# Lab 12 Response: Energy Audit

**Table 1. Carbon footprint comparisons.**

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| **Comparative households of similar size (# of people) and with similar income** | **Carbon footprint in tons of CO2eq/year** |
| **U.S. Average**  |  |
| **State Average** |  |
| **County Average** |  |
| **City Average** |  |
| **Your Household** |  |

**Table 2. Household carbon footprint composition.**

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| --- | --- | --- | --- |
| **Carbon footprint category** | **Carbon footprint in tons of CO2eq/year** | **Largest contributor in each category in tons of CO2eq/year** | **Comparison to similar households in your town %** |
| **Travel**  |  |  |  |
| **Housing** |  |  |  |
| **Food** |  |  |  |
| **Goods** |  |  |  |
| **Services** |  |  |  |
| **Total Footprint** |  |  |  |

**Table 3. Reducing carbon footprints.**

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| **Action taken** | **Footprint reduction in tons of CO2eq/year** | **Dollars saved in $/year** | **Upfront cost** |
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| **TOTALS** |  |  |  |

**Table 4. Tree benefit calculator.**

Identify the tree species \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and its size \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- |
| **Benefit category** | **Annual economic value** | **Describe the environmental and social benefit** |
| **Carbon Dioxide** |  | Total carbon reduction:Carbon sequestered:Describe how:Carbon avoided:Describe how: |
| **Air Quality** |  | Pollutants absorbed or intercepted:Describe how:Pollutants avoided:Describe how: |
| **Energy** |  | Electricity for cooling conserved:Describe how:Natural gas for heating conserved:Describe how: |
| **Stormwater** |  | Stormwater intercepted:Describe how: |
| **Property Value** |  | Property value benefit:Describe how: |
| **Overall Benefit** |  |  |

## Questions

1. How does your household’s total carbon footprint compare to similar households in your town, county, state, and in the U.S.? Discuss possible reasons for any differences.
2. Discuss what you learned about your household’s contributions to greenhouse gas emissions from this audit. Specifically, discuss what you learned about contributions in each category (travel, housing, food, goods, and services). What surprised you? What aspects do you feel good about due to low greenhouse gas emissions? What elements could/should be changed to reduce greenhouse gas contributions?
3. How do the details of your carbon footprint compare to similar households in your town? For each category (travel, housing, food, and shopping), discuss possible reasons for any differences.
4. Explain why you picked the actions that you did in **Table 12.3**. What will the overall reduction in your carbon footprint be as a result of implementing all 10 actions? Discuss the cost–benefit analysis associated with implementing the actions you selected (savings versus upfront costs relative to reduction in carbon footprint). Will making these changes be worth it, in your estimation? Explain your thinking.
5. Reflect on all the actions available (not just the ones you selected). Do you think such individual actions would make a difference in reducing the enhanced greenhouse effect and addressing climate change in the long run? Explain your thinking.
6. Was planting trees one of the actions you committed to as a way to reduce your household’s carbon footprint? Explain why you did or did not choose this action. How does the additional information from the National Tree Benefit Calculator about the benefit that trees provide influence your decision about whether and how many trees you would pledge to plant? Which benefits did you find the most compelling? Explain your thinking.
7. How many trees of the size and species you selected for the tree benefit calculation will it take to absorb the carbon dioxide your household releases in a year? Provide details about the tree species and size and show your calculations.