

# Project Team Goals

## Context & Objective

The objective of this semester is to identify metrics to accurately measure development velocity across all project teams, while ensuring that engineering effort translates directly into high-value features delivered to our nonprofit partners.

Success is defined not only by output (PRs, commits), but by cycle time, participation breadth, and impact on NPO-requested functionality.

This document follows the GQM (Goal-Question-Metric) framework to ensure metrics remain actionable and aligned with real outcomes.

## Goals

### **G1. Accurately Measure Development Velocity per Team and per Developer**

Identify metrics that accurately measure development velocity, and identify potential areas of improvement.

### **G2. Broaden Engineering Participation**

Reduce bottlenecks caused by over-reliance on tech leads by increasing meaningful contributions from all developers.

### **G3. Maximize NPO Value Delivery**

Prioritize and complete issues that directly map to NPO needs, reducing time-to-value.

### **G4. Improve Delivery Predictability**

Enable project leads and NPOs to reliably anticipate feature delivery timelines.

## Key Questions

### **Velocity & Flow**

- How quickly are teams converting issues into merged code?
- Where are bottlenecks occurring (review, implementation, unclear requirements)?

## Participation

- Are contributions evenly distributed across team members?
- Are non-tech-lead members actively reviewing and owning issues?

## NPO Impact

- How many completed issues directly correspond to NPO-requested features?
- How long does it take to deliver an NPO-requested feature end-to-end?
- How quickly are NPO-requested features transformed from identified needs into deployed, usable solutions for the partner?

## Process Health

- Are teams consistently engaging in standups and NPO syncs?
- Are tasks being created and closed at a sustainable pace (number of created issues is closely similar to number of closed issues)?

## Weekly Metrics

### Velocity Metrics

- Number of pull requests merged per team
- Number of pull requests merged per developer
- Average PR cycle time (open → merged)
- Number of issues closed per team
- Issue closure rate (closed / created per week)

### Participation Metrics

- Number of created pull requests per team
- % of team members with  $\geq 1$  PR per week
- Number of PRs reviewed by non-tech-lead members
- Review participation distribution (to detect review bottlenecks).
- Average time to give out a code review per team and per member
- Estimate time to code an issue, and correlate it with task difficulty

### NPO Value Metrics

- Number of issues labeled as NPO-Feature closed per week
- Average time to close NPO-Feature issues
- NPO meeting summary → linked issues created

### Process & Engagement Metrics

- Standup meeting notes summary (auto-generated)
- NPO meeting summary
- Per-team attendance rate
- Historical per-member attendance rate
- % of attendees who pushed a commit or opened a PR that week

## Automation

### Velocity & Participation Automation

- Weekly GitHub report per team:
  - PRs merged
  - PRs opened
  - Issues created / closed
  - Cycle time averages
- Per-developer activity summary sent to project leads

### Accountability & Alerts

- Alarms for team members with no PR activity for > 2 weeks
- Alerts for:
  - PRs open > 7 days
  - Issues stalled with no activity > 10 days
- Team-level alerts when issue creation outpaces closures
- Team-level alerts when no new issues are created

### NPO Value Tracking

- Auto-link NPO meeting notes
- Weekly report:
  - “NPO value delivered this week” (Send to NPO as weekly update, LinkedIn)
  - Issues closed that directly map to partner requests
- End-of-semester summary:
  - Features shipped per NPO
  - Average time-to-value per project

## Expected Outcomes

By the end of **Spring 2026**, this framework should result in:

- Faster, more predictable feature delivery
- Higher contribution rates from non-lead developers
- Clear, measurable alignment between engineering output and NPO impact
- Reduced burnout and review bottlenecks
- Data-driven project retrospectives instead of anecdotal feedback

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