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T306: Customer Needs

Initial Sponsor (Customer) Meeting Questions:

We began our Needs Analysis with our initial Sponsor meeting, with the intent to establish the 5 W's (Who, What, When, Where, Why,) and How of this project. We worked through gathering enough data to have a good understanding of what they are looking for in this project. Overall, the project stems from the Leon County Office of Sustainability's Growing Green Initiative to incorporate sustainability and furthermore renewable energy into the county. The questions we asked were as followed:

- 1) Why do they want this project?
 - a. Use this project for reference in future renewable energy projects.
- 2) What do they want with the project?
 - a. Focus on Renewable Energy in Leon County
 - b. Creative ideas for renewable energy sources
 - c. Have something that can be viewed or accessed by the public to raise awareness of solar energy in Leon county.
 - d. Look for ways to address social issues.
 - e. Look for public feedback and see how we can address some of those issues.
 - f. A concise plan of action.
- 3) Is the project Solar-based?
 - a. Yes, but with more creativity.
 - b. Consider hydroelectric within areas such as parks
- 4) Where will the project be located?
 - a. Possible facilities and parks are listed where potential is greatest for impact
- 5) What exactly is the design powering?
 - a. Seeking self-sustainability in low income areas

- 6) How do they want this project completed?
 - a. Include a site analysis
 - b. Include economic impact
 - c. Include cost analysis
 - d. Include Return on Investment
 - e. Include design
 - f. Report will be presented to Leon County officials and will be implemented

- 7) Who exactly is the project to affect?
 - a. Lower Income neighborhoods in Leon County
 - b. General public of Leon county

- 8) What is the budget?
 - a. 50-60 Thousand

Customer Statement of Needs:

With an initial interview done, we were able to have a good idea of what exactly was wanted by this project. Overall, it is an analysis and design of a project to be implemented after we finish that would utilize Leon County facilities or parks as an avenue to integrate renewable energy as a means of increasing their sustainability and the public’s exposure to renewable energy. Therefore, we could tabulate the customer’s need statements as followed:

No.	Statement of Need	Source
1	Must be creative	Cust.
2	Must promote self-sustainability	Cust.
3	Must promote renewable energy	Cust.
4	Must be implementable	Cust.

5	Must include a concise plan of action	Cust.
6	Must make use of Leon County facilities and parks	Cust.
7	Must adhere to all NEC requirements	NEC
8	Must adhere to all Electric Utility Interconnection Requirements	Electric Utility
9	Must conform to budgetary restrictions	Cust.

Interpreted Needs and Requirements

Although a number of these aforementioned needs can be subjective, we began to look into how we could make them less so. We arrived at these in two ways, the first and main source being what we knew from working with the customer. That would meet their requirements. The second was from what we had researched what all was required to potentially integrate renewables alongside a utility service. Those two needs (7 and 8) stem from there. The issue however we continued to run into is that due to the broad scope of what can be done for the project, our interpreted requirements cannot be too precise. In addition, due to these unprecedented times and multiple scheduling conflicts, we are not able to actually tour the sites to better understand what it is we could do and better grasp our limitations before we the Customer Needs were required to be submitted. We were, however, able to interpret these statements we do have into guiding requirements going into the facilities tour:

No.	Interpreted Requirement	Corresponding Need
1	Will make use of Leon County facilities and parks	6
2	Will adhere to NEC standards	7
3	Will include approved Transfer Switch if utility connected	8
4	Total cost will be less than \$50,000	9

5	Will use appropriate voltage outputs	7, 8
6	Will be able to power at least 20% of site's total load	2, 3, 4
7	Will include site analysis and selection justification	5
8	Will include economic feasibility analysis	5
9	Will include design plans with drawing package	4, 5
10	Will include load survey/analysis	5
11	Will include return on investment analysis	5
12	Will be designed to be viewable from site entrance	1, 2, 3

These requirements will greatly help guide us in how we can pick a site that will best allow us to meet them. When looking at these we can discuss why we decided on them. Whereas one of, if not the most important, of our assumptions is to provide a plan that makes effective use of tax dollars, we are going to stay on the lowest end of the budget that we can, as shown in Requirement 4. Another of our assumptions was that this project would not be overly ambitious, which is our guiding idea behind Requirement 6. If we can do over 20% of the total load, all the better. But our biggest requirement is to present a useable and effective analysis and plan to the Leon County Office of Sustainability to be implemented. Requirement 12 stems from the difficulty in having something objective from something as subjective as creative, which is something we still have room to incorporate. However, since one of the needs is to be viewable by the public and in the public sphere, the part of the park where we know everyone will see is the entrance, ergo, we can ensure maximal viewership.

Summary

After meeting with the sponsor she described the different locations that Leon county is looking to implement solar or renewable energy. The sponsor is focused on the analysis and turn key design. We will share our findings with the sponsor at the end of the year so that they can present those findings to the county commissioner to receive funding to begin building the design. On top of presenting a key turn project the project should also promote solar energy usage in Leon county to the public by being in a public and easily seen area. The key turn project that will be turned over to Leon county needs to be

within the budget of \$50,000-\$100,000. The sponsor will be giving tours of the 12 locations to team 306 to give more details and visual aid on what each location will entail when creating our design.