Team Project: Report 2
Lean Project Proposal for EverCharge Company

IE5617-Spring 2025

Template

Team number: 4

Names of students who <u>actively</u> worked on this report: Zach Haley, Mike Fortin, Saheel Chavan, Jenny Patel, Naveen Murali

Company Overview:

EverCharge is a Palo Alto, California-based company established in 2013 and is an early-stage startup developing electric vehicle (EV) charging technologies. Dedicated to providing high-efficiency, scalable charging infrastructure to all settings—from multi-unit residences to commercial fleets, offices, and homes—EverCharge's SmartPower™ technology enables optimum sharing of power among many charging stations. The process makes it possible to install many more chargers without retrofitting existing electrical infrastructure, lowering cost and simplifying installation [1].

EverCharge was acquired in 2022 by the SK Group, a large South Korean industrial conglomerate. With this support, the company has been growing faster throughout North America. EverCharge provides end-to-end solutions, ranging from site assessments and hardware installation to management software and service. Its solutions are not only designed for performance and reliability but also with sustainability and energy efficiency in mind. As the demand for EV infrastructure grows, EverCharge is playing a major role in helping communities and businesses switch to clean transportation [1].

Problem Statement

While EverCharge has been an established entity since 2013, with an acquired brand name in the Charging industry, they also have their own drawbacks that have begun to surface over recent times with increased demand and the company's base. EverCharge is currently running at 65% assembly efficiency, which leads to demotivated manpower, higher Takt time, and facility expense due to longer production times (~25 mins/unit compared to the target of 17 mins). Low morale results in more micro-downtimes. To address these issues, the project is going to implement a real-time monitoring of productivity, propose an output-based payment system, deploy an employee reward system, and set a conservative goal to attain 5-10% increase in efficiency in 3 months and implement continuous improvement methods to attain efficiency as near to 100% as possible in the long term.

Project Goals

Due to the current problem described above, the main project goal is to increase utilization from 65%. Based off this current rate, this is leading to a large amount of wasted cost in the form of both labor, lost production, and facility costs. At this current efficiency rate, the assembly team is not able to consistently meet current demands, which leads to difficulty in planning production expectations, setting goals, and improving as a team.

At this current run rate, the team takes approximately 25 minutes to create a unit. The main goal is to reach a 100% efficiency rate in the long term with a short-term three-month goal of increasing efficiency by 5-10%, which would result in a long-term goal of reaching a 17-minute overall time to create a unit.

To help increase efficiency, the project aims to implement a monitoring system which tracks overall productivity in real time and is displayed prominently at the front of the assembly floor— for all stations to see. This system will give live updates to the employees if they are on or behind schedule. The visibility of live performance data is a key driver of behavior and output: when Putter's Pickles implemented a similar system, they experienced a 16% increase in line efficiency and reduced monthly labor costs by $5,000, primarily due to operators being able to see and respond to their own production performance in real time (Worximity, 2023). Similarly, Maradyne Corporation saw significant workflow improvements and better on-time job completion after adopting a real-time monitoring system that gave workers and supervisors continuous visibility into production goals and job statuses (Harmoni, 2023).

Tracking these metrics in real time will help incentivize the team to reach their daily goals and allow the team to reach their 5-10% efficiency increase in three months and will continue to lead to improvements over time.

To further accomplish this goal, our project is also looking to increase overall employee motivation, productivity, and team morale. Currently, the company is facing high turnover, and many employees are not performing as expected, leading to frequent instances of "micro down times" caused by underutilization of potential. In response, our project aims to implement a reward and recognition program designed to incentivize the team and drive engagement. One key initiative will be the **pilot of an output-based compensation model**, grounded in the current production target of 160 units per week. Over a three-month trial period, all 7 employees if they meet the target output — while maintaining quality standards — will receive full weekly compensation, regardless of the hours worked. This approach is intended to **empower flexibility**, foster a sense of ownership, and improve morale by rewarding efficiency rather than time spent. In addition to this, the program will offer both monetary and non-monetary rewards such as performance bonuses, public recognition from leadership, and team-based outings, all aimed at increasing motivation and helping the company meet its production deadlines more effectively.

