



Market to Metacom: Climate Resilience and Economic Development Plan

EC4

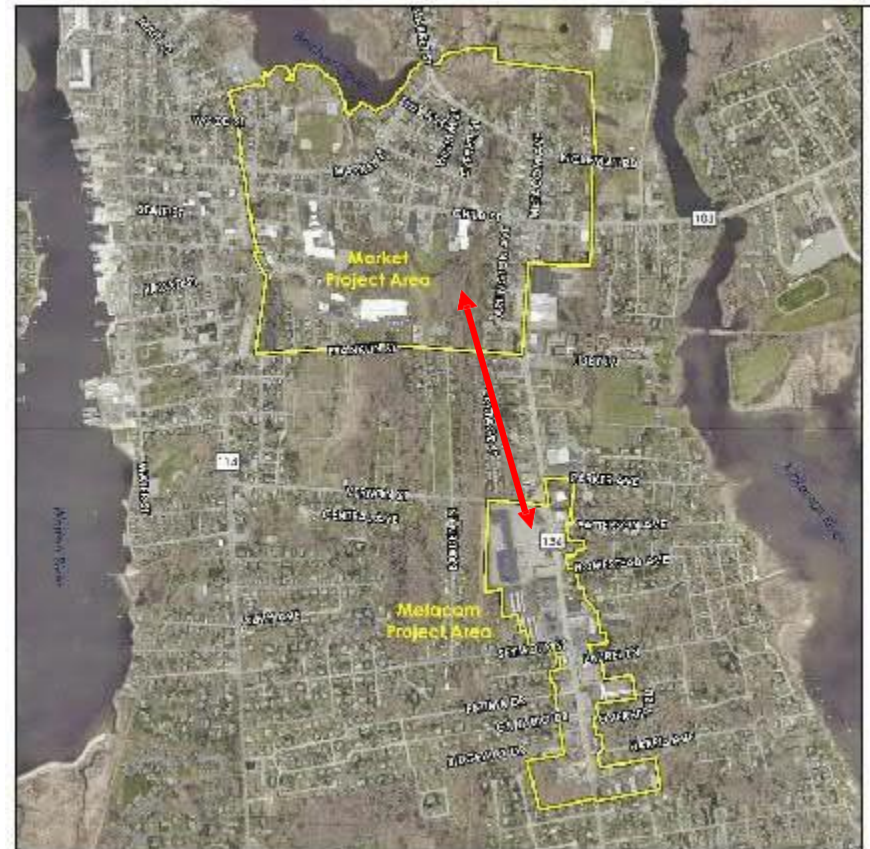
June 23, 2022

© *Butch Lombardi*

Market to Metacom Project

Grant from Southeast New England Program (SNEP) of Restore America's Estuaries

Explore concept of linking the future of adaptation in Market Street area with redevelopment in Metacom Avenue corridor.



Methodology and Data

- Property/tax data – Town of Warren
- GIS data – Warren/State of RI
- Climate forecast: NOAA
- Sea level rise and storm data: StormTools
- Disaster impact estimates: FEMA and FloodFactor
- Road/bridge data – RIDOT/Statewide Planning/national

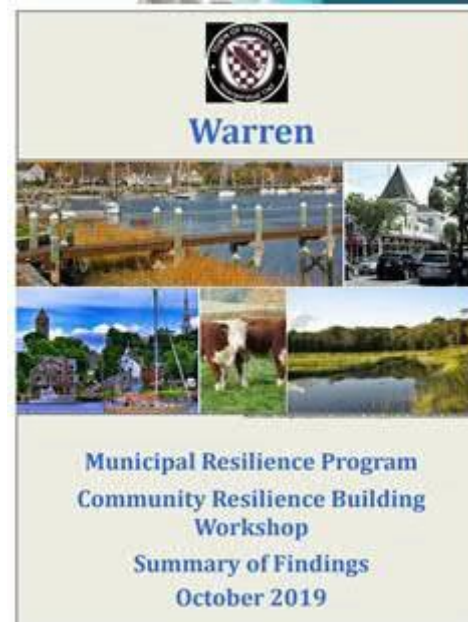


RHODE ISLAND
DIVISION OF
PLANNING



Coastal Flooding Concerns

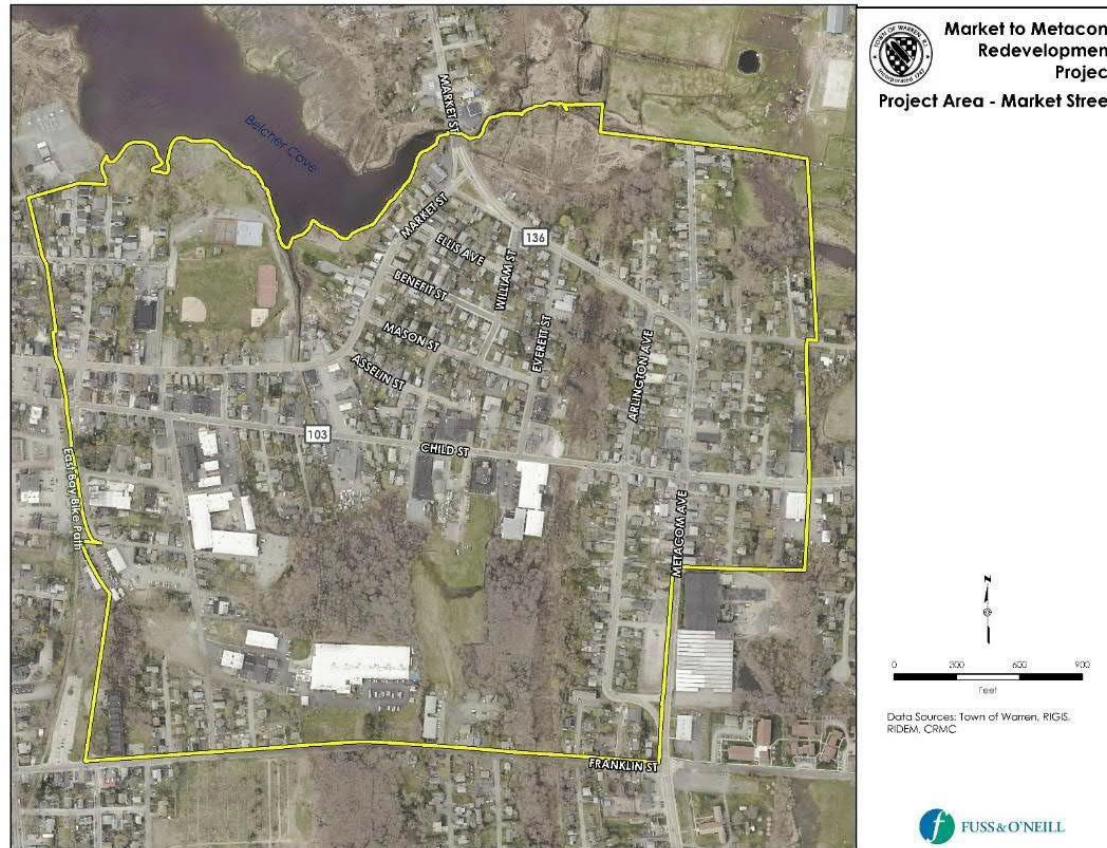
- Why is Warren doing this project at this time?
 - Climate change is bringing
 - *rising sea levels*
 - *stronger storms*
 - *more intense precipitation events*
 - Warren has done forecasting and planning for Town-wide impacts
 - *Municipal Resilience Plan*
 - *Hazard Mitigation Planning*
 - *URI and UPenn Projects*



Market Street - Project Area

Area contains approximately:

