Most important tree canopy layers to Central Township in Indiana

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Introduction

The point of our project was to analyze the Tree Canopy Planner to assist Keep Indianapolis Beautiful (KIB) in deciding which factors (layers) were most important specifically to central township in Indiana.

Figure 1. Monument Circle in Downtown Indianapolis, located in Center Township (Indianapolis, IN: Monument Circle - Downtown).

Materials and methods

For our analysis, we used the Tree Canopy Planner online found at: https://pg-cloud.com/KIB/. We went back and forth toggling between all of the possible factors to see which ones had the greatest impact on central township. A lot of our analysis was based on trial and error. We would mix and match different layers to see how they impacted one another and to visualize which layers had the greatest impact on central township.

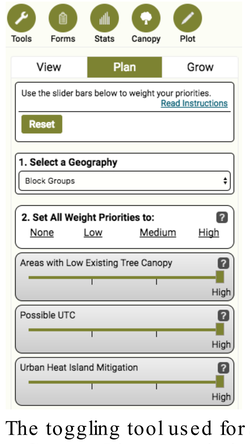

Figure 2. The toggling tool used for analysis on the Tree Canopy Planner website.

Results

We decided from the beginning that we knew we wanted to include the layers 'areas with low existing tree canopy' and 'possible UTC'. Our indecision was in what the third layer would be. We found that central township has a pretty large amount of plantable space and an even larger amount of areas with low tree canopy. So, we played around with the third layer to decide what was affecting our area specifically, and what, in turn, we should pinpoint as being a big problem for central township. That is when we decided on urban heat island mitigation. No other area in Indiana has a higher urban heat island than Indianapolis.

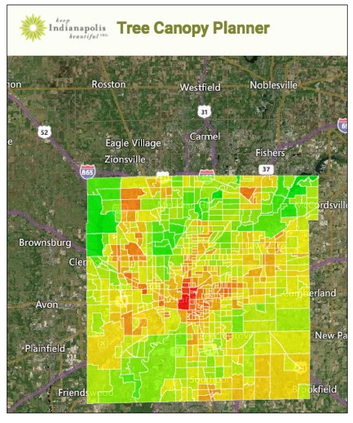

Figure 3. Urban heat island mitigation as illustrated by the Tree Canopy Planner.

Conclusions

In testing all three data layers together, it was found that downtown Indianapolis areas were most affected. These block groups have high amounts of 'areas with low existing canopy cover' and high urban heat islands. These block groups also have a medium amount of 'possible urban canopy cover'. The specific block groups in study are within the black box shown in figure 4. This photo shows the effect of all three data layers on the area. The legend shows the level of effect on the block groups. The large amount of orange/red in the areas being studied shows that there is a medium/high amount of low existing canopy cover, possible canopy cover, and urban heat islands in these block groups.

Conclusions Cont.

Downtown Indianapolis has a high urban heat island for a few reasons. The first is the large amount of anthropogenic heat produced in the area due to the large amount of businesses and transportation.The urban heat island in the areas stays so high due to the lack of trees. Planting trees in these areas will allow for some mitigation of the urban heat island (KIB. (n.d.)). There is a medium amount of possible canopy cover in many of these block groups, which means planting trees should be possible here. Due to the downtown Indianapolis area being so busy with restaurants, stores, malls, and lots of transportation; it is unlikely that the urban heat island will decrease unless combated with new canopy cover.

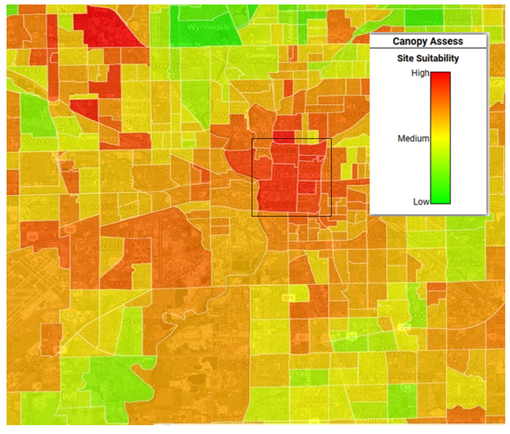

Figure 4.
The black box shows the block groups in focus. This shows the effects of all three data layers combined.

Getting The Public Involved

The first step in getting the public involved in tree planting and tree care requires educating people in a way that is interesting to them. Many people do not know all the benefits trees provide to us. They also probably do not know that trees can save them a lot of money over time. The National Tree Benefit Calculator is one way to actively show people how trees affect them. This shows different benefits trees provide, and also puts a dollar amount to how much money an individual tree can save people. A medium sized (DBH 16 in.) Maple tree in Indianapolis was used as an example for the Tree Benefit Calculator (Casey Trees, & Davey Tree Expert Co.). Figure 5 shows an estimation of the monetary values associated with benefits trees provide us. Informing people of how they can save money is a way to get people interested in tree planting. There are many busy areas in downtown Indianapolis where a booth could be set up to inform people and get them interested in volunteering.

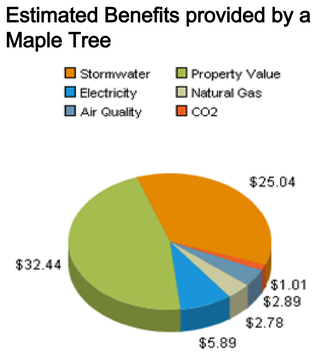

Figure 5.
Pie chart of the estimated monetary values of benefits a tree provides to the community (Casey Trees, & Davey Tree Expert Co.).

Getting The Public Involved Cont.

By providing the public with a way to become educated in a way that is interesting, shows the benefits of trees, and shows how trees can help save money, it is likely more people will want to be involved with trees in their community.

Literature cited

KIB. (n.d.). Tree Canopy Planner. Retrieved April 23, 2017, from https://pg-cloud.com/KIB/

Indianapolis, IN: Monument Circle - Downtown Indianapolis. (2017). Retrieved April 24, 2017, from http://www.city-data.com/picfilesc/picc33569.php

Casey Trees, & Davey Tree Expert Co. (n.d.). *National Tree Benefit Calculator*. Retrieved April 24, 2017, from http://treebenefits.com/calculator

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For further information

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