Proposal Summary:

1. **Primary Problem & Solution:** EverCharge's assembly line is currently operating at 65% efficiency, producing units in ~25 minutes—not even remotely close to the targeted rate of 17 minutes. The inefficiency translates into increased labor, overtime, and facility costs. The

goal of this project is to increase the level of production efficiency by 5-10% within 3 months' time, and to reach nearly 100% in the long run through Lean improvements on a continuous basis.

2. **Lean-Based Real-Time Monitoring:** The project will also utilize display monitors on every workstation to monitor real-time KPIs. The monitors will show real-time progress, Takt time, and daily goals in an attempt to maintain a consistent production level, heighten awareness of time, and provide daily accountability on the factory floor.

3. **Pilot Output-Based Compensation Model:** To support these efficiency gains, a three-month pilot of an output-based payment model will be introduced. Grounded in the existing weekly production target of 160 units, the model allows employees to receive full weekly compensation if they meet the output goal—regardless of hours worked—so long as quality standards are upheld. This approach encourages efficiency, empowers flexibility, and helps create a stronger sense of ownership and morale on the production floor.

4. **Employee Incentivization Through Motivation:** A reward-for-performance incentive program will be introduced to honor exceptional performers. Incentives will be tied to bonuses, public recognition, and team activity—seeking to reduce discretionary breaks, boost morale, and create a culture of ownership in productivity.

Project (Measurable) Benefits

- **Real-Time Visibility:** Live employee Key Performance Indicator (KPI) tracking will display in real time at each workstation and prominently at the front of the assembly floor, offering immediate feedback on individual and team progress against production goals. Research shows that the visibility of live performance data is a key driver of output and behavioral accountability. When Putter's Pickles implemented a similar system, they saw a 16% increase in line efficiency and saved $5,000 per month in labor costs, largely due to operators adjusting behavior based on real-time performance feedback [2]. Similarly, Maradyne Corporation reported significant workflow improvements and better on-time job completion after adopting a real-time floor display that provided continuous visibility into job statuses and takt compliance [3]. These benefits suggest that EverCharge could expect similar improvements in both short-term output and longer-term team alignment.

- **Boost in Employee Output and Morale:** The incentive and recognition program—alongside the output-based wage pilot—is expected to cultivate a strong sense of ownership, motivation, and accountability. Studies consistently show that employee morale and engagement have a measurable impact on productivity and team performance. For instance, Towers Perrin-ISR found that companies with highly engaged employees improved operating income by 19.2%, while companies with low engagement saw declines of 32.7% [4]. Another study by Gallup reported that teams with high employee engagement experienced 21% higher profitability and 17% higher productivity [5]. These findings support the project's approach to drive performance by investing in workforce morale through recognition, flexibility, and purpose-driven output.

- **Reduction in Utility Costs:** By lowering Takt time to the target of 17 minutes and encouraging adherence to standardized shutdown procedures during downtime, EverCharge has the potential to save approximately $2,700 per month in electricity costs. This includes turning off non-essential electronics, workstation lighting, and auxiliary systems during non-production periods. These energy savings compound annually and add further justification to the efficiency and scheduling initiatives being proposed.

- **Measurable Gains from Output-Based Compensation:** The proposed output-based pay model enables employees to receive full weekly compensation for meeting the 160-unit target, regardless of total hours worked—so long as quality remains consistent. Although this may result in a $15,000 monthly wage increase at full utilization, the productivity gains far exceed the cost. Based on current profits of approximately $500,000 annually, even a modest 30–40% increase in output—without the need to hire additional labor—can lead to significant profit expansion. Additionally, this system encourages a mindset shift from time-spent to value-created, supporting long-term scalability and lean transformation.

