# Transportation Improvement Plan

Methacton School District

August 16, 2016

# Progress Report

- Experienced drivers tested routes and recorded local knowledge of turn difficulty, door side stops, congested areas, impassable roads, and accuracy of times.  They paused at the stops to simulate students loading.

- Very experienced router with Bus Boss reviewed every driver comment and incorporated them into calibration of the map that included:

  - Travel time by road segment by time of day.  For example, between 7 and 8 a.m. this segment has travel speed of 15 mph, from 8 to 9 a.m. it slows to 10 mph.

  - Impassable road segments-blocked off on computer map

  - Loading time at each stop-add 18 seconds per rider (50 students adds 15 minutes for loading)

# The Importance of Latest Maps and Calibration

- Once the newest map is calibrated, the software can load all stops into a school in a matter of seconds, being aware of bus seating capacity and road system considerations. The software minimizes the time it takes for all students to be transported to a school.

- At this time, on average students will ride 20% shorter than last year. Some may have longer rides than in the past, while others will be shorter.

- Using the latest calibrated map, the software can do in minutes what previously took days.

- Turn by turn directions of driver's route sheet will be accurate and easier for substitute to follow.

# Better Calibration Means Faster Responsiveness

- Latest data on all students was uploaded into the calibrated map on August 8 and 10 a.m. Then all public school students were routed by that evening. Previously, that would have taken many days of work to enter newly registered student data.

- As we approach the start of school, student placement in buildings based on class size practices add a level of difficulty to last minute changes and could potentially lengthen routes.
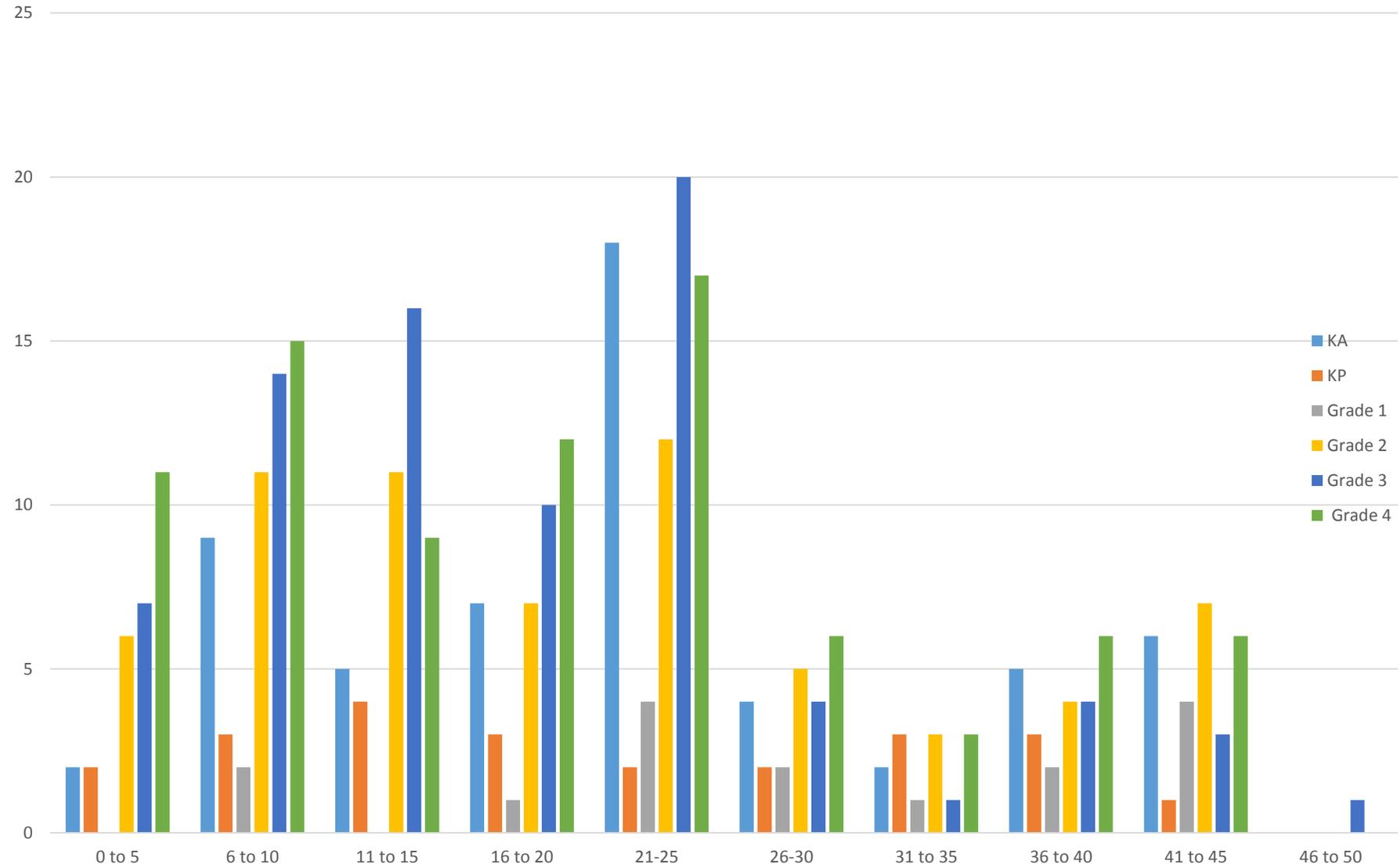
# Reducing Long Ride Times