- 184 acres
- 400 buildings
- 700 housing units
- 30 businesses



1939 Aerial – Market/Child Streets





10/8/21@10:30 AM

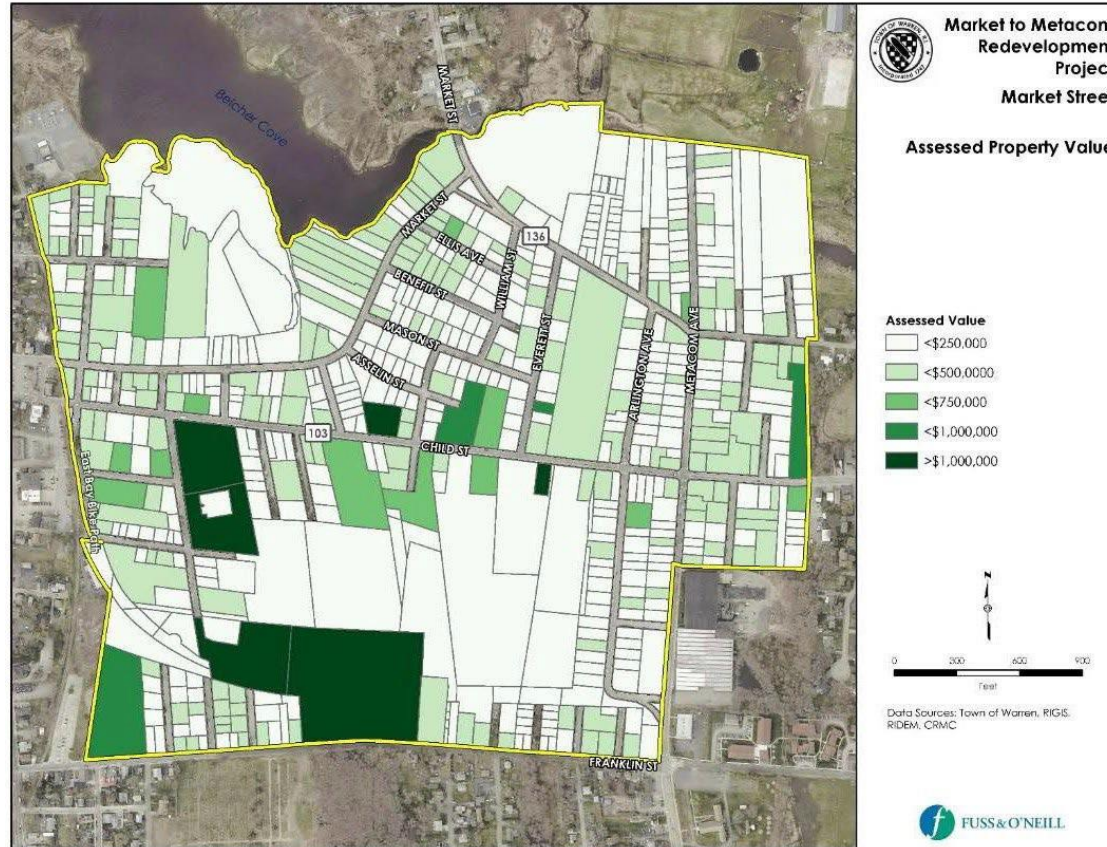
Photos from RI – Sea Grant

Belchers Cove/Market Street

Market Street – Assessed Property Values

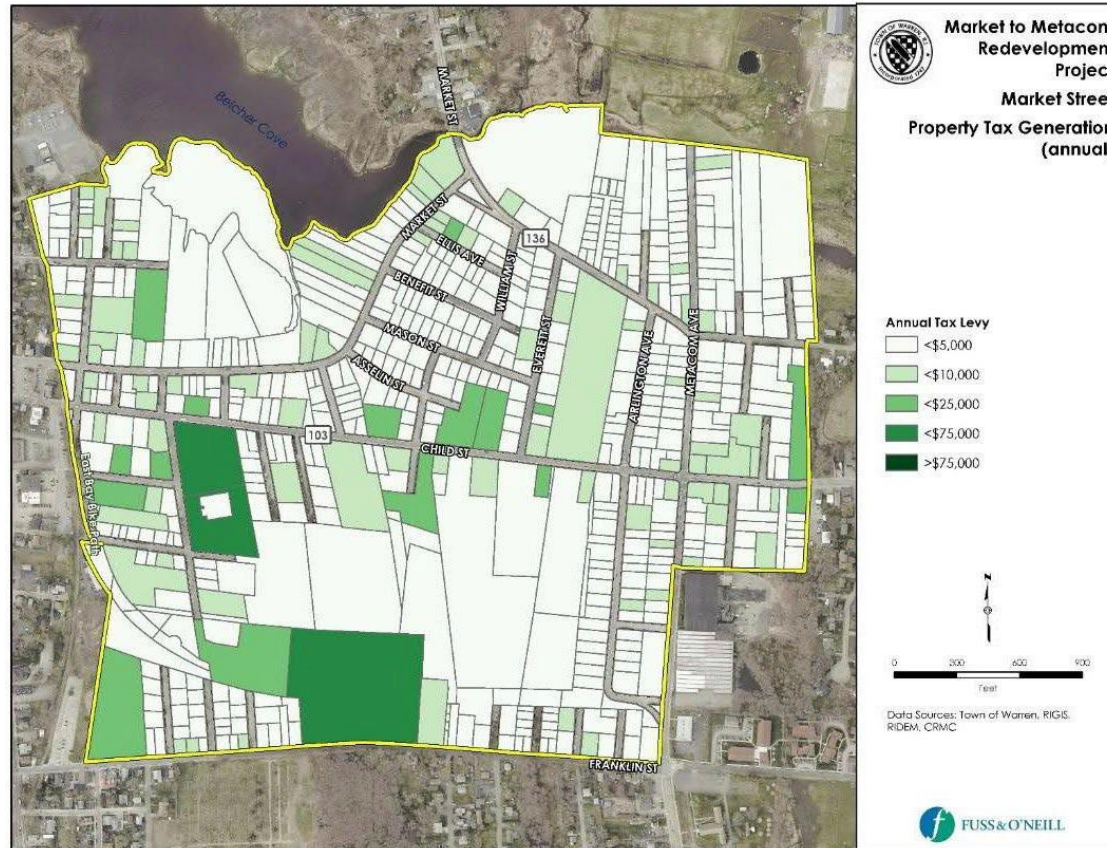
Total Assessed Value:
\$138 million

- 586 parcels
- Average parcel value: \$236,000 (2020 Revaluation)



Market Street – Property Tax Generation (annual)

Total Annual Taxes to
Town of Warren:
\$2,401,000



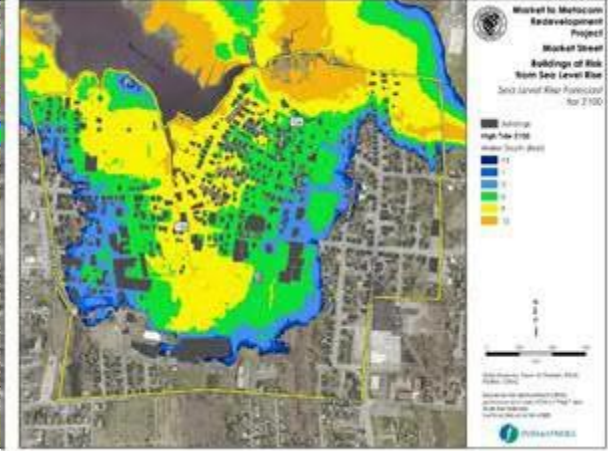
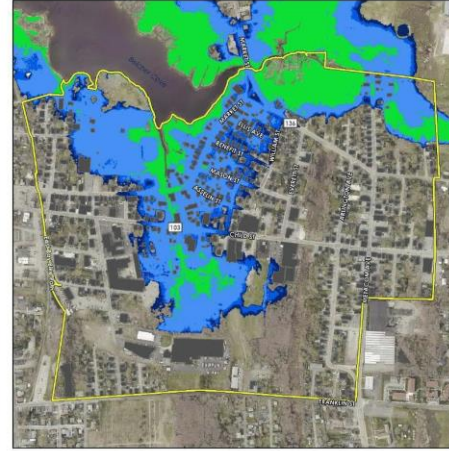
Market Street – High Tide Projections 2035-2100

