Urban Tree Canopy Assessment

Stakeholder Recommendations

April 2, 2012

Oahu Urban Tree Canopy Assessment

Sean MacFaden from the Spatial Analysis Lab in Vermont presented the UTC Assessment at four meeting on Oahu. March 5 – 8, 2012. The following are the collective recommendations from one of these meetings on March 6th. The topics are categorized into three areas: education and outreach, analysis, and model and demonstrate. The recommendations are not in a priority order.

This was the first UTC Assessment in a tropical island urban setting. This urban forest infrastructure layer will allow the state and county agencies, along with stakeholders, an opportunity to use the assessment and images to produce maps relevant to their industry and the urban forest.

1. Education & Outreach

A. Hire Outreach Coordinator

- Secure funding for an outreach coordinator – one aspect of their job would be to educate decision makers, state and county legislators, industry partners, developers, planners, landscape architects, nonprofits and others.
- Public outreach education is needed. City responds to community response.
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- Understand and react to legislation bills and ordinances.
- Paul Conry recommends we ask communities if there are enough trees to improve quality of life issues.
- Need a collective voice. Bring it to neighborhood boards, engineers, and legislature for example and show how trees can save them money.
- Need to meet with developers.

B. Develop Outreach & Education Materials

- Children need more outside interaction with trees. Kids have not been able to touch trees, and climb trees and play in and around trees.
- We need an education program that teaches kids now.
- Development of marketing materials for adults and school age about the benefits of trees or UTC Assessment technology. (Check available resources.)
- Create opportunities for the community to be involved in the care of the urban forest. Consider citizen scientist programs and web/smartphone applications.
- Develop a marketing piece that describes the UTC results and findings in a manner that engages a non-technical audience.
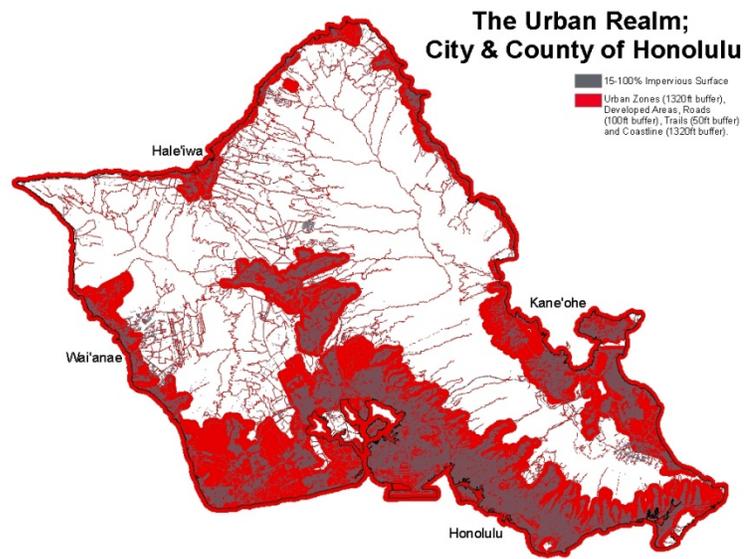
- Develop a web app that will show where trees are on a property based on the TMK. For example charge a fee of $2.99 per request. How about looking for sponsorships like Home Depot? This could be a source of funding.
- PBR would like a short presentation on the value of trees to show to legislators.