- As routes are prepared, we analyze the number of students riding longer periods than the desired maximum ride times.

- Time is calculated from stop to school.

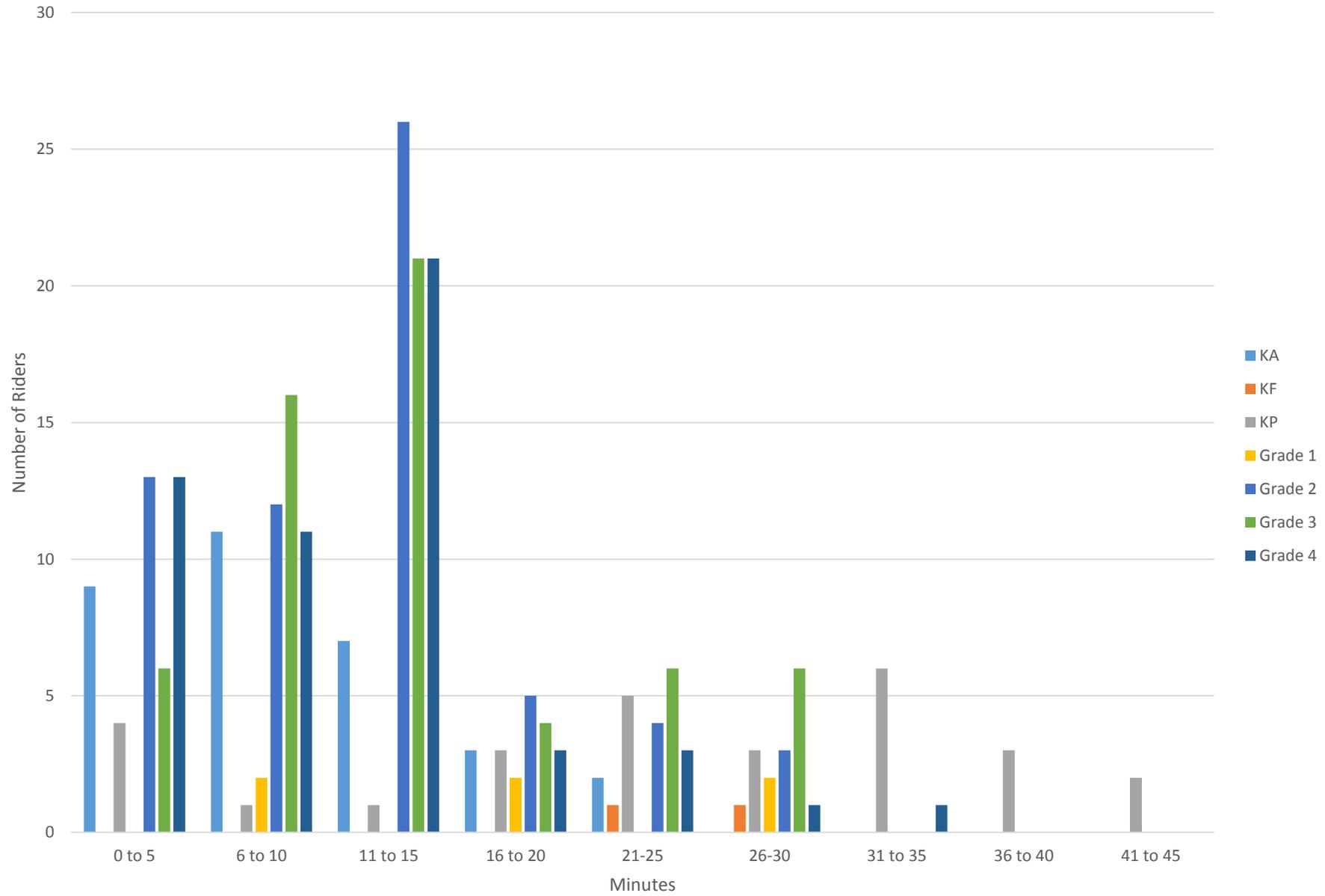- Advisory Committee recommended that very few public