2035

2050

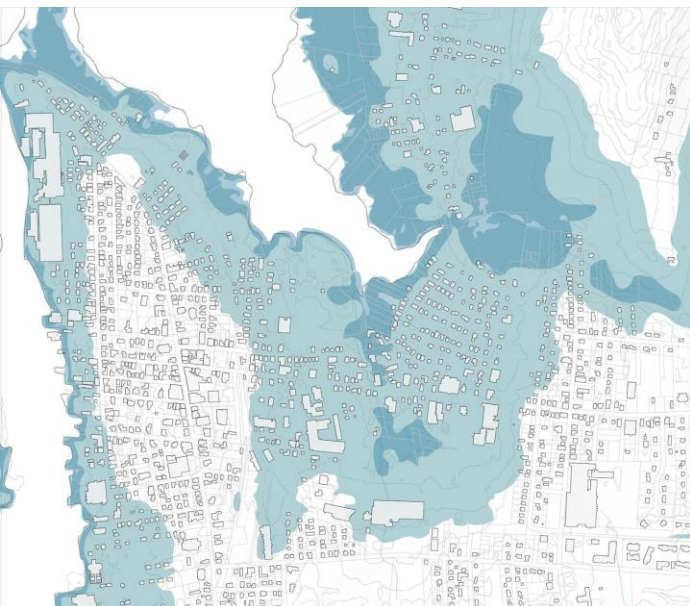
2070

2100

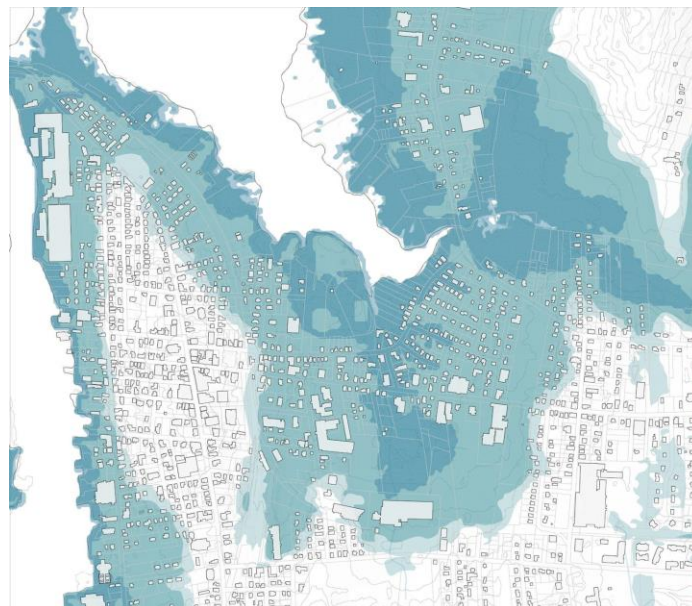


SLR + 100-YEAR STORM

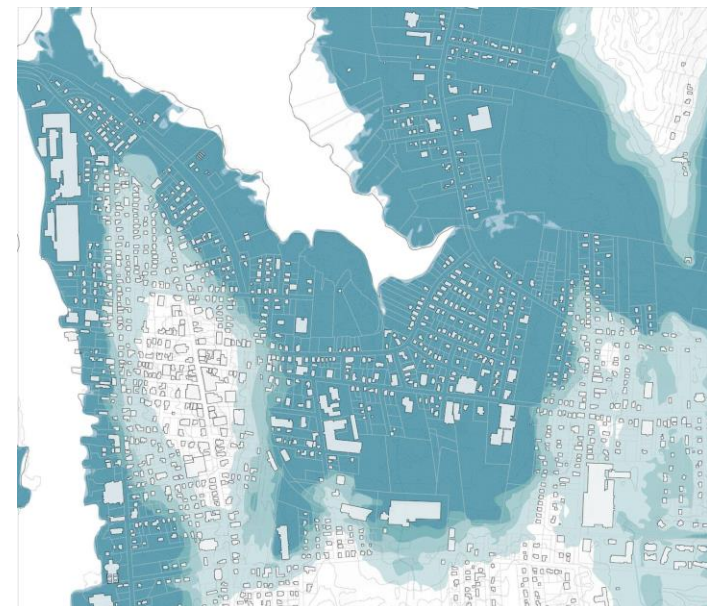
- Sea level rise
- 100-year storm



2035



2050



2100

Child Street – Route 103 Flooding

Stormwater flooding from
9/1/21 – Child Street

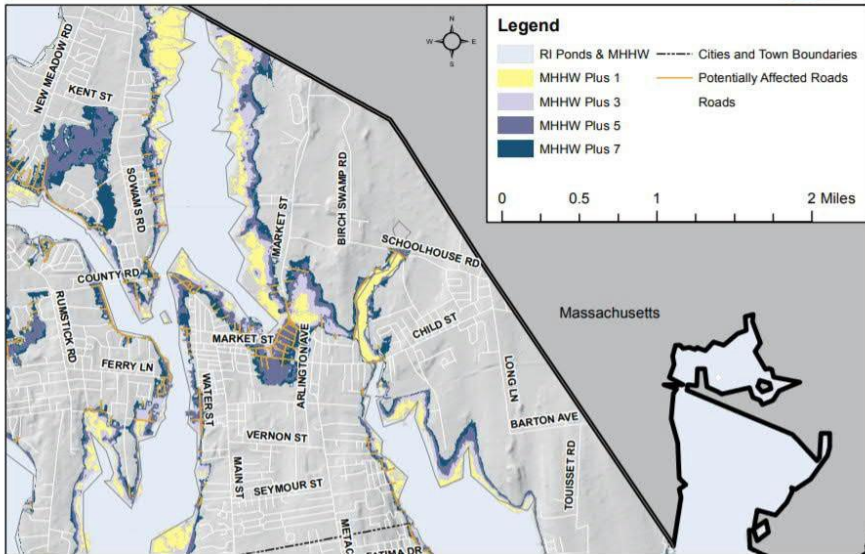


Impacts to Transportation Assets

Warren, RI

RHODE ISLAND STATEWIDE PLANNING PROGRAM

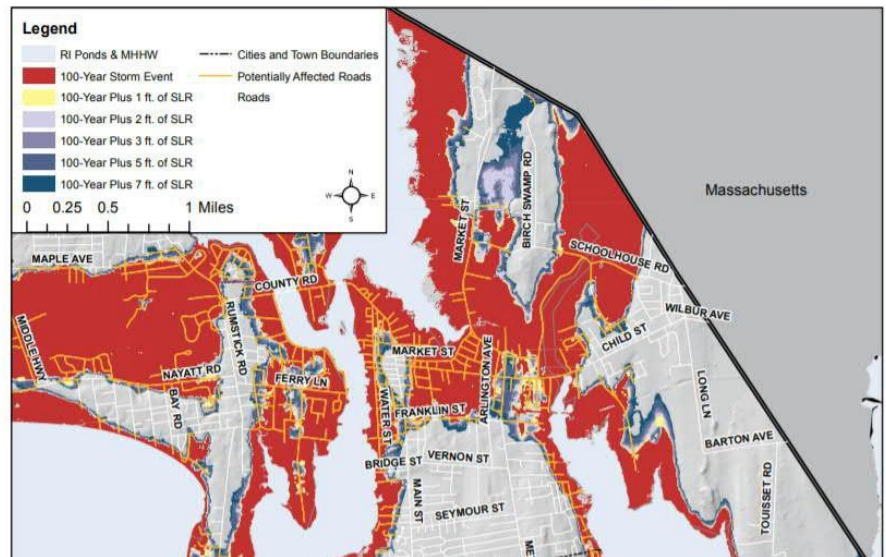
Warren Roads Exposed to Sea Level Rise



Warren, RI

RHODE ISLAND STATEWIDE PLANNING PROGRAM

Warren Roads Exposed to 100-Year Storm Surge Events



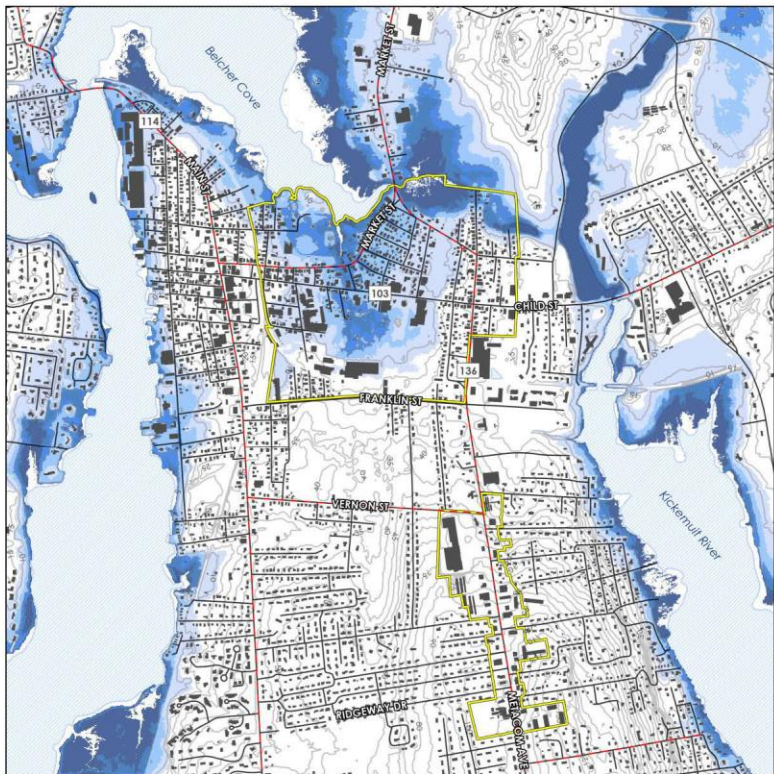
RI DOT and the Town of Warren are developing a road adaptation strategy template that can be replicated throughout the State and the Region.

