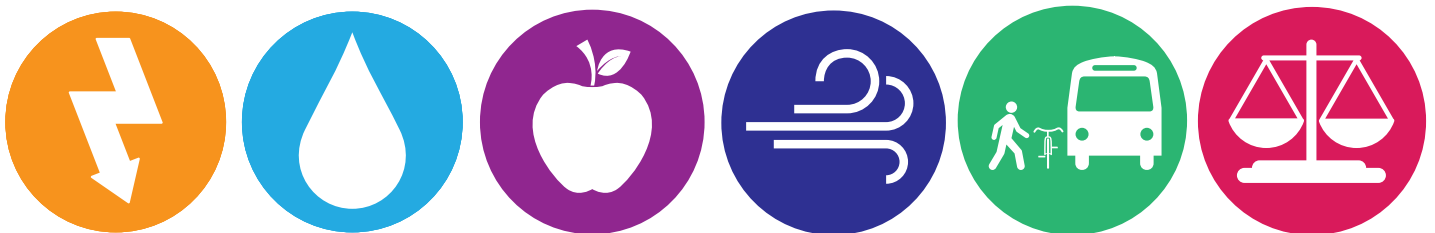


MILLVALE ECODISTRICT PIVOT 2.0



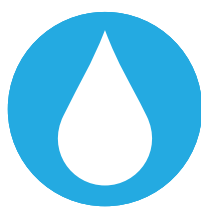
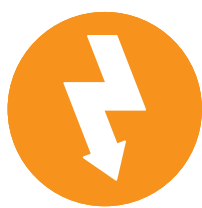
powered by
evolveEA

with support from
Henry L. Hillman Foundation

April 2016

MILLVALE

ECODISTRICT PIVOT 2.0



Steering Committee

Tina Walker, Millvale Community Development Corporation
Brian Wolovich, Millvale Borough Councilman
Ed Figas, Millvale Community Development Corporation/Millvale Borough
Zaheen Hussain, Millvale Sustainability Coordinator
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with support from

Henry L. Hillman Foundation
Anonymous Foundation
Neighborhood Allies

through the Millvale Community Development Corporation
April 2016

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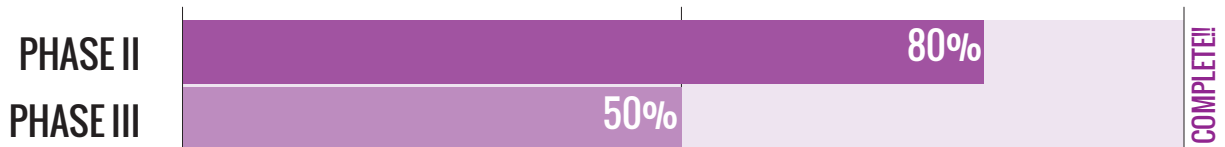
HOW ARE WE DOING?

PIVOT 1.0 REPORT CARD

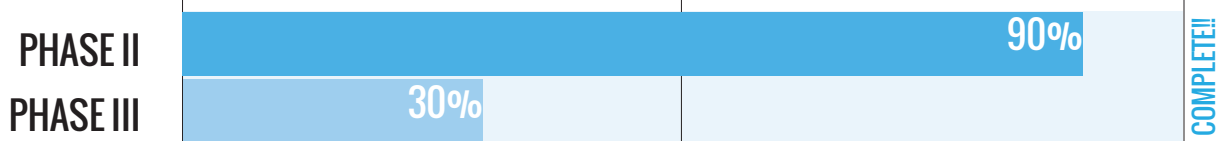
rev. October 2015



FOOD



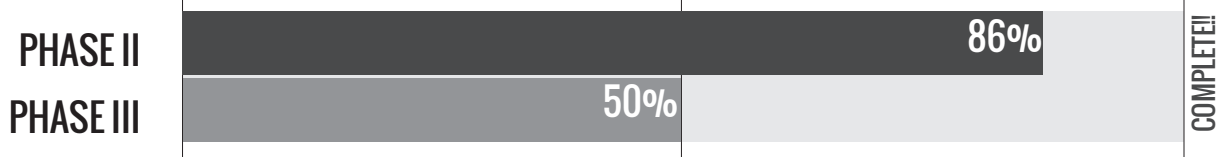
WATER



ENERGY



OVERALL



STATE OF THE MILLVALE ECODISTRICT

In 2012, with the development of the Millvale EcoDistrict Pivot 1.0 Plan, the community had selected three key issue areas to tackle—Food, Water, and Energy.

Without knowing the community, one might wonder why these three topics were what community members thought of first when evolveEA started to walk the community through its sustainable planning process. To those who live here, it couldn't be more obvious. Millvale is a food desert, has a history of stream flooding, and has a strong sense of self determination through energy independence.

Three years into our Millvale EcoDistrict journey, you'll find that the community has been hard at work collaborating

both internally as well as with regional partners to start chipping away at the community's goals. With over 70% of the goals from the first iteration of the plan already complete, the community turned its attention to the future by kicking off Millvale EcoDistrict Pivot 2.0 planning activities. Expanding its focus to Air, Mobility, and Equity, on October 26th, 2015, over 80 residents and community stakeholders came together to Imagine Millvale. Below, you can read more about what has been accomplished thus far and get a taste of what is yet to come between now and the year 2030.



Image: GTECH

PNC BANK RAINGARDEN
constructed in partnership
with GTECH



Image: evolveEA

BENNETT STATION FOOD HUB
to be completed in 2016,
future home to Tazza D'Oro
and New Sun Rising



Image: SolarizeAllegheny.com

LIBRARY SOLAR PANELS
produces over 100% of the
Library's electricity needs



FOOD

PHASE II :: 8/10 (80%)

PHASE III :: 5/10 (50%)

Millvale's goal is to be a foodie paradise known for hyper local production. (2012 vision)

The Millvale Community Development Corporation (MCDC), and a number of partnering organizations have been hard at work to make this goal become a reality. The Town Square Project, administered by the MCDC, is redeveloping a once abandoned building into a fresh food hub. evolveEA worked with the MCDC to develop the master plan for this building, pivoting a building that has been vacant for decades into the anchor for main street revitalization. The two-story structure is expected to be completed in early 2016 and will feature a retail space, which for the first time in years will make fresh and healthy food consistently available to community members. Tazza D'Oro, a key tenant, is committed to building the local economy into an outlet for healthy foods and to engage the community to create their own healthy foods. The second floor will house New Sun Rising's (NSR) Launch Millvale program, a local non-profit partner that

provides start-up incubation services for emerging food entrepreneurs. Program participants are helped through a 12 month program, after which they will walk away with a fully developed business plan. The partnership with NSR and the businesses that will hopefully emerge from this program fit well into the community's desire to grow its small business base. Located minutes from Downtown Pittsburgh, and across the river from Lawrenceville, Millvale is in a geographic sweet-spot for a burgeoning food production and restaurant cluster.

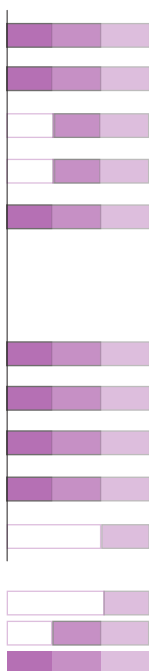
In the meantime, the Gardens of Millvale, a project of the MCDC has been hard at work to transform Millvale into an urban farming leader. Currently a member of NSR's Launch Millvale program, the Gardens of Millvale will not only continue to grow food in their existing orchard, hoop house and 8-lot community garden, but also hopes to provide up to 95% of the food needs for Millvale's future restaurant cluster. The Gardens have recently purchased their property with help from a Neighborhood Allies grant, are developing a permaculture-based master plan, and are hiring a garden manager.

PHASE II rev. October 2015

- Establish and build community garden greenhouse
- Re-establish farmers market
- Cultivate restaurant partnerships
- Inventory agriculture-related entrepreneurs and retail outlets
- Augment classes and community education

PHASE III rev. October 2015

- Establish restaurant hub
- Establish agricultural-based micro-enterprise incubator
- Establish urban farm and diversify production
- Establish urban grange program and place
- Establish education and job training



on our to do list
working on it
done!



“Tupelo Honey Teas brewing a move to Millvale”

NEXT Pittsburgh, 02/2016

“Launch Millvale, a new food enterprise incubator now accepting applications”

NEXT Pittsburgh, 08/2015

“Millvale to break ground for Town Square”

Pittsburgh Post Gazette, 11/2014

“Garden project to keep Millvale in bloom”

Pittsburgh Post Gazette, 04/2011

“Beer: Grist House Brewing opens this weekend in Millvale”

Pittsburgh Post Gazette, 05/2014





PHASE II :: 18/20 (90%)
PHASE III :: 3/10 (30%)

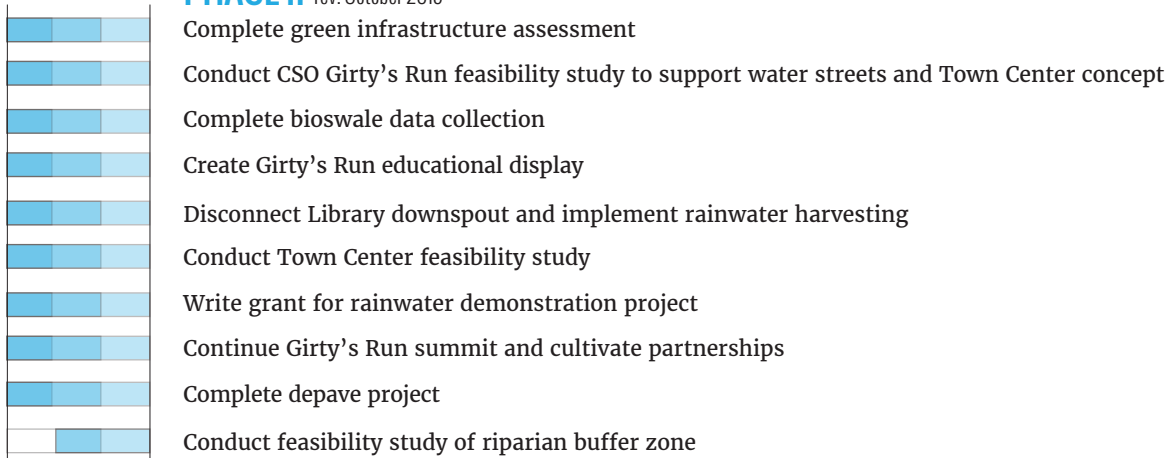
Millvale is working to become a water town with water integrated into productive and pleasurable landscapes. (2012 vision)

Millvale’s identity is formed by water and the Borough and partners have been working to expand that identity beyond floods into ecologically rich and productive water parks. Green stormwater infrastructure like the rain gardens at the Library and in the Borough parking lot, as well as bioswales located near the historic Mt. Alvernia Campus, are examples of green infrastructure that residents with yards as well as businesses can implement

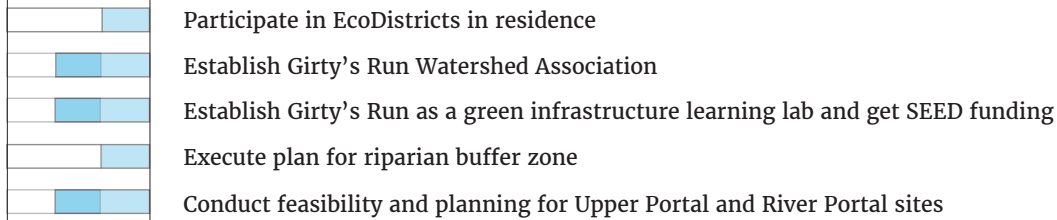
to reduce the impact of stormwater runoff. As studies identify key low-cost high-return locations for further green infrastructure investments, residents can look forward to seeing even more gardens as well as rain barrels throughout town.

Millvale is also partnering with a number of neighboring municipalities. Together, we are working to connect residents to the beautiful Riverfront Park, which is a huge environmental and economic asset, but is difficult to access due to the close proximity of Route 28’s on and off ramps to the entrance of the park.

PHASE II rev. October 2015



PHASE III rev. October 2015



 on our to do list
 working on it
 done!



“Millvale gets grant for trees”

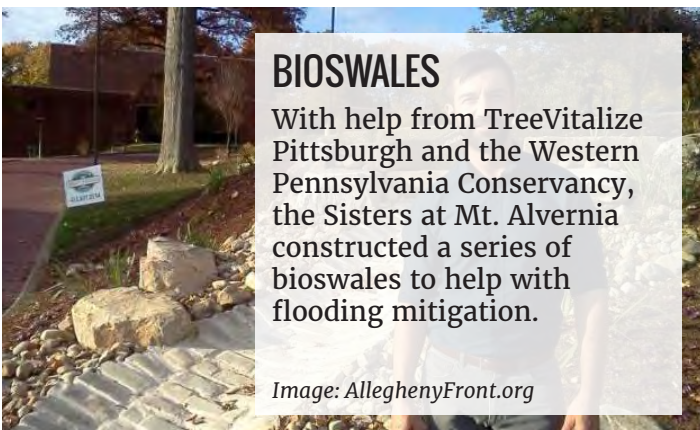
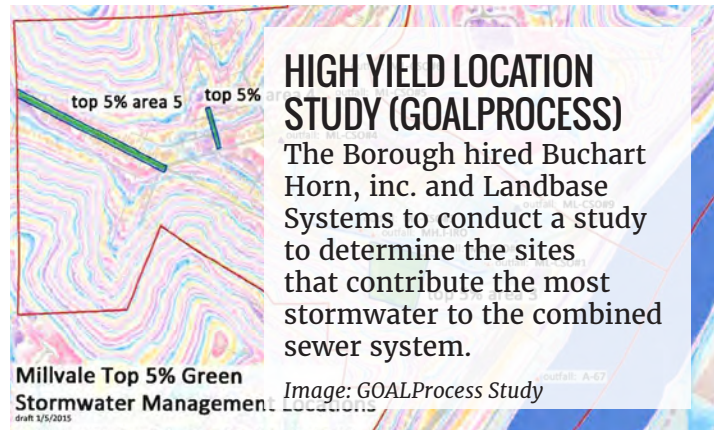
Pittsburgh Post Gazette, 02/2012

“Bioswale, trees help control storm runoff at Mount Alvernia in Millvale”

Pittsburgh Post Gazette, 09/2013

“Bioswale project aims to stop flooding in Millvale”

Pittsburgh Post Gazette, 10/2013





ENERGY

PHASE II :: 12/14 (83%)
PHASE III :: 3/8 (38%)

Millvale's goal is to be a self-reliant urban solar village and is hard at work becoming more energy independent. (2012 vision)

Solar and other forms of renewable energy are at the heart of this goal, but with a lot of wisdom, the community decided to start by addressing energy efficiency and building performance first.

A participant in ReEnergize Pgh's Energy Efficiency Challenge, Millvale won a community energy efficiency competition in which participating households demonstrated over 8% energy savings cumulatively compared to the previous year. Residents not only changed their behavior, but also learned about how they can make improvements to their homes to help improve performance.

Meanwhile, the Library, which is already energy efficient, has expanded its solar installation and is now generating more electricity than it uses. This has given the Library the financial capacity to remain open longer and offer more community programming. The Library also led the effort to fully solarize the Imagine building located next door and partially solarize the Millvale Community Center.

Thinking of the Library as the epicenter, Millvale hopes that one day all the south facing rooftops will have solar arrays powering the community with clean and renewable energy. While we wait for that to come to fruition, residents should be on the lookout for information on the newly formed Allegheny Solar Cooperative, which aims to democratize community solar ownership through member-owned solar installations on the rooftops of community organizations.

PHASE II rev. October 2015

Activate bike committee (education, outreach and sharrows)

Establish solar cooperative

Complete phase II of the Library solar array

Install solar on the Town Center

Review existing ordinances and contribute to new code

Energize public education

Complete public transit study and monitoring

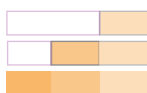
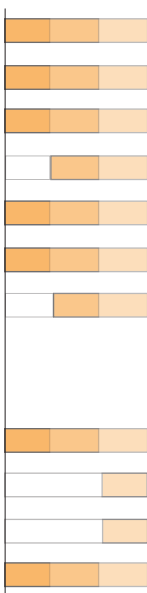
PHASE III rev. October 2015

Establish a solar hub

Establish a smart grid (municipal)

Establish a smart grid (public)

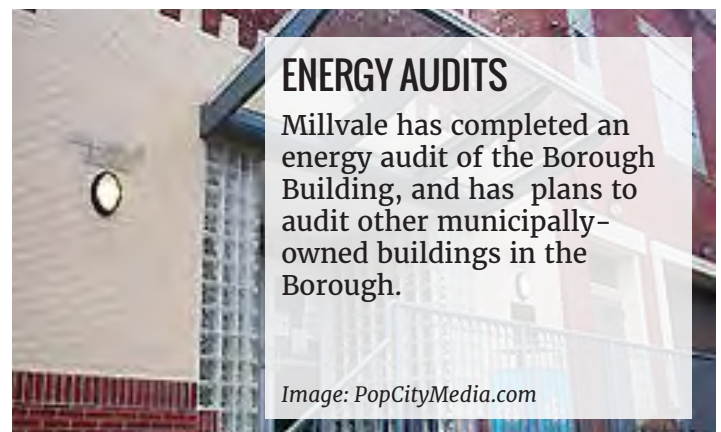
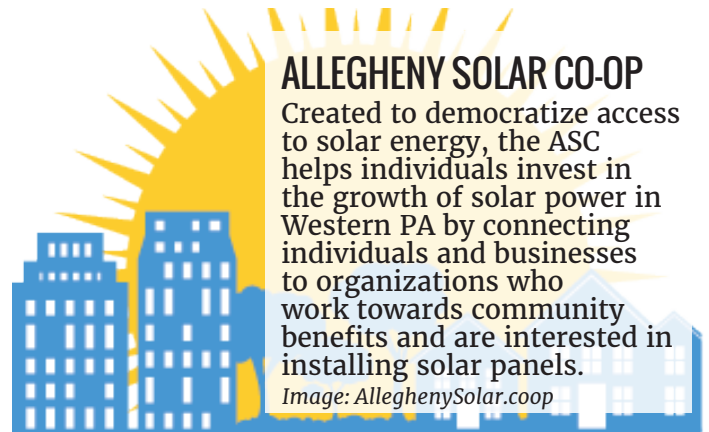
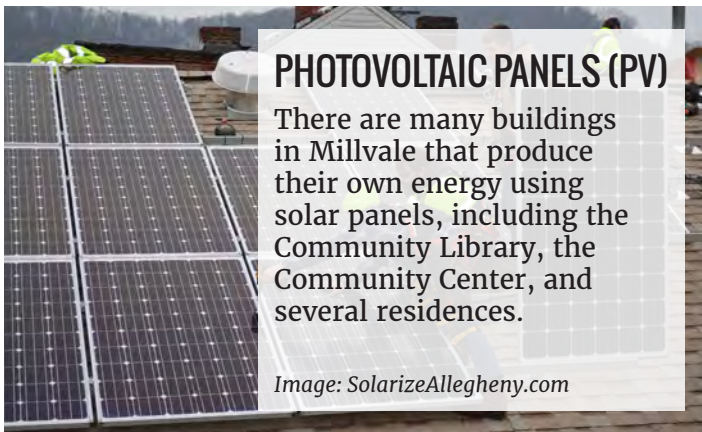
Negotiate advantages of municipality's contracts with Duquesne Light



“Millvale Library generates solar power”
Pittsburgh Post Gazette, 03/2015

“Free Allegheny SolarFest to heat up Millvale Riverfront Park”
NEXT Pittsburgh, 06/2015

“Solarize Allegheny powers up with more communities”
Trib Total Media, 08/2015





MOBILITY



AIR



EQUITY

The Pivot 2.0 report has opened up the conversation on other important community resiliency issues, including mobility, air quality and equity. The community is able to advance these new topics by looking deeply at existing food, energy and water projects and through existing stand alone initiatives.

One such effort was led by the MCDC and the Millvale Borough Bike & Pedestrian Committee (MBBPC). With support from the Heinz Endowments Youth Philanthropy Program, Millvale is installing sharrows and street signs to guide bikers through the heart of town and signs that alert drivers to be more mindful of non-motorized traffic. Similar to many progressive cities who are adopting a “complete streets” approach, Millvale is poised to become a pioneer by improving road, sidewalk, and crosswalk safety, in addition to increasing mobility.

Complete streets and many of the energy initiatives also impact our air quality. Allegheny County is unfortunately designated one of the Countys with the worst air quality in the nation. By incorporating air into our community plan, it gives us a platform to develop more educational programming as well as a formalized way to analyze how the community can reduce the impacts of air movement from elsewhere while we improve our own emissions.

Equity, which in sustainability terms addresses fairness, is an exciting addition to our community planning efforts because everything we have discussed thus far in one way or another addresses equity within the community. For example, having access to food, being able to breathe clean air, feeling safe traveling, not living in fear of flooding and being able to afford clean energy are all matters of fairness, and often walks the line of human rights. Additionally, this allows us to incorporate sustainable housing, affordability, health and education into the fold. Millvale is already engaged in some exciting equity-related projects, such as the construction of two natural play and exploration playgrounds (one in the backyard of the Library and one at the riverfront park), GED test prep and youth programming at the Library, and the North Hills Community Outreach who provide supports for people in crisis. As Millvale begins the journey towards regaining the economic stability it once enjoyed, including equity as part of the conversation ensures that change that comes into the community is by, and for Millvale residents first.

All of the initiatives described are a part of Millvale’s greater goal of becoming a more sustainable and resilient community accessible for all—something it has been working to become for the greater part of the past decade.

With contributions by Zaheen Hussain, Millvale Sustainability Coordinator.



TREE PLANTING

Over the past 5 years, Millvale residents have planted over 15,000 trees in the community with help from the Western Pennsylvania Conservancy and many tree planting volunteers.

Image: Post-Gazette.com



MILLVALE SHARROWS

Many sharrows were painted on Millvale streets to remind and encourage bicyclists and cars to share the road.

Image: BikePGH.org



**“Bicyclist struck by car near
Shadyside-East Liberty border”**

Pittsburgh Post Gazette, 08/2015

**“Stagnant air brings an odor of rotten
eggs to Pittsburgh suburbs”**

Pittsburgh Post Gazette, 08/2015

**“Report: Many Allegheny County students lack
access to ‘opportunity schools’”**

Pittsburgh Post Gazette, 06/2015

**“Pittsburgh’s air pollution ranking shows an
unhealthy situation for our communities”**

Pittsburgh Post Gazette, 03/2015

**“Pittsburghers for Public Transit continues
to push to restore Port Authority bus service”**

Pittsburgh Post Gazette, 05/2015

**“Less low-income Pittsburgh housing
squeezing needy people”**

Pittsburgh Post Gazette, 05/2013



it is important to me that...

There are safe bike routes connecting Millvale to the river and surrounding communities.

it is important to me that...

Millvale's existing small town culture is both celebrated and maintained.

it is important to me that...

I understand the Greater Pittsburgh Region's air quality issues, and advocate for improvement to the County.

COMMUNITY ENGAGEMENT

The success of any EcoDistrict hinges on the support of local residents. Additionally, EcoDistricts need the support of the region to make change and achieve their goals.

Through a series of meetings, Millvale engaged 100s of local residents, business owners, city and regional stakeholders, community partners and subject matter experts to share ideas and discuss Millvale's future.

26 OCTOBER 2015

COMMUNITY MEETING

The EcoDistrict 2.0 kick off meeting began with a brief overview of accomplishments made in recent years in the Food, Energy & Water categories. Air, Mobility & Equity were then introduced and workshop participants created 2030 visions for these new categories. In small groups, workshop participants prioritized projects and programs for the 6 subject areas.

14 & 21 JANUARY 2016

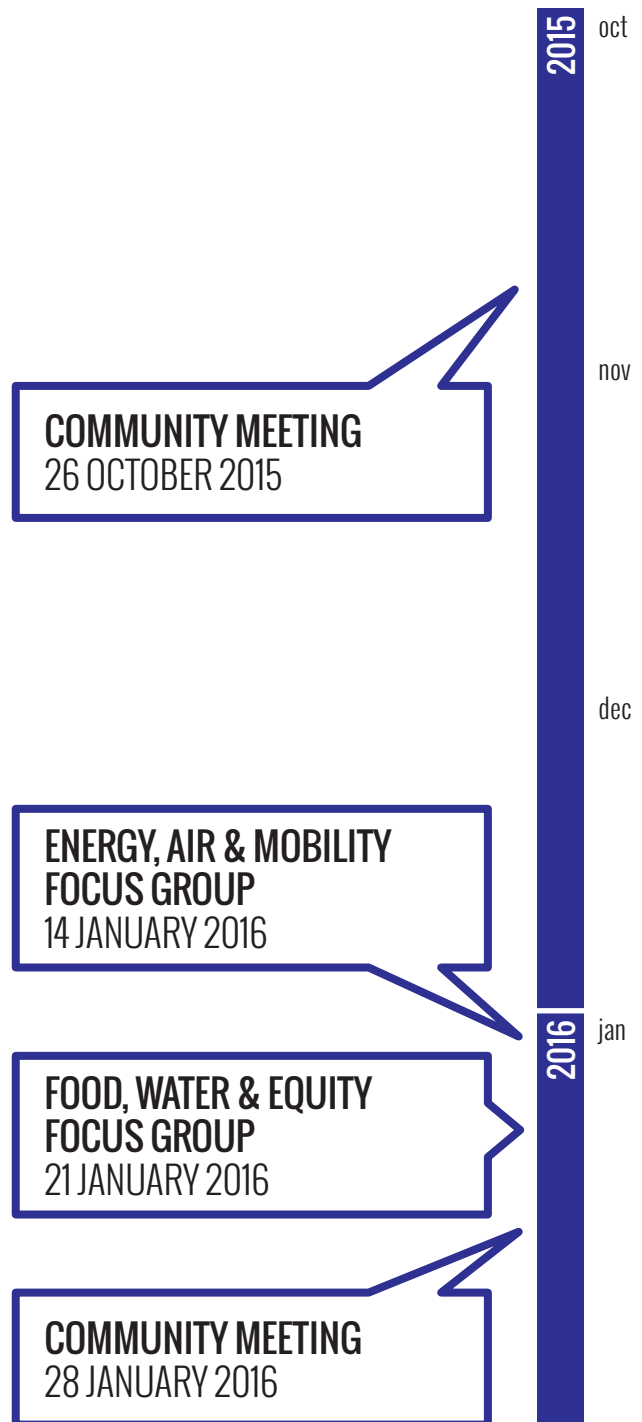
FOCUS GROUPS

During the month of January, evolveEA met with local leaders and subject matter experts for each of the 6 subject areas to discuss recommended projects more in depth. This feedback was incorporated into the report and was shared during the final community meeting.

