

# HILLCREST REDEVELOPMENT SUSTAINABILITY WORKGROUP

Meeting Minutes | April 22, 2022

## Attendees

- Russ Stark
- Mike Hirabayashi
- Chelsea DeArmond
- Matt Doll
- Bill Alms
- Monte Hilleman
- Becky Alexander
- Jess Vetrano
- Bob Barth

## MEETING SUMMARY

1. Icebreaker – Earth Day Reflections
  - a. Monte – constantly reflecting on his work in this field and gets teary thinking his daughters and the future that we’re leaving them. And what we’re leaving seven generations from now.
  - b. Russ – the task at hand is very overwhelming, all the work that needs to be done, so it helps to think about everything that we’ve accomplished thus far
  - c. Bob – thinking about how to give urban kids access to open space and their work can improve that
    - i. Introduces himself, Director of Land Development at WSB
    - ii. Involved on the last of the sewer separation project in St. Paul 30 years ago
    - iii. Here to talk about next-generation stormwater at The Heights
    - iv. Monte’s thesis reflected on the pathologies that might result from lack of access to greenspace
  - d. Mike – aspiring to a world where his family in California doesn’t need to flee their homes every time there’s a fire season
  - e. Bill – special guest, expert in water resources and building sustainable solutions; it’s a nice day to reflect on the impacts that our projects are making, improving environmental impacts
  - f. Chelsea – it can be frustrating to not see progress, there’s only so much we can do as an individual, but working in groups like this help feel like we’re making progress on a bigger scale
  - g. Matt – this time of year, most of his work revolves around the state legislature, some is disappointing, but there are now a lot of people in the legislature where climate is their number one issue; even traditional deniers can’t avoid it
  - h. Tiffani – reflecting on major policy successes, like getting rid of the hole in the ozone and how the Ohio River isn’t on fire anymore
  - i. Becky – encouraged that she gets to work every day on this stuff to help move the world in the right direction
2. Agenda Review
  - a. Next-generation stormwater
    - i. Bob and Bill will talk about it, some site-specific strategies for The Heights
    - ii. Monte will review other precedents from different Port projects
  - b. Embodied Carbon
  - c. Work Force Strategies
  - d. Next steps
3. Next-Generation Stormwater
  - a. Master Plan – treat stormwater as a resource
    - i. It’s a visual element as well as a regulatory, infrastructure element
    - ii. It can be very efficient to put it underground, but we’re trying to get as much of it above ground as possible
    - iii. We don’t want to overwhelm the landscape with stormwater and drown vegetation

- iv. Most builders will want interior drained buildings, but we will need to encourage them to drain outward to the landscape
- v. Encourage water reuse for irrigation
- vi. Two competing sustainability goals – PV roofs versus green roofs
- b. District stormwater concept
  - i. Stormwater diagram in the master plan conceptualizing the district stormwater plan – lines suggest conveyance and treatment
    - 1. Suggestion of the potential for underground storage – might be associated with infiltration if it makes sense to do so
    - 2. We need to understand the PCA tolerance for contaminants as relates to infiltration; we're supposed to be cleaning everything up, so it should be ok
    - 3. Wetlands can help polish the water quality, but treatment is supposed to be completed upstream of the wetlands
  - ii. St. Paul and Minneapolis both have a very strict definition in the difference between public and private stormwater
  - iii. Highland Bridge and Allianz Field led to the creation of St. Paul's green infrastructure district
    - 1. Russ and Wes Saunders-Pierce were integral to making those policy changes
- c. Best Management Practices
  - i. Small to large scale options – tree boxes/raingardens to underground storage
  - ii. Permeable pavements – they need to be in low-traffic areas without a lot of turning movements
    - 1. Not going to be in the areas where trucks need to be
    - 2. Great in parks and plazas
  - iii. Ponds – efficient way to accomplish flood control
  - iv. Chambers, vaults, cisterns for reuse
  - v. Wetlands for finishing
- d. Permeable surfaces
  - i. Best strategy is to detach impervious surfaces before water ends up in the storm system – direct the water to vegetation and let it soak in/evapotranspire
  - ii. Permeable pavements don't evapotranspire
- e. Contamination Remediation
  - i. Need to be careful with infiltration
  - ii. We will implement augmented water quality treatment
  - iii. If you can't infiltrate, you need to retain
  - iv. We are eliminating most of the contamination, since it is near the surface
  - v. Highest level of contamination will be moved off site
  - vi. Otherwise buried at least 4' deep and away from water resources
- f. Resilience and Adaptation
  - i. Drought resilience an important focus – especially for young trees
  - ii. Infrastructure designed to a 7" rain event standard (Atlas 14) which is more robust than most of Metro
  - iii. Flood protection includes flood storage and best practices in site design for routing excess stormwater that is outside of 100-year event
  - iv. Shallow vegetated overland conveyance to slow water down and promote infiltration/improve water quality – slows water velocity significantly to mitigate surges (which are more impactful than overall volume)