Project Budget

The budget presented below reflects the expected costs for addressing the key issues identified on EverCharge's production floor of low employee motivation and lack of real-time visibility into production progress. All estimates are based on current market rates and the scale of operations at the facility.

Item	Purpose	Estimated Cost (USD)
Network Upgrade (If necessary)	To support the connectivity needed for real-time data tracking and display (i.e. software or licenses necessary)	$1,200
Large Display Monitor (Single Unit)	To show live productivity data (Takt time, progress vs. goals) and keep the team aligned. **Already owned by EverCharge (Sunk Cost)**	**Free**
Incentive & Recognition Budget	For implementing a performance-based reward system (bonuses, recognition board, team appreciation events).	$2,000
Training Program Budget	To conduct skill alignment and short refresher sessions for the technicians.	$500
Contingency	Budgeted to cover unexpected costs such as set-up support or minor equipment adjustments.	$1,000
Payment Plan (opportunity cost)	This money would not need to be paid if said utilization rate were higher to begin with	$15,000
Total Estimated Cost		**$19,700**

This budget prioritizes direct impact items that can immediately improve visibility and group morale.

Required Resources

To implement the above proposal and meet the goal of increasing production efficiency from 65% within 3 months, the following resources are required:

1. Human Resources

- IT Technician – To install and configure the network equipment and monitor.
- Factory Manager – To oversee program implementation and approve incentive structures. Also, to monitor production progress and coordinate employee involvement.
- Line Technicians – Participation in training sessions and compliance with updated processes.

2. Equipment and Material Resources

- High-Visibility Display Monitor (x1) – Positioned strategically near the center of the floor to show real-time production status, Takt time, and targets.
- Networking Equipment (router/switches/cabling) – To ensure stable data flow for the live dashboard.
- Training Materials – Simple guides or visual SOPs for each technician group.
- Incentive Tracking System – Digital or physical board to display top performers monthly.

3. Timeline

- Week 1–2: Equipment preparation, internet upgrades, and preparation of training material.
- Week 3: Installation of the new tester and the display screen.
- Week 4: Conduct technician training and launch incentive system.
- Month 2–3: Continuous monitoring, feedback collection, and evaluation of improvements.

Follow up (Continuous Improvement)

Members will follow up at the end of April and May of 2025 to get feedback on how our proposal was taken. The following questions should be answered:

Did they hit the conservative utilization increase goal?

What lessons were learned from this proposal internally?

How have the employees taken the idea?

Has there been increased responsibility for the process from them?

Have they exceeded their expectations?

If there is considerable positive feedback to these questions, the weekly goal can be moved up, by an additional 10 units per week, every month. So in about a year's time or less they can be potentially running at as close to 100% utilization as possible. Concurrently, increases in wages should be considered as employees output more effectively. After speaking with their head of

sales for the Northeast, there are a significant number of sales poised to be coming in 2025, so this radical change could be the platform for which operations to be able to perform.

Appendix A: Notes from your interviews

Interviewee: Jose – Started as a Quality Engineer, currently Factory Manager
Date: 14th April 2025

