

## Client Background

- Public school district administers 13 schools in the greater Lafayette, Indiana area with 7200 students
  - 8 Elementary
  - 1 Intermediate
  - 1 Junior High
  - 1 High School

## Problem Statement

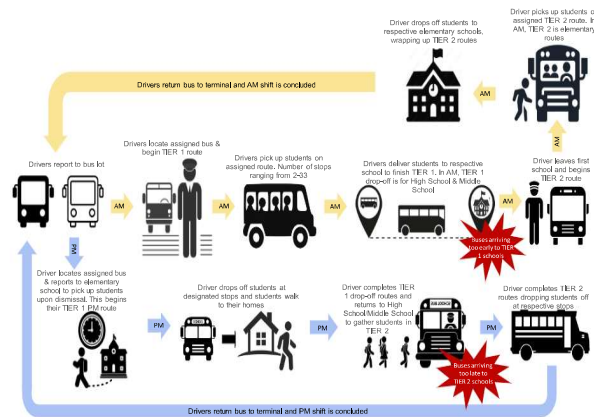
The Lafayette School Corporation is facing an issue with a lack of available school bus drivers due to a loss of personnel since 2020. This problem results in an inefficient system for the pickup and drop-off of students in the school district. Students are unable to consistently get to and from school promptly. The current bus system and its routes must be examined to overcome staffing issues and employ a more reliable way to transport students.

## Project Scope

A Strategic Advisory Report encompassing:

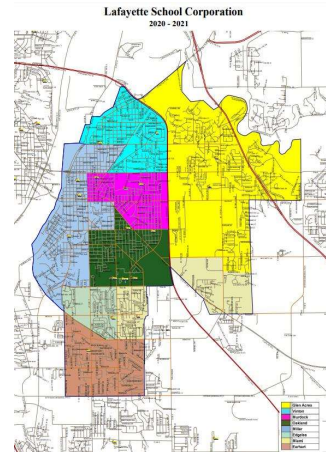
- Recommendations to improve bus routes to efficiently deliver students to school and home on time
- Updating current student registration to include transportation
- Evaluation of rider attendance and how utilized the busses are in terms of rider attendance

## System Model



## Transportation

- ~100 Bus Routes
- Operating on a two-tiered system however will be switching to a three-tiered system for 2024-2025 school year
- Transportation policy states a student enrolled in K-12 who lives one and one-half miles or more from his or her school is eligible for transportation to and from school.
- Facing an issue of lack of drivers
- See school boundaries for LSC in image below



## Methodology

### Route Efficiency Recommendations

- Analyzing current bus route data and bus stop data
  - Walk distance to bus stop
  - Total length of bus routes
  - Number of stops and frequency
- Highlighting inconsistencies and room for improvement
- Provide bus driver retention recommendations

### Updating Registration Portal

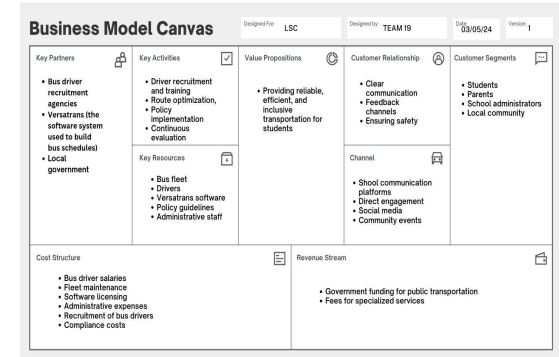
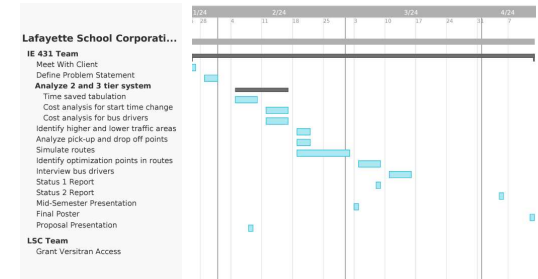
- Adding transportation as a part of the student registration portal
  - Parents/Students will be able to indicate whether rides are needed in the morning, afternoon, or not at all

### Collecting Current State Data

- Performing attendance checks and time studies on bus routes to understand areas of improvements
  - Inconsistencies across fullness of busses
  - Busses who are consistently late/early
  - Routes that have a longer run time than the time allotted for their route



## Discussion

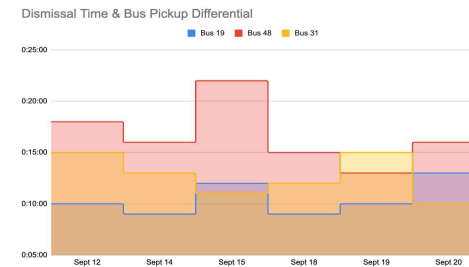


## Results

Estimated Average Ridership	100%
Actual Average Ridership	55.88%
Estimated Time	47 minutes 40 seconds
Actual Time	31 minutes 17 seconds
Unaccounted Time Saved	26.94%
Average district distance from bus to home (K-12)	0.093 miles
Average K-4 distance from bus to home	0.078 miles
Average 5-6 distance from bus to home	0.097 miles
Average 7-12 distance from bus to home	0.106 miles

The table above has been completed with data compiled from our team's time study. Our sample size spanned over six routes covering Vinton, Sunnyside, Earhart, and Glen Acres. All estimated averages are based on data provided to our team by Versatrans software. All actual ridership are based on data from the time study.

To the right, a screenshot of the desired outcome of PowerSchool, the student registration portal, with transportation included.



The chart to the left is visually representing the differential between school dismissal time and when the student is picked up for the bus. These three specific busses were analyzed during out current state analysis.

