

# BATH: BUILT TO LAST



BATH, ME • NOVEMBER, 2014

**AIA** Communities by Design

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DESIGN AND RESILIENCY TEAM (DART) FINAL REPORT  
A PILOT PROJECT OF THE AMERICAN INSTITUTE OF ARCHITECTS  
CO-SPONSORED BY THE NEW ENGLAND MUNICIPAL SUSTAINABILITY NETWORK





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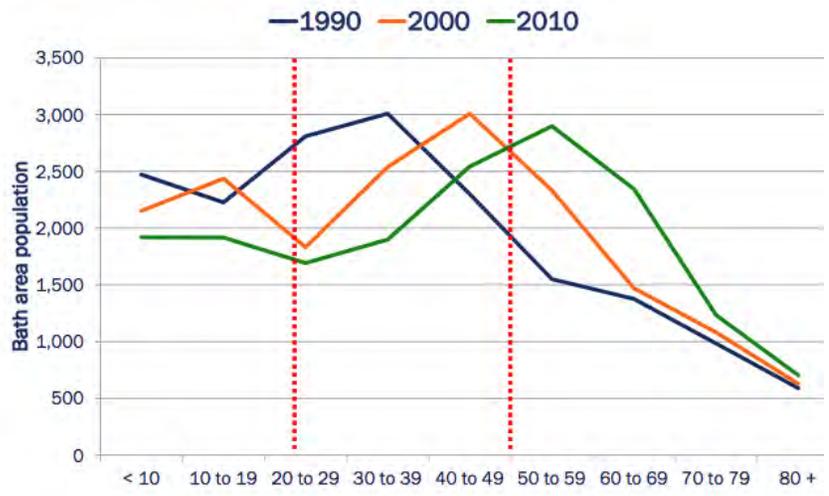
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INTRODUCTION

Jurisdiction	Median Age	Household
Portland	36.7	2.07
United States	37.2	2.58
Bath	41.0	2.14
Maine	42.7	2.32

## Age distribution shifted significantly 1990 > 2010



(Table and Charts prepared by the Bath Planning and Development Department, with future data extrapolated by the DART).

## INTRODUCTION

Bath, Maine, is a charming and exciting small city built on the waterfront of the Kennebec River. The Kennebec River at Bath is a wide, deep tidal river, providing Bath deep draft access to the ocean, and it supports Bath’s long history as a maritime ship building city, “The City of Ships.” Bath has a downtown rich in vibrancy, with diverse retail and dining amenities, and yet it still retains a relaxed pace and relatively low land prices. Bath can be the envy of similar sized cities throughout the United States.

Bath’s small size (under 8,500 people) belies its role as a regional employment base. It hosts significantly more jobs (over 10,000) than its own workforce or even its own population.

Bath’s population, however, is both declining (approximately ½ percent per year) and rapidly aging (with a median age of 41, much older than the USA’s median age of 37.2, although not as old as Maine’s median age of 42.7. These trends of declining population and, we suspect, aging population, are especially acute within walking distance of downtown. Both trends create adverse effects on the city and the vibrancy of downtown.

Significant sections of downtown, both developed sections and potential building sites, are already vulnerable to flooding during King tides (perigee and perihelion periods when the earth, moon and sun are lined up and creating the highest tides) and especially during 100-year storms (storms with a 1% likelihood of striking in any given year. Flooding is expected to get much worse and of longer duration with climate change, during semidiurnal tides (twice a day), King tides, and larger storm events. Fortunately, Bath has already started the data gathering to try to quantify some of the climate change effects and has begun a community dialogue.

When AIA, with support from the New England Municipal Sustainability Network, announced the Design and Resiliency Team pilot program, Bath, working with the Midcoast Council of Governments, prepared one of the first DART applications. Bath asked for assistance on protecting downtown buildings and development sites from the effect of sea level rise.

AIA found that Bath is making great progress with thinking about community resiliency and has the capacity to make great things happen. AIA approved Bath's application to be one of two pilot DART communities.

AIA sponsored a DART preliminary visit (July 28-29, 2014). During that visit AIA staff and the DART team leader toured the site and met with a diverse variety of community stakeholders. During that visit it quickly became clear that Bath and its represented stakeholders wanted assistance in how downtown and the waterfront could become more vibrant and resilient. The clear consensus was a desire to encourage significant economic and downtown development to create a Bath that would be resilient in light of climate, demographic, and economic changes and challenges.

AIA identified the need for a multidisciplinary team, including architects and other professionals. The final team included an architect, landscape architect/architect, planner, professional engineer, and climate change policy analyst, along with AIA design assistance staff. The issues are far more complex than any one discipline, and the diverse team allowed the members to look at issues from all angles and collaborate on their recommendations.

The full DART (November 3-5, 2014) included site visits, stakeholder meetings, a community interactive design workshop, intense team charrette work time, and a final presentation to the community. This report summarizes the DART's findings and final presentation.





THE COMMUNITY SPEAKS

## THE COMMUNITY SPEAKS

Bath residents, business owners and stakeholders identified Bath's sense of community, its downtown, and waterfront as the very soul of Bath. The natural environment, the built environment, the rich maritime history, the people, and various gathering places, from the farmers market to the library, are all part of this soul.



*Soul of Bath, from the Bath community workshop*

We heard an overwhelming desire for a stronger downtown with more nightlife, entertainment, housing, and businesses, a stronger and more accessible waterfront, and a greater linkage between the downtown and the waterfront. Bath has a wonderful waterfront, but the Bath community understands that the visual, physical and economic connection between the waterfront and adjacent downtown are far weaker than they could be.



We heard community members speak about resiliency, but never as an end to itself or with only a focus on climate change. We did not hear that Bath should simply become a more resilient community by storm-proofing buildings to survive the next storm, a higher sea level, or some short term crisis. Instead, we heard community members speak about creating a stronger community that would thrive in the wake of future social, physical, and economic changes, overcoming challenges, and embracing opportunities.

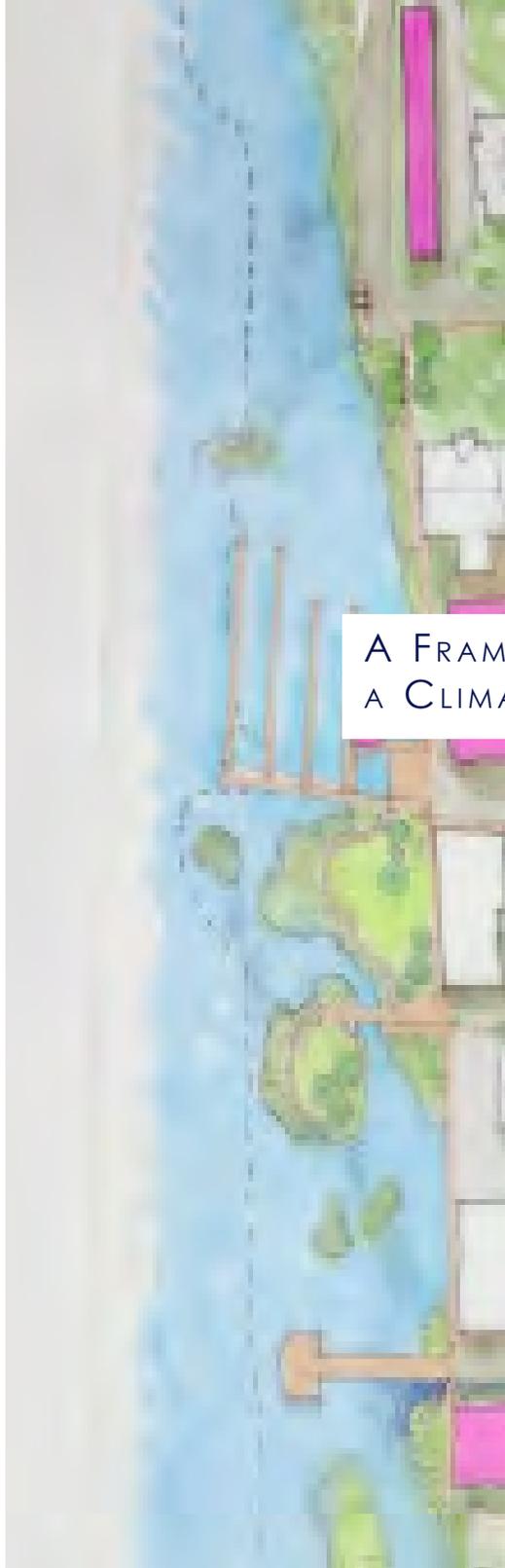
Bath is ready to focus on how its downtown can grow, thrive and evolve long into the future and how its waterfront can be a greater part of the life of everyone who lives, works, plays, or visits. Only by achieving this, can Bath be a more resilient community.

**Families**  
**Resilient**  
 Infill  
 Marina  
 Junior Portland  
 Docks  
**Environment**  
**Urban Downtown**  
 Young people  
 Connectivity  
**Waterfront**  
 Alternative lifestyle  
**Evening life**  
 Design review  
 Growth  
**Waterfront access**  
**Downtown housing**

The community helped us identify three primary resiliency focal challenges. First, the demographic changes discussed in the introduction provide fewer workers, shoppers, volunteers, and residents to support downtown. Second, climate change will increase daily, annual, and storm-caused flooding. Finally, and at least as significantly, the nature of downtowns is changing and the role of retail is declining and downtowns need a larger critical mass with new dining, entertainment, recreation, residential, and civic components to remain relevant and vibrant.

Fortunately, Bath is blessed with opportunities to build downtown and restore its population, centered on improved connections to the waterfront. Development can be laid out to avoid future flooding, to grow downtown Bath's downtown, and to fulfill the community's vision. Bath can then become a vibrant, healthy and resilient community.





A FRAMEWORK FOR  
A CLIMATE ADAPTATION PLAN

## INSTITUTIONALIZING CLIMATE PLANNING

Now that the City of Bath has begun a substantial engagement with the likely effects of climate change on its downtown, it is important to institutionalize this process. This will help to ensure that the climate-change perspective is consistently brought to all aspects of planning, development, and operations. It will also help to clarify for property owners, developers, and others less familiar with the details of climate change the framework and the approach they should use for addressing climate-related vulnerabilities.

Bath has a good foundation for undertaking climate planning. The 2009 Comprehensive Plan is a long-term vision for the city, and more recent studies provide a fairly detailed picture of how sea-level rise is likely to affect parts of the city. Deepening the engagement on climate change has several elements.

### **1. Start with what you know—current problems, current conditions.**

*Climate change will expand existing problems, and sometimes create new ones.* The Comprehensive Plan and discussion with residents both make clear that the community already has a good grasp of current problems, particularly flooding. Bath has worked out a lot of emergency management issues in relation to winter storms, but are there other crucial areas? For example: Is Bath really prepared for the current 100-year flood? Do people know where to go? Do businesses know what to do? Do residents and businesses have flood insurance? Are critical facilities ready to deal with power failures? Many jurisdictions have found that, when they start addressing climate change issues, they are actually addressing current deficiencies in emergency preparedness.

### **2. Take advantage of opportunities.**

Even without thinking about climate, government agencies and private property owners are regularly making investments in large-scale and small-scale facilities and infrastructure. Find ways to add a climate or sea-level-rise component to work that is already being done for other reasons. The 2009 Comprehensive Plan cites an excellent example of this approach: “The [combined sewer overflow] problem has been addressed

repeatedly as the Public Works Department has included separation projects *whenever opportunities presented* in other roadwork or water-system projects allowed.” (p.3-29, italics added) It may be useful to add to an appropriate City document (e.g., ordinance, internal procedures, capital budget guidelines) a specific requirement that all capital projects include an evaluation of whether a climate-change component can be effectively or practically added.

