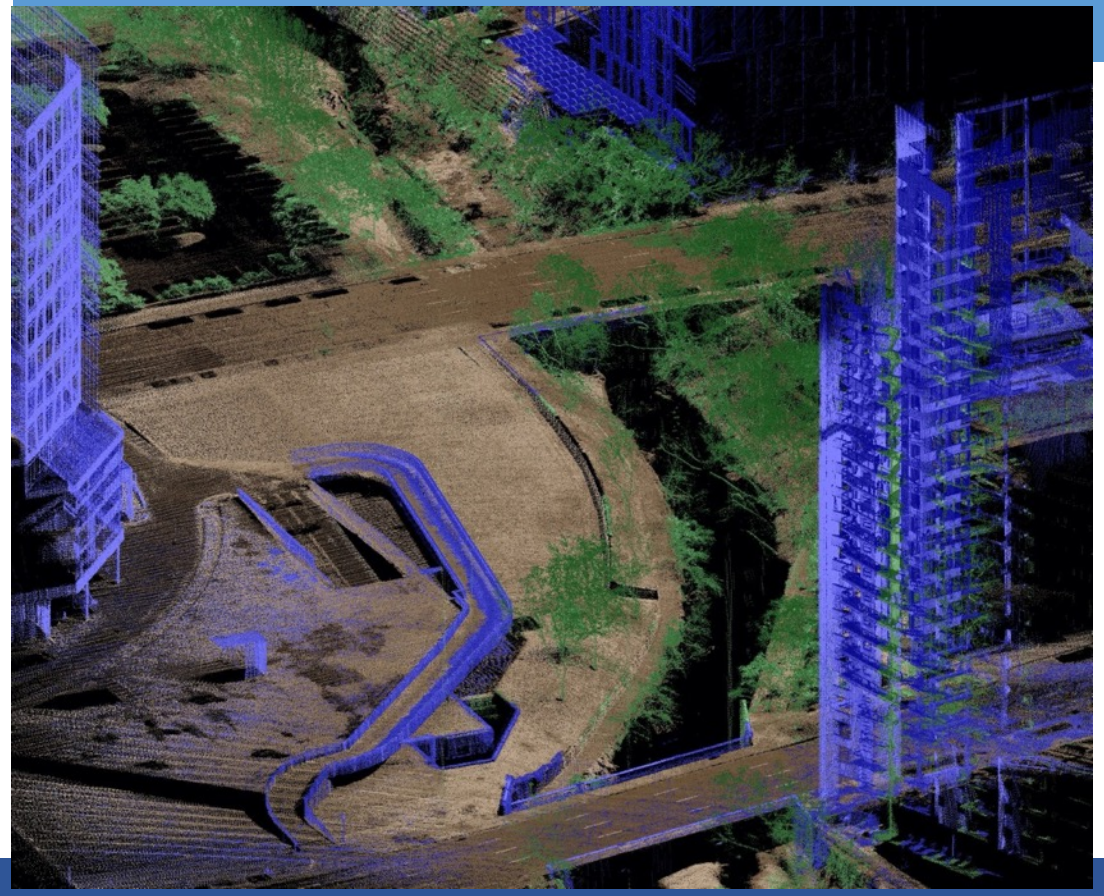
- Identify trusted organizations
- Engagement plan
- How to use working infrastructure
- How to use broken infrastructure

Image from austintexas.gov

Emergency Response

1. Use infrastructure to dispatch responders in targeted, accurate and transparent ways.
2. Use autonomous drones and other vehicles for search and rescue.
3. Engage with trusted community organizations based upon pre-crisis plan.
4. Tell residents where and how to access help.
5. Make data and curated information available to residents so they can make decisions.
6. Install pre-built applications to be run by compute-at-the-edge devices on the infrastructure.

Stabilization and Cleanup



LIDAR Image from Watershed Dept, City of Austin

- Use the data infrastructure to customize cleanup communications and services while providing a common narrative to residents.
- Autonomous drones and other vehicles for precise damage assessment and service delivery.
- Infrastructure sensors for real time environmental data with block-by-block precision.
- Customized public outreach, engagement, and messaging.

Recovery and Renewal

Building and Repairing

- Grocery Stores
- Roads
- Community Centers

Creating Opportunity

- Workforce Development
- Education
- Increased Community Connection

Image from austinportfoliorealestate

Conclusions

- Understanding the policy-maker goals (and the data captured around it) can define what success might look like for the community.
- How infrastructure is used can help customize response to an event.
- There is no technology that can replace in-person communication to understand context and build trust.