- **Background**: No structured planning or format initially; change management was challenging.
- **Key Issues Identified**:
  - No clear *Takt time* tracking or data-driven structure.
  - Low assembly efficiency (~65%) causing longer unit build times (25 mins vs. 17-min target).
  - Frequent employee breaks, low morale, and high turnover resulting in micro-downtimes.
  - Major bottleneck at *Station 6* – only one tester available, often causing line backups. *Internally being dealt with – not considered for the project.*
  - Lack of standardized work pace and role alignment among technicians.
- **Initial Actions Taken by Jose and team**:
  - Implemented a *Kanban system* to improve material flow and visual control.
  - Started tracking *Takt time* and identifying process inefficiencies.
  - Working on understanding employee strengths and assigning tasks accordingly.
  - Tried to improve overall work culture and approach to work. ***But with little success***
- **Next Steps as proposed by our team**:
  - Add a second tester at Station 6 to eliminate the bottleneck, but that idea is in the works already.
  - Deploy real-time productivity monitoring and an employee incentive program (Rewards System).
  - Goal: Increase efficiency by 5-10% in 3 months and drive continuous improvement toward 100%.
- **Supply Chain Status**:
  - Materials are already consistently available; focus now on optimizing internal flow and execution.
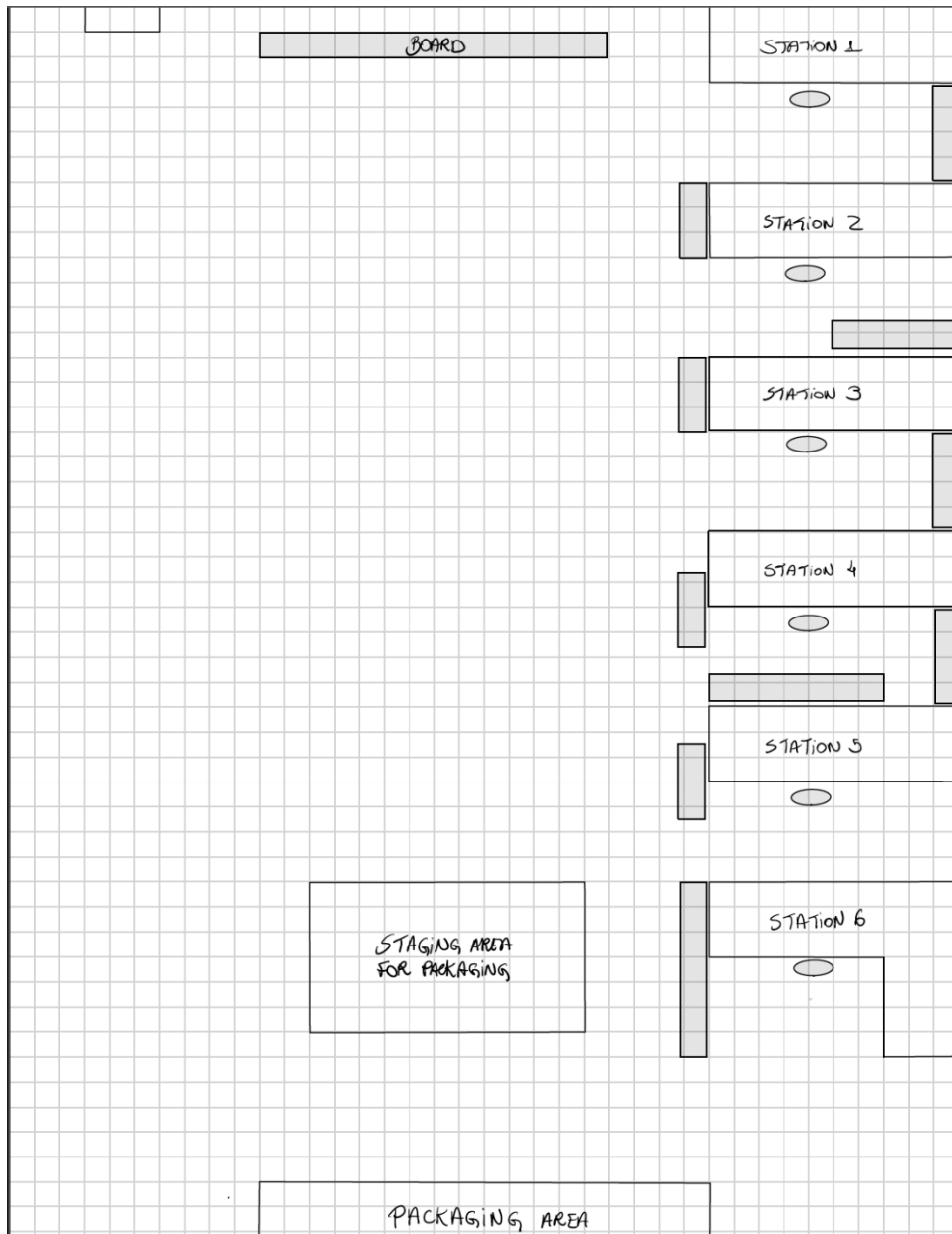 - Remove bottlenecks and obstructions of flow. (Station 6)