students ride longer than 50 minutes.
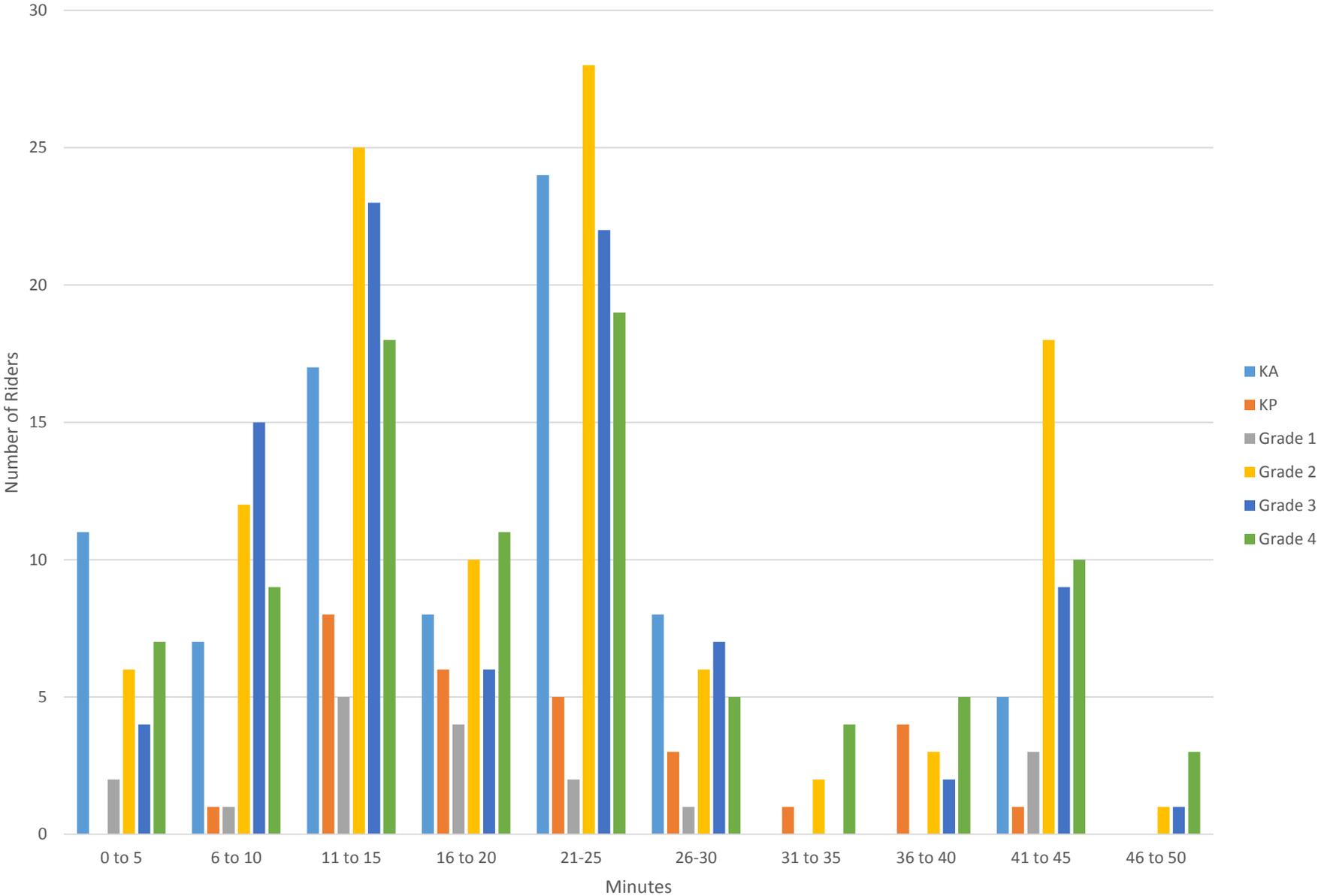
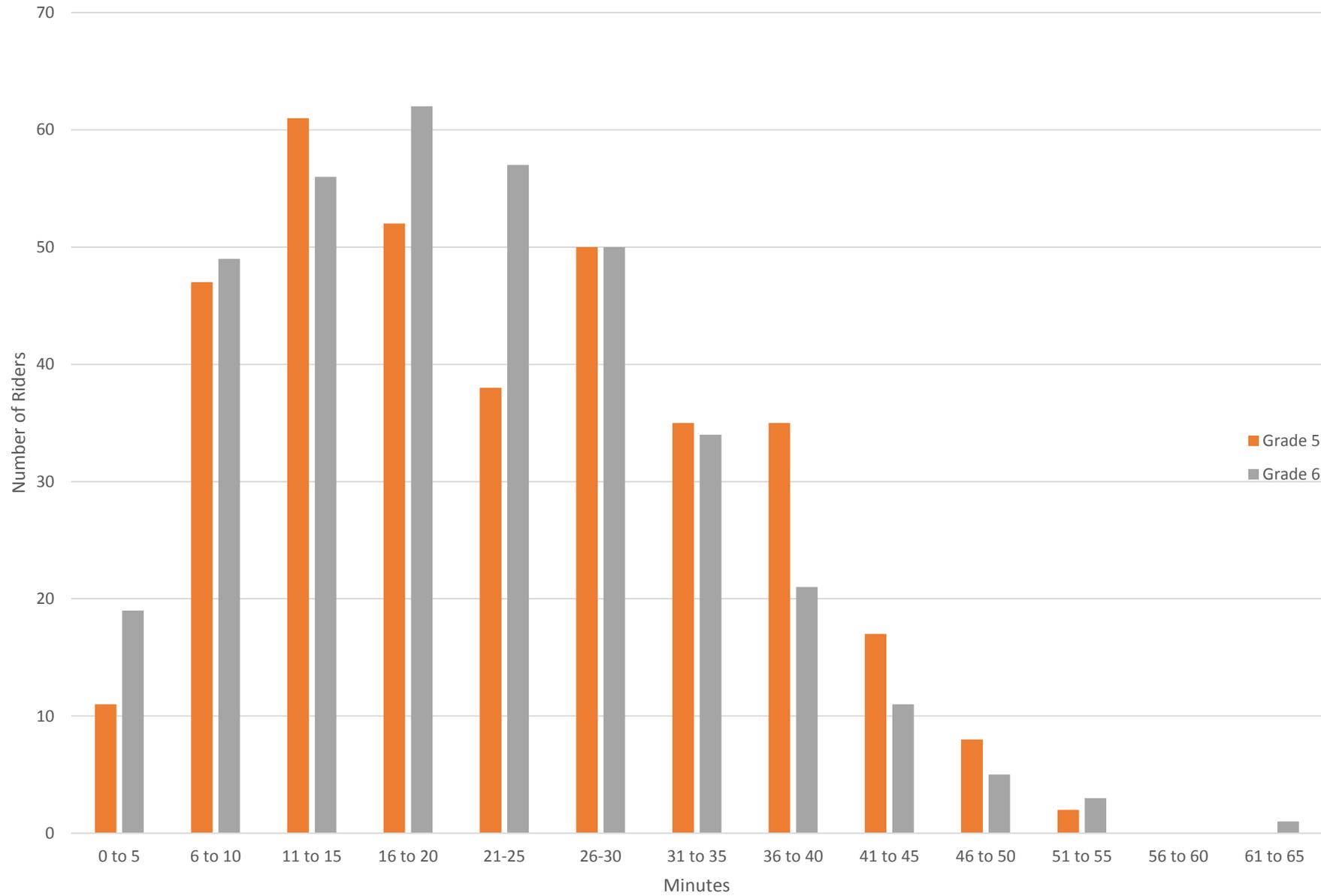Eagleville Elementary Ride Times
