Bayside Adapts

DESIGN CHALLENGE
PORTLAND, MAINE
FEBRUARY—MAY 2017

PROBLEM STATEMENT

Portland's Bayside Neighborhood is a growing urban redevelopment district that includes opportunities for housing, employment, and entrepreneurialism. Traditional retail, market rate housing, affordable housing, established businesses, social services, and emerging industries share space and have room to expand. A growing "maker" economy and food manufacturing sector is maturing among established light industry. Extraordinary cultural and economic diversity within the neighborhood exemplifies Portland's heritage as a community of opportunity and inclusiveness. Located between the interstate highway and Portland's Downtown, the area lies well positioned for sustainable growth with pedestrian friendly proximity to services, amenities, transit, and open space.

Image Credits: GOOGLE

However, Bayside faces an uncertain future.
Challenged by low topography, aging public infrastructure, and an urbanized, impermeable landscape, Bayside is vulnerable to flooding.

Its situation between the 295 highway and Munjoy Hill means that water flows into it from Back Cove through pipes under the highway during high tides, and drains down the hill into it during storms. Even today during higher tides, ponding water impacts small areas of streets. When intense rain storms coincide with high tides, wide spread flooding expands across the neighborhood, disrupting travel and business, and causing vehicle and property damage.

Anticipating a future with more frequent and intense rain, increased storm surge, and rising seas, Bayside needs our attention.

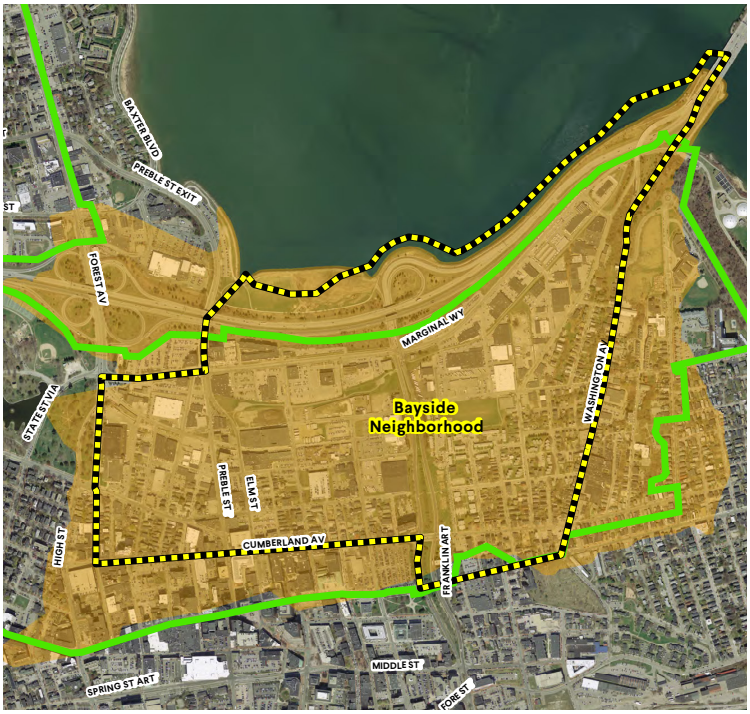
> *How can Bayside continue to grow and succeed in a future with higher sea levels?*
>
> *What might the neighborhood look like in the future?*
>
> *What actions can property owners, residents, and City government take to intentionally design the neighborhood for more water?*

NATIONAL LEAGUE of CITIES

UNIVERSITY OF SOUTHERN MAINE Edmund S. Muskie School of Public Service

New England Environmental Finance Center

Bayside Study Area
See BaysideAdaptsMaps.pdf for full size maps.



Bayside Neighborhood Drainage

DESIGN BRIEF

Generate visionary images and ideas for the Bayside neighborhood illustrating a vital future with more water.

Develop concepts for adaptive approaches through which Bayside can succeed with rising sea levels. Illustrate, describe and support your concepts, in order to inspire, stimulate conversation, and help the community envision a viable future for Bayside.

Concepts can range from “blue sky” and “anything goes” to incremental and “low hanging fruit” approaches; they can address a comprehensive neighborhood-wide solution, or focus on a specific intervention. While not intended to be concepts for construction, contest submissions have the opportunity to make a formative impact on the future development of the neighborhood.

SUBMISSION REQUIREMENTS

Timeline for Submission, Review, and Awards

Preliminary meeting for questions and discussion: **March 8, 2017 at 4 PM**. A conference line will be available to join the meeting remotely. Contract Troy Moon at **thm@portlandmaine.gov** for call in details

Submissions due: **April 10, 2017** to **thm@portlandmaine.gov**

Awards: **May 03, 2017** at Rines Auditorium, Portland Public Library

Climate Change Scenario Description

Submitting teams will establish and describe the climate change impacts to the study area assumed in their proposals. This Scenario Description should include how many feet of sea level rise are assumed and would be accommodated by the illustrated concepts, and also establish a time frame for adaptation and anticipated life cycle for the infrastructure(s) illustrated. The Climate Change Scenario Description will be included in full on at least one of the submitted display boards. 250 Words or Less

Concept Summary Board

Show the physical interventions to the built and natural environment and how they will be programmed. The Concept Summary should ground the reviewer in the overall approach to adaptation suggested in the submission. This Board should stand alone as a document for publication, including all relevant citations to foundational work used within the entire submission. All academic and publicly accessible reference work will be adequately cited and no copyrighted material by others may be used without permission and citation.

