URBAN TREE REUSE PROJECT

Dead Urban Trees: Why Important? Why Repurpose?

- Every year hundreds, if not thousands, of trees die in urban areas due to weather, disease, or natural causes.
- Trees are extremely beneficial:
  - They sequester carbon (i.e., store CO_2) from the atmosphere.
  - They filter rainwater and reduce topsoil loss.
  - They create habitats for several species.
- But, when they die they become dangerous, because they can fall on and damage cars, buildings, power lines, and roads.
- Yet, simply disposing of dead trees in a landfill or by chipping or burning them is not a sustainable solution, as it will release all the carbon that the tree has sequestered.
- Recovering some or most of the wood from a tree and turning it into long-lasting items like a bench extends the time all that carbon is kept out of the atmosphere and benefits the community.
- We need to sustainably remove, replace, and reuse the trees that are so important in urban areas.

Our Goals

- This project is the second phase of our efforts to highlight the ecological and economic benefits of urban trees to local communities (See *Building Off Our Previous Work*).
- Our goal was to distribute our information about repurposing dead urban trees into park benches by:
  1. Building more benches out of locally sourced urban trees.
  2. Create an interactive map of the benches in Hartford parks, which people can access via a QR code on each bench.
  3. Create an online presence that is linked to the bench QR codes to walk people through the Urban Tree Reuse Project.

Building Off Our Previous Work

- Last year, we partnered with Heather Dionne (City of Hartford Arborist) and Tom Worthley (UConn Extension) to quantify the benefits made during the lifetime of an individual white ash tree located in Hartford's Bushnell Park that died and was scheduled for removal.
- Quantifying Benefits (Fig. 1; left photos): Using the National Tree Benefit Calculator, we predicted the benefits the tree provided over its lifetime:
  - The white ash was 129 years old and likely started growing when Arch was constructed.
  - The tree provided the community with ~$9377.61 in monetary benefits.
  - By the time it was 54 inches in diameter, it provided ~$345.81/yr in the form of storm water, air quality, property value, energy and carbon reduction benefits.
- Extending the Tree's Benefits (Fig. 1; right photos): We constructed our first bench from the ash tree, which was on display with an informational poster in Hartford City Hall and is currently in the Keney Park Golf Club House.

