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## Plan Integration for Resilience Scorecard

A DHS Science and Technology Directorate  
Center of Excellence Solution

### New Method Helps Communities Clear A Major Hurdle

A new method is helping communities clear a difficult disaster planning hurdle: integrating all the plans they have – such as those for transportation, parks, economic development, hazard mitigation, emergency management and comprehensive land use – so that the plans work together to reduce vulnerabilities to hazards.

For instance, a city's hazard mitigation plan may call for acquisitions and buy-outs in high-hazard areas, while its comprehensive land use plan may set goals to increase investments in the same location. Such plans are not only incompatible, but actively increase vulnerabilities.

The **Plan Integration for Resilience Scorecard method**, developed by Department of Homeland Security (DHS) Science and Technology (S&T) Coastal Resilience Center of Excellence partner, the Institute for Sustainable Communities at Texas A&M University, provides a way to solve this problem using spatial evaluation.<sup>1</sup>

### Plan Integration for Resilience Scorecard

Working with communities, researchers and planning practitioners converted this method into a guidebook and scorecard that walks users through (1) evaluating community plans with respect to hazards risk and how well they target areas of the community that are most vulnerable, (2) identifying when and where those plans are in conflict, and (3) resolving those conflicts across plans to reduce hazards vulnerabilities.

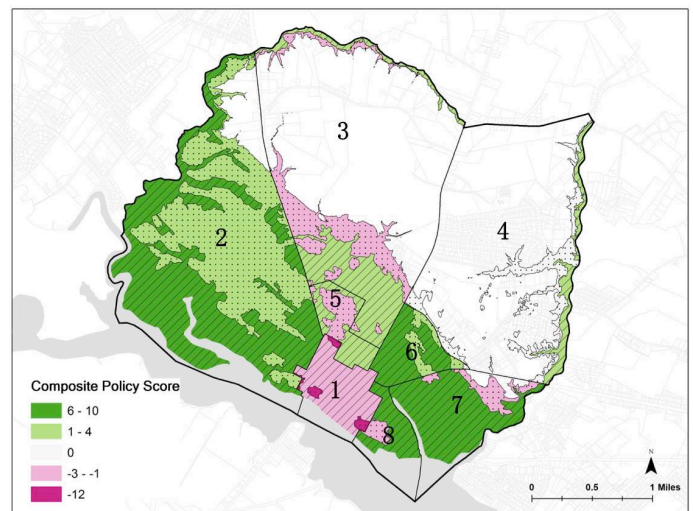
#### Key Steps:

- Gather community plans and extract applicable policies.
- Use the scorecard to score the policies based on whether they increase or decrease exposure in hazard zones, then map the results.
- Assess physical and social vulnerability, then map the results.
- Compare the maps to reveal vulnerability hotspots.

The scorecard is not meant to be used in isolation. It can and should be integrated with broader community initiatives, such as historic preservation, environmental conservation, and disaster recovery planning.

### Pilot Communities

The research team since July 2016 has worked with three pilot communities to test the Scorecard: League City, Texas; Norfolk, Virginia; and San Luis Obispo, California. Results to date demonstrate that the Scorecard method makes it easier to recognize gaps and conflicts across a community's network of plans. Having this information enables planners and emergency managers to engage the whole community to improve the integration, consistency and responsiveness of their networks of plans.



A map of one jurisdiction's composite scores for its policies' impacts on vulnerability in hazard areas. The composite map combines policy scores for land use, hazard mitigation, comprehensive land use, and parks and recreation plans. Positive scores for decreasing vulnerability show as green. Negative scores for reducing vulnerability show as red.