Private property owners, particularly those in current or projected floodplains, should do the same when renovating or repairing their buildings. For example, they should reduce the vulnerability of electrical panels or heating and ventilation equipment, or close openings where floodwater can enter. This requires education. A growing amount of informative material—for example, from the City of Boston, the City of New York, and some business groups—is available for property owners.

### **3. Integrate.**

To ensure that you are taking advantage of opportunities, integrate climate change into existing planning and review processes and documents. The City of Bath has many tools and policies that it already uses to guide and influence development and land use: the comprehensive plan, contract rezoning, subdivision review, site plan review, and the floodplain management ordinance. Climate adaptation should be included in many of these formal documents. The form that inclusion takes will vary. For example, the site plan review requires submissions to analyze *existing* physical conditions, but they should also discuss the impact of likely *future* physical conditions. The floodplain rules could change the definition of the floodplain from the *current* 100-year flood to an area covered by the 100-year flood with 2 or 3 feet of sea-level rise. The community will need to decide whether to leave the selection of relevant numbers (e.g., number of feet of sea-level rise) up to property owners or to choose one or more planning levels for all to use. These choices will also be affected by the length of time it is important to consider (sea-level rise isn’t important for something that is only planned to last ten years) and by the criticality of the structure (a fishing shed as opposed to a hospital). Depending on whether the City or the State of Maine controls the building code, it may also be useful to see what changes should be made to those requirements.

Any climate adaptation plan does not replace the existing comprehensive plan. Rather, the climate change measures should be an essential component of the Comprehensive Plan. The goals of the Comprehensive Plan will not be reached if climate change is not properly taken into account. Furthermore, the vision in that plan provides guidance for the choices that must be made in adaptation. Of course, it's even more important that the people implementing these requirements understand them and take them seriously.

Another important aspect of integration is that it often allows the City to take advantage of existing funding streams; for example, the standard regional, state, or federal funds that are available for transportation and water infrastructure and for parks and natural resources.

#### **4. Expand responsibility.**

Effective climate adaptation requires action by residents and businesses and by all levels of government, and it is vital to ensure that all are involved. Private property owners cannot address large-scale climate problems, but they can take steps to protect their own properties that allow government to focus on the larger-scale problems. The City of Bath is already engaged with its largest business, Bath Iron Works, and it is vital to expand this engagement to include discussions of sea-level rise and other aspects of climate change. Government entities beyond the City that need to be involved include:

- Bath Water District (and Brunswick's, too, if the connection is significant)
- Sagadahoc County—Emergency Management Agency and Board of Health
- Maine Department of Environmental Protection—reviews development on shore land
- Maine Department of Transportation—Route 1 and Sagadahoc Bridge and Carlton Bridge
- Maine Public Utility Commission and the Independent System Operator-New England (ISO-NE)—to examine vulnerability of energy supplies

#### **5. Work at all scales of time and distance simultaneously.**

#### **6. Think about people, not buildings.**

As easy as it is to appreciate the risk posed by rising waters, the community needs to think about public health. Climate change will increase summer temperatures. What is a heat wave in Bath, and will they pose health risks, particularly to the elderly? Will more buildings need A/C? Lyme disease is increasing in Maine. As it continues to spread, what does the city need to do?

Thinking about people also emphasizes that climate adaptation is not just about the physical environment. What people do—the way they operate buildings and business or take care of themselves and their families during extreme weather—is an essential component. For that, education is key.

#### **7. Mitigate.**

As important as it is, climate preparedness should not divert the community from its greenhouse gas reduction efforts. Bath has a goal of reducing its greenhouse gas emissions 2 percent a year. Look for opportunities to combine mitigation and adaptation.

#### **8. Get started; be flexible; practice patience.**

Climate adaptation is a long process. Other sections of this report present some big ideas for how Bath can adapt to sea-level rise while enhancing the qualities of the city that are most important to the people who live and work here. Implementing these ideas, or something like them, will take time. Many of the changes can be made in steps or phases, with implementation problems solved along the way, but it's important to start now.



DOWNTOWN RESILIENCY  
AND  
GREEN INFRASTRUCTURE



*Sea level rise is not a question of how high, but of when. A baseline sea level rise of three feet above MHHW – inundation likely to be experienced within a generation\* – will have a relatively limited impact on Bath’s current downtown footprint. Impact affects the waterfront mostly east of Commercial Street, reaching across Commercial Street in some areas near Elm Street.*

*\*Bath COAST Report, December, 2013 predicts an additional 3.5 feet by the year 2070 per the “high SLR” scenario.*



*Sea level rise is only one impact of climate change to be considered when planning the direction of Bath's downtown. According to the Intergovernmental Panel on Climate Change (IPCC), precipitation intensity and variability have increased over most land areas.*

*In Bath, MHHW plus 2 feet of sea level rise, possible within the next 40 years, combined with storm surge impact from a 100-Year storm event, expands the impact west across Commercial Street and down Elm/Water Street. It is interesting to note that the configuration of downtown Bath is not a coincidence when viewed through this lens, as the heart of downtown is located on an island of high ground. Front Street used to be the waterfront street, and the waterfront was expanded east over time including the addition of Commercial Street. The current Water Street and the railroad corridor both are historically streams.*

# RESILIENCY

- **Build Greenways:**  
Work with water – weave green/blue fingers into downtown
- **Allow migration:**  
Plan new wetland migration zones for SLR, shoreline retreat
- **Treat runoff:**  
Green Infrastructure to naturally filter runoff
- **Harden edge:**  
Elevate buildings & armor edge for storm surge

*A resilient Bath will integrate these four planning and design strategies into downtown's future vision. The inundation mapping clearly demonstrates a need to redefine and harden the waterfront edge east of Front Street to combat sea-level rise. Retreating the shoreline west over time will help redirect growth to higher ground while also allowing for the establishment of new wetland migration zones. The community is intensely aware of and connected to the water, so a public spirit of celebrating water can extend into the downtown with the establishment of "green/blue fingers". Elm Street and Water Street, for example, could be redesigned to include natural wetland systems and safely and strategically allow temporary storm surge into the downtown. This could be a cost effective way to handle storm inundation – working with the water – and also enhance economic value as a cultural and aesthetically pleasing downtown visual element.*



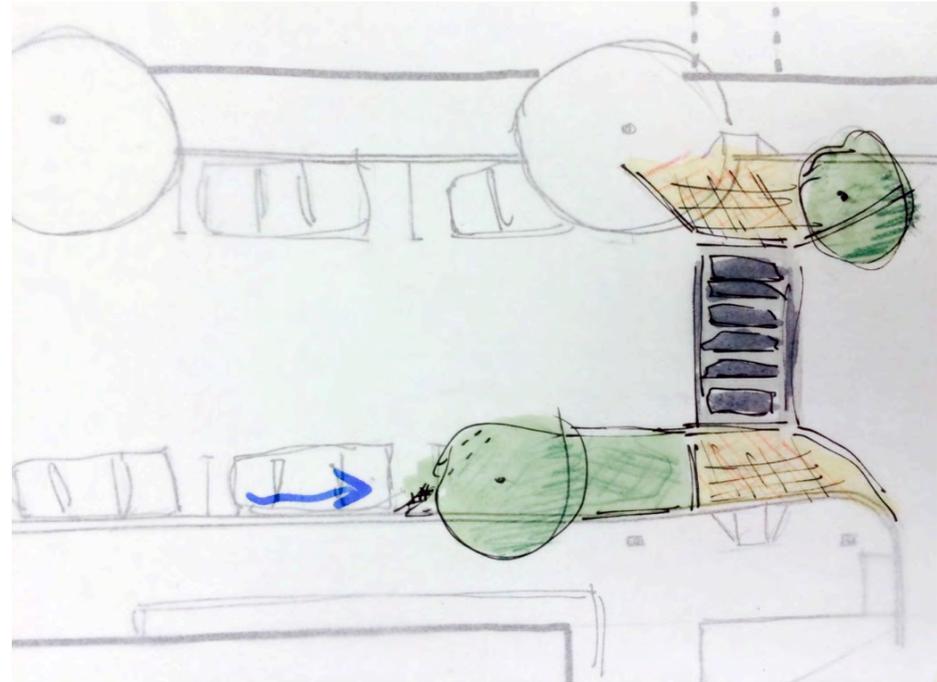
*Bath's downtown framework concept centers on Front Street and Washington Street as existing north-south spines, with the desire to extend the Front Street downtown experience north of Elm Street towards the Hampton Inn. Opportunities include a reimagining of existing connections between Front Street and Commercial Street as "ways to the water" prioritizing pedestrian connectivity, waterfront open space, and viewsheds. Vine Street is often perceived as a neglected fragment of the downtown fabric. Enhancement of gateway nodes at the intersections of Front/Vine and Washington/Vine would be high-value improvements.*



*Start now! Communities across the country are employing “tactical” improvements within the public realm. Improvements such as parklets, creative crosswalk and/or intersection treatments, and public art can be implemented quickly at little to no cost as first steps towards the community’s long term vision. These sometimes temporary improvements are often catalysts for future larger scale change, and build community connections and dialogue.*



*One quick and cost-effective short term improvement is strategic re-striping to add on-street public parking wherever possible. Areas shown in red were identified for future study as additional on-street parking. The addition of conveniently located on-street public parking helps enable future economic development and also may offset parking losses necessary for implementation of parklets, bumpouts, and green infrastructure.*



*A demonstration project is envisioned as a first step to build public awareness of the environmental and community benefits of green infrastructure. A bioretention system located on Front Street near Broad Street would intercept, filter, and soak in runoff before it turns the corner down Broad Street towards Commercial Street and the river. The project in this location could be combined with curb bump-outs and additional trees at the existing crosswalk location to reinforce the Water Street parking archway pedestrian connection.*



*The intersection of Front Street and Vine Street is a key introduction to the downtown. However, a confusing traffic pattern and poor pedestrian experience presently represent a missed opportunity to build the Bath downtown brand and direct traffic north. The intersection could be reimagined to include a small-scale traffic circle to slow vehicular speeds and create a sense of arrival. Any improvements should include wayfinding enhancements calibrated both towards vehicles and pedestrian/bicycle traffic.*





The long-term vision for downtown includes a network of green streets and green/blue fingers. The primary green/blue finger is Elm Street and Water Street, which could be rebuilt to work with the water by including wetland systems and safe accommodation of temporary inundation during storm events. Relatively steep east-west streets connecting Front Street and Commercial Street should be improved to prioritize pedestrian traffic and include green infrastructure to slow and filter stormwater runoff before discharge to the river. Parking lots can also be green, and can include bioretention systems and permeable pavement.