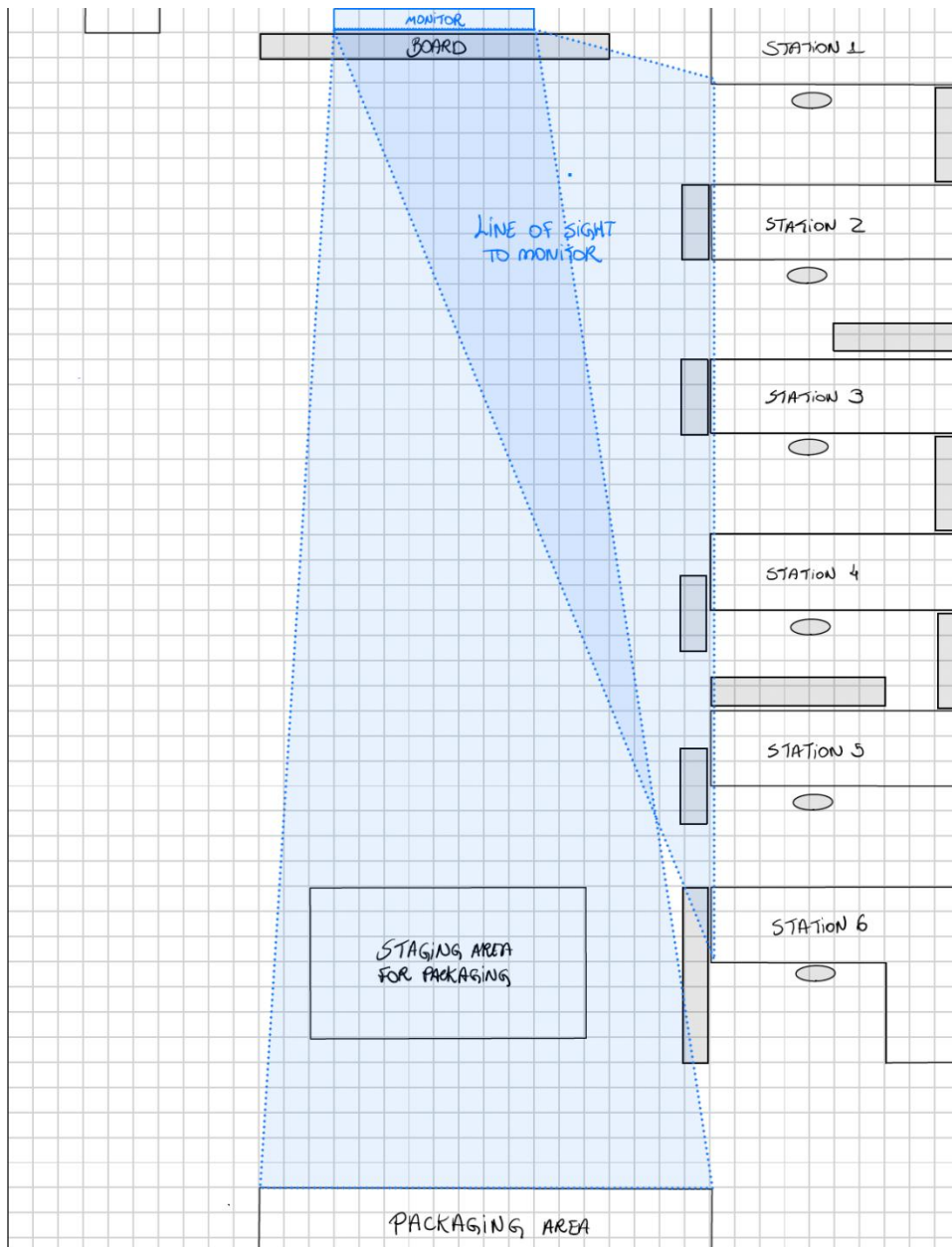**Appendix B: Pictures from your tour (if applicable)**