No Action Scenario - ASSUMPTIONS

- Town of Warren takes no actions to prepare for climate change impacts
- State agencies and utilities take no action to prepare for climate change impacts
- Sea level rise per NOAA forecasts:
 - 1' rise by 2035
 - 3' rise by 2050
 - 6' rise by 2070
- Increase (in frequency and severity) to historical averages of precipitation and storm events
 - Hurricanes
 - Nor'easters
 - Seasonal precipitation



No Action Scenario – FLOODING OVERVIEW



**Market to Metacom
Redevelopment
Project**

**Areas at Risk
from Sea Level Rise**

Legend:

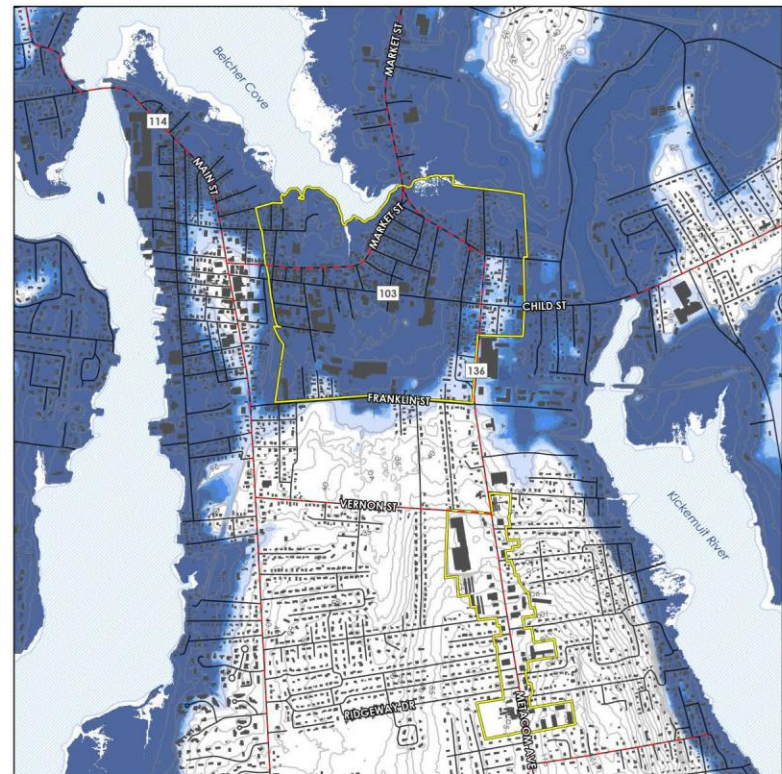
- Project Area
- Buildings
- Roads
- Evacuation Route
- 5 Foot Contours
- MHHW 2020
- MHHW 2035
- MHHW 2050
- MHHW 2070
- MHHW 2100
- Water

Scale: 0, 500, 1,000, 1,500, 2,000 Feet

Data Sources: Town of Warren, RIGIS, RIDEM, CRMC

Sea level rise data reflect CRMC guidance and uses NOAA's "High" sea level rise forecast. Vertical datum is NAVD88

FUSS & O'NEILL



**Market to Metacom
Redevelopment
Project**

**Areas at Risk
from 100-Year Storm**

Legend:

- Project Area
- Buildings
- Roads
- Evacuation Route
- 5 Foot Contours
- 100-Year Storm 2020
- 100-Year Storm 2035
- 100-Year Storm 2050
- 100-Year Storm 2070
- 100-Year Storm 2100
- Water

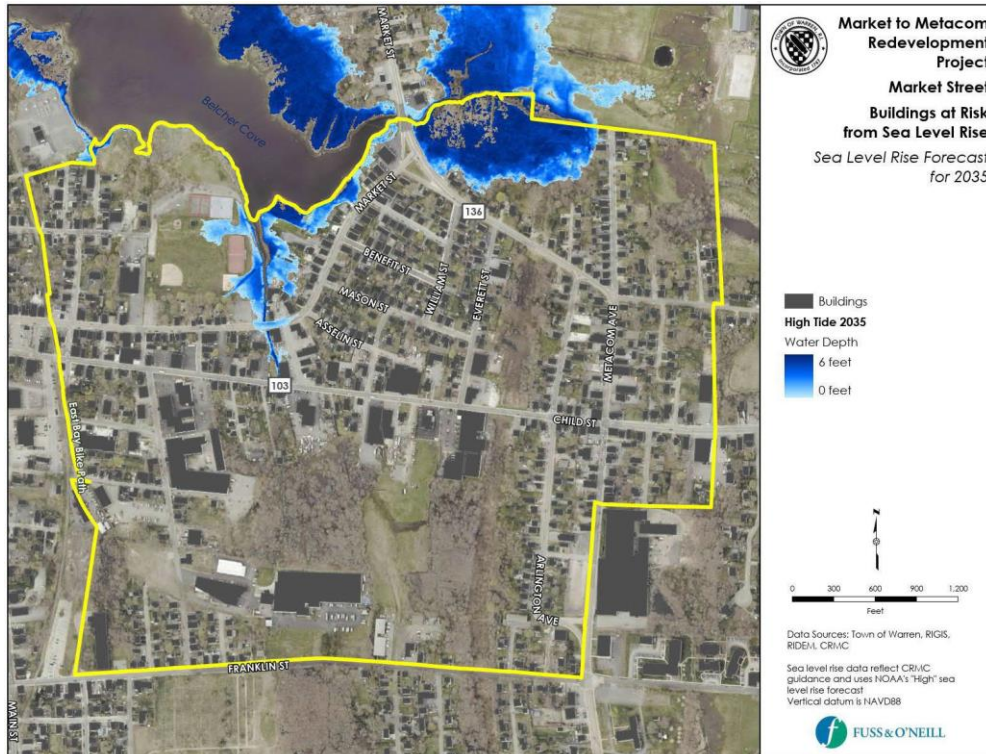
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FUSS & O'NEILL

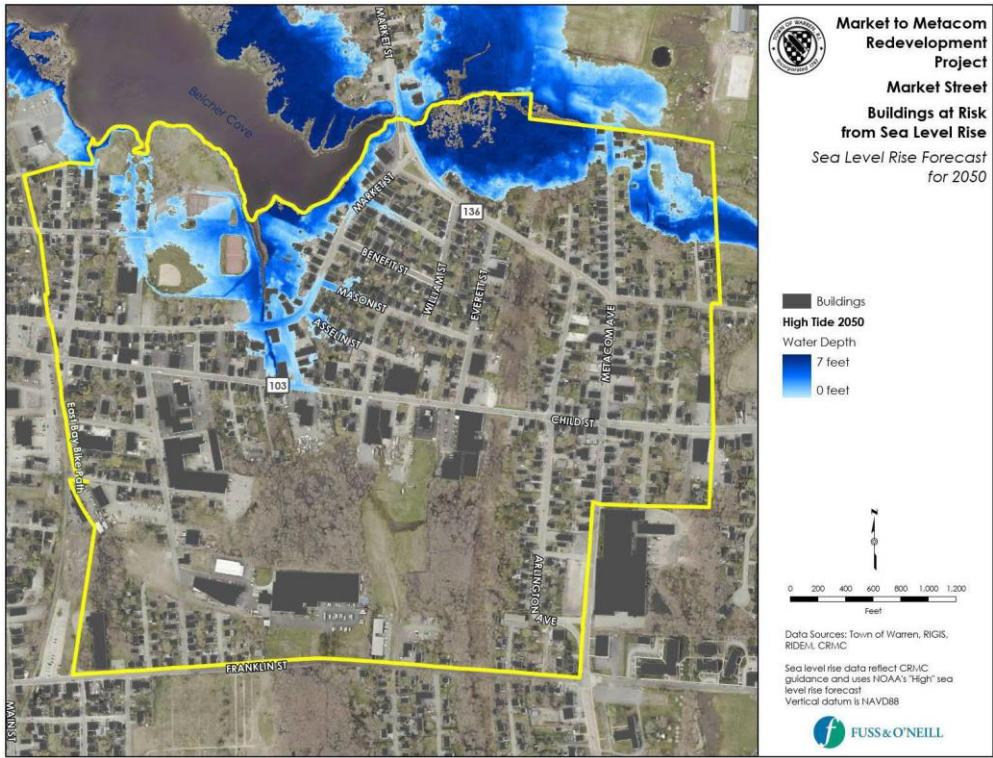
No Action Scenario – 2035



Properties Flooded	58
Buildings Flooded	31
Housing Units Lost	57
Residents Displaced	86
Lost Annual Tax Revenue	\$200,000*
Building Loss Cost	\$8,100,000*

* Current numbers, not adjusted

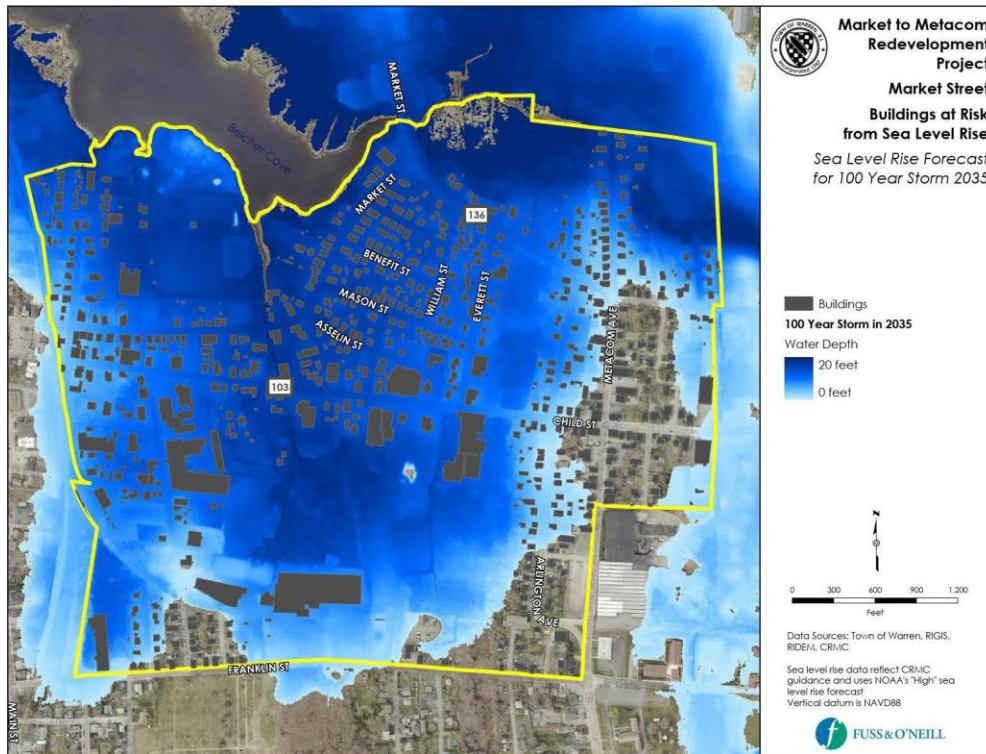
No Action Scenario – 2050



Properties Flooded	75
Buildings Flooded	65
Housing Units Lost	121
Residents Displaced	182
Lost Annual Tax Revenue	\$300,000*
Building Loss Cost	\$16,600,000*

