



# Denver Hazard Mitigation Plan Story Map

## Objectives

Denver updated its Hazard Mitigation Plan (HMP) in 2021 to document the city's 21 hazards. An interactive Esri story map and web application was developed to supplement information in the HMP for the city and make the data accessible to the public. Denver wanted its citizens to easily be able to see which hazards were most likely to impact their community or property without having to read a 700-page plan. The story map provides users with a high-level overview or each hazard, the likelihood of it occurring, and pictures of examples or past occurrences. Scan the QR code below to access the story map on your mobile device.

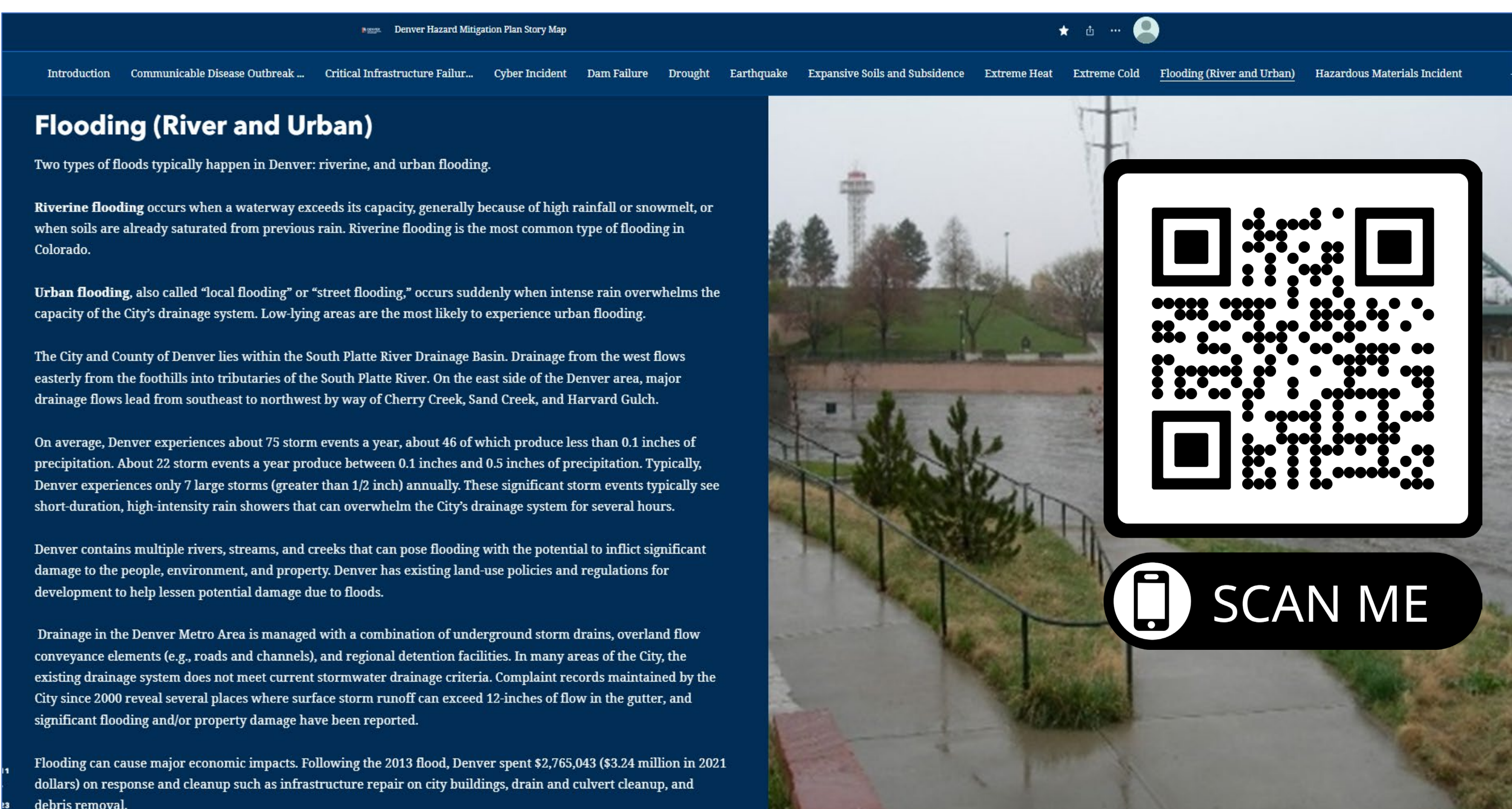


Figure 1 – Story map Flooding section

## Significance

- Final HMP is over 700 pages
- Impacts over 700,000 residents
- Over 1 million buildings analyzed
- Written in plain language to increase access and explain each hazard