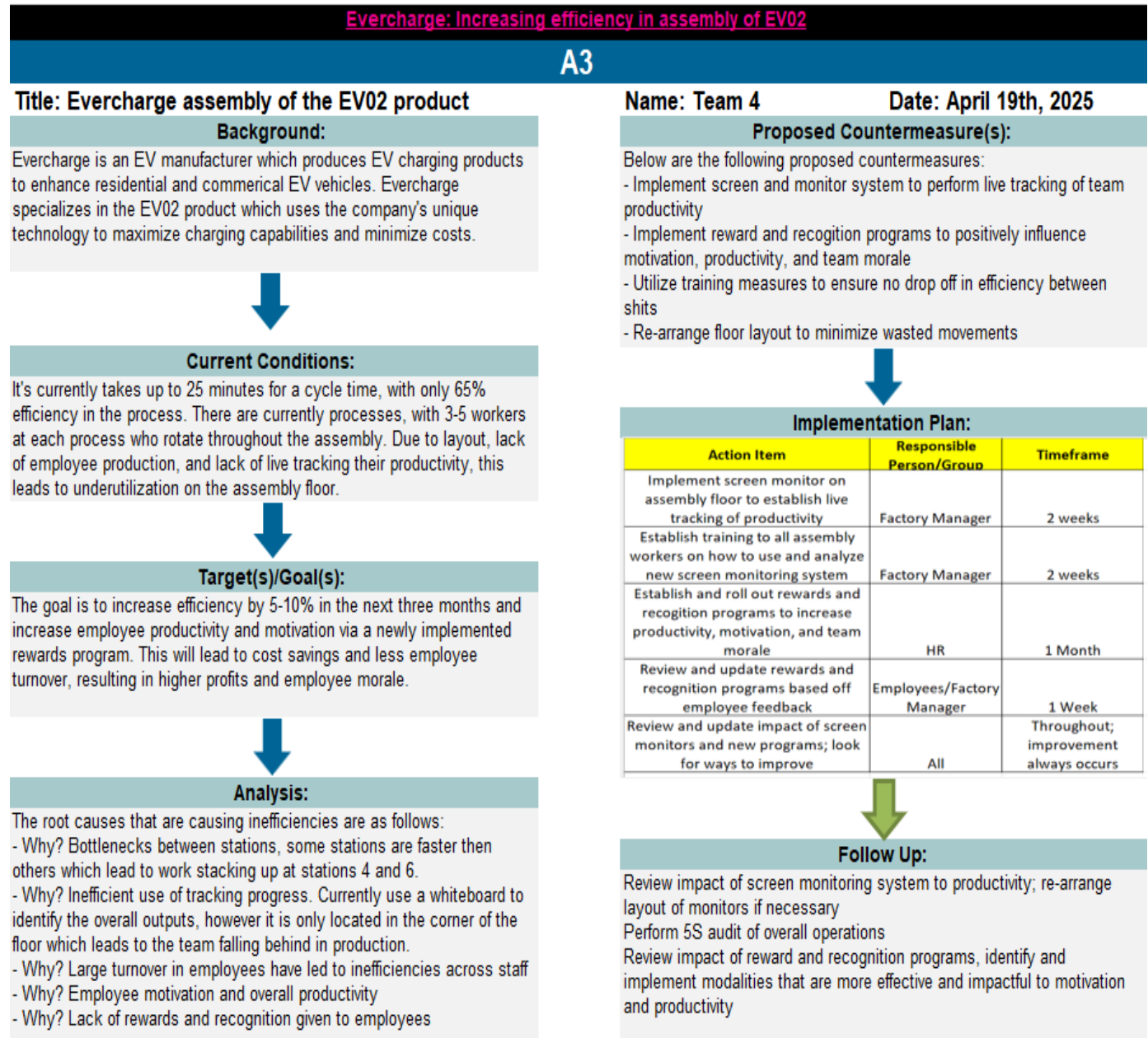**Appendix C: Process Area Layout (Current)**