* Current numbers, not adjusted

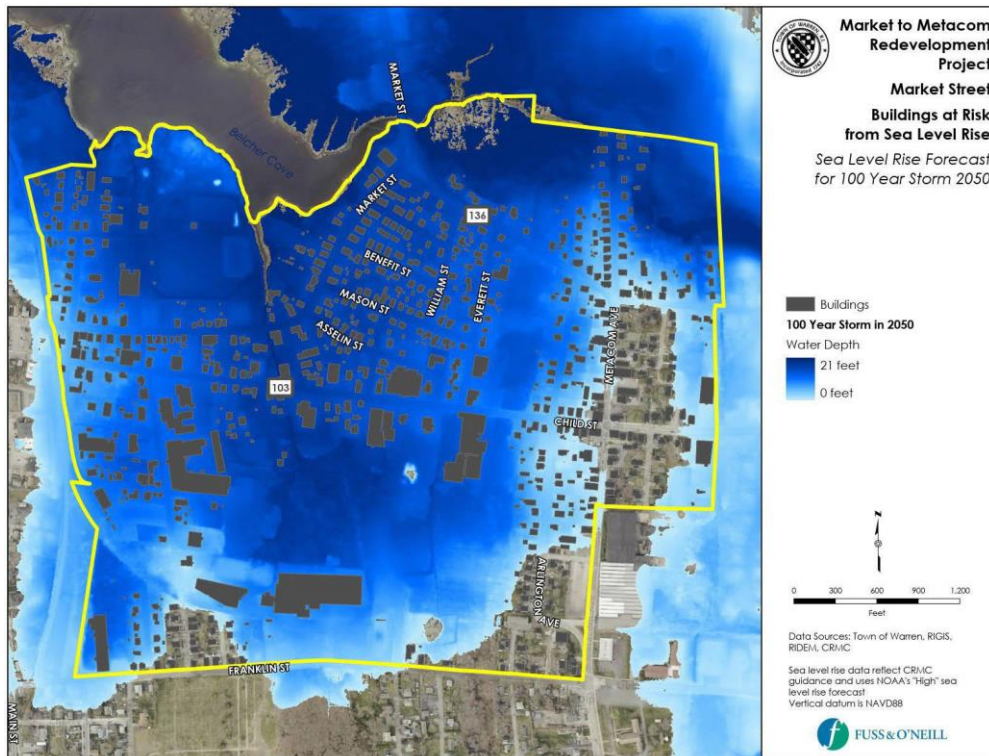
No Action Scenario – 2035 – 100 Year Storm Event



Damage	\$3,500,000
Lost Business Revenue	\$5,400,000
Total Flood Impacts	\$8,900,000*

* Current numbers, not adjusted

No Action Scenario – 2050 – 100 Year Storm Event



Damage	\$8,500,000
Lost Business Revenue	\$3,600,000
Total Flood Impacts	\$12,100,000*

* Current numbers, not adjusted

No Action Scenario – COSTS SUMMARY

Time Period	2025-2035	2035-2050	2050-2070	2070-2100	Total by 2100
Properties Flooded by Sea Level Rise	58	75	113	137	383
Buildings Flooded by Sea Level Rise	31	65	92	118	306
Building Loss Cost	\$8,100,000	\$16,600,000	\$23,000,000	\$38,100,000	\$85,800,000
Damage from 24" Flood Event	\$3,500,000	\$8,500,000	\$13,100,000	\$27,500,000	\$52,700,000
Lost Business Revenue from 24" Flood Event	\$5,400,000	\$3,600,000	\$22,000,000	\$95,200,000	\$126,300,000

All numbers current, not adjusted

No Action Scenario – ROADWAY IMPACTS

- Market, Child and Rte. 136 are flooded during 100-year storm events
- Market Street at Redmond is flooded every day (by 2035)
- Child Street (Rte. 103) is flooded every day (by 2050)
- Rte. 136 at Belcher Cove Bridge is flooded every day (by 2050)

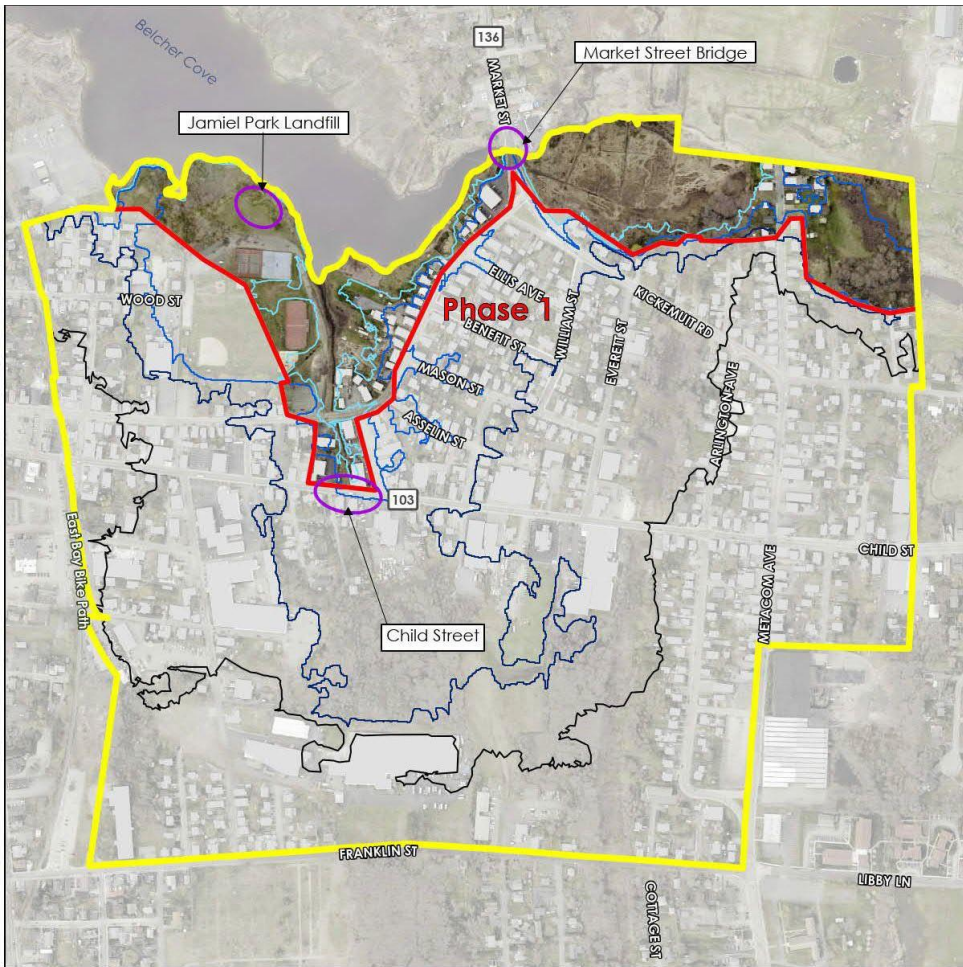


Phased Relocation and Restoration Scenario - ASSUMPTIONS

- Occurs in 4 Phases over 50-70 years
- Buy-outs of properties in danger of repetitive flooding and storm damage
- Removal of most local streets
- Removal of most utilities
- Restoration of wetlands for protective buffering and flood storage
- Adaptation of State roadways to protect transportation connections

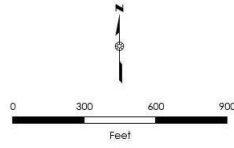


Phased Relocation and Restoration – PHASE 1 (2025-2035)



**Market to Metacom
Redevelopment
Project
Market Street
Phase 1 (2025-2035)**

- Project Area
- Predicted MHHW Extent
 - 2035
 - 2050
 - 2070
 - 2100
- Critical Infrastructure