28 JANUARY 2016

COMMUNITY MEETING

Report findings and recommendations were shared at the final community meeting. Participants viewed a brief presentation by evolveEA summarizing the report, and then circulated between subject areas around the room to learn more about the report details. Participants responded to the recommendations presented by writing their thoughts on post-it notes.



2015 VISIONS



ENERGY

CONSERVE

PRODUCE

RESILIENCY

Millvale is a self reliant urban solar village.

PROJECTS Solar Farm, Green Business District, Community Center phase II, Allegheny Solar Co-op

ACTIONS 1) Gather deep data on consumption and develop a more detailed business case. 2) Develop or connect with creative financing and implementation products that benefit the current population as well as attract new residents. 3) Commit to municipal energy leadership. 4) Expand visibility and viability of renewable energy technologies.



FOOD

PRODUCE

PROCESS

DISTRIBUTE

ENGAGE

MANAGE

Millvale is a foodie paradise for everyone and is known for hyper local production.

PROJECTS Restaurant Cluster, Food Foraging Trail

ACTIONS 1) Get food based production sites "in place". 2) Move from access to enablement. 3) Accelerate the emerging entrepreneurial food scene. 4) Review and track issues related to Millvale's materials metabolism.



WATER

PROTECT ASSETS

PLACEMAKING

PRODUCTIVE

Millvale is part of a just watershed system known for productive and pleasurable landscapes.

PROJECTS Creekside Park and Plaza, Complete Streets and Town Plaza, Integrated Green Infrastructure, Watershed Advocacy Team

ACTIONS 1) Bring green stormwater infrastructure projects to the "shovel-ready" stage. 2) Develop a vision for complete streets along Grant and North Avenues that improves sidewalk culture and below grade infrastructure. 3) Decrease the impact of the floodplain ordinance through a reduction of the BFE and by streamlining compliance procedures.



MOBILITY

MULTI-MODAL

SAFE

ACCESS

Millvale is a place where people of all ages have the freedom to move safely.

PROJECTS Kayak Commuter Hub, Complete Streets Infrastructure, Youth Place Spaces

ACTIONS 1) Develop a transportation baseline by gathering data on current modes of transportation and destinations/routes. 2) Encourage expanded use of alternative transportation. 3) Increase visibility and safety by installing biking, busing and walking infrastructure. 4) Encourage walking and biking through/to downtown Millvale by discouraging the use of cars.



AIR

HEALTHY

FEWER SOURCES

LESS IMPACT

Millvale is a clean air community where people breathe easy indoors and outdoors.

PROJECTS Clean Air Park, Breathe Easy Zones, Research-based Interventions

ACTIONS 1) Gather in-depth data on the magnitude of air quality-related issues in Millvale. 2) Create policies and projects that minimize production of and contact with air pollutants. 3) Create an informed culture that advocates for and acts upon air quality-related issues.



EQUITY

DIVERSE

EDUCATED

EMPOWERED

HEALTHY

Millvale is a place of self-determination, where Millvalians are able to participate and shape their future as well as the future of Millvale.

PROJECTS Affordable Housing, Connected Greenspace, Needs Assessment

ACTIONS 1) Gather and establish equity-related baseline data. 2) Create pathways for participation 3) Measure, grow and communicate.



PIVOT 2.0 ECODISTRICT ACTION PLAN

Millvale has completed a cycle of EcoDistrict action and is now a maturing EcoDistrict. Pivot 2.0 provides the tools to increase Millvale’s depth of commitment and breadth of adoption.

EcoDistrict plans are not static documents but are constantly evolving with the community’s progress and emerging ambitions. Pivot 1.0 helped to define the direction of the district and to establish its values. It also built commitment within the community, with real and tangible projects to demonstrate the EcoDistrict’s potential. Pivot 1.0 defined the destination—the next stage of planning will define routes to get there. Pivot 2.0 has the simultaneous goals of increasing Millvale’s depth of commitment and their breadth of adoption. The plan will:

Realign existing performance categories

Pivot 2.0 builds on existing accomplishments in the Food, Energy and Water categories to evaluate progress and amplify performance goals. Metrics are introduced to measure absolute and relative progress and to establish a greater depth of understanding. The community will focus on developing their capacity to advocate for long term or regionally influenced projects.

Add new performance categories

With the existing performance categories underway, Millvale is able to include additional issues in Pivot 2.0 that were previously on the periphery, including Mobility, Air Quality and Equity. Millvale’s baseline performance needs to be developed for each of the new performance areas and a tribe of activated residents will need to advocate for progress in each performance area.

Enable data driven decision making

Action is most effective when directed by simple and straightforward goals backed up with measurable data. To get to the next level of performance, Millvale will need more in-depth baseline data, often from sources beyond publicly available data. Those sources may involve dynamic or sensed real-time data and the community will need a simple interface or dashboard to monitor and communicate progress.

Formalize administration of district efforts

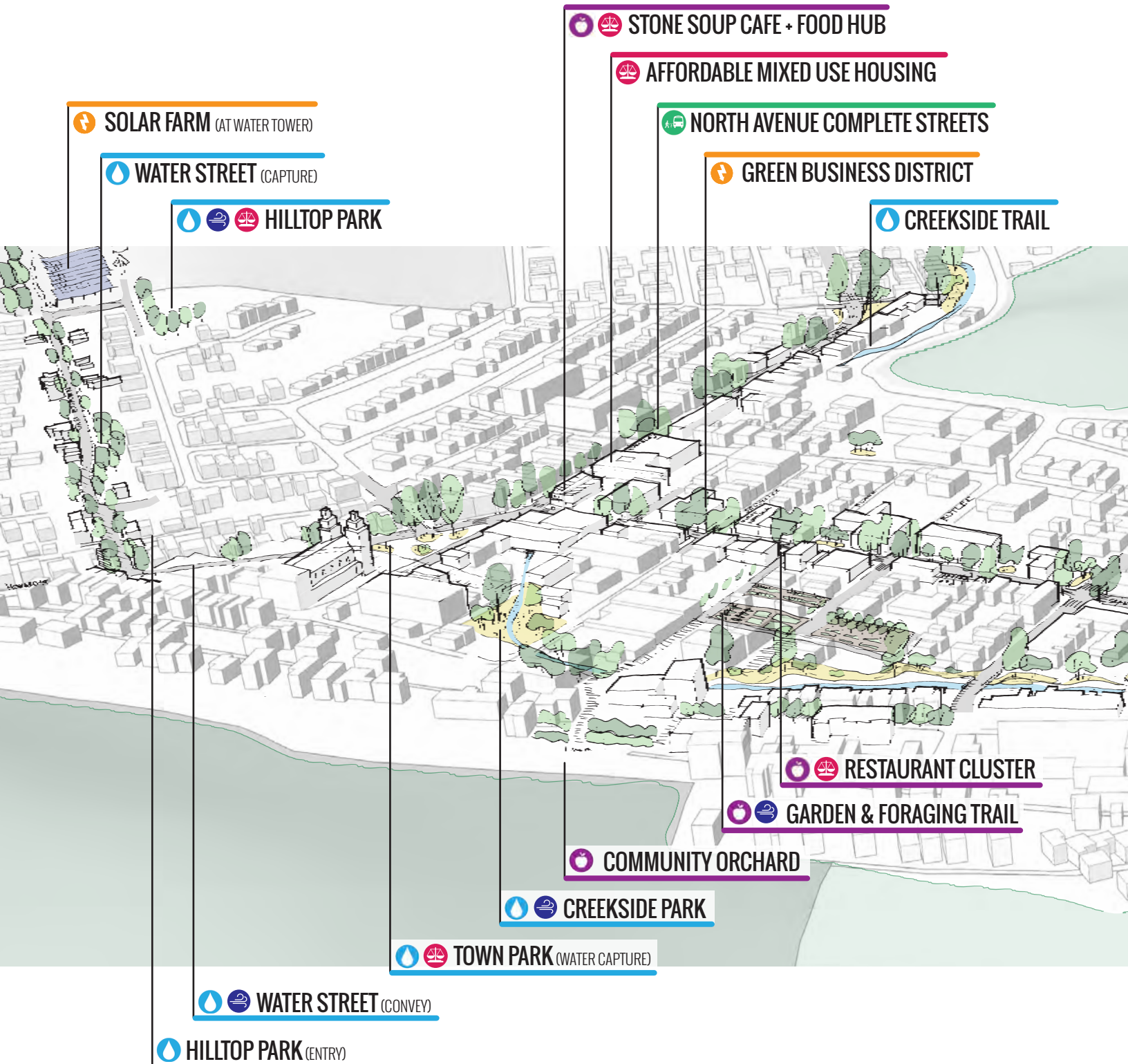
Millvale’s district has evolved from the efforts of concerned residents and assistance from informal and formal partnerships to requiring staff to accomplish the EcoDistrict goals. The community developed a Sustainability Coordinator position in 2015 to respond to their growing needs. This report will help define the priorities and role of the Coordinator and will help with the evolution of more formalized administrative structures.

Empower residents to act

Pivot 2.0 is more ambitious than Pivot 1.0 and will need deeper community engagement to succeed. In addition, Millvale is attracting new residents and businesses who are interested in its progressive identity and track record. Formal and informal networks must be intentionally cultivated to bring together current and existing assets and to move from planning to action.

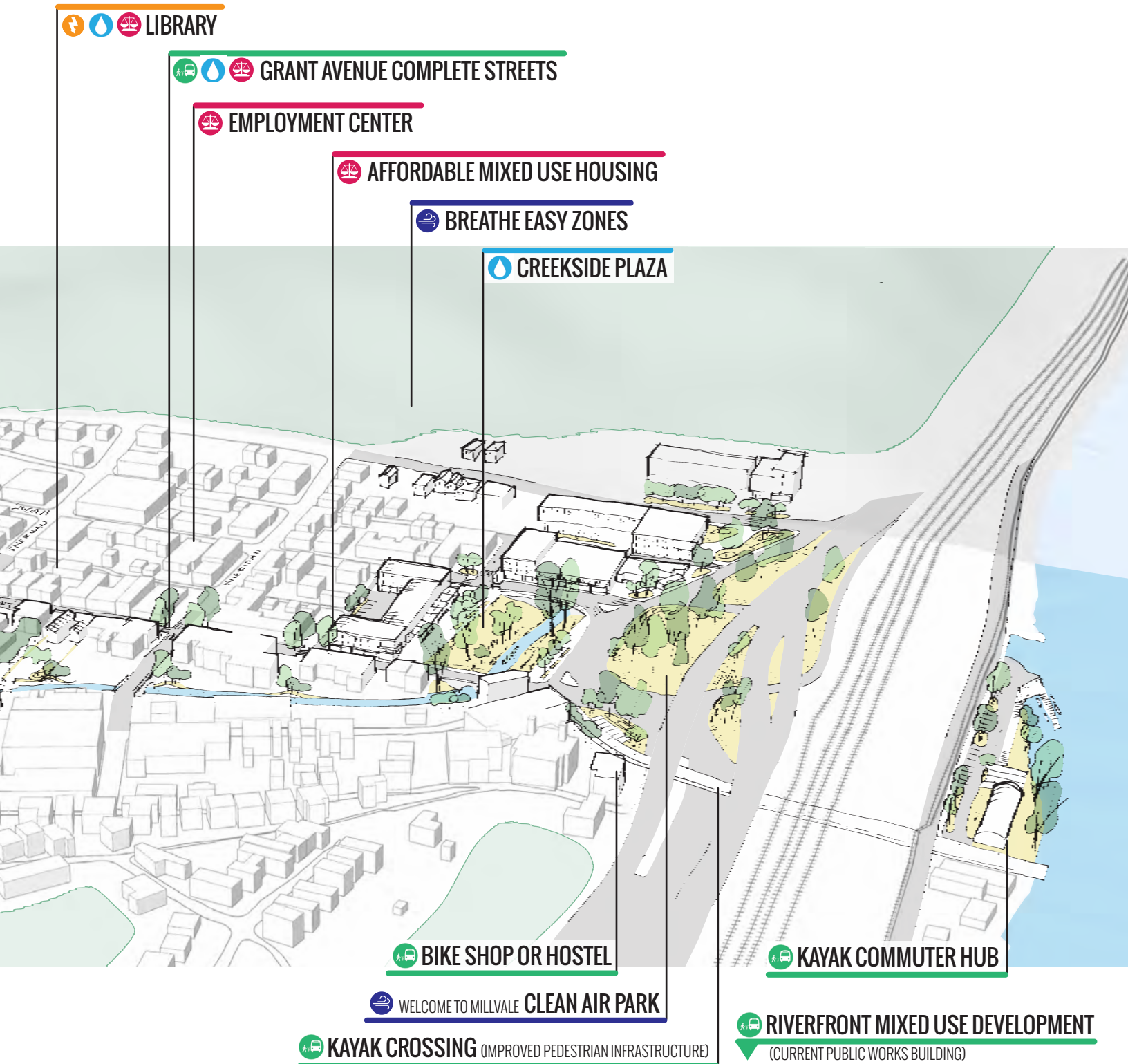
TOWN CENTER

Millvale's Town Center consists of catalytic projects such as the Kitman Building mixed use redevelopment, the Bennett Station Food Hub and the Town Park, in addition to several restaurants and food-related businesses.



RIVER DISTRICT

Millvale's River District consists of catalytic projects such as a market/restaurant mixed use redevelopment, the creekside plaza and the kayak commuter hub, in addition to new housing and a hotel.





future catalytic project
Millvale hillside solar farm

ENERGY

Millvale is a self reliant urban solar village.

The Millvale EcoDistrict will contain the most energy-efficient buildings in the region, providing a low cost of living for residents and reducing the community's environmental impact. Innovative energy-related technology will become a part of the Borough's identity.

CONSERVE

PRODUCE

RESILIENCY

ENERGY Pivot 1.0

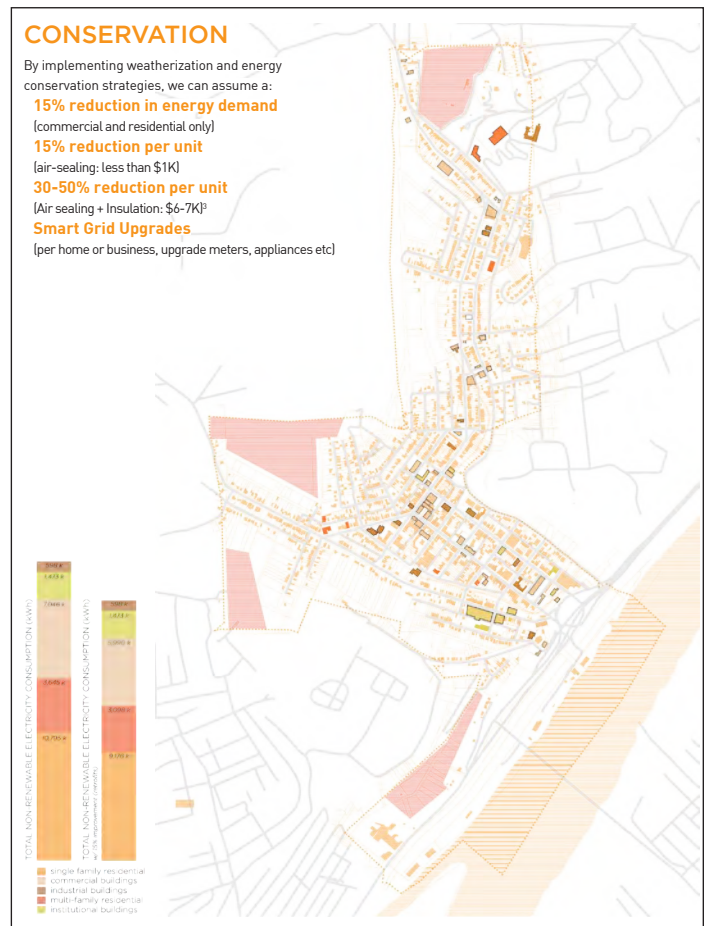
Energy resources are important for the well-being of urban communities of the future. Resilient communities will have to address challenges of limited energy resources, infrastructure reliability and increasing energy costs.

Energy resiliency relies on two main strategies, energy conservation and energy production.

Energy conservation is the first and most important step to energy resiliency and it should be applied at a small (house) and large (business) scale throughout the community. Conservation includes strategies to reduce energy consumption, such as building weatherization, increased insulation, efficient appliances and proper HVAC maintenance. The US Department of Energy has determined that homeowners can save up to 30% on their energy bills by completing energy efficiency upgrades.

Energy production, through solar panels, wind power or other renewable sources, will help meet building energy demands and can lead to significant cost savings. The adoption of renewable energy is dependent on two variables, the first cost and performance of the system. Government incentives help reduce the first cost for most renewable energy systems, and new technologies improve system performance every year.

Energy hubs allow adjacent buildings to pool their solar resources, which contributes to Millvale's long-term resiliency goals. Energy hubs are most important during extreme climate events, such as floods or blackouts. Energy hubs require a cluster of buildings with large roof areas and significant solar exposure to maximize solar energy production. During times of emergency, these buildings act as providers of electricity, shelter, food and more to the people of Millvale.



ENERGY CONSERVATION

Reducing the amount of energy consumed is the first and most important step to energy resiliency and it can be applied at the home-scale and business-scale throughout the community.



Pivot 1.0 VISION

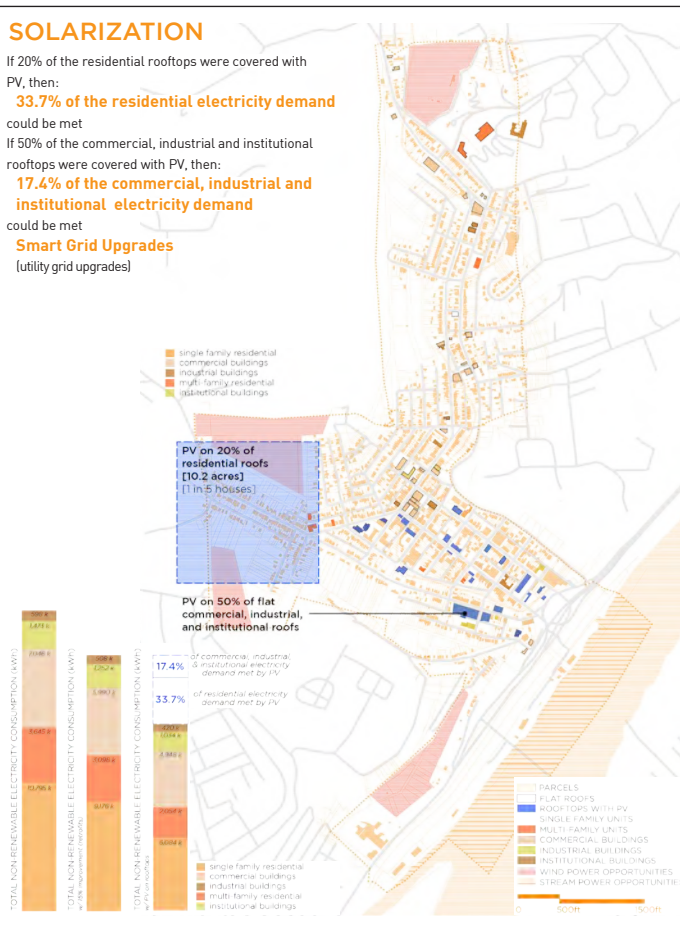
Millvale is a self reliant urban solar village.

SOLARIZATION

If 20% of the residential rooftops were covered with PV, then:
33.7% of the residential electricity demand could be met

If 50% of the commercial, industrial and institutional rooftops were covered with PV, then:
17.4% of the commercial, industrial and institutional electricity demand could be met

Smart Grid Upgrades
 (utility grid upgrades)

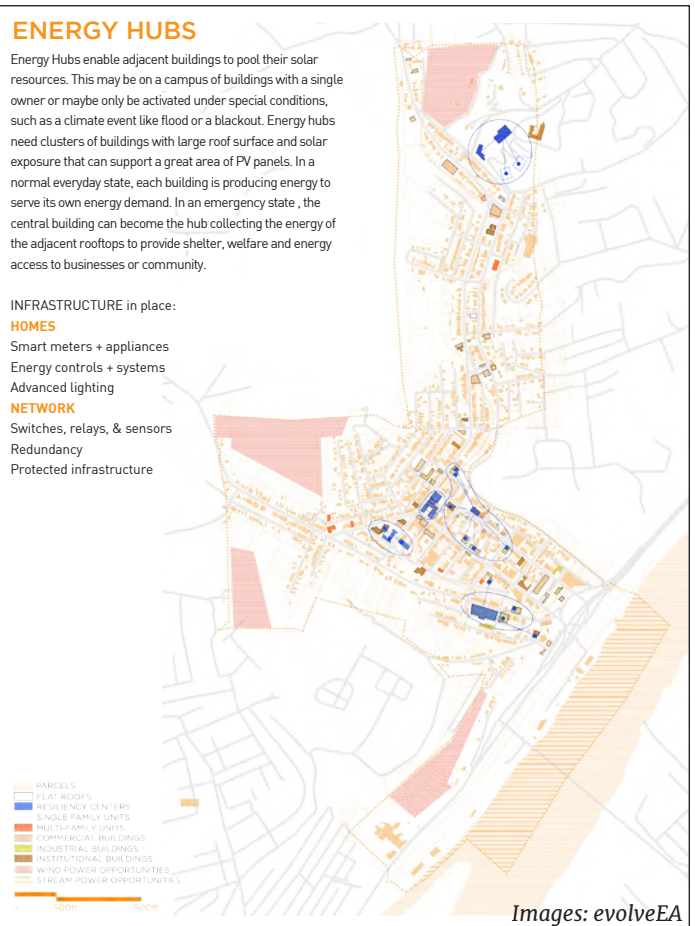


ENERGY HUBS

Energy Hubs enable adjacent buildings to pool their solar resources. This may be on a campus of buildings with a single owner or maybe only be activated under special conditions, such as a climate event like flood or a blackout. Energy hubs need clusters of buildings with large roof surface and solar exposure that can support a great area of PV panels. In a normal everyday state, each building is producing energy to serve its own energy demand. In an emergency state, the central building can become the hub collecting the energy of the adjacent rooftops to provide shelter, welfare and energy access to businesses or community.

INFRASTRUCTURE in place:

- HOMES**
- Smart meters + appliances
- Energy controls + systems
- Advanced lighting
- NETWORK**
- Switches, relays, & sensors
- Redundancy
- Protected infrastructure



SOLARIZATION

Installing solar panels on commercial, industrial, institutional and residential buildings will serve the buildings' own energy demands and can lead to significant cost savings.

ENERGY HUBS

The creation of energy hubs is a long-term goal for Millvale. Energy hubs enable adjacent buildings to pool their solar resources, especially during times of climate emergencies.

ENERGY Benchmarking

Identifying and tracking energy-related metrics will help Millvale set goals and measure success towards achieving their goals by the year 2030.

METRICS

ENERGY CONSERVATION

100%
INCREASE

GOAL

50%
< 3 YRS

of smart meters installed
BTU savings
\$ savings
Weatherization
of weatherization projects
sf of weatherization projects
commercial
residential

% of household budget spent on energy bills
Return on Investment (ROI)

RENEWABLE ENERGY

100%
INCREASE

100%

GOAL

Renewable Energy Projects
of renewable energy projects
kWh generated
kWh per person
kWh per household
\$ savings
Public/Private Funders

% of municipal demand supplied by renewables
% of private sector demand supplied by renewables
% of total Borough demand met by renewables

COMMUNITY RESILIENCY

100%

100%
INCREASE

GOAL

Energy Hub
\$ raised
% completed
% of in-Borough energy generated

of new financing models used in Millvale
of individuals trained for the energy workforce



TRIPLE BOTTOM LINE BENEFITS



PLANET

Consuming less energy from fossil fuels reduces pollution and CO2 emissions, and reduces the risk of natural resource depletion.



PEOPLE

As a result of less pollution and CO2 emissions, consuming less energy from fossil fuels improves human health.



PROFIT

Consuming less energy from fossil fuels reduces the cost of energy and therefore the cost of living. Energy independence and renewable energy generation reduces the risk associated with future price fluctuations and increases revenue through sales.



IDENTITY

Showing innovative energy leadership will help define Millvale's identity as a self reliant urban solar village.

ENERGY RESOURCES

Business Association of Millvale (BAM)

Day, Megan. "Local Solar." American Planning Association, 2015.

Moore, Daniel. "With microgrid experiment, Duquesne Light and Pitt try to change century-old system." Pittsburgh Post Gazette, 30 Nov, 2015.

ENERGY Actions

The following recommended actions will help Millvale build upon current energy-related achievements in pursuit of the Borough's 2030 goals.

1 Gather deep data on consumption and develop a more detailed business case.

Pivot 1.0 relied on national data sources to estimate the Borough's energy baseline. A GIS database containing actual energy consumption data should be created to calculate a detailed baseline and to accurately prioritize projects.

- Investigate smart meters and other potential data sources to replace the national CBECS data used to calculate the Pivot 1.0 baseline. Investigate ways to make this low or no cost for low income residents.
- Update a GIS database monthly to track retrofits, upgrades and new construction or installations that affect the community's energy baseline.
- Gather municipal data to augment the residential and commercial data.
- Identify the most cost sensitive sectors and develop a critical path to address them.

2 Develop or connect with creative financing and implementation products that benefit the current population as well as attract new residents.

When people pay less for energy they have more money to raise a family, start a business or advance their standard of living. Creative financing will improve livability for existing residents and would make Millvale more attractive to those considering a move to the Borough.

- Prioritize efforts that build community wealth through job training or hiring, such as a youth energy conservation team or learn and earn county program.
- Develop a Millvale return on investment (ROI) brochure to market the affordability of living in an innovative energy community.
- Explore alternative energy non-traditional finance mechanisms such as co-ops, community volunteer banks, barter boards, creative labor exchanges, social capital funds, etc.
- Continue to partner with organizations that can leverage institutional or governmental sources of funding (such as CCI, GBA, PCRG, etc.).
- Look for funding sources to build a revolving loan fund for improvements or incentives for renewable energy.

MILLVALE HAS ALREADY...
started and is now promoting an Allegheny Solar Co-op!



3 Commit to municipal energy leadership.

The Borough of Millvale has a small inventory of buildings and fixtures that can be made more efficient to save taxpayer dollars, in addition to acting as a point of leadership for others in the community.

- Commit to buying all or a percentage of renewable energy.
- Conduct periodic audits and transparency reports to reduce municipal energy consumption.
- Investigate municipal power purchasing options and ways to expand the benefits of such programs.
- Create a Borough demand management commitment.

MILLVALE HAS ALREADY...
installed LED lighting in many Borough streetlights.

4 Expand visibility and viability of renewable energy technologies.

Millvale contains a number of renewable energy installations and could increase this number to continue offsetting utility costs for Millvale residents and business owners. This would also help build Millvale's reputation for innovation.