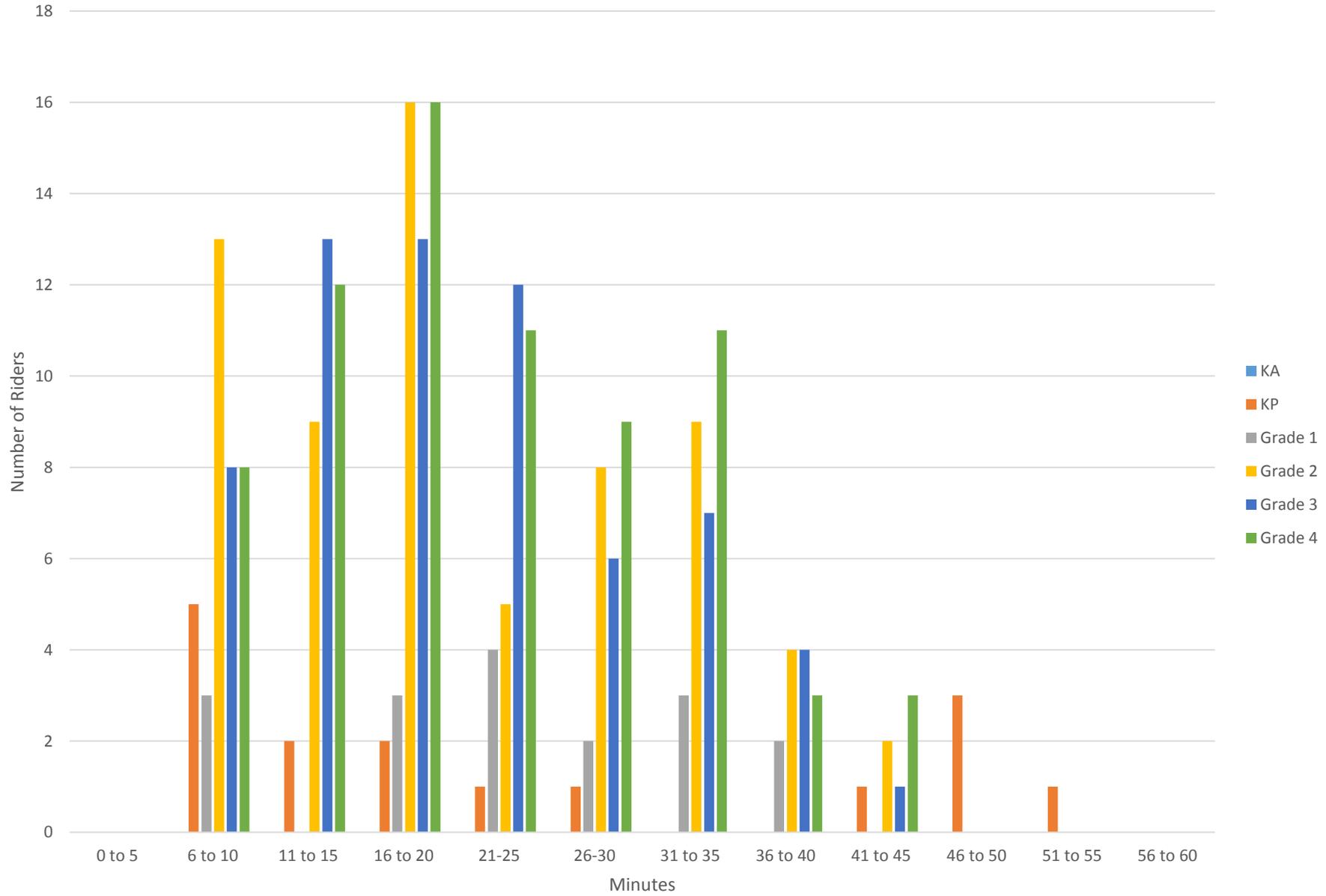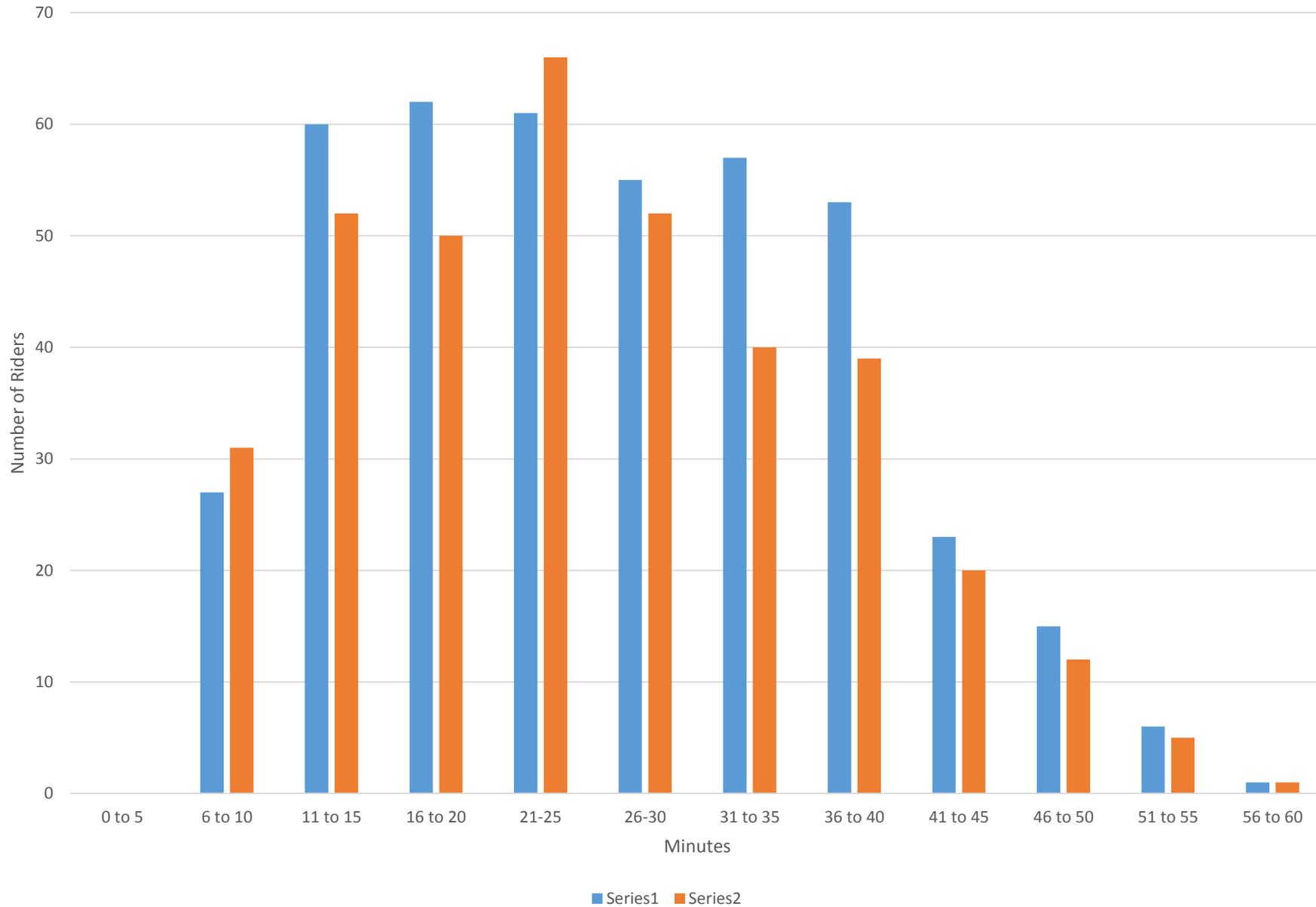
Worcester Elementary Ride Times