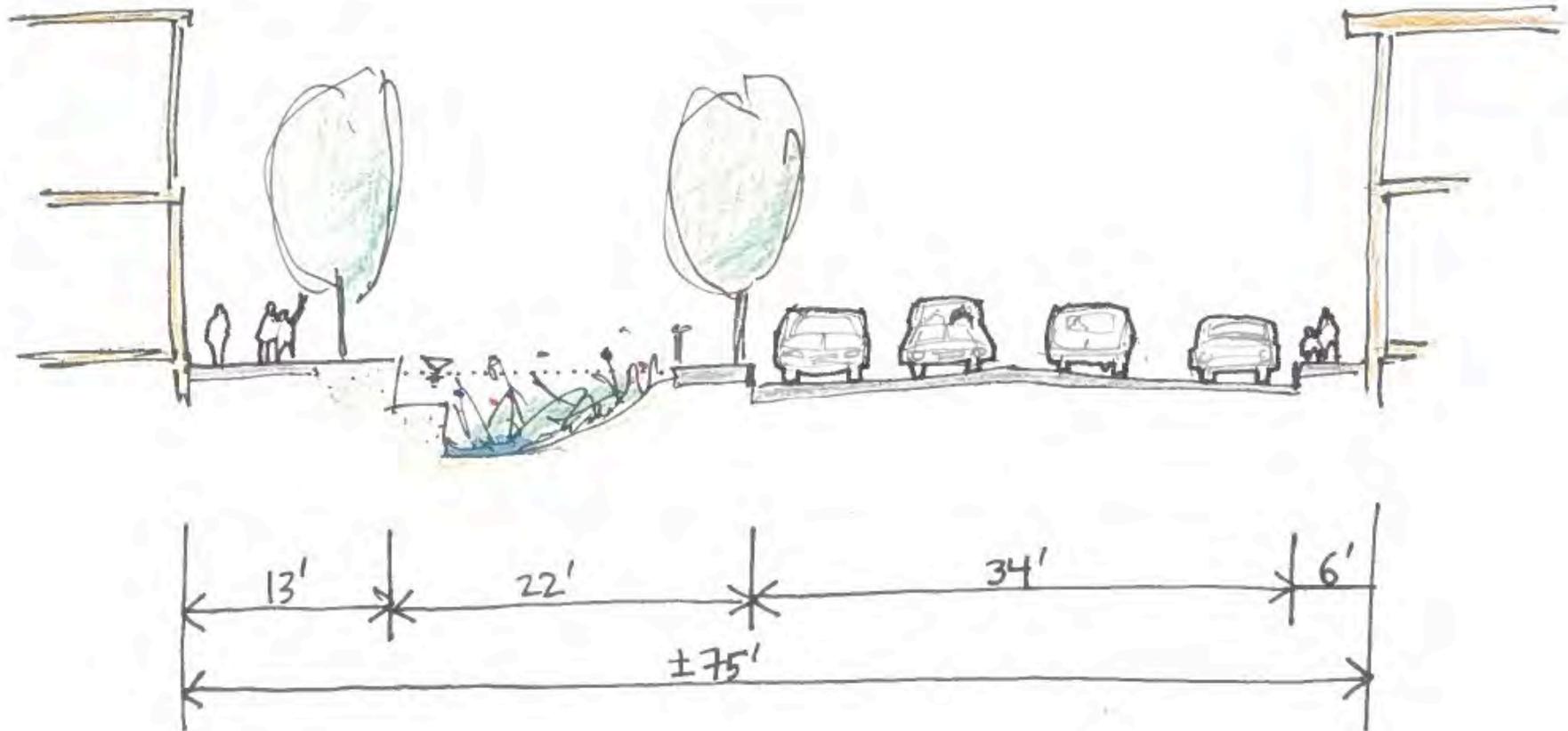
*The Elm/Water Street green/blue finger can accommodate inundation while fitting into the downtown context – allowing public connection to the water and adding aesthetically pleasing wetland restoration planting.*



*These illustrations represent several examples that illustrate how Bath can incorporate green infrastructure strategies into its blue/green fingers downtown.*

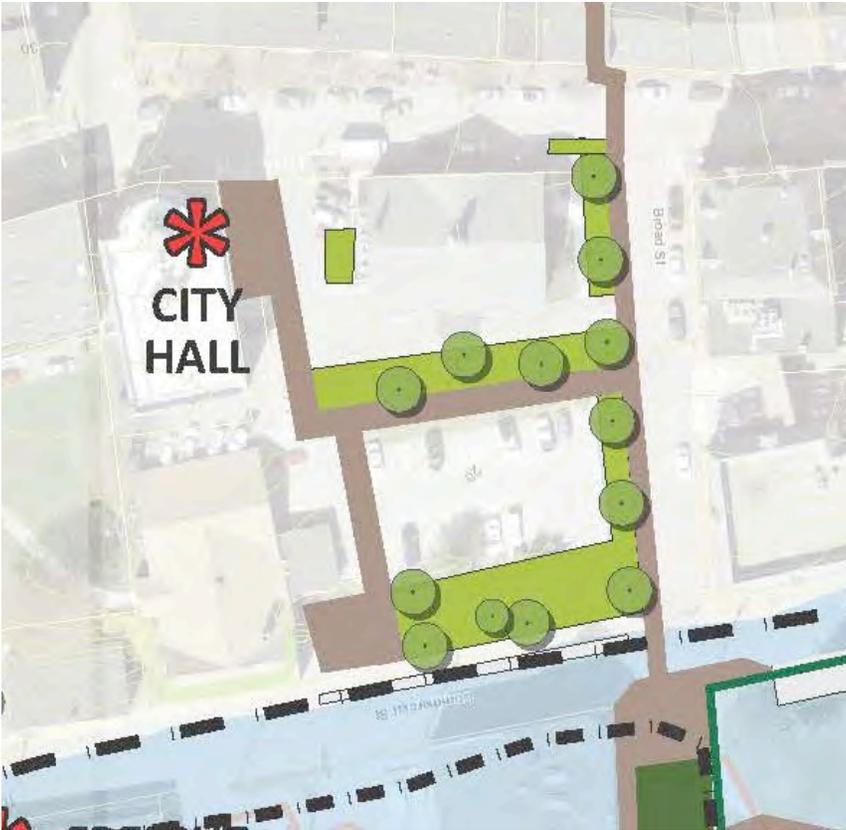


# CELEBRATE WATER



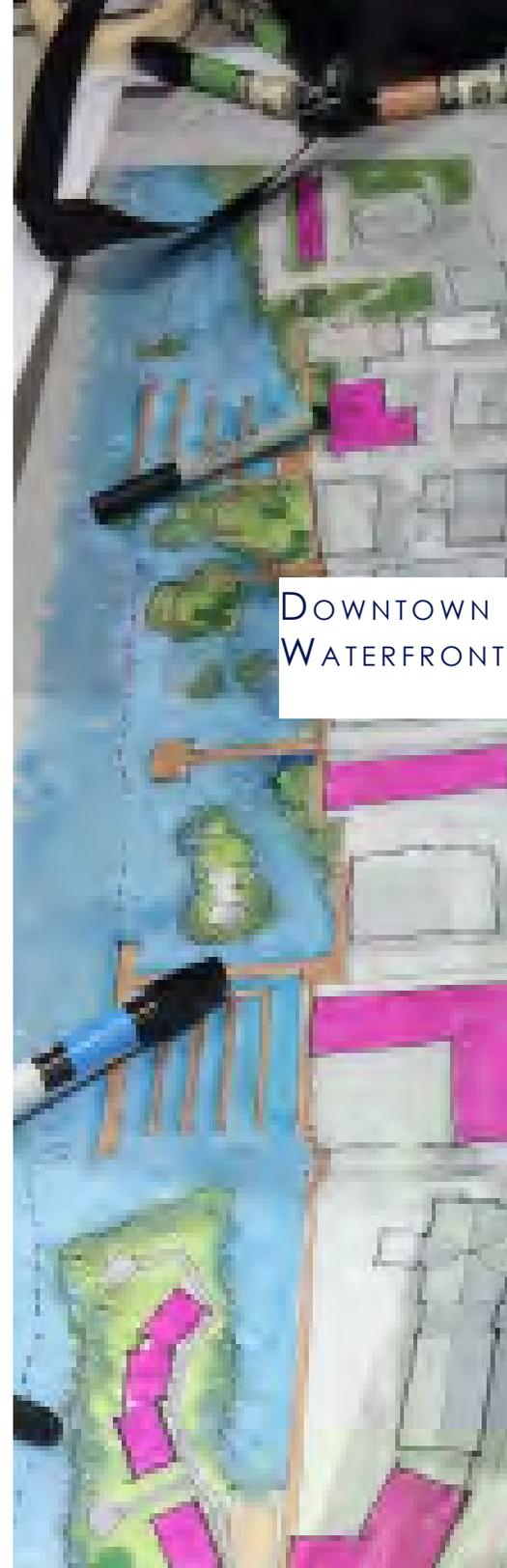
*The reconfiguration of Elm Street to include parallel on-street parking and a green/blue feature adds value, reinforcing a pedestrian scale streetscape and building the sense of place at this strategic location connecting Front Street east to a redefined waterfront and west to Water Street and Washington Street.*

GREEN STREETS - AN EXAMPLE



## GREEN PARKING - AN EXAMPLE





DOWNTOWN AND  
WATERFRONT CONNECTIONS

## CONNECTIONS

One of the recommended strategies for the future vision of downtown Bath in the face of climate change is the reinforcing and enhancement of connectivity in the core area. Changes at the water's edge due to sea level rise will most likely affect existing buildings and prevent future development in this area of town. As a result, the opportunity and need to re-develop downtown upland parcels that currently serve as surface parking lots will become stronger. As new infill replaces parking, walking easily and conveniently throughout the core will become a necessity.

Despite the challenging topography of the core, pedestrian connectivity in downtown Bath is currently quite good, especially in the city's epicenter around the intersection of Front and Centre Streets. Sidewalks in this area are wide and inviting, they serve multiple destinations, streets are narrow, and traffic moves calmly. Nevertheless, during the charrette, the design team was able to identify some key connections beyond this central area that would benefit from enhancement, as the city prepares for changes in the coming years.

As a strategy for pedestrian connectivity, the team organized a brief analysis and a series of recommendations into four main typologies of connectivity: 1) the spine, 2) the ways to the water connectors, 3) the passageways, and 4) the waterfront "braid". The typologies working together form a network that provides the necessary redundancy of paths, efficiency of movement, and "amenitization" of walking circuits, in order to make downtown Bath an even better walking district.



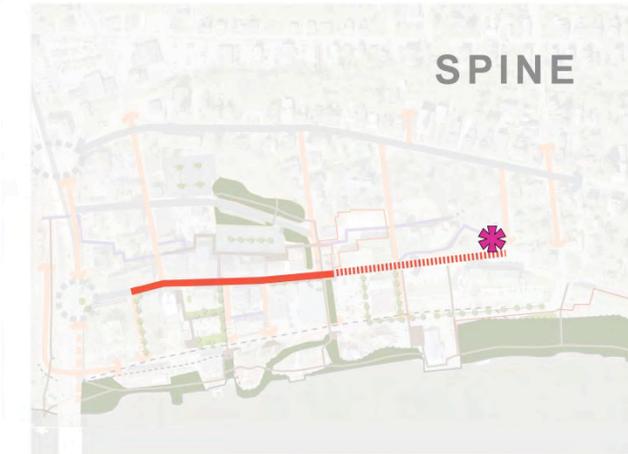
*The diagram illustrates the connectivity network, color-coded by typology. The solid lines represent parts of the network that currently perform highly on connectivity and accessibility. The dashed lines represent the opportunity areas where the network could be strengthened or enhanced.*

## TPOLOGY 1: SPINE

The spine is Front Street, the heart of downtown. Front Street is Bath's and the region's main destination. It is a pedestrian thoroughfare during the spring, summer and fall months, where residents and visitors meet each other, shop, eat, and enjoy themselves. Even in the winter, when the weather discourages walking outdoors, Front Street remains Bath's heart and destination with its multiple stores, cafes and restaurants.