Note: Due to current situation with EverCharge, the team replaced the VSM with a Process Area layout as it is more applicable to the project goals based off their current issues.

Appendix D: Process Area Layout (Proposed w/ Line of Sight)

Appendix E: A3 Chart

Evercharge: Increasing efficiency in assembly of EV02

A3

Title: Evercharge assembly of the EV02 product

Name: Team 4   **Date: April 19th, 2025**

Background:

Evercharge is an EV manufacturer which produces EV charging products to enhance residential and commerical EV vehicles. Evercharge specializes in the EV02 product which uses the company's unique technology to maximize charging capabilities and minimize costs.

Current Conditions:

It's currently takes up to 25 minutes for a cycle time, with only 65% efficiency in the process. There are currently processes, with 3-5 workers at each process who rotate throughout the assembly. Due to layout, lack of employee production, and lack of live tracking their productivity, this leads to underutilization on the assembly floor.

Target(s)/Goal(s):

The goal is to increase efficiency by 5-10% in the next three months and increase employee productivity and motivation via a newly implemented rewards program. This will lead to cost savings and less employee turnover, resulting in higher profits and employee morale.

Analysis:

The root causes that are causing inefficiencies are as follows:
- Why? Bottlenecks between stations, some stations are faster then others which lead to work stacking up at stations 4 and 6.
- Why? Inefficient use of tracking progress. Currently use a whiteboard to identify the overall outputs, however it is only located in the corner of the floor which leads to the team falling behind in production.
- Why? Large turnover in employees have led to inefficiencies across staff
- Why? Employee motivation and overall productivity
- Why? Lack of rewards and recognition given to employees

Proposed Countermeasure(s):

Below are the following proposed countermeasures:
- Implement screen and monitor system to perform live tracking of team productivity
- Implement reward and recogition programs to positively influence motivation, productivity, and team morale
- Utilize training measures to ensure no drop off in efficiency between shits
- Re-arrange floor layout to minimize wasted movements

Implementation Plan:

Action Item	Responsible Person/Group	Timeframe
Implement screen monitor on assembly floor to establish live tracking of productivity	Factory Manager	2 weeks
Establish training to all assembly workers on how to use and analyze new screen monitoring system	Factory Manager	2 weeks
Establish and roll out rewards and recogition programs to increase productivity, motivation, and team morale	HR	1 Month
Review and update rewards and recognition programs based off employee feedback	Employees/Factory Manager	1 Week
Review and update impact of screen monitors and new programs; look for ways to improve	All	Throughout; improvement always occurs

Follow Up:

Review impact of screen monitoring system to productivity; re-arrange layout of monitors if necessary
Perform 5S audit of overall operations
Review impact of reward and recognition programs, identify and implement modalities that are more effective and impactful to motivation and productivity

Appendix F, etc.

References

[1] EverCharge - About Us. Retrieved from: https://evercharge.com

[2] Worximity (2023). Case Study: Putter's Pickles Boosts Line Efficiency with Real-Time Monitoring.

[3] Harmoni (2023). Maradyne Corporation: Visual Workflow Improves On-Time Completion.

[4] Towers Perrin-ISR (2006). The ISR Employee Engagement Report.

[5] Gallup (2017). State of the American Workplace.