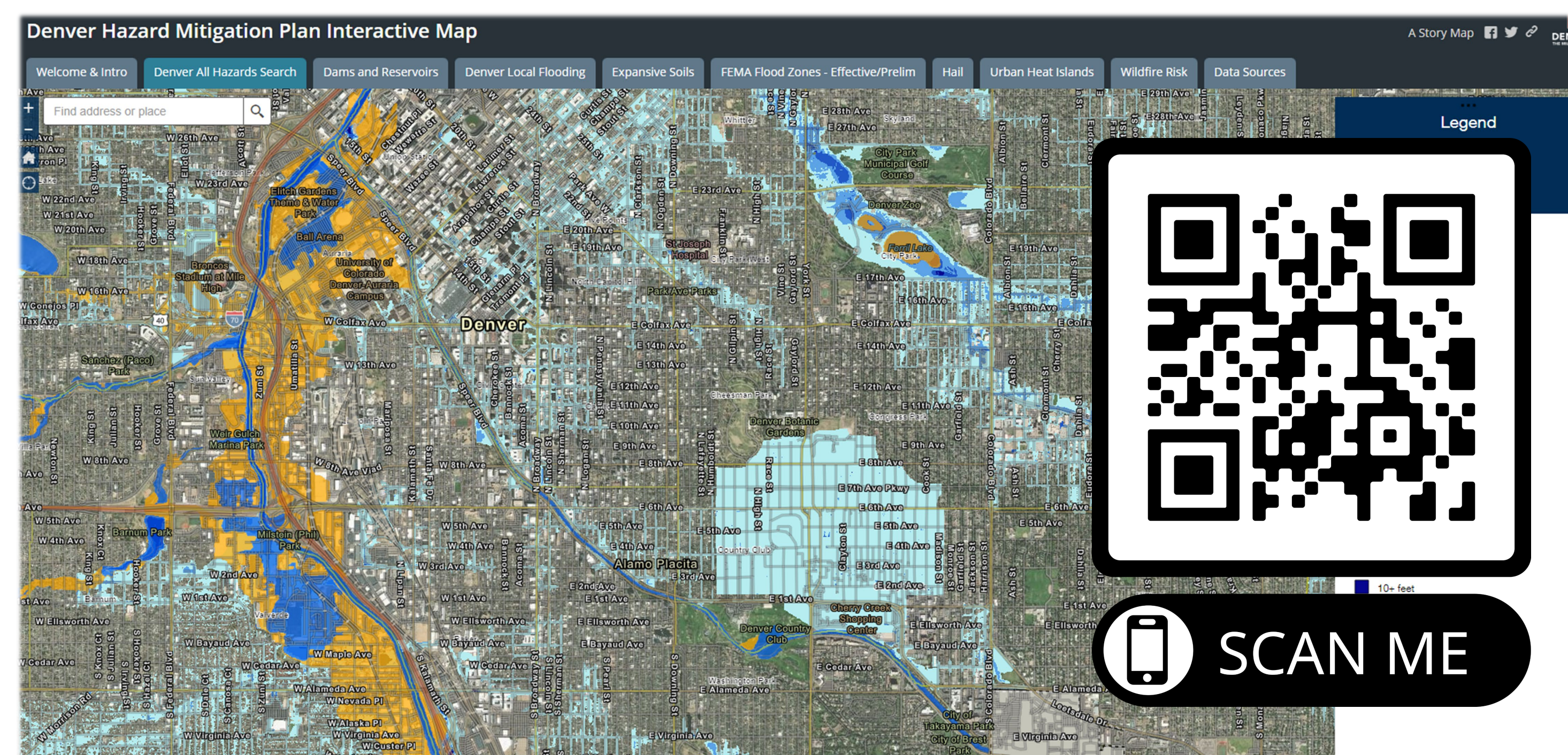


Figure 2 – Interactive Web App All Hazards Search

## Analysis

WSP published spatial data for any hazards that had a localized threat and were used in the HMP. This data was analyzed with the city's building footprints to show which hazard(s) were most likely to impact each structure. 2020 Census population and city building footprint data was used to estimate the population of each residential structure. A list of the spatial hazards shown in the web app are shown below.

Denver's 21 HMP Hazards	
Spatial	Non-Spatial
Dam Failure	Communicable Disease
Extreme Temperatures	Cyber Attack
Flooding	Drought
Expansive Soils/Subsidence	Severe Winter Storm
Severe Thunderstorm	Earthquake
Wildland Fire	Hazmat Incident
	Critical Infrastructure Failure
	Social Unrest
	Space Weather
	Terrorism and Mass Violence
	Mass Influx of Evacuees
	Transportation Incident
	Urban Conflagration
	Volcanic Ash

Table 1– Denver Hazards categorized

## User Friendly

Under the interactive web map users can search for their home address in the “Find address or place” box. The interactive map allows users to turn layers on or off that they are interested in. Each type of hazard is displayed individually, but there is also a tab that includes all hazards if multiple hazards are of interest. Descriptions of all pictures were added to make the story map accessible for visually impaired.