Currently, the spine is clearly defined and well utilized in the few blocks between Centre and Arch Streets, with its energy and draw diminishing after that point. As part of the connectivity strategy, the design team provided the following recommendations to strengthen the already successful spine of Bath:

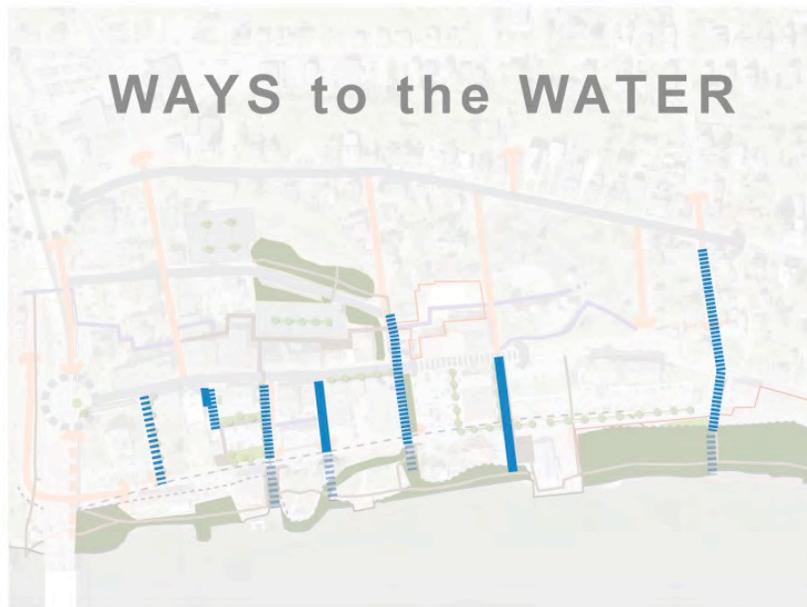
- Preserve the qualities that currently make the spine successful: preserve street width, availability of on-street parking, and seasonal programming
- Create a new anchor destination at the northern end of Front Street to extend its use and encourage further the walkability of the spine. An ideal new use could be the construction of a new playground on the NE corner of Library Park, connecting it in design concept and configuration with the existing granite outcrop at the base of the library (see photo below). The sidewalk along the park's edge could be enhanced too to create interpretive elements describing the geology and morphology of Bath; this could become an interpretive walk and nature playground with the theme of *"bath is built on granite"*.
- The building at the intersection of Front and Linden Streets, recently re-zoned for commercial use, could also provide a second anchor for the community at the end of Front Street with a cafe to be used by families visiting the playground in the mild months, and as a warming hut during the winter. This café can be the counterpart to the existing Café Crème on the opposite end of Front Street.



*The spine is a strong pedestrian thoroughfare south of Arch Street. A new amenity added to its northern end could function as a new draw and extend the walkability of the spine further.*

## TYPOLGY 2: WAYS TO THE WATER CONNECTORS

Ways to the water connectors are the east-west streets that link Front Street with Bath's waterfront. The connectors play a key role in activating the waterfront from a pedestrian connectivity standpoint since they are the links that would allow pedestrians to park their cars on the larger parking lots along Water Street and still be able to feel well connected to the entire core area. They also are natural water conveyors for Bath's core, as discussed previously.



*The ways to the water connectors are key elements in the overall pedestrian connectivity strategy, as they are the links of Bath's core to its waterfront.*

Currently, each one of the connectors offers different levels of accessibility; some would require almost no change to continue to work, while others could use more significant improvements to encourage pedestrians to take the trek along them. For the connectivity strategy, the design team recommended responding to these variable conditions with small interventions with the dual goal of improving pedestrian accessibility, while also incorporating stormwater management and green infrastructure elements. To represent the gamut of possible interventions for the connectors, the design team selected three of them and provided a potential concept and recommendations for each, as summarized below:

- Connector level 1 (Minimal Intervention): Arch Street is the best example of a connector in Bath that currently works well, requiring minimal interventions. Crossing Front Street at this location could be improved by adding two bulb-outs on the eastern side of Front. Additionally, this connector presents a great opportunity to introduce green infrastructure elements, such as small detention planted pockets along the existing on-street parking areas on the south side of the street. The biggest challenge the design team identified for this connector was the missed opportunity to provide a more inviting terminus onto Waterfront Park. Currently, Arch Street ends at the perpendicular parking area along the park. The design team's recommendation for this area is to eliminate the last two parking spaces and extend the park's bulb-out to form a small "landing plaza" for pedestrians coming from downtown towards the waterfront. See images on following page for a before and after concept for the Arch Street connector.



*The concept vignette illustrates the potential improvements recommended for the Arch Street connection to improve the views to the water: bulb-outs at Front Street, introducing green infrastructure on the south side of the street in line with the parking areas, and removing the two parking spaces along the Waterfront Park to form a "landing plaza" at the terminus of Arch Street.*



- Connector level 2 (Medium Intervention): An example of a level 2 intervention requiring a more involved approach, is the connector next to City Hall (the potential Centre St extension onto the current parking lot) where a pedestrian plaza/corridor could be introduced in the form of an “urban balcony” with the objective of truly celebrating Bath as a City by the water with a vista point. From the “urban balcony” pedestrians can link to a new path introduced following the edge of the auto bank teller to land on Broad Street, following the softer slope down to the waterfront. Opportunities for new infill could open up on that block, and the public plaza will assure the vista corridor is preserved..

*The concept for the space next to City Hall is that of a public “balcony”, providing a small seating and gathering area next to the public building while granting views to the water and an alternative connection to the waterfront through an enhanced connector next to the auto bank teller. This approach would still allow new development on the parcels east of the bank (see box in red on the concept vignette).*



*An elevated crosswalk, rain gardens and other detention areas, along with the reconfiguration of the existing diagonal parking on the south side of Broad Street will transform this connector into the main gateway to the waterfront.*

Connector level 3 (Major Intervention): One of the most important connectors needing attention is the one on Broad Street. Broad Street Passageway is an important access point from the parking lot on Water Street. The opportunity that the design team highlighted here was the creation of a direct linkage from the existing passageway with a green pedestrian corridor all the way to the river. Green infrastructure pilot projects can be introduced in this location as the currently diagonal parking is reconfigured or eliminated to allow for a fully accessible descent to the waterfront.

### TYPOLGY 3: PASSAGeways

Bath's core area is characterized by the presence of multiple alleys and passageways that connect areas mid-block and provide a unique character and charm to the city. The passageways, as part of the connectivity strategy, build on this urban typology. The passageways form a secondary network, unique to Bath, providing alternative routes to streets and sidewalks, allowing pedestrians to find more efficient ways to navigate the downtown area. The design team walked the passageways in Bath and identified areas where possible enhancements to existing ones could be deployed, as well as others where new passageways could be introduced to complete missing links.

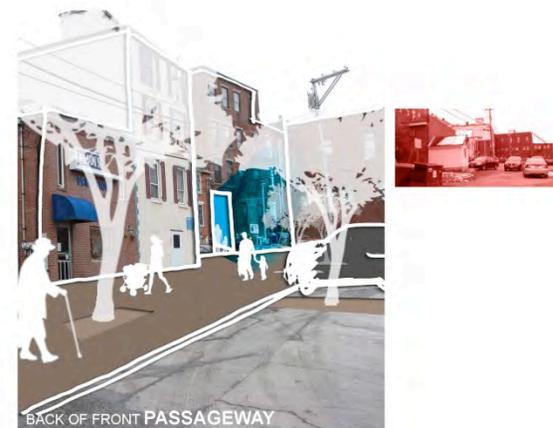


*Passageways form the secondary network of pedestrian connectivity in Bath.*

The design team developed conceptual ideas for two of the “missing links” passageways summarized as follows:

- “Back of Front” passageway: All the commercial and mixed use buildings that line Front Street have “back facades” and access points. Currently the parking lot in this location abuts the back

- facades. The design team identified this area as a prime opportunity to create a dedicated pedestrian way with improvements to create seating areas, or even to have additional outdoor dining pockets along this passageway. The reconfiguration of the parking lot would allow making it more efficient for parking and also would facilitate the introduction of larger green infrastructure strategies as described previously.



*The “Back of Front” new passageway provides multiple opportunities for enhanced connectivity, activation of the downtown area, and green infrastructure elements.*

- Centre to Route 1 passageway: While meeting with stakeholders on the first day of the charrette, the design team learned that one of the biggest challenges for downtown Bath is the poor image or “face” it presents along Route 1. In addition to this fact being a misrepresentation of Bath’s actual urban character and richness, it has also over the years exacerbated the problem of challenging pedestrian connectivity from downtown south to other parts of Bath. Recently, the City built a new crosswalk under the elevated Highway, connecting the corner of Water and Vine Streets with the train station. This is an important step in the right direction for pedestrian and transit connectivity. The design team proposed maximizing the use of this new crosswalk, by formalizing a pedestrian route into a dedicated passageway that would meander the lots south of Centre Street, terminating at the intersection where the new crosswalk is located.



*The proposed Centre to Highway 1 passageway formalizes an existing pedestrian “shortcut” and transforms the interstitial space into a public amenity that builds on the unique system of alleys and passageways of Bath.*

## TyPOLOGY 4: WATERFRONT “BRAID”

Bath is the City by the water, and its waterfront should be a destination year round. Historically, Bath’s water’s edge has been a working waterfront. With the consolidation of Bath Iron Works in the last decades to the large campus south of Highway 1, the portion of the waterfront immediately adjacent to Bath’s core has been mainly underutilized. The Waterfront Park has allowed residents and visitors to reconnect again with their unique waterfront, but as sea levels rise and the edge transforms itself in the next decades, Bath faces challenges to maintain and enhance this and other connections along its waterfront.

From the point of view of the connectivity strategy in this vision plan, the design team looked at the waterfront as an important opportunity to re-engage the City of Bath with its waterfront and to embrace the changes to come. The design team recommended looking at the water’s edge as a system of paths or a waterfront braid that is designed and built to not only provide direct access to the water during different flooding periods, but also as a first zone of “defense” for the city. Inspiration can be drawn from many other waterfronts that are responding to similar challenges. From New York City, to Charleston, SC, all the way to China, waterfronts have evolved in recent years into dynamic, multi-layered systems that capture runoff, prevent flooding, foster habitat creation, while still functioning as important public amenities.