- Develop a renewable energy test site in partnership with a local University.
- Plan and implement a solar farm.
- Investigate the potential for micro-grids.
- Continue installing solar panels on residential and commercial properties.
- Increase the number of off-the-grid properties and businesses.
- Begin discussing energy hub commitments with interested locations.
- Investigate the geothermal energy potential for new and existing developments.
- Investigate the hydro-power potential for riverfront properties.
- Investigate the potential for anaerobic digestion paired with energy production (bio gas) in Millvale.

MILLVALE HAS ALREADY...
established "Solarize Millvale" and has installed solar panels on the roof of the Borough Library.

ENERGY Projects

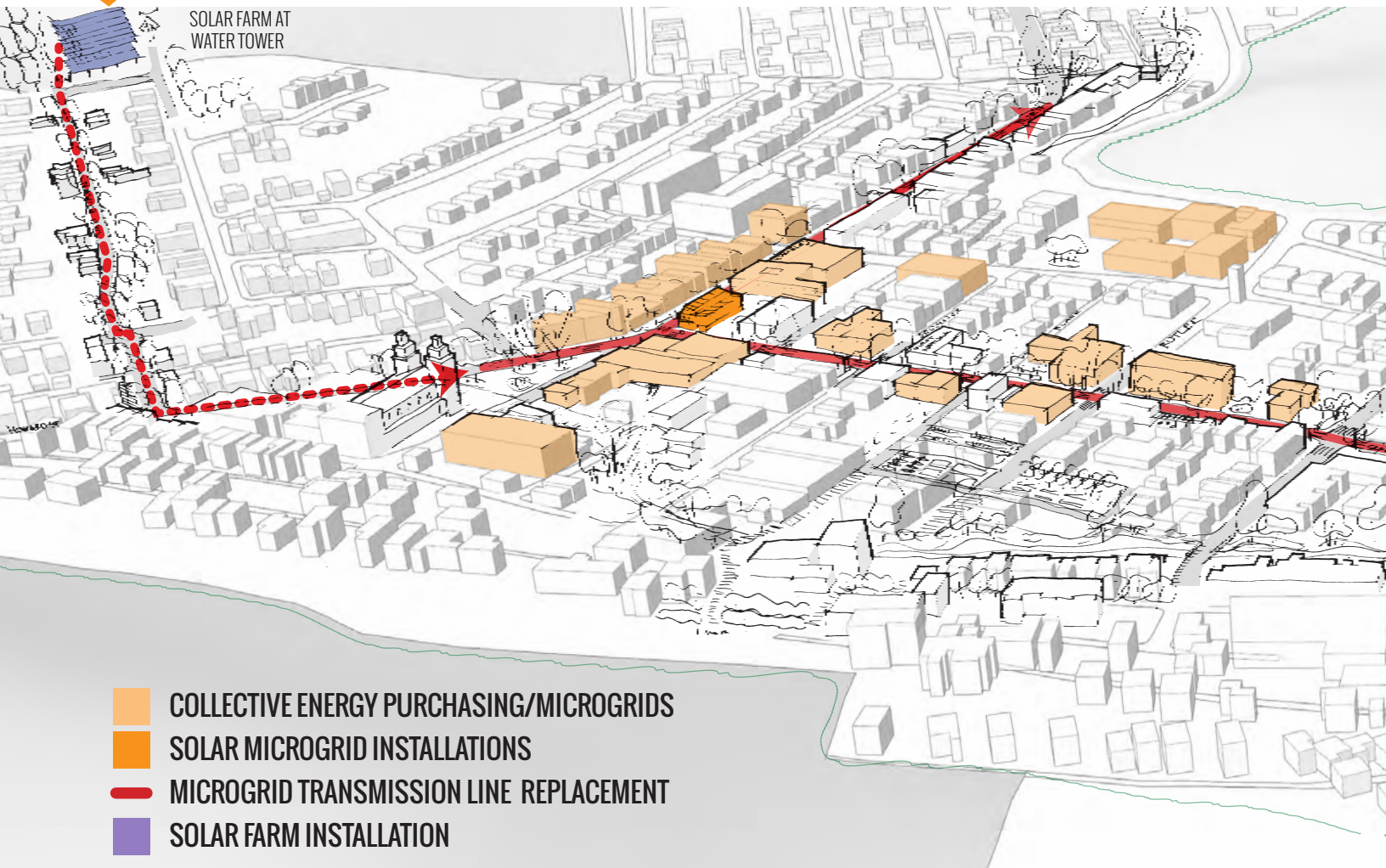
The following recommended projects will help Millvale achieve the Borough's 2030 goals, while making a visible statement of Millvale's commitment to sustainability.

SOLAR FARM SUPPLIES
COMMUNITY SOLAR CO-OP



SOLAR FARM & CO-OP

A large solar farm in Millvale would be installed and connected to the utility grid. The energy produced would be community-shared through a solar co-op.



UPDATED TRANSMISSION LINES
ALLOW BUILDINGS TO SHARE ENERGY

ROOFTOP SOLAR INSTALLATIONS
POWER MICROGRIDS

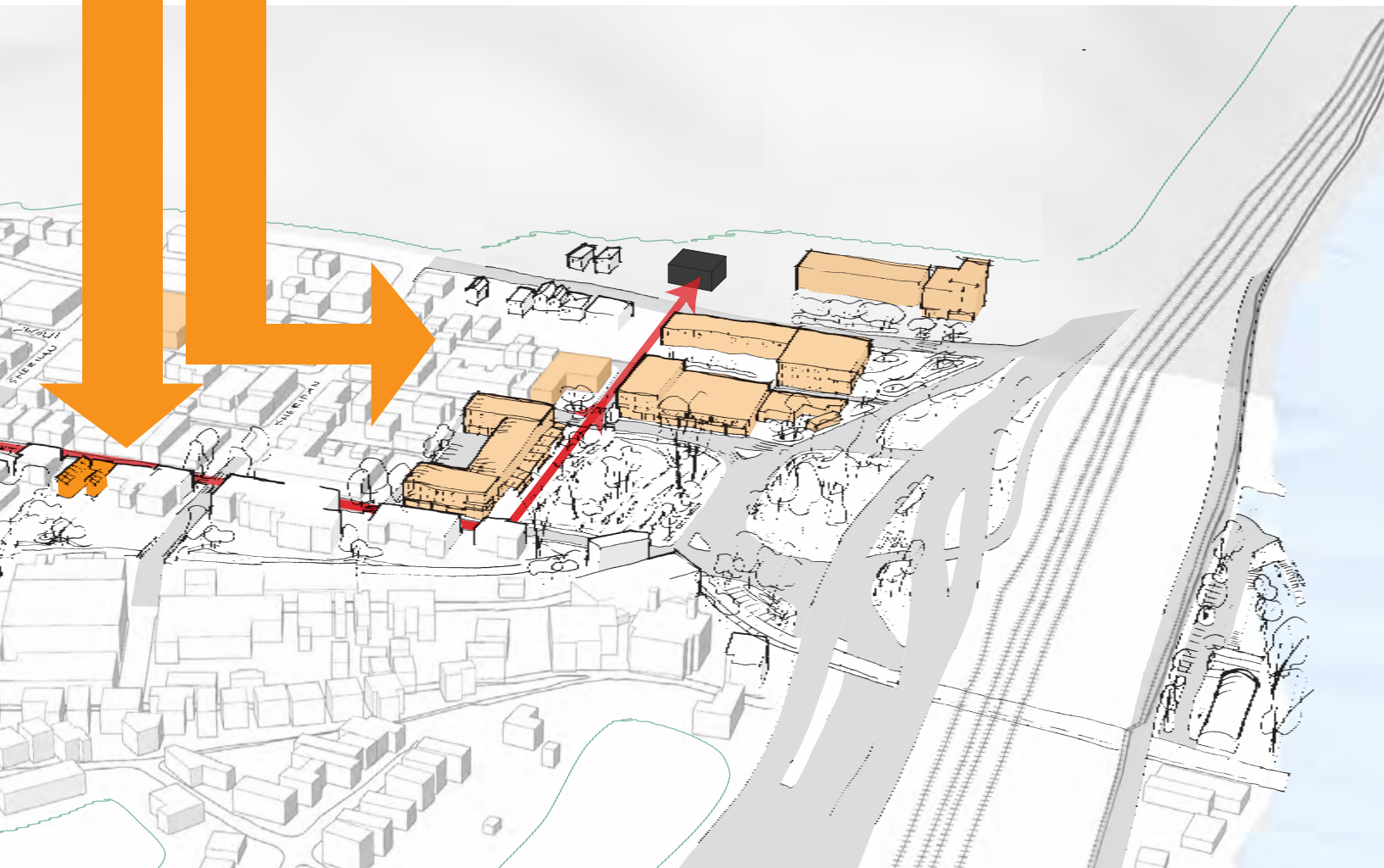
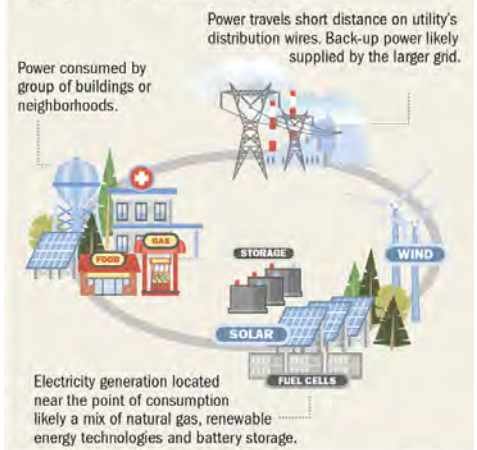


LIBRARY ROOFTOP SOLAR PANELS
Image: SolarizeAllegheny.com

GREEN BUSINESS DISTRICT

Millvale's downtown businesses would begin purchasing green power or establish an energy micro-grid to pool resources and complete energy efficient retrofits to existing buildings.

Duquesne Light Co. will study how a microgrid design would work in powering small clusters of buildings or neighborhoods around Pittsburgh. Here's how a basic microgrid operates.





American
REDALE
5.9% ABV

Session PALE ALE
4.8% ABV

AMERICAN WHEAT
4.3% ABV

BROWN ALE
4.6% ABV

NEW Crouching PORTER
6.1 ABV

HIDDEN Chocolate



future catalytic project
Millvale restaurant cluster

FOOD

Millvale is a foodie paradise for everyone and is known for hyper local production.

The Millvale EcoDistrict will produce enough food to feed Millvale residents and visitors year-round. Millvale's hyper-local production and cluster of restaurants and food-related businesses will help to define the Borough's identity.

**PRODUCE
PROCESS
DISTRIBUTE**

ENGAGE

MANAGE

FOOD Pivot 1.0

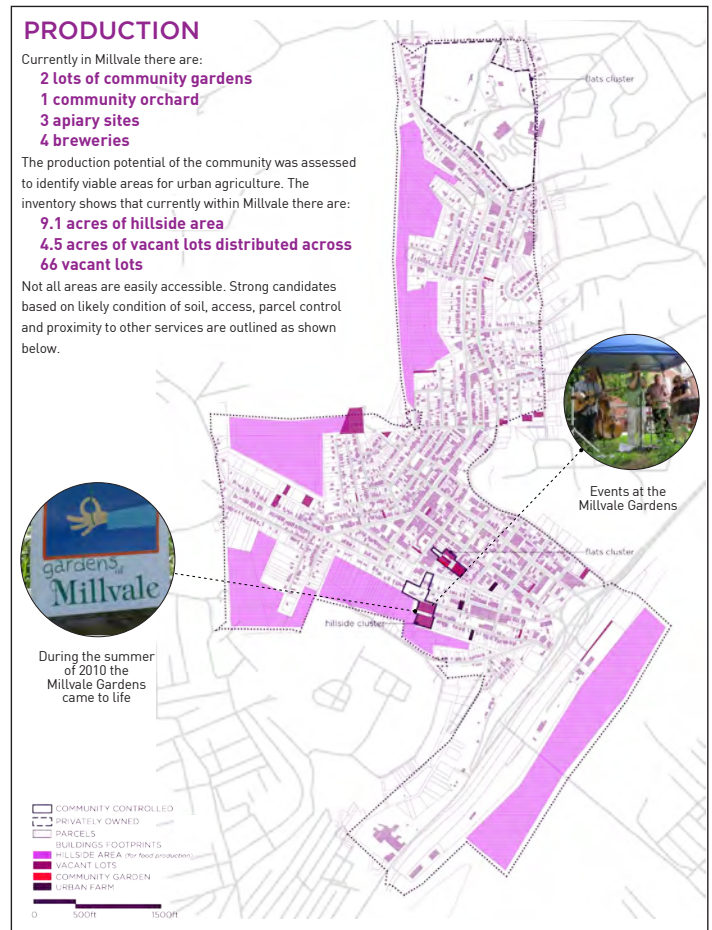
Millvale is considered a food desert because over one third of the population lives more than 1 mile away from a supermarket or grocery store. Access to food, especially fresh food, is a challenge.

Millvale has started many food-related projects in town, including the Food Hub located on the corner of Grant and North Avenues. However, like many small communities, Millvale faces funding challenges that prevent the Borough from solving its food security issue in a comprehensive way.

As part of Pivot 1.0, food production potential was assessed in the community by considering vacant lots, hillsides and other areas where food may be grown. Additionally, Millvale has the possibility to produce honey and eggs.

The processing of food is a big opportunity for Millvale. The Borough has a small but strong base of restaurants, food producers and breweries in town which are demonstrating what is possible. Additionally, Millvale contains many unused commercial kitchens which may be an opportunity for food-related businesses that are just starting up.

Finally, food distribution plays a key role in Millvale's food system. Because current food distribution is limited, establishing central distribution points in the community is critical. These distribution points are key for economic development to attract visitors to shop in the community. While the Food Hub is a good start, additional food distribution points in Millvale is key to ending Millvale's status as a food desert.



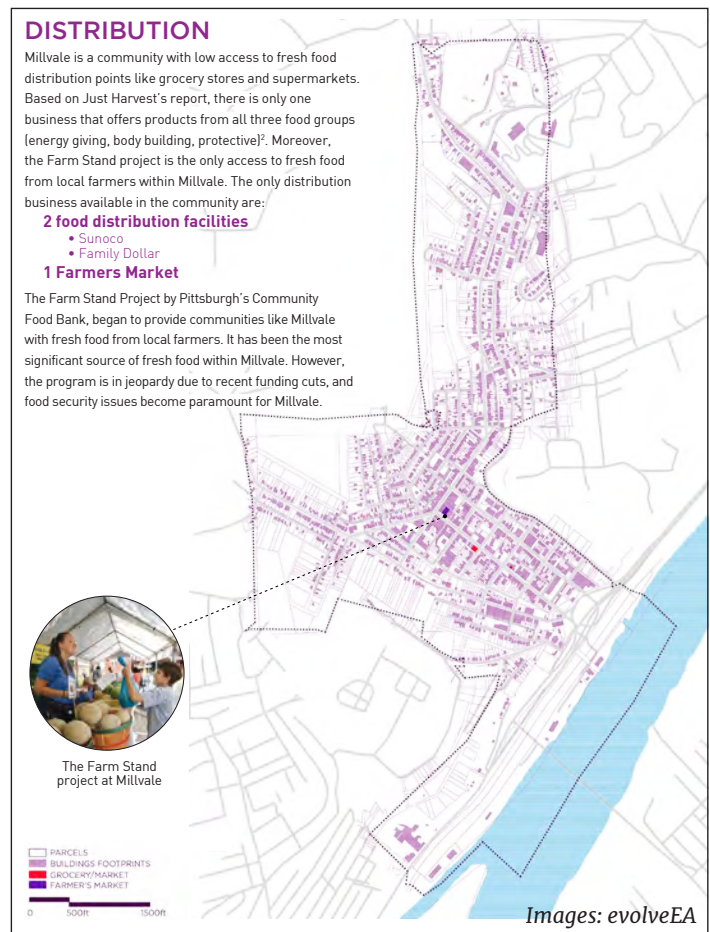
FOOD PRODUCTION

The production potential of the community was assessed to identify viable areas for urban agriculture. Millvale has 66 vacant lots, which equates to 4.5 acres viable for food production.



Pivot 1.0 VISION

Millvale is a foodie paradise known for hyper local production.



FOOD PROCESSING

As for processing & supply, an existing network of commercial kitchens, processing businesses and restaurants has been identified within the community. In 2013, there were 24 food service businesses and 30 commercial kitchens in Millvale.

FOOD DISTRIBUTION

Food distribution points for residents and visitors plays a key role in Millvale's food system. Since existing access to fresh food within the community is limited, the development of a central distribution point becomes critical.

FOOD Benchmarking

Identifying and tracking energy-related metrics will help Millvale set goals and measure success towards achieving their goals by the year 2030.

METRICS

FOOD PRODUCTION, PROCESSING & DISTRIBUTION

100%

% of restaurant food grown in Millvale
% acquisition of garden network properties

100%
INCREASE

lbs of food grown
lbs distributed through CSA
of food production, processing & distribution places
of restaurants
of restaurants with health food focus
of products with the “Made in Millvale” brand
of health food outlets

GOAL

IMPROVE EFFICIENCY & CLOSE LOOPS

100%

% of residents participating in municipal recycling program

100%
INCREASE

lbs of waste diverted from the landfill compared to the regional average
of public tri-sorter waste bins
of educational training opportunities

GOAL

COMMUNITY BENEFIT

100%
INCREASE

of food-related visitors
of food-related jobs and businesses created
of food related classes offered
Kitchen tool lending Library
of tools borrowed
of members
of people participating in the CSA
of people participating in wellness programs
of reservations made using the online commercial kitchen reservation system

GOAL



TRIPLE BOTTOM LINE BENEFITS



PLANET

Local and healthy food will improve the local biotic systems through sustainable production methods.



PEOPLE

Healthy food will raise the health baseline for all residents. Additionally, this will create an entrepreneurial environment for hyper local production.



PROFIT

The distribution locations in Millvale will be low cost but high quality, helping residents save on food and transportation to fresh food sources.



IDENTITY

Production, processing and distribution locations will further reinforce Millvale's image as a foodie paradise.

FOOD RESOURCES

Bennett Station Food Hub

Gardens of Millvale

New Sun Rising's Launch Millvale Program

FOOD Actions

The following recommended actions will help Millvale build upon current food-related achievements in pursuit of the Borough's 2030 goals.

1 Get food based production sites “in place”.

Advance food production places identified in Pivot 1.0 as the “community garden network” with long term planning and implementation. Use of these places for community gardens and greenhouses have been ongoing, but their long-term viability demands a deeper commitment of resources and planning.

- Perform a detailed study on the location and use of properties to create an identifiable and connected series of public food production places that attracts residents and visitors.
- Evaluate property ownership and acquisition status for identified properties to create the community garden network.
- Secure long-term tenure on the gardens, food forest, and food foraging trail. Investigate ways to fund and preserve the tenure, such as a community land trust.

MILLVALE HAS ALREADY...
started a community garden, an orchard and a greenhouse.

2 Move from access to enablement.

Pivot 1.0 projects such as the Food Hub and New Sun Rising succeeded in giving Millvalians better access to healthy foods. Pivot 2.0 should ensure that Millvalians take advantage of these new food sources by enabling and encouraging them to cook with fresh ingredients, eat healthy and create a positive food culture.

- Build new skills by offering additional food-related classes.
- Establish a kitchen tool and appliance lending Library.
- Encourage residents to join the existing CSA by offering starter kits and cooking classes.
- Establish a visible and welcoming health and wellness coaching program in the community.
- Continue efforts to increase individual growing opportunities and access to affordable, local, and healthy food in Millvale.
- Implement strategies to promote and encourage healthy food education and consumption.

MILLVALE HAS ALREADY...
started offering cooking classes that are open to the public.



3 Accelerate the emerging entrepreneurial food scene.

Pivot 1.0 was able to recruit new food-related businesses to Millvale and sparked interest from many others. This interest needs to be channeled into solid commitments from retail and service businesses.

- Recruit additional restaurants to create a restaurant cluster. Encourage new business locations as well as the upgrading of menus at existing establishments, especially breweries.
- Secure assets such as Jean Marc’s Bakery and other existing restaurants.
- Establish “Made in Millvale” campaign, beginning with food and expanding to other goods.
- Continue to fill gaps such as recruiting a bulk foods market and mobile food market.
- Inventory and improve a core set of commercial kitchens.
- Clear the roadblocks to allow entrepreneurs to use existing commercial kitchens, including easy access to food safety training and an online kitchen reservation system.
- Develop a connected local food system.

MILLVALE HAS ALREADY...
recruited several restaurants and breweries to relocate to the Borough.

4 Review and track issues related to Millvale’s materials metabolism.

Millvale should move towards the incorporation of a Materials Management category by tracking its success in recycling, water minimization and composting. Many of these issues are related to Council of Governments (COG) policies that determine municipal recycling potential.

- Develop a baseline for Millvale’s residential and commercial materials metabolism.
- Create Borough waste management targets and policies, including event standards.
- Install tri-sorter waste bins in the public right-of-way.
- Expand residential waste recycling programs and establish waste recycling programs for commercial businesses.
- Partner with waste reduction nonprofits for education and resources.

MILLVALE HAS ALREADY...
started a recycling program for single family homes.

FOOD Projects

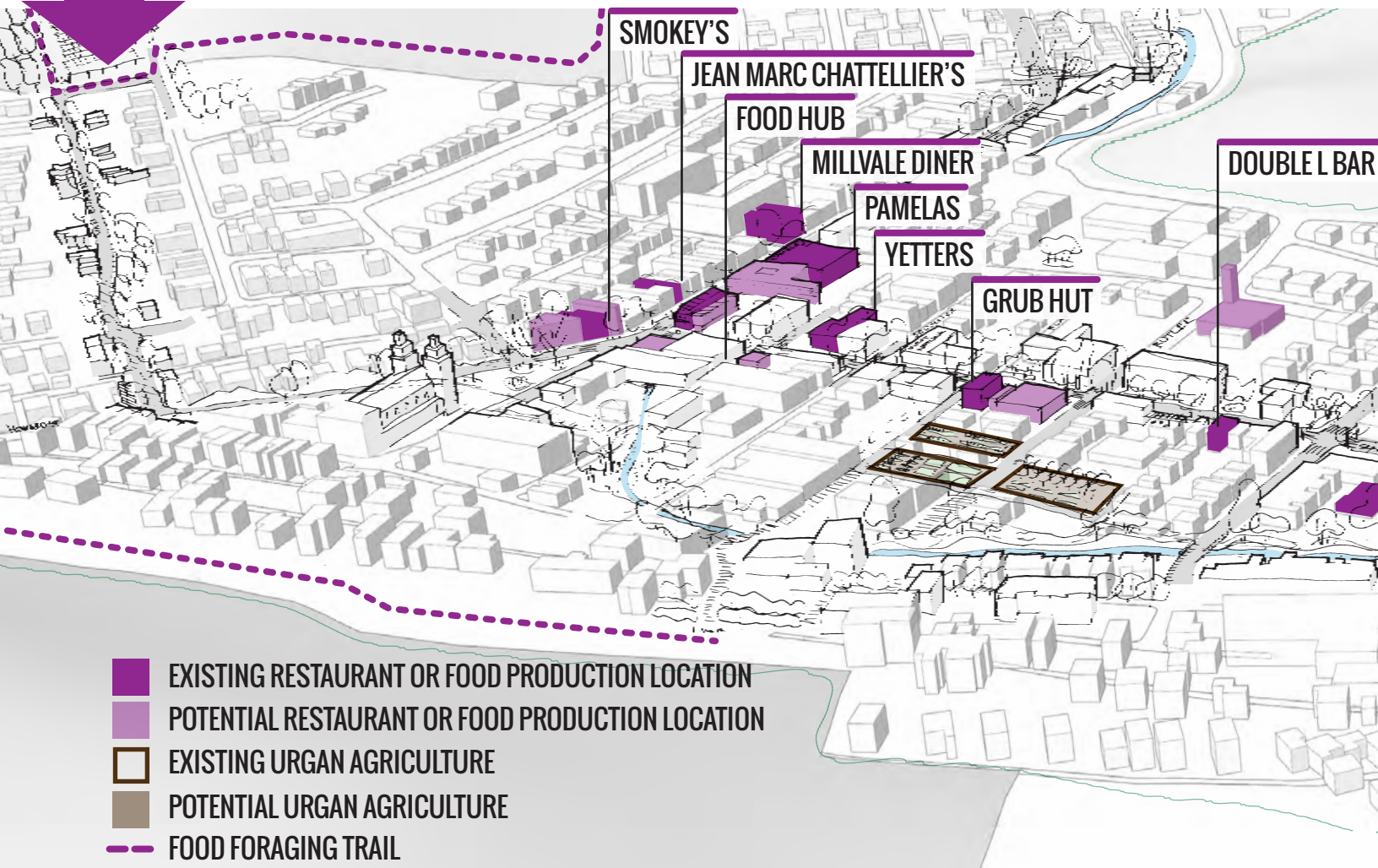
The following recommended projects will help Millvale achieve the Borough's 2030 goals, while making a visible statement of Millvale's commitment to sustainability.

FORAGING TRAIL CONNECTS MILLVALE'S GREEN SPACES



FOOD FORAGING TRAIL

A walking path that connects Millvale's hillsides and green spaces could feature edible plants such as fruit and nut trees.