Supporting Boards

Submit up to three (3) additional supporting boards showing

Details – Diagrams or illustrations of concepts in any format include plan, section, or perspective views

Renderings – Illustrations of your adaptations in use

Implementation Narrative – Description or diagram of potential players (public and private,) their roles, and proposed funding scenario of the suggested adaptive approach

Research – Science employed to establish the Climate Change Scenario and ground adaptive approach

Graphic Standards

Submit entries using the attached PDF templates.

Electronic submissions to thm@portlandmaine.gov
PDF format only
11x17" page size
Images should be vector or 300 dpi or greater.
Labels should include Title, Team ID and Members, bibliography and citations

The Bayside Adapts Design Challenge will print and mount for display a representative sample of submitted boards, selected at the organizers sole discretion.

SUBMISSION CATEGORIES, PRIZES, AND JUDGING CRITERIA

Submission Categories

Citizen Planner (Individual, team, or neighborhood)

Student (Middle and High Schools)

Professional Designers (Including Undergraduate and Graduate Degree candidates)

Prize

Best of Show – will win $1000 Cash Prize or equivalent donation to the local charity of the Winner's Choice

Judging Criteria

Coherency – Are the Adaptive Approaches clearly conceived and communicated?

Credibility – Does the Climate Change Scenario Description provide confidence as a science based articulation of risk? Is (are) the suggested adaptive approach(es) reasonably expected to address the articulated risk?

Scope – Does the submission address the scope of the problem described in the Problem Statement as further informed by the submitted Climate Change Scenario Description?

Practicality – Does the submission have reasonable expectation for implementation at a neighborhood-wide scale?

Inspiration – Is the vision compelling? Does the submission inspire the community to take action?

A committee of citizens, property owners, design professionals, and outside experts selected by the City of Portland staff will serve as jury for the competition. City staff from the departments of Public Works, the City Manager's Office, Planning, and Economic Development will review all submissions for completeness and will select teams for jury review and printing. Teams not selected for final review may still have material posted, printed, and displayed, at the sole discretion of the City of Portland.

Use of Material

The audience for the results of the Bayside Adapts Design Challenge is the entire community of Portland, ME and surrounding areas. Specifically, the Bayside Adapts Work Group, a non-appointed ad hoc body considering climate change impacts for the Bayside Neighborhood, will use the information in their work. Simultaneously with the Design Challenge, the Work Group is evaluating climate change and sea level rise and will suggest goals for adaptation for the neighborhood. The resulting goals will be communicated to the City Council for possible adoption in advance of Bayside Adapts, Phase II – Selecting an Adaptive Approach.

The images and material generated by the competition will generate thought, concepts, and conversation around planning for the Study Area. The submissions to the competition are intended to inform, stimulate, and inspire the community and the Work Group in their thinking. They are also intended to help the community understand the complex infrastructure management, regulatory challenges and environmental challenges faced by City staff as they support growth in the Bayside Neighborhood. The community conversation generated by evaluating, judging and display of submitted adaptive approaches will additionally help develop a community dialogue and common language on the issues of climate change and sea level rise in advance of decision making on actual projects. Bayside Adapts organizers hope that submitting teams will illustrate a full range of options from "blue sky" and "anything goes" to incremental and "low hanging fruit" approaches. While not intended to produce concepts for construction, the submitted material has the opportunity to have a formative impact on creating goals for future development of the neighborhood. The more compelling the images submitted, the more likely that the community, property owners, and decision makers will be moved to act in the direction of the submission.

Reservation of Rights

All material submitted will be the property of the City of Portland and may be used and or modified for display, publication, web posting, or

any other legitimate uses. The competition organizers and or the City of Portland may reject any submission for any reason at its sole discretion.

Citation and Use of Third Party Work

It is the sole responsibility of all submitting teams to cite all third party sources of information and gain permission to use any and all copyrighted material. The submitting teams guarantee that all material submitted is lawfully used and adequately cited. The City of Portland does not assume responsibility for copyright infringement for material submitted by the submitting teams, but the City may reject submissions not adequately cited or unlawfully used. All submissions with inadequate citation of third party work or use of copyrighted material without permission will be rejected at the City of Portland's sole discretion.

FAQ'S

What is Bayside Adapts?