Fig. 1. From left to right: removal of the ash tree from Bushnell Park; two graphs displaying monetary and carbon reduction benefits as the ash tree grew to a diameter of 54 in; construction of the first bench from the ash tree; and the revealing ceremony of the bench at Hartford City Hall.
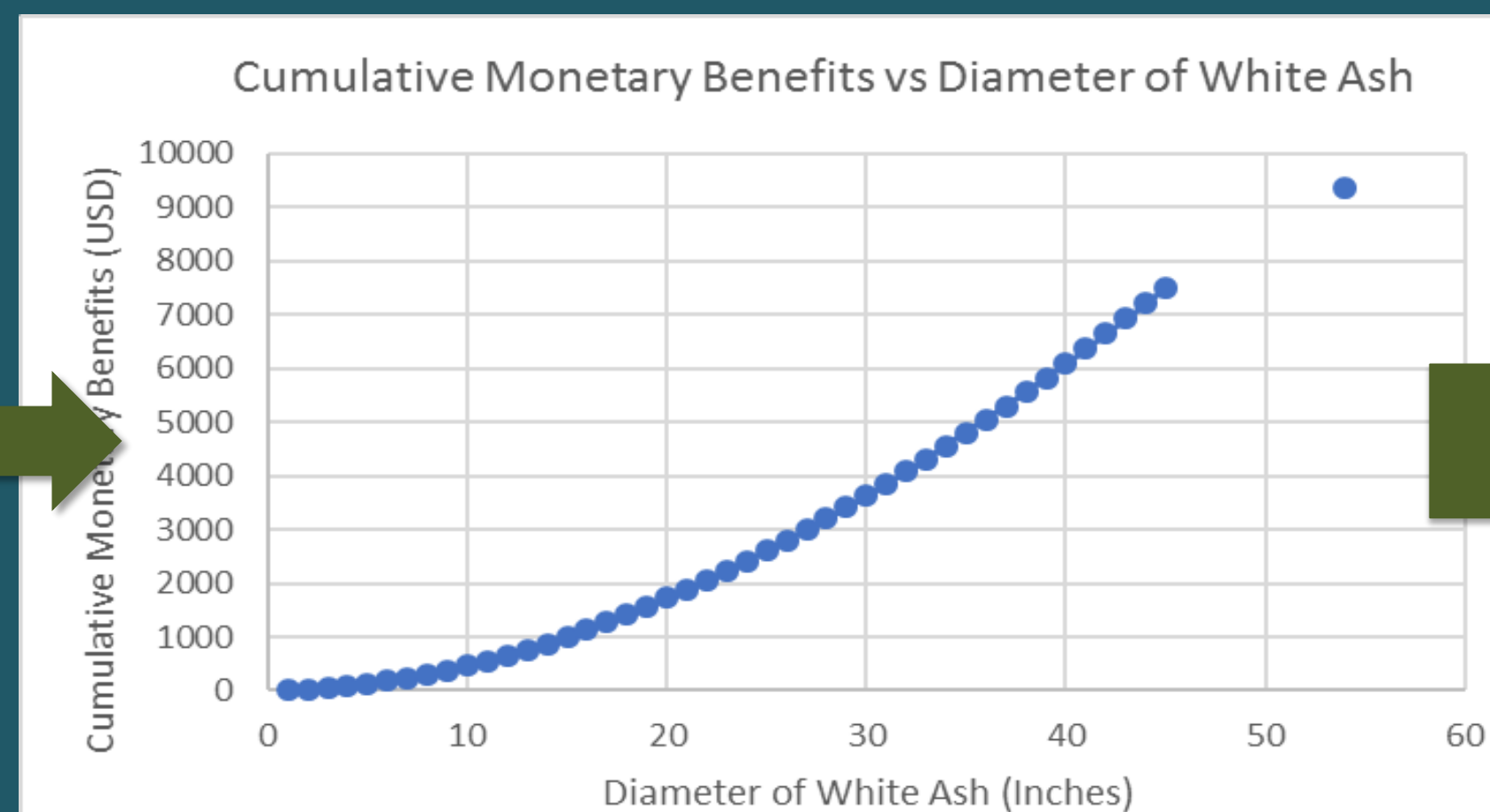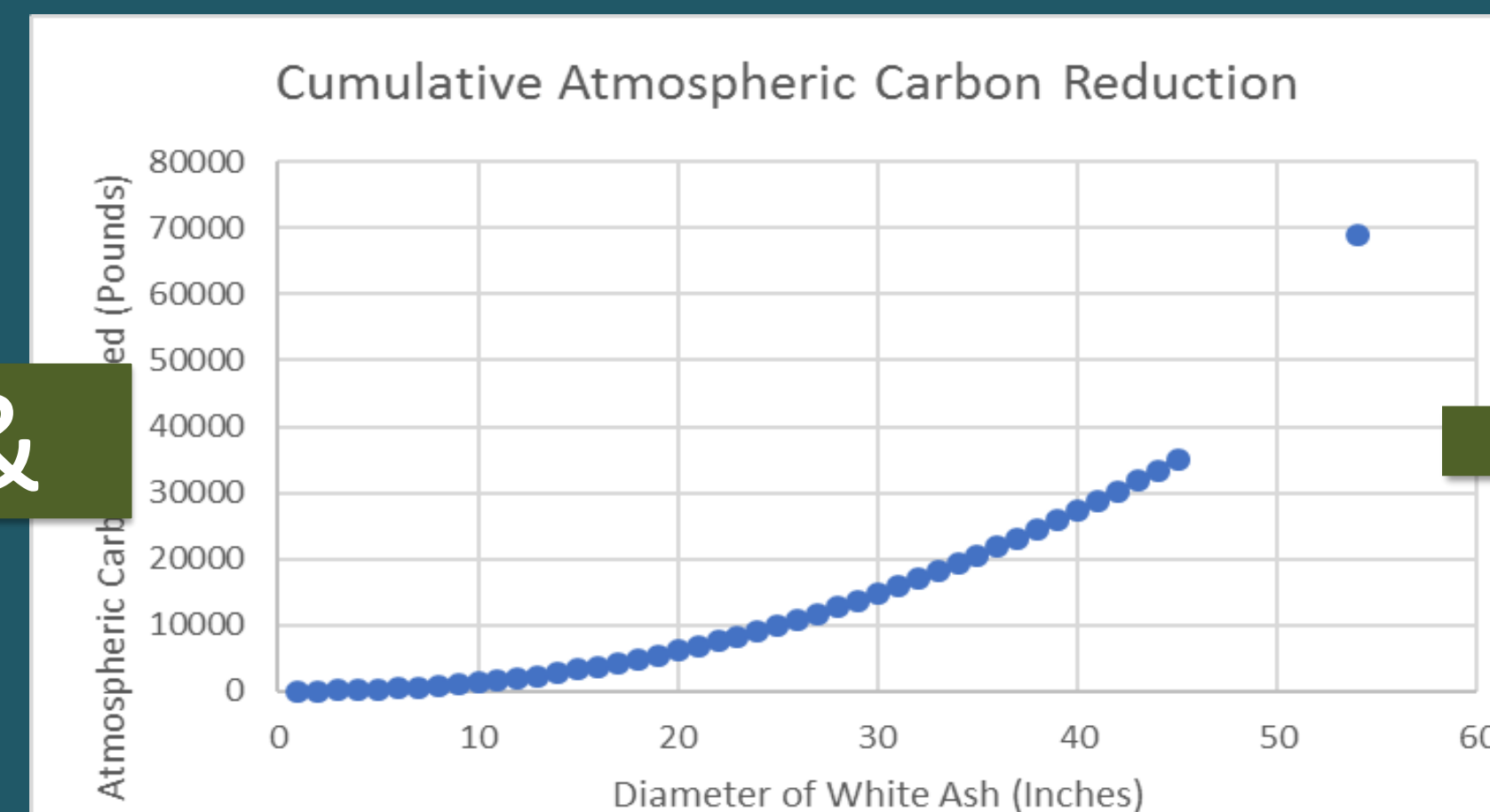
Building the Benches

