WATERFORD LAKES AND HIGHWAY 50 SMART GRID.

TEAM BAIT
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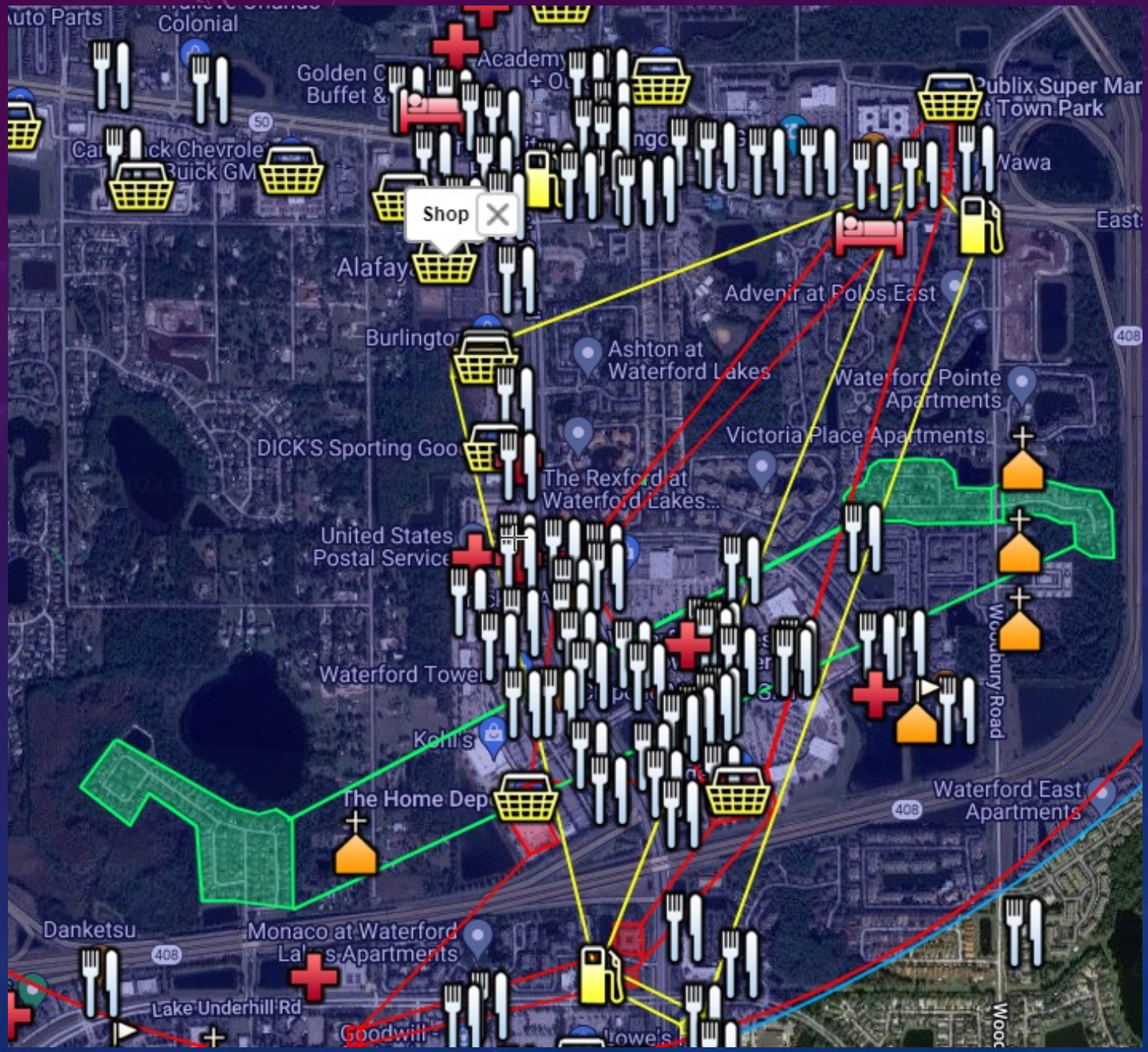
BACKGROUND INFORMATION

- Smart grids use modern IT control technologies, and have become a much more global trend. This is due to the ability of smart grids to predict the future loads of its users, which allows utility companies to control and adjust outgoing electricity to balance the electricity usage for all of its consumers.

- Why a smart grid or micro grid?
  - A smart grid allows for a clear and concise “order of operations” on which buildings should have electricity restored in the event of an outage, and also allows for easy monitoring of facilities. Knowing when an outage occurs before it is reported saves time and money for the power company and fixes the problem quicker.

DESIGN PROCESS

- Projects 2-4
  - Project 2, We made a 2.5 mile circle around UHS and we marked our maps with the buildings in the area.
  - Project 3, We calculated the power usage for the types of buildings and we noted down how the usage would change through the day.
  - Project 4, We made decisions on which types of buildings to power first and which to give the most power to based on their urgency, usefulness, and contribution to the general populous. These were the decisions that we made.
  - Give the most power and priority level 1 (Emergency Services, Grocery Stores, Banks)
  - Give a decent amount of priority level 2 (Non Urgent Stores, Restaurants, Traffic Lights)
  - Give a good amount of power but not to much priority to level 3 (Homes, churches, Schools, Offices)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THE DESIGN

- Our design was based around the basic needs like food, emergency services, and money access. This would show why we have many priority level 1 buildings (6,262.097 KW) powered over level 2 (1,778.477) and 3 (6,020) buildings
- We wanted to make sure that higher priority business and buildings get power first and the most power over homeowners and. We did this because more and more home owners in Florida are getting generators and solar panels giving us more power to give to higher priority buildings.
- We also decided to have about a MW of buffer power in case there are places that will need more power then we have calculated or in case there is an emergency.
- And an important thing that we decided to include was traffic lights, while not included these only take up 15 watts per light which is absurdly small compared to the power that we have. This is good because we can still have traffic control while not spending a massive amount of energy.

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THANK YOU
ANY QUESTIONS?