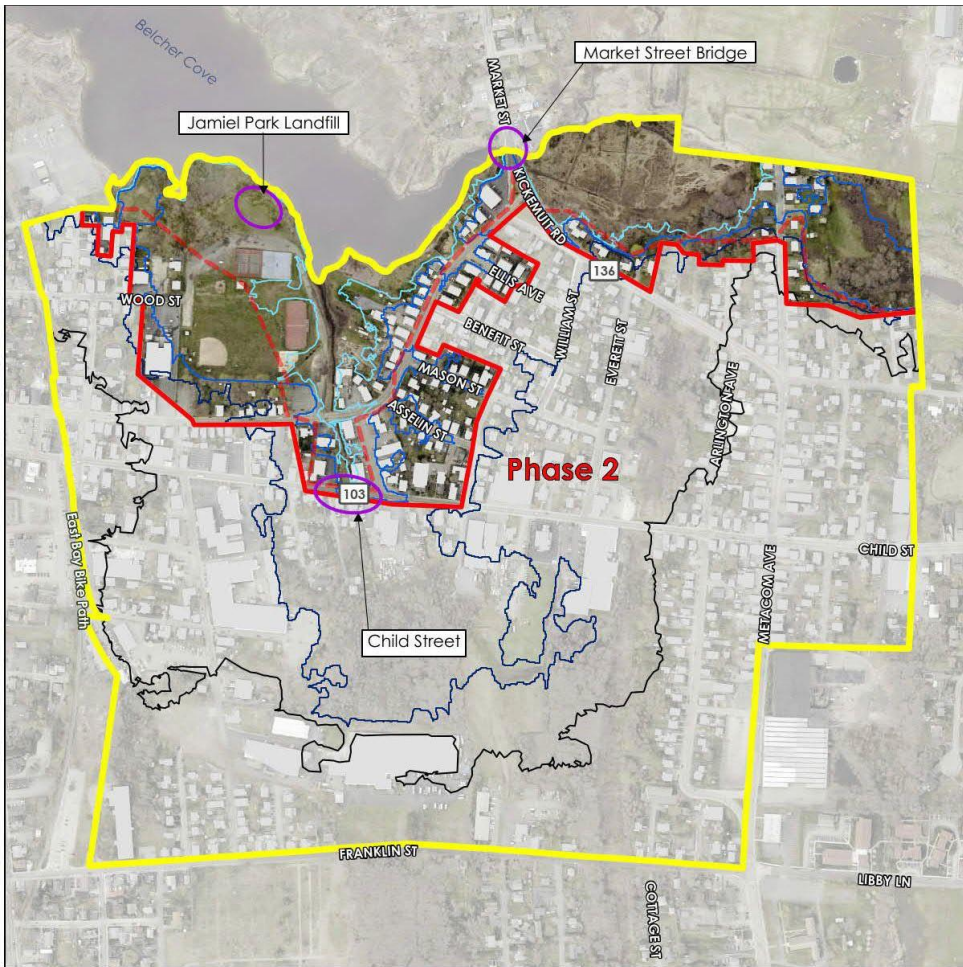
Data Sources: Town of Warren, RIGIS, RIDEM, CRIMC
Sea level rise data reflect CRMC guidance and uses NOAA's "High" sea level rise forecast
Vertical datum is NAVD88



Properties	58
Buildings	31
Total Cost	\$14,900,000

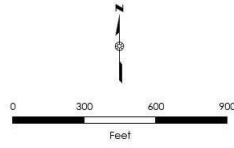
Total cost includes property acquisition, demolition, utility removal, siteclearing, and restoration. Current numbers not adjusted.

Phased Relocation and Restoration – PHASE 2 (2035-2050)



**Market to Metacom
Redevelopment
Project
Market Street
Phase 2 (2035-2050)**

- Project Area
- Prior Phases
- Predicted MHHW Extent
 - 2035
 - 2050
 - 2070
 - 2100
- Critical Infrastructure



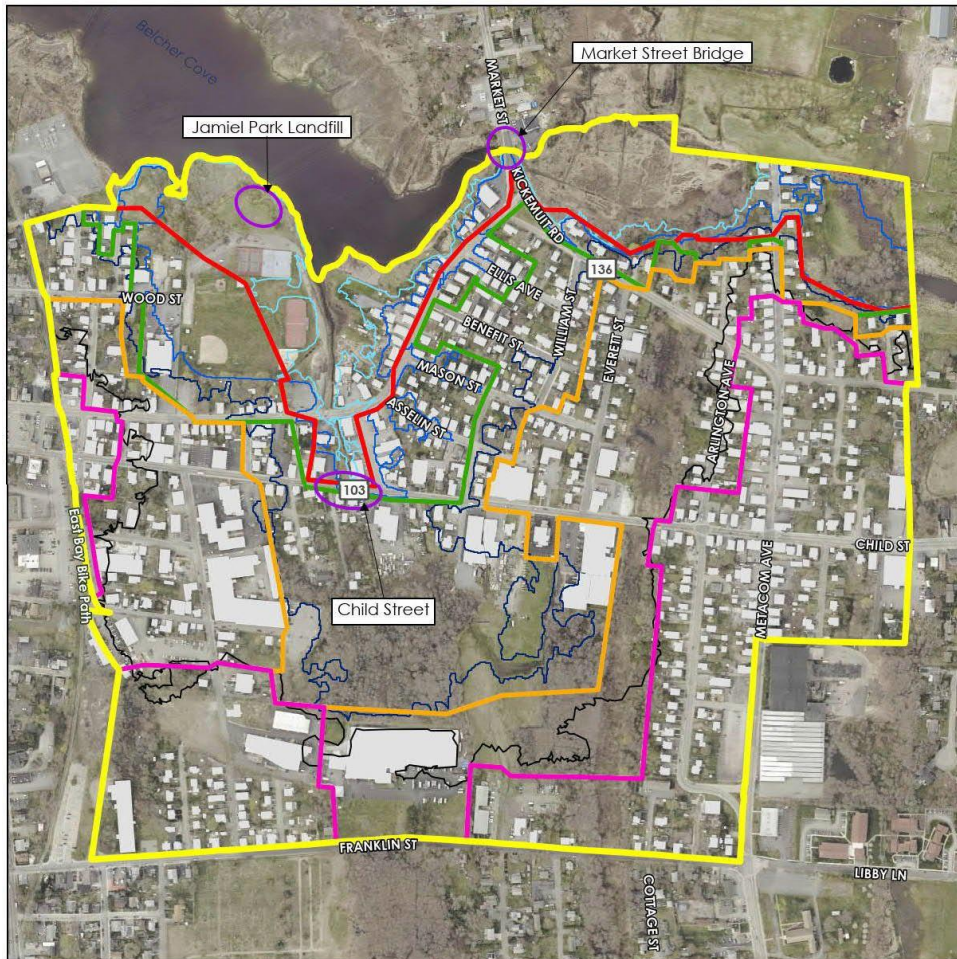
Data Sources: Town of Warren, RIGIS, RIDEM, CRMC
Sea level rise data reflect CRMC guidance and uses NOAA's "High" sea level rise forecast
Vertical datum is NAVD88



Properties	75
Buildings	65
Total Cost	\$24,600,000

Total cost includes property acquisition, demolition, utility removal, siteclearing, and restoration.
Current numbers not adjusted.

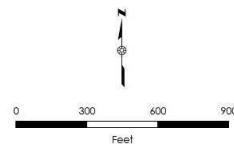
Phased Relocation and Restoration - SUMMARY



Market to Metacom Redevelopment Project Market Street

All Phases

- Project Area
- Phase 1 (2021-2035)
- Phase 2 (2035-2050)
- Phase 3 (2050-2070)
- Phase 4 (2070-2100)
- Predicted MHHW Extent
 - 2035
 - 2050
 - 2070
 - 2100
- Critical Infrastructure



Data Sources: Town of Warren, RIGIS, RIDEM, CRMC

Sea level rise data reflect CRMC guidance and uses NOAA's "High" sea level rise forecast. Vertical datum is NAVD88