NEW SUN RISING - FOOD BUSINESS INCUBATOR
Image: NewSunRising.org



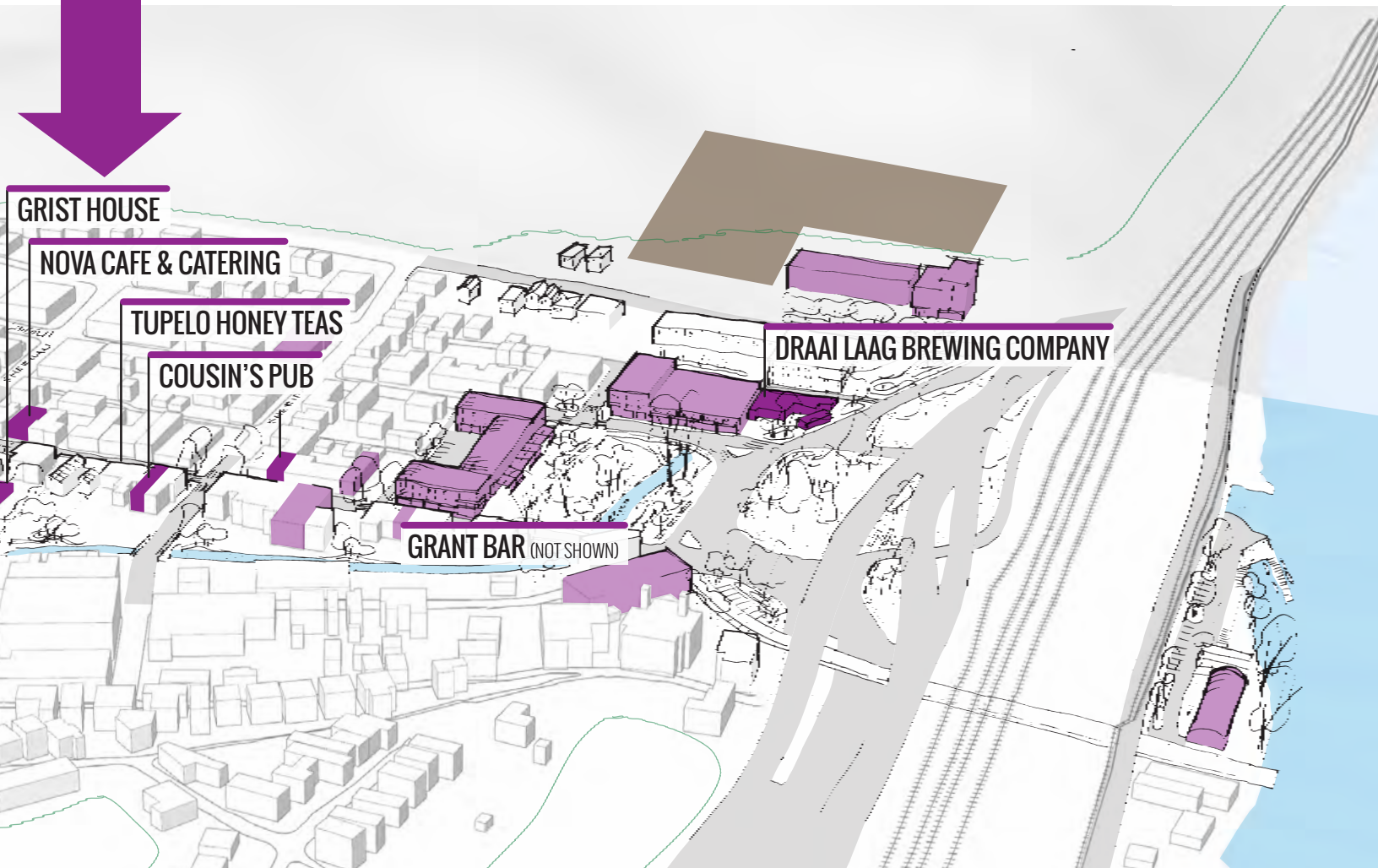
MILLVALE GARDENS
Image: <http://www.post-gazette.com/>

RESTAURANT CLUSTER

A restaurant cluster would establish Millvale as a food destination in the Greater Pittsburgh Area. A significant amount of the restaurants' ingredient demands could be produced in Millvale.



FOOD HUB
Image: evolveEA





How It Works

Mary Beth Doyle Wetland Preserve mimics a floodplain. It provides space for the creek to overflow, dramatically reducing its speed, and spreading water out where it can be absorbed by soil and vegetation.



Treatment Train

1. Pollutants with a lot of speed, or "brink", are slow when sediment and debris are removed and trapped at the dam.
2. The large, broad-shaped basin south of the bridge is typically dry, with the meandering creek forming a meander. The creek then passes through a 24" pipe under the road before the wetland.

Wildlife Watch

There are some of the animals you may see on your visit through the park.

Killdeer

Great Egret

future catalytic project
Stormwater utility park

WATER

Millvale is part of a just watershed system known for productive and pleasurable landscapes.

The Millvale EcoDistrict will transform water from a liability into an asset, demonstrated through many water-centric public spaces. Development will become more attractive in Millvale because consent decree compliance will become more easily achievable.

**PROTECT
ASSETS**

**PLACE-
MAKING**

PRODUCTIVE

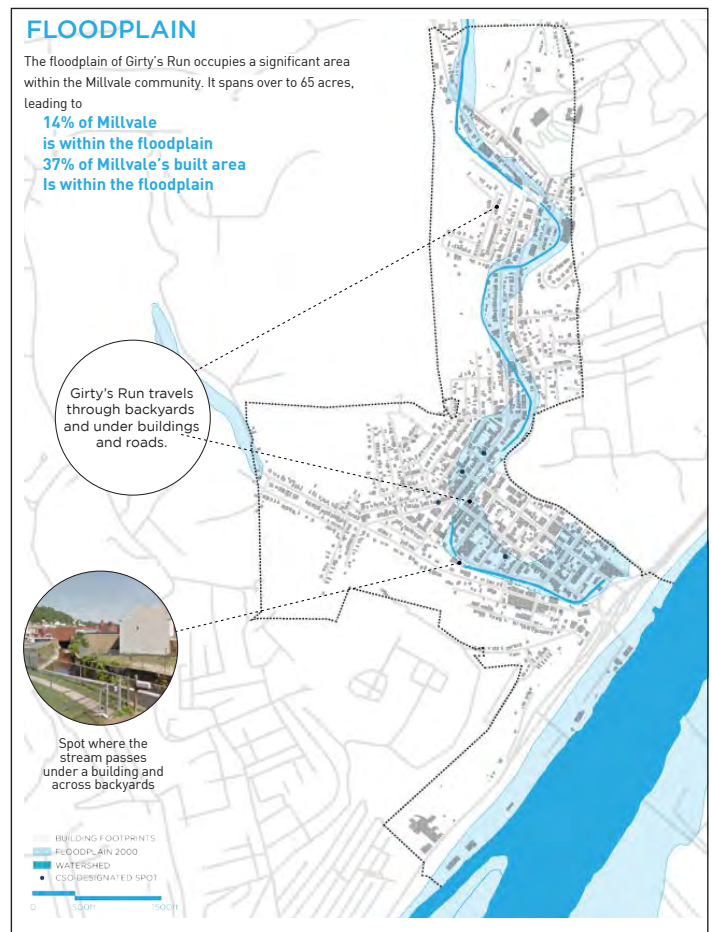
WATER Pivot 1.0

Large storm events resulting in severe flooding have been an impediment to Millvale's aspirations and vision. Even though Millvale is in the midst of redevelopment, this effort is challenged by restrictions from recent floodplain ordinances.

Over the past few decades, big box development in upstream communities along the Girty's Run watershed have increased impermeable surface area, therefore increasing runoff water that contributes to Girty's Run. Unfortunately, Millvale is at the end of this watershed and suffers the consequences of upstream.

Despite being engineered into culverts, Girty's Run has overflowed its banks significantly in 2004 and 2007, wiping out many business and home owner investments. This extreme water-related risk has accelerated the economic instability of Downtown Millvale. Additionally, a recent floodplain ordinance was passed to protect development occurring in the floodplain by requiring strict design guidelines.

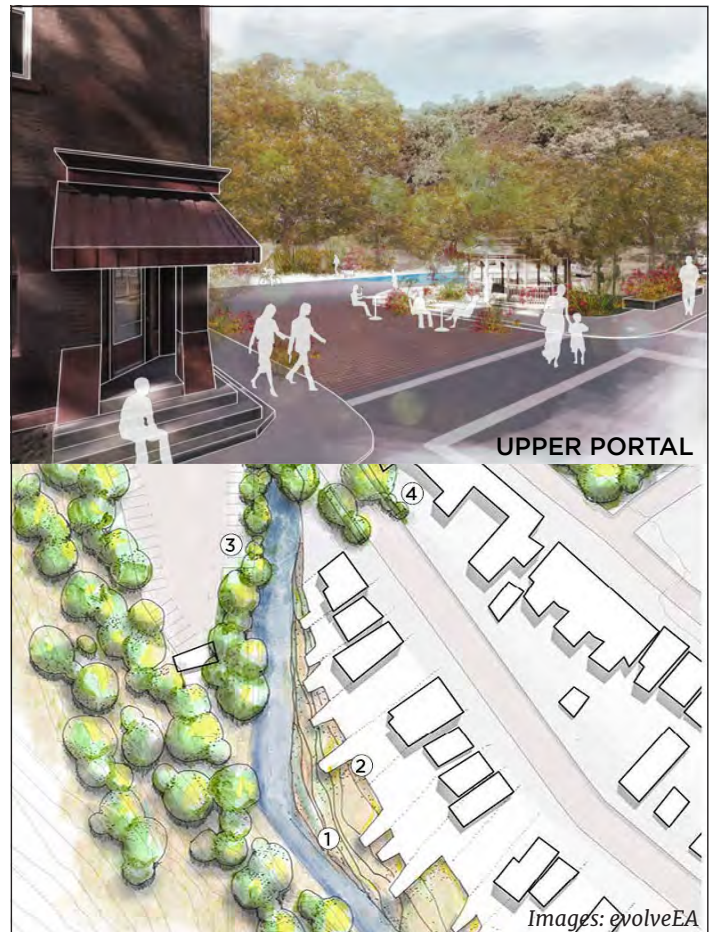
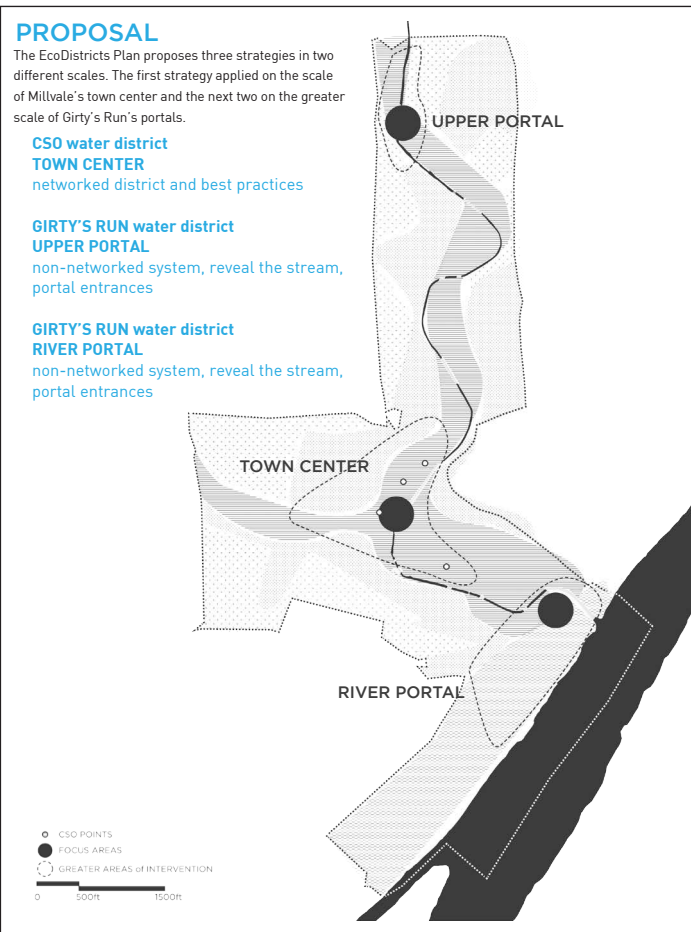
Nevertheless, Millvale is adjacent to the Allegheny River and water in the town should be seen as not only a regional issue, but also an opportunity. Given some newly realized economic development and green infrastructure projects, Millvale is at the nexus of a larger initiative for community scale EcoDistrict planning. An aggregation of local water initiatives can allow for more significant far-reaching green development to occur within the community context. Millvale must consider how EcoDistrict principles can improve the ecology and the economic performance of the community. Additionally, Millvale must address stormwater issues and create livable waterscapes for residents that can co-exist with current and future successful businesses.



GIRTY'S RUN

Despite being engineered into culverts, Girty's Run overflowed its banks significantly in 2004 and 2007, wiping out the investments of business owners and residents. The extremes of this water-dominated ecology have accelerated the economic instability of downtown Millvale.

Millvale is a water town with water integrated into productive and pleasurable landscapes.



COMBINED SEWER OVERFLOW

A 3 Rivers Wet Weather feasibility study for green infrastructure along Girty's Run identified 4 Combined Sewer Overflow (CSO) output points in the center of Millvale where green infrastructure would be equally if not more effective than grey infrastructure.

STREAM PORTALS

The stream's portals play a key role in Millvale. The portals work to address Millvale's flooding issues, but also act as educational and informational stormwater places for residents and visitors.

WATER Background

Millvale's water identity has long been established, however, not for positive reasons. Millvale is one of the few regional communities with established riverfront access, yet it is most often identified by its volatile tributary, Girty's Run.

Once part of the natural water systems that carved Millvale's namesake valley, Girty's Run appears and disappears in culverts and channelized stream beds as it flows through the Borough. This would seem to be an asset, as Girty's Run flows year-round from spring fed sources and in many places, it can be quite beautiful. Unfortunately, Girty's Run grows exponentially during rain events from runoff as well as from authorized and unauthorized municipal and private pipes.

Girty's Run has a history of flooding and to comply with federal regulations and the National Flood Insurance Program, Millvale adopted a revised Floodplain Ordinance in 2015. The Ordinance requires more stringent flood-resistant construction standards and a new approvals process to secure federally backed flood insurance. The Federal Emergency Management Agency (FEMA) also updated the floodplain map, which has expanded the area of flooding and revised base flood elevations (BFEs) to reflect new data on changing climate conditions and extreme weather events. While the program aims to reduce the socio-economic impacts of disaster, challenges in completing improvements that meet the stringent requirements will affect the short term market for building improvement. In some cases, construction may no longer be viable within the floodplain area and new patterns of development may emerge.

Millvale is also home to Alcosan outflow A-67, which is a major contributor to wet weather sewer overflow. As in other combined sewer communities, rain events can cause the sewer system to overload and carry sewage into the

river or even into Girty's Run. Upstream communities with separated sewers contribute major amounts of water to the system because of their large areas of impervious surface, resulting in uncontrolled runoff. Ironically, these upstream communities are no less a factor because of their separated sewers—ultimately their water flows to the combined sewers that flow through Millvale. It is estimated that 11% of the runoff comes from areas with combined sewers while 61% is from the upstream separated sewer areas. Millvale contributes just 46.3 MG/yr to the system and is only 4% of the watershed area. (*GOALProcess Stormwater/CSO Green Infrastructure Study*)

Consequently, recent watershed studies have determined that Borough actions and, more specifically, green stormwater infrastructure (GSI) will have minimal effect on the functioning of the A-67 system unless upstream flows are attenuated.

“Green Sewer Infrastructure (GSI) can play a role in addressing reduced combined sewer overflows, but (that) issue of water quality degradation, erosion, sedimentation, and flooding caused by stormwater runoff in separated (upstream) areas can only be minimally impacted by deploying GSI in the Borough of Millvale...” (GOALProcess Study)

This study reinforced the need to reduce upstream contributions by identifying that CSO overflows actually happen upstream of Millvale where the trunk line is surcharged, creating hydraulic bottlenecks. This does not mean that GSI cannot be useful in decreasing Millvale's stormwater runoff, but it does confirm that the most effective solution lies at the scale of the watershed.



Top 5% Stormwater Management Locations, GOAL Process Stormwater/CSO Green Infrastructure Study (left)

PNC Bank parking lot rain garden (bottom)



The GOALProcess Study also identifies “five high yield areas where intensive investment in GSI will have the highest rate of return on cost effectively reducing combined sewer overflows” from within the Borough. The report estimates that approximately 33% of the rainwater runoff in Millvale occurs in and around these five areas, including runoff from private properties and from the public right of way (streets and sidewalks). These areas represent opportunities for green infrastructure installations that can improve the public realm with plantings and parks. (GOALProcess Study)

In addition to reducing upstream stormwater runoff, Alcosan will need to make grey infrastructure improvements to the mains that are located under the

main streets of Millvale’s business district (North Avenue and Grant Avenue). This will be a considerable disruption to the community, but offers the opportunity for above grade and below grade improvements such as sidewalk improvements, traffic calming and green infrastructure as well as improved communication, data, power and water infrastructure. It is estimated that the project will not begin for several years, leaving time to plan carefully and to advocate for multiple system improvements.

Additionally, basement flooding reduction can lead to improved indoor air quality and reduce related health outcomes associated with mold.

WATER Benchmarking

Identifying and tracking energy-related metrics will help Millvale set goals and measure success towards achieving their goals by the year 2030.

METRICS

PRODUCTIVE LANDSCAPE

100%
INCREASE

GOAL

0%

Green infrastructure projects
 # by private property owners
 # by Borough
 # in public realm
 Gallons diverted from five focus areas

Gallons of water runoff contributing to the sewer
 Acres draining to the sewer
 % of runoff to CSO attributed to Millvale

PROTECT ASSETS

100%
INCREASE

GOAL

0

Vulnerable properties within the floodplain
 sf of adapted buildings
 sf of redeveloped properties outside the floodplain
 \$ invested in floodplain properties

of properties suffering from water damage
 # of bank overflows
 # of houses with basement flooding issues
 sf of properties within the floodplain

COMMUNITY BENEFIT

100%
INCREASE

GOAL

\$ invested in green infrastructure projects
 # of jobs attributed to green infrastructure projects
 # of volunteer water coaches
 # of volunteer hours
 # of job training opportunities
 # of visits to online floodplain information

TRIPLE BOTTOM LINE BENEFITS



PLANET

Better water management will improve water quality and contribute to consent decree compliance.



PEOPLE

Improved water quality increases air quality and contributes to a better river connection.



PROFIT

Improved water management will make development in Millvale more attractive and affordable.



IDENTITY

Improved water management will remove the water stigma and will instead show regional leadership.

WATER RESOURCES

Borough of Millvale Floodplain Ordinance

Buckhart Horn, Inc. "GOALProcess Stormwater/CSO Green Infrastructure Study." 31 July, 2015.

Environmental Planning & Design "Riverbend Comprehensive Plan." March 2014.

FEMA Floodplain Map

Malmö, Sweden

Qunli Stormwater Park, China

Seoul, South Korea

WATER Actions

The following recommended actions will help Millvale build upon current water-related achievements in pursuit of the Borough's 2030 goals.

1 Accelerate the creation of a watershed authority.

Most of Millvale's stormwater issues are a result of flows from upstream communities. Millvale's vulnerability to flooding and the combined sewer overflows of A-67 cannot be effectively addressed without collaborative, multi-municipal action. A watershed authority needs to be established and involved in advocacy, planning and regulatory authority to effectively address these issues. Other locales in Pennsylvania have created watershed authorities that exist primarily as planning and regulatory agencies that plan for flood protection, stormwater and water quality improvement, and sustainable water resource (flow) management, in addition to providing water information and outreach. In other models, watershed authorities have the ability to implement projects, including the ability to contract to carry out management projects, acquire properties, maintain systems, and accept funds, assess fees, and encumber debt.

- Develop a core community advisory group including water advocates who will represent the community during negotiations.
- Offer training to community members to increase literacy.
- Develop a long term water-integrated urban design vision and use it as a negotiating position during the watershed improvement discussions.
- Execute a planning study to model the economic impact and placemaking opportunities that would result from reducing Millvale's base flood elevation, given upstream improvements.
- Increase collaboration with Girty's Run Joint Sewer Authority.

MILLVALE HAS ALREADY... held Girty's Run summits since 2013, in addition to implementing green stormwater infrastructure.

2 Bring green stormwater infrastructure projects to the "shovel-ready" stage.

By implementing green stormwater infrastructure at the five high yield sites identified in the GOALProcess study (fall 2015), approximately 33% of the Borough's rainwater runoff can be diverted from the sewer system. According to the study, these sites have the highest potential rate of return for green stormwater infrastructure and would be the most cost effective in reducing combined sewer overflows.

- Examine all five micro-shed areas and evaluate what would be the most effective green stormwater infrastructure using qualitative and quantitative criteria (triple bottom line criteria).
- Quantify contributions from private property and public right-of-way areas to understand the cost/benefit model.
- Integrate micro-shed projects into a comprehensive public realm strategy (e.g. physically linked or signature-designed Millvale stormwater parklets that become new amenities within the community).
- Develop a green stormwater infrastructure kit-of-parts and implementation incentives for residents and business owners to use on their properties.
- Connect property owners with nonprofits who can help them implement projects.
- Seek or develop local, state, or national funding to implement projects. Make water explicit in the Millvale narrative to give emphasis when asking for funding.
- Research and implement quantifiable hillside conservation opportunities.



3 Develop a vision for complete streets along Grant and North Avenues that improves sidewalk culture and below grade infrastructure.

Develop a vision for complete streets along Grant and North Avenues that improves sidewalk culture and below grade infrastructure. It is anticipated that major reconstruction of existing grey stormwater infrastructure will occur along North and Grant Avenues, which will cause significant disruption. However, this is an opportunity to significantly change above and below grade systems. This would create a more walkable and livable sidewalk environment, a more appealing business district and would also incorporate more efficient improvements in below grade networks, including high speed data, micro-grid electricity and green infrastructure.

- Create a strong and unique Millvale identity through main street improvements.
- Develop Millvale-specific main street goals that align with complete streets principles (e.g. integrate multi-modal transit including bikes, buses and pedestrians, improve ecological and water systems, create a business friendly sidewalk culture, etc.).
- Complete a study on the viability of micro-grid electric production (solar, co-generation, fuel cells, etc.) and model possible scenarios for implementation.
- Develop a main street kit-of-parts for sidewalk and storefront improvements that guides redevelopment and property improvements.

4 Decrease the impact of the floodplain ordinance through a reduction of the BFE and by streamlining compliance procedures.

Millvale's 2015 floodplain ordinance now meets federal guidelines but also imposes strict rules for building renovations and development to reduce loss of life and property damage during flooding. These rules change how improvements are made to buildings and will increase renovation costs.

- Create an illustrated online guide to assist property owners with compliance, including an interactive map, illustrated best practices and a process guide for the approval process.
- Develop strategies to safeguard or prepare residents and businesses who are vulnerable to the rising cost of floodplain compliance (those who will be making required improvements to meet code, those suffering from increased insurance costs, loss of property value and loss of habitability).
- Investigate possibilities to lower the base floodplain elevation through changes in the upper watershed or lower watershed. Model the economic case for such improvements.

WATER Futures

Millvale can reduce floodplain restrictions with action at three scales: advocate for decreased runoff in upstream communities, plan for new land use patterns that recognize vulnerable properties and increase building-based water protection.

Vulnerability Scale

more vulnerable

less vulnerable

location

Properties may be MORE vulnerable if they are:

- *in the floodplain*
- *near to the open channels of Girty's Run*
- *occupy a hydrologically valuable site*

condition

Properties may be MORE vulnerable if they are:

- *small (less than 10,000 sf)*
- *inexpensive (less than \$250,000)*
- *owned by someone out of town*
- *in need of major repairs*

civic value

Properties may be LESS vulnerable if they:

- *are in a main street/commercial area*
- *are of historic significance*
- *serve a public function or service*
- *maintain density or affordability*

WHERE WOULD PUBLIC INVESTMENT PROVIDE THE MOST BENEFIT?

Communities around the country are re-evaluating their flood prone development as federally backed flood insurance becomes more difficult or impossible to acquire. Given these new conditions, it is important to evaluate the vulnerability of Millvale's properties to understand how property owners might make future investment decisions and to proactively shape the Borough's public space.

Vulnerable properties can be addressed in a number of ways. Extra assistance in the form of technical support or funding can help property owners understand their risks, target their investment, and make improvements. In some cases, there may be a need for the municipality or a land trust to purchase especially problematic properties. In the past,

some Millvale property owners have sold their properties through FEMA transactions after major flood events. If another flood event occurred, these transactions might again be available, though it is hardly a proactive strategy.

A more strategic approach would be to create a municipal watershed plan that accounts for the geometry and functioning of the stream and the vulnerability of adjacent properties to identify strategies that increase the stream functions and stabilize investment for property owners. The plan would identify where long term control of key parcels might create parks, trails, or other public-serving infrastructure for Millvale's residents while decreasing the likelihood of flooding with waterway improvements.

Millvale's situation is similar to many other flood plain communities in our region. Strategic long term investments in water infrastructure can help decrease the threat of flooding for the entire community, but those decisions will not be easy.

Some high risk properties will become increasingly expensive to maintain. At some point, these properties may become more valuable as green infrastructure sites.

Millvale needs a long-term horizon to focus investment into functional water systems that strengthen the urban character and fabric.

