

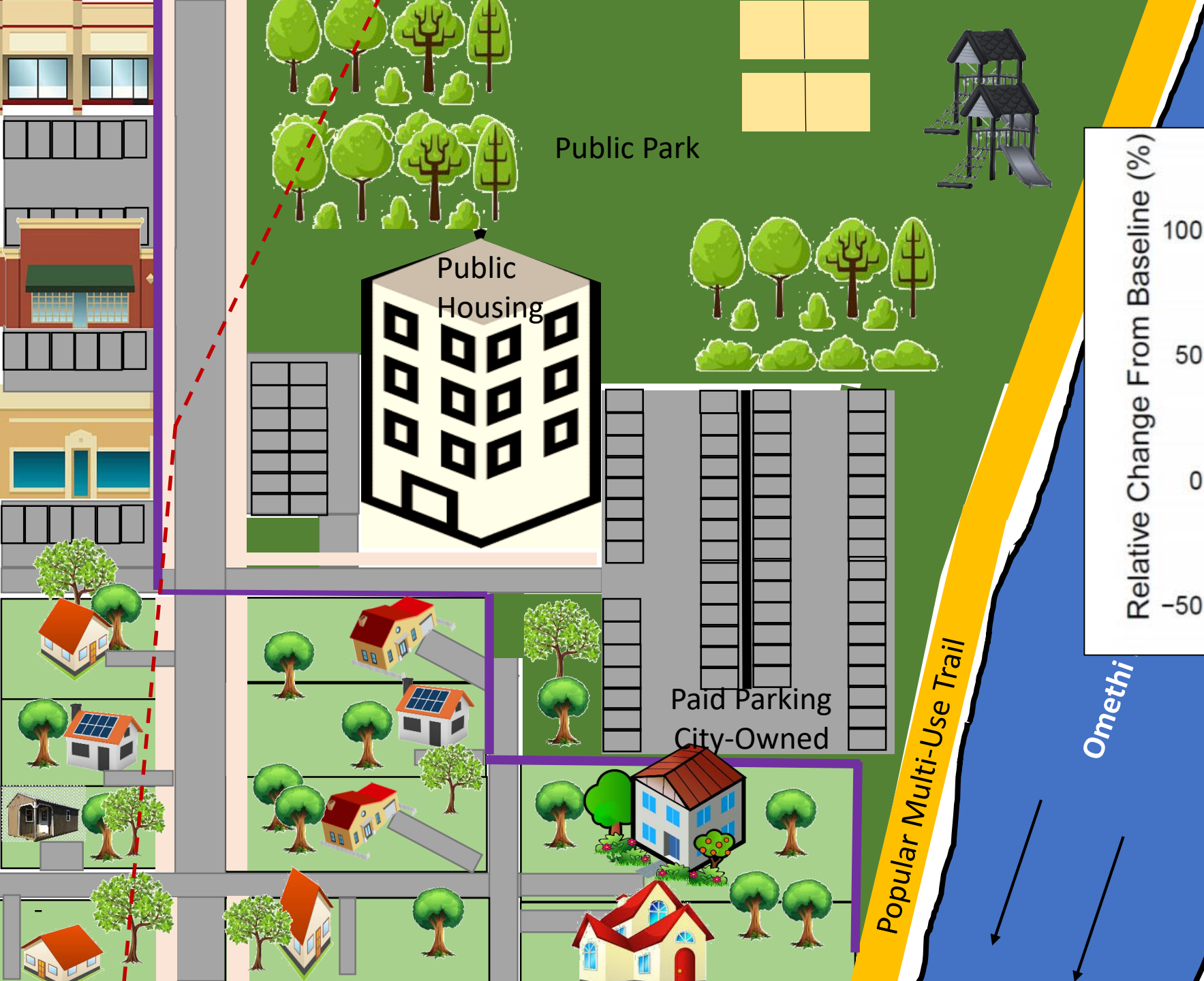


City of Newarre

Population: 100,000

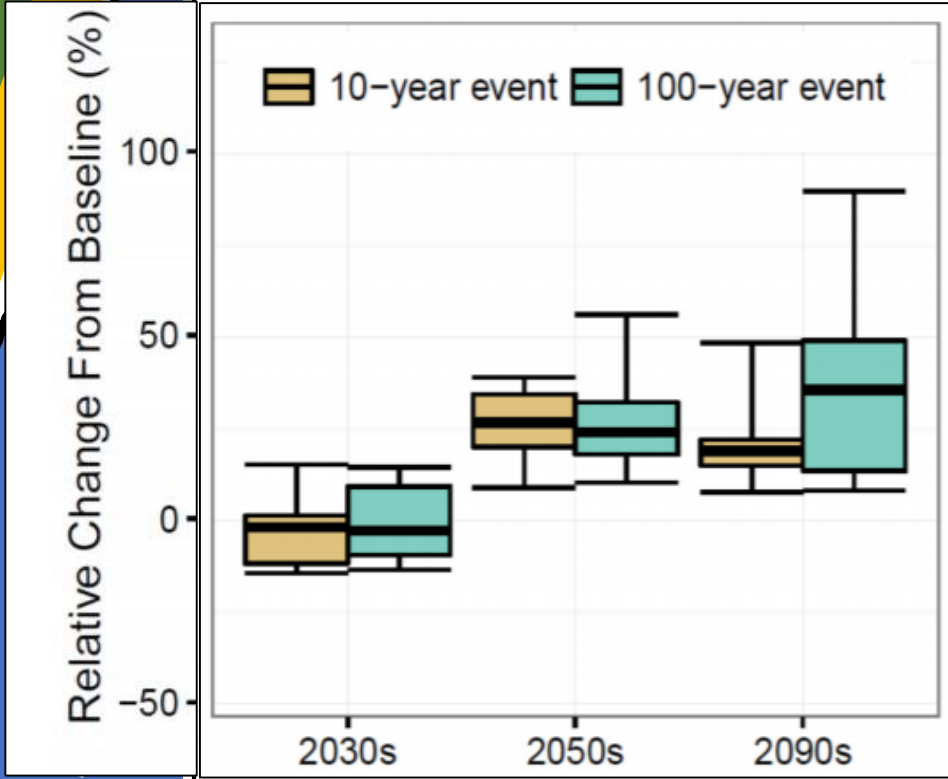
Social Housing Complex

- Built: 1957
- 4 Stories
- 42 Apartments
- Minimal renovations since construction
- Within 100-year floodplain
- Flooded in 1962, 1978, 2004, 2015, 2017
- Elevation above baseline river height: 1.6m
- Omethi River channeled in 1929



City of Newwarre

Population: 100,000



- 100-year floodplain (1985 study)
- Uninterrupted city-owned land adjacent to Omethi River
- Public Land
- Private Land

City of Newarre

Study Option 1: Renaturalization

Re-naturalize the channel to increase absorptive capacity of the Omethi River.

Loss of trail, ½ of parking lot, expropriation of some private land.

Capital works needed beyond geographic scope displayed here.





City of Newarre

Study Option 2: Retaining Wall

Install a hard barrier to prevent overland and groundwater flooding of housing complex.

$\frac{1}{4}$ of paid-parking required for installation

Protects against current 100-year flood height



City of Newarre

Study Option 3: Dyke Installation

Install a dyke along the length of the Omethi River within the jurisdiction of Newarre.

Multi-use trail to be re-installed on top of the dyke.

Can be scaled to expected height of 2050 100-year storm.



City of Newarre

Study Option 4: Building Renovation

Relocate all HVAC, water and other mechanical systems from the basement to the main floor.

Raise most components of main floor above current 100-year flood level.

Option	Pros	Cons	Cost