MAX DIVERSITY + FLEXIBILITY



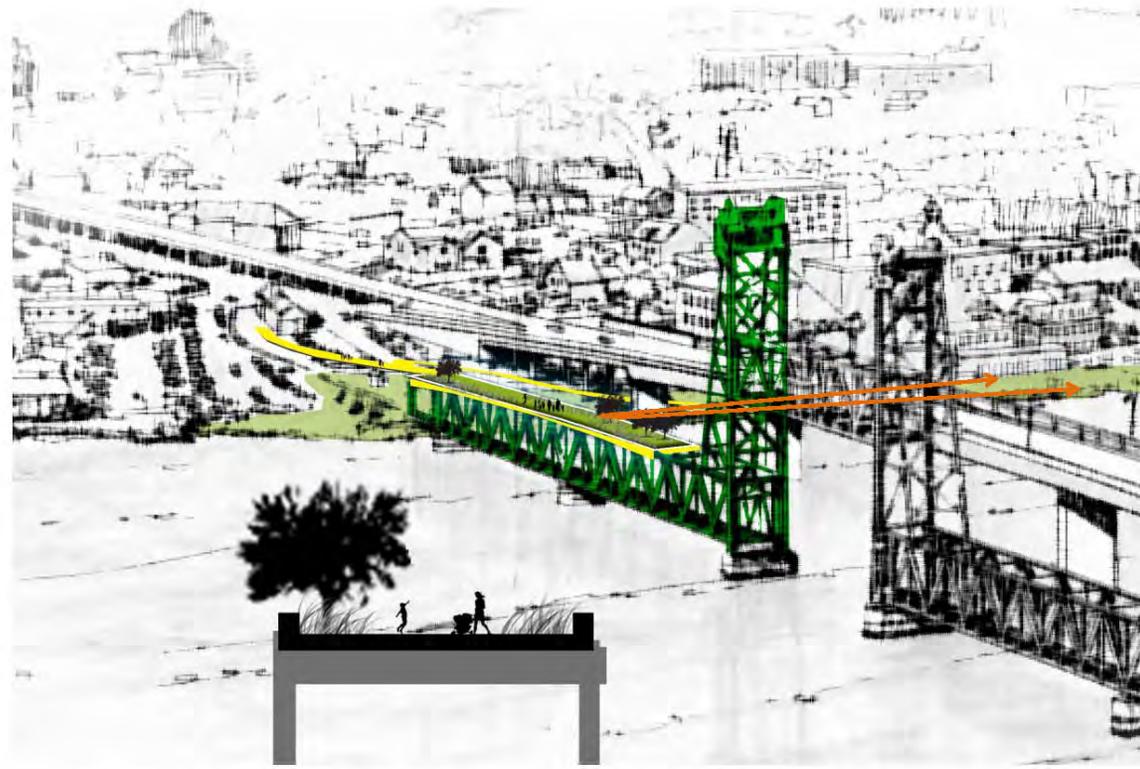
DEFENSE STRATEGY



MAX DIVERSITY + FLEXIBILITY

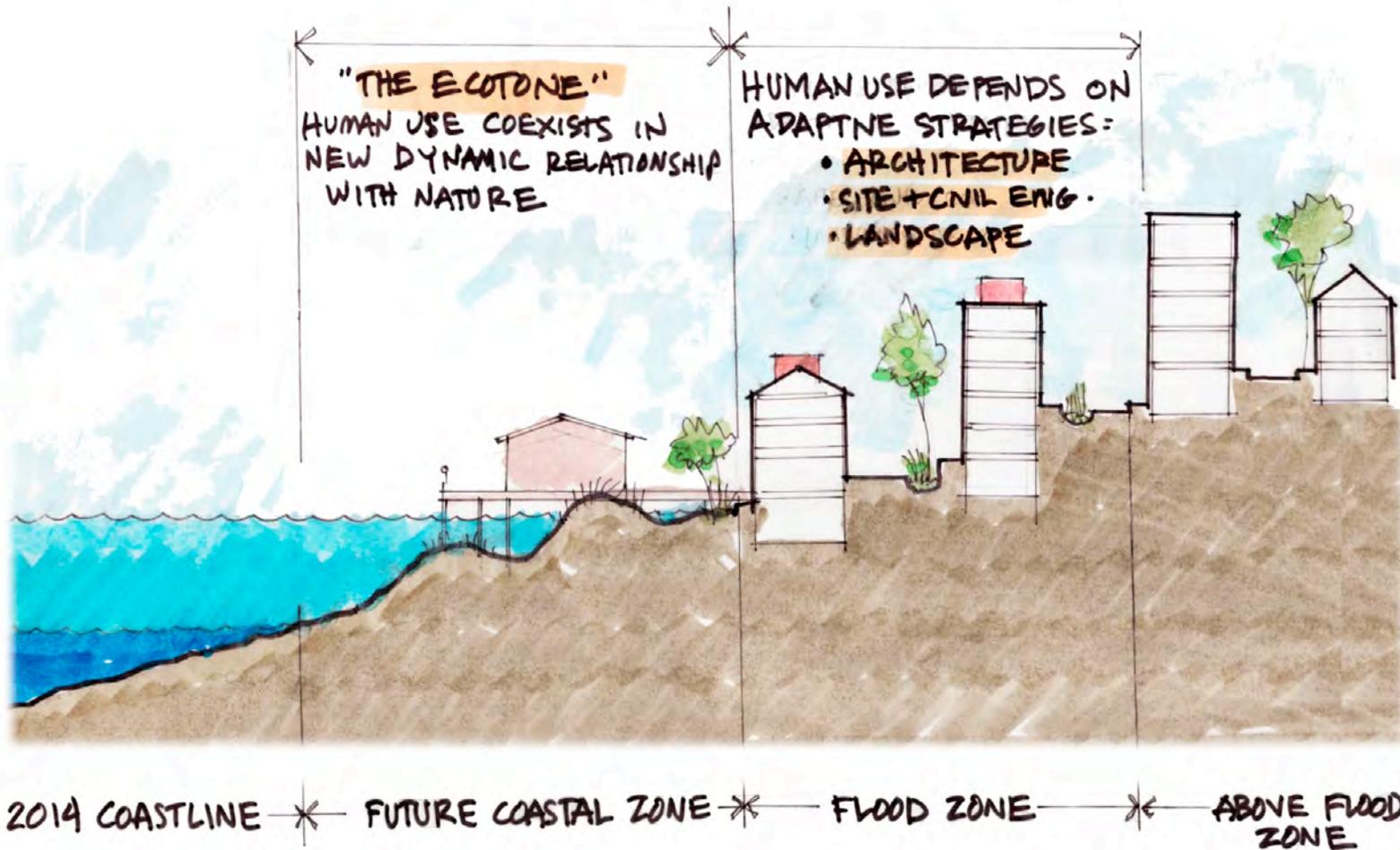
*The proposed waterfront “braid” for Bath is inspired in the already existing diverse conditions of Bath’s waterfront as observed here on the pictures to the left. The “braid” can house other functions beyond connectivity, such as flood control, habitat creation, etc.*

A final element in the overall connectivity strategy is part of the waterfront braid: an educational overlook to be located on the abandoned old Sagadahoc Bridge. In addition to walking along the waterfront and using the waterfront braid as a defense strategy, the braid could culminate at the bridge overlook, where residents and visitors can have a one-of-a-kind experience and augment their understanding of the waterfront's current conditions, as well as observe its evolution in the next decades. The design team proposed designing the western portion of the old bridge as an elevated park, incorporating interpretation elements to inform residents on climate change topics, sea level rise issues, and to celebrate the history of Bath, and the region. The vantage point that this structure affords is invaluable, and can become a regional destination that highlights and celebrates the past, present and future of Bath's waterfront.



## BRIDGE OPPORTUNITY

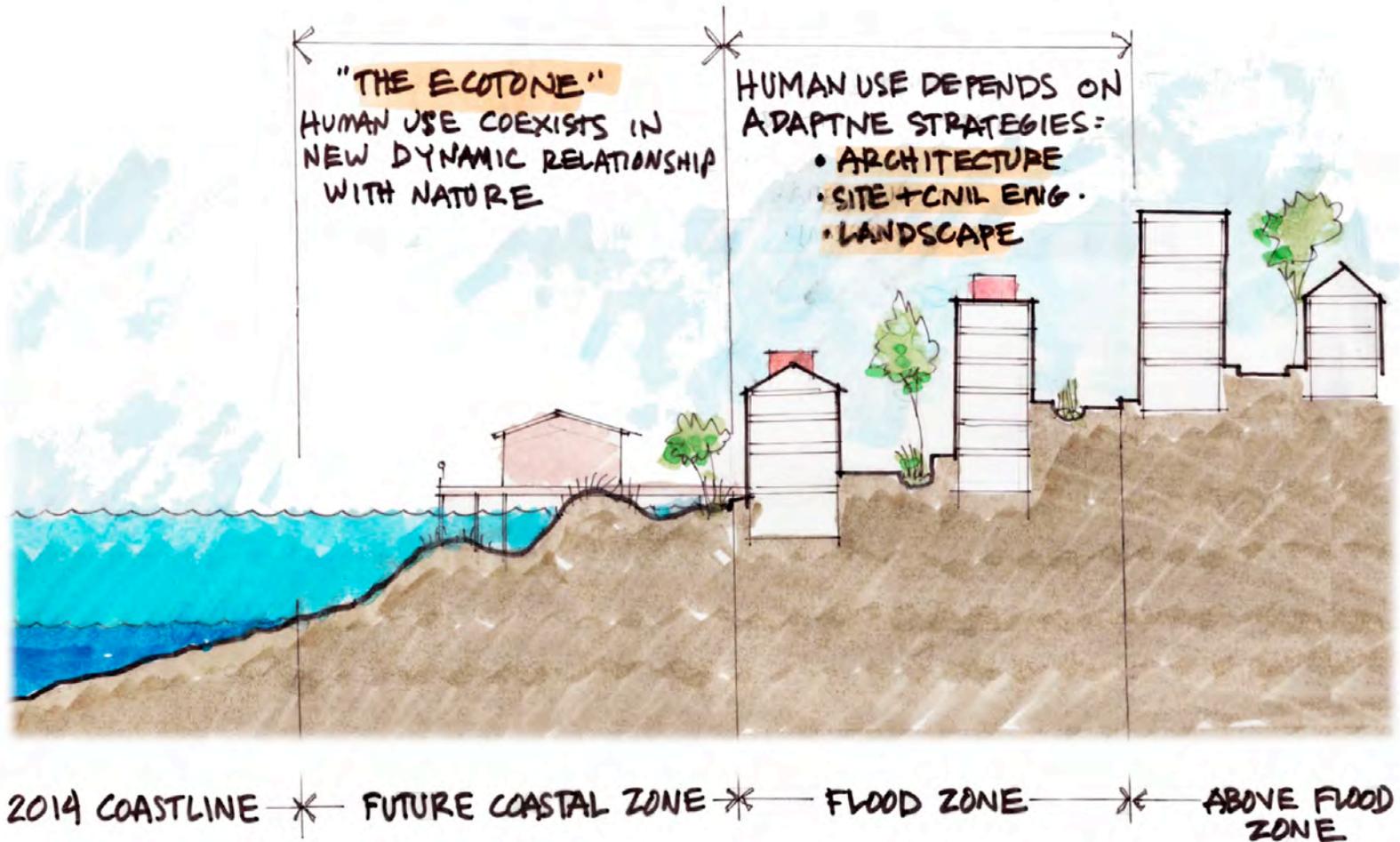
*The western portion of the old Sagadahoc Bridge can be transformed into an elevated park and an interpretive outdoor "museum" for the waterfront.*



This drawing illustrates how sea-level rise and the effects of catastrophic coastal storms could affect low-lying coastal communities based on proximity and elevation.

The diagram shows a horizontal section cut through typical land forms of coastal community. It is not drawn to a scale that represents Bath specifically, but the general principles apply to the geography of the AIA Bath DART study area.