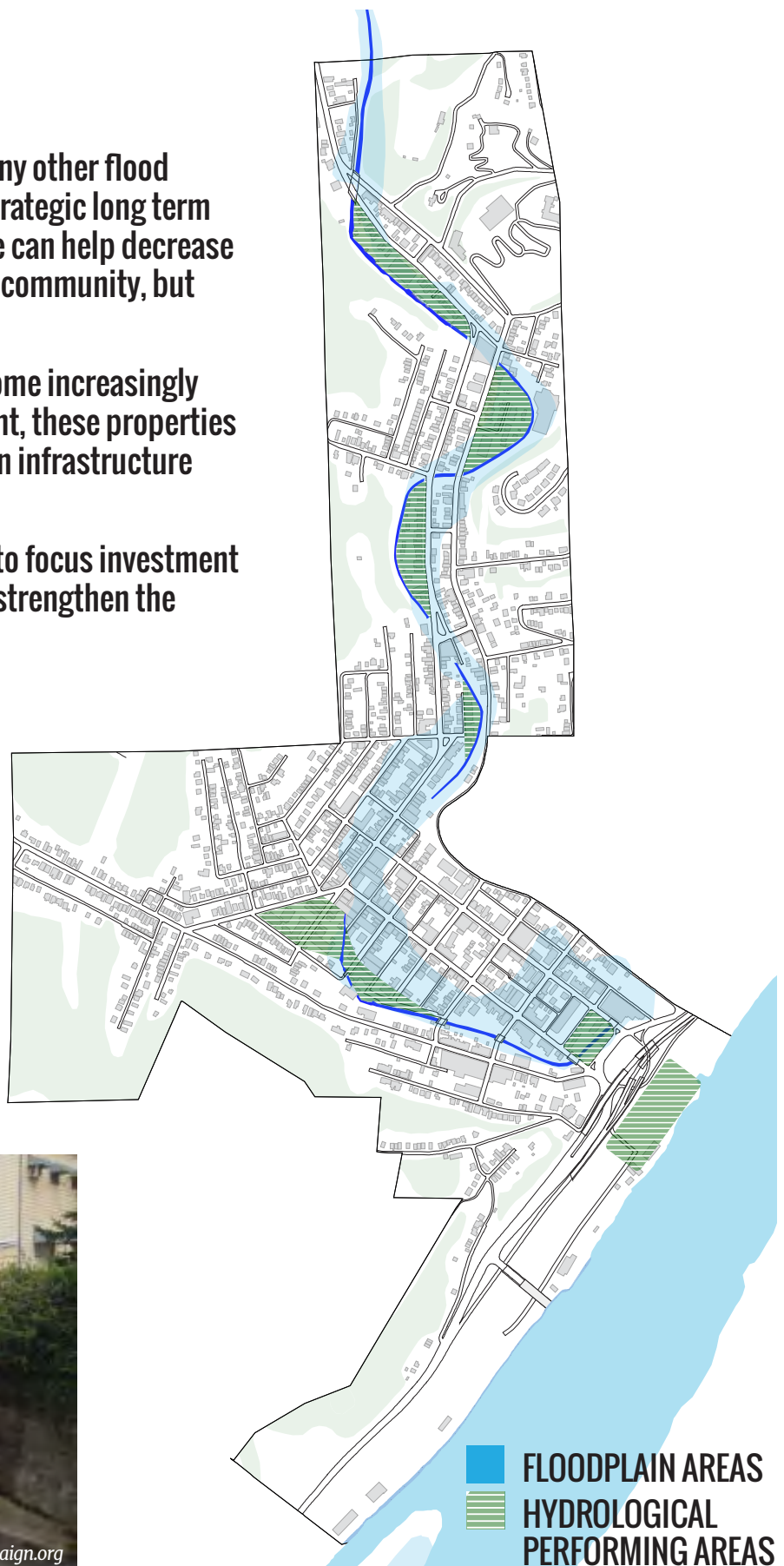


Image: cleanriverscampaign.org

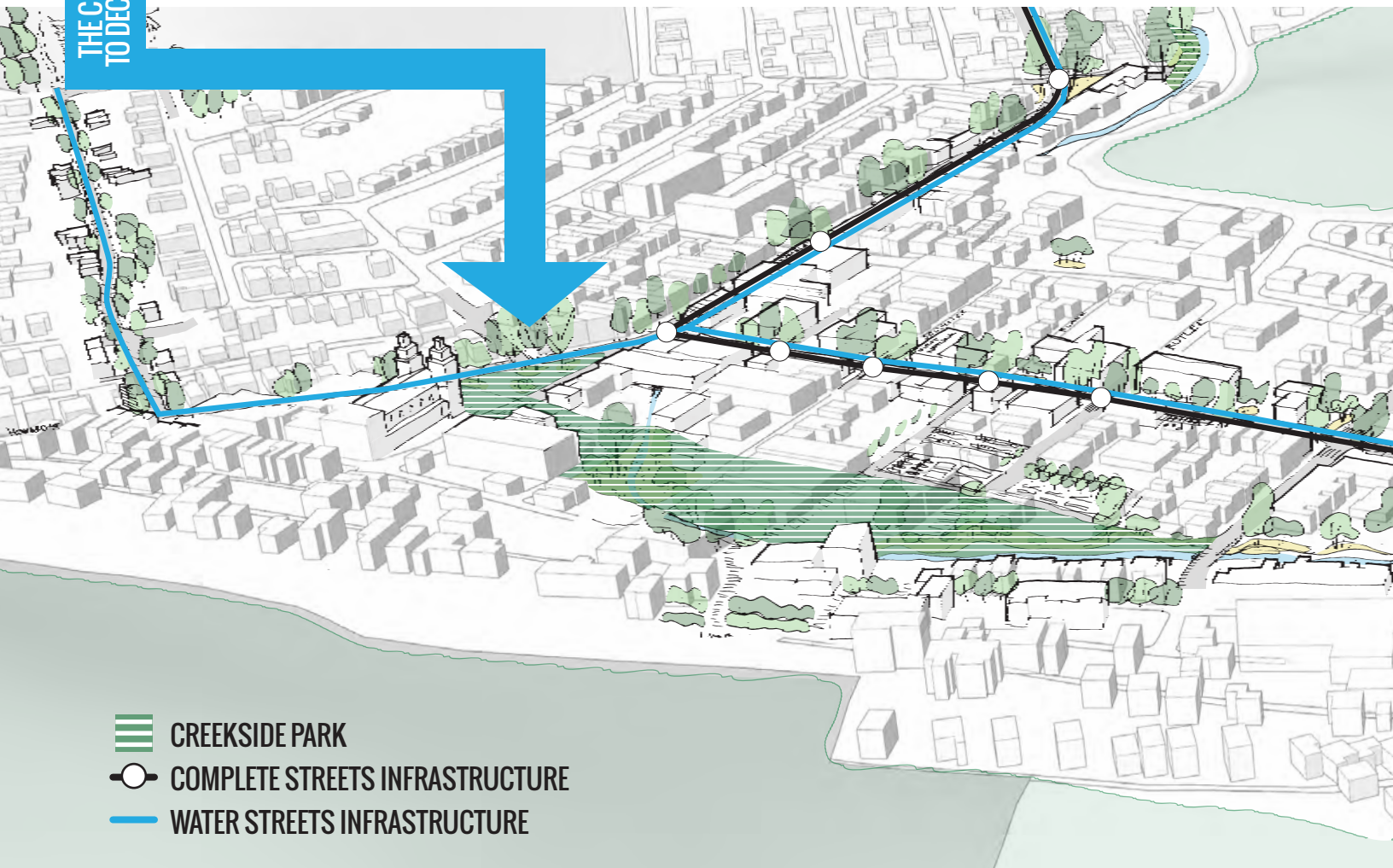
WATER Projects

The following recommended projects will help Millvale achieve the Borough's 2030 goals, while making a visible statement of Millvale's commitment to sustainability.



CREEKSIDE PARK & PLAZA

The Creekside Park is the dechannelization of Girty's Run to provide safe access and improved natural services to limit flood impact.



COMPLETE STREETS MANAGE STORMWATER
WHILE PROVIDING A SAFER EXPERIENCE



COMPLETE STREETS & TOWN PLAZA

The integration of networked water infrastructure (grey and green) as well as improved power and data infrastructure. Includes the creation of a Town Center plaza that conveys, stores and celebrates water.





Image: evolveEA

COMPLETE STREETS & TOWN PLAZA [continued...]



Complete Streets in Millvale might include...

bike friendly intersections, bike parking, and sharrows or dedicated bike lanes

improved pedestrian infrastructure such as sidewalks, curb extensions, and raised crosswalks

improved public transit accommodations such as integrated bus shelters and transfer locations

networked tree pits that provide leafy cover and lower the heat island effect

Complete streets describes an approach to designing and maintaining the public right-of-way to be welcoming to all types of activity, including vehicles, public transit, bicycles, and pedestrians. By emphasizing people, not just cars, it creates pleasant and safe streetscapes for people of all ages to participate in public life. It also integrates the invisible infrastructure that is necessary in the public right-of-way, such as the electric grid, water systems, and communication networks.

Recent discussions have suggested that it might be necessary to replace water infrastructure on North Avenue and Grant Avenue. This project would be an ideal time to integrate complete streets strategies in Millvale's main thoroughfares.

Perhaps most importantly, complete streets are an opportunity to integrate stormwater conveyance systems and to capture and carry water to smaller scale detention sites.

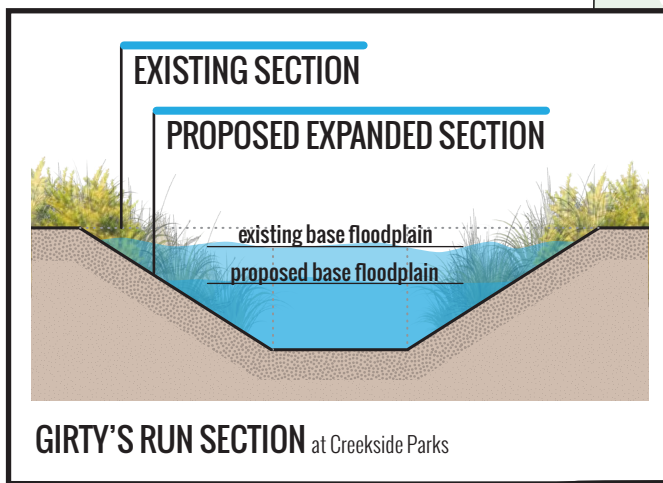
CREEKSID PARK & PLAZA [continued...]

The Creekside Park decreases the risk of flooding by creating a more natural profile for Girty's Run and incorporating improvements like walking and biking trails. The Creekside Park addresses the likelihood that properties adjacent to the Run will become increasingly expensive to improve and maintain and plans for a future condition where some properties may be intentionally aggregated into a linear green space.

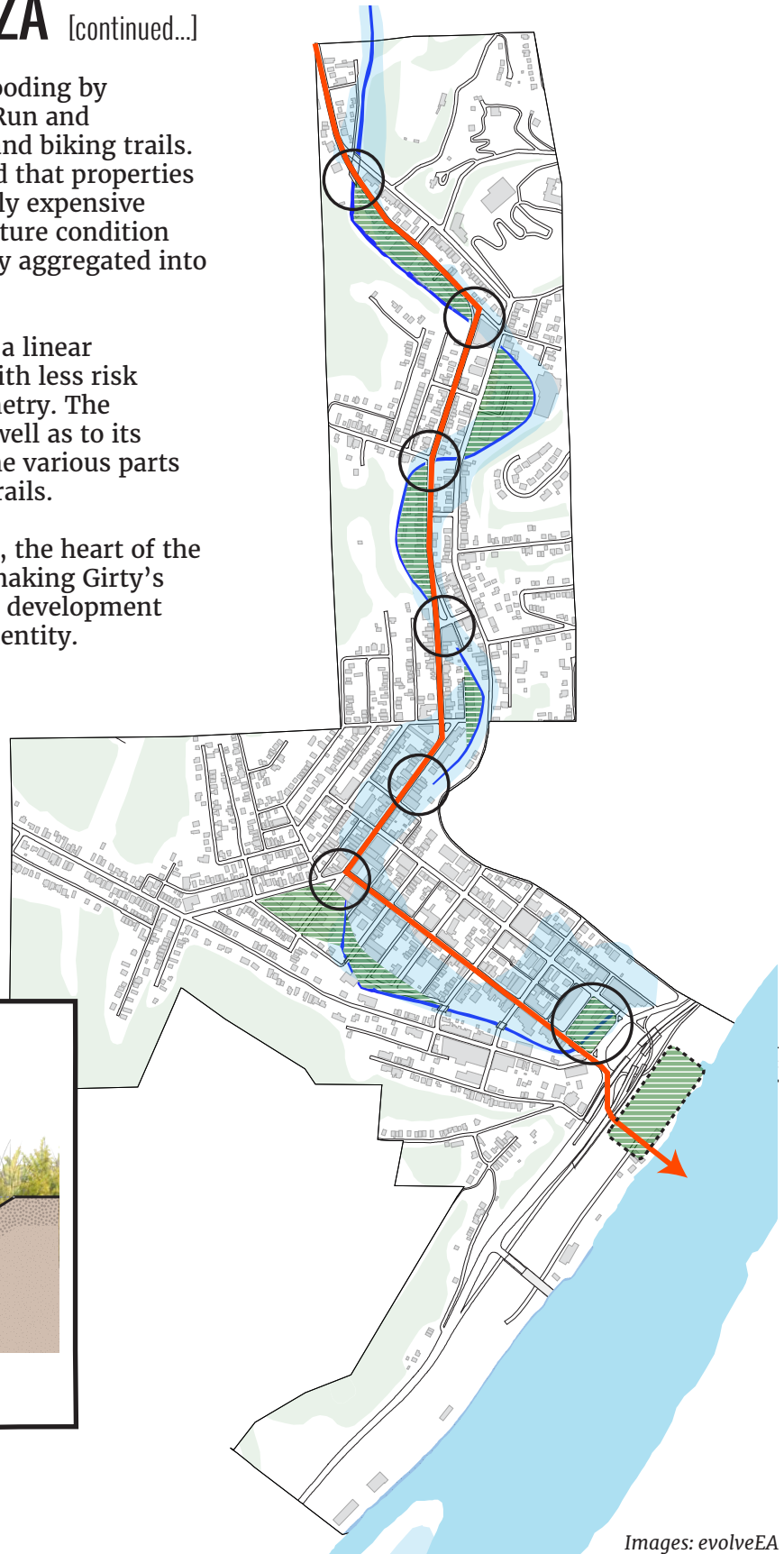
In these locations, Girty's Run is reborn as a linear park that allows the Run to ebb and flow with less risk of flooding by expanding the channel geometry. The park would be an asset to the Borough, as well as to its immediate neighbors, and could connect the various parts of the community with walking or biking trails.

The Creekside Park ends at Creekside Plaza, the heart of the River District mixed use development. By making Girty's Run more visible, it adds an amenity to the development and makes it a positive part of Millvale's identity.

LONG TERM PLANNING FOR A TOWN PLAZA AT THE TOWN CENTER WOULD ADD AREA TO AN ALREADY POPULAR PLAY SPACE AND WOULD HELP TO MEET MILLVALE'S CONSENT ORDER STORMWATER REQUIREMENTS.



-  CREEKSID PARK
-  GIRTY'S RUN
-  STREAM CROSSING INFRASTRUCTURE
-  FORECASTED GRAY STORMWATER INFRASTRUCTURE REPLACEMENT





future catalytic project
Grant + North Ave. complete streets

MOBILITY

Millvale is a place where people of all ages have the freedom to move safely.

The Millvale EcoDistrict will be a well-connected community, where the majority of residents and visitors travel safely to, from, and through the community using alternative transportation.

MULTI-MODAL

SAFE

ACCESS

MOBILITY Background

Millvale is located in close proximity to Downtown Pittsburgh, making it easy for residents to drive there in minutes. This close proximity provides an enormous opportunity for residents and visitors to use alternative transportation to travel to, from, and through the community.

With access to alternative transportation becoming an increasingly sought after amenity for existing and incoming residents in the Greater Pittsburgh Area, the City is making a concerted effort (with much help from local non-profits and community partners) to provide greater bus access, increased walkability and safer biking conditions for area residents. To prove this commitment, the City is developing a Complete Streets policy that will ensure all streets are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities.

The complete streets concept has received a lot of attention in many communities across the country, including the Borough of Millvale. The Borough has established a goal to increase multi-modal transportation to, from, and through the community to reduce air pollution, CO2 emissions and improve resident health.

Currently, the use of public transportation is difficult in Millvale, with only one bus line serving the community. Traveling via bus from Millvale to Downtown can take upwards of 35 minutes, compared to only 3 minutes by car. Additionally, the frequency and hours of bus service in Millvale are restrictive. Luckily, for the first time in many years, the Port Authority of Allegheny County is beginning to add routes to their service.



Sharrows along Grant Avenue
Image: Zaheen Hussain



A bike rack in front of the Millvale Community Library
Image: BreatheProject.org

Because of the transportation challenges that Millvalians experience when only going a short distance, the Borough has worked to expand transportation options for both residents and visitors. This includes the creation of bicycle trails along the riverfront, leading to Downtown. The Borough has also painted

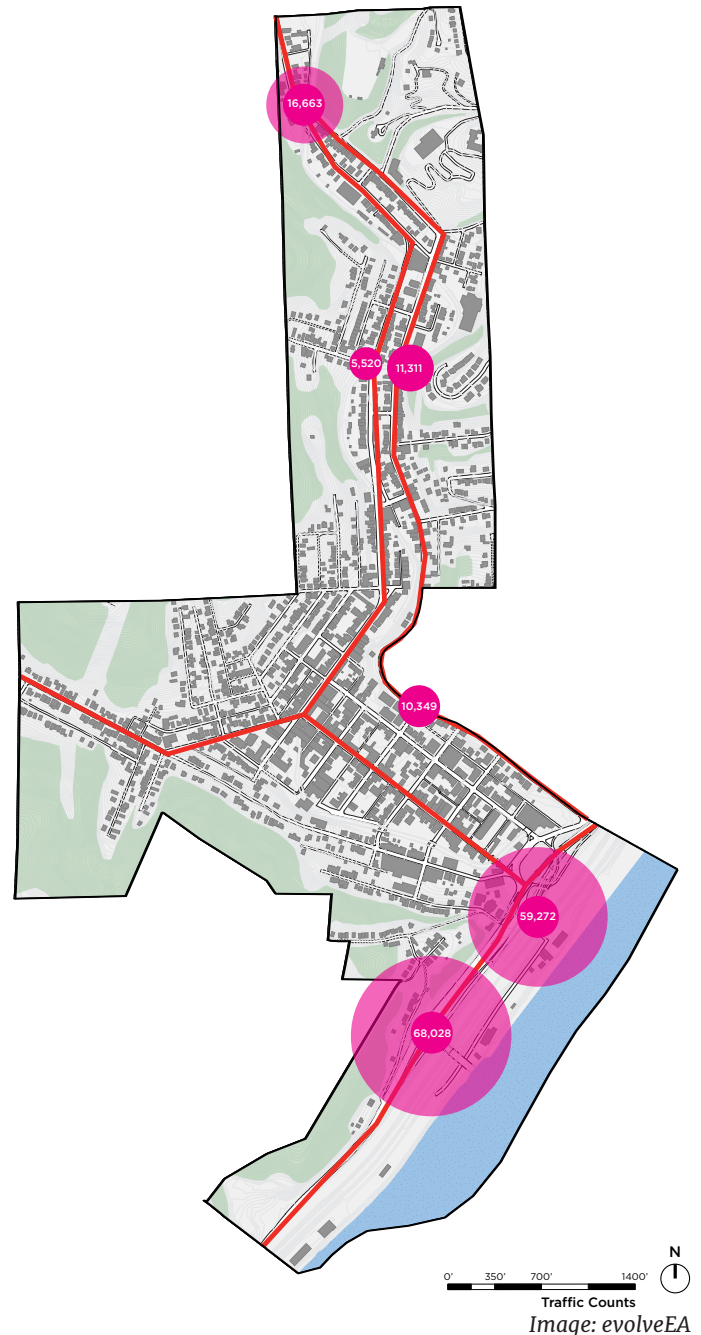


sharrows on major Millvale streets to remind and encourage vehicles to share the road with bicyclists. Traveling via bicycle to Downtown Pittsburgh is only a 21 minute journey and produces health and cost benefits.

Walking through the community is currently a challenge for some due to sidewalks that are in disrepair. This presents an accessibility issue for walkers, especially those who already have mobility constraints.

Luckily, the Millvale Borough Bike/ Pedestrian Committee (MBBPC) was formed recently with the mission of establishing a safer shared roadway for bicyclists, pedestrians and motorized vehicles throughout the Borough of Millvale and neighboring municipalities.

As the population of Millvale and the Greater Pittsburgh Area continues to grow, and as Millvale's EcoDistrict goals continue along the path towards achievement, providing a range of transportation options that are affordable is important. From biking, walking, driving, busing, and everything in between, being able to travel safely, efficiently and affordably with minimal environmental impact is what will help Millvale reach it's mobility-related EcoDistrict goals.



MOBILITY Benchmarking

Identifying and tracking energy-related metrics will help Millvale set goals and measure success towards achieving their goals by the year 2030.

METRICS

DIVERSITY OF TRANSPORTATION MODES

100%
INCREASE

GOAL

- # of sharrows
- miles of sharrows
- # of bikers
- # of bus routes
- Cost to park Downtown
- # of preferred (hybrid, EV, carpool) parking spots Downtown

50%
DECREASE

- Vehicle miles traveled (VMTs)
- # of parking spaces in Downtown Millvale
- % of household budget spent on transit compared to regional baseline

IMPROVE CONDITIONS CONTRIBUTING TO SAFETY

100%
INCREASE

GOAL

- Safety infrastructure
 - # of traffic calming projects
 - # of safe road projects
 - # of accessibility projects

0

- # of transportation crashes
- # of reported injuries

IMPROVE ACCESS & SAFETY FOR ALL AGES AND ABILITIES

100%
INCREASE

GOAL

- # of bus shelters
- # of bus riders
- # of walkers
- # of sidewalk improvements, including ADA accessibility

COMMUNITY BENEFIT

100%
INCREASE

GOAL

- # of outdoor events
- # of establishments with outdoor seating
- # of visitors to Millvale



TRIPLE BOTTOM LINE BENEFITS



PLANET

Consuming fewer gallons of gas will improve air quality.



PEOPLE

Alternative forms of transportation improves health and makes access to essential services easier and safer.



PROFIT

Alternative forms of transportation can be more affordable.



IDENTITY

Showing leadership in terms of alternative transportation will put Millvale “on the map” for all modes of travel and take advantage of unique modes.

MOBILITY RESOURCES

Aspect, LLC. “Millvale Borough Intersection/Bus Stop Study.”

Brooklyn Bridge Park Kayak Landing

Chicago River Kayak Park, moss architects

Environmental Planning & Design “Riverbend Comprehensive Plan.” March 2014.

Millvale Borough Bicycle/Pedestrian Committee (MBBPC)

Walk & Roll Green Space Walking/Cycling Tour Map, Millvale Library

MOBILITY Actions

The following recommended actions will help Millvale build upon current mobility-related achievements in pursuit of the Borough's 2030 goals.

1 Develop a transportation baseline by gathering data on current modes of transportation and destinations/routes.

Understanding current trends and patterns will help identify areas where projects and improvements will have the greatest impact. Having a transportation baseline will allow Millvale to measure reduced vehicle miles traveled (VMTs) over time.

- Conduct a transportation survey of those who live, work and play in Millvale.
- Create a transportation network map using the findings from the transportation survey.
- Conduct a neighborhood walkability audit on an annual basis to identify areas that need improvement.

MILLVALE HAS ALREADY...
participated in surveys regarding ADA and public transit access, as well as regional destination planning.

2 Encourage expanded use of alternative transportation.

Providing incentives, advocating for alternative transportation-related policies and services, providing resident education and promoting carpooling and ride sharing are all strategies to increase alternative transportation ridership and decrease VMTs.

- Feature alternative transit assets (bike trail and river) in the development of Millvale's unique identity and improve the river and bike networks.
- Provide Millvale residents with municipal incentives to encourage alternative transportation use (such as discounted bus passes).
- Partner with Millvale Borough Bike and Pedestrian Committee and Pittsburghs for Public Transit to establish bus lines.
- Promote "park(ing) day" to energize residents around transportation and mobility issues.
- Create a Kids Walking Campaign (child-led neighborhood walking tours, scavenger hunts, etc.) and participate in the "Walk [your city]" campaign by producing and posting campaign signage throughout town.
- Install solar-powered electric vehicle charging stations.
- Expand Highmark's bike sharing program to Millvale.
- Establish a car share (hybrid or electric vehicle) and carpool programs.
- Establish a Millvale shuttle bus to transport elderly or handicapped individuals to Millvale's downtown (could be operated by a private company).

MILLVALE HAS ALREADY...
created a "Walk and Roll" map highlighting sustainability projects for a bike or pedestrian tour of Millvale.



3 Increase visibility and safety by installing, biking, busing and walking infrastructure.

When alternative transportation infrastructure is more visible in the community, it will make it safer and more attractive to travel by walking, biking and busing. Additionally, the more attractive and visible these modes of transit are, the more widely they will be accepted by those who travel through, to and from the Borough.

- Emphasize Millvale's unique connection to the river and river-based transit opportunities.
- Establish official bike routes through the community that are supported by sharrows, bike boxes and bike lanes where appropriate.
- Create and promote a Millvale bikes and walks campaign with supporting educational programming.
- Use complete streets principles to guide road design and repairs.
- Build bus shelters for Millvale's most heavily used bus stops, featuring live bus tracking information.
- Improve wayfinding around town and to various transportation options.
- Implement slow road (traffic calming, lower speed limits), safe road (reflectors, stop signs, traffic signals, share the road signs, widen sidewalks, road/sidewalk planter barriers) and accessibility (sidewalk improvement) initiatives.
- Install bike tool stations around town for Millvalians to repair their bicycles.

MILLVALE HAS ALREADY...
installed sharrows along main roads and bike racks around town.

4 Encourage walking and biking downtown by discouraging the use of cars.

Managing parking downtown in a way that encourages alternative transportation and makes traveling by car less attractive will reduce VMTs within the Borough.

- Create a Millvale parking management policy to limit parking downtown. This would include preferred parking for hybrid vehicles, carpooling, etc.
- Increase the cost per hour for downtown parking meters.
- Recruit a bike sales and repair store to relocate to downtown Millvale.
- Improve downtown sidewalk culture.

MOBILITY Projects

The following recommended projects will help Millvale achieve the Borough's 2030 goals, while making a visible statement of Millvale's commitment to sustainability.

COMPLETE STREETS MAKE IT SAFE FOR ALL MODES OF TRANSPORTATION



COMPLETE STREETS

Complete streets in Millvale would be designed and operated to enable safe access for all users, including pedestrians, cyclists, transit riders and motorists of all ages and abilities.

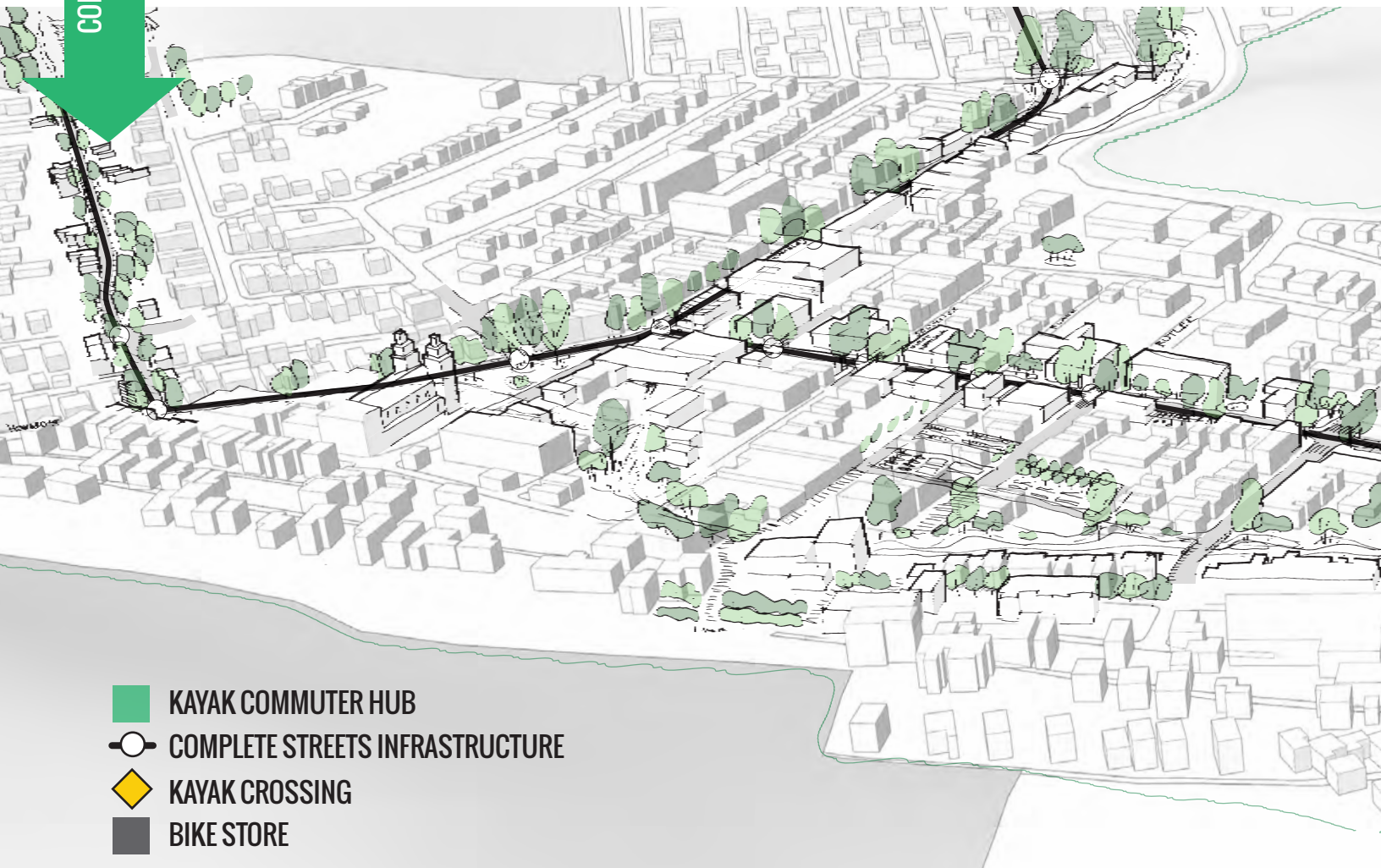




Image: <http://images.huffingtonpost.com/>



Image: Moss-Design.com

KAYAK COMMUTER HUB

Millvale's location along the river, in close proximity to Downtown Pittsburgh, provides an opportunity to become an alternative transportation hub for commuters.