C. Advocacy

- Coalition of non-profits to advocate to Neighborhood Boards, Local Business Associations, appropriate City/County Sub Committee, City, County and the State – value of urban forest and importance of its maintenance and the budget to do it.
- Bring nonprofits together to advocate for the county urban forestry budgets and support relevant legislation. City and County continue to lose staff and the City Urban Forestry Division would like to see the industry support their program.
- Next step - educate political leaders about the value of the tree canopy. Trees are part of the green infrastructure. Trees help manage storm water. Educate decision makers for trees as green infrastructure and that budget decisions will support maintenance decisions.
- Strengthen ordinances for trees as critical infrastructure. Direct resources towards ordinances.
  - Trees are an integral component of the urban ecosystem, just as important as roads, water, parking lots and hardscapes.
- There doesn't appear to be political or property-owner support necessary for urban canopy. This assessment could be used as a tool for communicating your message and to acquire support.
- Take this show on the road and target audiences:
    City council, Ewa – Kapolei – (Campbell, etc.), Malama Manoa, Sierra Club, Nature Conservancy, and The Outdoor Circle
- No longer the GREEN INDUSTRY. Trees and landscapes are not the focus of the green industry. It's solar etc. Leed certification. Does not include trees.
- What the sub division would look like in terms of land values. City green started to address those issues.
- Need to enforce good tree maintenance-- we do not have a program in place to educate the public about the value of trees.
- Need to understand the challenges of project process and where and how decisions are made and at what step does the UF industry get involved.
- John Whalen is working with city on new rules.

2. Next Steps for Analysis -- Conduct Additional Assessments, Interpretations & Analysis

- William Aila, Chair, DLNR suggested getting the word out to other state departments such as Department of Health, and showcase the project on Olelo.
- Ensure that the urban tree canopy is integrated into the City's GIS and will be made accessible.
- Paul Conry asked that the UTC Assessment be integrated with other data sets.
- Ensure that the tree canopy assessment reflects the actual canopy percentage for Honolulu and Kapolei.
- Take out the reserve and rural forest areas so that it doesn't inflate the canopy cover (47% canopy cover is too high).
- Redesign boundaries to look at urban areas only. Focus on the canopy in specific areas.
- Look at land use, zoning and ownership.
- Analyze and compare neighborhoods. For example Mililani vs. Kapolei. Honolulu vs. Kapolei.
- Analyze tree cover by demographics.
- Look at tree coverage that the state and city manage.
- Look at Kapolei where it's dry and show the impact-- heat islands, etc.
- Need species component to use with this tool.
- Best strategies for conducting a UTC on neighbor islands.
- Conduct inventories for each county.
- Jointly work together about purchasing LiDAR together.
- How will this information be distributed or be made available.
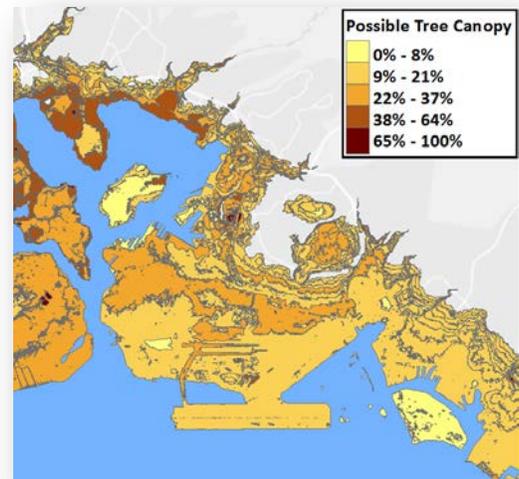- Use the UTC Assessment for quality of life decisions.

The Urban Realm;
City & County of Honolulu

15-100% Impervious Surface

Urban Zones (1320ft buffer),
Developed Areas, Roads
(100ft buffer), Trails (50ft buffer)
and Coastline (1320ft buffer).