Arrowhead Elementary
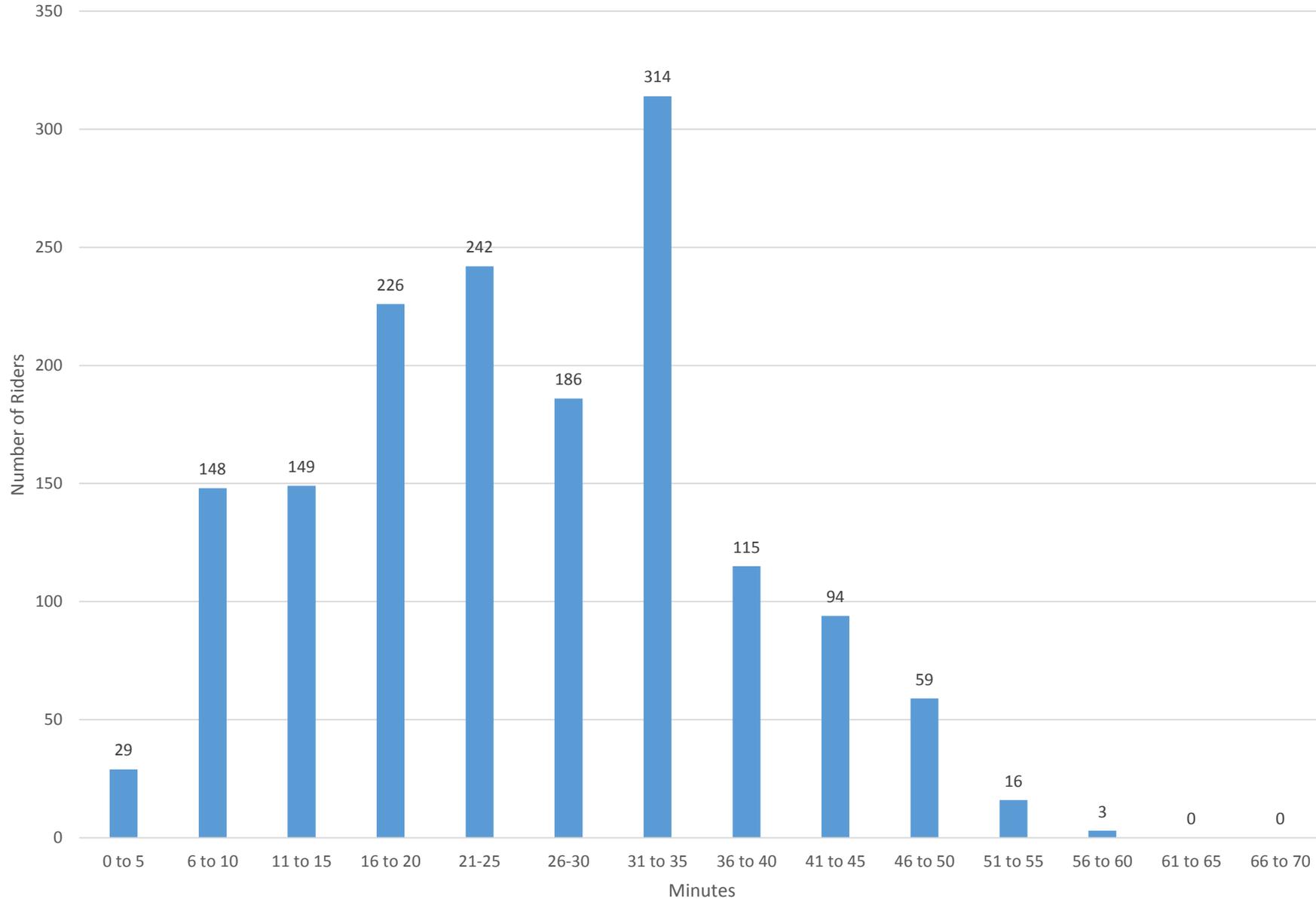
Audobon Elementary School Ride Time