PEDESTRIANS, BIKES, AND THOSE GOING TO THE KAYAK COMMUTER HUB CAN EASILY AND EFFECTIVELY NAVIGATE THIS INTERSECTION

KAYAK COMMUTER HUB MAKES IT EASY TO KAYAK TO/FROM DOWNTOWN

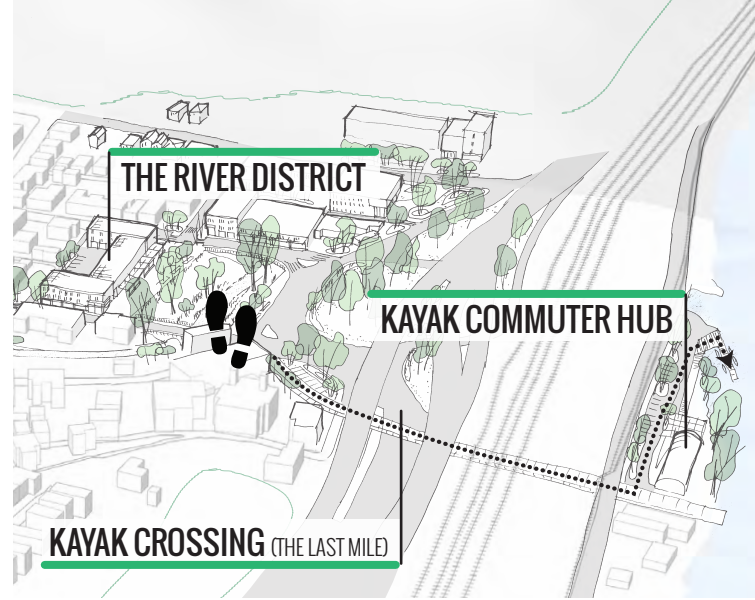




KAYAK CROSSING & KAYAK COMMUTER HUB

Millvale is a contradiction in connectedness. Commuting to downtown by bike is virtually uninterrupted... once you can get to Millvale's Riverfront Park and trail! Millvale is one of the few communities with river access... but it is not easy to find your way there! Millvale is connected to the many networks, but the "last mile" that connects to those networks, is Millvale's real challenge. This is most felt at Millvale's front door, the intersection at Route 28, and is addressed by the Kayak Crossing that connects the River District to the Kayak Commuter Hub.

The River District mixed use development includes commercial and adds more dense residential development, becoming an ideal place for people to live who may not need a car. These people would find the proximity to the bike trail, public transit, and even walking to Lawrenceville attractive and it is the ideal place for amenities like Zipcar or bike share. The inclusion of a small grocery would attract other Millvale residents to walk to the site, amplifying the likelihood of the area as a hub of activity.



The Kayak Hub brings the park amenities closer to the population center. The Kayak Hub is a place to touch the river, store your boat, buy some food, and see where Girty’s Run meets the Allegheny River. It is envisioned as a mixed use, public/private development that gives people more opportunities to enjoy their river and becomes a node on a river transit network that is being developed along the Allegheny.

The success of the River District at the southern end of Girty’s Run is tied to the real and perceived connection of the town to the river. The Kayak Crossing is an

opportunity to advocate for integration of complete streets principles into the PennDOT controlled intersection to improve safety and create a stronger community identity. The Crossing references the unexpected spectacle that occurs when Millvale residents carry their kayaks across the treacherous highway crossing... a shocking sight if you do not know that there is a vibrant community on one side of the overpass and a beautiful river on the other side. The signage, public art, and other improvements make the passage safer and better connected the River District.



future catalytic project
Clean air park

AIR

Millvale is a clean air community where people breathe easy indoors and outdoors.

The Millvale EcoDistrict will contain the cleanest indoor and outdoor air in the region, reducing the number and severity of air quality-related health issues and related costs for Millvale residents.

HEALTHY

**FEWER
SOURCES**

**LESS
IMPACT**

AIR Background

Small boroughs like Millvale share many of the same concerns about air quality as big cities like Chicago, San Francisco, or Toronto. Millvale needs to be proactive about projects and policies that can improve local conditions, while taking part in important regional conversations. This report gives preliminary recommendations, with the anticipation of a more in-depth forthcoming investigation and implementation process.

Clean air is a simple concept but is full of contradictions. We cannot see it and we rarely think about it, yet we could not survive without it. We concern ourselves with local air quality but that air is affected by regional and even global phenomena. We require oxygen but air brings many other substances that threaten our narrow band of acceptability. Even if we understand its composition, we have a difficult time understanding its behavior. Unlike water flow or the movement of other resources, air movement is difficult to predict and is affected by weather, landform, seasonal changes, altitude, man made inputs, and other issues.

How do we connect air quality to the design of our cities and our buildings? Our built environment is not neutral and can contribute to air quality issues in positive and negative ways. If done well, our buildings and landscapes can reduce pollution and can lessen our exposure to harmful substances. When air is not a concern for designers, planners and policy makers, our cities can host a number of unhealthy and dangerous conditions, generating and concentrating pollutants and people together in a disfigured and unsafe environment.

Well before Congress passed the Clean Air Act in 1970, Pittsburgh was the epicenter of the battle for clean air. Pittsburgh's industrial prowess was built on the exploitation of soft coal, and the smell of pollution was equated by many to the "smell of money being made." Smog, chronic illnesses and soot-covered surfaces were unavoidable and became

part of the urban identity. In the 1940's, after generations of harmful living conditions, urban leaders in our region committed to change, which later became the basis of our scientific understanding of pollution, its regulation and the technologies that enable improvement. While great strides were made during that time, there is still much to do and we can see the struggles at play in our own region and globally.

Poor air quality affects our health, our environment and our economy. Poor air quality is bothersome to healthy individuals but can be devastating to people with acute conditions such as asthma, heart and respiratory diseases, or compromised immune systems. Certain populations, such as children or the elderly are especially sensitive, and long term exposure to toxic chemicals or particles can lead to systemic health problems such as cancer, brain damage and birth defects.

Air pollution changes our environment in ways that affect our well being. Pollutants that migrate to the upper atmosphere have thinned the ozone layer, creating unsafe conditions in terms of sun exposure for humans as well as plants and animals. Pollutants in the lower atmosphere form acid rain, which has damaged even the most remote forests and lakes. When the forest is under stress, entire ecosystems can shift as invasives replace native species and natural services such as carbon sequestration are compromised.

Health and environment are intimately tied to economic issues. Air pollution



increases health care costs, causes lost wages and lessens productivity in the workplace, as well as inhibiting children's futures through missed school days. Lost or damaged crops cause short term economic distress while compromised ecosystems risk generational loss of natural services and resources. In addition, poor air quality lies at the heart of questions regarding environmental justice. Air pollution disproportionately affects poor communities. As conditions worsen, those who are able often move to better conditions. Those who remain may lack the resources to adequately defend against the pollution emitters, further depressing the equity and value of investments within their community. Pollution inhibits a community from building wealth and can make the community more vulnerable to increased pollution emissions.

According to the US Environmental Protection Agency, the six major substances of concern are: particulate matter, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides and lead. The EPA considers particle pollution (particulate matter) and ground-level ozone to be the most widespread health threats. These six pollutants are regulated by the EPA through health-based and/or environmentally based

criteria that establishes permissible levels, or primary standards. When the regional air quality is better than the primary standard, it is in "attainment"; when it exceeds the primary standard it is called a "non-attainment" area.

The source of pollution can be difficult to track. Large pollution emitters such as that from industrial sources or power plants can travel across state lines and even across national borders. Other sources of pollution may come from highly local sources such as auto body shops or dry cleaners. Pollution from these sources may travel, but the source is static and so we refer to these as point sources.

Other sources of pollution are dynamic, such as tailpipe emissions from cars, trucks and buses. It is estimated that half of the toxic air pollution emissions in the US, including volatile organic compounds (VOCs) and nitrogen oxide (NOx) emissions are from motor vehicles. Over 75% of carbon monoxide emissions are from our national fleet of vehicles. This pollution is often visualized using air monitors that show red areas around major highways and thoroughfares. In countries without tailpipe emission controls, the pollution can be seen as a brown haze above the urban canyons of the streets.

Six major substances of concern

- particulate matter
- ground-level ozone
- carbon monoxide
- sulfur oxides
- nitrogen oxides
- lead

Source: US Environmental Protection Agency

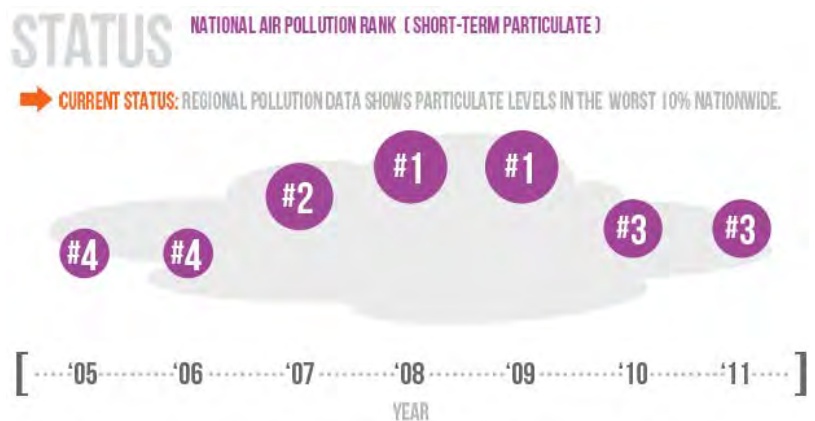


Image: Breathe Project. Heinz Endowments

Pittsburgh is fortunate enough to have a comprehensive regional campaign for air quality called the Breathe Project. Sponsored by the Heinz Endowments, the Breathe Project is an awareness and advocacy campaign that is providing data and framing the issues unique to our region. The Breathe Project coordinates awareness and advocacy for many of the larger issues that require multi-municipal cooperation and would be out of reach for small boroughs such as Millvale.

Air Quality & Urban Planning: National Examples

The planning and design of our cities and buildings can help us improve air quality and some cities have directly addressed air quality in their planning processes.

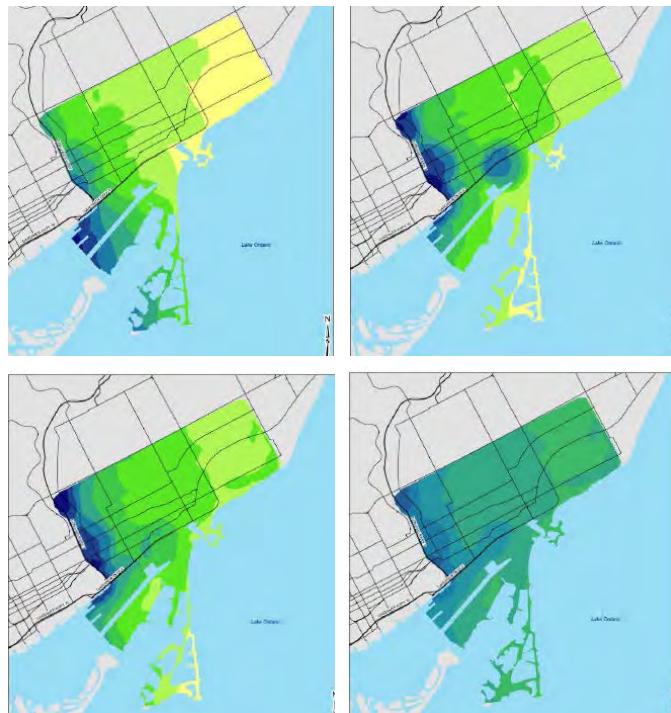
San Francisco. San Francisco has addressed air quality through policies informed by data from the San Francisco Indicators Project. The project prioritized public health issues and identified air quality as a major concern. Projects and policies included neighborhood health and impact studies, congested road pricing, and created Air Pollution Zoning Maps. The maps resulted in building-based requirements to limit exposure and had implications for open space planning and urban forest establishment.

Toronto. In 2011, Toronto performed targeted air quality studies to understand the magnitude and extent of 30 pollutants in city neighborhoods, and the potential cumulative health impacts of the substances. This effort was led by the governmental sector with participation from the environment and energy agency, the public health agency, and in partnership with their climate change efforts. The studies concluded that many of the substances of greatest concern, including benzene, butadiene and nitrogen oxides were produced by local sources, including transportation and fuel used to heat and cool homes and businesses.

Toronto took a multi-scalar response, ranging from advocating for more protective federal air quality standards, to the creation of urban planning guidelines that include a commitment

to complete streets. Complete streets change the typical mode split by valuing the pedestrian over the vehicle and by creating urban environments that enable social, cultural and economic functioning without the need for carbon-based travel. Complete streets encourage an active and visible culture, and have health benefits beyond air quality improvement, such as safer travel and increased physical and social activity.

Chicago. As part of its climate action planning, Chicago has taken on an intense effort to better understand air quality problems by blanketing micro-sensors across the city. The project, called the Array of Things, gathers information for residents to make smarter choices. For example, the interactive, modular sensor boxes might be installed around the city to measure climate, air quality and noise. The data could be used to determine the healthiest walking time and routes or could be gathered for a longitudinal understanding of the intersection of environment and human health issues. At this point, no policy or regulations have been developed. Sensor installation is expected to begin in early 2016, with 500 sensors in place by the end of 2017.



Images: Pollution Concentration Maps. Toronto Air Quality Study, 2011.



Air Quality Zoning

Very few cities have made air quality a foundational element in land use planning. One of the earliest reports on the influence of air quality on urban planning policy was titled “Air Zoning: An Application of Air Resource Management,” prepared in 1966 by Michael Meshenberg. The report cites reasons why urban planning departments hesitate to aggressively deal with air quality. First, it is difficult to determine the source polluter’s contribution to a cumulative effect. Second, the affected geographic area varies with weather, and source emissions and boundaries are hard to determine. Lastly, the conditions are not constant or predictable, presenting a rate of change much different than other horizons for change in planning.

Meshenberg presents a useful model for understanding where we might intervene in this system that begins with a pollution source and ends with an affected population. Basing his premise on the need to prevent property damage and protect human health (ecological damage was not presented as an issue at this time), Meshenberg cites Frenkiel’s four steps, including: (1) production of the pollutants; (2) emission of the pollutants into the atmosphere; (3) their transfer from the point of emission by the flow of air, and (4) the contact with receptors (e.g., lungs, buildings, vegetation) which are susceptible to damage.

Much has changed since Meshenberg’s paper was first presented, but the categories are still useful to consider how we can prioritize action. Production and emissions have decreased significantly, largely as a result of policy and enforcement at the federal, state and local levels. However, the cost-benefit analysis is often tempered by the lack of hard economic data on human health and environmental damage and the economic benefit is often described as job creation or retention. Despite the best policy intentions, it is possible that the greatest gains were not simply a result of new technology or enforcement but through the off-shoring of sources in the global economy.

Transfer or movement of pollutants has recently become more transparent as our measurement and sensor capabilities have allowed us to sensor micro-sites and visualize the movement of otherwise invisible substances in real time. This has enabled behavior changes that help lessen the pollution sources or the health impact, such as ozone action days when people are encouraged not to drive or to be outside in unsafe conditions. We have yet to find an effective way to control the weather patterns that deliver pollution but we do know source location and general pattern well enough to be able to attribute environmental damage such as acid rain to remote sources.

A focus on the end user and preventing contact is perhaps the scale most familiar to urban planners and designers. Designs generally use filtration as a principle, through the creation of a buffer zone or park, by the installation of high performance furnace filters and air sealing a home, or by air filtering fashions as seen in some global cities. Reducing the solution to the small scale enables the citizen or the organization to exert control over the problem, and is a very important scale for inspiring larger policy level actions. Small scale solutions also acknowledge that the homeowner or business owner might very well be a source themselves, with emitting appliances or products in their spaces or even through deferred maintenance that leads to wet or moldy conditions.

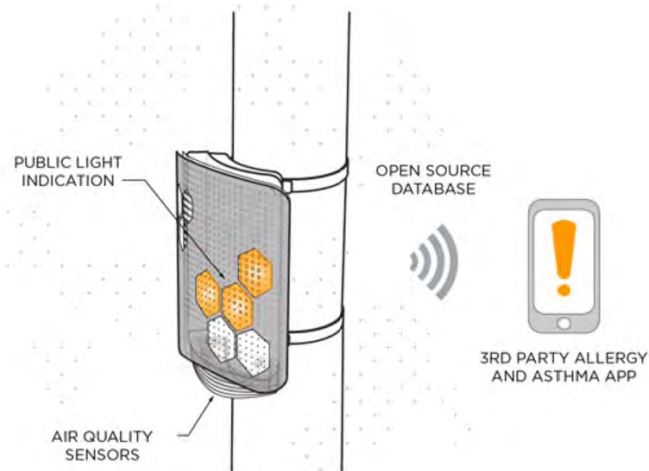


Image: Sensors from the Array of Things, Chicago, 2015.

AIR Benchmarking

Identifying and tracking energy-related metrics will help Millvale set goals and measure success towards achieving their goals by the year 2030.

METRICS

IMPROVE COMMUNITY HEALTH

100%
INCREASE

GOAL

Productivity
% of days in air quality attainment

50%
DECREASE

Air related illnesses
 # of people diagnosed with brain cancer
 # of people diagnosed with lung cancer
 # of people diagnosed with autism
 # of people with asthma
 Healthcare costs compared to regional average
 Absenteeism
 % of population who have unmitigated exposure to heavily trafficked roads
 Levels of harmful particulate matter
 Levels of ground level ozone
 Levels of carbon monoxide
 Levels of sulfur oxides
 Levels of nitrogen oxides
 Levels of lead

SOURCE REDUCTION

100%
INCREASE

GOAL

Proximity to heavy regional pollution emitters
Non-emitting transportation miles traveled

50%
DECREASE

of heavy regional pollution emitters
Magnitude of dynamic emissions
Frequency of dynamic emissions
Vehicle miles traveled (VMTs)

MITIGATION

100%
INCREASE

GOAL

% of homes with upgraded mechanical and filtration systems
of trees planted
of homes with radon abatement and prevention measures in place
of homes with stormwater related mold abatement and prevention measures in place

50%
DECREASE

% of people who smell exhaust on their property or in their homes



TRIPLE BOTTOM LINE BENEFITS



PLANET

Improved air quality makes it easier for people and animals to breathe.



PEOPLE

Better air quality improves health by reducing the risk of lung cancer, asthma and other potentially fatal health issues.



PROFIT

Improved air quality reduces health care costs and makes Millvale more attractive to potential residents.



IDENTITY

Improved air quality would transform a current problem into a regional leader through creative problem solving.

AIR RESOURCES

Group Against Smog & Pollution (GASP)
The Breathe Project, Heinz Endowments

AIR Actions

The following recommended actions will help Millvale build upon current air quality-related achievements in pursuit of the Borough's 2030 goals.

1 Gather in depth data on the magnitude of air quality-related issues in Millvale.

Preliminary data suggests that Millvale's biggest emission sources are most likely regional plants such as coking works on the Ohio and Monongahela Rivers, as well as Millvale's proximity to the highway and heavily traveled roads. An extended investigation would gather:

- The impact of regional emitters on the air quality of Millvale (industrial sources).
- The impact of localized and dynamic sources on the air quality of Millvale (transportation sources).
- The prevalence and impact of localized sources of pollution (building-based or local process sources).
- Possible correlations or causalities with Millvale's localized health statistics.
- A list of priority emission sources and locations for Millvale to target.

2 Create policies and projects that minimize the production of and contact with air pollutants.

Millvale should consider a scalar approach to minimize contact with pollutants through public realm and building-based improvements. These could include:

- Integrate air quality goals into a complete streets vision and create dense and walkable development to decrease the reliance on air polluting vehicles.
- Evaluate pass-through transit and how zoning could decrease the impact of this on the community.
- Consider air quality parks that decrease particulate matter transfer through biofiltration.
- Create programs that encourage weatherization and filtration for homes and commercial buildings.



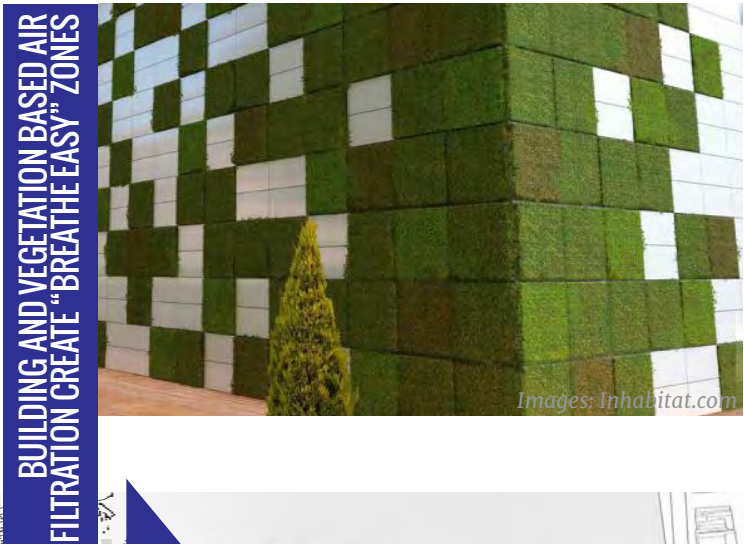
3 Create an informed culture that advocates for and acts upon air quality issues.

Similar to watershed issues, Millvale needs to “punch above its weight” in advocating for change at a regional level. This needs to be carried forward by a well-informed community that frames a positive and proactive narrative while working towards environmental justice in Millvale.

- Convene a group of concerned residents to help guide the deep investigation and action process.
- Develop educational programs and media outlets that keep the community informed on air quality progress.
- Create projects that make air quality visible and encourage engagement of all citizens.

AIR Projects

The following recommended projects will help Millvale achieve the Borough's 2030 goals, while making a visible statement of Millvale's commitment to sustainability.



BREATHE EASY ZONE

Breathe easy zones are areas in Millvale where there's a focus on building-based air filtration. That includes very efficient filters, smart air sealing, green roofs, etc.