3. Model & Demonstrate

A. Neighborhoods

- Demonstrate neighborhoods and homes with a tree canopy that supports a healthy community.
- Need to rethink development to include larger trees. Small trees are being used because there are insufficient planting spaces. Need designs with larger spaces.
- Instead of telling the owner what not to do – give them a planting plan of what is appropriate – including fruit trees.
- *Ideal neighborhood*
  - Design houses above the root zone
  - Consolidate solar panels
  - Plant large trees to cool the house

B. Design

- Make Room in Designs for Large Canopy Trees
- Look at how much root zone is needed to support large tree canopy.
- Innovation in design - for example set aside large park areas for big trees instead of narrow strips between sidewalk and curb – away from Photovoltaic systems and solar water heaters. Not saying to take away street trees but set aside areas for the large canopies and ensure they don't interfere with solar panels.
  - What if new street standard with sidewalk against curb, use the space saved and put in one large area for large trees.
  - Design issue – design for large species trees - cost benefit analysis.
  - Setting aside adequate planting area for a large tree species to mature in (e.g. 30 ft. x 30 ft. x 4 feet (deep) for a banyan or Monkeypod. Issues – cost of land, design, etc.

Possible Tree Canopy
- 0% - 8%
- 9% - 21%
- 22% - 37%
- 38% - 64%
- 65% - 100%

Sample Possible Tree Canopy

Smart Trees Pacific |

- Shared trees in community. Should land be set aside to share trees in one location versus having XXX tree(s) per lot for example?
- Hawaiian Electric Company Inc. understands the importance of right trees. Trees are important. This is laying the groundwork for the next phase. Show how to take this to the next step. Something we can invest in. Maybe need to have solar grouped in one area and have trees on the yard.
- In parking areas parking stalls are very valuable. Redesign parking lots to allow the trees to be large. Perhaps trees on the perimeters vs. in parking lot itself.
- Need to develop community with all the parts.

C. Best Management Practices

Quantify the Value of the Urban Forest. Determine how much storm water we save. We need more details on the economics of trees value for cooling and storm water savings for example.

- Assess ISA Best Management Practices and determine how they apply to the tropics.
- Inventory the tropical urban forest.
- Assess best management practices and their practicality for the tropics.
- Quantify the value (appraisal) of the tropical urban forest.
- Compare trees to land area with medium and small species of trees (or both) and the benefits and associated costs.
- Ensure the correct space is allocated for larger trees by assessing the tree canopy with the root structure.
    - Try to mitigate the impact of tree roots for example. Look at built environment what percentage of trees in planters.
- It's not the number of trees in parking lots, but the amount of canopy cover that should be focused on.

Attendee List March 6, 2012

Last Name	First name	Business/Organization
Bail	Lisa	Smart Trees Pacific
Barbee	Matthew	University of Hawaii
Carroll	Colleen	Smart Trees Pacific
Chun	Greg	Hawaiian Electric
Chung	Russell	PBR Hawai`i

Conry	Paul	Division of Forestry and Wildlife
Crabbe	Lee Ann	Queen Liliuokalani Trust
Desilva	Ka`iulani	Smart Trees Pacific
Eckert	Kevin	Smart Trees Pacific
Hauff	Rob	Division of Forestry and Wildlife
Inouye	Lester	Lester Inouye and Associates
Kanehira	Derek	First Insurance
Kaupu	Russell	The MacNaughton Group
Koike	Terri-Ann	Urban Forest Division
Kurokawa	Joel	Director
Kwan	Carol	Aloha Arborists
Lee	Wai	Smart Trees Pacific
MacFaden	Sean	Spatial Analysis Lab
Nimz	Steve	Steve Nimz and Associates
Quinn, ASLA	Rick	Helber Hastert & Fee, Planners
Ralya	Jackie	Kaulunani Urban Forestry
Sakoda	David	County of Maui
Sand	Joshlyn	Honolulu Botanical Gardens
Schmidt	Ken	City and County of Honolulu
Trueman-Madriaga	Teresa	Smart Trees Pacific

March 8th Meetings

DLNR Board Room - William Aila, Chair DLNR
City and County of Honolulu Planning Department – Technology Transfer

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Partners include State DLNR Division of Forestry and Wildlife, Kaulunani Urban and Community Forestry Program; the City and County of Honolulu, Department of Parks and Recreation, Urban Forestry Division, and the Department of Planning and Permitting, Honolulu Land Information System.