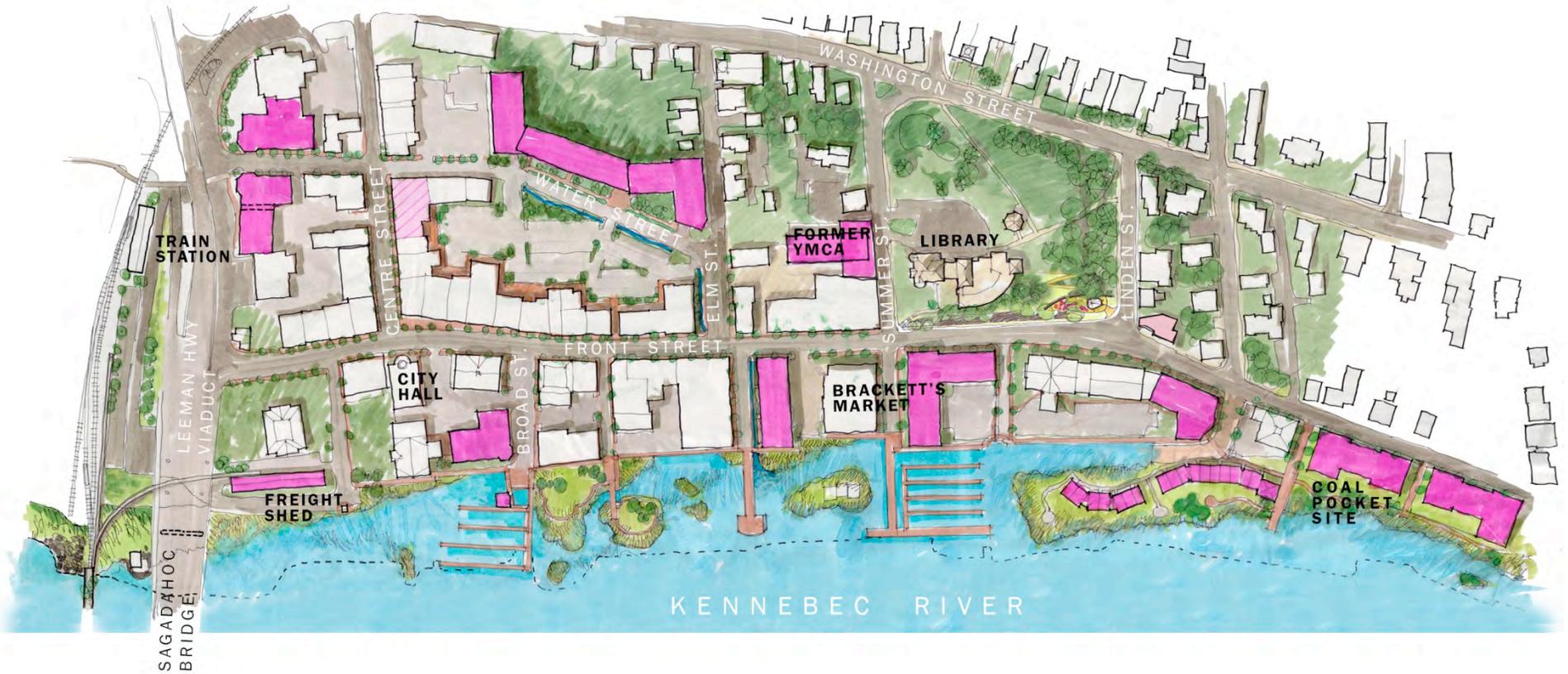
The section describes four zones. On the far left is land that as of the study date is below water. The edge of this zone is the coastline we see today between Commercial Street and the river. On the far right is land that is at high enough elevation that current impact analyses show it is not likely to be directly impacted by even the most severe combination of sea level rise and storm surge. Impact analysis diagrams made available to the AIA Bath DART team show that the hill upon which Bath City Hall sits at the intersection of Front and Centre Streets is within this zone. The land in between these two zones is where the difference between sea level rise and storm surge can be understood.



We have used the term “ecotone” to describe the lowest-lying coastal land that – absent changes to the physical character of this land – would be under water when sea level rises. In biology, an ecotone is a zone where two distinctly different ecosystems overlap. In this case, the rise of sea level will put what we used to know as productive human uses on “dry land” in a new and dynamic relationship with water. Although hard infrastructure barriers like seawalls are among the ways a community could “protect” this land from the rising seas, the AIA Bath DART recommends that a more effective long-term adaptive response would include some “retreat” from the coastline and the construction of “soft” offshore elements such as berms and new coastal wetlands.

Within the study area and in approximate terms, Commercial Street – constructed to support ship yards that no longer exist – would have its value greatly diminished by sea level rise. The City of Bath could consider re-establishing Front Street as the viable street closest to the waterfront. The last zone, labelled “flood zone” in this diagram, is where increasingly severe storms would drive flood waters. High water in this zone should be considered a temporary condition. As the goal is to sustain productive human use in this urban zone, architecture, landscape architecture, and civil engineering design strategies that promote the rapid drainage of large volumes of water and mitigate its damage should be considered.

 POTENTIAL NEW INFILL / REUSE DEVELOPMENT



Resilient design is not a no-growth strategy. The City of Bath can take advantage of the necessity to respond to the impacts of sea level rise and storm surge flooding to address some of the other impediments to growth that it is facing.

The need to create more market-rate rental housing close to Bath's historic downtown was described as an imperative to the AIA Bath DART. The housing needs of three demographic communities – young singles, new families and senior citizens – were particularly cited.

The site plan shows many sites where new housing or other commercial development could take place. These blocks are indicated in pink. Some of these sites will be described in greater detail in subsequent sketches. The site plan also shows a reconfigured waterfront for Bath, Maine, with Commercial Street under water.



#### Corners, Vine Street & Water Street

The corner of Vine and Water Street are an important entry to Bath's historic district. However, it is poorly marked and occupied by parking lots and undistinguished green spaces associated with low-density single-story buildings. If developable parcels could be assembled, this intersection would work much better as a pair of four-story residential or mixed-use commercial buildings.

The sketch shows two new buildings on these sites from under the highway overpass. Both buildings have articulated corner bays to help mark the space between them as an important urban threshold.

## Corner Water & Center Streets

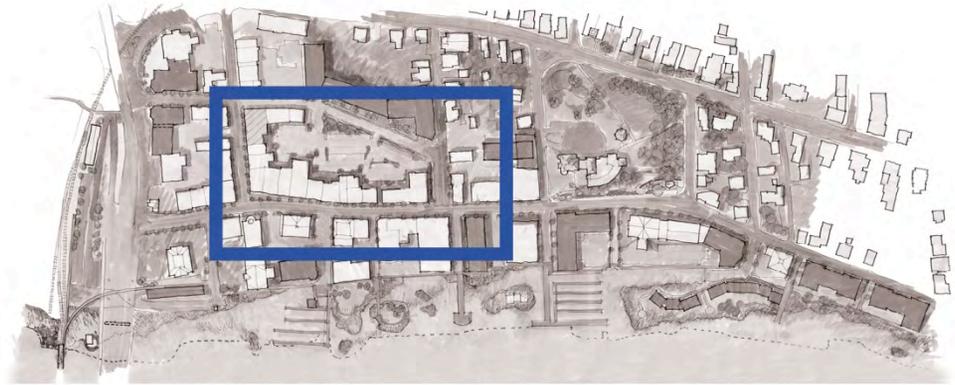
A full redevelopment strategy for downtown Bath that accommodates growth, protects historic resources, and prepares for the impacts of climate change would focus on parcels like this one.

The existing single-story commercial building on this site is a well-preserved Art Deco-style structure probably built in the 1930's or 1940's. It shares a city block with other single-story buildings that contribute to the historic district as well as some surface parking lots. Also of note, this low corner will undoubtedly be more frequently inundated by storm surge and flooding in the future.

The sketch shows the historic facades being preserved as part of a full-block redevelopment with four new stories of housing over commercial space. The simple architectural language shown is generic, but meant to suggest that new buildings can be both modern and sympathetic to a historic context. Of note: the first floor elevation is shown as raised to above an expected flood elevation. Given the slope of the sidewalk, this limits the number of accessible entries the commercial space will have in effect consolidating the retail into a single, larger sublease area.

Also depicted is a basement space that is designed to accommodate flood waters. Moving the building's mechanical equipment and emergency generators to the roof would allow power-related building functions critical to upper floor uses to continue while flood waters are receding. Designing the basement as a "bathtub" with windows that function like storm sewer grates would reduce the damage to the building from flooding and minimize recovery time.

This aerial view from perhaps 100 feet above the roof of "Beale Street Barbecue" illustrates several of the AIA Bath DART's principle recommendations. Water Street was named for a reason. We understand it was formerly a creek and an underground aquifer still exists there. We also understand it is very likely to become inundated by storm surge flood waters coming from two possible directions: either up Elm Street or across Vine from the General Dynamics/Bath Ironworks sites. This street, its parking lots, and the buildings around it are a case study of the "flood zone" land area illustrated in our first drawing. For productive human uses to continue here, the effects of inevitable flooding must be mitigated.





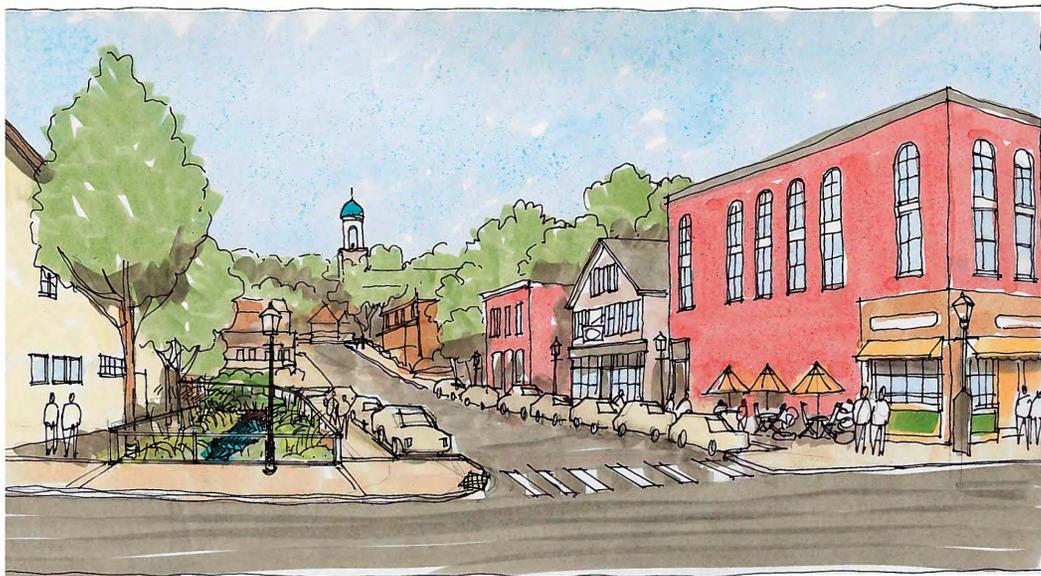
The middle of this sketch shows a significant amount of site area given over to “green infrastructure”, in this case a daylighted aquifer surrounded by plant materials chosen for their capacity to filter particulate matter from flood waters. This site feature would be designed to retain and divert as much flood water as possible without overburdening the city’s existing storm sewers.

The large building on the left is a new 5 or 6 story residential building to the north and west of Water Street. It could contain up to 200 units of apartments and might therefore be appropriate for an age-qualified or income-qualified community. The building takes advantage of the higher ground above Water Street, but still puts the lowest habitable floors on the second floor above structured parking and retail space.