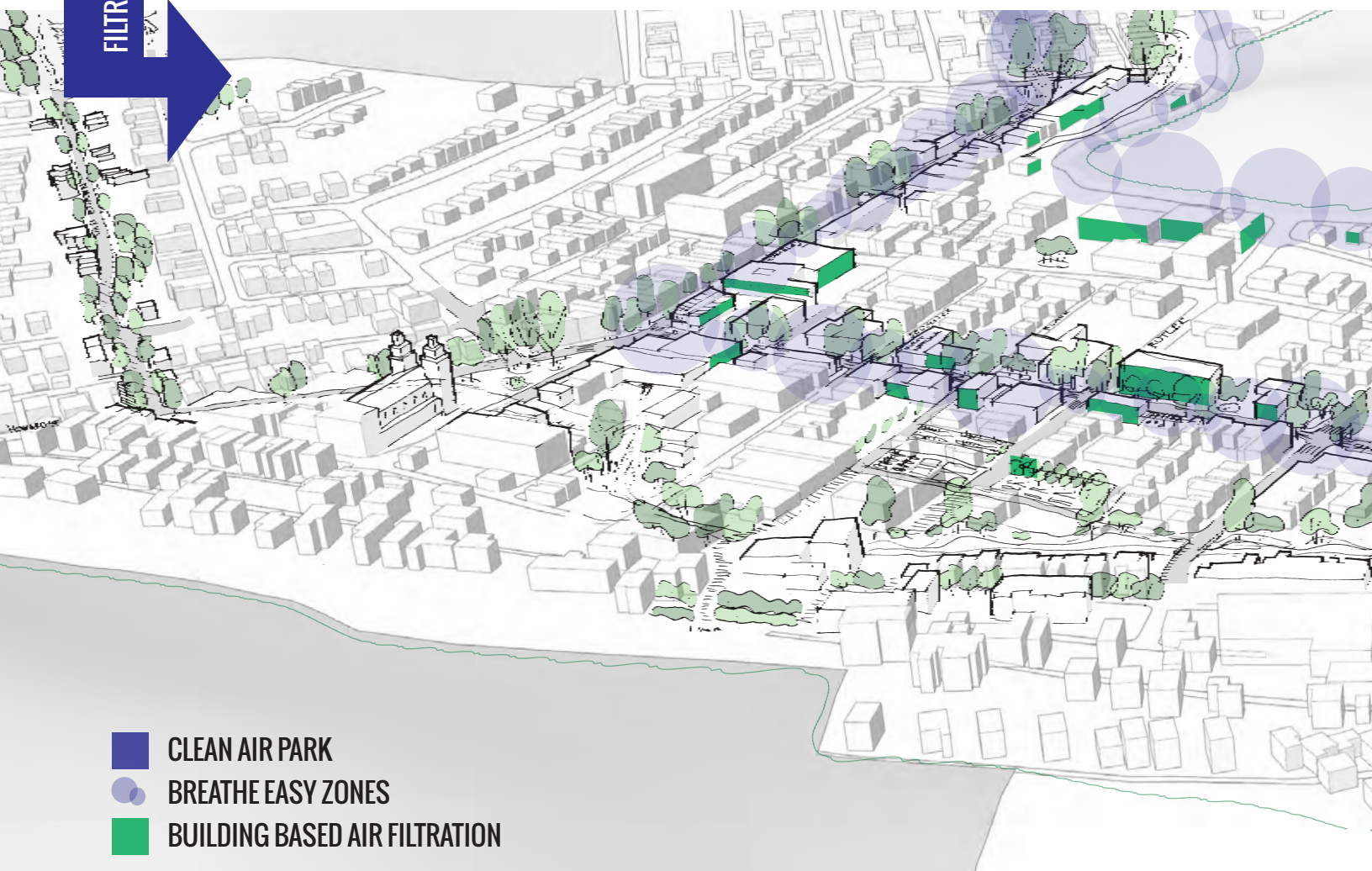




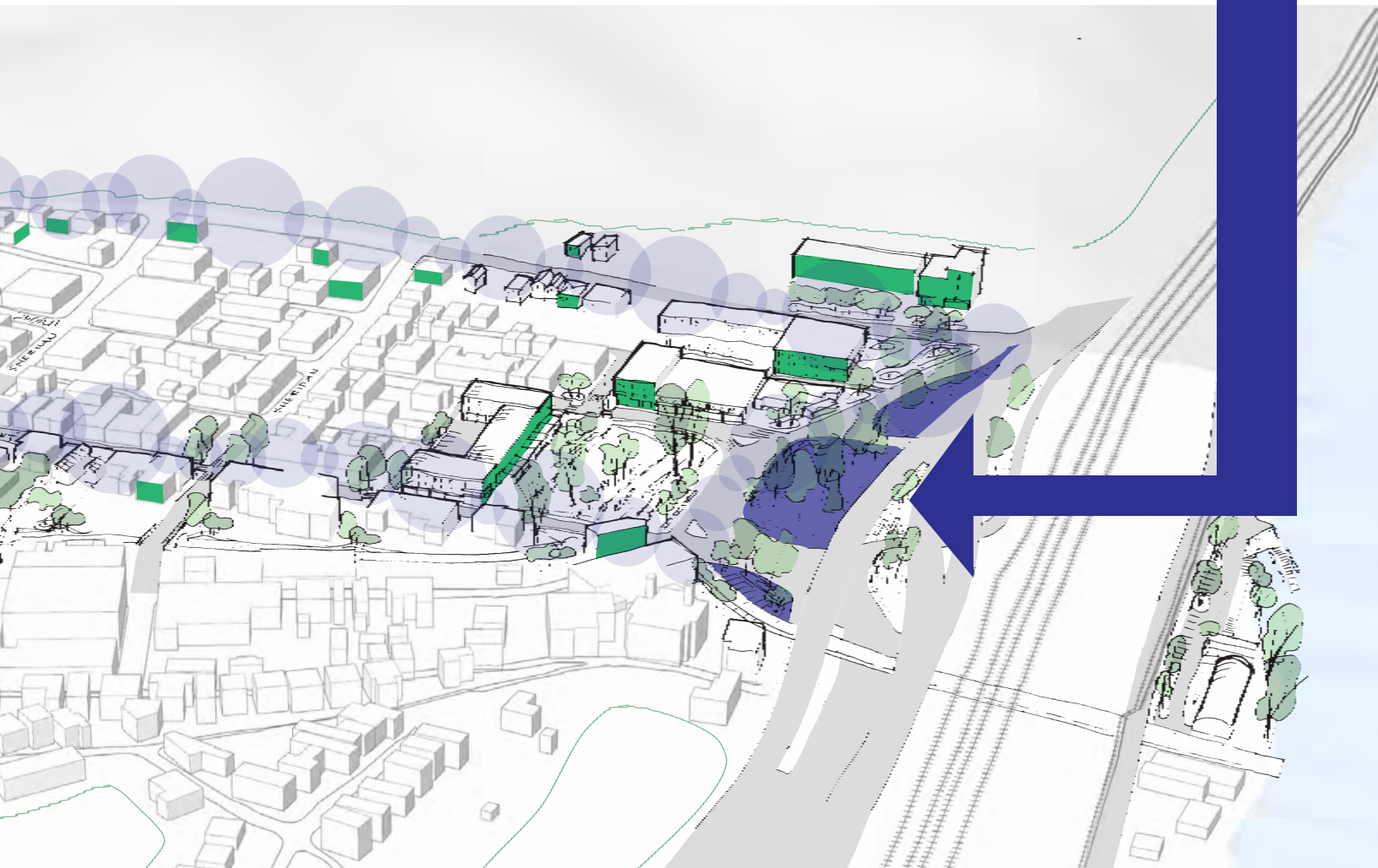
Image: Art Piece Indicating Air Quality, www.slate.com

CLEAN AIR PARK

A clean air park would help block pollution created by cars on the adjacent highway so residents have an outdoor area where they can breathe easy.



Image: SeekNewTravel.com





future catalytic project
Millvale EcoDistrict

EQUITY

Millvale is a place of self-determination, where Millvalians are able to participate and shape their future as well as the future of Millvale.

The Millvale EcoDistrict will be home to a diversity of people, who have access to and choices for health care, education, jobs and affordable housing and products, contributing to a high quality of life.

DIVERSE

EDUCATED

EMPOWERED

HEALTHY

EQUITY Background

Millvale will be a thriving, diverse urban neighborhood where a variety of positive health care, education, affordable housing, and job opportunities are available. This report is the start of a conversation about the meaning of equity in Millvale.

For the first time in years, the Pittsburgh region is growing and the issues faced by Millvale and other nearby communities are growing more complex. As with many industrial towns, Millvale has seen the great economic shifts that have accelerated the decline of the blue collar workforce. Equity in this context needs to address the evolution of opportunity for existing residents while anticipating the concerns of a new population.

The Pittsburgh region pulls in national and international accolades for livability amongst massive development activity. As development builds and supports asset growth, new residents and stakeholders begin to enter the community bringing fresh ideas and resources. In some parts of our region, after a certain threshold is reached, the original residents and stakeholders that are the community's backbone become priced out and the market shifts the population and community character. People move to a more affordable neighborhood that is often coupled with a lower quality of life.

With strong neighboring development markets, and Millvale's continued asset development, the Borough has entered into a cycle of growth where Millvale's guiding equity values of diversity, empowerment, education and healthcare become essential project considerations. Can we harness the power of the market to encourage investment, strengthen and grow community assets, and intentionally support mechanisms to ensure that Millvale's quality of life increases for everyone?

Community pride runs deep in Millvale, with current and former residents feeling a sense of connection and commitment to the town. This is seen through tireless volunteerism taking place throughout Millvale, as well as the commitment of our family-owned small-business community. Actualizing the recommendations put forth in Pivot 2.0 will depend on listening and understanding established residents and entrepreneurs, while providing pathways to participation for new and previously disconnected entrepreneurs and residents.



PLANET

People who live in equitable communities enjoy the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn and work. Additionally, they have the same degree of access to enjoy the natural environment.



PEOPLE

Equitable communities contain diverse populations who have access to food and healthcare, as well as healthy lifestyle choices.



PROFIT

People who live in equitable communities have choices, access to education, jobs, and job training as well as an affordable but high quality of life.



IDENTITY

An equitable Millvale maintains its "small town" feel while acting as a regional EcoDistrict leader.



Underlying the entire Pivot 2.0 plan is the ultimate goal of enabling residents to directly improve their quality of life. The community wants the pathways to participation to be open, connecting and welcoming both to new and established residential, spiritual, social service and business communities. This report summarizes the early equity-related thoughts and aspirations of the community and will be further developed in 2016. The early principles are:

Diverse

A diverse community that is welcoming, desirable, offers a diversity of product, is affordable, allows residents to stay in place and includes many places to engage.

Healthy

A community that provides access to healthy food and healthcare service, contains a healthy environment, has improved indoor and outdoor air quality and provides healthy lifestyle choices.

Educated

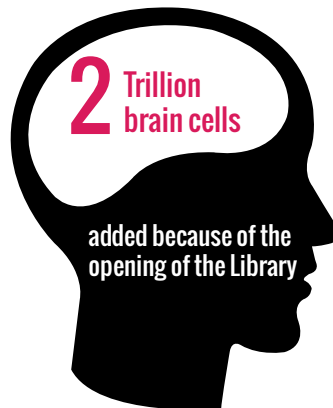
A community that provides educational choices, including integrated formal and informal educational opportunities, job training opportunities to participate in growth and a Living Learning Lab to support other neighborhood-scale community efforts.

Empowered

An empowered community that can shape their own environment, will maintain Millvale's "small town" feel, ensure that future developments contribute to the skills and opportunities for Millvalians and increase job and volunteer participation.



Age distribution in Millvale resembles other growing areas with a large working age population.



250+
new Library card holders



EQUITY Actions

Identifying and tracking energy-related metrics will help Millvale set goals and measure success towards achieving their goals by the year 2030.

1 Gather and establish baseline data.

Millvale has access to publicly available data but needs to comprehensively gather data sets to be able to look for causality or correlation. Ideally, data should be managed with dynamic systems for ongoing monitoring of key metrics.

- Determine targeted metrics to drive decisions around promoting diversity, education, healthcare and empowerment.
- Gather qualitative (attitudes and emotions count!) as well as quantitative data to analyze.
- Highlight and share storytelling through community events.
- Engage Allegheny County Health Department health data through collaboration with Shaler Area School District.
- Create a comprehensive community needs assessment.

MILLVALE HAS ALREADY...
built a community Library that contains many sustainability features in addition to offering educational programming.

2 Maintain affordability and build community wealth.

As Millvale's EcoDistrict develops and the Borough increases in popularity, it will become increasingly difficult to find affordable housing in the community. Affordability should be viewed as a priority in Millvale, including opportunities for existing Millvalians to build wealth.

- Require a large percent of newly constructed housing units to be affordable for both new and incoming residents.
- Establish a community land trust to ensure community stewardship of the land and guarantee long-term housing affordability. This model of land ownership will provide residents the opportunity to build community wealth.
- Establish funding models and low interest loans to support residents who are starting a business or looking to purchase a home.
- Recruit housing co-ops (such as artists co-ops) to re-locate or establish themselves in Millvale.
- Encourage property acquisition by existing stakeholders to prevent displacement of current residents.
- Reach out to all Millvale property owners to understand potential sales and property turnovers, and match opportunities with interested parties.
- Create sustainable employment and business opportunities.



3 Create pathways for participation.

One of Millvale’s strengths during the EcoDistrict planning process includes the residents strong sense of community participation and activation. Millvale should maintain this strength while encouraging additional residents to participate.

- Partner with community-based organizations to engage existing stakeholders and welcome new community members.
- Develop a “Welcome to Millvale” packet and online platform that can act as a clearinghouse of information to lower barriers of entry for new stakeholders.
- Use metrics from equity recommendation #1 to create a set of diversity expectations for community-based organization Boards.
- Use metrics from equity recommendation #1 to create a scorecard where community-based organizations can rank potential investments and projects based on their level of community benefits (e.g. jobs, green construction attributes, job training, etc.).

MILLVALE HAS BEEN...
home to Sisters of St. Francis at Mt. Alvernia for 150 years, who are committed to service in Millvale.

4 Measure, grow and communicate.

Using the metrics and baseline data collected as part of recommendation #1, Millvale should continue to track it’s progress in both quantitative and qualitative ways.

- Institute a 3-year process to measure and document growth.
- Develop a “Faces of Millvale” photography exhibit, to be displayed at the Millvale Community Library.
- Update the Millvale Planning Initiative-style deep dive into the homes and businesses of Millvale.
- Create an internal communications channel to help shape the way Millvale residents see ourselves, in addition to targeted press releases to influence Millvale’s external narrative.
- Choose an EcoDistrict-related framework to pursue and track progress towards certification.

EQUITY RESOURCES

Sol-Lux Alpha building (San Francisco’s first passive house), Lloyd Klein and John Sarter of Off The Grid Design

EQUITY Projects

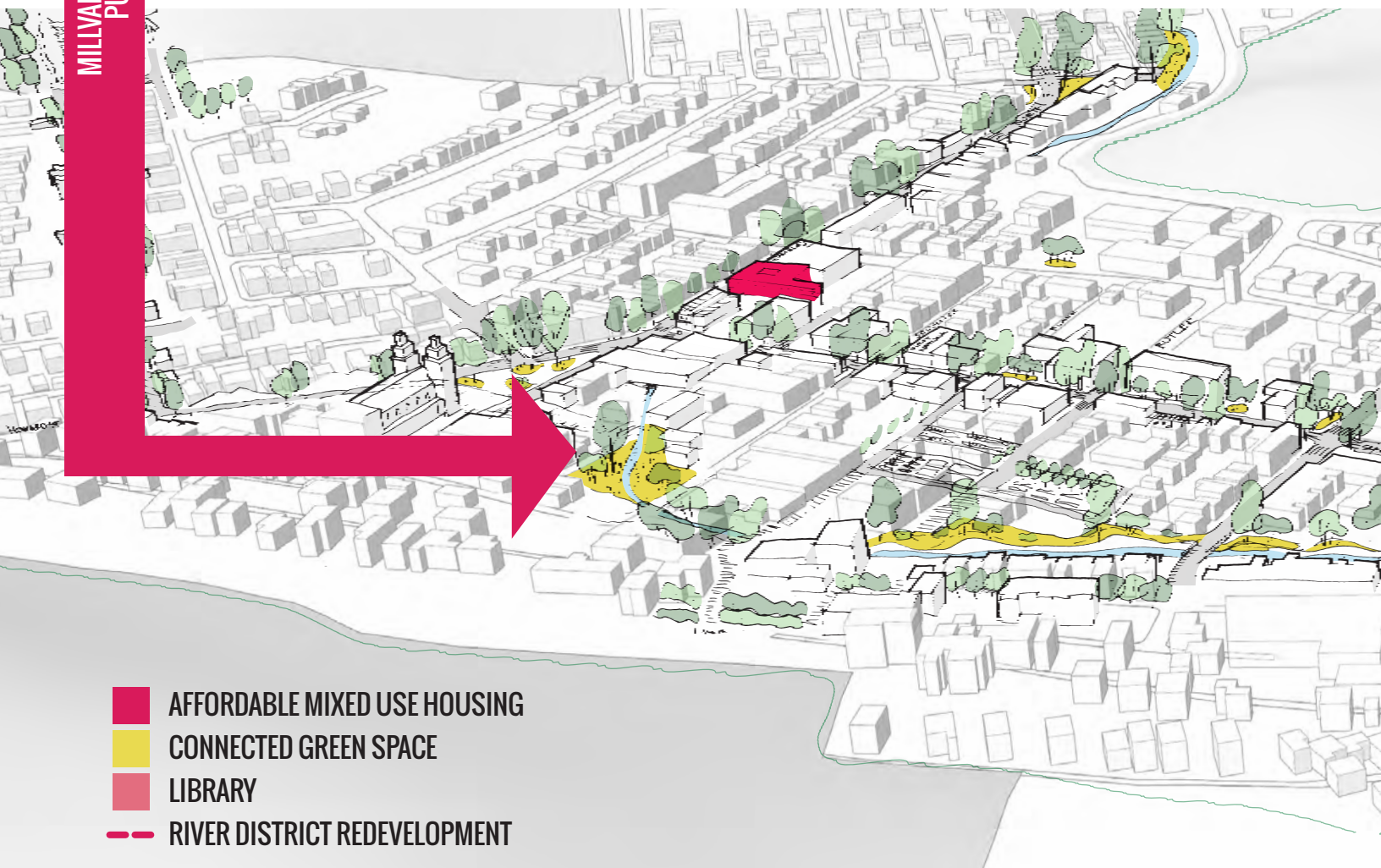
The following recommended projects will help Millvale achieve the Borough's 2030 goals, while making a visible statement of Millvale's commitment to sustainability.

MILLVALE'S GREENSPACE NETWORK PROVIDES PUBLIC AREAS FOR RESIDENTS TO ENJOY



CONNECTED GREEN SPACE

Managing Millvale's floodplain liabilities by intentionally crafting a greenspace network that is accessible to all.



NEWLY CONSTRUCTED HOUSING IN MILLVALE IS AFFORDABLE AND HIGH PERFORMING



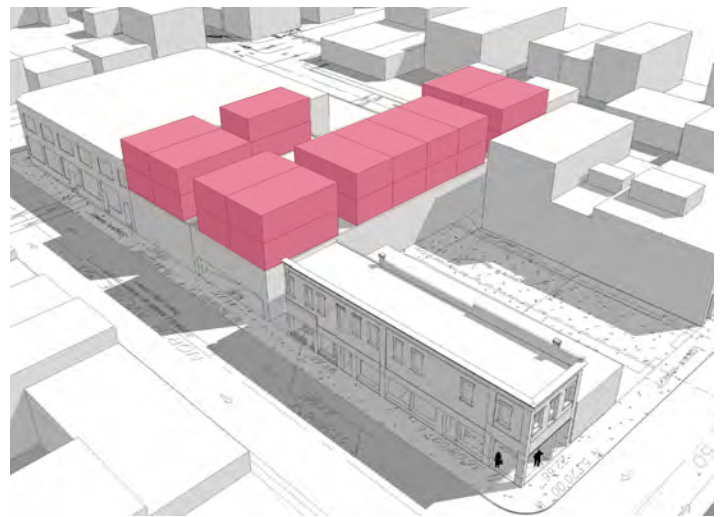
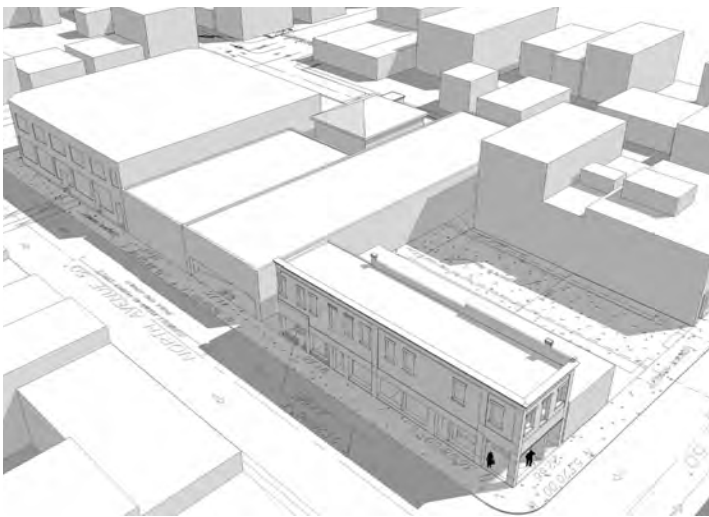
AFFORDABLE HOUSING

Housing that is affordable to construct, operate and maintain and allows Millvalians to build equity.



Images: Inhabitat.com





KITMAN BUILDING MIXED USE REDEVELOPMENT

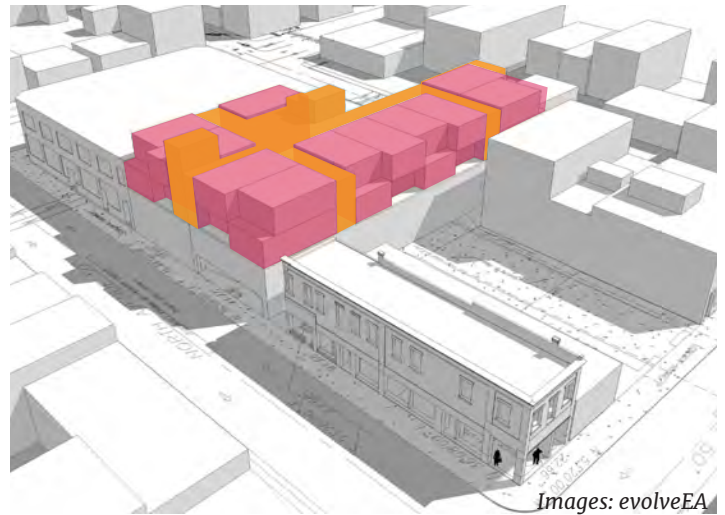
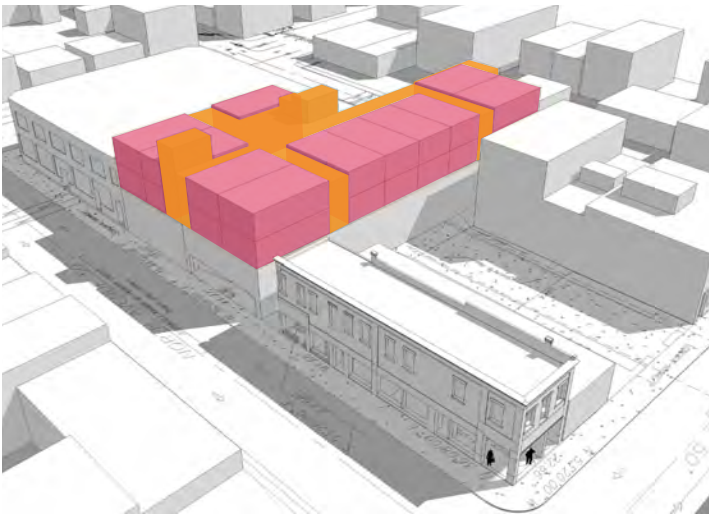
In 2014, the MCDC acquired the buildings at 216 and 220 North Ave. One had laid vacant since the 2004 flood and the other, the recently closed Jerry Kitman Fine Furniture building, had been a mainstay in the community for decades. Centrally located in the Town Square Project, these buildings will serve as the foundation for a new mixed-use development with ground floor retail and micro-unit housing above.

As urban centers have begun to densify, micro-unit housing has emerged as a solution to affordable housing demand. The units at 216 and 220 North Ave will address this downsized, affordable housing demand with 400-500 square foot units overlooking the bustle of the Town Center. At that scale, the development could house 12-15 one- to two-bedroom units on each floor, for a total of 24-30 new housing units. Utilizing prefabricated, modular

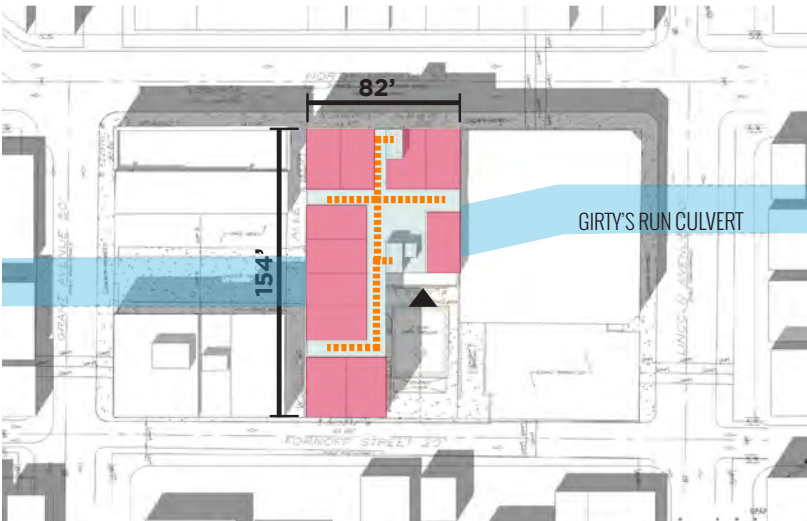
building technology could add to the affordability of the units and provide an innovative method of expanding on the existing buildings.

Fitting the rooftops of the residential units with photovoltaic panels would add nearly 9000 square feet of energy-producing potential, which could offset resident energy usage and establish a Town Center energy hub.

The buildings at 216 and 220 North Ave are unique in that they sit directly on top of the buried portion of Girty's Run. This positions the buildings in FEMA's floodway zone, meaning that they will need to be renovated to floodproofing standards. The solutions used to floodproof this development could then serve as a guide for future floodproofing of commercial buildings in the extensive flood zone of central Millvale.



Images: evolveEA



SITE

216 North Ave: 6,400 gsf
 220 North Ave: 3,370 gsf
 TOTAL: ~ 9,800 gsf

ZONING

Type S (Mixed Use)
 2000 min. SF per dwelling
 50% max lot coverage
 "Mixed Non-Residential/Residential" land use is permissible by right (§202 Table 1)
 40' or 50' height limit (two limits stated in code)

BUILDING EFFICIENCY

Common efficiency ration (R-2): 60-70%
 $9,800 \text{ gsf} \times 65\% \text{ (efficiency)} = \sim 6,300 \text{ net usable sf}$
 $6,300 \text{ nsf} / 525 \text{ sf units} = 12 \text{ units per story}$
 Parking (Pittsburgh): 1 parking spot per unit

BUILDING MASSING ISSUES

Modular units
 Potential outdoor spaces
 Views
 Rear entry (Fornoff Street)

BUILDING CODE

Type V-A construction (protected wood frame)
 Upper levels: R-2 use classification (multi-unit residential)
 Ground level: M (mercantile), B (business), or A-2 (restaurant)
 Fire separation between uses (R-2 & M/B (none); R-2 & A-2 (1 hr if sprinkled, 2 hr if nonsprinklered))
 Type V + R-2: three story, 12,000 sf/story limit
 Occupant load: 200 gsf per person = 49 occ/story
 Stair width: occ load 1-50: 36"; 50-100: 44"
 75' path of single travel (125' if sprinklered)



FRAMEWORK PROVIDER	NEW OR EXISTING COMMUNITIES	COMPLIANCE	CERTIFICATION FEE	CATEGORIES/ CONCEPTS
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ECODISTRICTS PROTOCOL

Portland Sustainability Institute	Both	Must complete all process-based deliverables, including self-defined targets and strategies	Protocol is still in development, cost is currently unknown	<ul style="list-style-type: none"> Place Prosperity Health & Wellbeing Connectivity Ecosystem Health Resource Protection
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LEED FOR NEIGHBORHOOD DEVELOPMENT

The U.S. Green Building Council, The Congress for New Urbanism, and The Natural Resources Defense Council	Predominately new construction, but can be pursued by both	Must achieve prerequisites, can choose from a set of credits to reach desired certification level	For projects under 20 acres: \$29,500 to \$31,750	<ul style="list-style-type: none"> Smart Location & Linkage Neighborhood Pattern & Design Green Infrastructure & Buildings Innovation & Design Process Regional Priority
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LIVING COMMUNITY CHALLENGE

International Living Futures Institute	Predominately new construction, but can be pursued by both	Must achieve all imperatives	For projects between 10-25 acres: LC Masterplan Compliance - \$15,000 LC Certification - \$30,000	<ul style="list-style-type: none"> Beauty Equity Water Health + Happiness Energy Materials Place
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STAR COMMUNITIES

STAR Communities	Existing communities	No requirements, can choose from a set of credits to reach desired certification level	\$1,500	<ul style="list-style-type: none"> Built Environment Climate & Energy Economy & Jobs Education, Arts & Community Equity & Empowerment Health & Safety Natural Systems
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ENTERPRISE GREEN COMMUNITIES

Enterprise Community Partners, Inc.	Affordable housing new construction	Must achieve the mandatory requirements, can choose from a set of credits to reach desired certification level	Free	<ul style="list-style-type: none"> Integrative Design Location + Fabric Site Improvements Water Conservation Energy Efficiency Materials Healthy Environment O & M & Engagement
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ECODISTRICT FRAMEWORKS

There are many resources available to communities who are committed to sustainability. Frameworks can be third party rating systems, evaluation protocol, standards or programs that define criteria of excellence and strategies for particular areas of performance.