Skyview Upper Elementary School Ride Time

Arcola Ride Time

Methacton High School Ride Times, All Grade Levels

# Problems Analyzed Become Opportunities for Improvement (OFIs) Implemented Quickly

- Problem: Driving directions cause confusion particularly with substitute drivers
  - Solution: map calibration for accurate driver directions
    - Other ideas:  experienced drivers substitute difficult routes, photos on driver route sheet, preloaded route on  portable GPS, radio contact with dispatcher, others?
- Problem: Special education routing takes too long from providing data to getting routes
  - Solution: several dataflow streamlining options
- Problem: Unresponsive, unclear, contradictory communication
  - Information supplied to schools, communication office, others in best format for their needs
  - Everyone should provide a quick referral to Call Center
- Problem: Some parent/rider confusion during first week
  - Solution:  Four standby buses positioned in strategic locations

# Other Improvement Opportunities in Process Management

- Map calibration with driver input, verified by Zonar GPS tracking of time at stop, travel speed, wait time

- Work study students

- Athletic events-arrive too early missing instructional time, no bus waiting if inclement weather

- Late arrival communication-due to congestion, road construction, etc., if 15 minutes late then notify by electronic communication

- Bus video-quick access to video recordings, cold weather reliability

# Managing Processes in a Complex Transportation System

- Special Education Routing
- Career and Technology School Routing
- Nonpublic School Routing
- Notifying Parents/Riders
- Mapping Bus Parking at School
- Change Requests-Stops, Routes
- After School Visits to Friends Houses
- Athletic Events
- Bus Discipline
- Late Arrival to School
- Assignment of Bus Monitors
- Emergency procedures-bus evacuations, if accident, if illness of student, etc.
- Driver training

# Communication Plan-Key Messages

- Key messages
  - Safety First
  - Average time riding buses will be reduced by 20%
  - Widespread agreement that extensive rerouting was needed to update routes based on changing traffic, land development patterns, and neighborhood aging/turnover to new families
  - Advisory committee of parents and employees set performance standards-ride time, seating capacity, balanced loads, etc.
  - Utilizing latest technology, refined with driver input
  - Administration will monitor system performance daily and make adjustments
  - First week bussing runs slower than second week when all riders, parents, and others are familiar
- Letters to parents to be sent shortly after August 22