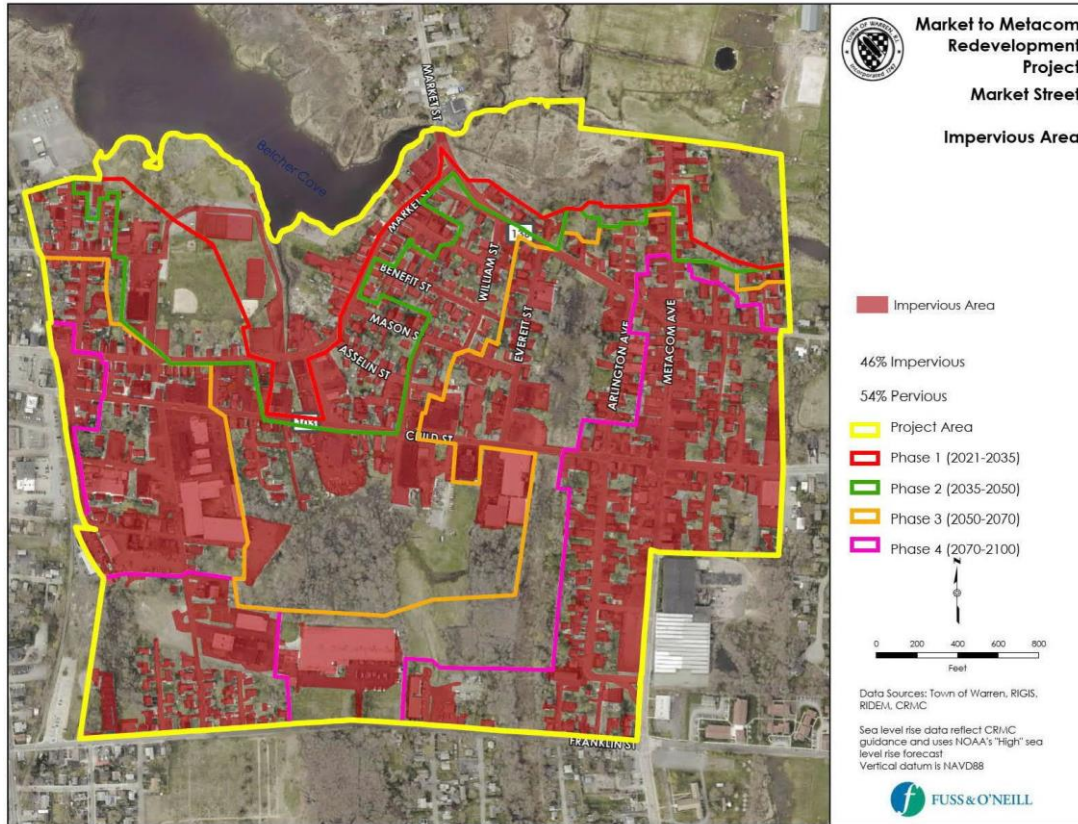


Totals by 2100

Properties	383
Buildings	306
Total Cost	\$138,300,000

Total cost includes property acquisition, demolition, utility removal, site clearing, and restoration. Current numbers not adjusted.

Phased Relocation and Restoration – Impervious Removed



Phase	Impervious Area Removed (Acres)	Marshland Created (Acres)
1	8	34
2	10	21
3	17	42
4	29	56
Total	63	153

Phased Relocation and Restoration Scenario – AVAILABLE FUNDING

- EPA: Pre-Disaster Mitigation Grants
- FEMA: BRIC Program – Building Resilient Infrastructure and Communities
- Army Corps Of Engineers
- US Dept. of Agriculture
- RI Infrastructure Bank
- Tax Increment Financing (TIF)

FEMA to open up more money for resilience projects

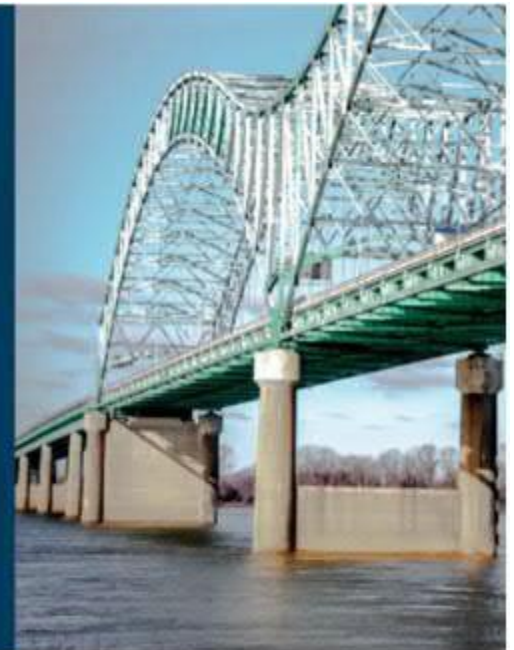
\$400 million+

Building Resilient Infrastructure and Communities (BRIC) program, expected annual funding

\$56 million

Predisaster Mitigation Program, on average from 2009-2016

* \$400M figure depends on disaster expenditures and is at the discretion of FEMA.



Special Legislative Commission to Study the Rhode Island Low- and Moderate-Income Housing Act

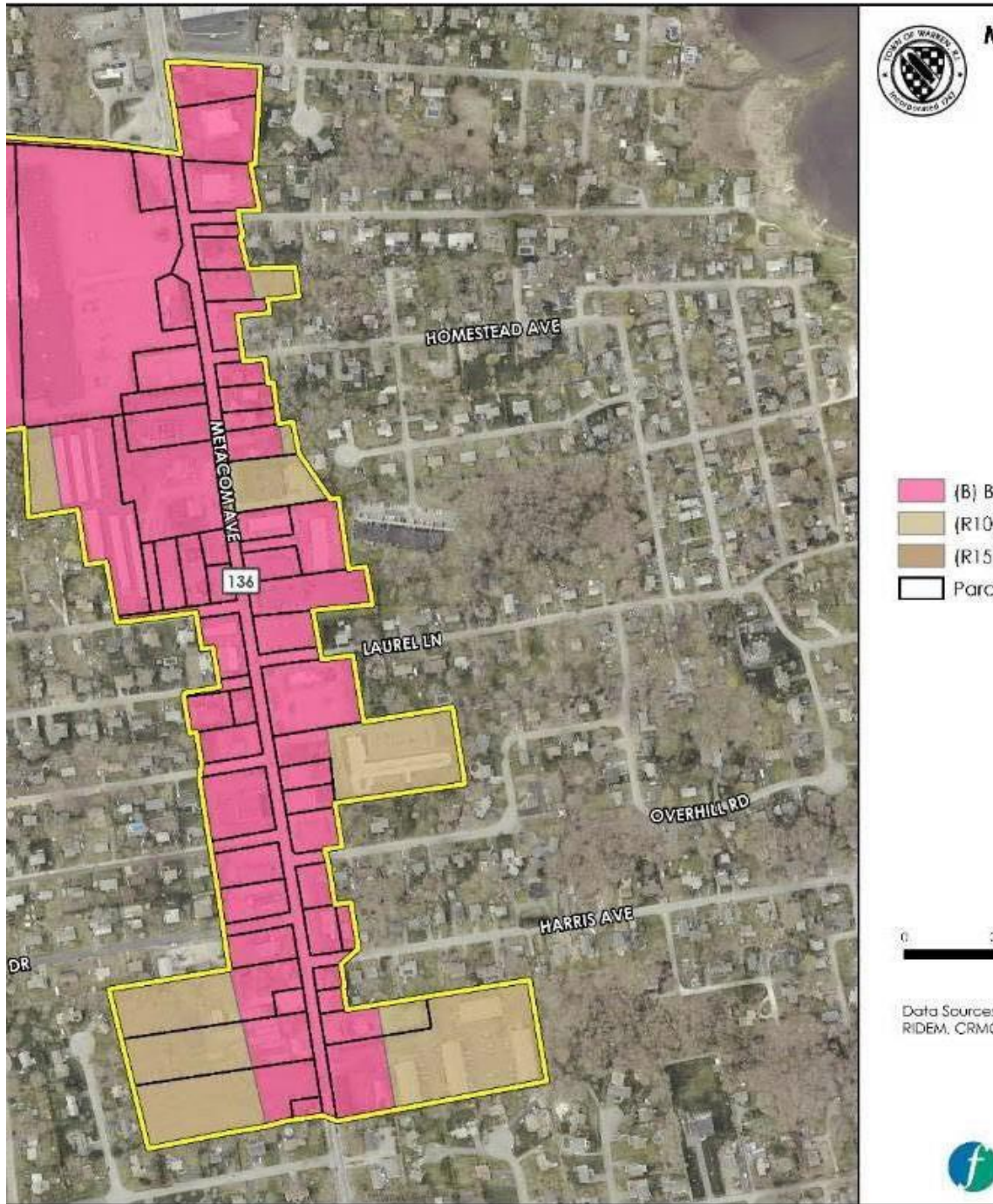
Robert Rulli, Director
Office of Planning & Community Development
Town of Warren
December 2, 2021



Metacom Avenue – Project Area

- Area contains approximately:
 - 81 acres
 - 54 buildings
 - 66 housing units
 - 50 businesses





Metacom Avenue – Zoning & Land Use

- Land Use:
- Comm/Indust: 39%
- Single family: 23%
- Multi-family: 12%
- Vacant (improved): 13%
- State/Utility: 7%
- Vacant (unimpr): 6%



Existing Conditions



MARKET TO METACOM

OCEAN STATE JOB LOT CONCEPTUAL PERSPECTIVE RENDERING

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UNION STUDIO
ARCHITECTURE & INTERIOR DESIGN

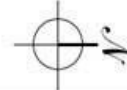
Job Lot Plaza Site

Job Lot Plaza Site



PROGRAM	
A	Performing Arts Center - 33,500 gsf 500-750 seat theatre @ 18,500 gsf Parking and service below @ 15,000 gsf
B	3-Story Mixed Use Building - 21,600 gsf 18 units @ approx. 900 sf/unit
C	4-Story Mixed Use Building - 48,000 gsf 44 units @ approx. 1000 sf/unit Commercial Retail - 4,000 sf
D	3-Story Mixed Use Building - 21,600 gsf 18 units @ approx. 900 sf/unit
E	4-Story Apartment Building - 23,600 gsf 35 units @ approx. 960 sf/unit
F	4-Story Mixed Use Building - 33,600 gsf 26 units @ approx. 960 sf/unit Commercial/Retail @ 8400 sf
G	3-Story Mixed Use Building - 11,200 gsf Commercial/Retail @ 4,400 gsf 8 units @ approx. 1000 sf/unit
H	3-Story Mixed Use Building - 15,000 gsf Commercial/Retail @ 5,000 gsf 10 units @ approx. 1000 sf/unit
I	4-Story Truck Under Townhouses 20 units @ approx. 2,400 gsf/unit