Third party evaluation tools and standards provide effective mechanisms for communities to pragmatically and impartially gauge progress toward greater sustainability. Certification and standardization of sustainability achievements have fundamentally changed rates of adoption and uptake across scales (from the building to

community scale), because they often provide a common language for users, detailed guidance for implementation, a market for services and competition and opportunities for branding and differentiation or recognition. Millvale may consider pursuing one or more of the following frameworks in the future.

ECODISTRICTS PROTOCOL

Just, sustainable and resilient cities and neighborhoods for all.

LEED FOR NEIGHBORHOOD DEVELOPMENT

Protect and enhance the overall health and quality of our natural environment and our communities.

LIVING COMMUNITY CHALLENGE

Envision a future that is socially just, culturally rich and ecologically restorative.

STAR COMMUNITIES

A healthy environment, a strong economy and improved well-being of the people living in the community.

ENTERPRISE GREEN COMMUNITIES

Make the transition to a green future for affordable housing.

ECODISTRICTS PROTOCOL

The EcoDistricts Protocol is a process-based framework and certification standard that empowers equitable, resilient and sustainable neighborhoods and districts for all. After five years of research, development and field-testing, the first official completed Protocol is set to be released in March 2016.

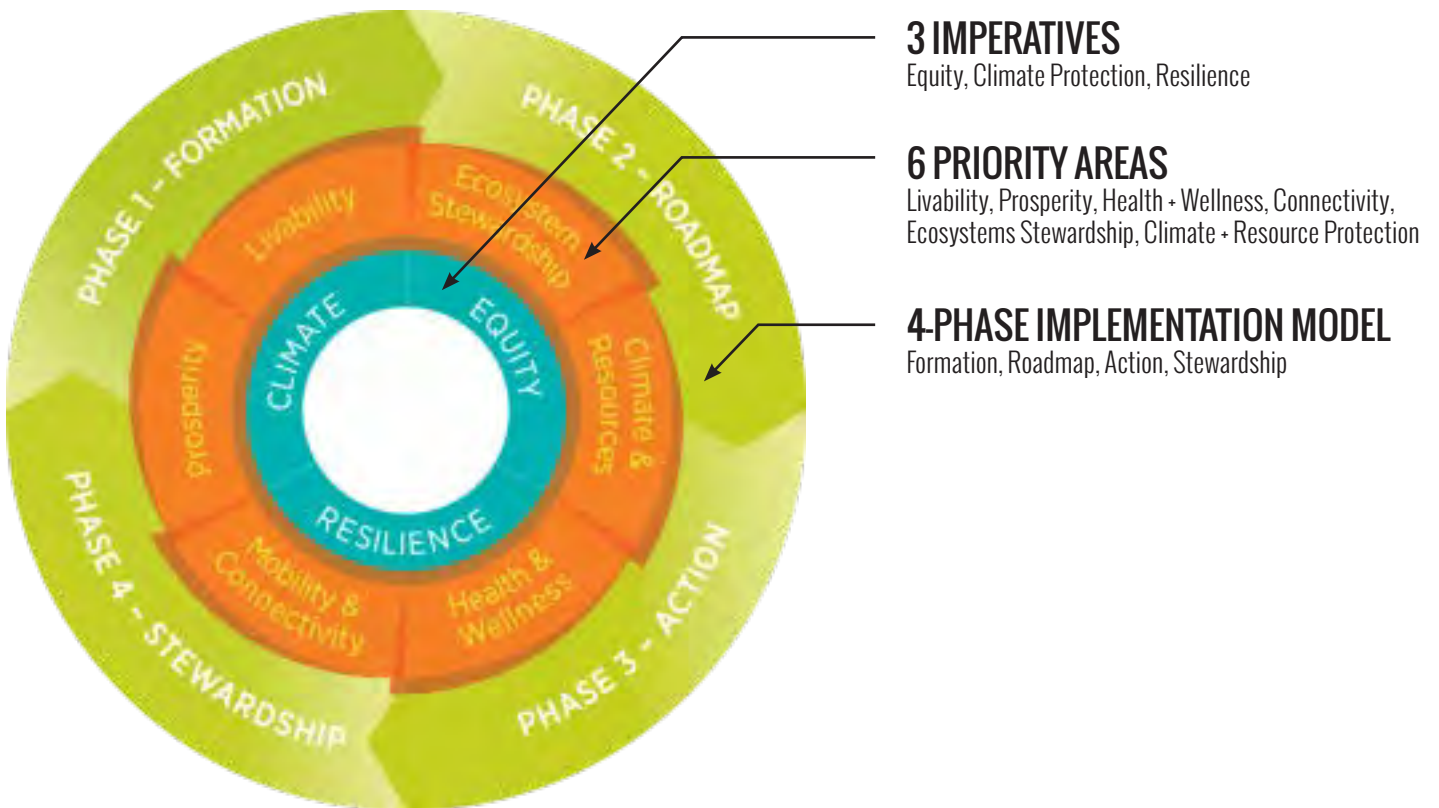
Achieving the Protocol starts with an unwavering commitment to three Imperatives: Equity, Resiliency and Climate Protection. These Imperatives should be embedded in the foundation of the project.

At the heart of the Protocol are six Priority Areas: Place, Prosperity, Health & Wellbeing, Connectivity, Ecosystem Health and Resource Protection. These performance areas are used to help scope and define the project's sustainability agenda, and serve as the sustainability lens of the EcoDistricts Protocol.

Underpinning the EcoDistricts Protocol is a three-phase Implementation Model. The Model is designed to set the conditions for sustained, scalable outcomes critical to the specific needs of the neighborhood or district, by building in collaboration, transparency and information sharing. The three phases are: District Formation, Roadmap and Action.

Projects must complete a series of required steps at each phase of the project, addressing the Priority Areas, in support of the Imperatives, to achieve EcoDistricts Certification. Projects may seek EcoDistricts Certification at any phase of the project once the Project Manifesto has been endorsed by EcoDistricts.

Source: www.EcoDistricts.org



LEED FOR NEIGHBORHOOD DEVELOPMENT (LEED-ND)

LEED for Neighborhood Development (LEED-ND) is a voluntary rating system that incorporates principles of smart growth, New Urbanism and green building into a national standard for green community design. Like other LEED rating systems, it is designed to evaluate and guide the design and construction of development projects using objective, measurable criteria. Projects may constitute whole neighborhoods, portions of neighborhoods, or multiple neighborhoods. Projects are often mixed-use, though small single-use projects that complement existing neighborhood uses may also use the rating system.

LEED for Neighborhood Development differs from other commercial and residential LEED rating systems because it has three stages of certification that relate to the phases of real-estate development:

Stage 1 Conditionally Approved Plan

Provides the conditional approval of a LEED-ND Plan available for projects before they have completed the entitlements, or public review, process. It is envisioned that completing Stage 1 will help projects get support from the local government and from the community.

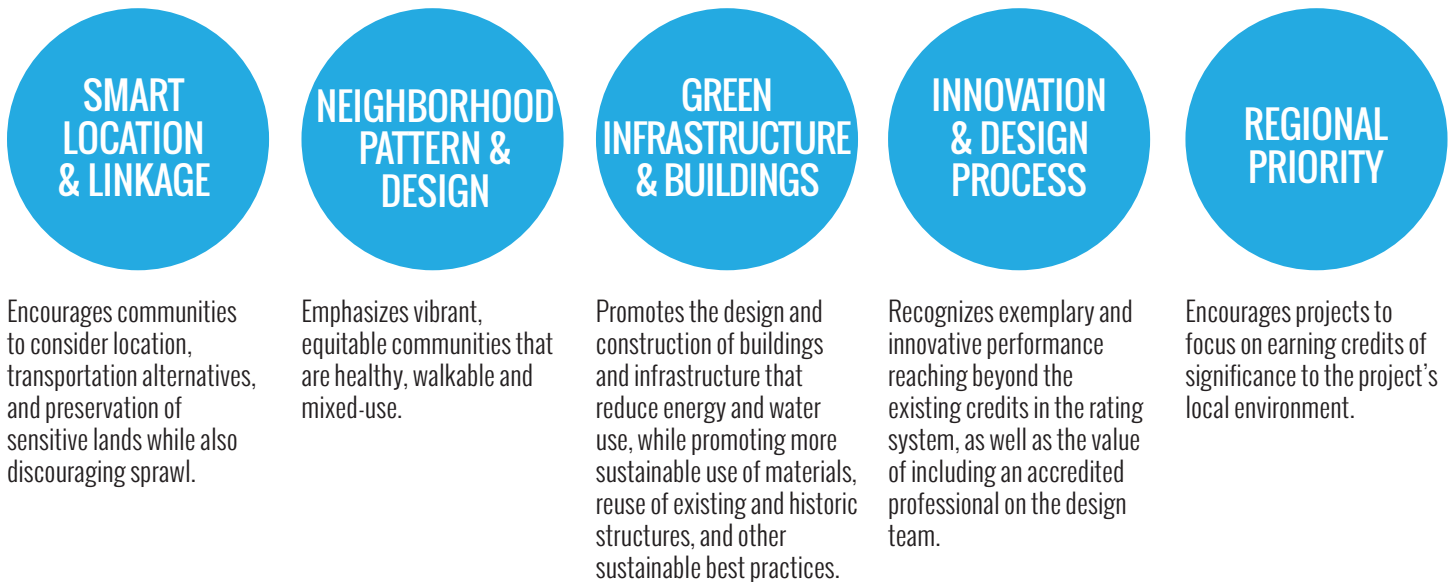
Stage 2 Pre-Certified Plan

Pre-certifies a LEED-ND plan and is applicable for fully entitled projects or projects under construction. Completing this review can help projects secure financing, expedited permitting or attract tenants.

Stage 3 Certified Neighborhood Development

Completed projects formally apply for LEED certification to recognize that the project has achieved all the prerequisites and credits attempted.

Source: www.USGBC.org



LIVING COMMUNITY CHALLENGE

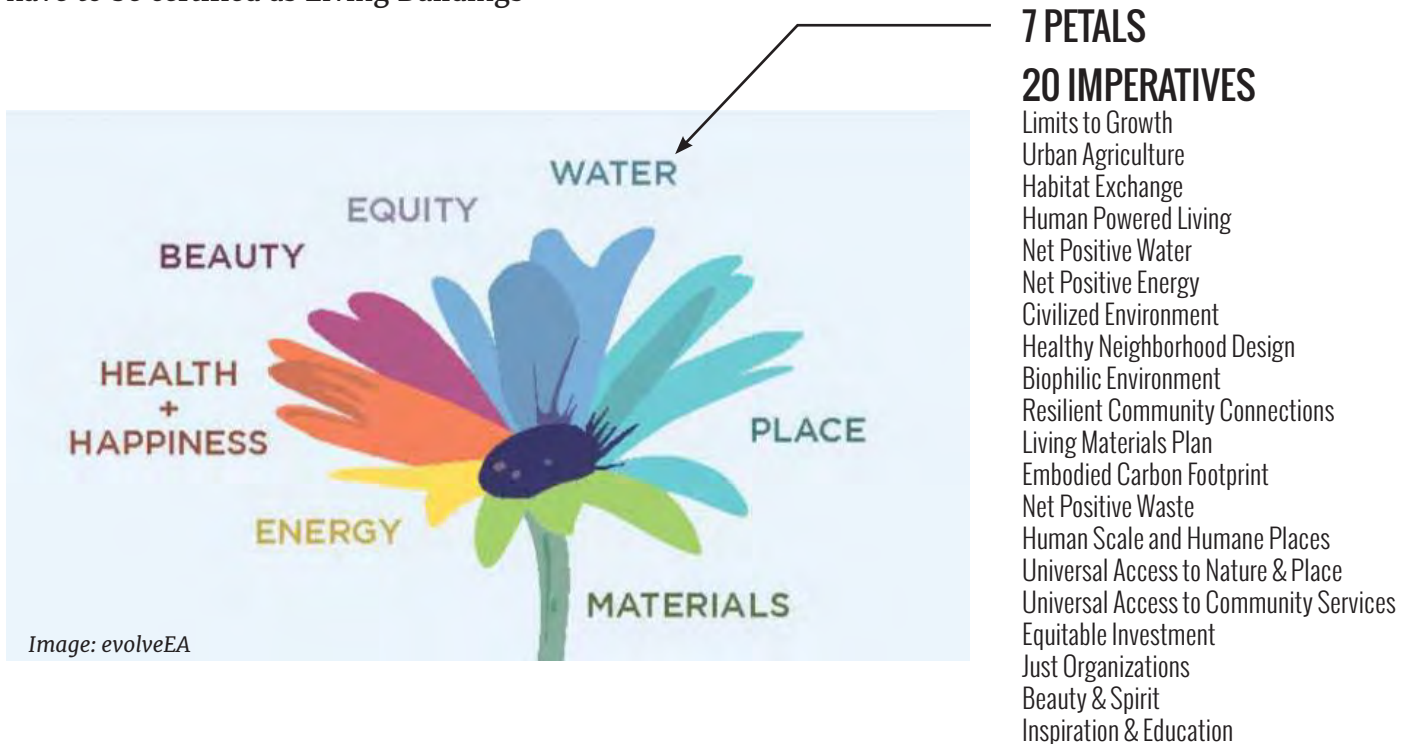
The Living Community Challenge is an exciting new program by the Institute to help planners and developers rethink how they design their community-scale projects, and provide a compliance review process at the master planning stage and certification for fully built community or campus scale projects. Whether your project is a street, block, corridor, small or large neighborhood, or campus—it has a home in the Living Community Challenge.

Once a planned Living Community has completed construction and has a minimum of twelve months of continuous operation, it may apply for Petal or Living Community Certification. Because a Community is often built in phases, The Community may work with the Institute to determine if the phase is significant enough to trigger certification for that portion of the development. This is likely a suitable strategy for large community or campus plans. Existing buildings within the community or buildings not under the ownership of the Community do not have to be certified as Living Buildings

(although they are encouraged to be). However, all built infrastructure within the Living Community must meet the requirements of the program. In addition, all buildings owned or developed by the community must meet the Living Building Challenge for the project to earn full Living Community certification status.

The Institute recognizes that it can take years and sometimes decades to develop masterplans, then years more for those plans to evolve into completed projects ready for occupancy. Living Community Masterplan compliance acknowledges this reality and reviews masterplans at the first stage toward Living Community Certification. This powerful new tool can guide developers and planners during a project’s critical conceptual phases, public review or planning efforts, acknowledging and certifying world-class planning efforts at this critical early juncture.

Source: www.Living-Future.org



STAR COMMUNITIES

STAR Communities is a national framework and certification program that recognizes sustainable communities. The rating system helps communities identify, validate and support implementation of best practices to improve sustainable community conditions. Local governments use STARS as a roadmap, planning tool, to organize/guide public engagement processes, to aid in decision-making, for performance-based budgeting and as a measuring stick to determine whether their investments are achieving outcomes.

The rating system's evaluation measures collectively defined community-scale sustainability and presents a vision of how communities can become healthier, more inclusive and prosperous across seven goal areas. The system's goals and objectives provide a much-needed vocabulary that local governments and their communities can use to more effectively strategize and define their sustainability planning efforts.

The STAR Community Rating System contains two types of evaluation measures, community level outcomes and local actions.

Community level outcomes are measurable, condition-level indicators that show community progress on a STAR Community Rating System Objective. Examples include reductions in energy use or increased transportation access.

Local actions are the things you do to move toward the Community Level Outcomes - the range of decisions, investments, programs, plans and codes that a local community puts in place. Actions focus on interventions that move the needle toward desired Outcomes, and can be done by both the local government and other community groups and partners.

Source: www.STARCommunities.org



ENTERPRISE GREEN COMMUNITIES

Enterprise Green Communities is improving the health and well-being of low-income people by transforming the quality of affordable housing in America. By aligning affordable housing investment strategies with environmentally responsive building practices, Enterprise is leading the national effort to ensure that people living in affordable housing are healthier, spend less money on utilities and have more opportunities through their connections to transportation, quality food and health care services. The building stock is also improved because Certified Enterprise Green Community properties cost less to operate and maintain, use fewer natural resources, generate less waste and contain fewer toxic materials, contributing to a healthier environment.

The 2015 Enterprise Green Communities Criteria captures the collective experience of affordable housing

developers and leading housing and green building organizations and experts. This collaborative approach provides a clear, cost-effective framework for affordable housing. Their commitment to a thorough integrative design process, optimized location and site features, water conservation, energy efficiency and property operations practices is demonstrated by the 2015 Criteria. The framework also includes thoughtful integration of resilient design features and has an expanded emphasis on residents' health.

The Criteria is suitable for all development types, including new construction, substantial rehab and moderate rehab in both multifamily and single-family projects. Where relevant, exemptions based on project location or on development type are identified within each criterion.

Source: www.EnterpriseCommunity.com



2030 DISTRICTS

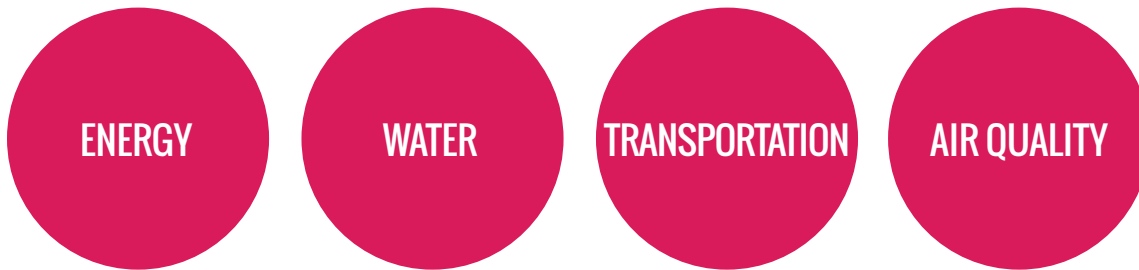
The Pittsburgh 2030 District is an interdisciplinary public-private-nonprofit partnership of building owners and managers, community stakeholders and resource partners convened by the Green Building Alliance (GBA), who are committed to the aggressive building performance goals of the 2030 Challenge.

The framework is based on the Architecture 2030 Challenge, which

provides property performance targets. Existing buildings are challenged to achieve 50% reductions (below baseline) in energy use, water consumption and transportation emissions by the year 2030.

This framework is not a certification, there are no credits, instead buildings are simply challenged to meet targets in each category.

Source: www.2030Districts.org

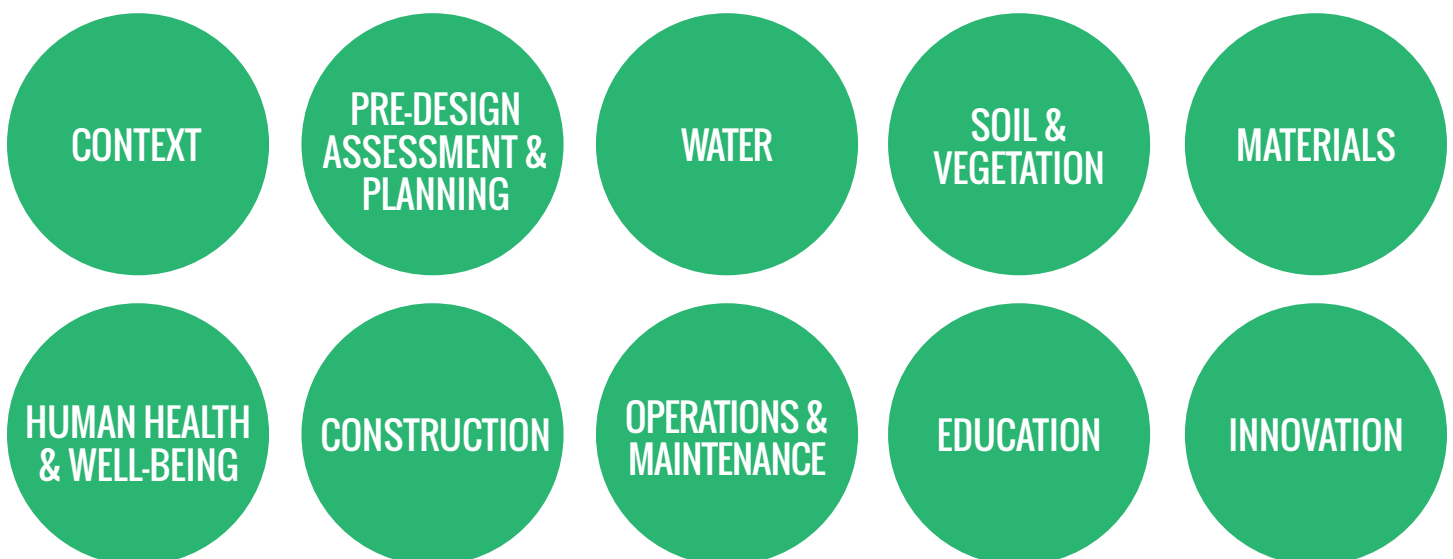


SUSTAINABLE SITES INITIATIVE (SITES)

The SITES Rating System is a set of comprehensive, voluntary guidelines together with a rating system that assesses the sustainable design, construction and maintenance of landscapes. It is used by landscape architects, designers, engineers, architects, developers, policy-makers and others to guide land design and

development. SITES can apply to projects at various scales, with or without buildings. Project types include: open spaces, streetscapes, commercial and educational / institutional campuses, residential neighborhoods and yards, military and more.

Source: www.SustainableSITES.org



ECODISTRICTS PROTOCOL	LEED ND	LIVING COMMUNITY CHALLENGE	STAR COMMUNITIES	ENTERPRISE GREEN COMMUNITIES	SITES	2030 DISTRICTS
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PLACE	SMART LOCATION & LINKAGE GREEN INFRASTRUCTURE & BUILDINGS	PLACE	BUILT ENVIRONMENT		CONTEXT	
		WATER		WATER CONSERVATION	WATER	WATER
		ENERGY	CLIMATE & ENERGY	ENERGY EFFICIENCY		ENERGY
HEALTH & WELLBEING		HEALTH & HAPPINESS	HEALTH & SAFETY	HEALTHY LIVING ENVIRONMENT	HUMAN HEALTH & WELL-BEING	
		MATERIALS		MATERIALS	MATERIALS	
ECOSYSTEM HEALTH	REGIONAL PRIORITY		NATURAL SYSTEMS			
RESOURCE PROTECTION						
CONNECTIVITY	NEIGHBORHOOD PATTERN & DESIGN			LOCATION & NEIGHBORHOOD FABRIC		TRANSPORTATION
	INNOVATION & DESIGN PROCESS			INTEGRATIVE DESIGN	INNOVATION PRE-DESIGN ASSESSMENT & PLANNING	
		EQUITY	EQUITY & EMPOWERMENT			
PROSPERITY			ECONOMY & JOBS		EDUCATION	
			EDUCATION, ARTS & COMMUNITY		EDUCATION	
				O&M AND RESIDENT ENGAGEMENT	OPERATIONS & MAINTENANCE	
				SITE IMPROVEMENTS	SOIL & VEGETATION	
		BEAUTY			CONSTRUCTION	AIR QUALITY

MILLVALE ECODISTRICT FRAMEWORKS ANALYSIS

Millvale and evolveEA worked together to develop six focus areas to guide the EcoDistrict plan. Compared to other sustainability frameworks, there is some focus area overlap, however, Millvale’s focus areas do not map directly onto any of the EcoDistrict frameworks analyzed in this report.

ECODISTRICTS PROTOCOL

Millvale’s focus areas overlap somewhat with the EcoDistrict Protocol’s Priority Areas. The Health & Wellbeing, Ecosystem Health and Resource Protection Priority areas relate directly to Millvale’s “Food” focus area, Connectivity relates to “Mobility”, and Prosperity relates somewhat to Millvale’s “Equity”. While the Priority Areas act as the basis of the EcoDistrict recommendations, the Protocol is more focused on the process used to create and implement the plan. With this in mind, Millvale has already completed many of the certification requirements, including: A community-based asset map, context summary, baseline data assessment, EcoDistrict targets and an EcoDistrict roadmap. This framework is a good fit for Millvale, and if the Borough decides to pursue it, many of the required steps have already been completed or are currently in motion.

LEED FOR NEIGHBORHOOD DEVELOPMENT (LEED-ND)

Millvale’s focus areas have minimal overlap with LEED ND. This framework is primarily for new communities, and only two of the credit categories overlap with Millvale’s focus areas (Neighborhood Pattern and Design & Regional Priority). If Millvale pursues this framework, it will require a lot of effort to comply with this framework’s requirements.

LIVING COMMUNITY CHALLENGE (LCC)

This framework has significant overlap with Millvale’s focus areas, but requires a more rigorous level of completion than the Borough is able to achieve. Millvale cannot financially achieve LCC’s net positive energy and net positive water requirements at this time, but does share LCC’s focus on Water, Energy, Health & Happiness and Equity.

STAR COMMUNITIES (STAR)

The STAR Communities planning tool may be useful as Millvale continues establishing EcoDistrict goals. STAR’s flexibility allows the Borough to easily fit its sustainability goals into this framework’s existing categories. STAR and Millvale overlap in terms of Climate & Energy, Health & Safety, Natural Systems and Equity & Empowerment, with a minor connection to Economy & Jobs and Education, Arts & Community.

ENTERPRISE GREEN COMMUNITIES (EGC)

One of Millvale’s EcoDistrict goals is for the Borough to remain affordable for existing and incoming residents. Similarly, EGC’s main focus is to improve the health and well-being of low income people through affordable housing. Despite EGC and Millvale’s alignment on this issue, Millvale has many other EcoDistrict goals in addition to this, which Millvalians hold equally important. With that said, the framework has many overlaps with Millvale’s focus areas, including Water Conservation, Energy Efficiency, Healthy Living Environment and Location & Neighborhood Fabric. If Millvale pursues this framework, they will see that some EGC requirements are already in motion.

SUSTAINABLE SITES INITIATIVE (SITES)

SITES is a landscape-based framework, and because of this, Millvale’s six focus areas do not overlap much with SITES (there is only overlap with Water and Human Health & Wellbeing). Millvale may consider this framework for future landscape-based projects, such as parks, but it would not align well with Millvale’s overall EcoDistrict plan.

2030 DISTRICTS

The structure of 2030 Districts is unique because they bring together different building owners for a common cause. This is similar to Millvale’s downtown, where various building owners must work together to achieve Millvale’s EcoDistrict goals. Because of this, establishing a Millvale 2030 District, either in collaboration with the Green Building Alliance or independently, might be useful in helping Millvale achieve its goals. 2030 Districts include only four focus areas, but these focus areas map directly onto Millvale’s focus areas, including Air (which has no overlap with any of the other frameworks). If Millvale decides against starting a 2030 District, the Borough can at least learn from existing 2030 Districts in their structures, goals and methods.



MILLVALE

ECODISTRICT PIVOT 2.0