1. Tree canopy is another strategy to slow down/decrease surge events and increase resilience of groundcover plantings that are more protected from the sun
2. Vegetation choice is important – irrigated turf grass has far less value for stormwater mitigation than more robust, native options (deeper root systems)
- v. Maintenance is essential for these systems to maintain their resilience (e.g. sweeping/clearing of permeable pavement)
- g. Beacon Bluff Next Generation Metrics Overview
  - i. Involved brownfield remediation, stormwater treatment for new road construction
  - ii. Overlaid original Phalen Creek bed (drains directly into Swede Hollow Park and then the Mississippi River) and intercepted 143.6 acres of untreated residential runoff
  - iii. Built utility-scale underground infiltration system – perforated 10' diameter pipes wrapped in various soil media to support pipes and promote infiltration, such as tire-derived aggregate as a reuse opportunity
  - iv. Many permitting issues related to policy and science – overall lack of data internationally of environmental efficacy and performance of underground systems such as this – as a result many monitors/methods of measuring performance were installed
    1. First site to use a S.A.F.L. Baffle – interrupts the manhole swirl – and is now standard practice in watershed
  - v. Metrics feedback loops – BMPs vs Models vs Actual metrics (what this project provides)
  - vi. Measured outflow was 0 – indicating all inputs were infiltrated
  - vii. Ecosystem services of stormwater – groundwater recharge
  - viii. Partnership with the University of Minnesota to enhance research of actual performance metrics and enhance BMPs of stormwater infrastructure with real data (many assumptions are likely inaccurate)
  - ix. City saved half a million dollars through the sale of infiltration credits
  - x. Many awards were won for this project
  - xi. Opportunities for research stations such as this at The Heights? Would help move the industry and understanding of BMPs forward
- h. Group Conversation
  - i. Chelsea – seeing new trees put in last summer to replace what had been lost to Emerald Ash Borer was very exciting, but the impact of the major late summer drought on young trees is concerning – how can we learn from this to build in drought resilience and consider stormwater reuse?
    1. The district model makes a central collection point very difficult, and reuse systems can be expensive
    2. Greywater and blackwater reuse are also potentials but have their own financial implications
    3. Building high-maintenance systems requires building funding streams as well – hasn't been achieved yet – it is a source of jobs but lack of maintenance hurts both funding and system success
    4. Much focus/energy has been put toward understanding what users will be charged to be plugged into this system
    5. What is a low-cost way to avoid losing half of new trees that are planted and what is a way of reusing stormwater that is lower cost than UV treatment? What policy affects the reuse and makes it more expensive (potable water level required for reuse even as irrigation currently)

#### 4. Embodied Carbon

- a. Embodied carbon are the emissions associated with the life cycle of a building (including material extraction/processing/transporting, installation/construction, end of life disposal)
  - i. 20% of global emissions come from building materials
  - ii. Half of total new construction emissions between now and 2050 will be from embodied carbon
  - iii. Reduction targets have been set by various global organizations
  - iv. Knowledge surrounding embodied carbon has come a long way, resulting in many more tools/resources for the measurement and reduction of embodied carbon – which have informed the goals for this project
- b. Goals
  - i. Quantifying the community's carbon impact to understand how we can reach that goal more realistically
  - ii. Raise awareness to move forward the industry and make meaningful reductions
  - iii. Include a demonstration project to inspire future change (John Metza)
- c. Biggest Impacts
  - i. Materials used – using those with less embodied carbon
  - ii. Building Systems – Structure/exterior enclosure have a larger upfront impact, and interior impacts add up over time
  - iii. Building type – heavier the building, higher the impact
- d. Strategies
  - i. Savings can be achieved of up to 46% for less than 1% cost premiums
  - ii. Building lighter and smaller is the goal – efficient design
  - iii. Increasing the life span of buildings – most sustainable buildings are those that are already constructed
  - iv. Utilizing low-carbon materials – selection of just type of insulation can make a huge difference
    - 1. Environmental Product Declarations can help identify the lower-carbon facilities/products
- e. Master Plan currently calls for the project to model embodied carbon and use materials/techniques that lower it
- f. Covenants
  - i. Focused on the structure and enclosure – interior discussions could be raised in the design team meetings
  - ii. Buildings other than single-family homes shall conduct life-cycle assessments and evaluate feasibility of reducing global warming potential by 5-10%
  - iii. This would achieve 1-3 LEED points
- g. Group Discussion
  - i. City's policies do not currently get into embodied carbon – this may be due for another update
  - ii. Trying to understand the marketplace impact of requiring the analysis/measurement of embodied carbon – Port is currently analyzing because they know it is the right thing to do
- h. Demonstration project
  - i. Sustainable wood sourcing – helped sponsor grant application with Sustainable Forestry Initiative where Port committed to “supporting mass timber”

#### 5. Workforce Strategies will be moved to the next meeting

## 6. Next Steps

- a. Achieve workgroup consensus on recommendations
  - i. Who is the audience for this document?
    1. Master Plan is going to City Council on May 25<sup>th</sup>
    2. Port will use these as guiding principles to create consensus on decision making both internally and externally, citing support of the larger community to back up decisions
      - a. “Coalition building” to implement radically different things to achieve the goal of net zero – increases likelihood of success
- b. 2-part homework assignment – by next Friday, workgroup members should suggest top priority topics for the draft recommendations via email, Port team to create the draft document and distribute, workgroup members to review by 5/18 and provide any comments/concerns to Port team
  - i. Might be tight for timing due to Monte’s vacation
- c. Review areas of concern during Meeting 5