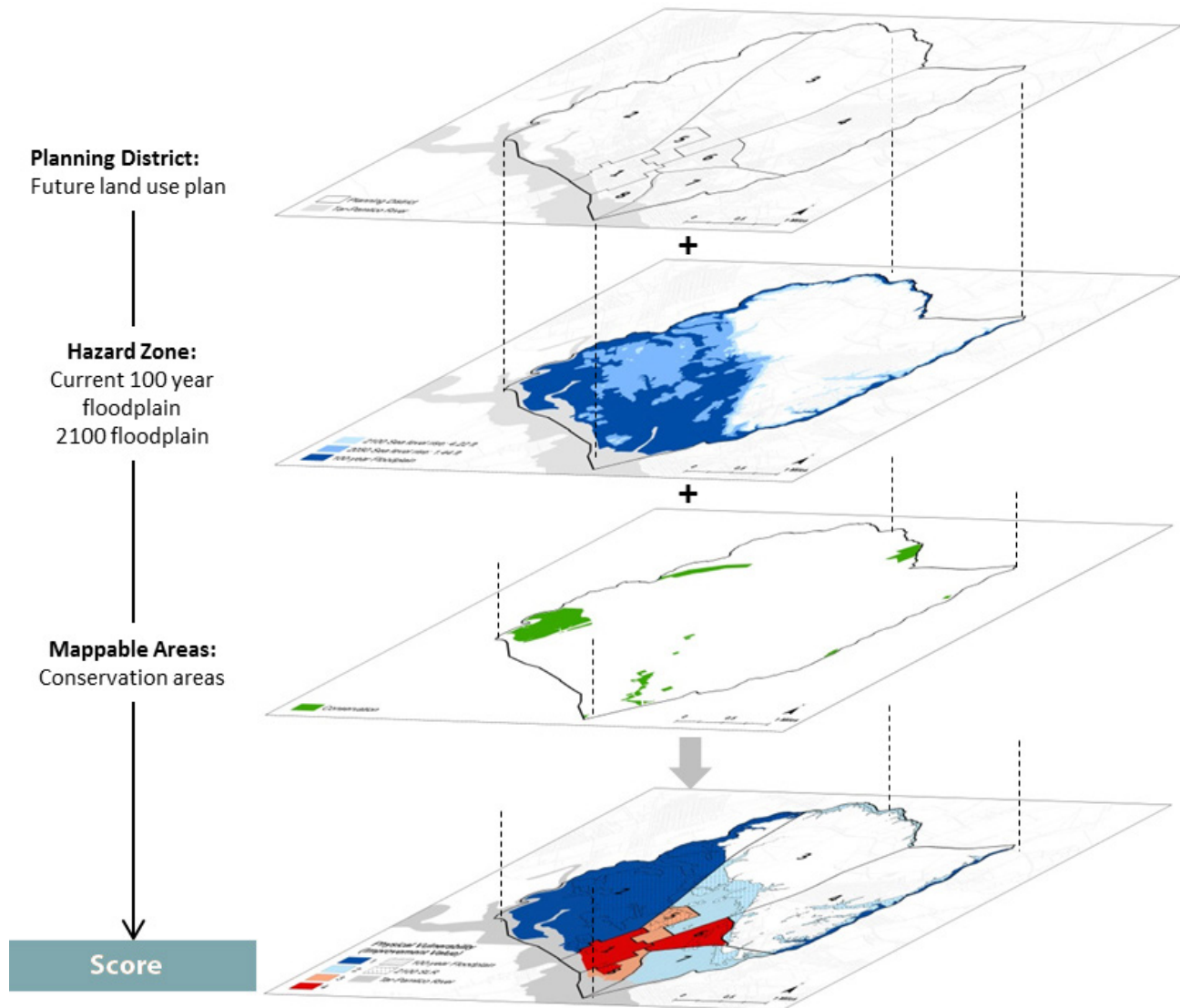
**CREDIT:** Image from "Plan Integration for Resilience Scorecard Guidebook: How to spatially evaluate networks of plans to reduce hazard vulnerability,"- Masterson, J.H., Berke, P., Malecha, M., Yu, S., Lee, J., Thapa, J. 2017.

1. Berke, P., G. Neman, J. Lee, T. Combs, C. Klosna, and ZD. Salveson. 2015. Evaluation of Networks of Plans and Vulnerability to Hazards and Climate Change, *Journal of the American Planning Association*, 81(4): 287-302. (Best Article of the Year Award, American Planning Association)



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**Overlaying Planning Districts with Hazards.** Planning districts are overlaid with hazard zones and other “mappable areas” to generate scores for each plan and for the community overall. The overlay can reveal vulnerability hotspots and areas where plans conflict.

**CREDIT:** Image and text from “Plan Integration for Resilience Scorecard Guidebook: How to spatially evaluate networks of plans to reduce hazard vulnerability,”- Masterson, J.H., Berke, P., Malecha, M., Yu, S., Lee, J., Thapa, J. 2017.