# Communication Plan-Technology Supported

- Technology Supported
  - Radios-dispatcher to drivers
  - Automated Messenger-
    - Call if bus is running late
    - Linked to Bus and Student Information System (SIS)
- Call Center
  - starts August 22, ends second week of September
  - two operators with handsets in room with consultant
  - access to Bus Boss information
  - <u>standardized answers</u> with consultant advice as necessary,
  - 24 hour response time, 3 days required to implement
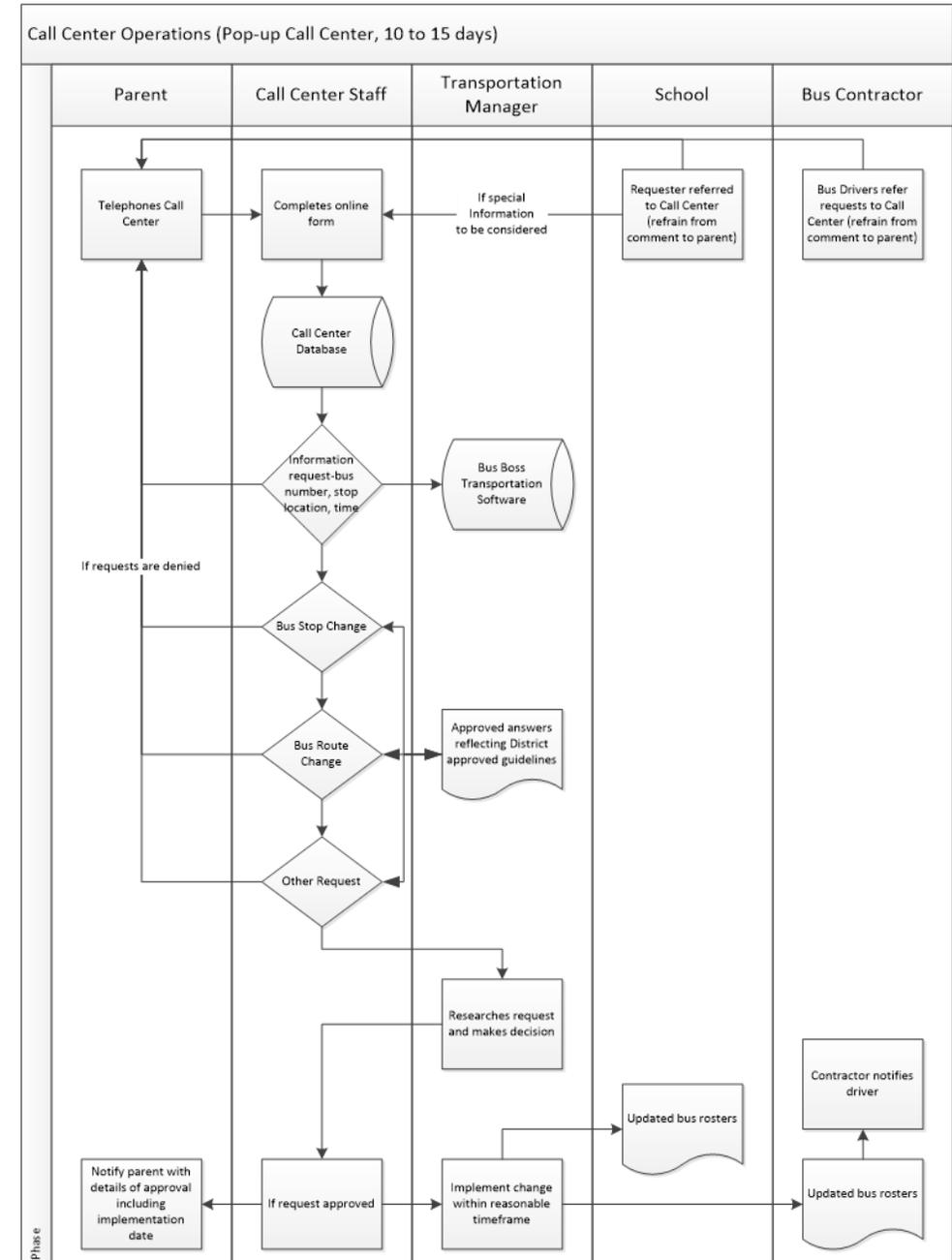
# Schedule in the Next Month

- Week of August 15
  - Complete all routes
  - Train two Call Center operators
  - Driver meeting-picking of routes
  - Testing of routes-dry runs to become familiar with routes
  - Board Work Session to review routing parameters and give general approval
- Week of August 22
  - Mail letters
  - Open Call Center
  - Board Meeting-approval of routes (systemwide data on buses, routes, use of time and seating capacity, ride time, routes/buses per school, tier utilization of buses, etc.)
- Week of August 29
  - Add new registrants
  - Minor adjustments of routes and notification of any changes
  - Sports runs begin
- Week of September 6
  - School starts
  - Spare buses strategically placed to handle any missed students
  - Daily reports to administration and school board on system performance
- Week of September 13
  - Decide and implement any change requests-new stop, route changes affecting pickup times