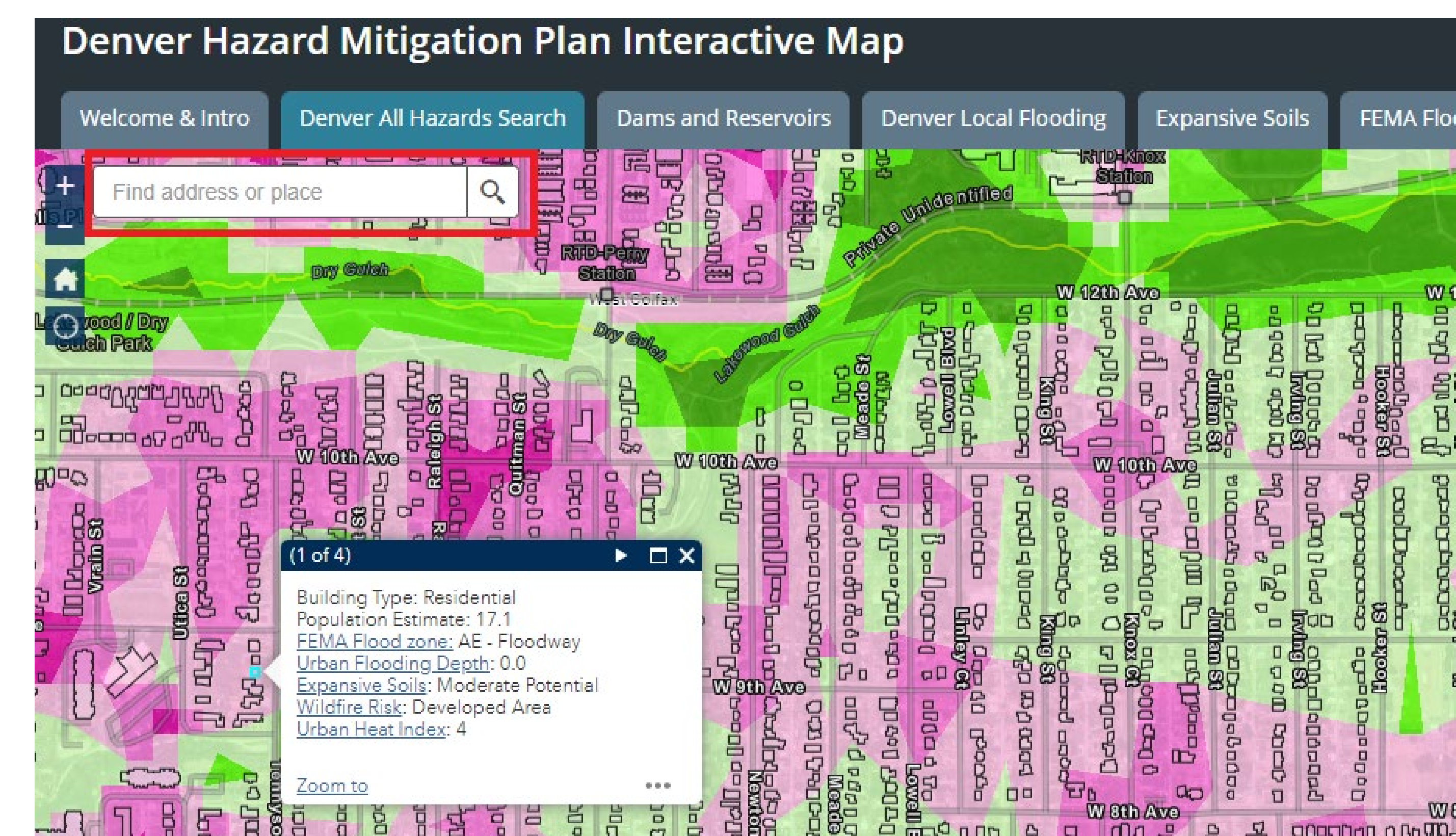


Figure 3 – Interactive Web App Urban Heat Island with custom Building Footprint pop-up

## Conclusions

Using the HMP web applications, citizens can search for their home or neighborhood to see what hazards in the area. A custom pop-up window was developed to display the attributes of each hazard within the building footprint. This pop-up window also links users back to the story map description to explain each hazard. All of this data is hosted on City of Denver's ArcGIS Online Account to use in the future.

For Data Sources and References:  
<https://geospatialdenver.maps.arcgis.com/apps/MapSeries/index.html?appid=affbb9fde78465abf5f4ea97b1d1a4e&folderid=c495d8f65d4458f932209a411b328b3>