NATURE-BASED SOLUTIONS CASE STUDY

Green Infrastructure *and* Climate Resiliency Policy

PROJECT SUMMARY

Deerfield, a town in Franklin County with a population of 5,042, has recently enacted a Green Infrastructure and Climate Resiliency Policy that will serve as a model for surrounding municipalities. The town's goals for this policy are to promote climate resiliency across public and private development through the adoption of green infrastructure and a shift to more sustainable, renewable practices. Funding assistance to develop this policy was received in 2019 through a Municipal Vulnerability Preparedness (MVP) Program Action Grant from the Massachusetts Executive Office of Energy and Environmental Affairs.

Flooding in Deerfield from Tropical Storm Irene

LOCATION
Deerfield, MA

CLIMATE HAZARD ADDRESSED
Flooding, extreme weather

ACTIONS/TECHNIQUES
Policy

CO-BENEFITS
Flood mitigation, stormwater management, water quality, erosion prevention, energy savings

PROJECT STATUS
(as of Feb. 2021)
The policy was adopted by the Deerfield Selectboard on 4-22-20

A Green Infrastructure Committee has been appointed to oversee the policy, and they have been meeting monthly for the past year

SCALE/SIZE
Municipal

COSTS
$6500

FUNDING
MVP Action Grant (FY19)

PROJECT PARTNERS
Deerfield Select Board
Deerfield Planning Board
Conservation Works, LLC

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Nature-Based Solutions Spectrum

Nature-based solutions use natural systems or mimic natural processes to address natural hazards and climate impacts like flooding, erosion, drought, and heat islands.

Nature-based solutions cross many scales, and include conservation of existing natural areas such as forests or wetlands of forests; restoration of destroyed or degraded ecosystems; and incorporating nature into the built environment.

THE POLICY PAVES THE WAY FOR ALL THREE CATEGORIES!

- **CONSERVE EXISTING NATURAL AREAS**
- **RESTORE OR ENHANCE ECOSYSTEMS**
- **INCREASE NATURAL ELEMENTS IN THE BUILT ENVIRONMENT**

MASS ECAN
Massachusetts Ecosystem Climate Adaptation Network

BSLA
Boston Society of Landscape Architects
The Massachusetts and Maine Chapter of the American Society of Landscape Architects

The Nature Conservancy

SNEP
Southeast New England Program

Condit C. & J. Fellows

As clearly visible in this aerial view, flooding from Tropical Storm Irene caused erosion and sediment migration that extended for miles.

Deerfield's vulnerability to flooding was undeniable after Hurricane Irene flooded the Deerfield River in 2011 and caused massive erosion, sediment migration, and billions of dollars of damage. The policy outlines guidelines to "promote the use of green street facilities and green infrastructure in public and private development as a cost-effective and sustainable practice for stormwater management in current and future projects wherever possible." The policy also includes climate mitigation actions including: installing new charging stations for electric vehicles, switching to hybrid municipality vehicles, incentivizing group solar panel purchases, and a switch to LED lights in all street and traffic lights and municipal buildings.

The Green Infrastructure and Climate Resiliency Policy also directs Deerfield to adopt zoning best practices for flood adaptation and climate mitigation. A subsequent MVP Action Grant has allowed the town to update zoning bylaws to require and incentivize green features while also enforcing existing regulations. New site plan review standards were drafted in an effort to address unregulated new development. The new standards put limits on site disturbances and water use in landscaping, and encourage tree preservation and the use of native plantings. The siting standards also require new development to take advantage of passive solar access, which reinforces the town's push towards renewable energy resources.

Enacting any new regulation in a municipality can seem overwhelming, especially with a policy that touches so many different departments, and a policy like this requires some forward thinking from the community. Deerfield has a proactive Select Board that was supportive of the project from the beginning. An MVP committee was created to answer the Board's questions regarding financing, and from there they were able to further develop the policy. This policy not only serves the people living and working in Deerfield, but also the surrounding communities who can now look to this new policy as a model for their own communities.

> Good zoning bylaws provide "snapshots for what a community will look like in future." Chris Curtis, Conservation Works

Town of Deerfield

REFERENCES

Summary of Findings for the Town of Deerfield MVP Project. (2018, December). Retrieved March 04, 2021, from www.mass.gov/doc/deerfield-report/download

Deerfield approves innovative green infrastructure policy

February 16, 2021: Winter Webinar #1, Part 2: Implementing Nature-Based Solutions Deerfield portion presented by Chris Curtis, project manager for Deerfield's MVP program

ADDITIONAL RESOURCES

- **Mass ECAN Nature Based Solutions Resource**
- **Municipal Vulnerability Preparedness Program Nature Based Solutions Toolkit**