We built 7 benches out of locally sourced wood to extend the benefits produced by urban trees. We wanted the natural beauty of the wood to be central to the bench design. The following steps were followed to create the benches:

Step 1: We start by having the tree removed and split into smaller pieces.

Step 2: Next, we mill the log(s) into flat boards.

Step 3: After that, we sketch our design onto the wood.

**Step 4:** Next, we cut all of the pieces out of the wood.

Step 5: Then we assemble the bench and treat it with oil or polyurethane.

Step 6: Lastly, we put on finishing touches and bring the bench to its final location.

Telling the Bench's Story Through An Online Presence

We used the Urban Tree Reuse Project as an opportunity to teach the public about the importance of urban trees and its sustainable reuse. Each bench has a link to:

- An interactive map displaying the location of other Hartford benches made out of repurposed wood. We created the map using Track Kit GPS App & Google Maps.
- Our website that provides deeper information on the long term goals of the project.
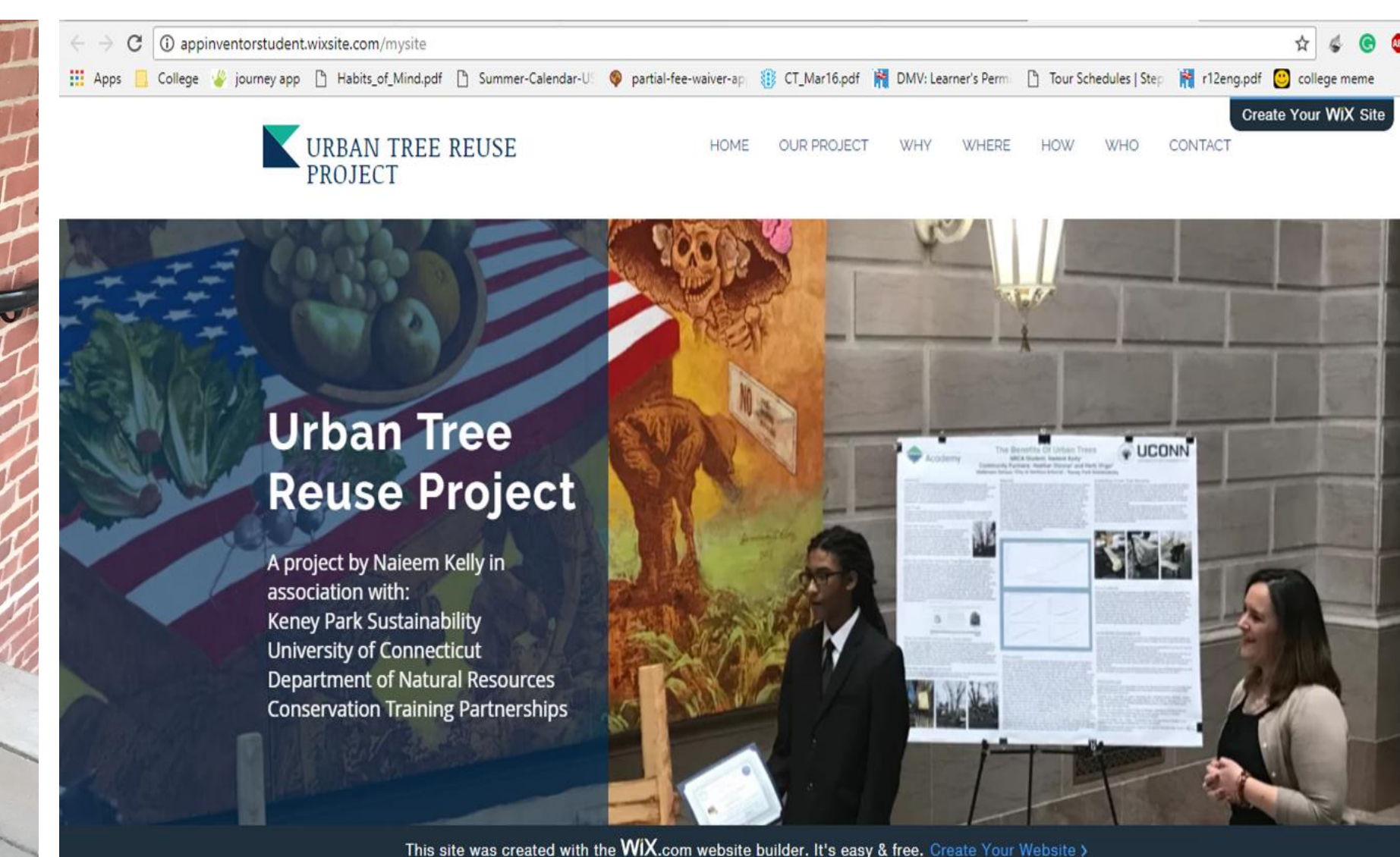
Next Steps

This project has lead to the creation of a four-month pilot program for the first wood materials management program in the City of Hartford, to be located in Keney Park (one the largest municipal forests in New England). For this project, youth and volunteers from several community organizations will help manage Keney Park's urban forest by collaborating with City of Hartford staff and contractors to identify, collect, remove, and process trees at a dedicated wood materials processing site. The project will focus on dead/dying trees or trees that have been removed due to thinning, infestation, or storm damage.

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