#1 Channel Restoration	<ul style="list-style-type: none">Higher absorptive capacity protects downstream propertyReduces flashiness of floodsGreatest capacity to mitigate flood intensification impactsUrban flood mitigation co-benefits	<ul style="list-style-type: none">Highest cost optionLoss of popular trail, parkland, parking revenue.Need to purchase private landGreatest benefits require restoration beyond geographical confines of study area	\$\$\$\$\$
#2 Retaining Wall Installation	<ul style="list-style-type: none">Protects against overland and groundwater floodingLowest cost optionLeaves trail, park space and ¾ of parking accessible	<ul style="list-style-type: none">May exacerbate flooding downstreamRainfall intensification by 2050 reference period (2040-2070) expected to expand 100-year floodplain beyond barrier	\$
#3 Dyke Installation	<ul style="list-style-type: none">Small loss of park, parking lot or private property spaceCan be scaled to height of 2050 intensification projectionsMulti-use trail can be relocated above it	<ul style="list-style-type: none">Will exacerbate flooding downstream of installationGreatest benefits require installation beyond geographical confines of study areaHighest cost of operations and maintenanceHighest consequence of infrastructure failureHigh cost optionSome public and private land expected to be needed for dyke space requirements	\$\$\$\$
#4 Complex Renovation	<ul style="list-style-type: none">Reduces flood sensitivity (damage costs, recovery time, relocation needs)Low cost optionDoes not increase flood exposure of other properties	<ul style="list-style-type: none">Exposure to flooding events unchanged10 families will be forced to leave complex, while the City is already managing a long waitlistFewer access points likely to decrease use of trail	\$\$
Others Options			

Key Considerations:

Preferred Choice:

Rationale: