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Assessing Coastal Hazards in Wisconsin Through Planning



CALM Network Meeting

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Planning and Natural Hazards



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PHIL BERKE



Research Professor

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Philip Berke's work focuses on the relationship between community resilience and urban planning with specific focus on methods, theory and metrics of local planning and outcomes. He is the lead co-author of an internationally recognized book, *Urban Land Use Planning* (University of Illinois Press, fifth edition, 2006), which focuses on integrating principles of sustainable communities into urban form, and co-author of a book, *Natural Hazard Mitigation: Recasting Disaster Policy and Planning*, which was selected as one of the "100 Essential Books in Planning" of the 20th century by the American Planning Association Centennial Great Books. His 2015 publication on community resilience to hazards and climate change received the Best Article Award, the highest award for scholarly research given by the American Planning Association.

Hazard Mitigation



Plan Quality

Searching for the Good Plan

A Meta-Analysis of Plan Quality Studies

Philip Berke
 David Godschalk
 University of North Carolina

Journal of Planning Literature
 Volume 23 Number 3
 February 2009 227-240
 © 2009 Sage Publications
 10.1177/0885412208327014
<http://jpl.sagepub.com>
 hosted at
<http://online.sagepub.com>

Plan Implementation

Environment and Planning B: Planning and Design 2006, volume 33, pages 581 – 600

DOI:10.1068/b31166

What makes plan implementation successful? An evaluation of local plans and implementation practices in New Zealand

Plan Integration

Articles

Evaluation of Networks of Plans and Vulnerability to Hazards and Climate Change: A Resilience Scorecard

Philip Berke ✉, Galen Newman ✉, Jaekyung Lee ✉, Tabitha Combs ✉, Carl Kolosna ✉ & David Salvesen ✉

Pages 287-302 | Published online: 23 Nov 2015

Download citation <https://doi.org/10.1080/01944363.2015.1093954>



Comprehensive and Hazard Mitigation Plans in Wisconsin Communities

Library of Plans

Comprehensive Planning Quick Links

Comp Planning Home
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Contact Us

Phone
(608) 267-3369

Mailing Address

Email
comp.planning@wisconsin.gov



Comprehensive Plans Submitted to and Logged by DOA

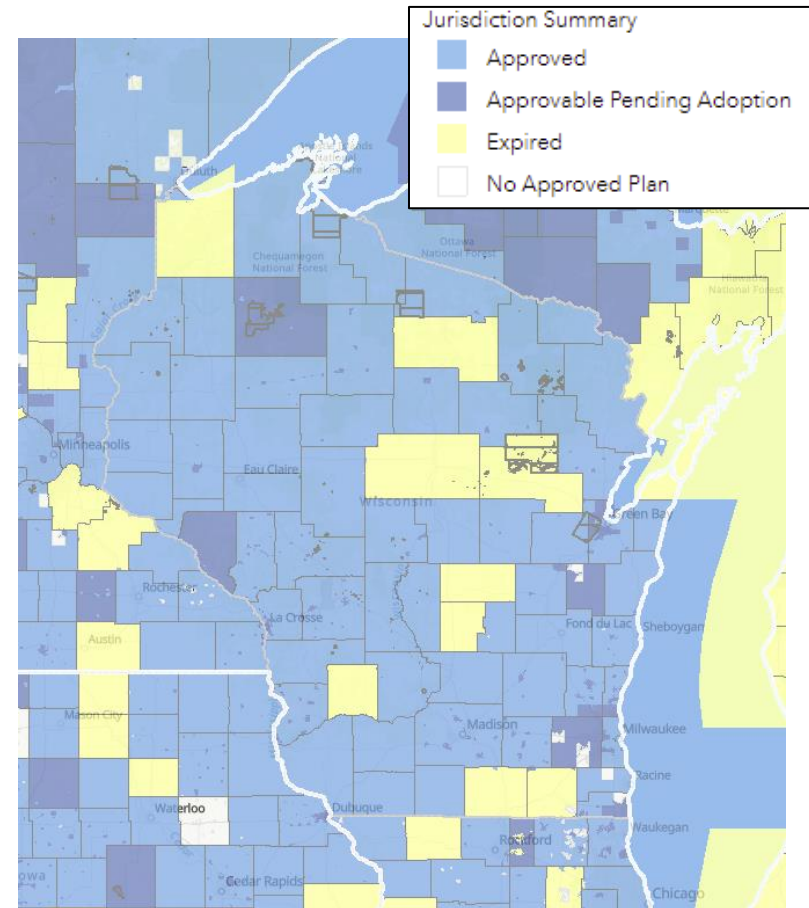
- Counties (67 of 72 = 93%)
- Cities (181 of 190 = 95%)
- Villages (343 of 417 = 82%)
- Towns (954 of 1255 = 76%)

Summary of Adopted Comprehensive Plans Logged by DOA

Number of Plans Submitted (as of last library update on May 18, 2022)

- County plans: 67
- Municipal plans: 1,478
- Tribal plans: 4
- Regional Planning Commission plans: 7

<https://doa.wi.gov/Pages/LocalGovtsGrants/Comprehensive-Planning-Library-of-Plans.aspx>



<https://www.fema.gov/emergency-managers/risk-management/hazard-mitigation-planning/status>

Coastal Plan Inventory - 2015

Brad Sippel reviewed 52 comprehensive plans and 17 hazard mitigation plans in coastal counties, cities and villages. Keyword searches were used to find how each plan addressed hazards through descriptions of issues, needs and solutions.

Comprehensive Plans

- 21 of 22 cities
- 15 of 17 villages
- 14 of 15 counties
- 2 of 3 regional planning commissions

Hazard Mitigation Plans: 3 cities, 14 counties

Detailed observations of 5 comprehensive plans and 3 hazard mitigation plans

Short overviews of 5 city/village and 8 county plans that demonstrated awareness and understanding of coastal hazards.

<https://maps.aqua.wisc.edu/geocatalog/pdf/glcsp-wi-coastal-plan-review.pdf>

Coastal Plan Inventory Update – 2021

The updated report includes content analysis by Collin Mieras from 20 comprehensive plans and 16 hazard mitigation plans updated since the previous review in 2015.

Trends in addressing coastal hazards

- **A growing number of communities including coastal resilience topics in their comprehensive plans.** Six communities that updated their plans since the original review in 2015 incorporated coastal resilience topics into their comprehensive plans for the first time.
- Several comprehensive plans identified existing strategies already in place to increase a community's resilience to coastal hazards. Examples include mapping environmentally sensitive areas and using native vegetation for stormwater runoff.
- **Several hazard mitigation plans included a more detailed analysis of the processes, causes, and effects of coastal hazards** on the community as compared to comprehensive plans.
- **Increasing reference to climate change in hazard mitigation plans.** In 2016, 38% of hazard mitigation plans in Wisconsin analyzed included climate change in their plan (WEM). This review noted 13 of 16 hazard mitigation plans included climate change.

Coastal Plan Inventory – 2021 Update

Featured Comprehensive Plans (5)

- City of Ashland (2017), City of Bayfield (2019), Village of Fox Point (2021), City of St. Francis (2016), City of Sturgeon Bay (2020)

Featured Hazard Mitigation Plans (7)

- Brown County (2021), Douglas County (2016), Iron County (2018), Kenosha County (2020), City of Milwaukee (2019), Ozaukee County (2020), City of Superior (2020)

City of Ashland Comp Plan (2017)

- detailed analyses of coastal hazards document the susceptibility of the shorelines and bluffs to erosion
- waterfront overlay district
- recommends increasing the minimum setback for waterfront properties

Village of Fox Point Comp Plan (2021)

- coastal hazard analysis section uses data on bluff stability, bluff recession, and beach width
- recommends strengthening the bluff protection ordinance and planting native vegetation for erosion control

Douglas Co. Natural Hazards Mitigation Plan (2016)

- analysis of coastal and bluff erosion
- best practices for mitigating coastal hazards (setbacks, property acquisition, relocation)
- expand the recession rate study to the St. Louis River Estuary

Ozaukee Co. Hazard Mitigation Plan (2020)

- most extensive analysis of coastal hazards
- extensive list of mitigation strategies, including regulation/policy measures, bluff top, bluff face and shore mitigation measures, and public education

Coastal Plan Inventory – 2021 Update

Findings

- **The comprehensive plans could benefit from further attention in including implementation strategies to increase coastal resilience.**
- Coastal hazards were often addressed in Natural Resource and Parks and Recreation Chapters, but rarely identified as a risk in chapters focused on development in the community. Limiting coastal resilience to a single chapter of the plan is contrary to best practices that **recommend linking hazard mitigation into several comprehensive plan elements, including land use, transportation, housing, and economic development** (Schwab, 2010).

Coastal Plan Inventory – 2021 Update

Findings

- When regional plan commissions or county planning departments conducted the plans, there was a greater analysis of coastal hazards and more coordinated policies across the plans.
- In some situations, where a local jurisdiction conducted the comprehensive plan and a county emergency management department conducted the hazard mitigation plan, the **separation of the planning process tended to result in less analysis of coastal hazards and considerable divergence in policies**. This trend has been identified on a national and even international scale and can increase vulnerability when local and regional plans don't equally address hazard mitigation elements (Berke et al., 2015).

Coastal Plan Inventory Story Map



A story map collection by Gabriel Wilkins, Brian Ohm and David Hart to highlight plans in coastal communities that address resilience to natural hazards.

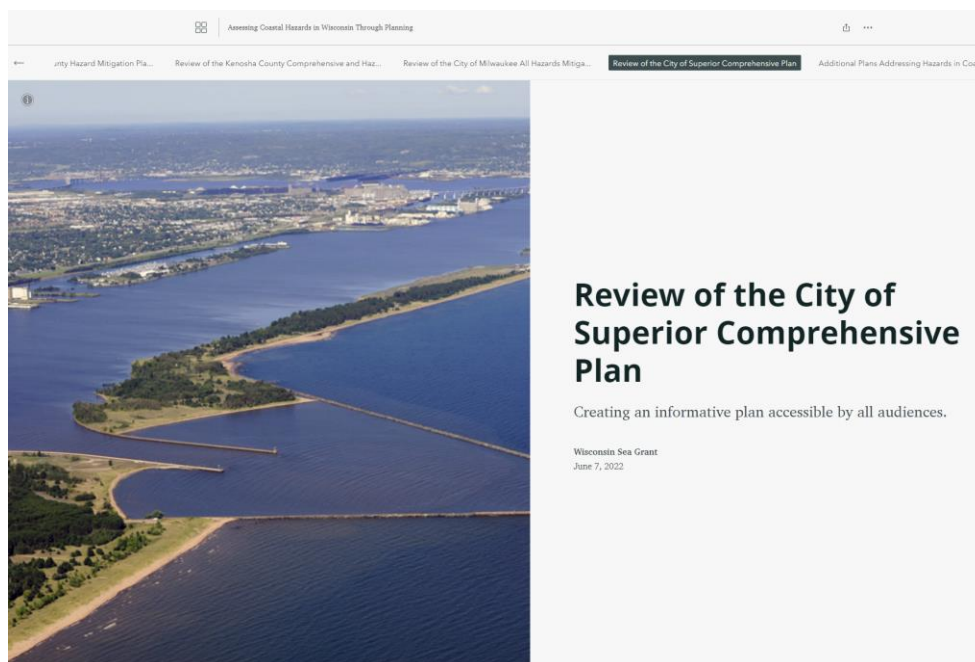


<https://arcg.is/1ajyvO>

Next Steps: Enhance Coastal Plan Story Map

- Include resources and best practices to help communities build coastal resilience through planning.
- Track implementation of new comprehensive and hazard mitigation plans in coastal communities and include new case studies dynamically.

CREATING SCORECARD	Policy Tasks	<ul style="list-style-type: none"> • Assemble the 'Network of Plans' • Generate lists of applicable policies
	Mapping Tasks	<ul style="list-style-type: none"> • Determine planning districts • Delineate hazard zones • Map your 'mappable policies'
	Policy Scoring	<ul style="list-style-type: none"> • Score your policies +1, 0, -1 or not applicable • Create tables, maps and indexes
ANALYZING	Physical Vulnerability	<ul style="list-style-type: none"> • Assess and analyze physical vulnerability
	Social Vulnerability	<ul style="list-style-type: none"> • Assess and analyze social vulnerability
ADVANCING RESILIENCE	Resilience through Planning	<ul style="list-style-type: none"> • Recognize policy induced vulnerability • Strengthen plan integration and resilience
	Stories	<ul style="list-style-type: none"> • Stories from Case Studies



Next Steps: ID Network of Plans Addressing Resilience

Functional Plans

- Land and water resource mgmt plans
- Watershed plans (EPAs 9 key elements)
- Sustainability plans
- Climate adaptation plans
- Resilience plans
- Capital improvement plans
- Farmland preservation plans (DATCP)
- Recreation and open space plans
- Historic preservation plans
- Housing plans
- Habitat management plans...

Small Area Plans

- Neighborhood plans
- Corridor plans
- Waterfront plans
- Downtown development plans
- Stormwater management plans
- Community development plans...

Table 1.1 Examples of Plans, Funding and Technical Assistance that aligns with the Plan Integration for Resilience Scorecard

	Agency	Plan	Funding	Technical assistance
Consolidated Housing Plan (CHP) and Annual Action Plans (AAP)	HUD	X		
Hazard Mitigation Plan [Preparedness Grants, Hazard Mitigation Grant Program, Pre-disaster Mitigation Grants, Flood Mitigation Assistance]	FEMA	X	X	
Community Rating System Activity 510	NFIP		X	
Habitat Management Plan (HMP) and Annual Habitat Work Plans (AHWP)	USFWS	X		
State Wildlife Action Plans (SWAP), aka Comprehensive Wildlife Conservation Strategies [Wildlife Conservation and Restoration Program (WCRP) funds; State and Tribal Wildlife Grants (SWG) program]	Congress by Conservation and Reinvestment Act of 2000	X	X	
Coastal Zone Management Program (CZMP) [Coastal Zone Enhancement Program; Coastal Nonpoint Pollution Control Program]	NOAA		X	
Forest Plan (Land Management Plan)	USFS	X		
Endangered Species Recovery Plan	NOAA	X		
Climate Action Plan (focusing on adaptation, mitigation, and/or resilience)	NA	X		
Historic Preservation Planning Program	NPS	X		
National Conservation Innovation Grants	NRCS		X	
NOAA Climate Program Office: Regional Integrated Sciences and Assessments (RISA) Program	NOAA		X	
Resilience AmeriCorps	CNCS			X
Resilience Dialogues	USGCRP			X
Regional Integrated Sciences and Assessments	NOAA			X
Landscape Conservation Cooperatives	DOI			X
Regional Climate Hubs	USDA			X
Climate Adaptation Community of Practice	USGCRP			X
Clean Water State Revolving Fund (CWSRF)	EPA		X	
Fostering Advancements in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE)	DOT		X	
Sustainable Communities Initiative	HUD		X	

Next Steps: Update Coastal Community Overview Map