Bayside Adapts is a group of initiatives instigated by the City of Portland working with concerned organizations and citizens to assess and plan for the impacts of climate change in the Bayside neighborhood of Portland, ME.

Who is Involved?

Bayside Adapts is a City initiated process to address sea level rise, future storm surge, and increased intense rainfall events in the Bayside neighborhood. The Design Challenge is funded through a grant from the National League of Cities. Managed by City staff from the City Manager's Office, Economic Development Department, Planning and Urban Development, and the Department of Public Works, the Design Challenge is part of a first phase of resiliency planning which also includes work with engineering consultants, the New England Environmental Finance Center, and the Community. The results of the Design Challenge are intended to energize activism, generate creative ideas, and to inform City decision makers when creating goals for adaptation for the study area.

Who can submit Design Proposals?

Anyone can submit. Teams comprised of diverse backgrounds and perspectives are encouraged. Within the broad categories described on page 3, school groups can compete against each other and against professional design firms. Citizen planners, artists, neighborhood activists, climate change doubters, developers...all are welcome and can contribute to the discussion. Submissions will be judged according to their clarity, rigor, and vision. Clear and compelling graphics set within a solid and concise narrative will be essential for a successful submission.

How can I stay informed?

Please visit the Sustainability Office website for current information about the design challenge: http://www.portlandmaine.gov/1890/Sustainability-Office. You may also email Troy Moon, Sustainability Coordinator, at thm@portlandmaine.gov if you have questions.

INFORMATION AND ADDITIONAL RESOURCES

Submitting teams are encouraged to research widely and immerse themselves in current research and adaptive strategies pertaining to climate change. As a start, here is a basic overview of strategies and relevant data.

What is Climate Change Adaptation?

Several broad categories for adaptation to climate change, specifically increasing flooding risk, have emerged over the last few years. Each category has community/social, economic, environmental and other benefits and tradeoffs that must be understood and taken into account. Some of the approaches used by other coastal communities are summarized in the following list:

Accommodate – Sometimes, we just get wet. Other times we get out our hip boots and keep on going. As a community, we are currently accommodating the water in Bayside by altering driving and parking habits, barricading roads, watching the tide charts, planting salt tolerant trees, and creating stormwater systems designed to deal with more water. More aggressive accommodations are possible and potentially effective as short term measures and under lower sea level rise horizons. Extreme accommodations (converting streets into canals...) may be needed under higher sea level rise scenarios. Effective accommodation allows us to get wet gracefully.

Elevate – Flood Plane development regulations require that new structures are elevated above existing mapped "flood hazard" areas established on Federal FEMA Flood Insurance Rate Maps (Flood Maps.) This common sense approach can be applied prospectively to infrastructure in anticipation of future hazards due to sea level rise and stronger storms. If, how, where, and when elevating resources is applied to buildings, open spaces, natural systems, and public infrastructure remains an open question... and what becomes of resources not elevated?

Armor – Keep the water out. One can armor a building (waterproofing,) a river (levees,) and the sea (seawalls and dikes.) The armoring can be permanent (a dam) or event specific (sand bags or closeable storm gates.) Armoring accepts that eventually valued resources will be below water and depend on built features to resist water to a designed elevation. Barriers, however, work both ways and water flowing into the Study Area from rain will also need to be addressed (reservoirs, infiltration, pumps, tanks....)

Retreat – When the water is rising, sometimes, enough is enough and it's time to pick up stakes and move. Natural systems, such as estuaries and beaches, may "migrate" landward in response to rising seas given a proper balance of available sediment and landward space to move. Barriers however, such as roads and buildings, block natural system migration. Human-made features will eventually need to employ an intentional adaptive measure, such as those summarized above or others, or lose the utility of the feature due to the presence of or damage from water. Retreat is an option; but, given past investments, current value, and future opportunities, is retreat the appropriate option for Bayside?

Additional Resources

Portland, ME GIS maps
http://click.portlandmaine.gov/gisportal/

Maine's Climate Future
http://cci.siteturbine.com/uploaded_files/climatechange.umaine.edu/files/Maines_Climate_Future_2015_UpdateFinal-1.pdf

Maine Geological Survey tide information
http://www.maine.gov/dacf/mgs/hazards/hat/index.shtml
http://www.maine.gov/dacf/mgs/explore/marine/sites/dec14.pdf

People Nature Adapting to a Changing Climate
http://www.maine.gov/dacf/municipalplanning/docs/People%20and%20Nature%20Adapting%20to%20Climate%20Change.pdf

Resiliency Planning in Portland, Maine
https://conference.ifas.ufl.edu/NWWWS/documents/Presentations/D2%20Needelman.pdf

Portland Press Herald
http://www.pressherald.com/2015/09/30/heavy-rains-slowing-morning-commute-across-southern-maine/

National Resource Council of Maine
http://www.nrcm.org/wp-content/uploads/2013/10/portland1.jpg