[Corner of Elm Street and Front Street]

This corner is very important to Bath’s climate change preparations. It is the lowest point of Front Street and already subject to flooding. The storm water overburden on Water Street will likely come from the Kennebec through this intersection.

The sketch shows how the proposed green infrastructure on Water Street will also change the character of Elm Street. But note: this new infrastructure can be beautiful as well as functional. The sketch shows the paved right-of-way of Elm Street reduced by the presence of daylighted aquifer and native landscape materials. Parking, pedestrian sidewalks, and familiar streetscape furniture remain.



[Waterfront between Lambard and Broad]

This spot along Bath's waterfront is the new edge of the Kennebec River bank. To the left are both existing and new buildings. To the right is the new "ecotone" zone where productive human used co-exist in a dynamic new relationship with water. The path shown in the middle of the sketch is a boardwalk where Commercial Street is now.



## THE 'COAL POCKET' SITE

The AIA Bath DART recognizes the community's long-term interest in seeing new residential development occur on the abandoned industrial waterfront site known as the "Coal Pocket" site. The team has several guidelines to recommend that may be taken into consideration when development proposals are being reviewed.

1. Public access to the waterfront should be incorporated into any development plan. Housing, and especially condominium housing, often comes with an interest for privatization of open space. This site should be regarded as urban dwelling with very little – if any – property rights for outdoor space conveyed with the living units allowing the public to enjoy unrestricted use of the waterfront.

2. If multi-story residential buildings are proposed, they should be sited on the northern half of the site and as close to Front Street as possible. Our site plan shows two buildings of perhaps 16 to 20 units each with front doors right on the Front Street sidewalk. Not only does this help continue the street wall of Front Street re-enforced by the Hampton Inn, it also moves the buildings as far away from the rising river's edge as possible.

3. If dwelling units are proposed for the southern half of this site, they will likely be within the "ecotone" region and will coexist in a dynamic new relationship with water. Our site plan and this sketch shows approximately 16 small 2-1/2 story wood frame buildings built on piers with the 1st floors above the potential flood elevation and accessed by boardwalks.

POTENTIAL NEW INFILL / REUSE DEVELOPMENT





ZONING

## ZONING

There are some opportunities for changes to Bath’s zoning that can help achieve the community vision laid out above. Zoning changes clearly can have significant impacts on the value of private property, both positive and negative. Collectively, however, these recommended zoning changes will add dramatic value to downtown Bath and to the collective value of private property.

We recommend six categories of zoning changes.

### 1. Reduce the minimum required lot area per dwelling unit in the R1 zoning district:

Decrease to 2,500± square feet per dwelling unit in all existing buildings

Decrease to 2,500 to 4,000± square feet per dwelling unit for entire district

Increasing the population within easy walking distance of any downtown is often the most effective way to build downtown vibrancy. This is certainly true in Bath, where more people would create more business and life on the street.

In Bath, instead of growing, however, neighborhoods within walking distance of downtown (especially the R1 zoning district) are rapidly losing population. These areas probably have the most significant population decline in the city. Large residential buildings populated by families and households whose average size is dropping is leading to underutilized space and dropping population density in the place where it is most needed.

Some of this drop is driven by market demands and some by the unique challenges of diving up existing buildings, but much of the problem is caused by Bath’s zoning. Bath requires 6,000 square feet per dwelling unit in the R1 zoning district, a very low density for a walkable city.

Community	Zone	Min Lot Area in sq. feet	Min. Area per dwelling unit in sq. feet	Comments
<i>Bath (R1)</i>	<i>R1</i>	<i>6,000</i>	<i>6,000</i>	<i>Design approval only in historic district</i>
<i>Portland</i>	<i>R6</i>	<i>4,500</i>	<i>1,200</i>	<i>Design standards apply</i>
<i>Portsmouth</i>	<i>CD4-L GRC</i>	<i>3,000 3,500</i>	<i>3,000 3,500</i>	<i>Form based code- strict design Other abutting districts have lower density</i>
<i>Northampton</i>	<i>URB/C</i>	<i>2,500</i>	<i>2,500</i>	<i>Formula design standards</i>
<i>Brunswick</i>	<i>TR1</i>	<i>10,000</i>	<i>4,356</i>	<i>Other abutting districts have lower density</i>
<i>Provincetown</i>	<i>all</i>	<i>2,500</i>	<i>2,500-3,500</i>	<i>For up to 16 units</i>

Table: Minimum area per dwelling unit in selected successful small New England cities

**2. Add a new focus on exterior form in the R1 zoning district.**

- a. Implement clear design standards for all buildings with simple guidelines (e.g., no exterior fire escapes facing the street, no parking in the front yard setback)
- b. Implement a threshold for larger projects when design approval is required (e.g., above 6 units in a new building).

For many communities, the concern about higher densities is about how buildings appear from the street and to abutters. The problem, of course, is that it is possible to have a horrible incompatible building on a large lot or a wonderfully designed and sensitive building on very small lot. Design may matter more than size.

**3. Target development for priority development sites in the C1 and C1/ Shoreline Overlay**

Currently, much development along the shoreline requires discretionary review with no guarantee of success. To the extent that development is consistent with the vision in this report or whatever vision Bath ends up adopting, permitting should move to a design review and site plan review approach where all the details get reviewed but more certainty is provided to a developer. In essence, when a site is consistent with the community vision and public access along the water can be guaranteed, sites can be pre-permitted, providing greater certainty.

**4. Promote water dependent uses in the C1/Shoreline Overlay**

Zoning should ensure that every project in the shoreline overall should either be dedicated to water dependent uses (fisheries, commercial boating, recreational boating, public access) or those uses should at least be a prominent use covering at least 50% of the site.

**5. Decrease density or create a moratorium for other shoreline areas**

The shoreline overlay should be strengthened so that no development not consistent with this plan or whatever vision Bath ends up adopting is approved.

**6. Adopt stronger performance standards for the industrial shoreline**

The industrial shoreline, most notably the Bath Iron Works area and any other industrial areas, should embrace redevelopment of those sites and not prohibit any water dependent or water-benefiting industrial use. Any new investment, however, should be designed for sea level rise and future storm conditions. The biggest risk to Bath's industrial and maritime industries would be if new investments were ever heavily damaged by a storm event, which could lead to a rapid disinvestment.



BUILD IT TO LAST:  
MOVING FORWARD

## BUILT TO LAST: MOVING FORWARD

A vibrant and resilient Bath requires a long term vision and short term actions. Act today while always keeping an eye on the long term prize. We hope this report helps Bath become more strategic in moving forward.



We suggest a new Bath logo for this project, *Built to Last*. Inspired by the Bath Iron Works “Bath Built is Best Built” slogan, Built to Last represents the opportunity of doing it right the first time, which is far less expensive than the alternative.

Building it to last requires investments and policy changes. Most of these investments can be financed by using existing funding sources and steering those investments in new directions, whether aided by zoning (for private investments) or new public policies (for public investment). Often it doesn’t take any more money to build it to last. Grant and other financing sources are available to help with any of the gaps.

We have provided samples of short, medium, and long term actions to help spark the community conversation about what should come next.



## Short Term Actions

Revise Zoning to address recommendations

Adopt Hazard Mitigation Plan or amend county plan to address climate change

Strategic street restriping to add on-street parking and bicycle sharrows

Consider climate change as part of site plan and subdivision review

Review emergency preparedness plans

Share information on sea level rise and climate change with property owners

Expand regional discussions with local, regional, and state agencies

Review vulnerability to other aspects of climate change (e.g., insect, food)

Creative painted intersection treatments to increase safety and add character

Install parklets for outdoor seating and traffic calming and to beautify the public realm

Temporary Front Street closures for festivals and special events

Playground at Library Park (City Park)

Passageway art installation

## Medium Term Actions

Consider climate change as part of comprehensive plan

Follow greenhouse gas reduction targets

Design the Bath Highline

Obtain hazard mitigation money to buy out flood insurance repetitive loss properties

New development should provide its own green infrastructure

Green infrastructure demonstration project at Front Street and Broad Street

Gateway intersection improvements at Front Street and Vine Street

Gateway intersection improvements at Washington Street and Vine Street

Implement Back of Front improvements and encourage shared parking agreements at Water Street to increase efficiency

Integrate green infrastructure into parking lots to naturally filter stormwater runoff and improve aesthetics

Create a tree planting program for public and private downtown tree planting

Ways to water connections (medium and long term)

Advance development of catalytic and infill sites consistent with overall vision

## Long Term Actions

Build the Bath Highline

Remove buildings in green infrastructure areas at the end of their useful life

Remove obsolete infrastructure from green infrastructure areas

Fill the gaps in waterfront public access and park system and complete waterfront piers

Armor buildings and harden shoreline edge to resist storm surge

Retreat shoreline edge to provide wetland migration zones and further resist storms

Construct “green/blue fingers” aligned with Elm Street and Water Street inundation zones to accommodate SLR and weave water into the downtown fabric

Reconstruct East–West connections from Front Street to water as “ways to the water” incorporating pedestrian movement and green infrastructure

Extension of passageway (north and south)



APPENDIX 1:  
DESIGN ASSISTANCE

## THE DESIGN ASSISTANCE PROGRAM

With nearly 300 state and local chapters and over 80,000 members, the American Institute of Architects serves as the voice of the architecture profession and the resource for its members in service to society. The AIA has a 45-year history of public service work. Through the Center for Communities by Design, the AIA has engaged over 1,000 professionals from more than 30 disciplines, ultimately providing millions of dollars in professional pro bono services to more than 200 communities across the country, and engaging thousands of participants in community-driven planning processes. Its projects have led to some of the most recognizable places in America, such as the Embarcadero in San Francisco and the Santa Fe Railyard Redevelopment. In 2010, the AIA received the *Organization of the Year Award* from the International Association for Public Participation (IAP2), recognizing its program impact on communities and contributions to the field.

- **Regional and Urban Design Assistance Teams (R/UDAT):** Created in 1967, the AIA's R/UDAT program pioneered the modern charrette process by combining multi-disciplinary teams in dynamic, multi-day grassroots processes to produce community visions, action plans and recommendations.
- **Sustainable Design Assessment Teams (SDAT):** In 2005, in response to growing interest and concern about local sustainability planning, the AIA launched a companion program to the R/UDAT that allowed it to make a major institutional investment in public service work to assist communities in developing policy frameworks and long term sustainability plans. During the first 7 years of the SDAT program, the Center for Communities by Design has worked with over 50 towns, cities and regions.
- **Design and Resilience Teams (DART):** In 2014, AIA launched the DART pilot program with a narrower focus on resiliency in cooperation with the New England Municipal Sustainability Network (NEMSN), a network of municipal sustainability directors and professionals. DARTS expand the strong focus R/UDATS and SDATs already have on resiliency. Two communities participated in the pilot program.



The Center's Design Assistance Team programs operate with three guiding principles:

- **Multi-disciplinary Expertise.** Each project is designed as a customized approach to community assistance that incorporates local realities and the unique challenges and assets of each community. As a result, each design assistance team includes a multi-disciplinary focus and a systems approach to assessment and recommendations, incorporating and examining cross-cutting topics and relationships between issues. In order to accomplish this task, the Center forms multi-disciplinary teams that combine a range of disciplines and professions in an integrated assessment and design process.
- **Enhanced Objectivity.** The goal of the design assistance team program is to provide communities with a framework for action. Consequently, each project team is constructed with the goal of bringing an objective perspective to the community that is outside of the normal politics of public discussion. Team members are deliberately selected from geographic regions outside of the host community, and national AIA teams are typically representative of a wide range of community settings. Team members all agree to serve pro bono, and do not engage in business development activity in association with their service. They do not serve a particular client. The team's role is to provide an independent analysis and unencumbered technical advice that serves the public interest.
- **Public Participation.** The AIA has a four-decade tradition of designing community-driven processes that incorporate substantial public input through a multi-faceted format that includes public workshops, small group sessions, stakeholder interviews, formal meetings and presentations. This approach allows the national team to build on the substantial local expertise already present and available within the community and leverage the best existing knowledge available in formulating its recommendations.



APPENDIX 2:  
TEAM ROSTER

## DART TEAM



Wayne Feiden, FAICP  
*Team Leader*  
*Northampton, Massachusetts*

Wayne Feiden is Director of Planning and Sustainability for Northampton, MA. He led that city to earn the nation's first 5-STAR Community rating for sustainability and the highest "Commonwealth Capital" score, the former Massachusetts scoring

of municipal sustainability efforts, as well as "Bicycle-Friendly," "Pedestrian-Friendly," "APAGreatStreets," and "NationalHistoricTrustDistinctiveCommunities" designations. Wayne's professional focus includes downtown revitalization, multi-modal transportation, and open space preservation. His research and lecture focus is downtown revitalization, revitalizing small post-industrial cities, sustainability and assessing sustainability, and professional practice. He is adjunct lecturer at the University of Massachusetts, teaching planning law and planning tools.

Wayne's most recent publication was *Assessing Sustainability* (American Planning Association). He has also published on management of local government planning, planning on Native American reservations, planning issues of onsite wastewater treatment, and financial performance guarantees. Wayne has led or served on 21 American Institute for Architects design assessment teams. He has also served on numerous additional assessment efforts from Vermont to Puerto Rico to Haiti to Hungary. Wayne's Eisenhower Fellowship to Hungary and Fulbright Specialist fellowships to South Africa and to New Zealand all focused on urban revitalization and sustainability. He is a fellow of the American Institute of Certified Planners, Honorary member of Western Mass AIA, earned professional planner and advocacy planner awards from APA-MA, and American Trails Massachusetts Trails Advocacy Award.



Mike Davis, FAIA  
*Urban Design & Waterfront*  
*Boston, Massachusetts*

Michael R. Davis, FAIA, LEED AP, a Principal and Vice President at Bergmeyer Associates, Inc., is a practicing architect, an educator, and an advocate for sustainable public policy. Mr. Davis advises the Boston Redevelopment Authority as Chair of the Boston Civic Design Commission and served on Boston Mayor Thomas Menino's Green Building Task Force and Massachusetts Governor Deval Patrick's Net Zero Energy Building Task Force. He was 2013 President of the Boston Society of Architects and is a former Co-Chair of the AIA Massachusetts Government Affairs Committee. For the American Institute of Architects, Mike has led AIA Sustainable Design Assessment Team (SDAT) charrettes in Ithaca, NY, DeKalb County, GA, Augusta, GA, Tremonton, UT, and St. Helens, OR, and currently serves on a national AIA Material Transparency working group.

Mike's recent projects include a new LEED-Registered facility for Hostelling International Boston in an adaptively-reused historic building and a deep-energy retrofit of public housing units for the Boston Housing Authority at the Cathedral Family Development, which achieved LEED Platinum certification. He blogs about his firm's work as signatory to the AIA 2030 Commitment at <http://mikedavisfaia.wordpress.com>.

Mike is a Trustee of the Boston Foundation for Architecture and an Overseer of the Boston Architectural College. He holds a Bachelor Degree in Architecture from the Pennsylvania State University and a Master of Architecture from Yale University.



Alma Du Solier

*Urban Design & Connectivity*

*San Francisco, CA*

Alma Du Solier is an architect and landscape architect with a Master in Landscape Architecture from the University of California, Berkeley and a Bachelor in Architecture from ITESM

Campus Monterrey (Mexico). Alma has 15 years of experience in the practice of design and is currently a Principal at POPULOUS, leading their brand new Urban and Landscape Design Studio in San Francisco. Alma has been lead designer for a wide range of projects from urban parks and waterfront projects, to large development communities and long-term open space and resources strategic planning, covering the entire spectrum of tasks, from concept and landscape master planning to detailed construction documentation and implementation. Alma employs a unique multidisciplinary and participatory design approach due to her dual background in both landscape design and architecture, and her interest on collaboration and on the meaningful integration of design with site and culture.

Her experience includes the development of open space master plans and landscape design projects in the US, such as the LA Waterfront, a multi-phase public realm improvements and waterfront access project along the Port of Los Angeles, the new William H Hannon Library at Loyola Marymount University in Los Angeles, and the Clough Undergraduate Learning Commons (Clough Commons) at Georgia Tech in Atlanta, GA which includes a 15,000 square feet roof garden; and in Mexico (where she is a licensed architect), including landscape master plan and design for the State of Zacatecas Government City campus. She recently led a multidisciplinary consultant team in the initial design phases of Crane Cove Park in San Francisco, CA, a 9-acre waterfront site located within Pier 70's historic district. The design recommendations that resulted from this initial and crucial phase of the project set the tone for the future development of the park, responding to considerations of visitor's experience, climate change adaptation, and the interpretation of the site's remarkable historic resources. In 2010-2011, leading a multidisciplinary consultant team with SPUR (San Francisco Planning and Research Association),

she designed and facilitated a transparent, interactive and inclusive outreach program for the development of the Ocean Beach Master Plan\* in San Francisco, CA., a long-range plan that provides a comprehensive framework and implementation path for the beach's protection and enhancement. between recreational needs, sea level rise threats, ecological, wildlife and historic resources. At the conclusion of the 18-month process, the six "key moves" and the overall vision proposed by the master plan were supported by all the participants in the outreach program, allowing for some of the initial steps to begin implementation.

Alma is President of the Board for San Francisco's Center for Architecture and Design, part of AIA San Francisco. She is a recurrent guest lecturer at UC Berkeley's Department of Landscape Architecture and Environmental Planning and in 2010 was invited as guest lecturer at ITESM Campus Zacatecas, School of Architecture, as part of Tec's Líderes Académicos program. In 2009 she was key note speaker at the Australian Institute of Landscape Architecture (AILA)'s annual conference.



Carl Spector

*Climate Change Planning*

*Boston, MA*

Carl Spector is Director of Climate and Environmental Planning in the City of Boston's Environment Department, where he oversees programs related to climate mitigation and adaptation, air and

noise pollution, and other aspects of sustainability. Before joining Boston City Hall in 2005, Carl worked on a wide variety of environmental and energy issues at the U.S. Environmental Protection Agency and the U.S. General Accounting Office, and in private industry. He holds degrees in physics and environmental science.



Jon Ford, PE

*Green Infrastructure*

*Providence, RI*

Jon Ford has over 16 years of experience and is a Registered Professional Engineer in five states. Jon's planning and design approach is based on the principles of the Charter of the New Urbanism – compact, walkable neighborhood design creates vibrant, lovable places in balance with nature. Dedication to traditional neighborhood design and a devotion to interdisciplinary collaboration led Jon to found Morris Beacon Design in 2006 where he served as a New Urbanist civil engineering and planning resource until joining the Horsley Witten Group.

Jon is a Knight Fellow in Community Building at the University of Miami's School of Architecture, co-founder and past President of the New England Chapter of the Congress for the New Urbanism, and on the faculty of the Form Based Codes Institute. He serves on the Board of Directors of the New England Chapter of the Congress for the New Urbanism, Ecological Landscape Alliance, and Blackstone Parks Conservancy.

Jon's projects have won numerous local and national planning and design awards, including a CNU Charter Award Honorable Mention, CNU New England Award of Excellence, Rudy Bruner Award for Urban Excellence Silver Medal, and Boston Society of Landscape Architects Honor Award.

## AIA Staff

Erin Simmons

*Director, Design Assistance*

Erin Simmons is the Director of Design Assistance at the Center for Communities by Design at the American Institute of Architects in Washington, DC. Her primary role at the AIA is to provide process expertise, facilitation and support for the Center's Sustainable Design Assistance Team (SDAT) and Regional and Urban Design Assistance Team (R/UDAT) programs. In this capacity, she works with AIA components, members, partner organizations and community members to provide technical design assistance to communities across the country. Through its design assistance programs, the AIA has worked in 200 communities across 47 states. In 2010, the Center was named Organization of the Year by the International Association for Public Participation (IAP2) for its impact on communities and contributions to the field.

Erin is a leading practitioner of the design assistance process. Her portfolio includes work in over 70 communities across the United States. A frequent lecturer on the subject of creating livable communities and sustainability, Erin contributed to the recent publication "Assessing Sustainability: A guide for Local Governments". Prior to joining the AIA, Erin worked as historic preservationist and architectural historian for an environmental and engineering firm in Georgia, where she practiced preservation planning, created historic district design guidelines and zoning ordinances, conducted historic resource surveys, and wrote property nominations for the National Register of Historic Places. She holds a Bachelor of Arts degree in History from Florida State University and a Master's degree in Historic Preservation from the University of Georgia.

Matthew Welker, Assoc. AIA

*Senior Manager, Strategic Alliances & Initiatives*

Matthew Welker, Assoc. AIA, is Senior Manager, Strategic Alliances & Initiatives for the AIA National component in Washington, DC. In this role, he works with a diverse team of sustainability leaders to manage the design & health portfolio, focusing on member education, community-based design programs, and research. Prior to this, he managed other strategic initiatives at the AIA including integrated project delivery and leadership development. A member of the AIA since 2011, Matthew serves on the AIA-DC Active Design Committee and is active in his community. He earned his Masters of Architecture from the Savannah College of Art and Design in Savannah, Ga.

Joel Mills

*Director, Center for Communities by Design*

Joel Mills is Director of the American Institute for Architects' Center for Communities by Design. The Center is a leading provider of pro bono technical assistance and participatory planning for community sustainability. Its processes have been modeled successfully in the United States and across Europe. The Center has been the recipient of a numerous awards recognizing its impact. In 2010, the Center was named *Organization of the Year* by the International Association for Public Participation (IAP2) for its impact on communities and contributions to the field. In 2013, the Center received a *Power of A Award* from the Center for Association Leadership, and a *Facilitation Impact Award*, given by the International Association of Facilitators.

Joel's 20-year career has been focused on strengthening civic capacity and civic institutions around the world. This work has helped millions of people participate in democratic processes, visioning efforts, and community planning initiatives. In the United States, Joel has worked with over 100 communities, leading participatory initiatives and collaborative processes that have facilitated community-generated strategies on a host of issues.



APPENDIX 3:  
ACKNOWLEDGEMENTS

## ACKNOWLEDGEMENTS

Local support for the DART was amazing, with approximately 100 people giving up their time to participate in at least one of the three public events, stakeholder groups, a town hall style forum, and the team's final presentation.

A special thanks is extended to a few critical players:

- Audra Caler-Bell, Planning & Community Development Director at Midcoast Council of Governments, who prepared the DART application.
- Davis Conservation Foundation who provided financial support for materials and meeting space.
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