Parking +/- 470 total spaces
(includes parking under PAC, truck under townhouses, and at Lauren's Restaurant)



MARKET TO METACOM

OCEAN STATE JOB LOT PLAZA CONCEPTUAL MASTER PLAN- OPTION C
FEBRUARY 4, 2021
SCALE: 1"=100'-0"

PAGE 3



Metacom Avenue Redevelopment Scenario



Blocks A and B

	Block A	Block B
Civic or Institutional	(N/A)	(N/A)
Commercial	13,000 sf	9,600 sf
Residential: Multi-Family	74 units	20 units
Residential: Single-Family	12 units	(N/A)
Total Residential Units	86 units	20 units
Total Parking Spaces	135	48

Metacom Avenue Redevelopment Scenario

Blocks C and D



	Block C	Block D
Civic or Institutional	(N/A)	33,500 sf
Commercial	24,000 sf	27,500 sf
Residential: Multi-Family	72 units	159 units
Residential: Single-Family	33 units	20 units
Total Residential Units	105 units	179 units
Total Parking Spaces	210	470

Metacom Avenue Redevelopment Scenario



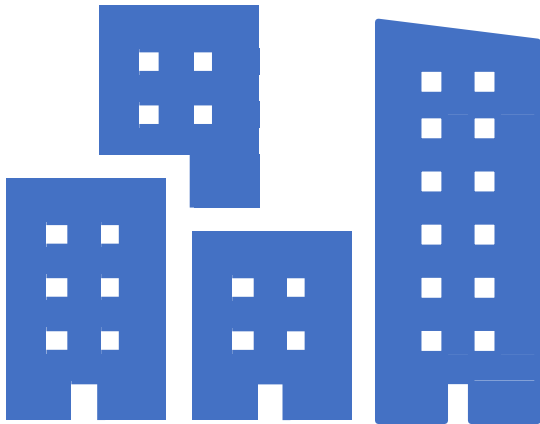
Blocks E and F

	Block E	Block F
Civic or Institutional	(N/A)	(N/A)
Commercial	10,400 sf	23,000 sf
Residential: Multi-Family	25 units	102 units
Residential: Single-Family	3 units	(N/A)
Total Residential Units	28 units	102 units
Total Parking Spaces	70	197

Metacom Avenue Redevelopment Scenario - Totals

Parcel	Commercial (square footage)	Residential Units	Existing Value	Future Value	Existing Property Tax Payment	Future Property Tax Payment	Increase in Taxes to Town
A - Pasqua/Healey	13,000	86	\$1,288,200	\$15,198,855	\$22,363	\$264,460	\$242,097
B - Ridgeway and Canario	9,600	20	\$936,900	\$3,460,567	\$16,265	\$60,214	\$43,949
C- CVS block	24,000	105	\$6,736,900	\$17,792,728	\$116,953	\$309,593	\$192,641
D - Job Lot Plaza	27,500	179	\$7,545,600	\$37,006,435	\$130,992	\$643,912	\$530,295
E - Patterson-Homestead	10,400	28	\$1,497,000	\$5,934,071	\$25,988	\$103,253	\$77,265
F - AT&T Block	23,000	102	\$4,019,500	\$13,479,109	\$69,778	\$234,537	\$164,758
TOTALS	107,500	520	\$22,024,100	\$92,871,765	\$382,338	\$1,615,969	\$1,251,005

Form Based Code: What is it?



- Form Based Code (FBC) is an alternative zoning district that allows for the regulation of development that helps a community realize its vision for a specific area.
- While existing zoning focuses on separating land uses (i.e., residential, commercial, industrial) it does little to encourage an integrated approach to development.
- FBC helps regulate land development and redevelopment by setting careful and clear controls on building form, rather than focusing strictly on types of land use.
- FBC typically allows for more density than existing zoning districts.
- FBC clearly defines requirements for building heights, building and parking placement, architectural features, as well as standards for sidewalks street trees, parking and public spaces.
- **A mix of affordability is required for housing units.**
- It also can provide a less intensive/ expensive option than current Planning & Zoning Review.
- FBC can also provide financial incentive by offering a faster and more streamlined approval process.
- Benefits to FBC include a more predictable outcome due to form-driven zoning requirements.
- The Town and the community each benefit from managed growth and public improvements that are aligned with a collective vision for the future.

Advantages of Form Based Code



Revitalization of 1960's era park in the front, one-story, architecturally insignificant buildings



Intelligent increase of density



Improvements to infrastructure



Increased housing opportunities, mixed income, rental & ownership



Preserves historic character of Downtown Warren, takes development pressure away from eastern portion of town, respects surrounding neighborhoods



Increases tax revenues

What is Tax Increment Financing (TIF)

Financing method to incentivize economic development

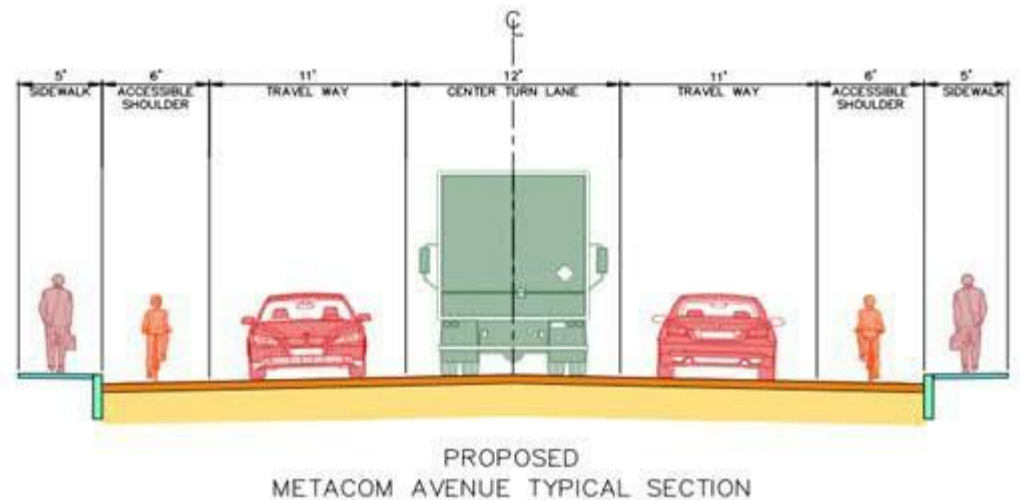
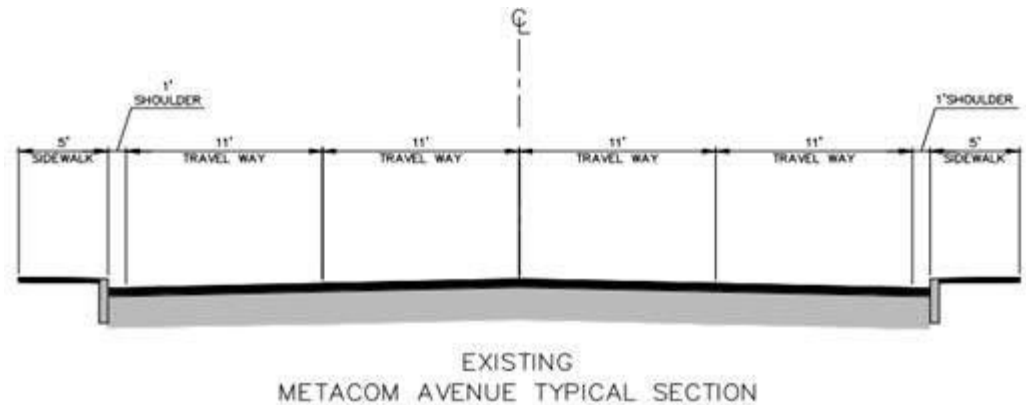
Allows some or all of future property tax revenues from new development to be dedicated to support infrastructure, projects and programs related to economic development

Property tax **increment** can be used to help finance **public** and **private** development costs

Portion of incremental revenues not dedicated for TIF is used for general fund and once TIF expires, all revenues go to general fund.

Metacom Avenue Reconfiguration

- Maintains existing curb lines/utilities/stormwater
- One travel lane in each direction
- Center turn lane
- Accessible shoulders for bike
- Improved sidewalks for pedestrians



Metacom Avenue Stormwater Retrofits

- Opportunity to improve water quality impacts to Kickemuit and Warren River
 - Redevelopment of privately owned parcels
 - RI DOT improvement of State roads
 - Town-owned properties and streets



Metacom Avenue Stormwater Retrofits

- Reduce water velocity



Additional Information

Project Website <https://bit.ly/M2M-Warren>