

What were the outcomes of the prior phase?

1. What did I plan to do?

In systems design, our team expected that through the completion of various methodologies including functional analysis, morphological analysis, concept generation, and selection, we will be able to successfully define the architecture and interface of our system in order to satisfy the requirements previously defined by our customer in the problem definition phase.

2. What did I actually do?

In this phase our team was able to successfully propose a first cut test plan and back-up plan for contingency. These were developed beginning with functional decomposition by utilizing both a function tree and transformation diagram. Following development of our functions, we aligned the function to corresponding ER's. We also benchmarked against various competitors and even toured a local aquaponics system to benchmark. Feasibility studies of various requirements of the system were conducted. Following completion of feasibility, benchmarking and functional decomposition, we generated various solutions to primary functions using a morphological table. From this, we generated 8 different solutions and compared using Pugh Analysis. Taking the best results from the initial Pugh Analysis, we developed 2 hybrid solutions and conducted a secondary Pugh Analysis to determine the best solution. We expanded our feasibility studies specific to our chosen solution and developed various sketches of the system. From this, we were able to establish our first-cut test plan and supporting contingencies for the plan. We also began nitrate cycling tests to understand how to control this process once fish are introduced. Throughout this process, risks were assessed and close adherence to the project schedule were upheld

3. What did I learn? How were plan and reality different?

Overall, I was very pleased with the progress we made in this phase. Initially, we set our standard to where the MSD requirements expected us to be. As we progressed, we expanded upon our initial expectations where applicable to ensure more thorough analyses to help reduce risk probability. In the future, I believe we can even increase expectations further throughout the phase.

Team level goal for next phase

Our expectations for this phase was to focus on further development of our systems design proposal, with specific attention being made to our high-risk components, the rope pump and water wheel. We plan on expanding upon our feasibility studies for both our high-risk components as well as further development of our architecture and development of the support system for the filter and PVC piping. We also expect to further our prototyping of nitrate cycling by beginning to use live goldfish in our tests and monitor their vitality. By the end of this phase,

we plan to have completed feasibility studies of our rope pump and water wheel system and have begun implementing it on our actual system by applying the knowledge we gain through this phase on further developing our systems architecture. We also plan on establishing a preliminary BOM and further develop our project test plan. Through adherence to identified project risks and maintenance of the project deadlines and deliverables, we will successfully complete the preliminary detailed design phase.

What do I plan on doing to ensure that my team has a successful review at the end of the next phase?

My plan as project manager is to maintain all administrative responsibilities including risks, scheduling, presentations, and any other duties that will be added to the project manager throughout the next phase. I will continue to send out reminders of deadlines and deliverables and ensure focus on deliverables during team meetings. By maintaining all administrative and maintenance documents, I plan on allowing my team to maximize utilization of class and group work time on solely the tasks to further project progress.

What is standing in my way of meeting my next phase goals?

1. Lack of understanding of feasibility of rope pump and wheel system. Delegated to Thomas and Kesh to oversee initial prototyping and feasibility requirements. I will assist in providing materials and ideas on how to conduct prototyping. Completion: 10/29
2. Further development of nitrate cycling knowledge. Delegated to Melissa to continue and expand current nitrate cycling efforts. I will provide support and assistance in conducting the studies. Completion: 11/04
3. Ensure EDGE is reflective of project progress. Delegated to Armand to continue updates. I will provide with updates on what is ready to be uploaded Completion: Continuous, checks are completed following each team meeting.
4. Maintenance and transparency of project budget when developing BOM. Delegated to Jacky to monitor and track all changes to BOM. I will provide oversight to help ensure budget constraint is adhered to with respect to the triple constraint. Prelim BOM Completion: 11/04
5. Maintenance of project risks and ensuring each relevant team member is aware of their risks and its relationship with their work. My responsibility to monitor risk assessment and provide checks with team members to ensure adherence. Completion: Continuous, checks are completed following each team meeting.
6. Adherence to projects triple constraint. My responsibility to provide oversight for the project schedule, budget, and scope and ensure both team members and stakeholders are transparent on project goals. Completion: Following the established change management format, will provide updates with any changes and will give reminders and updates to necessary deliverables.